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IMPORTANT WEBSITES

PROGRAMS & SERVICES

Academic Advising
Academic Resources
Career Services
Counseling
Dean of students
Dining Services
Disabled Assistance Programs
Diversity Programs
Fellowships
Freshman Experience Program
Health Services
International Student Services
Office of Minority Educational Development
Orientation (new students)
Tutoring & Workshops
Women's Resources

DEPARTMENTS

Admissions (undergraduate)
Admissions (graduate)
Alumni Association
Athletic Association
Bursar's Office
Dean of Students Office
Division of Professional Practice
Financial Aid
Housing
Parking and Transportation
Police (campus)
Registrar's Office

STUDENT LIFE

Community Services
Student Government
DramaTech

FACILITIES

Campus Recreation Center
Information Technology
Library & Information Center
Interdisciplinary research Centers
Ferst Center
Student Center

PRESIDENT'S CABINET

G. P. "Bud" Peterson
President

Cabinet

Rafael L. Bras
Provost and Executive Vice President for Academic Affairs

Barrett H. Carson
Vice President for Development

Stephen E. Cross
Executive Vice President for Research

Lynn M. Durham
Executive Assistant to the President

Archie W. Ervin
Vice President for Institute Diversity

Patrick J. McKenna
Associate Vice President for Legal Affairs and Risk Management

William D. Schafer
Vice President for Student Affairs

Dene H. Sheheane
Executive Director for Government and Community Relations

Anderson D. Smith
Senior Vice Provost for Academic Affairs

Steven G. Swant
Executive Vice President for Administration and Finance

Michael L. Warden
Vice President for Communications and Marketing

ACADEMICS MENU - SELECT AN OPTION BELOW

UNDERGRADUATE STUDENT MENU

Please select an option from the menu on the left.

GRADUATE INFORMATION

The faculty of the Georgia Institute of Technology grants advanced degrees in engineering, science, management, computing, architecture, city and regional planning, public policy, and other technology-related areas. The goals for graduate studies and research are to establish an educational environment that will strengthen students' personal and professional development, to encourage students and faculty to vigorously pursue the discovery and generation of new knowledge through research, to investigate ways of applying such knowledge innovatively for the benefit of society and humanity, and to foster the development of new tools, objects, and ideas.

Students whose interests and aptitudes lead them beyond the limits of the traditional undergraduate curriculum may broaden their knowledge of a given field and pursue independent inquiry through graduate study. A graduate education is of particular benefit to students interested in careers in research, management development, design, or consulting; to those who aspire to formulate and administer policy; and to those who desire careers in higher education.

PROFESSIONAL EDUCATION

Georgia Tech Professional Education is an academic division of Georgia Tech providing innovative, comprehensive education and training. Professional Education gives participants a world-class learning experience promoting professional and personal success. It comprises the following:

- Degree Programs
- Short Programs
- English as a Second Language
- Community Outreach
- Learning and Meeting Facilities

This year, Professional Education and its programs reached more than 13,000 individuals and 3,100 companies in various locations.

Atlanta: The Georgia Tech Global Learning Center is designed, staffed, and equipped with the technology and service to foster the relationship between people and ideas and learning and working. Many courses and programs are hosted at the Center in addition to its being a corporate and professional meeting venue.

Georgia Tech-Savannah: The Savannah campus is currently transitioning from a campus offering four undergraduate and graduate degrees to a destination for professional education, including professional master’s degrees and specialized training programs targeting industry and the military.

Around the World: Courses are held in multiple cities throughout the Southeast and around the globe including nearly thirty different course locations from Alabama to Singapore.

Any Location: Various courses and programs are offered online, via videoconference, or customized and delivered directly to a company.

Learn more about Georgia Tech Professional Education at www.gtpe.gatech.edu.

General Information
- About This Catalog
- Student Services
- Faculty & Administration

Academics
- Colleges & Schools
- Undergraduate
- Graduate
- Professional Education
- Minors - Undergraduate
- Academic Resources
- Special Academic Programs
- Research Support Facilities

Admissions
- Undergraduate
- Graduate

Financial
Regulations

UNDERGRADUATE MINORS

An undergraduate minor is a defined program of study outside the student's major field. Minors are intended to broaden the student's education by encouraging and officially recognizing knowledge obtained by the student in fields other than their major.

Minors are typically offered by Schools which also offer a major. A program of study for the minor is outlined and it may include more than one option or "track". Tracks allow students to focus on an aspect of the academic field that is of particular interest to them. It is expected that there will be depth of the program of study and that specific educational objectives will be met upon completion of the minor.

Other minors are offered where there is no undergraduate degree granting program at Georgia Tech. These minors cover fields which are inherently multidisciplinary; i.e., ones that are covered in part by multiple degree granting academic programs. Multidisciplinary minors require particularly broad Programs of Study which include courses from multiple Schools and/or Colleges.

UNDERGRADUATE MINOR GUIDELINES

1. **AEROSPACE ENGINEERING**
   - Description
   - Program of Study
2. **ARCHITECTURAL HISTORY**
   - Description
   - Program of Study
3. **BIOLOGY**
   - Description
   - Program of Study
4. **BIOCHEMISTRY**
   - Description
   - Program of Study
5. **BIOMEDICAL ENGINEERING**
   - Description
   - Program of Study
6. **CHEMISTRY**
   - Description
   - Program of Study
7. **CHINESE**
   - Description
   - Program of Study
8. **COMPUTATIONAL DATA ANALYSIS**
   - Description

32. **NUCLEAR AND RADIOLOGICAL ENGINEERING**
    - Description
    - Program of Study
33. **PERFORMANCE STUDIES**
    - Description
    - Program of Study
34. **PHILOSOPHY**
    - Description
    - Program of Study
35. **POLITICAL SCIENCE**
    - Description
    - Program of Study
36. **PSYCHOLOGY**
    - Description
    - Program of Study
37. **PUBLIC POLICY**
    - Description
    - Program of Study
38. **RUSSIAN STUDIES**
    - Description
    - Program of Study
39. **SCIENCE, TECHNOLOGY, AND SOCIETY**
    - Description
    - Program of Study
40. **SCIENTIFIC AND ENGINEERING COMPUTING**
    - Description
    - Program of Study
41. **SOCIOLOGY**
    - Description
    - Program of Study
42. **SPANISH**
    - Description
    - Program of Study
43. **TECHNICAL COMMUNICATION**
    - Description
    - Program of Study
44. **WOMEN, SCIENCE, AND TECHNOLOGY**
    - Description
    - Program of Study

GEORGIA TECH - SPECIAL ACADEMIC PROGRAMS

Please select an option from the menu on the left.

RESEARCH SUPPORT FACILITIES

Please select an option from the menu on the left.

UNDERGRADUATE ADMISSIONS

Please select an option from the menu on the left.

GRADUATE ADMISSIONS

Admissions Information
Apply
Graduate Record Exam (GRE)
Orientation-New Students
Reactivation of Application
Readmission
TOEFL for Int'l Students
Transfer Credit
Types of Standing
Colleges & Degrees

GRADUATE ADMISSIONS

Prospective students may obtain information and apply for admission via the graduate admissions web page at www.grad.gatech.edu, gives information at the individual program level on minimum admissions standards and all relevant deadlines.

Applicants for Georgia Tech's graduate programs should have received a bachelor's degree from an accredited institution and have demonstrated academic excellence. Students must show evidence of preparation in their chosen field sufficient to ensure successful graduate study.

Please select an option from the menu on the left.

GEORGIA TECH FINANCIAL INFORMATION

Please select an option from the menu on the left.

ACADEMIC REGULATIONS

The Rules and Regulations section of this catalog contains detailed information regarding the academic regulations of the Institute. Students who have questions concerning these regulations should consult either their major school or the Registrar's Office.

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ADMISSIONS MENU - SELECT AN OPTION BELOW

General Information
About This Catalog
Student Services
Faculty & Administration
Academics
Colleges & Schools
Undergraduate
Graduate
Professional Education
Minors - Undergraduate
Academic Resources
Special Academic Programs
Research Support Facilities
Admissions
Undergraduate
Graduate
Financial
Regulations

ACADEMIC REGULATIONS - SELECT AN OPTION BELOW

- Rules & Regulations
- Other Polices

ACCREDITATION

The Georgia Institute of Technology is accredited by the Southern Association of Colleges and Schools Commission on Colleges to award bachelor's, master's, and doctoral degrees.

Contact the Commission on Colleges for questions about the accreditation of the Georgia Institute of Technology at:
Commission on Colleges
1866 Southern Lane
Decatur, GA 30033-4097
Telephone: 404.679.4500

Inquiries to the Southern Association of Colleges and Schools Commission on Colleges should only address:

1. the accreditation status of the Georgia Institute of Technology;
2. the filing of a third-party complaint at the time of Georgia Tech's decennial review; and
3. the filing of a complaint for alleged non-compliance with a requirement or standard.

In addition, many Institute programs are specifically accredited by appropriate professional certifying agencies.

COLLEGE OF ARCHITECTURE

In the United States, most state registration boards require a degree from an accredited professional degree program as a prerequisite for licensure. The National Architectural Accrediting Board (NAAB), which is the sole agency authorized to accredit U.S. professional degree programs in architecture, recognizes three types of degrees: the Bachelor of Architecture, the Master of Architecture, and the Doctor of Architecture. A program may be granted a 6-year, 3-year, or 2-year term of accreditation, depending on the extent of its conformance with established educational standards.

The Doctor of Architecture and Master of Architecture degree programs may consist of a pre-professional undergraduate degree and a professional graduate degree that, when earned sequentially, constitute an accredited professional education. However, the pre-professional degree is not, by itself, recognized as an accredited degree.

The Georgia Institute of Technology, School of Architecture, offers the following NAAB-accredited degree programs:

1. Master of Architecture, Two-year track (pre-professional degree in Architecture + 60 credits required)
2. Master of Architecture, Three-year track (non-pre-professional degree + 108 credits required)

The Bachelor of Science in Building Construction is accredited by the American Council for Construction Education (ACCE). The Master of Science in Building Construction and Facility Management is accredited by the International Facility Management Association (IFMA) Foundation. The School of Building Construction has also received international recognition by the Royal Institute of Chartered Surveyors (RICS).

The Master of City and Regional Planning program is fully accredited by the Planning Accreditation Board (PAB), www.planningaccreditationboard.org.

The Bachelor of Science in Industrial Design and the Master of Industrial Design degree programs have been accredited by the National Association of Schools in Art and Design (NASAD) and are recognized by the Industrial Designers Society of America.

COLLEGE OF COMPUTING

The following undergraduate computing programs are accredited by the Computing Accreditation Commission of ABET, www.abet.org.

- Bachelor of Science in Computer Science
- Bachelor of Science in Computational Media

COLLEGE OF ENGINEERING

The following undergraduate engineering programs are accredited by the Engineering Accreditation Commission of ABET, www.abet.org.

- Bachelor of Science in Aerospace Engineering
- Bachelor of Science in Biomedical Engineering
- Bachelor of Science in Chemical and Biomolecular Engineering
- Bachelor of Science in Civil Engineering
- Bachelor of Science in Civil Engineering - Regional Engineering Program (offered through Georgia Tech-Savannah)
- Bachelor of Science in Computer Engineering
- Bachelor of Science in Computer Engineering - Regional Engineering Program (offered through Georgia Tech-Savannah)
- Bachelor of Science in Electrical Engineering
- Bachelor of Science in Electrical Engineering - Regional Engineering Program (offered through Georgia Tech-Savannah)
- Bachelor of Science in Environmental Engineering
- Bachelor of Science in Industrial Engineering
- Bachelor of Science in Materials Science and Engineering
- Bachelor of Science in Mechanical Engineering
- Bachelor of Science in Mechanical Engineering - Regional Engineering Program (offered through Georgia Tech-Savannah)
- Bachelor of Science in Nuclear and Radiological Engineering
- Bachelor of Science in Polymer and Fiber Engineering

The Master of Science in Medical Physics and the PhD in Nuclear and Radiological Engineering - Medical Physics Option programs are accredited by the Commission on Accreditation of Medical Physics Educational Programs, CAMPEP, www.campep.org/campeplstgrad.asp.

COLLEGE OF BUSINESS

The College of Business and all of its degrees are accredited by the Association to Advance Collegiate Schools of Business (AACSB) International.

COLLEGE OF SCIENCES

The American Chemical Society has certified the curriculum leading to the Bachelor of Science in Chemistry.

The Human Factors and Ergonomics Society has accredited the curriculum leading to the PhD in Engineering Psychology.

The Master of Science in Prosthetics and Orthotics (MSPO) program is accredited by the Commission on Accreditation of Allied Health Education Programs (CAAHEP) upon the recommendation of the National Commission on Orthotic and Prosthetic Education (NCOPE). Accreditation for the MSPO program is effective 2010 to 2015.

DIVISION OF STUDENT AFFAIRS

The Counseling Center is accredited by the International Association of Counseling Services (IACS). IACS is the accrediting body for counseling services provided by college and university counseling centers. The Counseling Center sponsors a predoctoral internship training program in psychology for doctoral students in counseling and clinical psychology programs. The internship training program is accredited by the American Psychological Association (APA).

MEMBER INSTITUTIONS

Research Universities

- Georgia Institute of Technology
- Georgia Regents University
- Georgia State University
- University of Georgia

Research Institutes

- Skidaway Institute of Oceanography

Regional Universities

- Georgia Southern University
- Valdosta State University

State Universities

- Albany State University
- Armstrong Atlantic State University
- Clayton State University
- Columbus State University
- Fort Valley State University
- Georgia College and State University
- Georgia Southwestern State University
- Kennesaw State University
- Savannah State University
- Southern Polytechnic State University
- University of North Georgia
- University of West Georgia

State Colleges

- Abraham Baldwin Agricultural College
- Atlanta Metropolitan State College
- Bainbridge State College
- College of Coastal Georgia
- Dalton State College
- Darton State College
- East Georgia State College
- Georgia Gwinnett College
- Georgia Highlands College
- Georgia Perimeter College
- Gordon State College
- Middle Georgia State College
- South Georgia State College

THE GEORGIA TECH VISION AND MISSION STATEMENTS

THE VISION

Georgia Tech will define the technological research university of the twenty-first century. As a result, we will be leaders in influencing major technological, social, and policy decisions that address critical global challenges. "What does Georgia Tech think?" will be a common question in research, business, the media, and government.

THE MISSION

Technological change is fundamental to the advancement of the human condition. The Georgia Tech community—students, staff, faculty, and alumni—will realize our motto of "Progress and Service" through effectiveness and innovation in teaching and learning, our research advances, and entrepreneurship in all sectors of society. We will be leaders in improving the human condition in Georgia, the United States, and around the globe.

COLLEGE OF ARCHITECTURE

College established in 1975
School in 1948, Department in 1908
Location: 245 Fourth Street
Atlanta, Georgia 30332-0155
Phone: 404.894.3880
Fax: 404.894.2678
Website: www.coa.gatech.edu

GENERAL INFORMATION

With its five schools and five research centers, the College of Architecture is well equipped to address the designed and built environment across a range of scales: from everyday objects to metropolitan regions. The schools—Architecture, Building Construction, Industrial Design, City and Regional Planning, and Music—offer a variety of undergraduate and graduate degrees, minors, certificates, and concentrations.

The original mission of the College, at its establishment as a Department of Architecture in 1908, was to prepare students for the professional practice of architecture. Over the past one-hundred years, the College has grown in response to changes in the professions and in society. The College is now a multidisciplinary venue for teaching, research, and service that engages multiple dimensions of the designed, built, and lived environment.

The current undergraduate and graduate programs—and the degrees they offer—are described in the catalog webpages under their respective schools.

All work produced in the College of Architecture as part of a degree program becomes the property of the College; it may be retained or returned at the discretion of the faculty. The faculty also reserves the right to refuse for credit any project executed outside the precincts of the College or otherwise produced without proper coordination with the faculty.

ABOUT THE SCHOOL

Location: East and West Architecture Buildings
Telephone: 404.894.4885
Fax: 404.894.0572
Website
Faculty

Architecture was established as a discipline at Georgia Tech in 1908, and the graduates of the program have helped shape the growth and physical climate of Atlanta, the region and the world. As the largest of the five units in the College of Architecture, the School of Architecture has several distinct degree programs, a reflection of its multiple missions. The undergraduate program, the Bachelor of Science in Architecture, advances Georgia Tech's general education mission through a studio-based design curriculum providing a thorough grounding in liberal and technological knowledge.

At the core of the School is the professional program in architecture, the Master of Architecture, one requirement leading to licensure as a practicing architect. In addition, advanced study and research programs, including the Master of Science with a major in Architecture, the Master of Science in Urban Design, and the Doctor of Philosophy with a major in Architecture, build linkages with practice and industry and exploit the creative tensions between research and design that drives innovation in the field.

Resources such as the Digital Building Laboratory, the Digital Fabrication Laboratory, and the SimTigrate Lab for health and design, support a culture of research focused on building performance and innovation in the field.

ABOUT THE SCHOOL

Location: College of Architecture Annex â€“ Caddell Building
Telephone: 404.894.4875
Fax: 404.894.1641
Website
Faculty

The construction industry is among the largest in the United States, employing nearly seven million people and contributing 5 percent of the United States gross national product. The School of Building Construction (BC) at Georgia Tech is one of the nation's leading academic programs in building construction and is at the forefront of research in the built environment. The School's mission is to be the hub of excellence for construction teaching, research, and service by promoting the development of an adaptive knowledge-based, sustainability-conscious industry framework. Supported by the pillars of project delivery, construction management, and facility management, the aim is to advance emerging construction practices, technology innovation, and integrated delivery systems. The School's vision is to be a global leader in innovation and delivery of technological and methodological sustainability-focused advances for the construction and facility management industry through relevant, applied, and fundamental research. With a problem-focused approach to global outreach, the School will lead an expansion of our global footprint and influence to ensure that we are graduating good global citizens, and to ensure that our fundamental and applied construction research remains relevant at the local, regional, national, and international levels.

Employment prospects for BC students are excellent. Students are recruited by general contractors, residential home builders, project management firms, cost value and consulting firms, real estate and property development companies, building material suppliers, and local, state, and federal government agencies. The average starting salary for the BC graduate is among the highest on the Georgia Tech campus and ranks at the top of the industry. The degree granted is a Bachelor of Science in Building Construction. The School also offers a Master of Science in Building Construction and Facility Management.

Students in the School of Building Construction learn the basic principles and practices of construction management, real estate development, science, and technology. BC students are educated on how to manage the functions and processes of every aspect of the construction industry. The business climate in Atlanta is vibrant and provides an excellent laboratory opportunity for students to observe various construction sites and activities. The construction companies in the Atlanta area also provide many internships and part-time jobs for students during their study in the BC program.

ABOUT THE SCHOOL

Location: East Architecture Building
Telephone: 404.894.2350
Fax: 404.894.1628
Website
Faculty

Founded in 1952, Georgia Tech's planning school is one of the oldest professional planning programs in the United States, with more than 1,200 alumni. Graduates are employed in public, private, and third sectors, including all levels of government, real estate development firms, planning consultancies, banks, public utilities, community development corporations, universities, research organizations, and public interest groups. The School's Master of City and Regional Planning program is fully accredited by the Planning Accreditation Board and is the only accredited planning program in Georgia.

The School of City and Regional Planning offers the professional Master of City and Regional Planning (MCRP), the post-professional Master of Science in Urban Design, the PhD in City and Regional Planning, and the Master of Science in Geographic Information Science and Technology (MSGIST), as well as dual MCRP degrees with civil and environmental engineering (MS Civil Engineering), architecture (M Arch), public policy (MS Public Policy), and the Juris Doctor (Planning Law) degree at Georgia State University. Undergraduates and graduates may earn a Certificate in Land Development. Graduate students may earn a Certificate in Remote Sensing in cooperation with the School of Earth and Atmospheric Sciences. In addition, MCRP students may earn a Certificate in Real Estate or a Certificate in Historic Preservation offered in cooperation with Georgia State University. The School's professional curricula are organized in seven areas of urban and regional planning: economic development, environmental planning, geographic information systems, land and community development, land use policy, transportation planning, and urban design. The City and Regional Planning faculty includes six Fellows of the American Institute of Certified Planners, the co-editors of the Journal of Planning Education and Research, and former chief operating officers of the Atlanta Regional Commission, the Georgia Regional Transportation Authority, and the Atlanta City Planning Department. The faculty are responsible for an average of more than $2 million per year of externally funded research, serve on eleven editorial boards, and are widely sought as framers of and advisors to local, state, federal, and international human settlements policy, research foundations, private developers, and learned societies.

Graduate students come to this School from across the United States and around the world. A typical entering class includes students from ten to twenty states and a half-dozen countries, while also fully representing the diversity in Georgia's home regions. These students arrive with ambitions to solve the world's most vexing problems resulting from population growth, economic disparities, resource shortages, and climate change, and become after graduating leaders in the city planning profession, the development industry, the non-profit sector, and academia. Our 1,200 graduates, including many of Atlanta's and Georgia's top planners and policy makers, work in forty-five U.S. states and twenty-one foreign countries.
Our institutional setting within the College of Architecture and one of the world's premiere technology universities enables students to acquire expertise in every area of the urban development process, including planning, design, construction/engineering, and management. The School of City and Regional Planning is home to three research centers:

the Georgia Center for Quality Growth and Regional Development, Center for Geographic Information Systems, and the Urban Climate Lab. These centers plus Georgia Tech's Economic Innovation Institute, Georgia Transportation Institute, Brook Byers Institute for Sustainable Systems, and renowned co-op program, provide hands-on practice and research experience for many of our graduate students.

Our regional location in one of the largest, most diverse, and rapidly growing metropolitan areas of the United States affords our students and faculty direct access to a vibrant laboratory for urban planning. With its unique combination of urban amenities, temperate climate, employment opportunities, and its status as America's fifth largest concentration of higher education, Atlanta attracts more young professionals annually than any other U.S. city. We take advantage of our dynamic metropolitan setting through the development of four to five applied studio courses per year, the involvement of numerous city/regional planning practitioners as part-time instructors, and access to a wide range of federal, state, local, and private- and third-sector planning organizations that employ a substantial portion of our graduates. Outside of the classroom, students enjoy Atlanta's more than 200 days of sunshine and regional proximity to the mountains and the coast.

ABOUT THE SCHOOL

Location: West Architecture Building - Building B
Telephone: 404.894.4874
Fax: 404.894.3396
Website
Faculty

Industrial design is the professional service of creating and developing concepts and specifications that optimize the function, value, and appearance of products and systems for the mutual benefit of both user and manufacturer. An industrial designer's work touches all of our lives in the form of home products and furnishings, communication devices, healthcare equipment, rehabilitation technologies, and a myriad of other consumer and industrial products and services. While giving form to the efforts of industry, an industrial designer is at the same time a consumer advocate, providing the humanizing link between technology and people. As such, an industrial designer's central responsibilities include fitting the artifact, system, or service to the person through considering appropriate aesthetics and ergonomics, technical processes, requirements for manufacture, marketing opportunities, and economic constraints.

The Georgia Tech School of Industrial Design offers a well-rounded course of study with early emphasis on basic design and design skills. Design projects stress realistic design situations. The program encourages students to develop a diverse background in order to expand individual talents and to respond to changing opportunities in the field. Most faculty members are practicing designers with extensive experience in the field.

All work executed in the College of Architecture becomes the property of the College and will be retained or returned at the discretion of the faculty. The faculty also reserves the right to refuse credit for any project executed outside the precincts of the College or otherwise executed without proper coordination with the instructor.

ABOUT THE SCHOOL

Location: Couch Building
Telephone: 404.894.3193
Fax: 404.894.9952
Website
Faculty

GENERAL INFORMATION

Among the oldest traditions of the Institute, the School of Music provides a creative cultural outlet for Georgia Tech's many musically minded students. Whether a student's interest is casual or intense, the music faculty is dedicated to providing a quality experience in the theory, history, and practice of music. Students may elect to participate in various classroom courses and in vocal or instrumental ensembles, enjoying a sense of community, pride, and accomplishment. Institute research also reveals that student retention is four and a half times greater for students involved in music.

Performance activities in Music are centered around Tech's major performing groups: Marching Band, Concert Band, Chamber Choir, Chorale, Jazz Ensemble, Wind Ensemble, and Orchestra. Academic opportunities include music theory, music literature, music technology, and multimedia courses Students involved in the program represent every major of the Institute at both undergraduate and graduate-levels.

Students earn free elective or humanities credit for all ensembles and classroom courses. Upon completion of thirteen credit hours of coursework within a prescribed curriculum, a Certificate in Music may be awarded. Three Music Minors are also offered, each requiring 15 credit hours, with at least six credit hours at the upper-division level (3000 and 4000). The Music Minor, Music Technology Minor, and Music Performance Minor Require an application to the Music Minor Coordinator. Specific course offerings may be checked each semester at https://oscar.gatech.edu. The School plans events with an awareness of the demands placed upon Tech students so that a great amount of musical experience is concentrated into a limited time. Most ensemble classes schedule meetings and rehearsal times during the late afternoon and early evening hours. The School enjoys a tradition of commitment to campus and community service that contributes greatly to the quality of life at Georgia Tech.

SCHELLER COLLEGE OF BUSINESS

Established in 1913 as the School of Commerce
800 West Peachtree Street, Atlanta, GA 30308-0520
Telephone: 404.894.2600
Fax: 404.894.1552
Website
Faculty

GENERAL INFORMATION

The College of Business offers a full range of undergraduate and graduate programs. The undergraduate program in business administration leads to the Bachelor of Science degree. The College offers five master's degree programs: the Master of Business Administration (MBA), which can be completed in two years as a full-time program or in three years as a part-time evening program; the Master of Business Administration in Management of Technology and the MBA-Global Business Program, which are offered in weekend formats and can be completed in less than two years; A Master of Science in Quantitative and Computational Finance; and an undesignated Master of Science degree. The doctoral program leads to a PhD in Management. Students admitted to the graduate management programs are admitted only on a degree-seeking basis. The College is accredited by AACSB International The Association to Advance Collegiate Schools of Business (AACSB) International.

The College is a recognized leader in developing business leaders to succeed in today's high-tech business world. Programs combine excellence in the functional areas of business education with the multidisciplinary focus on management of technology, international business, and entrepreneurial and innovative processes for a global economy. Students learn to create value that will make a social and economic difference in the lives of individuals, groups, communities, and societies. With a curriculum that emphasizes collaborative learning based on real-world experience, the College offers the resources of centers focusing on global business, leadership, and entrepreneurship to foster research, teaching excellence, and discussion across the major functional areas of business.

COLLEGE OF COMPUTING

Established in 1990
Location: 801 Atlantic Drive
Telephone: 404.894.3152
Fax: 404.894.9846
Website: www.cc.gatech.edu

GENERAL INFORMATION

The founding of the College of Computing in 1990 as a focal point for the interdisciplinary advancement of computing caps a history that began in 1963 with the establishment of the School of Information Science. In 1972, this school was succeeded by the School of Information and Computer Science, the immediate predecessor of the current College of Computing. The College of Computing at Georgia Tech is one of the first college-level units devoted to the study of computing in the country.

Computer science is an important basis for many activities and is a natural and powerful partner with a variety of other disciplines. The College offers instructional and research programs in many areas, including algorithms and data structures, intelligent systems and robotics, computer architecture, cognitive science, databases, distributed and parallel systems, educational technology, graphics and visualization, human-computer interaction, information security, information systems, networking and telecommunications, operating systems, parallel architectures, programming languages, software engineering, and theories of automata and computation.

Beginning in fall 2006, the undergraduate program was organized around the Threads™ program developed by College of Computing faculty. A Thread™ is an intuitive, flexible, and mutually strengthening set of courses that allows students to craft a distinctive future in any computing-related field. Based on their particular interests, students will choose two Threads™ consisting of computing combined with modeling and simulation, devices, theory, information internetworks, intelligence, media, people, or platforms in order to weave a technical degree with a broad collection of skills and learning experiences they need to thrive in a globally competitive world. This approach allows the computing program to retain its strong computer science foundations yet encourages partnerships with the multitude of disciplines affected by computing and technology.

The College conducts an increasing number of interdisciplinary research and instructional programs jointly with other campus units and operates three centers of interdisciplinary research for the campus: the Center for Experimental Research in Computer Systems (CERCS); the Graphics, Visualization, and Usability (GVU) Center; and the Georgia Tech Information Security Center (GTISC). The College's operations are housed in parts of five separate buildings on campus, including the College of Computing building.

The College awards bachelor's degrees in computer science (CS), bachelor's degrees in computational media (jointly with the School of Literature, Media, and Communication), master's degrees in computer science, master's degrees in information security, and doctoral degrees in computer science and human-centered computing. The College offers an undergraduate CS minor. The College also offers the Master's degree in human-computer interaction in collaboration with the School of Literature, Media, and Communication and the School of Psychology. The College is a sponsor of a multidisciplinary program in Algorithms, Combinatorics, and Optimization, an approved doctoral degree program at Georgia Tech.

Master's and doctoral degrees in bioengineering can be pursued through the College as one of the units participating in the Institute-wide interdisciplinary Bioengineering Program. A doctoral degree in bioinformatics can also be pursued through the College in conjunction with the School of Biology.

SCHOOL OF COMPUTER SCIENCE

The School of Computer Science in the College of Computing is comprised of faculty and students engaged in research and teaching within computing systems, broadly defined, and computing theory. The School of Computer Science spans areas including:

- computer architecture
- databases
- distributed and embedded systems
- enterprise computing
- information security
- networking
- operating systems
- programming languages and compilers
- software engineering
- theory

The School participates in degree programs at the undergraduate-level (BS in Computer Science), the master's level (MS in Computer Science; MS in Information Security; MS in BioInformatics), and the PhD level (PhD in Computer Science; PhD in Algorithms, Combinatorics & Optimization; PhD in BioEngineering, PhD in BioInformatics). We welcome your interest in our community.

The mission of the School of Computer Science is to push the boundaries in education and research that will be necessary to design, build and understand the complex systems that are central to society. Examples of such systems include the Internet, enterprise computing systems, secure information spaces, and mobile communication systems. We accomplish this by creating a community of collaborators who are focused on high quality, high impact work.

SCHOOL OF INTERACTIVE COMPUTING

Interactive and intelligent computing is an emerging discipline on the frontier of ways computation impacts the external world. The School of Interactive Computing advances computing-mediated interactions by encompassing fields ranging from artificial intelligence and machine learning to graphics and computer vision to interface design and empirical methods. We don't just evaluate technology, we create technology that makes interactions better. Much of the research within the School of Interactive Computing produces new artifacts that embody new capabilities or methods. Examples include:

- Individuals working with traditional computers
- Groups of people using ubiquitous computing capabilities throughout various environments
- Researchers visualizing scientific data
- Students developing and altering middle school physics simulations
- Automated intelligent surveillance systems monitoring airport tarmacs
- Robots delivering pharmaceuticals to patients in hospitals

Whether an advance is in robotics, augmented reality, or ubiquitous computing, it is developed in the context of a prototype. School of Interactive Computing students become proficient in many areas such as mechanical or electrical engineering, and industrial design. The School of Interactive Computing develops practitioners, future innovators and researchers by offering numerous degree programs.

At the undergraduate-level, the School of Interactive Computing is an integral part of the College's BS in Computer Science, and oversees aspects of Computational Media's Bachelor's degree-offered jointly with the School of Literature, Communication and Culture (LMC). The School of Interactive Computing also administers the interdisciplinary Master's in Human Computer Interaction (HCI) program in which students from the School of Interactive Computing, LCC, and Psychology participate. At the graduate-level the School of Interactive Computing students can pursue Master's and PhD degrees in Computer Science, or a PhD in Human-Centric Computing-the first of its kind in the nation. The School of Interactive Computing is also developing a Robotics PhD to be offered in conjunction with schools from the College of Engineering.

COMPUTATIONAL SCIENCE AND ENGINEERING DIVISION

The Computational Science & Engineering (CSE) division was established in 2005 to strengthen and better reflect the critical role that computation plays in the science and engineering disciplines at Georgia Tech and in the broader technology community. Along with theory and experimentation, computation has gained widespread acceptance as a key component in the advancement of knowledge and practice.

As a division of the College of Computing, CSE supports interdisciplinary research and education in computer science and applied mathematics. CSE is designed to innovate and create new expertise, technologies, and practitioners.

CSE bridges the gap between traditional computer science (CS) and computational research. The division is currently developing programs that immerse students both in computing and important computational problems within specific domain contexts. Developing solutions to difficult computation problems that allow all the richness, subtleties, and requirements of the domain to be adequately considered or addressed is crucial.

CSE is concerned with those technologies that lie at the boundary between computer science and science and engineering. Some of these areas include:

- high performance and grid computing
- modeling
- simulation
- data analysis and mining
- numeric and geometric methods
- visualization
- combinatorial optimization

A distinguishing aspect of the CSE division is its emphasis on modeling and simulation (M&S). Spanning both continuous and discrete M&S, CSE graduates will be well equipped to compete for positions and establish technical leadership in areas such as defense and the entertainment industries, in additional to more traditional areas of computational science and engineering.

CSE involves deep collaboration with scientists and engineers, as well as traditional computer scientists. Therefore, division faculty team up with researchers and educators working in high impact areas both at Georgia Tech and at peer research organizations, such as Oak Ridge National Laboratories. Current projects span the following areas:

- aerospace engineering
- chemistry
- computational biology
- civil and environmental engineering
- industrial and systems engineering
- materials science
- mechanical engineering

- defense

COLLEGE OF ENGINEERING

First engineering program in 1885
College established in 1948
Location: 225 North Avenue
Atlanta, GA 30332-0360
Telephone: 404.894.3350
Fax: 404.894.0168
Website: www.coe.gatech.edu

GENERAL INFORMATION

The College of Engineering comprises eight academic units of instruction and research. These units offer programs of study and research leading to bachelor's, master's, and doctoral degrees. Some also offer programs in one or more subdisciplines or subspecialties.

The programs in engineering are designed to provide a fundamental understanding of the engineering sciences (which are based on mathematics and the natural sciences), of the basic concepts of the humanities and social sciences, and an understanding of the manner in which these elements are interwoven in engineering practice. Each curriculum provides enough flexibility through elective course opportunities to permit a certain amount of program individualism while meeting basic requirements.

GUGGENHEIM SCHOOL OF AEROSPACE ENGINEERING

Daniel Guggenheim School of Aeronautics
Established in 1930
Location: Montgomery Knight Building
Telephone: 404.894.3000
Fax: 404.894.2760
Website
Faculty

GENERAL INFORMATION

The Guggenheim School of Aerospace Engineering prepares students at the bachelor's, master's, and doctoral levels for a career in vehicle engineering with primary emphasis on flight vehicles. A combined BS/MS honors program is also offered, preparing students for graduate studies and research (www.ae.gatech.edu). In addition, the School offers a minor with six different tracks. The School is housed in five buildings with a total of approximately 122,000 square feet, most of which is devoted to instructional and research laboratories. Additional information can be found at www.ae.gatech.edu.

WALLACE H. COULTER DEPARTMENT OF BIOMEDICAL ENGINEERING AT GEORGIA TECH AND EMORY UNIVERSITY

Established in 1997
Location: U. A. Whitaker Building
Telephone: 404.385.0124
Fax: 404.894.4243
Website
Faculty

GENERAL INFORMATION

Biomedical engineering is a highly interdisciplinary field integrating engineering and the life sciences to support the prevention, diagnosis, and treatment of disease. The role of the biomedical engineer is to provide answers to problems arising from the study of living systems by employing the methodology and principles of engineering. Biomedical engineers often serve as integrators in multidisciplinary teams of engineers, scientists, and healthcare professionals in the medical device and biotechnology industries as well as government regulatory agencies. Our program challenges students with practical, hands-on problem-solving and design experiences throughout the curriculum. Graduates of our program have obtained the strong foundation necessary to address the complex healthcare challenges of the twenty-first century.

The Wallace H. Coulter Department of Biomedical Engineering at Georgia Tech and Emory University (the Coulter Department) is a unique partnership between a public institution and a private university—Georgia Tech's College of Engineering and Emory's School of Medicine. The formation of the Department in 1997 was the culmination of collaborative efforts in the field of biomedical engineering that dates back to the 1980s. In 2000, the Department assumed the name of Wallace H. Coulter, who was recognized as one of the most influential engineers in the twentieth century through his entrepreneurial efforts in shaping the fields of automated cell analysis and hematology.

Research in the Coulter Department encompasses long-range fundamental research and direct clinical applications through translational research. The department has identified six thrust areas in which to focus research and educational programs: biomaterials and regenerative medicine, cardiovascular biology and biomechanics, cellular and biomolecular engineering, integrative biosystems, medical imaging, and neuroengineering. Research initiatives in these areas are resulting in major breakthroughs in medicine, basic science, and applied technology.

The Coulter Department offers both undergraduate and graduate degree programs that attract outstanding students who wish to have an education that prepares them to be the leaders in this field in the twenty-first century. Additionally, to meet the needs of a rapidly changing society and global economy, the Coulter Department has forged a new partnership with Peking University to offer a joint doctoral degree in biomedical engineering. The program offers a unique means for U.S. and Chinese students who want to learn and work in a global economy and in global health settings.

SCHOOL OF CHEMICAL & BIOMOLECULAR ENGINEERING

Established in 1901
Location: Ford Environmental Science and Technology Building
Telephone: 404.894.1838
Fax: 404.894.2866
Website
Faculty

GENERAL INFORMATION

Chemical and Biomolecular Engineering is a branch of engineering that prepares students for an enormously varied set of career paths. Graduates have become corporate executives, plant engineers, professors, inventors, lawyers, researchers, physicians, consultants, and financial officers. They have found employment with oil, chemical, biomedical, pharmaceutical, microelectronics, environmental, pulp and paper, food, textile, fertilizer, fragrance, and automobile companies, and with academia, government, banks, and brokerages. Chemical and biomolecular engineers have led the development of biomedicine and biotechnology, and they have been crucial to the materials revolution, especially in computer chip manufacturing, nanotechnology, and plastics and fibers. Additionally, they are essential in addressing the energy needs of the nation. Chemical and biomolecular engineering emphasizes environmentally benign manufacturing and sustainable development. (www.chemicalengineering.org)

The Chemical Engineers in Action site celebrates the many significant advancements that chemical engineers have made to our world. Explore the site to learn more about chemical engineering's great achievements, bold innovators, and new frontiers in the fields of energy, the environment, biomedicine, electronics, food production, and materials.

The undergraduate curriculum leads to a Bachelor of Science in Chemical and Biomolecular Engineering. Chemical and biomolecular engineering principles are taught as the foundation of that degree, but students are also expected to develop an ability to solve all kinds of problems, to view systems in their entirety, and to formulate and test solutions irrespective of the framework of the problem. Completion of the BS degree prepares students for entry into the workforce, for advanced study in chemical and biomolecular engineering, and for countless other graduate programs.

The curriculum has two options. The Standard Option provides the basics of chemical and biomolecular engineering but allows flexibility for the student to complete additional study in a variety of areas, including microelectronics, materials, and the environment. The Biotechnology Option is for students who wish to focus their education on the biomolecular aspects of chemical and biomolecular engineering. This option includes the core chemical engineering courses, specialized biomolecular engineering courses, biochemistry, and technical electives focused in the biotechnology area. Both curriculum tracks offer special opportunities for students wishing to pursue minors or certificates in fields of particular interest, and students are encouraged to explore the frontiers of knowledge through involvement in faculty-directed research.

In addition to the BS, the School of Chemical and Biomolecular Engineering offers programs leading to the MS and the PhD. Students should check the School website for detailed curriculum information and recent updates.

The Georgia Institute of Technology is accredited by the Commission on Colleges of the Southern Association of Colleges and Schools (SACS) to award bachelor's, master's, and doctoral degrees. Georgia Tech's Cooperative Program is accredited by the Accreditation Council for Cooperative Education.

SCHOOL OF CIVIL & ENVIRONMENTAL ENGINEERING

About the School
Undergraduate
Accreditation
BS Civil Engineering
Description
Degree Requirements
BS Environmental Engineering
Description
Degree Requirements
Graduate
Admissions
Master's Degrees
Bioengineering
Civil Engineering
Computational Science & Eng
Eng Sci & Mechanics
Environmental Eng
Undesignated
Dual Degree
Doctoral Degrees
Bioengineering
Civil Engineering
Computational Science & Eng
Eng Science Mechanics
Environmental Engineering
Certificates
College of Engineering

SCHOOL OF CIVIL AND ENVIRONMENTAL ENGINEERING

Established in 1896
Location: Mason Building
Telephone: 404.894.2201
Fax: 404.894.2278
Website
Faculty

GENERAL INFORMATION

The School of Civil and Environmental Engineering offers courses in civil engineering, environmental engineering, and engineering science and mechanics, as well as programs leading to the degrees of Bachelor of Science in Civil Engineering, Bachelor of Science in Environmental Engineering, Master of Science in Civil Engineering, Master of Science in Engineering Science and Mechanics, Master of Science in Environmental Engineering, Master of Science (undesignated), and Doctor of Philosophy. The School participates in the interdisciplinary graduate programs in Bioengineering and Computational Science and Engineering. The School also offers a dual program leading to the degrees of Master of Science in Civil Engineering or Master of Science (undesignated), with a concentration in transportation systems engineering, and a Master of City Planning.

SCHOOL OF ELECTRICAL AND COMPUTER ENGINEERING

Established in 1896
Principal location: Van Leer Building
Telephone: 404.894.2901
Fax: 404.894.4641
Website
Faculty

GENERAL INFORMATION

Electrical engineers have defined, shaped, and driven the information technology revolution that we are experiencing today. Building on the fundamental cornerstones of electrical engineering—the control of information and electric power—electrical engineers have been responsible for innovations and technological breakthroughs that have altered the fabric and face of modern life. Cell phones, iPods, modern hearing aids, the Internet, digital cameras, global positioning systems, and hybrid cars all are based on electrical engineering. Georgia Tech's School of Electrical and Computer Engineering (ECE) is consistently ranked nationally among the top ten of all electrical engineering programs, and its graduates are pioneering such life-altering innovations as biomedical devices that save lives, and improve everyday living for disabled people, as well as environmentally friendly technologies such as solar energy and wind power. The electrical engineering program encompasses all major areas of this dynamic field, including analog electronics, bioengineering, digital signal processing, electric power, electromagnetics, microelectronics and microsystems, nanosystems, optics and photonics, systems and controls, and telecommunications.

Combining the study of computer systems with traditional aspects of electrical engineering, computer engineering is one of the fastest growing fields in the country, with projected demand over the next decade expected to grow by as much as 150 percent. The computer engineering program in ECE is at the forefront of this new and dynamic field, with national rankings consistently in the top ten. Rapid advances in underlying technologies have resulted in ever smaller, less costly, and higher-performance computer systems, making computers omnipresent in our everyday lives and fueling exciting developments in areas like robotics, wired and wireless networking, embedded processing, network security, and data storage. It is this ever-expanding capacity of computers that empowers us to communicate, learn, transact business, receive medical treatment, and explore space in new ways.

The School of Electrical and Computer Engineering (ECE) provides undergraduate and graduate programs that prepare students to participate in a broad range of career opportunities. Modern facilities and laboratories support experimental and theoretical programs of instruction and research. Additional information about the School is available at www.ece.gatech.edu or upon request by calling 404.894.2901.

H. MILTON STEWART SCHOOL OF INDUSTRIAL AND SYSTEMS ENGINEERING

Program established in 1924
School established in 1945
Location: Groseclose Building
Telephone: 404.894.2300
Fax: 404.894.2301
Website
Faculty

GENERAL INFORMATION

Industrial engineering is a branch of engineering that designs and improves systems and processes to enhance efficiency and productivity. The field uses technology to properly manage resources of all kinds, including human beings, around the world. Industrial engineering involves designing and analyzing complex systems that integrate technical, economic, and social factors for all types of organizations. The methodologies involved in industrial engineering are probability, optimization, capital investment analysis, statistics, and computer science. The important application domains are supply-chain systems, manufacturing, planning, quality control, economics, and financial systems, among others. Graduates can be found in a host of settings including transportation, telecommunications, hospitals, banking, environmental systems, retailing, government, and consulting.

SCHOOL OF MATERIALS SCIENCE AND ENGINEERING

Established in 1985
(School of Textile Engineering established in 1897)
(School of Ceramic Engineering established in 1924)
Location: J. Erskine Love Building
Telephone: 404.894.2888
Fax: 404.894.9140
Website
Faculty

SPECIAL NOTE

The faculties of the Schools of Materials Science and Engineering (MSE) and Polymer, Textile and Fiber Engineering (PTFE) merged into the School of Materials Science and Engineering in July 2010. Students currently in the BSPFE program will be able to complete the program. However, no further students will be admitted to the program.

GENERAL INFORMATION

The School of Materials Science and Engineering provides high-quality academic programs focused on developing a fundamental understanding of all forms of materials and the creation of new materials for the next generation of engineering applications. A discipline on the forefront of innovations in both science and engineering, the BSMSE degree offers students three separate concentrations: Polymer and Fiber materials; Structural and Functional materials, and Biomaterials. These concentrations view engineering materials, such as metals, ceramics, polymers, fibers, textiles, composites, biomaterials, nanomaterials and electronic materials, from a fundamental point of view, emphasizing the relationships between the atomic- and micro- scale structure, with the processing,Â properties, and performance of the materials.

Completion of the BS degree prepares students for entry into the workforce, for advanced study in materials science and engineering, or for other graduate programs. Materials scientists and engineers have many career options available, in industries such as aerospace, automotive, biomedical, chemical, defense, electronics, materials processing, textiles, consumer products, and recreational equipment, as well as in universities, government, and industrial laboratories.

Research and instruction in the School of Materials Science and Engineering at Georgia Tech spans the following areas:

1. Synthesis and processing focusing on development of advanced and traditional materials with novel compositions and tailored microstructures;
2. Characterization and evaluation of structure and properties using advanced techniques and state-of-the-art instrumentation; and
3. Modeling of processing-structure-property-performance relationships emphasizing correlation of properties with the structure across nano-, micro-, meso-, and macro-length scales.
4. Design of materials through fundamental theoretical and experimental understanding of materials behavior.

MSE faculty participate in collaborative research projects with faculty from other schools in the Colleges of Engineering and Sciences, and the Georgia Tech Research Institute. Several interdisciplinary centers are led by MSE faculty. The external sponsored research funding brought in by the FTE faculty in the School of Materials Science and Engineering exceeds $16 million per year and comes from a wide variety of sources including industry, private foundations, and federal agencies including AFOSR, ARO, DARPA, DoE, NSF, NIH, ONR. A significant number of materials specialists are required to meet the present and future opportunities and challenges of this field, which makes MSE graduates sought after in practically every aspect of technological advancement.

The school offers a Bachelor of Science in Materials Science and Engineering degree. An undergraduate minor in materials science and engineering is available for non-MSE majors. Graduate degrees (MS and PhD) are offered in materials science and engineering, paper science and engineering, and in the interdisciplinary bioengineering program.Â

WOODRUFF SCHOOL OF MECHANICAL ENGINEERING

Established in 1885
Location: Manufacturing Related Disciplines Complex (MRDC)
Administrative Office: 404.894.3200
Undergraduate Office: 404.894.3203
Graduate Office: 404.894.3204
Fax: 404.385.4545
Website
Faculty

GENERAL INFORMATION

Mechanical Engineering (ME) was the first academic program established at Georgia Tech. On September 20, 1985, the School of Mechanical Engineering celebrated its centennial by assuming the name of one of its most distinguished alumni, Atlanta businessman and philanthropist George W. Woodruff (Class of 1917). Today, the Woodruff School offers undergraduate degrees in mechanical engineering and nuclear and radiological engineering and graduate degrees in mechanical engineering, nuclear and radiological engineering, medical physics, bioengineering, robotics, and paper science and engineering.

Mechanical engineering traditionally deals with diverse engineering problems. Because of its general nature, mechanical engineering encourages a number of multidisciplinary activities to be conveniently organized within it. Mechanical engineering embraces the generation, conversion, transmission, and utilization of thermal and mechanical energy; the design and production of tools and machines and their products; the consideration of fundamental characteristics of materials as applied to design; and the synthesis and analysis of mechanical, thermal, and fluid systems, including the automation of such systems. Design, production, manufacture, operation, administration, economics, and research are functional aspects of mechanical engineering.

Nuclear and radiological engineering and medical physics are based on a symbiotic group of related areas of knowledge of a common set of science, engineering, and mathematical disciplines and their applications to the development of nuclear power and the utilization of radiation in industry and medicine. Nuclear engineering encompasses the disciplines of applied nuclear, neutron and plasma physics, radiation transport and interaction with matter, applied mathematics and computations, thermal and materials sciences, chemical processing, etc, and their applications to nuclear reactor development, operation, safety, and fuel cycle, and to fusion reactor plasma research and technology development. Radiological engineering encompasses radiation production, transport, interaction with matter, detection, shielding, and protection in nuclear power plants, industry, and medicine.

Medical physics encompasses the therapeutic and diagnostic applications of radiation in medicine. It involves the application of physical principles to medicine, particularly in the diagnosis and treatment of human diseases. Medical physics includes diagnostic radiology, the diagnosis of disease with X-rays, ultrasound, and magnetic resonance imaging; health physics, the study of radiation hazards and radiation protection; nuclear medicine, the diagnosis and treatment of diseases with injected radio-pharmaceuticals; and radiation oncology, the treatment of cancer by ionizing radiation.

SCHOOL FACILITIES

The Woodruff School is housed in a multibuilding classroom/research complex. Included in this complex are modern classrooms and seminar conference rooms that serve the entire Institute. The School has many types of specialized instruments and other equipment associated with its laboratories in mechanical engineering for the study of acoustics and dynamics; automation and mechatronics; bioengineering; computer-aided engineering and design; fluid mechanics; heat transfer, combustion, and energy systems; manufacturing; mechanics of materials; MEMS; and tribology. The Nuclear and Radiological Engineering Program has special facilities for the study of computational reactor physics; fast reactors; fusion; medical physics; and radiation detection.

Special facilities in the Woodruff School include laboratories dedicated for undergraduate use; the Integrated Acoustic Laboratory (anechoic chamber); a high-bay area for research and testing; an underwater acoustic tank; a wind tunnel; and a clean room for MEMS fabrication. Laboratories include: Active Control Lab; Active Materials and Devices Lab; Advanced Assembly Process Technology Lab; Advanced Intelligent Mechatronics Research Lab; Biothermal Sciences Lab; Cardiovascular Fluid Mechanics Lab; Cartilage Mechanics and Mechanobiology Lab; Cellular and Molecular Biomechanics Lab; Computational Hydrodynamics and Biofluids Lab; Computer-Aided Simulation of Packaging Reliability, Data Center Thermal Management; Dynamics Properties Research Lab; Engineering Information Systems Lab; Environmentally Conscious Design and Manufacture Lab; Fluid Mechanics Research Lab, Composites Manufacturing Research Lab, Intelligent Machine Dynamics Lab, Mechanical Properties Research Lab, Medical Devices Lab; Microelectronics Thermal Management; Microthermal Systems Lab; Nanoscale Thermal Measurement and Manufacturing; Precision Machining Research Consortium, Rapid Prototyping and Manufacture; Robotics Mechanisms Lab; Systems Realization Lab, Sustainable Thermal Systems Lab, Tribology and Rheology; and the Vascular and Biofluids Lab. Centers include: Center for Polymer Processing; Center for Surface Engineering and Tribology; Composites Education and Research Center; Fluid Power and Motion Control; Georgia Tech/Emory Center for the Engineering of Living Tissues; Technology Center Product Lifecycle Management Center of Excellence; Manufacturing Research Center

The facilities available for the nuclear and radiological engineering and medical physics programs include a radiation sources laboratory , which houses a graphite subcritical assembly, a californium-252 source, and an AmBe source for use in neutron dosimetry studies; Other facilities included numerous high-speed computing clusters, facilities for analyzing environmental samples by nuclear techniques, theAREVA Radiation Detection Laboratory; Microchannel Test Facility; Neutron Reference Field Laboratory; Plasma-facing Components Thermal-hydraulic Test Facility; Southern Nuclear Radiation Physics Laboratory and a Thermoluminscent Detector Laboratory.

IVAN ALLEN COLLEGE

Established in 1990
Location: 781 Marietta Street
Telephone: 404.385.1493
Fax: 404.894.8573
Website: www.iac.gatech.edu

GENERAL INFORMATION

The Ivan Allen College (IAC), named after a visionary leader who served as mayor of Atlanta during a time associated with the creation of the "New South," is a unique configuration of six schools as well as Georgia Tech's three ROTC departments. The College was established in 1990 in order to broaden the range of majors available to Tech students. The degree programs are unique in the ways they link the study of the social sciences and humanities to the world of technology and science. IAC majors prepare students for a wide range of professional careers, including leadership in government, business, and technology.

Study in these fields also prepares students for advanced study in professional programs in law, medicine, international affairs, public policy, and new media as well as graduate study in the humanities and social sciences. The success of these new programs has resulted in a realization of the close connections between service and progress expressed in Georgia Tech's motto.

The Ivan Allen College offers nine undergraduate degrees, six master's degrees, and four doctoral degrees. Detailed descriptions of these programs can be found under the appropriate school headings. In addition to its degree programs, the Ivan Allen College provides all Tech students with instruction in the humanities and social sciences. The College's course offerings and its certificate and minor programs enable students, regardless of their major, to broaden their educational experience and to better understand the cultural underpinnings of their professional and personal lives and the international context in which they live and work.

SCHOOL OF ECONOMICS

Established in 1990
Location: Habersham Building
781 Marietta Street
Telephone: 404.894.4919
Fax: 404.894.1890
Website
Faculty

GENERAL INFORMATION

The School of Economics provides high-quality programs of study leading to a Bachelor of Science in economics or a minor or certificate in economics for students in other disciplines. The school also participates in the International Plan and the Research Option for undergraduate students. The program focuses on skills and knowledge critical for a life of learning and leads to careers in academics, management, banking, the public sector, and other professional fields. A degree in economics is especially appropriate for students intending to pursue advanced degrees in the social sciences and in professional schools of management, law, and public administration.

Modern economics is analytically rigorous, requiring a background in mathematics and statistics. At the same time, it is critically linked with the other social sciences and humanities, as well as to applied management and policy studies. The undergraduate curriculum provides a strong, in-depth understanding of economic thought and policy and is intended to prepare students for productive careers, for useful roles in society, and for satisfying personal lives in a technologically complex, culturally diverse world.

The School of Economics offers a Bachelor of Science in Global Economics and Modern Languages in cooperation with the School of Modern Languages and a Bachelor of Science in Economics and International Affairs in cooperation with the Sam Nunn School of International Affairs. These programs provide students an opportunity to broaden their educational experience and to enhance their marketability in these areas.

The School of Economics also offers graduate courses leading to a Master of Science degree and in support of PhD programs in management, public policy, industrial and systems engineering, and city and regional planning.

SCHOOL OF HISTORY, TECHNOLOGY, AND SOCIETY

Established in 1990
Location: Old Civil Engineering Building
Telephone: 404.894.3196
Fax: 404.894.0535
Website
Faculty

GENERAL INFORMATION

The School of History, Technology, and Society (HTS), dedicated to the ideal of a well-rounded education at a technological university, provides instruction in the social sciences to every student at Georgia Tech. The School offers courses in history and sociology leading to three degrees: Bachelor of Science in History, Technology, and Society; Master in History and Sociology of Technology and Science; and Doctor of Philosophy in History and Sociology of Technology and Science. HTS also offers minors in history, sociology, women, science, and technology, and health, medicine, and society as well as several certificate programs for students in other undergraduate majors. In addition, HTS participates in the International Plan and Research Option.

THE SAM NUNN SCHOOL OF INTERNATIONAL AFFAIRS

Established in 1990
Location: Habersham Building
781 Marietta Street
Telephone: 404.894.3195
Fax: 404.894.1900
Website
Faculty

GENERAL INFORMATION

The Sam Nunn School of International Affairs offers educational programs that provide an enhanced understanding of the factors that shape the world in which we live and work in the twenty-first century. The programs of study equip students with the quantitative and qualitative skills needed to engage in strategic planning and analysis in an international context. A unique interdisciplinary curriculum provides students with an understanding of the increasing importance of technology in a borderless world. Many graduates assume professional positions within business, government, and international organizations. Other graduates pursue postgraduate or professional education in a range of disciplines that includes law, business, international affairs, public administration, and economics.

The Sam Nunn School of International Affairs is the only one of its kind at a leading technological institute. The educational programs administered by the Sam Nunn School at Georgia Tech are designed to equip students with the skills, values, and experience to build bridges between the world of science and technology and the world of international relations.

SCHOOL OF LITERATURE, MEDIA, AND COMMUNICATION

Established in 1990
Location: 335 Skiles Building
Telephone: 404.894.2730 or 404.894.2731
Fax: 404.894.1287
Website
Faculty

GENERAL INFORMATION

The School of Literature, Media, and Communication (LMC) is engaged in rethinking the role of humanities education in an increasingly technological and global environment. The faculty is committed to generating humanistic perspectives on a technological world through interdisciplinary research in cultural studies and new media studies at both theoretical and applied levels. In providing humanities and communication courses for all Georgia Tech undergraduates, LMC's curriculum focuses on the scientific and technologically oriented aspects of the humanities, as well as on the incorporation of new electronic media (visual, aural, and textual) into humanities and communication education.

LMC offers a BS in Science, Technology, and Culture (STAC), which includes specialty options in Media Studies, Gender Studies, and Biomedicine and Culture; a BS in Computational Media (CM) jointly administered with the College of Computing; and an MS and a PhD in Digital Media (DM). Graduates from LMC's undergraduate and graduate programs are positioned to assume important roles as leaders in the exciting new fields developing in the interface between technology and culture.

STAC majors receive a rigorous, well-rounded education in the various modes of communication and representation that are common to scientific inquiry, technological development, and aesthetic production. This equips STAC graduates for careers in government, education, and the private sector as well as postgraduate study in medicine, law, communication, literary studies, and cultural studies. Whatever path they chose, STAC graduates find themselves well prepared for the continual learning necessary for their future lives and careers.

CM is one of Georgia Tech's fastest-growing programs, going from one student in 2004 to 240 today. The BSCM curriculum gives students a grasp of the computer as a medium: the technical, the historical-critical, and the applied. Students gain significant hands-on and theoretical knowledge of computing, as well as an understanding of visual design and the history of media. Our graduates are uniquely positioned to plan, create, and critique new digital media forms for entertainment, education, and business.

DM graduates work as information architects, game designers, interaction designers, project managers, and interface designers, and in other emerging professional positions in the changing world of digital media. The PhD in Digital Media, launched in fall 2004, prepares students for research and teaching positions in academia and industry with specialties such as experimental games, interactive narrative, tangible computing, digital art, and design.

SCHOOL OF MODERN LANGUAGES

Established in 1904
Location: Swann Building
Telephone: 404.894.7327
Fax: 404.894.0955
Website
Faculty

GENERAL INFORMATION

The School of Modern Languages collaborates as an interdisciplinary partner with other units in the Ivan Allen College and across campus to prepare future participants in the global workforce through applied studies in foreign languages that are designed to develop advanced communication skills, creative thinking, and professional competency in the language. The School is building bridges between the languages it teaches and the engineering and technology units at Georgia Tech by integrating into its programs the kind of professional and social language students expect to use after entering the workforce. At the same time, the School offers an opportunity to develop a broad understanding of culture, media and the arts, and daily life in the countries whose languages are taught.

SCHOOL OF PUBLIC POLICY

Established in 1990
Location: 107 D. M. Smith Building
685 Cherry Street
Telephone: 404.894.6822
Fax: 404.385.0504
Website

GENERAL INFORMATION

The School of Public Policy is a research intensive, globally engaged school offering BS, MS, and PhD degrees to those intrigued by complex problem-solving in the public interest around issues of research and technology, the environment, economic development, and governance of information technology.

The School houses one of the world's top programs in the field of science and technology (S&T) policy. We host a major international conference on S&T policy that brings participants from every continent. Because nearly every policy area is intertwined with S&T issues — the environment, communications, transportation, biotechnology and health, urban development, workforce and education, — the School is at the center of a wide range of important international, national, and state policy questions.

Our faculty members are research oriented, with more than $6 million in research underway. Our degrees are analytically oriented, developing skills increasingly in demand in the policy world as data and powerful software becomes more readily available and policy challenges grow more complex. Because our degree programs are smaller than most, there are opportunities at all levels for students to become involved in research, from the fast growing numbers of undergraduate students helping on faculty research projects to the opportunities many of our PhD students have to publish scholarly papers.

Our School emphasizes professional-level analysis of the ethical and philosophical dimensions of policy. Our philosophers help you consider not just how things have been and how they are, but how they ought to be. We are unusual among policy schools in having an active research program at the intersection of philosophy, ethics, and policy.

In our School, you will be taught by award-winning teachers. You can experience policy development in projects, studios and internships that use our location in the vibrant, state capital of Atlanta as a source of real-world policy problems and contacts. You will find opportunities for international engagement, with research conducted jointly partners around the world, internationally oriented faculty and students, and opportunities for international exchange in our graduate programs. We offer a unique and forward-looking environment. We hope you will join us.

COLLEGE OF SCIENCES

College established in 1990
First Science Program in 1888
Location: 225 North Avenue
Atlanta, GA 30332-0365
Telephone: 404.894.3300
Fax: 404.894.7466
Website
Faculty

GENERAL INFORMATION

The College of Sciences comprises seven schools - Applied Physiology, Biology, Chemistry and Biochemistry, Earth and Atmospheric Sciences, Mathematics, Physics, and Psychology. All schools except Applied Physiology offer BS, MS, and PhD degree programs. Applied Physiology offers the MS degree in prosthetics and orthotics and the PhD degree in applied physiology. The Center for Education Integrating Science, Mathematics, and Computing (CEISMC), which works with K-12 schools and teachers in the state of Georgia to improve science and mathematics education, is also a unit of the College of Sciences.

The College of Sciences provides the courses in mathematics and the natural sciences that are necessary for all Tech undergraduates to acquire skills and basic principles for their majors. A detailed description of each degree program in the College of Sciences is located under the appropriate school heading, as are descriptions of the courses offered. The College of Sciences' courses required or recommended by degree programs in the other five colleges at Georgia Tech are listed under the curricula for those degrees.

SCHOOL OF APPLIED PHYSIOLOGY - GENERAL INFORMATION

Established in 2002 (formerly Department of Health and Performance Sciences, established 1990; and Physical Education and Recreation, established 1942)
Location: 555 14th Street Atlanta, GA 30332-0356
Telephone: 404.894.3986
Fax: 404.894.9982
Website
Faculty

GENERAL INFORMATION

Faculty in the School of Applied Physiology are focused on understanding the science of movement, the physiological basis of movement control, and on instruction related to the importance of maintaining sound physiological systems. Our approach to these tasks involves every biological level utilizing both basic and applied sciences. For example, attempts to understand how molecules transmit signals in skeletal muscle have a foundation in basic molecular biology and ultimately relate to the applied science of movement control. Faculty interests range from systems physiology (Chang, Kogler, Millard-Stafford, Nichols, Prilutsky, Shinohara, Sprigle, Wheaton) to the molecular/cellular levels (Balog, Burkholder). At the undergraduate-level, the School instructs all Georgia Tech students in their health and wellness requirement and offers a Certificate in Applied Physiology enriching students' desire for pre-medical and allied health science (e.g., physical therapy) education. At the graduate-level, the School administers master's and doctoral degree programs. A focused Master of Science in Prosthetics and Orthotics (MSPO) program offers cutting-edge instruction coupled with sound clinical training and a foundation in movement science. The accredited MSPO program graduated its first class in 2004. The PhD program in Applied Physiology, approved by the Board of Regents, began its first class in 2005, offering research tracks in muscle physiology, ryanodine receptor function, exercise metabolism, locomotion neuromechanics and prosthetics/orthotics. The School is unique to the Georgia Tech community but founded in interdisciplinary teaching and research fundamental to the mission of the Institute.

SCHOOL OF BIOLOGY - GENERAL INFORMATION

Established in 1960
Location: Cherry Emerson Building
Telephone: 404.894.3700
Fax: 404.894.0519
Website: www.biology.gatech.edu
Faculty

Programs of study offered by the School of Biology allow students to gain competence in several different areas of modern biological sciences. The curricula in all degree programs in the School encourage breadth by incorporating course selections from other schools and departments. The Institute, with its strengths in science, computing, mathematics, and engineering, provides unique opportunities for careers in the biological sciences and related areas.

The Bachelor of Science degree program consists of a combination of requirements and electives that ensure a balanced background in the fundamental areas of biology, while providing an opportunity to emphasize an area of interest in the junior and senior years. The School also offers graduate programs leading to MS and PhD degrees. The degree programs include coursework, faculty and student seminars, and independent research. Faculty members are actively engaged in research fields such as bioinformatics, biophysics, ecology, evolutionary biology, genetics, mathematical biology, marine science, microbiology, and molecular cell biology.

SCHOOL OF CHEMISTRY AND BIOCHEMISTRY

Established in 1906
Location: Molecular Science & Engineering Building
Telephone: 404.894.4002
Fax: 404.894.7452
Website
Faculty

GENERAL INFORMATION

The School offers courses in chemistry and biochemistry required for various engineering and science curricula, as well as for students interested in medical, dental, and pharmacy school, for the Bachelor of Science in Biochemistry and Bachelor of Science in Chemistry degrees, and for graduate work leading to the degrees Master of Science in Chemistry, Computational Science and Engineering, Paper Science and Engineering, and Doctor of Philosophy with a Major in Chemistry, Computational Science and Engineering, Bioinformatics, and Paper Science and Engineering.

SCHOOL OF EARTH AND ATMOSPHERIC SCIENCES

Established in 1970
Location: 311 Ferst Drive
Telephone: 404.894.3893
Website
Faculty

GENERAL INFORMATION

The School of Earth and Atmospheric Sciences (EAS) is an interdisciplinary program that studies Earth's physical and chemical environment. EAS takes an integrated Earth system science approach in which all components of Earth's system are studied and analyzed as parts of the larger coupled system. The curriculum is designed to provide its graduates with the intellectual insights needed to understand the evolution of Earth's environment and its possible future changes. This integrated approach provides the context for professional training in environmental science and meteorology, as well as specialization for research careers in atmospheric chemistry, aerosols, and clouds; dynamics of weather and climate; geochemistry; geophysics; oceanography; paleoclimate; planetary science; and remote sensing.

SCHOOL OF MATHEMATICS

Established in 1952
Location: Skiles Building
Telephone: 404.894.2700
Fax: 404.894.4409
Website
Faculty

GENERAL INFORMATION

Mathematics forms an integral part of the curricula of most students at Georgia Tech. Consequently, the School of Mathematics offers a wide range of courses serving students in the various engineering, science, and management disciplines. The School offers programs of study leading to bachelor's, master's, and doctoral degrees in mathematics. Such programs of study serve as preparation for mathematics careers, professional schools, and graduate studies.

In addition to basic courses in mathematics, the School offers a variety of specialized courses at the undergraduate and graduate levels, emphasizing areas related to the research activities of the faculty. These include mathematical analysis, applied mathematics, differential equations and partial differential equations, geometry, scientific computing, probability, statistics, combinatorics, mathematical physics, topology, and algebra.

The School of Mathematics has excellent computer facilities that are used in conjunction with an increasing number of courses and programs of study. A cooperative plan for students who wish to combine practical experience with academic work is available for mathematics majors.

SCHOOL OF PHYSICS - GENERAL INFORMATION

Established in 1939
Location: Howey Building
Telephone: 404.894.5201
Fax: 404.894.9958
Website
Faculty

GENERAL INFORMATION

Physics involves the study of matter and radiation from the subatomic to the cosmological scale. Revolutionary 20th century advances in quantum physics led to technological breakthroughs including the transistor and laser. Physics has become increasingly important as a fundamental basis for interdisciplinary research in engineering, biophysics, materials science and information. In an increasingly technically oriented society, a physics degree provides an important foundation for a range of careers.

The School of Physics offers basic service courses to freshmen and sophomores, some advanced service courses for students in other units of the Institute, and advanced studies leading to the bachelor's, master's, and PhD degrees in physics. The School seeks to provide elective freedom in its degree programs in order to enable students with a wide variety of goals to construct programs of study suitable for them.

In addition to offering courses in the fundamentals of physics, the School provides numerous specialized courses at all levels, particularly in those areas related to the research interests of the faculty. These areas of research currently include: astrophysics; atomic, molecular, and optical physics; biophysics; computational materials science; nonlinear mechanics and chaos; nuclear physics; laser physics; condensed matter physics; quantum computing; relativity; statistical mechanics; physics instruction. Opportunities exist in all these areas and in other areas through collaboration with faculty of other schools and colleges for Special Problems courses, master's theses, and doctoral dissertations.

Supplementary program planning is available from the School of Physics. Opportunities for graduate study and research are also available at www.physics.gatech.edu.

SCHOOL OF PSYCHOLOGY

Established in 1959
Location: J.S. Coon Building
Telephone: 404.894.2680 or 404.894.2683
Fax: 404.894.8905
Website: www.psychology.gatech.edu

GENERAL INFORMATION

The School of Psychology offers programs of study leading to the Bachelor of Science in Psychology, Master of Science in Psychology, and Doctor of Philosophy with a major in Psychology. It also offers training in the basic and applied aspects of the science of behavior for the student majoring in architecture, engineering, management, and natural sciences. The undergraduate curriculum provides a broad-based natural science approach to the study of psychology. Courses in mathematics, biology, and chemistry, for instance, complement the psychology courses. The curriculum also stresses methodological issues so that students learn the fundamentals for carrying out solid research.

UNDERGRADUATE STUDENTS

Core Curriculum
Degree Requirements
Core Area A1
Core Area A2
Core Area B
Core Area C
Core Area D
Core Area E
Core Area F
Constitution & History
Global Perspectives
US Perspectives
Wellness
Ethics
Credit / Tests & Scores
Credit
ROTC Credit
Transfer Credit
Courses with 'X' Numbers
Tests & Scores
Advanced Standing
Advanced Placement
International Baccalaureate
Departmental Exams
Regents' Test
SAT II Subject Tests
Graduate Courses
Degrees
Bachelor's Degrees
Graduate Course Option
Second Undergraduate
5-Year BS/MS Degrees
Minors
Special Programs
Colleges & Degrees

UNIVERSITY SYSTEM OF GEORGIA CORE REQUIREMENTS

University System of Georgia Core Curriculum Requirements

The following is a description of core requirements effective as of Fall 2011. The courses that can be used to satisfy the various area requirements are subject to change, and will be updated as soon as possible. Please check back regularly to obtain the most current information.

Any courses completed that were listed in prior catalogs as satisfying the humanities/social science requirement and were completed while that catalog was in effect may also be used to satisfy this requirement.

See the USG website for more information:
www.usg.edu/academic_affairs_handbook/section2/handbook/2.4_core_curriculum/

CORE AREA A1: COMMUNICATION OUTCOMES

Area A1 is satisfied by completion of 6 semester hours as follows.

Required for all majors:

Effective Fall 2010, for freshmen entering the USG system Fall 2010, students who have earned 60 hours but have not completed Area A1 must enroll in the next course necessary to make progress toward completing this Area in every semester in which they take classes.

Effective Fall 2011, this hour limit is lowered to 45 hours for freshmen entering the USG system Fall 2011, Spring 2012, and Summer 2012.

Effective Fall 2012, the hour limit is lowered to 30 hours for freshmen entering the USG system Fall 2012 and thereafter.

Course	Class Title	Credit Hours
ENGL 1101	English Composition I	3 semester hours
ENGL 1102	English Composition II	3 semester hours

CORE AREA A2: QUANTITATIVE OUTCOMES

Required of all students majoring in the College of Architecture, College of Computing, College of Engineering, College of Sciences:

Area A2 is satisfied by completion of 4 semester hours as follows.

Course	Class Title	Credit Hours
MATH 1501	Calculus I	4 semester hours

Required of all other majors (see note below)*. Select one of the following:

Course	Class Title	Credit Hours
MATH 1712	Survey of Calculus	4 semester hours
MATH 1501	Calculus I	4 semester hours

Effective Fall 2010, for freshmen entering the USG system Fall 2010, students who have earned 60 hours but have not completed Area A2 must enroll in the next course necessary to make progress toward completing this Area in every semester in which they take classes.

Effective Fall 2011, this hour limit is lowered to 45 hours for freshmen entering the USG system Fall 2011, Spring 2012, and Summer 2012.

Effective Fall 2012, freshmen entering the USG system Fall 2012 and thereafter, the hour limit is lowered to 30 hours.

* ***Note:*** In the case of a degree (major) that is jointly offered and the Colleges' requirements in this area are different, the student must complete the course that is specified in the curriculum for the degree, regardless of which college is the declared "home" of the student. This area of the Core Curriculum is driven by the requirements of the specific degree program, not by the general requirements of the College, if a degree is jointly offered.

CORE AREA B: INSTITUTIONAL OPTIONS

Area B is satisfied by students completing the following:

Course	Class Title	Credit Hours
CS 1301	Intro to Computing	3 semester hours

Or another CS class designated by the School.

CORE AREA C: HUMANITIES, FINE ARTS, AND ETHICS

Core Area C is satisfied by completion of 6 semester hours in courses that carry the HUM (Humanities) attribute. Fine Arts and some ethics related courses are included under Humanities at Georgia Tech. Courses that carry both the HUM and ETHS attribute can serve both purposes.

Students completing their degree requirements under catalog year 2012-2013 forward are required to complete the new US Perspectives Overlay as part of the Core Curriculum. These students must also complete 3 credit hours in at least one Global themed course to fulfill the new Global Perspectives Overlay requirement in the Core Curriculum. Some Humanities courses also carry the Global Perspectives attribute. These courses may be used to satisfy both HUM and GP areas (see chart below).

NOTE:

- Any courses completed that were listed in prior catalogs as satisfying the humanities or ethics requirement and were completed while that catalog was in effect may also be used to satisfy this requirement.
- Humanities credit is awarded for Modern Languages 1001 classes upon successful completion of the corresponding 1002 classes. Humanities credit is awarded for SPAN 1101 only upon the successful completion of SPAN 1102. In some instances, students may complete a Modern Languages course at 1001 and then be placed at the second-semester level and complete the 2001 level course. Therefore, the sequence that will warrant HUM credit for Modern Languages courses may be either the 1001-1002 or the 1001-2001 sequence.
- Undergraduate Research courses numbered 2698, 2699, 4698, and 4699 cannot be used to fulfill requirements for humanities.
- Additional information on Music courses: Students are permitted to earn 4 hours of humanities credit for participation in ensembles.
- **Humanities Credit for Ensemble Participation**
  Students are permitted to earn 4 hours of humanities credit for participating in ensembles in the School of Music, provided the selection and concentration criteria are satisfied. Specifically, the selection must satisfy Criterion 1, and the concentration must satisfy Criterion 2 or Criterion 3.
  - Criterion 1-The ensemble is chosen from the following list: Percussion Ensemble, Orchestra, Chorale, Concert Band, Jazz Ensemble, Woodwind Ensemble (Symphonic Band), Vocal Ensemble, and Men's Glee Club.
  - Criterion 2-The student earns at least four credits in one of the ensembles chosen from the list in Criterion 1.
  - Criterion 3-The student earns at least four credits in a combination of Woodwind Ensemble (Symphonic Band) and Concert Band.
- **Transfer Students:**

  Please be aware that when you see courses on your GT record that are listed with an "X" in the number (ECON 3XXX or JAPN 10X2, for example) it means that these are transfer courses and although they were not equated exactly with a GT course, they may have been accepted to meet a Core area such as Humanities and Social

Science.

If you review your records in DegreeWorks, you will be able to see how your transfer credit applies to your GT degree program. Refer to your academic advisor for more information.

ARBC 1002	FREN 3693	KOR 3691	MUSI 4455
ARBC 1501	FREN 3694	KOR 3692	PHIL 2010
ARBC 2001	FREN 4001	KOR 3693	PHIL 2025
ARBC 2002	FREN 4011	KOR 4001	PHIL 3050
ARBC 2301	FREN 4013	KOR 4002	PHIL 3102
ARBC 3001	FREN 4061	LCC 2100	PHIL 3103
ARBC 3002	FREN 4062	LCC 2200	PHIL 3105
ARBC 3501	FREN 4101	LCC 2300	PHIL 3109
ARBC 3691	FREN 4102	LCC 2400	PHIL 3113
ARBC 3692	FREN 4103	LCC 2500	PHIL 3115
ARBC 3693	FREN 4105	LCC 2600	PHIL 3127
ARCH 2111	FREN 4107	LCC 3102	PHIL 3135
ARCH 2112	FREN 4200	LCC 3104	PHIL 4110
ARCH 2115	FREN 4241	LCC 3106	PHIL 4174
ARCH 4109	FREN 4242	LCC 3108	PHIL 4176
ARCH 4110	FREN 4300	LCC 3110	PHIL 4752
ARCH 4113	FREN 4500	LCC 3112	RUSS 1002
ARCH 4114	GRMN 1002	LCC 3114	RUSS 1692
ARCH 4117	GRMN 2001	LCC 3116	RUSS 2001
ARCH 4118	GRMN 2002	LCC 3118	RUSS 2002
ARCH 4119	GRMN 3010	LCC 3202	RUSS 2691
ARCH 4120	GRMN 3011	LCC 3204	RUSS 2692
ARCH 4124	GRMN 3024	LCC 3206	RUSS 3001
ARCH 4128	GRMN 3026	LCC 3208	RUSS 3002
ARCH 4151	GRMN 3030	LCC 3210	RUSS 3222
ARCH 4305	GRMN 3055	LCC 3212	RUSS 3691
CHIN 1002	GRMN 3071	LCC 3214	RUSS 3692
CHIN 1012	GRMN 3110	LCC 3216	RUSS 3698
CHIN 2001	GRMN 3695	LCC 3218	SPAN 1002
CHIN 2002	GRMN 3696	LCC 3219	SPAN 1102
CHIN 2011	GRMN 3697	LCC 3220	SPAN 2001
CHIN 2012	GRMN 4010	LCC 3222	SPAN 2002
CHIN 3003	GRMN 4012	LCC 3225	SPAN 2690
CHIN 3004	GRMN 4023	LCC 3226	SPAN 3050
CHIN 3021	GRMN 4024	LCC 3228	SPAN 3061
CHIN 3022	GRMN 4025	LCC 3234	SPAN 3062
CHIN 3691	GRMN 4026	LCC 3252	SPAN 3064
CHIN 3692	GRMN 4061	LCC 3254	SPAN 3101
CHIN 4003	GRMN 4065	LCC 3256	SPAN 3102
CHIN 4004	GRMN 4120	LCC 3257	SPAN 3111
CHIN 4006	GRMN 4126	LCC 3258	SPAN 3112
CHIN 4021	GRMN 4500	LCC 3259	SPAN 3122
CHIN 4031	GRMN 4693	LCC 3262	SPAN 3170
CHIN 4500	GRMN 4694	LCC 3302	SPAN 3211
COA 2241	ID 2202	LCC 3304	SPAN 3235
COA 2242	ID 4206	LCC 3306	SPAN 3241
COA 3114	INTA 4743	LCC 3308	SPAN 3242
COA 3115	JAPN 1002	LCC 3310	SPAN 3254
COA 3116	JAPN 2001	LCC 3314	SPAN 3260

CP 4040	JAPN 2002	LCC 3316	SPAN 3500
CS 4752	JAPN 3001	LCC 3318	SPAN 3691
FREN 1002	JAPN 3002	LCC 3352	SPAN 3692
FREN 2001	JAPN 3061	LCC 3362	SPAN 3693
FREN 2002	JAPN 3062	LCC 3502	SPAN 3694
FREN 2005	JAPN 3691	LCC 3504	SPAN 3697
FREN 3000	JAPN 3692	LCC 3506	SPAN 3698
FREN 3001	JAPN 3693	LCC 3508	SPAN 4061
FREN 3002	JAPN 4113	LCC 3510	SPAN 4062
FREN 3004	JAPN 4123	LCC 3512	SPAN 4065
FREN 3011	JAPN 4133	LCC 3514	SPAN 4070
FREN 3012	JAPN 4143	LCC 3516	SPAN 4071
FREN 3014	JAPN 4163	LCC 3518	SPAN 4101
FREN 3015	JAPN 4165	LCC 4204	SPAN 4150
FREN 3017	JAPN 4173	LING 3010	SPAN 4160
FREN 3030	JAPN 4231	LING 4002	SPAN 4165
FREN 3040	JAPN 4233	LING 4065	SPAN 4170
FREN 3061	JAPN 4235	LING 4780	SPAN 4220
FREN 3062	JAPN 4500	MUSI 2010	SPAN 4235
FREN 3110	JAPN 4543	MUSI 2011	SPAN 4236
FREN 3121	JAPN 4743	MUSI 2600	SPAN 4242
FREN 3500	JAPN 4750	MUSI 3450	SPAN 4251
FREN 3551	JAPN 4780	MUSI 3500	SPAN 4255
FREN 3552	KOR 1002	MUSI 3600	SPAN 4350
FREN 3555	KOR 2001	MUSI 3610	SPAN 4400
FREN 3556	KOR 2002	MUSI 3620	SPAN 4500
FREN 3691	KOR 3001	MUSI 3630	
FREN 3692	KOR 3002	MUSI 4450	

May also be used to satisfy Global Perspective requirement.

May also be used to satisfy Ethics requirement.

CORE AREA D: NATURAL SCIENCES, MATH, AND TECHNOLOGY

Core Area D is satisfied by students completing 8 semester hours from the science list and 4 semester hours from the Mathematics list:

SCIENCE

Course	Class Title	Credit Hours
CHEM 1211K	Chemical Principles I	4 semester hours
CHEM 1212K	Chemical Principles II	4 semester hours
CHEM 1310	General Chemistry	4 semester hours
BIOL 1510	Biological Principles	4 semester hours
BIOL 1520	Intro to Organismal Biology	4 semester hours
EAS 1600	Intro to Environmental Science	4 semester hours
EAS 1601	Habitable Planet	4 semester hours
EAS 2600	Earth Processes	4 semester hours
PHYS 2211	Intro. Physics I	4 semester hours
PHYS 2212	Intro. Physics II	4 semester hours

MATHEMATICS

All students with majors in the Colleges of Architecture, Computing, Engineering, and Science will complete the following:

Course	Class Title	Credit Hours
MATH 1502	Calculus II	4 semester hours

Required of all other majors (see note below)*. Select one of the following:

Course	Class Title	Credit Hours
MATH 1711	Finite Mathematics	4 semester hours
MATH 1502	Calculus II	4 semester hours

Honors versions of the above courses are also accepted.

* ***Note:*** In the case of a degree (major) that is jointly offered and the Colleges' requirements in this area are different, the student must complete the course that is specified in the curriculum for the degree, regardless of which college is the declared "home" of the student. This area of the Core Curriculum is driven by the requirements of the specific degree program, not by the general requirements of the College, if a degree is jointly offered.

UNDERGRADUATE STUDENTS

Core Curriculum
- Degree Requirements
- Core Area A1
- Core Area A2
- Core Area B
- Core Area C
- Core Area D
- Core Area E
- Core Area F
- Constitution & History
- Global Perspectives
- US Perspectives
- Wellness
- Ethics

Credit / Tests & Scores
- Credit
  - ROTC Credit
  - Transfer Credit
  - Courses with 'X' Numbers
- Tests & Scores
  - Advanced Standing
  - Advanced Placement
  - International Baccalaureate
  - Departmental Exams
  - Regents' Test
  - SAT II Subject Tests
- Graduate Courses

Degrees
- Bachelor's Degrees
- Graduate Course Option
- Second Undergraduate
- 5-Year BS/MS Degrees

Minors
Special Programs
Colleges & Degrees

CORE AREA E: SOCIAL SCIENCES

Area E is satisfied by completion of 12 semester hours as follows:

The social sciences requirement (Core Area E) is satisfied by completion of the United States/Georgia history and constitution legislative requirement with 3 semester hours from HIST 2111, 2112, POL 1101, INTA 1200, PUBP 3000, and nine semester hours from the following list. Some social science courses also carry the ethics attribute. Those courses may be used to satisfy both the SOC SCI and the Ethics requirements. **Credit not awarded for both POL 1101 and INTA 1200.**

Effective Fall 2011, students are required to complete two new Overlay Areas, US Perspectives and Global Perspectives as part of the Core Curriculum. Some Social Sciences courses carry the both Global Perspectives and U.S. Perspectives attributes. These courses may be used to satisfy all three areas.

Any courses completed that were listed in prior catalogs as satisfying the humanities/social science requirement and were completed while that catalog was in effect may also be used to satisfy this requirement.

Students can receive three hours credit for any one of ECON 2100, ECON 2101, ECON 2105 or ECON 2106. The only combination for which students can receive six hours credit is ECON 2105 together with ECON 2106.

Undergraduate Research courses numbered 2698, 2699, 4698, and 4699 cannot be used to fulfill requirements for Social Sciences.

Transfer Students: Please be aware that when you see courses on your GT record that are listed with an "X" in the number (ECON 3XXX or JAPN 10X2, for example) it means that these are transfer courses and although there were not equated exactly with a GT course, they may have been accepted to meet a Core area such as Humanities and Social Science.

If you review your records in DegreeWorks, you will be able to see how your transfer credit applies to your GT degree program. Refer to your academic advisor for more information.

ARCH 4107	HTS 3007	HTS 4033	INTA 4500
ARCH 4126	HTS 3008	HTS 4034	POL 1101
ARCH 4137	HTS 3009	HTS 4035	POL 2101
ARCH 4335	HTS 3011	HTS 4061	PSYC 1101
ARCH 4770	HTS 3012	HTS 4062	PSYC 2015
CP 4010	HTS 3015	HTS 4063	PSYC 2103
CP 4020	HTS 3016	HTS 4064	PSYC 2210
CP 4030	HTS 3017	HTS 4065	PSYC 2220
ECON 2100	HTS 3018	HTS 4081	PSYC 2230
ECON 2101	HTS 3019	HTS 4082	PSYC 2240
ECON 2105	HTS 3020	HTS 4083	PSYC 2250
ECON 2106	HTS 3021	HTS 4084	PSYC 2270
ECON 3300	HTS 3023	HTS 4085	PSYC 2280
ECON 4160	HTS 3024	INTA 1110	PSYC 2300
ECON 4180	HTS 3025	INTA 1200	PSYC 2400
ECON 4232	HTS 3026	INTA 2030	PSYC 2760
ECON 4311	HTS 3028	INTA 2040	PSYC 3012
ECON 4340	HTS 3029	INTA 2100	PSYC 3040

ECON 4350	HTS 3030	INTA 2210	PSYC 3041
ECON 4351	HTS 3031	INTA 2220	PSYC 3060
ECON 4355	HTS 3032	INTA 2230	PSYC 4260
ECON 4357	HTS 3033	INTA 3010	PSYC 4770
ECON 4411	HTS 3035	INTA 3020	PUBP 2010
ECON 4415	HTS 3036	INTA 3031	PUBP 2012
ECON 4421	HTS 3038	INTA 3101	PUBP 2030
ECON 4430	HTS 3039	INTA 3102	PUBP 3000
ECON 4440	HTS 3041	INTA 3103	PUBP 3016
ECON 4450	HTS 3043	INTA 3104	PUBP 3020
ECON 4460	HTS 3045	INTA 3110	PUBP 3030
ECON 4510	HTS 3046	INTA 3111	PUBP 3120
ECON 4610	HTS 3051	INTA 3120	PUBP 3130
ECON 4620	HTS 3061	INTA 3121	PUBP 3201
HIST 2111	HTS 3062	INTA 3130	PUBP 3214
HIST 2112	HTS 3063	INTA 3131	PUBP 3315
HTS 1001	HTS 3064	INTA 3203	PUBP 3350
HTS 1031	HTS 3065	INTA 3220	PUBP 3600
HTS 1081	HTS 3066	INTA 3221	PUBP 3610
HTS 2001	HTS 3067	INTA 3230	PUBP 4010
HTS 2002	HTS 3068	INTA 3231	PUBP 4020
HTS 2006	HTS 3069	INTA 3240	PUBP 4111
HTS 2007	HTS 3070	INTA 3241	PUBP 4120
HTS 2011	HTS 3082	INTA 3301	PUBP 4130
HTS 2013	HTS 3083	INTA 3303	PUBP 4140
HTS 2016	HTS 3084	INTA 3304	PUBP 4200
HTS 2036	HTS 3085	INTA 3321	PUBP 4211
HTS 2037	HTS 3086	INTA 3330	PUBP 4212
HTS 2040	HTS 3087	INTA 3331	PUBP 4214
HTS 2041	HTS 3100	INTA 4011	PUBP 4226
HTS 2061	HTS 3102	INTA 4040	PUBP 4260
HTS 2062	HTS 4001	INTA 4050	PUBP 4338
HTS 2081	HTS 4002	INTA 4060	PUBP 4410
HTS 2082	HTS 4003	INTA 4101	PUBP 4414
HTS 2084	HTS 4004	INTA 4121	PUBP 4416
HTS 2085	HTS 4005	INTA 4230	PUBP 4440
HTS 2100	HTS 4011	INTA 4240	PUBP 4501
HTS 2101	HTS 4012	INTA 4241	PUBP 4514
HTS 3001	HTS 4013	INTA 4330	PUBP 4600
HTS 3002	HTS 4014	INTA 4331	PUBP 4609
HTS 3003	HTS 4015	INTA 4332	SOC 1101
HTS 3005	HTS 4031	INTA 4333	
HTS 3006	HTS 4032	INTA 4340	

May also satisfy U.S. Perspectives Requirement
May also be used to satisfy Global Perspective requirement.
May also be used to satisfy Ethics requirement.
May also be used to satisfy Global Perspective and Ethics requirement.

CORE AREA F - LOWER-DIVISION MAJOR REQUIREMENTS

Core Area F requirements vary with degree and major. It is expected that there will be 18 hours of lower division requirements in each major.

CONSTITUTION AND HISTORY REQUIREMENTS

The Georgia law as amended March 4, 1953, requires that before receiving an undergraduate degree all students pass an examination or a comparable course in United States and Georgia history/constitution. Courses that fulfill the United States and Georgia history/constitution requirement are HIST 2111, 2112; POL 1101; PUBP 3000; or INTA 1200. (Credit not awarded for both POL 1101 and INTA 1200.)

GLOBAL PERSPECTIVES

Following is a list of courses that are approved to meet the Global Perspectives Overlay area. The courses listed below may also meet Core Area C (Humanities) or Core Area E (Social Sciences). Students may use these courses to meet both areas (C and Global, or E and Global) at the same time.

All are 3 semester hour courses.

ARBC 2301
ARCH 2112
COA 2242
ECON 2101
ECON 3300
ECON 4311
ECON 4350
ECON 4355
ECON 4411
ECON 4415
HTS 1031
HTS 2036
HTS 2037
HTS 2041
HTS 2062
HTS 2082
HTS 2100
HTS 3012
HTS 3032
HTS 3051
HTS 3064
HTS 3065
HTS 3087
INTA 1110
INTA 2040
INTA 2100
INTA 2220
INTA 2230
INTA 3101
INTA 3203
INTA 3240
INTA 3241
INTA 3301
INTA 3303
INTA 3304
INTA 3321
LCC 3106
LCC 3108
LCC 3110
LCC 3112
LCC 3114

LCC 3116
LCC 3257
LCC 3316
LCC 3506
MGT 3606
MGT 3660

U.S. PERSPECTIVES

Following is a list of courses that are approved to meet the U.S. Perspectives Overlay area. The courses listed below meet both Core Area E (Social Sciences) and the U.S. Perspectives Overlay area requirements. Students may use these courses to meet both areas at the same time.

All are 3 semester hour courses.

HIST 2111
HIST 2112
INTA 1200
POL 1101
PUBP 3000

WELLNESS REQUIREMENT

All undergraduate students attending Georgia Tech must satisfactorily complete a wellness requirement (HPS 1040 which is offered effective Fall 2013 as APPH 1040 or APPH 1050, or an equivalent course).

ETHICS

The courses listed below carry the Georgia Tech-specific Ethics attribute. While some courses (as designated) meet Humanities or Social Science requirements, not all of the courses listed below will meet Core requirements. Additionally, some programs may require certain ethics courses to fulfill their degree requirements. Check with the major school accordingly.

BIOL 4650
CHBE 4515
CS 4001
HTS 1081
HTS 2061
HTS 2084
HTS 2100
HTS 3032
INTA 2030
LCC 3219
LCC 3318
MGT 3608
MGT 4047
PHIL 3105
PHIL 3109
PHIL 3127
PHIL 4176
PSYC 1101
PSYC 2015
PSYC 2210
PSYC 2220
PSYC 2230
PSYC 2240
PSYC 2270
PSYC 3031
PSYC 4050
PSYC 4270
PUBP 3600

ROTC

Georgia Tech offers three voluntary ROTC programs: Army, Navy, and Air Force.

Depending on the student's major, Basic and Advanced ROTC classes count as a portion of elective credit. (Students may apply a maximum of 4 hours in Basic ROTC courses and six hours in Advanced ROTC courses toward meeting the elective requirements for any degree at the discretion of the school.) Consult specific colleges to determine the amount of hours that will count toward a degree. After earning a baccalaureate degree and completing the Advanced ROTC courses for any of the three services, a student may receive a commission as an officer in either the reserve or active forces.

Students accepted into the program earn more than just money for a college degree. Cadets and midshipmen receive training and experience in the one quality which is always in great demand: Leadership.

ROTC CREDIT

Students may apply a maximum of 4 hours in basic (1000-2000 level courses) ROTC courses and six hours in advanced (3000-4000 level) ROTC courses toward meeting the free elective requirements for any degree. Students should begin taking basic ROTC courses during the first term they are enrolled. For further information, see individual curricula for the schools. Please note some departments may have stricter guidelines regarding ROTC courses.

TRANSFER CREDIT

The basic policy regarding the acceptance of courses by transfer is to allow credit for courses completed with satisfactory grades (*C* or better) at other accredited colleges and universities in the United States and Canada, provided the courses correspond in time and content to courses offered at the Georgia Institute of Technology. Georgia Tech will not accept credit for courses successfully completed at another institution but previously taken at Georgia Tech unless the final grade received at Georgia Tech is a W. The student must request and file an official transcript of transfer courses before the Institute can award credit. Coursework completed at colleges and universities outside the United States and Canada will be evaluated on a case-by-case basis. Transfer credit is not calculated in the Georgia Tech grade-point average.

Students may attend another institution as a transient student during terms when not enrolled at Georgia Tech. Students should discuss their course selection with their academic advisor to ensure transferability and applicability toward their degree programs. With the exception of officially sanctioned crossenrolled programs, students are not to be enrolled at Georgia Tech and another institution during the same term without the specific approval of the appropriate curriculum committee.

TRANSFER COURSES WITH 'X' NUMBERS

Transfer courses for which there is no exact Georgia Tech equivalent will be listed with the numbers 1XXX, 2XXX, etc. Courses so numbered can be used as free electives or may be substituted for Georgia Tech courses at the discretion of the academic unit. Transfer courses with an "X" as the third number of the course (e.g., MATH 15X2) are lacking a component of the Georgia Tech course. These courses, in combination with another Georgia Tech course, may be considered as equivalent for prerequisite checking and degree requirements. Students should seek advisement from their academic unit regarding the use of these courses toward fulfilling degree requirements.

ADVANCED STANDING - STUDENT RULES AND REGULATIONS 12B

B. EXAMINATIONS FOR ADVANCED STANDING

1. Students who offer satisfactory evidence that they are qualified to do so may receive credit for a course by examination. Such an examination is called an examination for advanced standing.
2. Examinations for advanced standing require the recommendation of the department of instruction in which the course is offered, payment of the appropriate fee to the Bursar's office, and authorization by the Office of the Registrar.
3. Examinations for advanced standing will ordinarily be offered during the week of final examinations.
4. A student will not be allowed to take an examination for advanced standing in a given course more than twice.
5. Students will not be allowed to take an examination for advanced standing in a course for which the prerequisite(s) has not been met, except with the consent of the school offering the course.
6. An examination for advanced standing will be reported with an S or U grade. Neither grade will be included in the calculation of the scholastic average.
7. Advanced standing is not allowed for laboratory or studio classes, except with the consent of the school offering the course.
8. Students may not use more than 9 credits of advanced standing to meet degree requirements.
9. Students may submit the Advanced Standing application and fee to obtain 6 to 8 hours of proficiency credit for foreign language at the 1001-1002 level upon completion of two classes in the same language at the 2000-level or higher with a minimum grade of C.

ADVANCED PLACEMENT

Students entering Georgia Tech may receive college credit based upon their scores on the College Board Advanced Placement (AP) Exams taken in conjunction with designated high school advanced placement classes, SAT II Subject Tests, International Baccalaureate Credit, and/or Georgia Tech Departmental Exams.

Once enrolled at Georgia Tech, students are not allowed to take College Board (Advanced Placement and SAT II), International Baccalaureate, or A-Level Examinations for credit. All examinations must be completed prior to the student's enrollment date. Students who offer satisfactory evidence that they are qualified to do so may receive credit for a course by examination at Georgia Tech. Such an examination is called an examination for advanced standing.

College Board Advanced Placement Exams

Subject	Course	Hours
American Government & Politics ***	AP Score: 4 or 5 = POL 1101	3
Art History	AP Score: 4 or 5 = COA 2242	3
Biology	AP Score: 5 = BIOL 1510	4
Chemistry - Effective Summer 2010	AP Score: 4 = CHEM 1211K	4
Chemistry	AP Score: 5 = CHEM 1310	4
Comparative Politics	AP Score: 4 or 5 = INTA 1200	3
Computer Science (A)	AP Score: 4 or 5 = CS 1301	3
Economics (Macroeconomics)*	AP Score: 4 or 5 = ECON 2105	3
Economics (Microeconomics)*	AP Score: 4 or 5 = ECON 2106	3
English (Composition & Literature)	AP Score: 4 or 5 = ENGL 1101	3
English (Language & Composition)	AP Score: 4 or 5 = ENGL 1101	3
Environmental Science	AP Score: 5 = EAS 1600	4
French Language & Culture	AP Score: 4 or 5 = FREN 2001 & 2002	6
German (Language Lvl III or Literature Lvl III)	AP Score: 4 or 5 = GRMN 2001 & 2002	6
History (American)	AP Score: 4 or 5 = HIST 2111	3
History (European)	AP Score: 4 or 5 = HTS 1031	3
History (World)	AP Score: 4 or 5 = HTS 1XXX**	3
Latin Language & Culture	AP Score: 4 or 5 = LATN 2XXX	6
Mathematics (AB and BC)	AP Score: AB4 or 5 BC3, 4, or 5 = MATH 1501	4
Music (Theory)	AP Score: 3 = MUSI 2600	2
Music (Theory)	AP Score: 4 or 5 = MUSI 2600 & 3600	4
Physics C: Part I (Mechanics, Calculus Based)	AP Score: 4 or 5 = PHYS 2211	4
Physics C: Part II (Electricity & Magnetism)	AP Score: 4 or 5 = PHYS 2212	4
Psychology (General)	AP Score: 4 or 5 = PSYC 1101	3
Spanish (Language Lvl III or Literature Lvl III)	AP Score: 4 or 5 = SPAN 2001 & 2002	6

* With a score of 4 or 5 in both macroeconomics and microeconomics, a student could instead elect to receive 3 semester hours of credit for ECON 2100.

** HTS 1XXX represents a 1000 level elective course.

*** Students cannot receive credit for both INTA 1200 and POL 1101.

INTERNATIONAL BACCALAUREATE

No International Baccalaureate Diploma

Subject	Higher Level Exam Scores	Credit
Biology	5	4 hours (BIOL 1510)
	6 or higher	8 hours (BIOL 1510 and 1520)
Chemistry	5 or higher	4 hours (CHEM 1310)
Computer Science	5 or higher	3 hours (CS 1301)
Economics	5 or higher	3 hours (ECON 2100)
English	4 or higher	3 hours (ENGL 1101)
European History	4 or higher	3 hours (HTS 2037)
Foreign Language*	5 or higher	6 hours (2001 and 2002)
History of Americas	4 or higher	3 hours (HIST 2112)
Mathematics	4 or higher	4 hours (MATH 1501)
Physics	5 or higher	8 hours (PHYS 2211 and 2212)
Psychology	5 or higher	3 hours (PSYC 1101)

International Baccalaureate Diploma - High Level

Subject	Higher Level Exam Scores	Credit
Biology	4 or 5	4 hours (BIOL 1510)
	6 or higher	8 hours (BIOL 1510 and 1520)
Chemistry	5 or higher	4 hours (CHEM 1310)
Computer Science	5 or higher	3 hours (CS 1301)
Economics	5 or higher	3 hours (ECON 2100)
English	4 or higher	3 hours (ENGL 1101)
European History	4 or higher	3 hours (HTS 2037)
Foreign Language*	4	3 hours (1002)
	5 or higher	6 hours (2001 and 2002)
History of Americas	4 or higher	3 hours (HIST 2112)
Mathematics	4 or higher	4 hours (MATH 1501)
Physics	5 or higher	8 hours (PHYS 2211 and 2212)
Psychology	5 or higher	3 hours (PSYC 1101)

International Baccalaureate Diploma - Standard Level

Subject	Standard Level Exam Scores	Credit
Biology	6 or higher	4 hours (BIOL 1510)
Economics	6 or higher	3 hours (ECON 1XXX)
English	6 or higher	3 hours (ENGL 1101)
European History	6 or higher	3 hours (HTS 1XXX)
Foreign Language*	6 or higher	3 hours (1002)
History of Americas	6 or higher	3 hours (HTS 1XXX)
Mathematics	6 or higher	3 hours (MATH 1XXX)
Physics	6 or higher	4 hours (PHYS 2XXX)

The following subjects are pending departmental review for International Baccalaureate diploma holders: Chemistry, Computer Science, Economics, Physics, and Psychology.

* See Modern Foreign Language Credit.

DEPARTMENTAL EXAMS

ADVANCED PLACEMENT IN MATHEMATICS

If you have taken a high school calculus course and achieved an SAT I mathematics score of 650 or higher, you may take the School of Mathematics' Advanced Placement Exam in calculus during freshman orientation. This exam is an alternative to College Board Advanced Placement Exams. If you pass the exam, you will receive credit for MATH 1501. You may also be approved for subsequent course exams.

MODERN FOREIGN LANGUAGE CREDIT

You may receive humanities credit for courses numbered 2001-2002 in a language if you

a. submit higher level scores of 5 or higher from a certified high school International Baccalaureate program, or
b. submit higher level scores of 4 or 5 from Advanced Placement exam in one of the languages taught at Georgia Tech.

You may receive humanities credit for courses numbered 1002 in a language if you

a. earn an International Baccalaureate diploma and
b. submit higher level scores of 4 or standard level scores of 6 or higher in one of the languages taught at Georgia Tech.

To have this elective credit entered on your records, please submit your IB or AP scores to the Registrar's office. This credit can apply toward the six-hour humanities/fine arts graduation requirement; no grade is attached to it. You will not get credit for high school language study if you are a native speaker of that language or if you have taken first-year courses at a college and received transfer credit.

REGENTS' TESTING PROGRAM

EFFECTIVE SPRING 2010

The Regents' exam is no longer required at Georgia Tech as a result of a recent decision by The Board of Regents'.

SAT II SUBJECT TESTS

Subject	Score	Semester Course	Hours
Chemistry	680	CHEM 1211K	4
Chemistry	730	CHEM 1310	4
English	750	ENGL 1101	3

UNDERGRADUATE STUDENTS TAKING GRADUATE COURSES

Seniors with a grade-point average of at least 2.7 may schedule graduate courses. In order to do so, the student must obtain permission both from the student's advisor and from the chair of the school offering the course. Credit toward the master's degree for up to twelve hours of courses taken as an undergraduate may be received under the following conditions.

1. The student was in residence at Georgia Tech for at least two semesters before registering for the course(s).
2. The student did not apply credit for the course toward the baccalaureate degree. (See Graduate Course Option for special exceptions in certain schools.)

COLLEGE OF ARCHITECTURE

- Bachelor of Science in Architecture
- Bachelor of Science in Building Construction
- Bachelor of Science in Industrial Design

COLLEGE OF COMPUTING

- Bachelor of Science in Computer Science
- Bachelor of Science in Computational Media (Interdisciplinary with IAC)

COLLEGE OF ENGINEERING

- Bachelor of Science in Aerospace Engineering
- Bachelor of Science in Biomedical Engineering
- Bachelor of Science in Chemical and Biomolecular Engineering
- Bachelor of Science in Civil Engineering
- Bachelor of Science in Computer Engineering
- Bachelor of Science in Electrical Engineering
- Bachelor of Science in Environmental Engineering
- Bachelor of Science in Industrial Engineering
- Bachelor of Science in Materials Science and Engineering
- Bachelor of Science in Mechanical Engineering
- Bachelor of Science in Nuclear and Radiological Engineering
- Dual Degree – BS in Computer Engineering – GT & Korea Advanced Institute of Science and Technology
- Dual Degree – BS in Electrical Engineering – GT & Korea Advanced Institute of Science and Technology

COLLEGE OF BUSINESS

- Bachelor of Science in Business Administration

IVAN ALLEN COLLEGE OF LIBERAL ARTS

- Bachelor of Science in Applied Language and Intercultural Studies
- Bachelor of Science in Computational Media (Interdisciplinary with COC)
- Bachelor of Science in Economics
- Bachelor of Science in Economics and International Affairs
- Bachelor of Science in Global Economics and Modern Languages
- Bachelor of Science in History, Technology, and Society
- Bachelor of Science in International Affairs
- Bachelor of Science in International Affairs and Modern Language
- Bachelor of Science in Public Policy
- Bachelor of Science in Science, Technology, and Culture

COLLEGE OF SCIENCES

- Bachelor of Science in Applied Mathematics
- Bachelor of Science in Applied Physics
- Bachelor of Science in Biochemistry
- Bachelor of Science in Biology
- Bachelor of Science in Chemistry
- Bachelor of Science in Discrete Mathematics
- Bachelor of Science in Earth and Atmospheric Sciences
- Bachelor of Science in Physics
- Bachelor of Science in Psychology

GRADUATE COURSE OPTION

Students completing both the bachelor's and master's in the same discipline at Georgia Tech may use up to 6 credit hours of graduate-level coursework in the major discipline for both degrees. Recognizing that some master's degree programs do not have a unique undergraduate counterpart program, and that some master's programs are offered by several schools, the term "discipline" in the prior sentence will be broadly interpreted in such cases. To qualify for this option, students must complete the undergraduate degree with a cumulative grade-point average of 3.5 or higher and complete the master's degree within a two-year period from the award date of the bachelor's degree.

SECOND UNDERGRADUATE DEGREES RULES AND REGULATIONS 13F

F. SECOND UNDERGRADUATE DEGREE

1. A student enrolled for a second undergraduate degree shall be classified as an undergraduate student, except that a graduate student wishing to pursue a second undergraduate degree will remain classified as a graduate student. A graduate student, with approval of the major school, may work toward a second undergraduate degree while pursuing a graduate program.
2. To be a candidate for a second undergraduate degree, a student must have the recommendation of the chair of the school concerned and the approval of the Undergraduate Curriculum Committee.
3. To obtain a second undergraduate degree, a student must complete all major required courses for the degree and earn credit for a total of at least thirty-six credit hours in excess of the requirement for any previous degrees earned.
4. All regulations in section XIII apply to students completing second undergraduate degrees.

BS/MS DEGREE PROGRAMS

Many schools at Georgia Tech offer BS/MS degree programs that, like the Graduate Course Option, allow eligible students to use up to 6 credit hours of graduate-level coursework in the major discipline for both degrees. The BS/MS programs typically include research and mentoring components and have their own GPA requirements.

Aerospace Engineering
Chemical & Biomolecular Engineering
Civil Engineering
Computational Media & Digital Media
Earth and Atmospheric Sciences
Electrical Engineering
Computer Engineering
Environmental Engineering
Materials Science Engineering
Mechanical Engineering
Nuclear and Radiological Engineering
Public Policy
Science, Technology, and Culture & Digital Media

UNDERGRADUATE MINORS

An undergraduate minor is a defined program of study outside the student's major field. Minors are intended to broaden the student's education by encouraging and officially recognizing knowledge obtained by the student in fields other than their major.

Minors are typically offered by Schools which also offer a major. A program of study for the minor is outlined and it may include more than one option or "track". Tracks allow students to focus on an aspect of the academic field that is of particular interest to them. It is expected that there will be depth of the program of study and that specific educational objectives will be met upon completion of the minor.

Other minors are offered where there is no undergraduate degree granting program at Georgia Tech. These minors cover fields which are inherently multidisciplinary; i.e., ones that are covered in part by multiple degree granting academic programs. Multidisciplinary minors require particularly broad Programs of Study which include courses from multiple Schools and/or Colleges.

UNDERGRADUATE MINOR GUIDELINES

1. **AEROSPACE ENGINEERING**
   - Description
   - Program of Study
2. **ARCHITECTURAL HISTORY**
   - Description
   - Program of Study
3. **BIOLOGY**
   - Description
   - Program of Study
4. **BIOCHEMISTRY**
   - Description
   - Program of Study
5. **BIOMEDICAL ENGINEERING**
   - Description
   - Program of Study
6. **CHEMISTRY**
   - Description
   - Program of Study
7. **CHINESE**
   - Description
   - Program of Study
8. **COMPUTATIONAL DATA ANALYSIS**

18. **HEALTH, MEDICINE, AND SOCIETY**
    - Description
    - Program of Study
19. **HISTORY**
    - Description
    - Program of Study
20. **INDUSTRIAL DESIGN**
    - Description
    - Program of Study
21. **INTERNATIONAL AFFAIRS**
    - Description
    - Program of Study
22. **JAPANESE**
    - Description
    - Program of Study
23. **KOREAN**
    - Description
    - Program of Study
24. **LAW, SCIENCE, AND TECHNOLOGY**
    - Description
    - Program of Study
25. **LEADERSHIP STUDIES**
    - Description
    - Program of Study
26. **MATHEMATICS**
    - Description
    - Program of Study
27. **MATERIALS SCIENCE AND ENGINEERING**
    - Description
    - Program of Study
28. **MULTIDISCIPLINARY DESIGN/ARTS HISTORY**
    - Description
    - Program of Study
29. **MUSIC**
    - Description
    - Program of Study
30. **MUSIC PERFORMANCE**
    - Description
    - Program of Study
31. **MUSIC TECHNOLOGY**
    - Description
    - Program of Study

32. **NUCLEAR AND RADIOLOGICAL ENGINEERING**
    - Description
    - Program of Study
33. **PERFORMANCE STUDIES**
    - Description
    - Program of Study
34. **PHILOSOPHY**
    - Description
    - Program of Study
35. **POLITICAL SCIENCE**
    - Description
    - Program of Study
36. **PSYCHOLOGY**
    - Description
    - Program of Study
37. **PUBLIC POLICY**
    - Description
    - Program of Study
38. **RUSSIAN STUDIES**
    - Description
    - Program of Study
39. **SCIENCE, TECHNOLOGY, AND SOCIETY**
    - Description
    - Program of Study
40. **SCIENTIFIC AND ENGINEERING COMPUTING**
    - Description
    - Program of Study
41. **SOCIOLOGY**
    - Description
    - Program of Study
42. **SPANISH**
    - Description
    - Program of Study
43. **TECHNICAL COMMUNICATION**
    - Description
    - Program of Study
44. **WOMEN, SCIENCE, AND TECHNOLOGY**
    - Description
    - Program of Study

GEORGIA TECH - SPECIAL ACADEMIC PROGRAMS

Please select an option from the menu on the left.

COLLEGE OF ARCHITECTURE

SCHOOL OF ARCHITECTURE

Bachelor's Degrees

Bachelor of Science in Architecture

Additional Options:

International Plan

Master's Degrees

Master of Architecture

Master of Science in Urban Design

Master of Science with a Major in Architecture

Concentrations:

Digital Design and Fabrication

High Performance Buildings

Health and Design

Dual Degree Programs:

Architecture & City and Regional Planning

Doctoral Degrees

Doctor of Philosophy with a Major in Architecture

SCHOOL OF BUILDING CONSTRUCTION

Bachelor's Degrees

Bachelor of Science in Building Construction

Master's Degrees

Master of Science in Building Construction and Facility Management

Concentrations:

Integrated Facility Management

Integrated Project Delivery Systems

Residential Construction Development

Doctoral Degrees

Doctor of Philosophy with a Major in Building Construction

SCHOOL OF CITY AND REGIONAL PLANNING

Master's Degrees

Master of City and Regional Planning

Dual Degree Programs:

City and Regional Planning & Civil and Environmental Engineering

City and Regional Planning & Architecture

City and Regional Planning & Georgia State University Juris Doctor degree program

City and Regional Planning & Public Policy

Master of Science in Geographic Information Science and Technology

Master of Science in Urban Design

Doctoral Degrees

Doctor of Philosophy with a Major in City and Regional Planning

SCHOOL OF INDUSTRIAL DESIGN

Bachelor's Degrees

Bachelor of Science in Industrial Design

Additional Options:

Architecture
Business
Computing
Engineering
Liberal Arts
Sciences

International Plan

Master's Degrees

Master of Industrial Design

SCHOOL OF MUSIC

Master's Degrees

Master of Science in Music Technology

Doctoral Degrees

Doctor of Philosophy with a Major in Music Technology

COLLEGE OF BUSINESS

Bachelor's Degrees

Bachelor of Science in Business Administration

Additional Options:

International Plan

Master's Degrees

Master of Business Administration

Master of Business Administration - Global Business

Master of Business Administration in Management of Technology

Master of Science in Quantitative and Computational Finance

Master of Science with a Major in Management

Doctoral Degrees

Doctor of Philosophy with a Major in Management

COLLEGE OF COMPUTING

Bachelor's Degrees

Bachelor of Science in Computer Science

Additional Options:

Cooperative Plan

International Plan

Research Option

SCHOOL OF COMPUTER SCIENCE

Master's Degrees

Master of Science in Bioengineering

Master of Science in Computer Science

Master of Science in Information Security - Systems

Master of Science in Information Security - Policy

Master of Science in Information Security - Users and Usability

Doctoral Degrees

Doctor of Philosophy with a Major in Algorithms, Combinatorics, and Optimization

Doctor of Philosophy with a Major in Bioengineering

Doctor of Philosophy with a Major in Bioinformatics

Doctor of Philosophy with a Major in Computer Science

SCHOOL OF INTERACTIVE COMPUTING

Bachelor's Degrees

Bachelor of Science in Computational Media (Interdisciplinary with LMC and CoC)

Additional Options:

Cooperative Plan

International Plan

Research Option

BS/MS Computational Media & Digital Media

Master's Degrees

BS/MS Computational Media & Digital Media

Master of Science in Computer Science

Master of Science in Human-Computer Interaction

Doctoral Degrees

Doctor of Philosophy with a Major in Computer Science

Doctor of Philosophy with a Major in Human-Centered Computing

Doctor of Philosophy with a Major in Robotics

COMPUTATIONAL SCIENCE AND ENGINEERING DIVISION

Master's Degrees

Master of Science in Bioengineering

Master of Science in Computational Science and Engineering

Master of Science in Computer Science

Doctoral Degrees

Doctor of Philosophy with a Major in Bioengineering

Doctor of Philosophy with a Major in Bioinformatics

Doctor of Philosophy with a Major in Computational Science and Engineering

Doctor of Philosophy with a Major in Computer Science

COLLEGE OF ENGINEERING

SCHOOL OF AEROSPACE ENGINEERING

Bachelor's Degrees

Bachelor of Science in Aerospace Engineering

Additional Options:

- Cooperative Plan
- International Plan
- Research Option

BS/MS A.E.

Master's Degrees

BS/MS A.E.

Master of Science in Aerospace Engineering

Master of Science in Computational Science and Engineering

Doctoral Degrees

Doctor of Philosophy with a Major in Aerospace Engineering

Doctor of Philosophy with a Major in Computational Science and Engineering

Doctor of Philosophy with a Major in Robotics

SCHOOL OF CHEMICAL AND BIOMOLECULAR ENGINEERING

Bachelor's Degrees

Bachelor of Science in Chemical and Biomolecular Engineering

Additional Options:

- Cooperative Plan
- Biotechnology Option
- Research Option

BS/MS C.H.B.E.

Master's Degrees

BS/MS C.H.B.E.

Master of Science in Bioengineering

Master of Science in Chemical Engineering

Master of Science in Paper Science and Engineering

Doctoral Degrees

Doctor of Philosophy with a Major in Bioengineering

Doctor of Philosophy with a Major in Chemical Engineering

Doctor of Philosophy with a Major in Paper Science and Engineering

SCHOOL OF CIVIL & ENVIRONMENTAL ENGINEERING

Bachelor's Degrees

Bachelor of Science in Civil Engineering

Additional Options:

- Cooperative Plan
- International Plan
- Research Option

Bachelor of Science in Environmental Engineering

Additional Options:

- Cooperative Plan
- International Plan
- Research Option

BS/MS C.E.

BS/MS ENV.E.

Master's Degrees

BS/MS C.E.

BS/MS ENV.E.

Master of Science in Bioengineering

Master of Science in Civil Engineering

Master of Science in Computational Science and Engineering

Master of Science in Engineering Science and Mechanics

Master of Science in Environmental Engineering

Master of Science with a Major in Civil Engineering

Master of Science with a Major in Environmental Engineering

Dual Degree Programs:

- City and Regional Planning & Civil and Environmental Engineering - Transportation Engineering

Doctoral Degrees

Doctor of Philosophy with a Major in Bioengineering

Doctor of Philosophy with a Major in Civil Engineering

Doctor of Philosophy with a Major in Computational Science and Engineering

Doctor of Philosophy with a Major in Engineering Science and Mechanics

Doctor of Philosophy with a Major in Environmental Engineering

SCHOOL OF ELECTRICAL & COMPUTER ENGINEERING

Bachelor's Degrees

Bachelor of Science in Computer Engineering

Additional Options:

- Cooperative Plan
- International Plan
- Research Option

Dual Degree Programs:

- Georgia Tech and Korea Advanced Institute of Science and Technology

Bachelor of Science in Electrical Engineering

Additional Options:

- Cooperative Plan
- International Plan

Research Option

Dual Degree Programs:

Georgia Tech and Korea Advanced Institute of Science and Technology

BS/MS E.C.E.

Master's Degrees

BS/MS E.C.E.

Master of Science in Bioengineering

Master of Science in Electrical and Computer Engineering

Additional Options:

GT Lorraine

Dual Degrees:

Dual with Korea Advanced Institute of Science and Technology

Dual with The Politecnico di Torino (ITALY)

Dual with Shanghai Jiao Tong University (SJTU)

Dual GT Lorraine and European partner universities

Doctoral Degrees

Doctor of Philosophy with a Major in Bioengineering

Doctor of Philosophy with a Major in Electrical and Computer Engineering

Joint Degrees:

ECE/JMIL

ECE/JTOR

Additional Options:

GT Lorraine

Doctor of Philosophy with a Major in Robotics

SCHOOL OF INDUSTRIAL & SYSTEMS ENGINEERING

Bachelor's Degrees

Bachelor of Science in Industrial Engineering

Additional Options:

Cooperative Plan

International Plan

Master's Degrees

Master of Science in Computational Science and Engineering

Master of Science in Health Systems

Master of Science in Industrial Engineering

Options:

Human Integrated Systems Track

Manufacturing and Logistics Track

Master of Science in International Logistics

Master of Science in Operations Research

Master of Science in Quantitative and Computational Finance

Master of Science in Statistics

Master of Science in Supply Chain Engineering

Doctoral Degrees

Doctor of Philosophy with a Major in Algorithms, Combinatorics, and Optimization

Doctor of Philosophy with a Major in Bioinformatics

Doctor of Philosophy with a Major in Computational Science and Engineering

Doctor of Philosophy with a Major in Industrial Engineering

Additional Options:

Applied Statistics Track

Economic Decision Analysis Track

Supply Chain Engineering

System Informatics & Control Track

Doctor of Philosophy with a Major in Operations Research

SCHOOL OF MATERIALS SCIENCE & ENGINEERING

Bachelor's Degrees

Bachelor of Science in Materials Science and Engineering

Additional Options:

Cooperative Plan

Research Option

BS/MS MSE

Master's Degrees

BS/MS MSE

Master of Science in Materials Science and Engineering

Master of Science in Paper Science and Engineering

Master of Science in Bioengineering

Master of Science with a Major in Materials Science and Engineering

Doctoral Degrees

Doctor of Philosophy with a Major in Materials Science and Engineering

Joint Degrees:

GT-PKU Joint PhD with a Major in Materials Science and Engineering

Doctor of Philosophy with a Major in Paper Science and Engineering

Doctor of Philosophy with a Major in Bioengineering

SCHOOL OF MECHANICAL ENGINEERING

Bachelor's Degrees

Bachelor of Science in Mechanical Engineering

Additional Options:

Cooperative Plan

International Plan

Bachelor of Science in Nuclear and Radiological Engineering

Additional Options:

Cooperative Plan

BS/MS M.E.

Master's Degrees

BS/MS M.E.

Master of Science in Bioengineering

Master of Science in Mechanical Engineering

Master of Science in Medical Physics

Master of Science in Nuclear Engineering

Master of Science in Paper Science and Engineering

Doctoral Degrees

Doctor of Philosophy with a Major in Bioengineering

Doctor of Philosophy with a Major in Mechanical Engineering

Doctor of Philosophy with a Major in Nuclear and Radiological Engineering

Additional Options:

Medical Physics

Doctor of Philosophy with a Major in Paper Science and Engineering

Doctor of Philosophy with a Major in Robotics

GT/EMORY DEPARTMENT OF BIOMEDICAL ENGINEERING

Bachelor's Degrees

Bachelor of Science in Biomedical Engineering

Additional Options:

Cooperative Plan

International Plan

Research Option

Master's Degrees

Master of Biomedical Innovation and Development

Doctoral Degrees

Doctor of Philosophy with a Major in Biomedical Engineering

Doctor of Philosophy with a Major in Bioengineering

Doctor of Philosophy with a Major in Bioinformatics

Doctor of Philosophy with a Major in Computational Science and Engineering

Doctor of Philosophy with a Major in Robotics

COLLEGE OF ENGINEERING

Master's Degrees

Master of Science in Enterprise Transformation

Professional Master's Program

COLLEGE OF LIBERAL ARTS

SCHOOL OF ECONOMICS

Bachelor's Degrees

Bachelor of Science in Economics

Additional Options:

International Plan

Research Option

Bachelor of Science in Economics and International Affairs

Additional Options:

International Plan

Bachelor of Science in Global Economics and Modern Languages

Additional Options:

International Plan

Master's Degrees

Master of Science with a Major in Economics

Doctoral Degrees

Doctor of Philosophy with a Major in Economics

SCHOOL OF HISTORY, TECHNOLOGY, & SOCIETY

Bachelor's Degrees

Bachelor of Science in History, Technology, and Society

Additional Options:

International Plan

Research Option

Master's Degrees

Master of Science in History and Sociology of Technology and Science

Doctoral Degrees

Doctor of Philosophy with a Major in History and Sociology of Technology and Science

SCHOOL OF INTERNATIONAL AFFAIRS

Bachelor's Degrees

Bachelor of Science in International Affairs

Additional Options:

International Plan

Bachelor of Science in International Affairs and Modern Language

Additional Options:

International Plan

Bachelor of Science in Economics and International Affairs

Additional Options:

International Plan

Master's Degrees

Master of Science in International Affairs

Doctoral Degrees

Doctor of Philosophy with a Major in International Affairs, Science, and Technology

SCHOOL OF LITERATURE, MEDIA, & COMMUNICATION

Bachelor's Degrees

Bachelor of Science in Computational Media (Interdisciplinary with LMC and CoC)

Additional Options:

International Plan

Research Option

BS/MS Computational Media & Digital Media

Bachelor of Science in Science, Technology, and Culture

Additional Options:

International Plan

Research Option

BS/MS in Science, Technology, and Culture & Digital Media

Master's Degrees

BS/MS in Science, Technology, and Culture & Digital Media

BS/MS Computational Media & Digital Media

Master of Science in Human-Computer Interaction

Master of Science in Digital Media

Doctoral Degrees

Doctor of Philosophy with a Major in Digital Media

SCHOOL OF MODERN LANGUAGES

Bachelor's Degrees

Bachelor of Science in Applied Language and Intercultural Studies

Additional Options:

International Plan

Bachelor of Science in International Affairs and Modern Language

Additional Options:

International Plan

Bachelor of Science in Global Economics and Modern Languages

Additional Options:

International Plan

PUBLIC POLICY

Bachelor's Degrees

Bachelor of Science in Public Policy

BS/MS PUBP

Master's Degrees

BS/MS PUBP

Master of Science in Public Policy

Dual Degree Programs:

City and Regional Planning & Public Policy

Doctoral Degrees

Doctor of Philosophy with a Major in Public Policy

Joint Degrees

GT-Georgia State University Joint PhD with a Major in Public Policy

RESERVE OFFICERS' TRAINING CORPS (ROTC)

Air Force Reserve Officers' Training Corps (ROTC)

Army Reserve Officers' Training Corps (ROTC)

Navy Reserve Officers' Training Corps (ROTC)

COLLEGE OF SCIENCES

SCHOOL OF APPLIED PHYSIOLOGY

Master's Degrees

Master of Science in Prosthetics and Orthotics

Doctoral Degrees

Doctor of Philosophy with a Major in Applied Physiology

SCHOOL OF BIOLOGY

Bachelor's Degrees

Bachelor of Science in Biology

Additional Options:

Business Option

International Plan

Research Option

Master's Degrees

Master of Science in Biology

Master of Science in Bioinformatics

Master of Science in Computational Science and Engineering

Doctoral Degrees

Doctor of Philosophy with a Major in Biology

Doctor of Philosophy with a Major in Bioinformatics

Doctor of Philosophy with a Major in Computational Science and Engineering

SCHOOL OF CHEMISTRY & BIOCHEMISTRY

Bachelor's Degrees

Bachelor of Science in Biochemistry

Additional Options:

Business Option

International Plan

Research Option

Bachelor of Science in Chemistry

Additional Options:

Biochemistry Option

Business Option

International Plan

Materials Option

Polymer Option

Research Option

Master's Degrees

Master of Science in Chemistry

Master of Science in Computational Science and Engineering

Master of Science in Paper Science and Engineering

Doctoral Degrees

Doctor of Philosophy with a Major in Bioinformatics
Doctor of Philosophy with a Major in Chemistry
Doctor of Philosophy with a Major in Computational Science and Engineering
Doctor of Philosophy with a Major in Paper Science and Engineering

SCHOOL OF EARTH & ATMOSPHERIC SCIENCES

Bachelor's Degrees

Bachelor of Science in Earth and Atmospheric Sciences

Additional Options:

- Business Option
- International Plan
- Research Option

BS/MS E.A.S.

Master's Degrees

BS/MS E.A.S.
Master of Science in Earth and Atmospheric Sciences

Doctoral Degrees

Doctor of Philosophy with a Major in Earth and Atmospheric Sciencess

SCHOOL OF MATHEMATICS

Bachelor's Degrees

Bachelor of Science in Applied Mathematics

Additional Options:

- Business Option
- Business - Research Option
- Research Option

Bachelor of Science in Discrete Mathematics

Additional Options:

- Business Option
- Business - Research Option
- Research Option

Master's Degrees

Master of Science in Computational Science and Engineering
Master of Science in Mathematics
Master of Science in Quantitative and Computational Finance
Master of Science in Statistics

Doctoral Degrees

Doctor of Philosophy with a Major in Algorithms, Combinatorics, and Optimization
Doctor of Philosophy with a Major in Bioinformatics
Doctor of Philosophy with a Major in Computational Science and Engineering
Doctor of Philosophy with a Major in Mathematics

SCHOOL OF PHYSICS

Bachelor's Degrees

Bachelor of Science in Applied Physics

Additional Options:

- Business Option

Bachelor of Science in Physics

Additional Options:

- Business Option
- Research Option

Master's Degrees

Master of Science in Physics

Doctoral Degrees

Doctor of Philosophy with a Major in Physics

SCHOOL OF PSYCHOLOGY

Bachelor's Degrees

Bachelor of Science in Psychology

Additional Options:

- Business Option
- International Plan
- Research Option

Master's Degrees

Master of Science in Human-Computer Interaction

Master of Science in Psychology

Doctoral Degrees

Doctor of Philosophy with a Major in Psychology - Cognitive Aging

Doctor of Philosophy with a Major in Psychology - Cognitive and Brain Sciences

Doctor of Philosophy with a Major in Psychology - Engineering Psychology

Doctor of Philosophy with a Major in Psychology - Industrial/Organizational Psychology

Doctor of Philosophy with a Major in Psychology - Quantitative Psychology

Click here for the official Board of Regents' degree list

GRADUATE STUDENT WORK LOADS

Full-time students must be enrolled for at least twelve credit hours on a letter grade or pass/fail basis. As an exception, the advisor and school chair may allow up to 3 hours out of the minimum twelve to be taken on an audit basis in fall and spring semesters; in summer semesters, the advisor and school chair may allow up to six hours out of the twelve minimum to be taken on an audit basis. Hours in excess of the required twelve may be taken on any basis. Full-time students working exclusively on thesis research should be registered for 18 or more hours of 7000 or 9000 level courses (Master's or Doctoral Thesis) in fall and spring semesters, and for up to sixteen hours during summer semesters.

The maximum load for graduate students in good standing is twenty-one hours in fall/spring and sixteen hours in summer. The minimum load is 3 hours except for the semester of graduation. A student is permitted to register for only one hour of Master's or Doctoral Thesis (7000 or 9000) during the semester of graduation. This exception may be used only once for each degree.

Students with fellowships, assistantships, traineeships, tuition waivers, or student visas and those assigned to the Institute by the armed forces for the purpose of pursuing a degree are required to enroll full time. Part-time doctoral students engaged in research for their PhDs should register for the number of 9000 level hours consistent with the time they and their faculty advisors spend on the dissertation research.

GRADUATE POLICIES AND REGULATIONS

The Institute Graduate Curriculum Committee, with the approval of the Academic Senate, is responsible for establishing academic policy for the graduate programs; however, final authority rests with the Senate. This committee reserves the right to change requirements for degrees as may be appropriate. Students enrolled at the time such changes appear in the catalog have the privilege of following either the regulations stated in the catalog effective the semester in which they enrolled or the regulations in the Catalog that records the change.

This catalog records the Institute-wide policies and regulations that govern the graduate program. Schools may make additional rules concerning their programs and the pursuit of their degrees, but such rules may not contradict Institute policies and regulations.

TRANSFER OF CREDIT

A student may not apply for transfer credit until after matriculation at Georgia Tech. The courses to be transferred would typically be those appearing on the approved program of study form for the master's degree. A doctoral student normally does not request transfer credit. The rules relative to and the process for obtaining transfer of credit for graduate-level courses are as follows:

1. A student in a master's degree program requiring fewer than 33 semester credit hours may receive up to six hours of transfer credit for graduate-level courses taken at an institution accredited by a Canadian or U.S. regional accrediting board, or at a foreign school or university that has a signed partner agreement with Georgia Tech, and not used for credit toward another degree. A student in a master's degree program requiring 33 semester credit hours or more may receive up to nine hours of transfer credit for graduate-level courses taken at an institution accredited by a Canadian or U.S. regional accrediting board, or at a foreign school or university that has a signed partner agreement with Georgia Tech, and not used for credit toward another degree. The student must supply a current transcript for this evaluation.
2. To obtain transfer of credit, the student must complete the following procedure:
   a. The student will confer with the graduate advisor to ascertain whether the courses to be transferred are a logical part of the student's graduate program;
   b. If the courses are appropriate, the student will deliver to the school that teaches such courses a copy of the current transcript, necessary descriptive materials including catalog descriptions, and textbooks used for evaluation. The faculty of the appropriate school will determine the equivalent Georgia Tech course and the number of credit hours accepted. The faculty member who prepares the transfer credit form should have the school chair cosign it. The school should then send the form directly to the registrar with a copy of the student's Approved Program of Study attached;
   c. If the student wishes to transfer more than the number of hours permitted in paragraph 1), a petition must be submitted to the Institute Graduate Curriculum Committee including statements of possible justification for the granting of such a petition, transfer credit forms, and the recommendation of the student's school chair.
3. A joint enrollment student may receive graduate credit for up to one-third of the hours required for the degree for graduate courses taken at Emory University or Georgia State University provided that
   a. Georgia Tech does not offer such courses;
   b. the student's advisor and school chair approve the courses in writing in advance;
   c. and the student passes the courses with a *C* or better. Advance approval is satisfied when the courses appear on the student's proposed Program of Study.
4. A student may not receive transfer credit from universities outside the United States and Canada except if the courses were taken at a foreign school or university that is accredited by a Canadian or U.S. regional accrediting board or has a signed partner agreement with Georgia Tech. In any other case, an international student can obtain credit for courses previously taken but not applied toward another degree by filling out an Examination for Advanced Standing Authorization Request Form, paying the appropriate fee at the Bursar's Office, and passing the examination for advanced standing. The school or college that normally teaches the equivalent course will

administer any necessary examinations.

STAFF MEMBERS

No staff member beyond the rank of instructor in a school may work for a master's degree in that school. No new staff member with the rank of assistant professor in a school may work for a doctoral degree in that school.

GRADUATE STUDENTS

General Information
- Graduate Work Loads
- Policies And Regulations
- Transfer Credit
- Staff Members

Master's Degrees
- Master's Degrees
- Graduate Course Option
- Enrollment Requirements
- Program Of Study
- Master's Thesis
- Requirements

Doctoral Degrees
- General Information
- Doctoral Degrees
- Admission To Candidacy
  - General Information
  - Comprehensive Exams
  - Thesis Topic
  - Time Limit for Completion
- Dissertation
- Doctoral Examination
- Minor Field Of Study
- Other Requirements
  - Enrollment
  - Additional Graduation Req
  - Language
  - Responsible Conduct for Research

Colleges & Schools

COLLEGE OF ARCHITECTURE

- Master of Architecture
- Master of City and Regional Planning
- Master of Industrial Design
- Master of Science in Building Construction and Facility Management
- Master of Science in Geographic Information Science and Technology
- Master of Science in Music Technology
- Master of Science in Urban Design
- Master of Science with a Major in Architecture

COLLEGE OF COMPUTING

- Master of Science in Bioengineering
- Master of Science in Computational Science and Engineering
- Master of Science in Computer Science
- Master of Science in Human – Computer Interaction
- Master of Science in Information Security

COLLEGE OF ENGINEERING

- Master of Science in Aerospace Engineering
- Master of Science in Bioengineering
- Master of Biomedical Innovation and Development
- Master of Science in Chemical Engineering
- Master of Science in Civil Engineering
- Master of Science in Computational Science and Engineering
- Master of Science in Electrical and Computer Engineering
- Master of Science in Engineering Science and Mechanics
- Master of Science in Enterprise Transformation
- Master of Science in Environmental Engineering
- Master of Science in Health Systems
- Master of Science in Industrial Engineering
- Master of Science in International Logistics
- Master of Science in Materials Science and Engineering
- Master of Science in Mechanical Engineering
- Master of Science in Medical Physics
- Master of Science in Nuclear Engineering
- Master of Science in Operations Research
- Master of Science in Paper Science and Engineering
- Master of Science in Quantitative and Computational Finance
- Master of Science in Statistics
- Master of Science in Supply Chain Engineering
- Master of Science with a Major in Civil Engineering
- Master of Science with a Major in Environmental Engineering
- Master of Science with a Major in Materials Science and Engineering

- Dual MS program in ECE with GT Lorraine and European partner universities
- Dual MS program in ECE with Korea Advanced Institute of Science and Technology
- Dual MS program in ECE with Shanghai Jiao Tong University (SJTU)
- Dual MS program in ECE with The Politecnico di Torino (ITALY)

Dual MS program City & Regional Planning & Civil and Environmental Engineering

Professional Master's in Applied Systems Engineering

COLLEGE OF BUSINESS

Master of Business Administration

Master of Business Administration – Global Business

Master of Business Administration in Management of Technology

Master of Science in Quantitative and Computational Finance

Master of Science with a Major in Management

IVAN ALLEN COLLEGE OF LIBERAL ARTS

Master of Science in Digital Media

Master of Science in History and Sociology of Technology and Science

Master of Science in Human – Computer Interaction

Master of Science in International Affairs

Master of Science in Public Policy

Master of Science with a Major in Economics

COLLEGE OF SCIENCES

Master of Science in Bioinformatics

Master of Science in Biology

Master of Science in Chemistry

Master of Science in Computational Science and Engineering

Master of Science in Earth and Atmospheric Sciences

Master of Science in Human – Computer Interaction

Master of Science in Mathematics

Master of Science in Paper Science and Engineering

Master of Science in Physics

Master of Science in Prosthetics and Orthotics

Master of Science in Psychology

Master of Science in Quantitative and Computational Finance

Master of Science in Statistics

GRADUATE COURSE OPTION

Students completing both the bachelor's and master's in the same discipline at Georgia Tech may use up to 6 credit hours of graduate-level coursework in the major discipline for both degrees. Recognizing that some master's degree programs do not have a unique undergraduate counterpart program, and that some master's programs are offered by several schools, the term "discipline" in the prior sentence will be broadly interpreted in such cases. To qualify for this option, students must complete the undergraduate degree with a cumulative grade-point average of 3.5 or higher and complete the master's degree within a two-year period from the award date of the bachelor's degree.

ENROLLMENT REQUIREMENTS

While students may enroll in a master's degree program upon admission with either full or conditional standing, all conditions must be met and the student's status changed to "full" in order to graduate with the master's degree. Students enrolled for the master's degree must register for at least one semester per year in order for the original requirements for their degree to remain unchanged. In other cases, the school may reevaluate the student's credentials and impose additional degree requirements.

Students who have completed all coursework and are planning to submit a thesis in partial fulfillment of the requirements for a master's degree should register for research hours (MAJR 7000) consistent with a realistic appraisal of the amount of remaining thesis work and required faculty involvement. Students are not eligible to receive thesis guidance during any term for which they are not registered.

Students must normally enroll for a minimum of 3 hours each semester. Thesis students may enroll for one hour of thesis only in the semester of graduation. The Institute has no residency requirements for the master's degree. See Requirements for Award of the Master's Degree for more information.

If a student has completed all degree requirements and will no longer require any of the Institute's facilities or faculty time, the student may request an enrollment waiver.

PROGRAM OF STUDY

The student, in consultation with the faculty advisor, should prepare a program of study for the master's degree as a guide for planning an academic schedule. In some cases, the student's school may require that the proposed program be submitted to the chair of that school for approval.

The program of study must be completed satisfactorily within six consecutive calendar years and must include, at a minimum, thirty approved credit hours distributed as follows:

WITH THESIS:

- Minimum course credit hours in major field (a basic field of knowledge, not a department of specialization): 12
- Minimum course credit hours at 6000 to 9000 level: 12
- Minimum course credit hours for degree: 18
- Minimum Thesis hours (7000): 6
- Total credit hours: 30

WITHOUT THESIS: (MUST HAVE APPROVAL OF SCHOOL CHAIR)

- Minimum course credit hours in major field (a basic field of knowledge, not a department of specialization): 18
- Minimum course credit hours at 6000 to 9000 level: 21
- Total credit hours: 30

Some schools require more than the minimum credit hours. Refer to specific academic program descriptions for more detailed information.

Other than thesis hours, the student may use only 3 hours under the pass/fail designation in the approved program of study. As a rule, a course may not be counted toward more than one degree.

Undergraduate courses required for graduation in the discipline (designated degree) or discipline-of-origin (undesignated degree) at Georgia Tech may not be applied toward a master's degree. See Graduate Course Option for special exceptions in certain schools.

THE MASTER'S THESIS

To complete the requirements for the master's degree, the student must submit a master's thesis unless the school chair determines that additional coursework is of more importance in meeting approved objectives.

Students who meet the requirements for the master's degree by completing a combination of coursework and thesis must register for a minimum of six hours of thesis credit. (See Program of Study.)

A candidate whose program includes a thesis must present a treatise in which the results of an investigation directed by a member of the faculty of the Institute are set forth in clear, articulate form. The purpose of the thesis is to further educational development by requiring the student to plan, conduct, and report an organized and systematic study of importance.

The *Manual for Graduate Theses*, available at www.grad.gatech.edu, specifies the formatting requirements for the thesis. Information regarding electronic thesis/dissertation submission can also be found at this website.

REQUIREMENTS FOR AWARD OF THE MASTER'S DEGREE

1. Petition to graduate: To apply for master's degree candidacy, the student must submit to the registrar, during the semester prior to the anticipated final semester of work, the petition for a degree with the Approved Program of Study.
2. Approved Program of Study (listed on Graduate Petition for Degree): The student's Approved Program of Study must show that course requirements for the master's degree will be satisfied before or during the final semester.
3. The Approved Program of Study must be successfully completed within a period of no more than six consecutive calendar years.
4. Course work at the 1000 or 2000 level may not be used for a Master's degree. Although in most cases, course work at the 3000-level may not be used for a Master's degree; individual programs may allow a reasonable number of 3000-level courses in special circumstances, such as in a program that requires language proficiency. Individual programs may include 4000-level coursework, but this must be reported to the Institute Graduate Curriculum Committee as either part of the initial proposal or clearly stated when revising a program. These rules will be enforced at graduation.
5. The diploma of a candidate for a degree shall bear the date of the latest commencement ceremony for the term in which the degree is awarded with the exception of summer graduation diplomas, which will bear the date of the official end of term.
6. All requirements for the degree must be completed and certified by the Registrar's Office no later than forty-eight hours after final grades for the term are due. If a candidate for a degree is not certified by the appropriate deadline, the degree will not be awarded. It is the responsibility of the student to reactivate the degree petition for the following semester.
7. The student must have an overall grade-point average of at least 2.70 and satisfy all school academic requirements. Some schools may require a higher overall grade-point average. If so, this must be reported to the Institute Graduate Curriculum Committee through the initial proposal or as a curriculum change and will be considered an informational item on the agenda, not requiring a vote. These requirements will be enforced at graduation.
8. Some programs may have different grade or grade-point average requirements for certain segments of the program requirements, such as the core classes. If this is the case, those requirements must be reported to the Institute Graduate Curriculum Committee as part of the initial proposal or as part of a request for a curriculum change and will be enforced at graduation.
9. A grade of D is acceptable for course work to be considered completed, but individual programs may require grades of "C" or higher if they choose. The requirement of a C or higher in required courses must be reported to the Institute Graduate Curriculum Committee either as part of the initial proposal or as part of a curriculum change and will be considered an informational item on the agenda, not requiring a vote. These requirements will be enforced at graduation.
10. The Institute allows three hours on a pass/fail basis. However, individual programs may not allow pass/fail grades at all, or may restrict them to only specific portions of the degree such as electives. These restrictions must be reported to the Institute Graduate Curriculum Committee as part of the initial proposal or as part of a curriculum change and will be enforced at graduation.

11. The student must have completed satisfactorily any language requirement imposed by the major school.
12. The student must have passed any qualifying or comprehensive examinations required by the student's school.
13. The student must be registered for a minimum of 3 credit hours at all times, except that thesis students are permitted to enroll for one hour of MAJR 7000 in the semester of graduation. This reduction may be used only once. Students who have met all requirements for graduation before the last day of registration for the graduation term and who were registered the preceding semester may be eligible for a waiver of enrollment.
14. In addition, the student must have completed any required work outlined at the time of matriculation.

ADDITIONAL REQUIREMENTS FOR MASTER'S THESIS STUDENTS

1. The student must submit the thesis topic and committee form to the Graduate Studies Office for approval and make satisfactory progress on the thesis.
2. The student must submit the thesis electronically to the Georgia Tech Electronic Thesis and Dissertation website at http://etd.gatech.edu and receive final acceptance from the Graduate Studies Office.

LANGUAGE REQUIREMENT

The student's school may require a reading knowledge of one appropriate language.

THE DOCTORAL DEGREE

The degree of Doctor of Philosophy recognizes demonstrated proficiency and high achievement in research. After adequate preparation, the candidate must successfully complete both comprehensive examinations in his or her academic field and a searching and authoritative investigation of a special area in the chosen field, culminating in a written dissertation.

GRADUATE STUDENTS

General Information
- Graduate Work Loads
- Policies And Regulations
- Transfer Credit
- Staff Members

Master's Degrees
- Master's Degrees
- Graduate Course Option
- Enrollment Requirements
- Program Of Study
- Master's Thesis
- Requirements

Doctoral Degrees
- General Information
- Doctoral Degrees
- Admission To Candidacy
  - General Information
  - Comprehensive Exams
  - Thesis Topic
  - Time Limit for Completion
- Dissertation
- Doctoral Examination
- Minor Field Of Study
- Other Requirements
  - Enrollment
  - Additional Graduation Req
  - Language
  - Responsible Conduct for Research

Colleges & Schools

COLLEGE OF ARCHITECTURE

- Doctor of Philosophy with a Major in Architecture
- Doctor of Philosophy with a Major in Building Construction
- Doctor of Philosophy with a Major in City and Regional Planning
- Doctor of Philosophy with a Major in Music Technology

COLLEGE OF COMPUTING

- Doctor of Philosophy with a Major in Algorithms, Combinatorics, and Optimization
- Doctor of Philosophy with a Major in Bioengineering
- Doctor of Philosophy with a Major in Bioinformatics
- Doctor of Philosophy with a Major in Computational Science and Engineering
- Doctor of Philosophy with a Major in Computer Science
- Doctor of Philosophy with a Major in Human – Centered Computing
- Doctor of Philosophy with a Major in Robotics

COLLEGE OF ENGINEERING

- Doctor of Philosophy with a Major in Aerospace Engineering
- Doctor of Philosophy with a Major in Algorithms, Combinatorics, and Optimization
- Doctor of Philosophy with a Major in Bioengineering
- Doctor of Philosophy with a Major in Bioinformatics
- Doctor of Philosophy with a Major in Biomedical Engineering
- Doctor of Philosophy with a Major in Chemical Engineering
- Doctor of Philosophy with a Major in Civil Engineering
- Doctor of Philosophy with a Major in Computational Science and Engineering
- Doctor of Philosophy with a Major in Electrical and Computer Engineering
- Doctor of Philosophy with a Major in Engineering, Science, and Mechanics
- Doctor of Philosophy with a Major in Environmental Engineering
- Doctor of Philosophy with a Major in Industrial Engineering
- Doctor of Philosophy with a Major in Materials Science and Engineering
- Doctor of Philosophy with a Major in Mechanical Engineering
- Doctor of Philosophy with a Major in Nuclear and Radiological Engineering
- Doctor of Philosophy with a Major in Operations Research
- Doctor of Philosophy with a Major in Paper Science and Engineering
- Doctor of Philosophy with a Major in Robotics
- Joint Doctor of Philosophy with a Major in Electrical and Computer Engineering/the Politecnico di Milano - Italy
- Joint Doctor of Philosophy with a Major in Electrical and Computer Engineering/the Politecnico di Torino - Italy
- Joint Doctor of Philosophy with a Major in Materials Science and Engineering with PKU

COLLEGE OF BUSINESS

- Doctor of Philosophy with a Major in Management

IVAN ALLEN COLLEGE OF LIBERAL ARTS

- Doctor of Philosophy with a Major in Digital Media
- Doctor of Philosophy with a Major in Economics
- Doctor of Philosophy with a Major in History and Sociology of Technology and Science
- Doctor of Philosophy with a Major in International Affairs, Science, and Technology
- Doctor of Philosophy with a Major in Public Policy

Joint Doctor of Philosophy with a Major in Public Policy (GT – Georgia State University)

COLLEGE OF SCIENCES

Doctor of Philosophy with a Major in Algorithms, Combinatorics, and Optimization

Doctor of Philosophy with a Major in Applied Physiology

Doctor of Philosophy with a Major in Bioinformatics

Doctor of Philosophy with a Major in Biology

Doctor of Philosophy with a Major in Chemistry

Doctor of Philosophy with a Major in Computational Science and Engineering

Doctor of Philosophy with a Major in Earth and Atmospheric Sciences

Doctor of Philosophy with a Major in Mathematics

Doctor of Philosophy with a Major in Paper Science and Engineering

Doctor of Philosophy with a Major in Physics

Doctor of Philosophy with a Major in Psychology

ADMISSION TO CANDIDACY - GENERAL INFORMATION

Doctoral students customarily apply for degree candidacy after completing at least three semesters of coursework beyond the bachelor's degree.

TO QUALIFY FOR CANDIDACY, STUDENTS MUST

- complete all course requirements (except the minor);
- achieve a satisfactory scholastic record;
- pass the comprehensive examination;
- submit for approval to the school chair and the Graduate Studies Office (on behalf of the Vice Provost for Graduate Education and Faculty Affairs) a formal statement naming the dissertation reading committee and delineating the research topic; and
- Complete the requirements for training in Responsible Conduct for Research (RCR).

Upon satisfactory completion of these requirements, Graduate Studies formally admits the applicant to candidacy for the degree on behalf of the Vice Provost for Graduate Education and Faculty Affairs.

THE COMPREHENSIVE EXAMS

The comprehensive examination assesses both general knowledge of the degree area and specialized knowledge of the student's chosen research field. Each school is responsible for scheduling comprehensive examinations at least once a year, in the fall or spring, and for informing students of their scope. A guidance committee appointed by the chair of the school will advise each student in planning a program of study and preparing for the examination, partly through an initial evaluation of the student's background and interests, partly through periodic consultation to evaluate and aid the student's progress.

THESIS TOPIC

Prior to the student's admission to candidacy, the candidate will present for the approval of the school chair or college dean and the Graduate Studies Office a formal statement naming the student's dissertation advisor and setting forth the topic selected for investigation, the objectives the student hopes to gain, and the steps by which the student proposes to achieve them. The thesis topic must give promise of being either a genuine addition to the fundamental knowledge of the field or a new and better interpretation of facts already known.

TIME LIMIT FOR DEGREE COMPLETION

Students must complete all degree requirements within seven years from the end of the term in which they pass the comprehensive examination.

THE DISSERTATION

The dissertation must demonstrate that the candidate possesses powers of original thought, talent for research, and ability to organize and present findings. Dissertations must be submitted electronically via the Georgia Tech Electronic Thesis and Dissertation website at http://etd.gatech.edu.

The format of the dissertation (in general appearance) must meet the criteria published in the Manual for Graduate Theses, which is available at http://www.grad.gatech.edu/thesis.php. For other format or style questions, students should refer to style manuals appropriate to their disciplines.

THE DOCTORAL EXAMINATION

If the dissertation advisory committee finds the dissertation satisfactory, it schedules the candidate for an oral examination on the subject matter for the dissertation and the field in which it lies. An examining committee approved by the Graduate Studies office on behalf of the Vice Provost for Graduate Education and Faculty Affairs will conduct the examination. The candidate's academic unit should forward the announcement of the oral examination, including the names of the examining committee members, to Graduate Studies at least ten working days prior to the exam.

If a candidate should fail to pass the final oral examination, the examining committee may recommend permission for one additional examination. In the case of failure, the registrar does not receive a report of the examination results.

THE MINOR FIELD OF STUDY

In addition to an adequate knowledge of the major field of intended research, the student must demonstrate mastery of some other, smaller body of knowledge-the minor field-preferably outside the student's school. The purpose of the minor is to encourage a wider interest on the part of the student and to provide a broader basis for the evaluation of the student's capabilities.

The minor will normally consist of at least nine semester hours of work in related courses, chosen by the student in consultation with a guidance committee and approved by the Graduate Studies Office on behalf of the Vice Provost for Graduate Education and Faculty Affairs. These courses should be at the 6000 level or above, but the use of certain 4000 level courses may also be approved. Courses taken at other institutions may be included in the minor. Once the student has satisfactorily completed the minor, the school chair sends a confirmation, accompanied by course grades, to the Graduate Studies Office for final approval and recording.

Although the student need not complete the minor as a prerequisite for admission to candidacy, the minor must be completed and approved in order to be cleared for graduation.

ENROLLMENT REQUIREMENTS

The matriculation requirements are similar to those outlined for the master's degree with the addition of the residency requirement: doctoral students must spend at least two full-time semesters in residence at the Georgia Institute of Technology and ordinarily must complete research for the dissertation while in residence. Under special circumstances, candidates who have met the residency requirement may receive permission to pursue their research in absentia, provided the chair of the appropriate school approves and a faculty member directs the project. Although doctoral students working full-time on thesis research should normally be registered for a full course load of 9000 level dissertation hours each semester, this requirement is at the discretion of the advisor and the department: no minimum number of 9000 level dissertation hours is required for the doctoral degree. Doctoral students must be registered in the semester of graduation.

While no fixed course requirements apply for the doctoral degree, the student's thesis advisory committee may recommend graduate coursework in both a major and a minor field of study. Doctoral students must be registered in the semester of graduation. See Additional Graduation Requirements for more information.

If a student has completed all degree requirements and will no longer require any of the Institute's facilities or faculty time, the student may request an enrollment waiver.

ADDITIONAL GRADUATION REQUIREMENTS

In addition to requirements listed elsewhere, the candidate must:

1. Submit a petition for the degree to the Registrar's Office during the term preceding the anticipated final term of work. Petition forms are available from the Registrar's Office.
2. Have an overall grade-point average of at least 3.0 in order to graduate.
3. Register for a minimum of one hour of dissertation in the term of graduation. This reduction from the normal minimum course load of 3 hours may be used only once. If all requirements for graduation, including submission of the final approved dissertation, have been completed prior to the last day of registration, and the student was registered for the preceding term, the student may apply for a waiver of the enrollment requirement.
4. Publishing prior to the final submission of the completed dissertation to Graduate Studies via the Electronic Thesis and Dissertation Website.

If both the dissertation and the examination are satisfactory and the candidate has completed the requirements of residence, minor field, and any additional school requirements, the Graduate Studies Office will certify the candidate as qualified to receive the degree of Doctor of Philosophy.

LANGUAGE REQUIREMENTS

The student's school may require a reading knowledge of one or more foreign languages.

RESPONSIBLE CONDUCT FOR RESEARCH (RCR)

Effective Fall 2011, all incoming PhD students at Georgia Tech are required to complete Responsible Conduct of Research (RCR) training, which includes an online training component and face-to-face training. See the Graduate Studies Office for more information.

PROFESSIONAL EDUCATION

Professional Education
About Us
Degree Programs
Short Programs
English As A Second Language
Community Outreach

DEGREE PROGRAMS

Rise to the next level of competitive expertise with graduate programs available through distance learning. A valuable service of Georgia Tech Professional Education for more than thirty-four years, these programs are open to the public and also to corporate sponsors.

In annual rankings from *U.S. News & World Report*, Georgia Tech graduate programs consistently rank in the top ten. The proven excellence of Georgia Tech graduate degrees and the convenience of online delivery make them a compelling choice for working professionals.

The following Master of Science degrees are available online:

- **Engineering** - Aerospace Engineering, Electrical and Computer Engineering, Industrial Engineering, Mechanical Engineering, Medical Physics (with Emory University), and Operations Research
- **Computing** – Computer Science, Computational Science and Engineering, and Information Security

Click here for more information about an online Master of Science degree.

- Professional Master's in Applied Systems Engineering

Click here for more information about the Professional Master's in Applied Systems Engineering (PMASE). This hybrid-format degree offers the convenience that a practicing engineer will appreciate and the skills and knowledge that an employer values.

SHORT PROGRAMS

Georgia Tech Professional Education provides education and training for working professionals and industry partners. These short courses and programs vary in length from one to eight days and help professionals keep pace with the latest development in their fields – defense technology, economic development, engineering, executive education, information technology, OSHA, power systems, and supply chain and logistics.

Taught by Georgia Tech faculty and industry-experienced instructors, our short programs are available in flexible formats whether that is in the classroom, online, or a combination of both.

Professional Education offers thirty-eight programs through which participants can earn a professional certificate by taking several short courses within a sequence. In addition, participants may earn Continuing Education Units (CEUs).

Learn more at www.pe.gatech.edu.

ENGLISH AS A SECOND LANGUAGE

The Georgia Tech Language Institute has delivered high-quality, practical English language training for more than fifty years. It serves a spectrum of learners: students preparing for academic work in the United States; professionals looking for career improvement through better language skills; and people who want to increase their English proficiency for social reasons.

Through full- and part-time programs, in daytime and evening classes, our excellent instructors and support staff aim to make learning a productive and enjoyable experience. Students also have access to numerous extracurricular activities, including a conversation partner program, day trips, and volunteer work.

Course options include:

- Intensive English Program (IEP)
- Summer Short Courses
- Summer Graduate Prep Workshops
- Summer Pre-MBA Program

Learn more at www.esl.gatech.edu.

COMMUNITY OUTREACH

As a flagship institute of Georgia's public university system, Georgia Tech plays an acclaimed role not only in our state but, increasingly, around the globe. An important aspect of our service includes the work of CEISMC, the Center for Education Integrating Science, Mathematics and Computing.

From educational partnerships and research to fun programs for students, CEISMC advocates and participates in efforts for systemic changes that lead to improved appreciation and performance in STEM for all students at the level of K-12, especially those under represented in science, technology, engineering and mathematics. With a presence at Georgia Tech-Savannah, CEISMC brings its expertise to the people and schools of southeast Georgia.

Learn more about our programs:

- K-12
- NASA ePDN
- Distance Calculus
- Georgia's Race to the Top

UNDERGRADUATE MINOR GUIDELINES

An undergraduate minor is a defined program of study outside the student's major field. Minors are intended to broaden the student's education by encouraging and officially recognizing knowledge obtained by the student in fields other than their major.

Minors are typically offered by Schools which also offer a major. A program of study for the minor is outlined and it may include more than one option or "track". Tracks allow students to focus on an aspect of the academic field that is of particular interest to them. It is expected that there will be depth of the program of study and that specific educational objectives will be met upon completion of the minor.

Other minors are offered where there is no undergraduate degree granting program at Georgia Tech. These minors cover fields which are inherently multidisciplinary; i.e., ones that are covered in part by multiple degree granting academic programs. Multidisciplinary minors require particularly broad programs of study which include courses from multiple Schools and/or Colleges.

1. Ordinarily a minor may be offered only in a field in which Georgia Tech offers a degree program. Exceptions may be made if (a) the proposed minor is in a recognized academic field or discipline, and (b) the schools or departments have in place sufficient courses, faculty, and facilities to offer the minor.
2. All proposals for a minor must originate from the faculty of the academic unit offering the minor or, in the case of a multidisciplinary minor, from the faculty of each participating academic unit. Proposals must be endorsed by the appropriate College Dean(s) and by the Provost.
3. A minor program of study must comprise at least fifteen semester hours, of which at least nine semester hours are upper-division coursework i.e., courses numbered 3000 or above. The depth of the program of study should ensure that upon completion the student will have met the educational objectives established for the minor.
4. No more than 3 semester hours of Special Topics courses may be included in a minor program. No more than a total of 3 semester hours of Special Problems or Undergraduate Research courses may be included in the minimum fifteen hours of a minor program.
5. Courses required by name and number and/or used to satisfy Core Areas A through E in a student's major degree program may not be used to satisfy the course requirements for a minor. However, courses used in a minor may be used to fulfill electives (free electives, technical electives, etc.) required by the student's major degree program.
6. Ordinarily, courses in a student's major cannot be used to fulfill the requirements of a minor. See also #7.
7. An exception to #6 may be made in the case of a multidisciplinary minor where the Institute Undergraduate Curriculum Committee may approve the inclusion of up to 6 semester hours of courses in a student's major when their inclusion is justified as essential to meeting the stated educational objectives of the multidisciplinary minor. However, these courses cannot also be used to fulfill the requirements of the student's major.
8. All proposed minors should include a plan for advising students pursuing the minor and for approving a student's completion of the required program of study.
9. All undergraduate minors must be approved by the Institute Undergraduate Curriculum

Committee and by the Academic Senate. Multidisciplinary minors must also be approved by the Chancellor of the Board of Regents.

10. All minor programs are to be reviewed by one of the sponsoring units at least once every six years, as part of the regular program review in the sponsoring unit(s).
11. A student may select a minor in consultation with the advisor in the major field. The minor selected must be outside the student's major field. The student should then consult an advisor in the minor field, who can inform the student of any remaining requirements.
12. A course may not be used to fulfill the requirements of more than one minor or certificate.
13. All courses counting toward the minor must be taken on a letter-grade basis and completed with an overall grade-point average of at least 2.00.
14. When the student petitions for a degree, he/she should complete a petition for a minor and have it approved by the minor advisor. The petition for a minor will accompany the petition for the major degree when reviewed and approved by the major school. The two forms are then submitted to the Registrar. The minor will be conferred at the same time the degree is conferred and the degree and minor will be recorded on the student's transcript. The minor will not be on the diploma. Minors may not be conferred retroactively upon students who have graduated.

MINORS

The School of Aerospace Engineering offers a minor in aerospace engineering for students majoring in all disciplines (other than AE) at Georgia Tech.

Approved Program of Study for Undergraduate Minors
Georgia Institute of Technology
Office of the Registrar
2013-2014
Minor in Aerospace Engineering

Please type or print in ink:

Name (first/last):	GT Student ID Number:
GT Email Address:	Daytime Phone:
Major:	Anticipated Graduation Date:

In addition to the guidelines listed below, you are responsible for reviewing and following the general guidelines for minors: http://www.catalog.gatech.edu/academics/minorguide.php

A. The AE minor must comprise at least 15 semester hours, of which at least 9 semester hours are upper-division coursework (numbered 3000 or above). **Required courses include: AE 1350, 2020, 3310.**

B. The remainder of the minor requirements can be fulfilled with any AE course with the following exceptions: A maximum of 3 hours of AE 3355/4355 may be applied to satisfy the Minor. Maximum of 1 hour of research credit (AE 2699/4699) may be used. No more than 3 semester hours of Special Topics courses may be included. No Special Problems or Internship coursework may be used. Students may not use AE 3515 to satisfy their Minor requirements if they use ME 3015 or ECE 3085 to satisfy their Major requirements.

C. All courses counting towards the minor must be taken on a letter-grade basis and must be completed with an overall grade point average of at least 2.0. No more than one D grade is permitted in an AE Minor course; courses in which a D is earned may be repeated.

It is the **major advisor's responsibility** to verify that students are not using any courses required by name and number for their major, that they are not using any core area A-E courses (including humanities and social sciences), and that they are not using any courses for more than one minor or certificate. Free electives and technical electives may be used towards minors.

List the courses completed for the requested minor:

Course and Section	Course Title	Credit Hours	Grade	Semester Completed
AE 1350	Introduction to Aerospace Engineering	2		
AE 2020	Low-Speed Aerodynamics	3		
AE 3310	Introduction to Aerospace Vehicle Performance	3		

Student Signature:
Major School Signature:
Minor School Signature:

CERTIFICATE AND MINOR PROGRAMS

The College of Architecture offers certificate programs in Architectural and Design History, City and Regional Planning, and Music, as well as undergraduate minor programs in Architectural History, Music, and a multidisciplinary minor in Design/Arts History. Academic advisors in the relevant programs should be consulted for details.

UNDERGRADUATE MINOR IN MULTIDISCIPLINARY DESIGN/ARTS HISTORY

The College of Architecture offers a minor for students in all disciplines at Georgia Tech. The program, which is separate from the minor in Architectural History offered by the School of Architecture, requires completion of one of three available core survey sequences in the history of design (ARCH 2111 and 2112 [or ARCH 4105 and 4106] or COA 2241 and 2242 or ID 2202) in addition to four courses from at least three lists of courses in: history of architecture, the history of industrial design, the history of the city/landscape/garden, history of art and foreign study, and music history. Architecture and Industrial Design program students must select a core survey sequence outside their major, or select two additional electives from approved lists. Interested students should consult with your academic advisor for more details.

Approved Program of Study for Undergraduate Minors
Georgia Institute of Technology
Office of the Registrar
2013-2014
Minor in Architectural History

Please type or print in ink:

Name (first/last):	GT Student ID Number:
GT Email Address:	Daytime Phone:
Major:	Anticipated Graduation Date:

In addition to the guidelines listed below, you are responsible for reviewing and following the general guidelines for minors: http://www.catalog.gatech.edu/academics/minorguide.php

A. The Architectural History minor must comprise at least 18 semester hours, of which at least 12 semester hours are upper-division coursework (numbered 3000 or above). **Required courses include: ARCH 2111 and ARCH 2112 or ARCH 4105 and ARCH 4106. Completion of the minor must include four courses (six for Architecture Program students)from the following: ARCH 2115, 4113, 4114, 4117, 4118, 4119, 4120, 4123, 4124, 4125, 4821 or 4822 or 4823 (approval needed for those courses), COA 3115, 3116**

B. Cross registration course work in architectural history from other Atlanta universities may be considered on a case by case basis.

C. This minor requires an overall GPA of 2.5.

D. Special Problem courses cannot be used towards the minor.

It is the **major advisor's responsibility** to verify that students are not using any courses required by name and number for their major, that they are not using any core area A-E courses (including humanities and social sciences), and that they are not using any courses for more than one minor or certificate. Free electives and technical electives may be used towards minors.

List the courses completed for the requested minor:

Course and Section	Course Title	Credit Hours	Grade	Semester Completed

Student Signature:
Major School Signature:
Minor School Signature:

MINOR PROGRAMS

A minor in biology is available to all non-biology majors. The minor program provides a concentration in modern biological sciences and is especially valuable for students considering biomedical or environmental fields. The basic requirement is fifteen semester hours in biology, of which nine hours must be at the 3000 level or higher. Further information is available from the School's undergraduate coordinator.

Approved Program of Study for Undergraduate Minors
Georgia Institute of Technology
Office of the Registrar
2013-2014
Minor in Biology

Please type or print in ink:

Name (first/last):	GT Student ID Number:
GT Email Address:	Daytime Phone:
Major:	Anticipated Graduation Date:

In addition to the guidelines listed below, you are responsible for reviewing and following the general guidelines for minors: http://www.catalog.gatech.edu/academics/minorguide.php

The Biology minor must comprise at least 15 semester hours, of which at least 9 semester hours are upper-division coursework (numbered 3000 or above).

It is the **major advisor's responsibility** to verify that students are not using any courses required by name and number for their major, that they are not using any core area A-E courses (including humanities and social sciences), and that they are not using any courses for more than one minor or certificate. Free electives and technical electives may be used towards minors.

List the courses completed for the requested minor:

Course and Section	Course Title	Credit Hours	Grade	Semester Completed

Student Signature:
Major School Signature:
Minor School Signature:

MINOR PROGRAMS

The School of Chemistry and Biochemistry provides many courses that are of interest to students from the Schools of Biology, Chemical and Biomolecular Engineering, Materials Science and Engineering, and Biomedical Engineering, and students pursuing pre-health tracks. These students develop greater interest in chemistry while taking these courses and the proposed minor provides a means to enhance their knowledge in a structured and documented manner. Given the multi-disciplinary nature of science and engineering today, the option to pursue more in-depth study outside of the major in a manner documented on their transcripts will benefit graduates as they enter a competitive, global, and diverse workforce.

The minor is likely to be highly attractive to students majoring in areas outside of the Colleges of Sciences and Engineering who intend to apply to medical, pharmacy, and dental schools.

Approved Program of Study for Undergraduate Minors
Georgia Institute of Technology
Office of the Registrar
2013-2014
Minor in Biochemistry

Please type or print in ink:

Name (first/last):	GT Student ID Number:
GT Email Address:	Daytime Phone:
Major:	Anticipated Graduation Date:

In addition to the guidelines listed below, you are responsible for reviewing and following the general guidelines for minors: http://www.catalog.gatech.edu/academics/minorguide.php

The Biochemistry minor must comprise at least 15 credit hours of ***approved*** biochemistry related courses and must comprise CHEM 4511 and CHEM 4512 and at least 6 credit hours upper-division coursework (numbered 3000 or above).

It is the **major advisor's responsibility** to verify that students are not using any courses required by name and number for their major, that they are not using any core area A-E courses (including humanities and social sciences), and that they are not using any courses for more than one minor or certificate. Free electives and technical electives may be used towards minors.

List the courses completed for the requested minor:

Course and Section	Course Title	Credit Hours	Grade	Semester Completed
CHEM 4511				
CHEM 4512				

Student Signature:
Major School Signature:
Minor School Signature:

Georgia Tech

SCHOOL OF CHEMISTRY AND BIOCHEMISTRY

BIOCHEMISTRY
MINOR DEGREE PROGRAM

The Biochemistry minor must comprise at least 15 credit hours of ***approved*** biochemistry related courses and must comprise CHEM 4511 and CHEM 4512 and at least 6 credit hours upper-division coursework (numbered 3000 or above)

1) Courses at the 1000 level may NOT be used toward the minor.
2) A maximum of 3 credit hours of Special Topics (in biochemistry) courses may be included in the minimum 15 credit hours of a minor program.
3) A maximum of 3 credit hours of CHEM 4699 (Independent Research) may be used toward the minor.
4) All courses counting toward the minor must be completed with an overall average GPA of at least 2.0. A minimum of six of these credit hours must be taken in residence at Georgia Tech.
5) All courses counting toward the minor must be completed with on a letter grade basis.

6) Courses required by name and number and/or used to satisfy Core Areas A through E in a student's major degree program may not be used in satisfying the course requirements for this minor. However, courses used in a minor also may be used to fulfill free electives or technical electives.

The 15 credit hours applied to the Biochemistry Minor must be comprised of CHEM 4511 and 4512 and 9 hours of any combination of the courses (3 semester hour each) listed below and still meet requirements 1-6 above. If CHEM 2312 is a major degree requirement (item 6 above), one of the following approved chemistry courses may be substituted.

CHEM 2312	Organic Chemistry II (*pre-requisite to CHEM 4511)
CHEM 3411	Physical Chemistry I (**pre-requisite to CHEM 4521)
CHEM 4511*/6501	Biochemistry I
CHEM 4512/6502	Biochemistry II
CHEM 4521**	Biophysical chemistry
CHEM 4581	Biochemistry Lab I
CHEM 4582	Biochemistry Lab II
CHEM 4699	Independent Research
CHEM 4803	Special Topics (with approval of Director, Undergraduate Studies)
CHEM 65XX	Graduate level biochemistry courses
CHEM 85XX	Graduate level biochemistry courses

Contact minor@chemistry.gatech.edu for further information or questions.

MINOR IN BIOMEDICAL ENGINEERING

The goal of the minor program is to educate students in how to apply engineering fundamentals to solve problems in biology and medicine. The program should be of particular interest to those students who plan to pursue advanced degrees in biomedical engineering and/or medicine.

Approved Program of Study for Undergraduate Minors
Georgia Institute of Technology
Office of the Registrar
2013-2014
Minor in Biomedical Engineering

Please type or print in ink:

Name (first/last):	GT Student ID Number:
GT Email Address:	Daytime Phone:
Major:	Anticipated Graduation Date:

In addition to the guidelines listed below, you are responsible for reviewing and following the general guidelines for minors: http://www.catalog.gatech.edu/academics/minorguide.php

The Biomedical Engineering minor must comprise at least 15 semester hours, of which at least 9 semester hours are upper-division coursework (numbered 3000 or above). **Required courses include APPH/BIOL 3751 or BMED 3100 and BMED/CHBE/ECE/ME/MSE 1750 or BMED 1300. In addition, please select from the following:**

Biosciences Coursework (minimum of 3 hours required):
Choose from the following:

APPH	4100, 4200, 4600;
BIOL	1510, 2344, 3340, 4478, 4570;
BIOL/BMED	4752;
CHEM	3511, 4511, 4512

Biomedical Engineering Coursework (minimum of 6 hours required):
Choose from the following:

BMED/ME	4757, 4758;
BMED	4400, 4477, 4500, 4783;
BMED/CHBE/CHEM	4765;
BMED/ECE	4783, 4784;
BMED/MSE	4751;
BMED/NRE/MP	4750;
BMED/CHBE/ECE/ME	4781
BMED/CHBE/ECE/ME	4782

It is the **major advisor's responsibility** to verify that students are not using any courses required by name and number for their major, that they are not using any core area A-E courses (including humanities and social sciences), and that they are not using any courses for more than one minor or certificate. Free electives and technical electives may be used towards minors.

List the courses completed for the requested minor:

Course and Section	Course Title	Credit Hours	Grade	Semester Completed
BMED 3100 or APPH/BIOL 3751	Systems Physiology or Human Anatomy and Physiology	3		
BMED 1300 or BMED/CHBE/ECE/ME/MSE 1750	Problems in BMED I or Introduction to Bioengineering	3		

Student Signature:
Major School Signature:
Minor School Signature:

Approved Program of Study for Undergraduate Minors
Georgia Institute of Technology
Office of the Registrar
2013-2014
Minor in Chemistry

Please type or print in ink:

Name (first/last):	GT Student ID Number:
GT Email Address:	Daytime Phone:
Major:	Anticipated Graduation Date:

In addition to the guidelines listed below, you are responsible for reviewing and following the general guidelines for minors: http://www.catalog.gatech.edu/academics/minorguide.php

The Chemistry minor must comprise at least 15 credit hours of approved chemistry related courses, of which at least 9 credit hours are upper-division coursework (numbered 3000 or above).

It is the **major advisor's responsibility** to verify that students are not using any courses required by name and number for their major, that they are not using any core area A-E courses (including humanities and social sciences), and that they are not using any courses for more than one minor or certificate. Free electives and technical electives may be used towards minors.

List the courses completed for the requested minor:

Course and Section	Course Title	Credit Hours	Grade	Semester Completed

Student Signature:
Major School Signature:
Minor School Signature:

SCHOOL OF CHEMISTRY AND BIOCHEMISTRY

CHEMISTRY
MINOR DEGREE PROGRAM

The Chemistry minor will comprise at least 15 credit hours of ***approved*** CHEM classes, of which at least 9 credit hours are upper-division coursework (numbered 3000 or above).

1) Courses at the 1000 level may NOT be counted toward the minor.
2) A maximum of 3 credit hours of Special Topics courses may be included in the minimum 15 credit hours of a minor program.
3) A maximum of 3 credit hours of CHEM 4699 (Undergraduate Research) may be used toward the minor.
4) All courses counting toward the minor must be completed with an average GPA of at least 2.0. A minimum of six of these credit hours must be taken in residence at Georgia Tech.
5) All courses counting toward the minor must be completed on a letter-grade basis.
6) Courses required by name and number and/or used to satisfy Core Areas A through E in a student's major degree program may not be used in satisfying the course requirements for a minor. Courses used in a minor also may be used to fulfill free electives, or technical electives.

The 15 credit hours applied to the chemistry minor must be comprised of any combination of the following courses listed below and still meet requirements 1-6 above:

CHEM 2211 Quantitative Analysis (3 credits)
CHEM 2311 Organic Chemistry I (3 credits)
CHEM 2312 Organic Chemistry II (3 credits)
CHEM 2380 Synthesis Lab I (2 credits)
CHEM 3111 Inorganic Chemistry (3 credits)
CHEM 3211 Analytical Chemistry (5 credits)
CHEM 3281 Instrumental Analysis (3 credits)
CHEM 3380 Synthesis Lab II (3 credits)
CHEM 3411 Physical Chemistry I (3 credits)
CHEM 3412 Physical Chemistry II (3 credits)
CHEM 3481 Physical Chemistry Lab (2 credits)

----Continued next page----

CHEM 3511 Survey of Biochemistry (3 credits)
CHEM 3700 Alternative Energy (3 credits)
CHEM 4311 Advanced Organic Chemistry (3 redits)
CHEM 4341 Applied Spectroscopy (3 credits)
CHEM 4452 Chemistry of the Solid State (3 credits)
CHEM 4699 Undergraduate Research
CHEM 4740 Atmospheric Chemistry (3 credits)
CHEM 4775 Polymer Science and Engr I (3 credits)
CHEM 4776 Polymer Science and Engr II (3 credits)
CHEM 4803 Special Topics (with approval of Director, Undergraduate Studies)
CHEM 6XXX Chemistry Elective (with approval of Director, Undergraduate Studies)
CHEM 8XXX Graduate courses (with approval of Director, Undergraduate Studies)

Contact minor@chemistry.gatech.edu for further information or questions.

MINOR PROGRAMS

The School of Modern Languages offers minors in Chinese, French, German, Japanese, Korean, and Spanish as well as in Russian Studies. This program is designed for students who wish to develop their language skills to at least an intermediate level and to provide themselves with a greater depth than possible with a certificate program.

1. Students must earn 15 credit hours of language electives in a single language beyond the 2002 course.
    1. Beyond the 2001 course for CHIN/JAPN/KOR/Russian Studies
    2. Beyond the 2002 course for FREN/GRMN/SPAN
    3. Students pursuing a minor in Russian Studies should take their electives in at least two different departments/schools (Modern Languages, International Affairs, and/or Literature, Communication, and Culture)
    4. At least nine hours must be taken at the 3000 level or above
2. A maximum of 9 semester hours of transfer credit is allowed in each minor. All courses counting toward a minor must be taken on a letter-grade basis, and a grade of *C* or better must be received in each course.

Students wishing to pursue one or more of these minors should declare the minor by filling out the minor change form with the Director of Undergraduate Studies in Modern Languages

Approved Program of Study for Undergraduate Minors
Georgia Institute of Technology
Office of the Registrar
2013-2014
Minor in Chinese, French, German, Japanese, Korean, Russian Studies or Spanish

Please type or print in ink:

Name (first/last):	GT Student ID Number:
GT Email Address:	Daytime Phone:
Major:	Minor:
Anticipated Graduation Date:	

In addition to the guidelines listed below, you are responsible for reviewing and following the general guidelines for minors: http://www.catalog.gatech.edu/academics/minorguide.php

1. Students must earn 15 credit hours of language electives in a single language.
   a. Beyond the 2001 course for CHIN/JAPN/KOR/Russian Studies
   b. Beyond the 2002 course for FREN/GRMN/SPAN
   c. Students pursuing a minor in Russian Studies should take their electives in at least two different departments/schools (Modern Languages, International Affairs, and/or Literature, Media, and Communication)
   d. At least 9 hours must be taken at the 3000 level or above
2. A maximum of 9 semester hours of transfer credit is allowed in each minor. All courses counting toward a minor must be taken on a letter-grade basis, and a grade of C or better must be received in each course..

It is the **major advisor's responsibility** to verify that students are not using any courses required by name and number for their major, that they are not using any core area A-E courses (including humanities and social sciences), and that they are not using any courses for more than one minor or certificate. Free electives and technical electives may be used towards minors.

List the courses completed for the requested minor:

Course and Section	Course Title	Credit Hours	Grade	Semester Completed

Student Signature:
Major School Signature:
Minor School Signature:

MINOR IN COMPUTATIONAL DATA ANALYSIS

The Computational Data Analysis minor will provide students with the necessary mathematical and statistical background to develop and apply various data analysis techniques to real world datasets. The minor has three main objectives related to knowledge, skills, and application: (1) provide students with foundational knowledge of topics such as probability and statistics, algorithms and data structures to solve data analysis problems arising in practical applications, (2) develop students' skill in software development techniques using one or more high level programming languages relevant to data analytics, (3) enable students to effectively apply computational methods to solve exemplar data analysis problems arising in relevant applications.

MINOR IN SCIENTIFIC AND ENGINEERING COMPUTING

The Scientific and Engineering Computing minor provides undergraduate students with computational and numerical skills and knowledge to augment their studies in their major programs. Core courses in mathematics and computing provide broad, general skills in numerical methods, algorithms, and scientific software development. Elective courses provide depth in applying numerical computation to problems in the field of the student's major.

Computational methods are now used routinely in virtually all fields of science and engineering, and are becoming more common in the social sciences. They have become essential to understand natural and human-created phenomena and systems. Computation has been described as the third paradigm for scientific discovery and innovation, along with theory and experimentation. A minor curriculum in computation is a natural complement to major programs in science, engineering and the social sciences.

Approved Program of Study for Undergraduate Minors
Georgia Institute of Technology
Office of the Registrar
2013-2014
Minor in Computational Data Analysis

Please type or print in ink:

Name (first/last):	GT Student ID Number:
GT Email Address:	Daytime Phone:
Major:	Anticipated Graduation Date:

In addition to the guidelines listed below, you are responsible for reviewing and following the general guidelines for minors: http://www.catalog.gatech.edu/academics/minorguide.php

This minor must comprise at least 15 semester hours, of which at least 9 semester hours are upper-division coursework (numbered 3000 or above).

A. **Required courses 6 hours:** CX 4240, CX 4242
B. **Choose 3 credit hours from below for Introduction to Probability and Statistics:**
MATH 3215, MATH 3225, ECE 3077, ISYE 202
C. **Choose 3 credit hours from below for Computational Methods:**
CX 4010, CS 4400, CS 4460
D. **Choose 3 credit hours from below for Elective:**
BIOL 4150, CEE 3010, CS 3630, CS 4400, CS 4460, CS 4495, CX 4010,
EAS 4430, EAS 4480, ECE 4270, ECE 4560, ECE4580,
ECE 4823 (Game Theory and Multi-agent Systems), ISYE 4311, ISYE 3232
MGT 4067, MGT 4803 (Introduction to Fixed Income), PSYC 4031

See notes on page below for additional details.

It is the **major advisor's responsibility** to verify that students are not using any courses required by name and number for their major, that they are not using any core area A-E courses (including humanities and social sciences), and that they are not using any courses for more than one minor or certificate. Free electives and technical electives may be used towards minors.

List the courses completed for the requested minor:

Course and Section	Course Title	Credit Hours	Grade	Semester Completed
CX 4240	Introduction to Computing for Data Analysis	3		
CX 4242	Data and Visual Analytics	3		

Student Signature:
Major School Signature:
Minor School Signature:

Prerequisites

1. Math through Calculus III
2. CS 1371 Computing for Engineers

Required Core Courses (4 core courses)

1. CX 4240. Introduction to Computing for Data Analysis
2. Introduction to Probability and Statistics (one of the following: MATH 3215, MATH 3225, ECE 3077, ISYE 2027; students who have taken CEE/ISYE/MATH 3770 may be required to increase their background in probability, and will be considered on a case-by-case basis)
3. Computational Methods (one of CX 4010 - Computational Problem Solving for Scientists and Engineers (new course), CS 4400 - Introduction to Database Systems, or CS 4460 - Introduction to Information Visualization)
4. CX 4242. Data and Visual Analytics

Data Analysis Elective

Students will select one among a set of courses where they take an additional course in data analysis methods or systems, or may apply data analysis techniques in the context of a specific domain. A list of potential candidates appear below (additional courses may be approved by the minor coordinator or committee).

ECE 4270 - Fundamentals of Digital Signal Processing
ECE 4560 - Intro to Automation and Robotics
ECE4580 - Computational Computer Vision
ECE 4823 - Game Theory and Multiagent Systems
CS 3630 - Introduction to perception and Robotics
CS 4400 - Introduction to Database Systems
CS 4460 - Introduction to Information Visualization
CS 4495 - Computer Vision
CX 4010 - Computational Problem Solving for Scientists and Engineers
ISYE 4311 - Capital Investment Analysis
ISYE 3232 - Stochastic Manufacturing & Service Systems
MGT 4067 - Financial Markets: Trading and Structure
MGT 4803 - Introduction to Fixed Income
BIOL 4150 - Genomics & Applied Bioinformatics
PSYC 4031 - Applied Experimental Psychology
EAS 4430 - Remote Sensing and Data Analysis
EAS 4480 - Environmental Data Analysis
CEE 3010 - Geomatics

MINOR IN COMPUTER SCIENCE

For those students majoring in disciplines other than computer science who wish to gain a deeper understanding of computing and its applications, the College of Computing offers the minor in computer science. Click here for additional information.

MINOR IN COMPUTING AND MANAGEMENT

The Computing and Management Minor is offered by the Colleges of Computing and Management. It is a course of study that enables undergraduate students in computing and management to learn one another's language through innovative coursework in their respective fields and interdisciplinary team projects focused on solving real-world problems presented by corporate affiliates.

The curriculum of the Minor in Computing and Managements requires the completion of 22 semester credit hours.

The minimum, cumulative GPA required for applicants to the Denning T&M Program is 3.0. In order for accepted students to maintain their eligibility to remain in the T&M Program, they must continue to maintain a minimum, cumulative GPA of 2.9 and maintain a 3.0 GPA for the classes required by the Denning T&M curriculum. All courses must be taken for a letter grade; pass/fail credit is not allowed.

Computing students will gain an understanding of market forces and the financial implications of information technology investment.

Business students will gain an understanding of the relationship between software infrastructure, business processes, organizational structure and business strategies to effectively manage information technology resource, as well as the capabilities and constraints within the computing disciplines.

COMPUTING AND BUSINESS MAJORS:

- will learn the skills necessary to work in multi-disciplinary teams by analyzing and developing comprehensive solutions to real-world technology and business based problems.
- will demonstrate leadership, communication, and team working skills that will prepare them for successful careers in a technology driven business world.
- will learn how to identify and capitalize on emerging technologies, and then analyze and design information systems from a managerial viewpoint vs. computer science perspective.
- will learn how to identify and address issues that are critical to the creation of a successful solution of a multi-disciplinary problem using a business and technical perspective and a global context.

Application and course descriptions are available at: http://mgt.gatech.edu/tm

Approved Program of Study for Undergraduate Minors
Georgia Institute of Technology
Office of the Registrar
2013-2014
Minor in Computer Science – Devices Track

Please type or print in ink:

Name (first/last):	GT Student ID Number:
GT Email Address:	Daytime Phone:
Major:	Anticipated Graduation Date:

In addition to the guidelines listed below, you are responsible for reviewing and following the general guidelines for minors: http://www.catalog.gatech.edu/academics/minorguide.php

The Computer Science –Devices track minor must comprise at least 17 semester hours of computer science coursework of which at least 9 hours must be at the 3000 level or higher. **Prerequisite for the minor is CS 1331 or CS 1372 (ECE majors) – prerequisite must be taken but not included in the required 17 hours.**

A. Required courses: CS 2110, CS 2200, CS 3251, one CS course from Devices in the Real World, and CS 3651 or one CS 3000/4000 level course from one of the elective categories in the Devices Thread.
B. No Special Problems or Internship coursework may be used towards the CS minor.
C. All courses must be completed with a grade of C or better.
D. Only CS courses are included in the minor.

It is the **major advisor's responsibility** to verify that students are not using any courses required by name and number for their major, that they are not using any core area A-E courses (including humanities and social sciences), and that they are not using any courses for more than one minor or certificate. Free electives and technical electives may be used towards minors.

List the courses completed for the requested minor:

Course and Section	Course Title	Credit Hours	Grade	Semester Completed
Prerequisite: CS 1331 or 1372		3		
CS 2110	Computer Organization and Programming	4		
CS 2200	Systems and Networks	4		
CS 3251	Computer Networking I	3		
CS		3		
CS		3		

Student Signature:
Major School Signature:
Minor School Signature:

Approved Program of Study for Undergraduate Minors
Georgia Institute of Technology
Office of the Registrar
2013-2014
Minor in Computer Science – Information Internetworks Track

Please type or print in ink:

Name (first/last):	GT Student ID Number:
GT Email Address:	Daytime Phone:
Major:	Anticipated Graduation Date:

In addition to the guidelines listed below, you are responsible for reviewing and following the general guidelines for minors: http://www.catalog.gatech.edu/academics/minorguide.php

The Computer Science – Information Internetworks track minor must comprise at least 17 semester hours of computer science coursework of which at least 9 hours must be at the 3000 level or higher. **Prerequisite for the minor is CS 1331 or CS 1372 (ECE majors)–prerequisite must be taken but not included in the required 17 hours.**

A. Required courses: CS 2110, CS 2200, two CS courses from Introduction to Information Management, and one CS course from Advanced Information Management.
B. No Special Problems or Internship coursework may be used towards the CS minor.
C. All courses must be completed with a grade of C or better.
D. Only CS courses are included in the minor.

It is the **major advisor's responsibility** to verify that students are not using any courses required by name and number for their major, that they are not using any core area A-E courses (including humanities and social sciences), and that they are not using any courses for more than one minor or certificate. Free electives and technical electives may be used towards minors.

List the courses completed for the requested minor:

Course and Section	Course Title	Credit Hours	Grade	Semester Completed
Prerequisite: CS 1331 or 1372		3		
CS 2110	Computer Organization and Programming	4		
CS 2200	Systems and Networks	4		
CS		3		
CS		3		
CS		3		

Student Signature:
Major School Signature:
Minor School Signature:

Approved Program of Study for Undergraduate Minors
Georgia Institute of Technology
Office of the Registrar
2013-2014
Minor in Computer Science – Intelligence Track

Please type or print in ink:

Name (first/last):	GT Student ID Number:
GT Email Address:	Daytime Phone:
Major:	Anticipated Graduation Date:

In addition to the guidelines listed below, you are responsible for reviewing and following the general guidelines for minors: http://www.catalog.gatech.edu/academics/minorguide.php

The Computer Science – Intelligence track minor must comprise at least 16 semester hours of computer science coursework of which at least 9 hours must be at the 3000 level or higher. **Prerequisite for the minor is CS 1331–prerequisite must be taken but not included in the required 16 hours.**

A. Required courses: CS 1332, CS 2110, CS 3600, one CS course from Embodied Intelligence, and one CS course from Approaches to Intelligence.
B. No Special Problems or Internship coursework may be used towards the CS minor.
C. All courses must be completed with a grade of C or better.
D. Only CS courses are included in the minor.

It is the **major advisor's responsibility** to verify that students are not using any courses required by name and number for their major, that they are not using any core area A-E courses (including humanities and social sciences), and that they are not using any courses for more than one minor or certificate. Free electives and technical electives may be used towards minors.

List the courses completed for the requested minor:

Course and Section	Course Title	Credit Hours	Grade	Semester Completed
Prerequisite: CS 1331	Introduction to Object Oriented Programming	3		
CS 1332	Data Structures and Algorithms for Applications	3		
CS 2110	Computer Organization and Programming	4		
CS 3600	Introduction to Artificial Intelligence	3		
CS		3		
CS		3		

Student Signature:
Major School Signature:
Minor School Signature:

Approved Program of Study for Undergraduate Minors
Georgia Institute of Technology
Office of the Registrar
2013-2014
Minor in Computer Science – Media Track

Please type or print in ink:

Name (first/last):	GT Student ID Number:
GT Email Address:	Daytime Phone:
Major:	Anticipated Graduation Date:

In addition to the guidelines listed below, you are responsible for reviewing and following the general guidelines for minors: http://www.catalog.gatech.edu/academics/minorguide.php

The Computer Science – Media track minor must comprise at least 19 semester hours of computer science coursework of which at least 9 hours must be at the 3000 level or higher. **Prerequisite for the minor is CS 1331–prerequisite must be taken but not included in the required 19 hours.**

A. Required courses: CS 1332, CS 2110 or 2261, CS 2340, CS 3451, and two CS courses from Media Technologies.
B. No Special Problems or Internship coursework may be used towards the CS minor.
C. All courses must be completed with a grade of C or better.
D. Only CS courses are included in the minor.

It is the **major advisor's responsibility** to verify that students are not using any courses required by name and number for their major, that they are not using any core area A-E courses (including humanities and social sciences), and that they are not using any courses for more than one minor or certificate. Free electives and technical electives may be used towards minors.

List the courses completed for the requested minor:

Course and Section	Course Title	Credit Hours	Grade	Semester Completed
Prerequisite: CS 1331	Introduction to Object Oriented Programming	3		
CS 1332	Data Structures and Algorithms for Applications	3		
CS 2110 or 2261		4		
CS 2340	Objects and Design	3		
CS 3451	Computer Graphics	3		
CS		3		
CS		3		

Student Signature:
Major School Signature:
Minor School Signature:

Approved Program of Study for Undergraduate Minors
Georgia Institute of Technology
Office of the Registrar
2013-2014
Minor in Computer Science – People Track

Please type or print in ink:

Name (first/last):	GT Student ID Number:
GT Email Address:	Daytime Phone:
Major:	Anticipated Graduation Date:

In addition to the guidelines listed below, you are responsible for reviewing and following the general guidelines for minors: http://www.catalog.gatech.edu/academics/minorguide.php

The Computer Science – People track minor must comprise at least 15 semester hours of computer science coursework of which at least 9 hours must be at the 3000 level or higher. **Prerequisite for the minor is CS 1331–prerequisite must be taken but not included in the required 15 hours.**

A. Required courses: CS 2340, two CS courses from Human-Centered Technology, one CS course from User Support Technology, and another CS course from User Support Technology or one CS 3000/4000 level course from one of the elective categories in the People Thread.
B. No Special Problems or Internship coursework may be used towards the CS minor.
C. All courses must be completed with a grade of C or better.
D. Only CS courses are included in the minor.

It is the **major advisor's responsibility** to verify that students are not using any courses required by name and number for their major, that they are not using any core area A-E courses (including humanities and social sciences), and that they are not using any courses for more than one minor or certificate. Free electives and technical electives may be used towards minors.

List the courses completed for the requested minor:

Course and Section	Course Title	Credit Hours	Grade	Semester Completed
Prerequisite: CS 1331	Introduction to Object Oriented Programming	3		
CS 2340	Objects and Design	3		
CS		3		
CS		3		
CS		3		
CS		3		

Student Signature:
Major School Signature:
Minor School Signature:

Approved Program of Study for Undergraduate Minors
Georgia Institute of Technology
Office of the Registrar
2013-2014
Minor in Computer Science – Systems and Architecture Track

Please type or print in ink:

Name (first/last):	GT Student ID Number:
GT Email Address:	Daytime Phone:
Major:	Anticipated Graduation Date:

In addition to the guidelines listed below, you are responsible for reviewing and following the general guidelines for minors: http://www.catalog.gatech.edu/academics/minorguide.php

The Computer Science – Systems and Architecture track minor must comprise at least 17 semester hours of computer science coursework of which at least 9 hours must be at the 3000 level or higher. **Prerequisite for the minor is CS 1331 or CS 1372 (ECE majors) – prerequisite must be taken but not included in the required 17 hours.**

A. Required courses: CS 2110, CS 2200, CS 3210, one CS course from Platform Interfaces, and one CS course from Computer Architectures.
B. No Special Problems or Internship coursework may be used towards the CS minor.
C. All courses must be completed with a grade of C or better.
D. Only CS courses are included in the minor.

It is the **major advisor's responsibility** to verify that students are not using any courses required by name and number for their major, that they are not using any core area A-E courses (including humanities and social sciences), and that they are not using any courses for more than one minor or certificate. Free electives and technical electives may be used towards minors.

List the courses completed for the requested minor:

Course and Section	Course Title	Credit Hours	Grade	Semester Completed
Prerequisite: CS 1331 or 1372		3		
CS 2110	Computer Organization and Programming	4		
CS 2200	Systems and Networks	4		
CS 3210	Design of Operating Systems	3		
CS		3		
CS		3		

Student Signature:
Major School Signature:
Minor School Signature:

Approved Program of Study for Undergraduate Minors
Georgia Institute of Technology
Office of the Registrar
2013-2014
Minor in Computer Science – Theory Track

Please type or print in ink:

Name (first/last):	GT Student ID Number:
GT Email Address:	Daytime Phone:
Major:	Anticipated Graduation Date:

In addition to the guidelines listed below, you are responsible for reviewing and following the general guidelines for minors: http://www.catalog.gatech.edu/academics/minorguide.php

The Computer Science – Theory track minor must comprise at least 15 semester hours of computer science coursework of which at least 9 hours must be at the 3000 level or higher. **Prerequisite for the minor is CS 1331–prerequisite must be taken but not included in the required 15 hours.**

A. Required courses: CS 1332, CS 2050 or CS 2051, CS 3510 or CS 3511, CS 4510, and CS 4540.
B. No Special Problems or Internship coursework may be used towards the CS minor.
C. All courses must be completed with a grade of C or better.
D. Only CS courses are included in the minor.

It is the **major advisor's responsibility** to verify that students are not using any courses required by name and number for their major, that they are not using any core area A-E courses (including humanities and social sciences), and that they are not using any courses for more than one minor or certificate. Free electives and technical electives may be used towards minors.

List the courses completed for the requested minor:

Course and Section	Course Title	Credit Hours	Grade	Semester Completed
Prerequisite: CS 1331	Introduction to Object Oriented Programming	3		
CS 1332	Data Structures and Algorithms for Applications	3		
CS 2050 or 2051	Discrete Math for CS	3		
CS 3510 or 3511	Design and Analysis of Algorithms	3		
CS 4510	Automata and Complexity Theory	3		
CS 4540	Advanced Algorithms	3		

Student Signature:
Major School Signature:
Minor School Signature:

SCHELLER COLLEGE OF BUSINESS

About the College
Accreditation
Degrees Offered
Undergraduate
BS Business Administration
Description
Degree Requirements
BSBA - Accounting
BSBA - Finance
BSBA - General Mgt
BSBA - IT Mgt
BSBA - Leading & Mgt Human Capital
BSBA - Marketing
BSBA - Operations & Supply Chain Mgt
Minors
Certificates
Transfer Credit Policy
Graduate
Admissions
Master's Degrees
MBA
MBA Full-time Viewbook
MBA Evening Viewbook
MS Quantitative & Computational Finance
Executive MBAs
MBA Global Business
MBA GB Viewbook
Evening MBA GB Viewbook
MBA Management of Tech
MBA MOT Viewbook
MS
PhD Management
PhD Viewbook

MINOR IN COMPUTING AND MANAGEMENT

The Computing and Management Minor is offered by the Colleges of Computing and Management. It is a course of study that enables undergraduate students in computing and management to learn one another's language through innovative coursework in their respective fields and interdisciplinary team projects focused on solving real-world problems presented by corporate affiliates.

The curriculum of the Minor in Computing and Managements requires the completion of 22 semester credit hours.

The minimum, cumulative GPA required for applicants to the Denning T&M Program is 3.0. In order for accepted students to maintain their eligibility to remain in the T&M Program, they must continue to maintain a minimum, cumulative GPA of 2.9 and maintain a 3.0 GPA for the classes required by the Denning T&M curriculum. All courses must be taken for a letter grade; pass/fail credit is not allowed.

Computing students will gain an understanding of market forces and the financial implications of information technology investment.

Business students will gain an understanding of the relationship between software infrastructure, business processes, organizational structure and business strategies to effectively manage information technology resource, as well as the capabilities and constraints within the computing disciplines.

COMPUTING AND BUSINESS MAJORS:

- will learn the skills necessary to work in multi-disciplinary teams by analyzing and developing comprehensive solutions to real-world technology and business based problems.
- will demonstrate leadership, communication, and team working skills that will prepare them for successful careers in a technology driven business world.
- will learn how to identify and capitalize on emerging technologies, and then analyze and design information systems from a managerial viewpoint vs. computer science perspective.
- will learn how to identify and address issues that are critical to the creation of a successful solution of a multi-disciplinary problem using a business and technical perspective and a global context.

Application and course descriptions are available at: http://mgt.gatech.edu/tm

MINOR IN ENGINEERING AND MANAGEMENT

The Engineering and Management Minor is offered by the Colleges of Engineering and Management. It is a course of study that enables undergraduate students in engineering and management to learn one another's language through innovative coursework in their respective fields and interdisciplinary team projects focused on solving real-world problems presented by corporate affiliates. Admission to most of the classes also requires that students be active members in the Technology and Management program. Top students with at least thirty hours of college credit from engineering, science, computing and management apply for this program in January of each year. Business and engineering students who complete the program earn a Minor in Engineering & Management. Science and Computing students receive a certificate of completion. Forty to fifty students are accepted each year and enter the program in the fall semester to begin a prescribed two-year, 22-credit course of study while satisfying requirements for a bachelor's degree in their engineering or management/business administration major. Application and course descriptions are available at: http://mgt.gatech.edu/tm.

MINOR IN LEADERSHIP STUDIES

The Minor in Leadership Studies has as its primary objective the goal of providing students with an in-depth knowledge of leadership theory, skills, experience, and application through a rigorous program of study that is multi-disciplinary in nature. Initially, the minor will be comprised of two tracks, one in Public Policy and the second in Management, offered through the School of Public Policy and the ILE respectively. Students apply for either the Public Policy Track or the MGT Track, are accepted, and enter the program to begin a prescribed 15 credit hour course of study while satisfying requirements for a bachelor's degree in their major. In order for a student to be enrolled in this minor, they must have at least thirty credit hours with a cumulative GPA of 2.5 or greater, have applied for admission, and been formally admitted. Each course counting toward the minor must be completed with a grade of C or above, with the overall required GPA in the courses counting toward the minor being a 2.75 or better.

Application and course descriptions are available at: http://leadership.gatech.edu, http://mgt.gatech.edu, and http://www.prelaw.gatech.edu.

Approved Program of Study for Undergraduate Minors
Georgia Institute of Technology
Office of the Registrar
2013-2014
Minor in Computing and Management
(Track for Business Administration students)

Please type or print in ink:

Name (first/last):	GT Student ID Number:
GT Email Address:	Daytime Phone:
Major:	Anticipated Graduation Date:

In addition to the guidelines listed below, you are responsible for reviewing and following the general guidelines for minors: http://www.catalog.gatech.edu/academics/minorguide.php

The Computing and Management is offered by the Colleges of Computing and Management. This new minor offers students who are pursuing a BS in Business Administration or a BS in Computer Science an innovative curriculum. Business Administration students will gain an understanding of the relationship between software infrastructure, business processes, organizational structure and business strategies to effectively manage information technology resource, as well as the capabilities and constraints within the computing disciplines.

The curriculum of the Minor in Computing and Managements requires the completion of **22 semester credit hours** in the course of study shown below. Students who are admitted to the T&M Program must satisfy the requirements for a bachelor's degree in their major.

The minimum, cumulative GPA required for applicants to the Denning T&M Program is 3.0. In order for accepted students to maintain their eligibility to remain in the T&M Program, they must continue to maintain a minimum, cumulative GPA of 2.9 and maintain a 3.0 GPA for the classes required by the Denning T&M curriculum. All courses must be taken for a letter grade; pass/fail credit is not allowed.

It is the **major advisor's responsibility** to verify that students are not using any courses required by name and number for their major, that they are not using any core area A-E courses (including humanities and social sciences), and that they are not using any courses for more than one minor or certificate. Free electives and technical electives may be used towards minors.

List the courses completed for the requested minor:

Course and Section	Course Title	Credit Hours	Grade	Semester Completed
CS 1316	Representing Structure and Behavior	3		
CS 2316	Data Manipulation for Science and Industry	3		
CS 3743	Analysis of Emerging Technologies	3		
CS 4005	Next Generation Computing Technologies	3		
CS 4052	Systems Analysis and Design	3		
CS 4741	Integrative Management Development	3		
CS 4742	Tech & CS Capstone Project	4		

Student Signature:
Major School Signature:
Minor School Signature:

Approved Program of Study for Undergraduate Minors
Georgia Institute of Technology
Office of the Registrar
2013-2014
Minor in Computing and Management
(Track for Computer Science students)

Please type or print in ink:

Name (first/last):	GT Student ID Number:
GT Email Address:	Daytime Phone:
Major:	Anticipated Graduation Date:

In addition to the guidelines listed below, you are responsible for reviewing and following the general guidelines for minors: http://www.catalog.gatech.edu/academics/minorguide.php

The Computing and Management is offered by the Colleges of Computing and Management. This new minor offers students who are pursuing a BS in Business Administration or a BS in Computer Science an innovative curriculum. Computing students will gain an understanding of market forces and the financial implications of information technology investment.

The curriculum of the Minor in Computing and Managements requires the completion of **22 semester credit hours** in the course of study shown below. Students who are admitted to the T&M Program must satisfy the requirements for a bachelor's degree in their major.

The minimum, cumulative GPA required for applicants to the Denning T&M Program is 3.0. In order for accepted students to maintain their eligibility to remain in the T&M Program, they must continue to maintain a minimum, cumulative GPA of 2.9 and maintain a 3.0 GPA for the classes required by the Denning T&M curriculum. All courses must be taken for a letter grade; pass/fail credit is not allowed.

It is the **major advisor's responsibility** to verify that students are not using any courses required by name and number for their major, that they are not using any core area A-E courses (including humanities and social sciences), and that they are not using any courses for more than one minor or certificate. Free electives and technical electives may be used towards minors.

List the courses completed for the requested minor:

Course and Section	Course Title	Credit Hours	Grade	Semester Completed
MGT 3000	Financial and Managerial Accounting	3		
MGT 3078	Finance and Investments	3		
MGT 3300	Marketing Management I	3		
MGT 3743	Analysis of Emerging Technologies	3		
MGT 4052	Systems Analysis and Design	3		
MGT 4741	Integrative Management Development	3		
MGT 4742	Tech & Mgt Capstone Project	4		

Student Signature:
Major School Signature:
Minor School Signature:

MINOR IN EARTH AND ATMOSPHERIC SCIENCES

The School of Earth and Atmospheric Sciences offers a minor with seven different tracks. These specific tracks are designed to give non-majors a background in the environmental and global change issues that face the world. This background both allows a broader exposure and gives a strategic background for many careers. The seven tracks are:

1. Climate Change
2. Earth System Physics
3. Environmental Chemistry
4. Environmental Science
5. Geophysics
6. Meteorology
7. Ocean Sciences

Approved Program of Study for Undergraduate Minors
Georgia Institute of Technology
Office of the Registrar
2013-2014
Minor in Earth and Atmospheric Sciences – Climate Change Track

Please type or print in ink:

Name (first/last):	GT Student ID Number:
GT Email Address:	Daytime Phone:
Major:	Anticipated Graduation Date:

In addition to the guidelines listed below, you are responsible for reviewing and following the general guidelines for minors: http://www.catalog.gatech.edu/academics/minorguide.php

The EAS minor with a Climate Change track is for students in majors outside of EAS who have an interest in understanding Climate Change and Issues surrounding it. Prerequisites required for some of the classes listed below. **This minor must comprise at least 15 semester hours, of which at least 9 semester hours are upper-division coursework (numbered 3000 or above).**

A. **Required Courses:** EAS 2750, EAS 4410

B. **Choose 9 credit hours electives with a minimum of 3 credit hours from each area below:**
   a. **EAS Electives:** EAS 3110, 3620, 4350, 4655, 4656, 4670, 4699, 4740
   b. **Electives:** ECON 2101, ECON 4440, PUBP 3315

It is the **major advisor's responsibility** to verify that students are not using any courses required by name and number for their major, that they are not using any core area A-E courses (including humanities and social sciences), and that they are not using any courses for more than one minor or certificate. Free electives and technical electives may be used towards minors.

List the courses completed for the requested minor:

Course and Section	Course Title	Credit Hours	Grade	Semester Completed
EAS 2750	Physics of the Weather	3		
EAS 4410	Climate and Global Change	3		

Student Signature:
Major School Signature:
Minor School Signature:

Approved Program of Study for Undergraduate Minors
Georgia Institute of Technology
Office of the Registrar
2013-2014
Minor in Earth and Atmospheric Sciences – Earth System Physics Track

Please type or print in ink:

Name (first/last):	GT Student ID Number:
GT Email Address:	Daytime Phone:
Major:	Anticipated Graduation Date:

In addition to the guidelines listed below, you are responsible for reviewing and following the general guidelines for minors: http://www.catalog.gatech.edu/academics/minorguide.php

The EAS minor with an Earth System Physics track is for students in majors outside of EAS interested in applying physical and mathematical principles to environmental problems. Prerequisites required for some of the classes listed below. **This minor must comprise at least 15 semester hours, of which at least 9 semester hours are upper-division coursework (numbered 3000 or above).**

A. **Required Coursed:** EAS 3610, 4655
B. **Electives: Choose 9 credit hours:** EAS 2750, 3603, 4312, 4330, 4360, 4370, 4410, 4450, 4470, 4699, 4670

It is the **major advisor's responsibility** to verify that students are not using any courses required by name and number for their major, that they are not using any core area A-E courses (including humanities and social sciences), and that they are not using any courses for more than one minor or certificate. Free electives and technical electives may be used towards minors.

List the courses completed for the requested minor:

Course and Section	Course Title	Credit Hours	Grade	Semester Completed
EAS 3610	Introduction to Geophysics	3		
EAS 4655	Atmospheric Dynamics	3		

Student Signature:
Major School Signature:
Minor School Signature:

Approved Program of Study for Undergraduate Minors
Georgia Institute of Technology
Office of the Registrar
2013-2014
Minor in Earth and Atmospheric Sciences – Environmental Chemistry Track

Please type or print in ink:

Name (first/last):	GT Student ID Number:
GT Email Address:	Daytime Phone:
Major:	Anticipated Graduation Date:

In addition to the guidelines listed below, you are responsible for reviewing and following the general guidelines for minors: http://www.catalog.gatech.edu/academics/minorguide.php

The EAS minor with an Environmental Chemistry track is for students in majors outside of EAS that seek to understand and address environmental problems within the context of chemical systems. Prerequisites required for some of the classes listed below. **This minor must comprise at least 15 semester hours, of which at least 9 semester hours are upper-division coursework (numbered 3000 or above).**

A. **Required Coursed:** EAS 3620, 4740
B. **Electives: Choose 8 credit hours:** EAS 3110, 4420, 4602, 4610, 4699, 4795

It is the **major advisor's responsibility** to verify that students are not using any courses required by name and number for their major, that they are not using any core area A-E courses (including humanities and social sciences), and that they are not using any courses for more than one minor or certificate. Free electives and technical electives may be used towards minors.

List the courses completed for the requested minor:

Course and Section	Course Title	Credit Hours	Grade	Semester Completed
EAS 3620	Geochemistry	4		
EAS 4740	Atmospheric Chemistry	3		

Student Signature:
Major School Signature:
Minor School Signature:

Approved Program of Study for Undergraduate Minors
Georgia Institute of Technology
Office of the Registrar
2013-2014
Minor in Earth and Atmospheric Sciences – Environmental Science Track

Please type or print in ink:

Name (first/last):	GT Student ID Number:
GT Email Address:	Daytime Phone:
Major:	Anticipated Graduation Date:

In addition to the guidelines listed below, you are responsible for reviewing and following the general guidelines for minors: http://www.catalog.gatech.edu/academics/minorguide.php

The EAS minor with an Environmental Science track is for students in majors outside of EAS who have an interest in understanding the Environment and Issues surrounding it. Prerequisites required for some of the classes listed below. **This minor must comprise at least 15 semester hours, of which at least 9 semester hours are upper-division coursework (numbered 3000 or above).**

A. **Required Course:** EAS 1600 or 1601
B. **Electives: Choose 11 credit hours:** EAS 2600, 2750, 3110, 3620, 4410, 4420, 4300, 4350, 4699, 4740

It is the **major advisor's responsibility** to verify that students are not using any courses required by name and number for their major, that they are not using any core area A-E courses (including humanities and social sciences), and that they are not using any courses for more than one minor or certificate. Free electives and technical electives may be used towards minors.

List the courses completed for the requested minor:

Course and Section	Course Title	Credit Hours	Grade	Semester Completed
EAS 1600 or EAS1601	Introduction to Environmental Sciences How to Build a Habitable Planet	4		

Student Signature:
Major School Signature:
Minor School Signature:

Approved Program of Study for Undergraduate Minors
Georgia Institute of Technology
Office of the Registrar
2013-2014
Minor in Earth and Atmospheric Sciences – Geophysics Track

Please type or print in ink:

Name (first/last):	GT Student ID Number:
GT Email Address:	Daytime Phone:
Major:	Anticipated Graduation Date:

In addition to the guidelines listed below, you are responsible for reviewing and following the general guidelines for minors: http://www.catalog.gatech.edu/academics/minorguide.php

The EAS minor with a Geophyics track is for students in majors outside of EAS majoring in science and engineering. Prerequisites required for some of the classes listed below. **This minor must comprise at least 15 semester hours, of which at least 9 semester hours are upper-division coursework (numbered 3000 or above).**

A. **Required Courses:** EAS 2600 and 3610
B. **Choose 8 credit hours electives:** EAS 4312, 4314, 4330, 4360, 4370, 4699, 4795

It is the **major advisor's responsibility** to verify that students are not using any courses required by name and number for their major, that they are not using any core area A-E courses (including humanities and social sciences), and that they are not using any courses for more than one minor or certificate. Free electives and technical electives may be used towards minors.

List the courses completed for the requested minor:

Course and Section	Course Title	Credit Hours	Grade	Semester Completed
EAS 2600	Earth Processes	4		
EAS 3610	Introduction to Geophysics	3		

Student Signature:
Major School Signature:
Minor School Signature:

Approved Program of Study for Undergraduate Minors
Georgia Institute of Technology
Office of the Registrar
2013-2014

Minor in Earth and Atmospheric Sciences – Meteorology Track

Please type or print in ink:

Name (first/last):	GT Student ID Number:
GT Email Address:	Daytime Phone:
Major:	Anticipated Graduation Date:

In addition to the guidelines listed below, you are responsible for reviewing and following the general guidelines for minors: http://www.catalog.gatech.edu/academics/minorguide.php

The EAS minor with a Meteorology track is for students in majors outside of EAS majoring in science and engineering. Prerequisites required for some of the classes listed below. **This minor must comprise at least 15 semester hours, of which at least 9 semester hours are upper-division coursework (numbered 3000 or above).**

A. **Required Coursed:** EAS 2551, 2750, 4655
B. **Electives: Choose 8 credit hours:** EAS 3603, 4410, 4450, 4460, 4470, 4480, 4610, 4656, 4670, 4699

It is the **major advisor's responsibility** to verify that students are not using any courses required by name and number for their major, that they are not using any core area A-E courses (including humanities and social sciences), and that they are not using any courses for more than one minor or certificate. Free electives and technical electives may be used towards minors.

List the courses completed for the requested minor:

Course and Section	Course Title	Credit Hours	Grade	Semester Completed
EAS 2551	Introduction to Meteorological Analysis	1		
EAS 2750	Physics of the Weather	3		
EAS 4655	Atmospheric Dynamics	3		

Student Signature:
Major School Signature:
Minor School Signature:

Approved Program of Study for Undergraduate Minors
Georgia Institute of Technology
Office of the Registrar
2013-2014
Minor in Earth and Atmospheric Sciences – Ocean Sciences Track

Please type or print in ink:

Name (first/last):	GT Student ID Number:
GT Email Address:	Daytime Phone:
Major:	Anticipated Graduation Date:

In addition to the guidelines listed below, you are responsible for reviewing and following the general guidelines for minors: http://www.catalog.gatech.edu/academics/minorguide.php

The EAS minor with an Ocean Sciences track is for students in majors outside of EAS majoring in Biology, Civil and Environmental Engineering, Chemistry and Biochemistry, and Chemical and Biomolecular Engineering. Prerequisites required for some of the classes listed below. **This minor must comprise at least 15 semester hours, of which at least 9 semester hours are upper-division coursework (numbered 3000 or above).**

A. **EAS Required: Choose one course:** EAS 1600, 1601, or 2600
B. **EAS Required:** EAS 4300
C. **Electives: Choose 8 credit hours:** EAS 3620, 4350, 4410, 4420, 4480, 4610, 4655, 4699
BIOL 4221, 4417

It is the **major advisor's responsibility** to verify that students are not using any courses required by name and number for their major, that they are not using any core area A-E courses (including humanities and social sciences), and that they are not using any courses for more than one minor or certificate. Free electives and technical electives may be used towards minors.

List the courses completed for the requested minor:

Course and Section	Course Title	Credit Hours	Grade	Semester Completed
EAS 1600 or EAS 1601 or EAS 2600	Introduction to Environmental Science or Habitable Planet or Earth Processes	4		
EAS 4300	Oceanography	3		

Student Signature:
Major School Signature:
Minor School Signature:

MINOR IN ECONOMICS

The School of Economics offers a Minor in Economics for students in all disciplines at Georgia Tech. The minor program provides a general acquaintance with economic thought and is especially valuable for students considering graduate work in law or management. It should also be attractive to students who wish to broaden their education and to understand the forces that shape the modern world.

All courses counting toward the minor must be taken on a letter-grade basis and must be completed with an overall grade-point average of at least 2.0. Courses required by name and number in a student's major degree program may not be used toward the minor.

HEALTH, MEDICINE, AND SOCIETY MINOR

The Health, Medicine, and Society minor is a program of study for undergraduate students who are interested in the health and medical professions. Humanities and social science perspectives on health and medicine equip students to address important topics, such as the ethics of biomedical research, the nature of medical discovery, the relationships among race, health, and gender, the global impact of public health, and the cost of health care delivery. Understanding these and related issues is essential to developing informed, thoughtful, and ethically enlightened leaders in the fields of health and medicine.

Approved Program of Study for Undergraduate Minors
Georgia Institute of Technology
Office of the Registrar
2013-2014
Minor in Economics

Please type or print in ink:

Name (first/last):	GT Student ID Number:
GT Email Address:	Daytime Phone:
Major:	Anticipated Graduation Date:

In addition to the guidelines listed below, you are responsible for reviewing and following the general guidelines for minors: http://www.catalog.gatech.edu/academics/minorguide.php

A. The Economics minor must comprise at least 15 semester hours, of which at least 9 semester hours are upper-division coursework (numbered 3000 or above).

B. Courses required by name and number and/or used to satisfy Core Areas A through E in a student's major degree program may not be used in satisfying the course requirements for a minor **(courses used to fulfill social science requirements cannot be applied towards the minor)**. However, courses used in a minor also may be used to fulfill other elective requirements (free electives, technical electives, etc.) in the student's major degree program.

List the courses completed for the requested minor:

Course and Section	Course Title	Credit Hours	Grade	Semester Completed

Student Signature:
Major School Signature:
Minor School Signature:

MINOR IN ENERGY SYSTEMS

The School of Mechanical Engineering now offers a 15-hour multidisciplinary minor in Energy Systems. This minor is available to students majoring in Mechanical Engineering. Requirements include courses which provide depth in an area relevant to energy related to Mechanical Engineering. The minor also includes requirements for courses which cut across disciplines. These courses are intended to add breadth of knowledge in areas outside the student's major but important to energy systems. A terminal "capstone" or project course provides an opportunity for students from multiple disciplines to work together in multidisciplinary teams on a significant project in the energy area.

MINOR IN ENGINEERING AND MANAGEMENT

The Engineering and Management Minor is offered by the Colleges of Engineering and Management. It is a course of study that enables undergraduate students in engineering and management to learn one another's language through innovative coursework in their respective fields and interdisciplinary team projects focused on solving real-world problems presented by corporate affiliates. Admission to most of the classes also requires that students be active members in the Technology and Management program. Top students with at least thirty hours of college credit from engineering, science, computing and management apply for this program in January of each year. Business and engineering students who complete the program earn a Minor in Engineering & Management. Science and Computing students receive a certificate of completion. Forty to fifty students are accepted each year and enter the program in the fall semester to begin a prescribed two-year, 22-credit course of study while satisfying requirements for a bachelor's degree in their engineering or management/business administration major. Application and course descriptions are available at: http://mgt.gatech.edu/tm.

MINOR IN NUCLEAR AND RADIOLOGICAL ENGINEERING

The Nuclear & Radiological Engineering and Health Physics Program of the Woodruff School offers a certificate and a minor in Nuclear & Radiological Engineering to non-NRE engineering students. These programs provide a general knowledge of Nuclear and Radiological Engineering topics and are valuable for students considering graduate work in Nuclear Engineering or Medical Physics.

Approved Program of Study for Undergraduate Minors
Georgia Institute of Technology
Office of the Registrar
2013-2014
Minor in Energy Systems

Please type or print in ink:

Name (first/last):	GT Student ID Number:
GT Email Address:	Daytime Phone:
Major:	Anticipated Graduation Date:

In addition to the guidelines listed below, you are responsible for reviewing and following the general guidelines for minors: http://www.catalog.gatech.edu/academics/minorguide.php

The minor includes requirements for courses which cut across disciplines. These courses are intended to add breadth of knowledge in areas outside the student's major but important to energy systems. A terminal "capstone" or project course provides an opportunity for students from multiple disciplines to work together in multidisciplinary teams on a significant project in the energy area.

The breadth courses and the capstone project course, courses taken by all students completing the minor, require one or more pre-requisites; specifically, basic economics, mathematics, and lab science courses. List of required prerequisites and curriculum requirements and options for this minor are on the following pages. All courses in the minor also must be 3000 level and above.

It is the **major advisor's responsibility** to verify that students are not using any courses required by name and number for their major, that they are not using any core area A-E courses (including humanities and social sciences), and that they are not using any courses for more than one minor or certificate. Free electives and technical electives may be used towards minors.

List the courses completed for the requested minor:

Course and Section	Course Title	Credit Hours	Grade	Semester Completed
GT 4813	Project in Energy Systems	3		

Student Signature:
Major School Signature:
Minor School Signature (Management) :

Partnering Colleges and Schools:

College of Engineering

The Daniel Guggenheim School of Aerospace Engineering
School of Electrical and Computer Engineering
The George W. Woodruff School of Mechanical Engineering

Ivan Allen College

School of Economics
School of Public Policy

College of Sciences

School of Biology
School of Chemistry and Biochemistry
School of Earth and Atmospheric Sciences

<u>Prerequisite Courses</u>

The prerequisites needed for one or more of the courses required for the minor (breadth courses and the capstone project course) are (all existing courses):

a) Mathematics (MATH 1501, 1502, 2401through Calculus III)
b) Physics (PHYS 2211, 2212)
c) Chemistry (CHEM 1310 or 1211)
d) Economics ECON 2100 or 2101 or (2105 and 2106)

Students ordinarily pursue the minor upon completion of the needed prerequisites. However, the depth course requirements (see below) may be taken as soon as students have met the relevant prerequisites. Students pursuing the minor are expected to remain in good academic standing while pursuing the minor. There is no specific GPA requirement nor are there any required grades in specific courses.

<u>Depth Courses</u>

The minor requires **six hours of depth courses** related to energy systems. A list of acceptable courses which meet the depth requirement is provided by each major approving the minor. Depth courses may be taken in the student's major to ensure the depth in that major needed to peruse a multidisciplinary minor. All acceptable depth courses must be consistent with the goals of the minor. Examples of acceptable courses include:

a) Engineering courses covering a specific energy technology like solar or relevant engineering science
b) Science courses which cover energy science like biomass or other relevant basic science
c) Public Policy courses which cover policy analysis or methodology
d) Economics courses covering economic analysis of complex systems
e) Relevant CoA or CoM courses

Depth courses may ordinarily serve as technical or free electives in the student's program of study. However, courses required by name and number and/or used to satisfy Core Areas A through E cannot be used to satisfy the requirements of a minor. All courses in the minor also must be 3000 level and above.

Menus of Depth Courses by Program

The Depth Courses below may have additional prerequisites; please check http://www.catalog.gatech.edu/courses/index.php to view the current prerequisites.

Aerospace Engineering

AE 4701	Wind Engineering
AE 4370	Life Cycle Cost Analysis
NRE 3208	Fundamentals of Nuclear and Radiological Engineering
NRE 3301	Radiation Physics
AE 4461	Intro to Combustion

Biology

BIOL 4221 Biological Oceanography
BIOL 4410 Microbial Ecology
BIOL 4418 Microbial Physiology
BIOL 4440 Plant Physiology
CHEM 3511 Survey of Biochemistry
CHEM 4511 Biochemistry I
CHEM 4512 Biochemistry II
EAS 4410 Climate and Global Change
EAS 3110 Energy, the Environment, and Society

Mechanical Engineering

ME 4011	Internal Combustion Engines
ME 4315	Energy Systems Analysis and Design (if not used as Design Elective)
ME 4325	Fuel Cells
ME 4321	Refrigeration and Air Conditioning
ME 4823	Mechatronic Systems in Hybrid-Electric Powertrains
ME 4823	Renewable Energy Systems
ME 4171	Environmental Design and Manufacturing
ME 4172	Sustainable Energy Systems Design
ME 4701	Wind Engineering
ECE 3071	Modern Electric Energy Systems
NRE 3208	Nuclear Reactor Physics I
NRE 4214	Reactor Engineering
NRE 4610	Intro to Plasma Physics and Fusion Engineering

Electrical and Computer Engineering

ECE 3070	Electromechanical and Electromagnetic Energy Conversion*
ECE 3071	Modern Electric Energy Systems*
ECE 4320	Power System Analysis and Control
ECE 4321	Power System Engineering
ECE 4325	Electric Power Quality
ECE 4330	Power Electronics

ECE 4335	Electric Machinery Analysis
NRE 3208	Fundamentals of Nuclear and Radiological Engineering
NRE 3301	Radiation Physics

*Note: If used for EE Breadth credit, ECE 3070 and ECE 3071 cannot be used for this minor. Any course on this list that is taken for ECE elective, engineering elective, or approved elective credit can count for this minor.

Public Policy

PUBP 3315	Environmental Policy and Politics
PUBP 3600	Sustainability, Technology & Policy
PHIL 4176	Environmental Ethics
PUBP 4420	Science, Technology, and Regulation

Economics
ECON 4440 Environmental Economics
ECON 4340 Industrial Organization

Chemistry and Biochemistry
CHEM 3511 Survey of Biochemistry
CHEM 4XXX/6284 Environmental Analytical Chemistry
CHEM 4XXX/6483 Chemistry of Electronic Materials

Earth and Atmospheric Sciences
EAS 4410 Climate and Global Change
EAS 3110 Energy, Environment, and Society

Breadth Courses
The minor requires **six hours of breadth courses** (two courses). Students should strive to complete the necessary prerequisites and the depth courses prior to enrolling in the breadth courses. However, depth courses may be taken concurrently with the courses taken to meet the breadth requirement. All students pursuing the minor choose either a) or d) and either b) or c) from the list below. Their choices depend on their majors (see notes below). While restrictions apply as to which courses can be used by various majors to fulfill the minor requirements (see Notes a – d), breadth courses may, with permission of the student's major, be taken for credit outside the minor.

- ME 3700 Introduction to Energy Systems Engineering (See note a)
- ECON 3300 Economics of International Energy Markets (See note b)
- PUBP 3350 Energy Policy (See note c)
- CHEM 3700 The Science of Alternative Energy (See note d)

Notes:
a) Cannot be used to complete the minor by COE students.
b) Cannot be used to complete the minor by ECON students.
c) Cannot be used to complete the minor by PUBP students.
d) Cannot be used to complete the minor by COS students.

Capstone Course
GT 4813 Project in Energy Systems

Ordinarily, students must complete all minor requirements before they can register for the Project in Energy Systems course.

Approved Program of Study for Undergraduate Minors
Georgia Institute of Technology
Office of the Registrar
2013-2014
Minor in Engineering and Management

Please type or print in ink:

Name (first/last):	GT Student ID Number:
GT Email Address:	Daytime Phone:
Major:	Anticipated Graduation Date:

In addition to the guidelines listed below, you are responsible for reviewing and following the general guidelines for minors: http://www.catalog.gatech.edu/academics/minorguide.php

Once enrolled in the Technology and Management program, the requirements for the Engineering and Management minor are the successful completion of 22 credit hours defined as follows:

- **For Management (BSBA) majors** – COE 3002, ME 3141, ME 2110, ME 3743, ME 3744, ME 4741, ME 4742
- **For Engineering majors** – MGT 3300, MGT 3000, MGT 3078, MGT 3743, MGT 3744, MGT 4741, MGT 4742

This minor requires a minimum grade point average of 3.0.

It is the **major advisor's responsibility** to verify that students are not using any courses required by name and number for their major, that they are not using any core area A-E courses (including humanities and social sciences), and that they are not using any courses for more than one minor or certificate. Free electives and technical electives may be used towards minors.

List the courses completed for the requested minor:

Course and Section	Course Title	Credit Hours	Grade	Semester Completed

Student Signature:
Major School Signature:
Minor School Signature (Management) :

MINORS AND CERTIFICATES

LMC provides minors in Film and Media Studies, Performance Studies, Technical Communication, and together with the Schools of History, Technology, and Society (HTS) and Public Policy (PubPol), co-sponsors a minor in Women, Science, and Technology (WST). Students wishing to pursue any of these minors should consult LMC (or, in the case of the WST minor, LCC, HTS, or PubPol) for detailed information concerning requirements. Courses for all minors are selected from "Courses of Instruction" and, in the case of the WST minor, from a special list of courses offered by LMC, HTS, PubPol, Economics (ECON), International Affairs (IA), and Modern Languages (ML).

LMC also sponsors a series of certificate programs in American Literature and Culture, Film Studies, and Literary and Cultural Studies. Students should consult the LMC director of undergraduate studies for detailed information on requirements. The courses for these certificates are among those listed in "Courses of Instruction," and all fulfill humanities requirements.

LMC and HTS also cooperate in providing a certificate in African American Studies. Students should consult LMC or HTS for detailed information concerning requirements. Courses for this certificate are selected from among those listed in "Courses of Instruction" and from the list offered by HTS.

HEALTH, MEDICINE, AND SOCIETY MINOR

The Health, Medicine, and Society minor is a program of study for undergraduate students who are interested in the health and medical professions. Humanities and social science perspectives on health and medicine equip students to address important topics, such as the ethics of biomedical research, the nature of medical discovery, the relationships among race, health, and gender, the global impact of public health, and the cost of health care delivery. Understanding these and related issues is essential to developing informed, thoughtful, and ethically enlightened leaders in the fields of health and medicine.

MINOR IN SCIENCE, TECHNOLOGY, AND SOCIETY

The Science, Technology, and Society minor will provide a context for understanding how science and technology fits within our social world, past and present. It offers students a better understanding of how science and technology develop and change, how they are represented and understood in culture, and how various social and historical contexts shape science and technology. This area of study also develops analytical abilities, verbal and written communications skills, and the critical thinking. It is good preparation for a broad array of careers, including business, education, government, and law.

Approved Program of Study for Undergraduate Minors
Georgia Institute of Technology
Office of the Registrar
2013-2014
Minor in Film and Media Studies

Please type or print in ink:

Name (first/last):	GT Student ID Number:
GT Email Address:	Daytime Phone:
Major:	Anticipated Graduation Date:

In addition to the guidelines listed below, you are responsible for reviewing and following the general guidelines for minors: http://www.catalog.gatech.edu/academics/minorguide.php

The Film and Media Studies minor must comprise at least 18 semester hours, of which at least 12 semester hours are upper-division coursework (numbered 3000 or above).

I. Each student must take two courses from this group (6 hours): LCC 2500 or LCC 2400 and LCC 3254.

II. Each student must also take three courses from this group (9 hours): LCC 3206, 3252, 3256, 3257, 3258, 3259, 3314, 3352, 3406, 3853

III. Each student must also take either a capstone-type course or a course from a closely related area that will provide additional depth and perspective to the study of film and media (3 hours): Capstone courses: LCC 4400, 4500 or Related courses: HTS course on film/media (e.g. HTS 2085) or modern language course on film/media (e.g. GRMN 4024)

It is the **major advisor's responsibility** to verify that students are not using any courses required by name and number for their major, that they are not using any core area A-E courses (including humanities and social sciences), and that they are not using any courses for more than one minor or certificate. Free electives and technical electives may be used towards minors.

List the courses completed for the requested minor:

Course and Section	Course Title	Credit Hours	Grade	Semester Completed

Student Signature:
Major School Signature:
Minor School Signature:

SCHOOL OF HISTORY, TECHNOLOGY, AND SOCIETY

About the School
Undergraduate
BS History, Tech, & Society
Description
Degree Requirements
Minors & Certificate
Graduate
Admissions
Certificates
MS In HSTS
PhD HSTS
Ivan Allen College

MINORS

For students in other majors interested in broadening their educational experience at Georgia Tech, HTS offers minors in history and in sociology and jointly administers minors in Women, Science, and Technology; and Health, Medicine, and Society; and Science, Technology, and Society.

HEALTH, MEDICINE, AND SOCIETY MINOR

The Health, Medicine, and Society minor is a program of study for undergraduate students who are interested in the health and medical professions. Humanities and social science perspectives on health and medicine equip students to address important topics, such as the ethics of biomedical research, the nature of medical discovery, the relationships among race, health, and gender, the global impact of public health, and the cost of health care delivery. Understanding these and related issues is essential to developing informed, thoughtful, and ethically enlightened leaders in the fields of health and medicine.

HISTORY MINOR

For students who want to broaden their educations, the study of history provides a context for understanding the world and develops analytical abilities, verbal and written communications skills, and the critical thinking that is the bedrock of active citizenship. It is also good preparation for a broad array of careers, including business, education, government, and law.

SCIENCE, TECHNOLOGY, AND SOCIETY MINOR

The Science, Technology, and Society minor will provide a context for understanding how science and technology fits within our social world, past and present. It offers students a better understanding of how science and technology develop and change, how they are represented and understood in culture, and how various social and historical contexts shape science and technology. This area of study also develops analytical abilities, verbal and written communications skills, and the critical thinking. It is good preparation for a broad array of careers, including business, education, government, and law.

SOCIOLOGY MINOR

The study of sociology develops analytical abilities, verbal and written communication skills, and invaluable critical tools for understanding the contemporary world. Sociology is good preparation for a broad array of careers, including business, education, public administration, and social work.

WOMEN, SCIENCE, AND TECHNOLOGY - MINORS AND CERTIFICATES

The Women, Science, and Technology (WST) program does what no other gender studies program does: it links science and technology issues to those issues more traditionally associated with women's studies. The WST minor prepares Tech students (women and men majoring in engineering, science, social sciences, and humanities) to live and work in an increasingly diverse world. The minor helps students develop their understanding of the human side of science and engineering involving not only gender issues, but inequalities of race and class as well.

WST courses reflect on the theoretical and practical dimensions of diversity. Students are encouraged to explore the values associated with scientific culture and to learn to synthesize knowledge across the disciplines, while viewing science and engineering as social and cultural forces that shape relations among women and men.

Each minor is required to choose two courses from the following list. The courses must be from two different schools: LCC 3304, HTS 3020, HTS 3021, PUBP 4212, PUBP 4214.

Each minor also chooses three (3) courses from the following list OR from the list above. The three elective courses must be offered by at least two different Ivan Allen College schools:

HISTORY, TECHNOLOGY, AND SOCIETY

HTS 2082 Technology and Science in the Industrial Age

HTS 2084 Technology and Society

HTS 3007 Sociology of Work, Industry, and Occupations

HTS 3016 Women and Gender in the United States

HTS 3017 Sociology of Gender

HTS 3051 Women and Gender in the Middle East

HTS 3082 Sociology of Science

HTS 3083 Technology and American Society

HTS 3084 Culture and Technology

HTS 3086 Sociology of Medicine and Health

LITERATURE, COMMUNICATION, AND CULTURE

LCC 2100 Introduction to Science, Technology, and Culture

LCC 2200 Introduction to Gender Studies

LCC 3212 Women, Literature, and Culture

LCC 3219 Literature and Medicine

LCC 3225 Gender in the Disciplines

LCC 3302 Science, Technology, and Ideology

LCC 3306 Science, Technology, and Race

LCC 3308 Environmentalism and Ecocriticism

LCC 3316 Science, Technology, and Postmodernism

LCC 3318 Biomedicine and Culture

PUBLIC POLICY

PUBP 2013 Foundations of Public Policy

PUBP 4410 Science, Technology, and Public Policy

PUBP 4416 Critical Issues in Science and Technology

PUBP 4200 Social Policy Issues

PUBP 4214 Gender, Science, Technology, and Public Policy

INTERNATIONAL AFFAIRS:

INTA 4803/8803 Gender in International Relations

MODERN LANGUAGES:

SPAN 3241 The Individual and the Family in Hispanic Literature

SPAN 3242 Society in Hispanic Literature

ECONOMICS:

ECON 2100 Economic Analysis and Policy Problems

ECON 2101 The Global Economy

ECON 2105 Principles of Macroeconomics

ECON 2106 Principles of Microeconomics

NOTE: Students can receive credit for either ECON 2100 or ECON 2101, or for ECON 2105/2106. Students cannot receive credit for ECON 2100 and ECON 2101, or for ECON 2100 and ECON 2105/2106, or for ECON 2101 and ECON 2105/2106.

With permission of the WST coordinators, students may substitute one independent study course or course from another Georgia Tech unit. This may be chosen from special topics courses, seminars, and other courses that focus upon gender and social inequality or social issues of science and technology. Students may register and plan their courses of study for the WST minor by meeting with WST coordinators, Carol Colatrella (LMC) or Mary Frank Fox (PUBP). Students petition for the minor at the time they petition for their major degree. Minors are conferred upon graduation and appear on students' transcripts.

CERTIFICATE PROGRAMS

Alone or in conjunction with other units of the Ivan Allen College, HTS offers certificates in five fields:

- African American Studies
- Asian Affairs
- European Affairs
- History
- Sociology

Approved Program of Study for Undergraduate Minors
Georgia Institute of Technology
Office of the Registrar
2013-2014

Minor in Health, Medicine, and Society

Please type or print in ink:

Name (first/last):	GT Student ID Number:
GT Email Address:	Daytime Phone:
Major:	Anticipated Graduation Date:

In addition to the guidelines listed below, you are responsible for reviewing and following the general guidelines for minors: http://www.catalog.gatech.edu/academics/minorguide.php

This minor must comprise at least 15 semester hours, of which at least 9 semester hours are upper-division coursework (numbered 3000 or above).

A. **Required courses 6 hours:** HTS 2080, LCC 2300
B. **Electives 9 hours:** ECON 4510, HTS 3086, HTS 3087, HTS 4086, LCC 3318, LCC 3219, LCC 4300, HTS 3803 (Race, Science, and Medicine), PUBP 4813 (Stem Cell Science, Ethics and Policy), PUBP 4848 (Health Care Law, Policy, and Ethics)

It is the **major advisor's responsibility** to verify that students are not using any courses required by name and number for their major, that they are not using any core area A-E courses (including humanities and social sciences), and that they are not using any courses for more than one minor or certificate. Free electives and technical electives may be used towards minors.

List the courses completed for the requested minor:

Course and Section	Course Title	Credit Hours	Grade	Semester Completed
HTS 2080	Introduction to the History of Disease and Medicine	3		
LCC 2300	Introduction to Biomedicine and Culture	3		

Student Signature:
Major School Signature:
Minor School Signature:

Approved Program of Study for Undergraduate Minors
Georgia Institute of Technology
Office of the Registrar
2013-2014
Minor in History

Please type or print in ink:

Name (first/last):	GT Student ID Number:
GT Email Address:	Daytime Phone:
Major:	Anticipated Graduation Date:

In addition to the guidelines listed below, you are responsible for reviewing and following the general guidelines for minors: http://www.catalog.gatech.edu/academics/minorguide.php

The History minor must comprise at least 15 semester hours, of which at least 9 semester hours are upper-division coursework (numbered 3000 or above). Three hours taken outside of history courses may be counted toward the minor, with approval of the School. Courses required by name and number and/or used to satisfy Core Areas A through E in a student's major degree program may not be used in satisfying the course requirements for a minor. All courses must be taken on a letter-grade basis and must be completed with an overall grade-point average of 2.0. No more than six hours of Special Topics (elective) courses may be counted toward the minor. Special Problems courses may not be counted toward the minor. Students majoring in HTS may not minor in history.

It is the **major advisor's responsibility** to verify that students are not using any courses required by name and number for their major, that they are not using any core area A-E courses (including humanities and social sciences), and that they are not using any courses for more than one minor or certificate. Free electives and technical electives may be used towards minors.

List the courses completed for the requested minor:

Course and Section	Course Title	Credit Hours	Grade	Semester Completed

Student Signature:
Major School Signature:
Minor School Signature:

SCHOOL OF INDUSTRIAL DESIGN

About the School
Accreditation
Undergraduate
BS Industrial Design
Description
Degree Requirements
Graduate
Admissions
Master Of Industrial Design
Certificates
College of Architecture

MINOR IN INDUSTRIAL DESIGN

The minor in Industrial Design will expose students to the field of industrial design, allowing them to better work on multidisciplinary teams where design is a central element. This minor will provide interested students from other disciplines at Georgia Tech accelerated access to the graduate program in Industrial Design. The minor has three main objectives related to knowledge, skills, and application: (1) provide students with foundational knowledge of industrial design, (2) develop students' skill in working on multidisciplinary design teams, and (3) enable students to effectively apply design methods to complete exemplary design projects arising in design across disciplines.

Approved Program of Study for Undergraduate Minors
Georgia Institute of Technology
Office of the Registrar
2013-2014
Minor in Industrial Design

Please type or print in ink:

Name (first/last):	GT Student ID Number:
GT Email Address:	Daytime Phone:
Major:	Anticipated Graduation Date:

In addition to the guidelines listed below, you are responsible for reviewing and following the general guidelines for minors: http://www.catalog.gatech.edu/academics/minorguide.php

This minor must comprise at least 15 semester hours, of which at least 9 semester hours are upper-division coursework (numbered 3000 or above).

A. **Required Courses:** ID 2320, ID 2401, ID 3320, ID 4833(ST: Collaborative)
B. **Choose 3 credit hours from below for elective:**
ID 3301 or ID 3302 or ID 3510 or ID 3520 or ID 4106 or ID 4201 or ID 4206 or ID 4210 or ID 4320

It is the **major advisor's responsibility** to verify that students are not using any courses required by name and number for their major, that they are not using any core area A-E courses (including humanities and social sciences), and that they are not using any courses for more than one minor or certificate. Free electives and technical electives may be used towards minors.

List the courses completed for the requested minor:

Course and Section	Course Title	Credit Hours	Grade	Semester Completed
ID 2320	Human Factors in Design	3		
ID 2401	Visual Design Thinking	3		
ID 3320	Design Methods	3		
ID 4833	ST: Collaborative	3		

Student Signature:
Major School Signature:
Minor School Signature:

MINORS

The School offers a Minor in International Affairs. This program is designed for students who want a concentration outside their major that provides a greater depth of study than a certificate program.

The International Affairs minor must comprise at least 18 semester hours, of which at least twelve semester hours are upper-division coursework (numbered 3000 or above). Required courses include INTA 1110 and one course at the 2000-level (not to include INTA 2010). All courses must be taken on a letter-grade basis, and a C or better must be received in each course. Courses required by name and number in a student's major degree program may not be included.A student may seek permission from the School to allow 3 hours of upper-division, non-INTA coursework to count toward the completion of the minor if that coursework is clearly relevant to International Affairs. More information concerning this program and its requirements is available through the School.

Approved Program of Study for Undergraduate Minors
Georgia Institute of Technology
Office of the Registrar
2013-2014
Minor in International Affairs

Please type or print in ink:

Name (first/last):	GT Student ID Number:
GT Email Address:	Daytime Phone:
Major:	Anticipated Graduation Date:

In addition to the guidelines listed below, you are responsible for reviewing and following the general guidelines for minors: http://www.catalog.gatech.edu/academics/minorguide.php

A. The International Affairs minor must comprise at least 18 semester hours, of which at least 12 semester hours are upper-division coursework (numbered 3000 or above). **Required courses include INTA 1110 and one course at the 2000-level (not to include INTA 2010).** A student may seek permission from the School to allow 3 hours of upper-division, non-INTA coursework to count toward the completion of the minor if that coursework is clearly relevant to International Affairs.

B. All coursework must be completed with a grade of C or higher.

It is the **major advisor's responsibility** to verify that students are not using any courses required by name and number for their major, that they are not using any core area A-E courses (including humanities and social sciences), and that they are not using any courses for more than one minor or certificate. Free electives and technical electives may be used towards minors.

List the courses completed for the requested minor:

Course and Section	Course Title	Credit Hours	Grade	Semester Completed
INTA 1110	Introduction to International Relations	3		

Student Signature:
Major School Signature:
Minor School Signature:

LAW, SCIENCE, AND TECHNOLOGY - MINORS AND CERTIFICATES

Established in 1998
Location: 107 D. M. Smith Building,
685 Cherry Street
Telephone: 404.894.6822
Fax: 404.385.0504
Website: www.prelaw.gatech.edu

GENERAL INFORMATION

The School of Public Policy is home to Georgia Tech's Law, Science, and Technology/Pre-Law Program. This program offers a wide range of curricular opportunities as well as pre-law advising and support services for students considering law school and careers in law.

The program introduces students to selected areas of law that they are likely to study in law school. Students will begin to develop the skills that they will need to succeed in law school and in law practice. Some of the courses are taught by full-time faculty, while others are taught by attorneys from the Atlanta area, thereby exposing students to academic and practical perspectives on the practice of law.

The program welcomes students from every college and major. Students majoring in the sciences and engineering may be surprised to learn that their undergraduate background gives them a strong start toward specializations such as intellectual property law, products liability law, and construction law. The pre-law program can supplement a student's scientific or engineering background by developing the reading and writing skills that are fundamental to a successful legal career.

LAW, SCIENCE AND TECHNOLOGY MINORS AND PRE-LAW CERTIFICATES

Students working toward the minor or certificate must take one of the following core menu courses:

- PUBP 3000 American Constitutional Issues
- PUBP 3016 Judicial Process
- PUBP 3610 Pre-Law Seminar
- PUBP 4609 Legal Practice

Students working toward the minor must take a total of fifteen semester hours of applicable credit (twelve semester hours at the 3000 level or above). Students working toward the certificate must take a total of twelve semester hours of applicable credit (nine semester hours at the 3000 level or above). For additional curricular requirements or any other information, see the pre-law section of the website www.prelaw.gatech.edu; or contact the pre-law program director (contact information listed at website).

Approved Program of Study for Undergraduate Minors
Georgia Institute of Technology
Office of the Registrar
2013-2014
Minor in Law, Science and Technology

Please type or print in ink:

Name (first/last):	GT Student ID Number:
GT Email Address:	Daytime Phone:
Major:	Anticipated Graduation Date:

In addition to the guidelines listed below, you are responsible for reviewing and following the general guidelines for minors http://www.catalog.gatech.edu/academics/minorguide.php.

A. The LST minor must comprise at least 15 semester hours, of which at least 12 semester hours are upper-division coursework (numbered 3000 or above). **Required courses include one of the following: PUBP 3000, PUBP 3016, PUBP 3610 or PUBP 4609**.

B. No more than 9 semester hours of Special Topics courses may be included in a minor program.

C. Students who began the LST minor prior to Fall 2003, may apply under an earlier set of guidelines. Please see Professor Robert Pikowsky, Director of the Pre-Law Program, for details.

It is the **major advisor's responsibility** to verify that students are not using any courses required by name and number for their major, that they are not using any core area A-E courses (including humanities and social sciences), and that they are not using any courses for more than one minor or certificate. Free electives and technical electives may be used towards minors.

List the courses completed for the requested minor:

Course and Section	Course Title	Credit Hours	Grade	Semester Completed

Student Signature:
Recommended (Major School Signature):
Approved (Minor School Signature):

Law, Science & Technology Minor

Course List

Students working toward the minor must take a total of fifteen semester hours of applicable credit (twelve semester hours at the 3000 level or above). No more than 9 semester hours of Special Topics courses may be included in a minor program.

Students working toward the minor must take one of the following core menu courses:

Core Course Options
PUBP 3000 Constitutional Issues
PUBP 3016 Judicial Process
PUBP 3610 Pre-Law Seminar
PUBP 4609 Legal Practice

Electives
CS 4010 Introduction to Computer Law
CS 4280 Survey of Telecommunications and the Law
ECON 4300/4301 Economics of Information, Transaction Costs and Contracts
ECON 4320/4321 Economics of Technology, Innovation, and Entrepreneurship
HTS 3002 History of American Business
HTS 3006 United States Labor History
HTS 3085 Law, Technology, and Politics
INTA 3031 Human Rights in a Technological World
INTA 3301* International Political Economy
INTA 4060 International Law
MGT 2106** Legal, Social, Ethical Aspects of Business
MGT 3102** Managing Human Resources within a Regulatory Environment
MGT 3606 International Business Law
MGT 3608 Technology Law and Ethics
MGT 3609 Legal Aspects of Real Estate
MGT 4010 Business Taxation
PHIL 3113 Logic and Critical Thinking
PUBP 3000 Constitutional Issues (if not counted as a core course)
PUBP 3016 Judicial Process (if not counted as a core course)
PUBP 3610 Pre-Law Seminar (if not counted as a core course)
PUBP 4111: Internet and Public Policy
PUBP 4226 Business and Government
PUBP 4314 Environmental Policy and Regulation
PUBP 4440: Science, Technology, and Regulation
PUBP 4512 Politics of Telecommunications Policy
PUBP 4609 Legal Practice (if not counted as a core course)
PUBP 4652 OLA Legal Internship
PUBP 6330 Environmental Law

Special Topics elective courses (number designations may change)
CS 480# Special Topics: Internet Law
INTA 480# Special Topics: International Law
INTA 480# Special Topics: International Human Rights
INTA 480# Special Topics: National Security Law
INTA 480# Special Topics: The Laws of War
ME 480# Special Topics: Engineering Law and Ethics
MGT 480# Special Topics: Business and Government Regulation
MGT 480# Special Topics: Corporate Governance
MGT 480# Special Topics: Principles of Commercial Law
MGT 480# Special Topics: Law for Entrepreneurs
PHIL 480# Special Topics: Health Care Law, Policy, and Management/Ethics
PUBP 480# Special Topics: Biomedical Law, Policy, & Ethics
PUBP 480# Special Topics: Biotechnology Law, Policy & Ethics
PUBP 480# Special Topics: Biotechnology Law & Policy
PUBP 480# Special Topics: Current Controversies
PUBP 480# Special Topics: Environmental Law
PUBP 480# Special Topics: Race, Gender, and the Fourteenth Amendment
PUBP 480# Special Topics: Health CareLaw, Policy, and Management/Ethics
PUBP 480# Special Topics: History of American Law
PUBP 480# Special Topics: Internet Law
PUBP 480# Special Topics: Law and Science
PUBP 480# Special Topics: Legal Internship
PUBP 480# Special Topics: Mock Trial
PUBP 480# Special Topics: Science, Philosophy, and the Law
PUBP 480# Special Topics: Survey of Telecommunications and the Law
PUBP 480# Special Topics: Technology Law, Policy & Management
PUBP 480# Special Topics: Transactional Law
PUBP 480# Special Topics: Foundations of Leadership (if taken before Summer 2010)
PUBP 48## Special Topics: Advanced Intellectual Property Law (one credit)
PUBP 48## Special Topics: Legal Research and Writing (one credit)

Also, special problems courses, as designated by the Director of the Law, Science & Technology Program on a case-by-case basis, may be counted toward the electives requirements for the Certificate and Minor.

*Note 1: INTA majors MAY NOT count this course as an elective toward the Certificate or Minor because it is required by name and number for the INTA major. This is an Institute rule for Certificates and Minors.

**Note 2: Management majors MAY NOT count these courses as electives toward the Certificate or Minor because they are required by name and number for the Management major. This is an Institute rule for Certificates and Minors.

MINOR IN LEADERSHIP STUDIES

The Minor in Leadership Studies has as its primary objective the goal of providing students with an in-depth knowledge of leadership theory, skills, experience, and application through a rigorous program of study that is multi-disciplinary in nature. Initially, the minor will be comprised of two tracks, one in Public Policy and the second in Management, offered through the School of Public Policy and the ILE respectively. Students apply for either the Public Policy Track or the MGT Track, are accepted, and enter the program to begin a prescribed 15 credit hour course of study while satisfying requirements for a bachelor's degree in their major. In order for a student to be enrolled in this minor, they must have at least thirty credit hours with a cumulative GPA of 2.5 or greater, have applied for admission, and been formally admitted. Each course counting toward the minor must be completed with a grade of C or above, with the overall required GPA in the courses counting toward the minor being a 2.75 or better.

Application and course descriptions are available at: http://leadership.gatech.edu, http://mgt.gatech.edu, and http://www.prelaw.gatech.edu.

Approved Program of Study for Undergraduate Minors
Georgia Institute of Technology
Office of the Registrar
2013-2014
Minor in Leadership Studies

Please type or print in ink:

Name (first/last):	GT Student ID Number:
GT Email Address:	Daytime Phone:
Major:	Anticipated Graduation Date:

In addition to the guidelines listed below, you are responsible for reviewing and following the general guidelines for minors: http://www.catalog.gatech.edu/academics/minorguide.php

The Leadership Studies minor must comprise at least 15 semester hours, of which at least 12 semester hours are upper-division coursework (numbered 3000 or above). In order for a student to be enrolled in this minor, they must have at least 30 credit hours with a cumulative GPA of 2.5 or greater, applied for admission, and been formally admitted. Each course counting toward the minor must be completed with a grade of C or above, with the overall required GPA in the courses counting toward the minor being a 2.75 or better.

I. Each student must take the following required course: PUBP 4140 - Foundations of Leadership (3 hours).
II. Each student must also take at least three courses (9 hours) selected from either the Policy or Management Track below.
Policy Track: PHIL 3050, PUBP 2010, PUBP 2030, or PUBP 4803*
Management Track: MGT 3103, 3150, 4106, 4193, 4194, 4670, 4803*, MGT/ME 4741, (MGT 4191 or 4192)
III. Each student must complete an internship from either the Policy track or the Management track (3 hours).
Policy Track: PUBP 4651 – Internship Management Track: MGT 4611 – Integrative Management Analysis

*(See below list of approved Special Topic courses for each track)

It is the **major advisor's responsibility** to verify that students are not using any courses required by name and number for their major, that they are not using any core area A-E courses (including humanities and social sciences), and that they are not using any courses for more than one minor or certificate. Free electives and technical electives may be used towards minors.

List the courses completed for the requested minor:

Course and Section	Course Title	Credit Hours	Grade	Semester Completed

Student Signature:
Major School Signature:
Minor School Signature:

Approved Special Topics courses:

<u>Management Track:</u>
MGT 4803 Fairness & Leadership: Building Trust - *Pre-requisites: MGT 3101 (Organizational Behavior) or MGT 3150 (Principles of Management)*

MGT 4803 Motivation & Rewards - *Pre-requisites: MGT 3101 (Organizational Behavior) or MGT 3102 (Management of Human Resources)*

MGT 4803 Corporate Governance (Beginning Spring 2013) - *Pre-requisites: MGT 2106 (Legal Aspects of Business)*

MGT 4803 Business Fundamentals for Social Entrepreneurs *(Currently available only to participants in the Budapest Study Abroad Program)*

MGT 4803 Management in the Healthcare Sector

<u>Policy Track:</u>
PUBP 48X3 Ethical Responsibility in Leadership

PUBP 4813 Managerial and Leadership Skill Building

PSY 4XXX Exploring Multicultural Identities

MINOR IN MATHEMATICS

A student may earn a minor in mathematics by fulfilling, in addition to the general Institute requirements, the requirements in one of the two tracks specified below.

TRACK I

MATH 4317, MATH 4107, MATH 4305, and nine additional hours of 3000 level or higher mathematics courses.

TRACK II

At least nine hours in one of the following fields:

1. Analysis: MATH 4317, 4318, 4320, 4581, 4640, 4641
2. Algebra and Number Theory: MATH 4012, MATH 4107, 4108, 4150, 4305
3. Probability and Statistics: MATH 3215, 3770, 4221, 4222, 4255, 4261, 4262, 4280
4. Dynamics and Differential Equations: MATH 4347, 4348, 4541, 4542, 4581
5. Discrete Mathematics: MATH 3012, 4012, 4022, 4032, 4580
6. Geometry and Topology: MATH 4431, 4432, 4441

Nine additional hours of 3000 level or higher mathematics courses are also required.

For further information, consult the departmental advisor.

FURTHER RULES

1. No more than three semester hours of Special Topics courses may be used. No more than three semester hours of Undergraduate Research courses may be used.
2. No Special Problems or Internship coursework may be used.
3. All coursework in the program must be completed with an overall grade-point average of at least 2.0.
4. Courses must be completed on a letter grade mode.
5. Courses required by name and number in a student's major degree program may not be used in satisfying the minor requirement.
6. Institute undergraduate minor guidelines must be satisfied.

Approved Program of Study for Undergraduate Minors
Georgia Institute of Technology
Office of the Registrar
2013-2014
Minor in Mathematics

Please type or print in ink:

Name (first/last):	GT Student ID Number:
GT Email Address:	Daytime Phone:
Major:	Anticipated Graduation Date:

In addition to the guidelines listed below, you are responsible for reviewing and following the general guidelines for minors: http://www.catalog.gatech.edu/academics/minorguide.php

A. The Mathematics minor must comprise 18 semester hours of upper-division coursework (numbered 3000 or above). A student may earn a minor in mathematics by fulfilling, in addition to the general Institute requirements, the requirements in one of the two tracks specified below.

Required courses include choosing either Track I or Track II:

Track I:
MATH 4317, 4107, 4305 and 9 additional hours of Mathematics courses at the 3000 level or above

Track II: Choose 9 hours in one of the following fields:
Analysis: Math 4317, 4318, 4320, 4581, 4640, 4641
Algebra and Number Theory: MATH 4107, 4108, 4150, 4305, 4012
Probability and Statistics: MATH 3215, 3770, 4221, 4222, 4255, 4261, 4262, 4280
Dynamics and Differential Equations: MATH 4347, 4348, 4541, 4542, 4581
Discrete Mathematics: MATH 3012, 4012, 4022, 4032, 4580
Geometry and Topology: MATH 4431, 4432, 4441

And 9 additional hours of Mathematics courses at the 3000 level or above. See below for additional rules.

It is the **major advisor's responsibility** to verify that students are not using any courses required by name and number for their major, that they are not using any core area A-E courses (including humanities and social sciences), and that they are not using any courses for more than one minor or certificate. Free electives and technical electives may be used towards minors.

List the courses completed for the requested minor:

☐ Track I ☐ Track II/Field:____________________

Course and Section	Course Title	Credit Hours	Grade	Semester Completed

Student Signature:
Major School Signature:
Minor School Signature:

Additional Rules

1. No more than three semester hours of Special Topics courses may be used. No more than three semester hours of Undergraduate Research courses may be used.
2. No Special Problems or Internship coursework may be used.
3. All coursework in the program must be completed with an overall grade point average of at least 2.0.
4. Courses must be completed on a letter grade mode.
5. Courses required by name and number in a student's major degree program may not be used in satisfying the minor requirement.
6. Institute undergraduate minor guidelines must be satisfied.

MINOR IN MATERIALS SCIENCE AND ENGINEERING

The School of Materials Science and Engineering (MSE) offers an undergraduate minor in materials science and engineering for non-MSE majors. The purpose of the minor is to broaden the materials background of non-materials science and engineering students and to introduce them to a materials approach to problem solving that may be different from that provided by their major.

Fifteen hours of MSE courses are required for the minor, of which at least nine semester hours are upper-division coursework (i.e., courses numbered 3000 or above). The depth of the program of study should ensure that upon completion, the student will have met the educational objectives established for the minor. No more than three semester hours of special topics courses may be included in a minor program. No more than a total of three semester hours of special problems or undergraduate research courses may be included in the minimum fifteen hours of a minor program. All courses counting toward the minor must be taken on a letter-grade basis and completed with an overall grade-point average of at least 2.00.

Courses required for the major (excluding electives) may not be applied toward the minor. Many students will be able to complete a considerable portion of the minor requirements by scheduling MSE courses as electives required by their major.

Non-MSE undergraduate majors are encouraged to participate in this program provided they have the appropriate prerequisites and approval of their home school academic advisor. To participate or for additional information, contact the associate chair for Undergraduate Programs in the School of Materials Science and Engineering.

Approved Program of Study for Undergraduate Minors
Georgia Institute of Technology
Office of the Registrar
2013-2014
Minor in Materials Science and Engineering

Please type or print in ink:

Name (first/last):	GT Student ID Number:
GT Email Address:	Daytime Phone:
Major:	Anticipated Graduation Date:

In addition to the guidelines listed below, you are responsible for reviewing and following the general guidelines for minors: http://www.catalog.gatech.edu/academics/minorguide.php

The MSE minor must comprise at least 15 semester hours, of which at least 12 semester hours are upper-division coursework (numbered 3000 or above).

It is the **major advisor's responsibility** to verify that students are not using any courses required by name and number for their major, that they are not using any core area A-E courses (including humanities and social sciences), and that they are not using any courses for more than one minor or certificate. Free electives and technical electives may be used towards minors.

List the courses completed for the requested minor:

Course and Section	Course Title	Credit Hours	Grade	Semester Completed

Student Signature:
Major School Signature:
Minor School Signature:

Approved Program of Study for Undergraduate Minors
Georgia Institute of Technology
Office of the Registrar
2013-2014
Minor in Multi-disciplinary Design/Arts History

Please type or print in ink:

Name (first/last):	GT Student ID Number:
GT Email Address:	Daytime Phone:
Major:	Anticipated Graduation Date:

In addition to the guidelines listed below, you are responsible for reviewing and following the general guidelines for minors: http://www.catalog.gatech.edu/academics/minorguide.php

The Multi-disciplinary Design/Arts History minor must comprise at least 18 semester hours, of which at least 12 semester hours are upper-division coursework (numbered 3000 or above). **Required courses include: ARCH 2111 and 2112 or ARCH 4105 and 4106 or COA 2241 and 2242 or ID 2011 or 2012. Completion of the minor must include 4 courses from at least 3 of the 5 lists:**

I. Architecture of History:
ARCH 2111, 2112, 4105, 4106, 4114, 4117, 4151, 4821-3 (with approval)

II. History of Industrial Design:
ID 2202, 3801 -2 (with approval), 4204, 4205, 4803, 4804,4805

III. History of the City; Landscape/Garden History:
ARCH 4151, 4821 – 3 (with approval), CP 4010, 4020, 4040

IV. History of Art and Foreign Study:
ARCH 2115, COA 1060, 2115, 2116, 2241, 2242, 4121

V. Music History:
MUSI 3450, 3610, 3611, 3801-3 (with approval), 4801-3 (with approval), 4450

It is the **major advisor's responsibility** to verify that students are not using any courses required by name and number for their major, that they are not using any core area A-E courses (including humanities and social sciences), and that they are not using any courses for more than one minor or certificate. Free electives and technical electives may be used towards minors.

List the courses completed for the requested minor:

Course and Section	Course Title	Credit Hours	Grade	Semester Completed

Student Signature:
Major School Signature:
Minor School Signature:

SCHOOL OF MUSIC

Admissions
About the School
MS in Music Technology
PhD in Music Technology
Minors
Certificates
Humanities Credit
Bands
Ensembles
Orchestra
College of Architecture

MUSIC MINORS

Music Minors are available in three distinct areas: general music literacy, music technology, and music performance. The minors are 15 credit hours each and permit students to flexibly customize a course of study specific and appropriate to their interests and abilities. The music literacy courses, Fundamentals of Musicianship I and II, are common to all three minors. All courses in the Music Minor must be taken on a letter-grade basis with a C or better, and must be completed with an overall GPA of 2.0. All other requirements outlined in the Georgia Tech Policy for Undergraduate Minors must be met.

TITLES OF MINOR

Music Minor, Music Technology Minor, and Music Performance Minor

SPECIFIC OBJECTIVES

Students completing a Music Minor at Georgia Tech will be trained in musical study to include theory, history, and music technology. Two of the courses of study, the Music Minor and the Music Performance Minor, require concentration in a specific applied area–vocal or instrumental.

ADMISSION REQUIREMENTS

Students seeking admission to one of the Music Minor Degree Programs must:

1. Be a full-time Georgia Tech student.
2. Have completed at least one semester of study at Georgia Tech or transferred from another institution.

Those seeking a minor, including applied lessons, must:

1. Demonstrate proficiency as a performer on a standard orchestral or band instrument, or as a vocalist.
2. Must audition for the Music Minor Program with more than three semesters remaining in their major degree program or before graduation.

APPLICATION

The application/audition procedure can occur no earlier than second semester of the student’s first year (see School Chair for specific deadlines). Entrance into the Music Minor Program will occur no earlier than first semester of the student’s second year. The application to the Music Minor Degree Program must include:

1. A completed Music Minor Application form. Please note the form includes a current resumé of musical activities, awards, repertoire list, and previous instructors.
2. A current transcript (unofficial).

APPLIED LESSON AUDITION/INTERVIEW

Each applicant seeking applied lessons must complete an audition and interview before being approved. A portion of the interview may be completed at the time of the audition and a formal interview with the Chair of the School of Music will be required for those individuals recommended for consideration by the Audition Committee. The audition must be completed at least one semester prior to admittance to the program. Auditions must be scheduled with the Music Minor Program Coordinator.

ENSEMBLE PERFORMANCE – (3 SEMESTER HOURS)

The Music Minor and Music Performance Minors require a minimum of 3 semesters in ONE of the following ensemble tracks and must be completed at the MUSI 3000 level or above. Therefore, a student must be enrolled in the ensemble for three semesters during their junior and senior years. The ensemble tracks include:

- Wind Ensemble and/or Concert Band
- Jazz Ensemble
- Percussion Ensemble
- Orchestra
- Chorale and/or Chamber Choir and/or Men's Glee Club

ENSEMBLE CLARIFICATION

Please note that Instrumental Chamber Ensembles do not apply to the Ensemble Performance course curriculum requirements.

Music Minor [General Emphasis]

- Written application and formal audition required
- 6 credit hours of Fundamentals of Musicianship
- 3-4 credit hours of Music Ensemble at the 3000/4000 level
- 2-5 credit hours of Music Technology
- 1-5 credit hours Individual Private Lessons

Music Technology Minor

- Written application required – no formal audition
- 6 credit hours of Fundamentals of Musicianship
- 9 credit hours of Music Technology as approved by the Music Minor Coordinator

Music Performance Minor

- Written application and formal audition required
- 6 credit hours of Fundamentals of Musicianship
- 3 credit hours of Individual Private Lessons – MUSI 3710, 3720, and 3730
- 4 credit hours of Major Ensemble at the 3000/4000 level
- 2 credit hours of Chamber Ensemble

For additional information please contact the Music Minor Coordinator, Dr. Frank Clark: fclark@music.gatech.edu or 404.894.8964. Alternatively, you can contact the Administrative Coordinator, Corissa Jones at corissa.jones@music.gatech.edu or 404.894.8949.

Approved Program of Study for Undergraduate Minors
Georgia Institute of Technology
Office of the Registrar
2013-2014
Minor in Music

Please type or print in ink:

Name (first/last):	GT Student ID Number:
GT Email Address:	Daytime Phone:
Major:	Anticipated Graduation Date:

In addition to the guidelines listed below, you are responsible for reviewing and following the general guidelines for minors: http://www.catalog.gatech.edu/academics/minorguide.php

The Music minor must comprise at least 15 semester hours, of which at least 9 semester hours are upper-division coursework (numbered 3000 or above).

- Written application required -- no formal audition
- 6 credit hours of Fundamentals of Musicianship (MUSI 2010 and 2011)
- 3 to 4 credit hours of Music Ensemble at the 3000/4000 level
- 2 to 5 credit hours of Music Technology
  (MUSI 3500, 4450, 4455, 4630, 4650, 4670)
- 1 to 5 credit hours of Individual Private Lessons
  (MUSI 3710, 3720, 3730, 3740, 3750)

It is the **major advisor's responsibility** to verify that students are not using any courses required by name and number for their major, that they are not using any core area A-E courses (including humanities and social sciences), and that they are not using any courses for more than one minor or certificate. Free electives and technical electives may be used towards minors.

List the courses completed for the requested minor:

Course and Section	Course Title	Credit Hours	Grade	Semester Completed
MUSI 2010	Fundamentals of Musicianship I	3		
MUSI 2011	Fundamentals of Musicianship II	3		

Student Signature:
Major School Signature:
Minor School Signature:

Approved Program of Study for Undergraduate Minors
Georgia Institute of Technology
Office of the Registrar
2013-2014

Minor in Music Performance

Please type or print in ink:

Name (first/last):	GT Student ID Number:
GT Email Address:	Daytime Phone:
Major:	Anticipated Graduation Date:

In addition to the guidelines listed below, you are responsible for reviewing and following the general guidelines for minors: http://www.catalog.gatech.edu/academics/minorguide.php

The Music Performance minor must comprise at least 15 semester hours, of which at least 9 semester hours are upper-division coursework (numbered 3000 or above).

- Written application and formal audition required
- 6 credit hours of Fundamentals of Musicianship (MUSI 2010 and 2011)
- 3 credit hours of Individual Private Lessons – MUSI 3710, 3720, and 3730
- 4 credit hours of Major Ensemble at the 3000/4000 level
- 2 credit hours of Chamber Ensemble

It is the **major advisor's responsibility** to verify that students are not using any courses required by name and number for their major, that they are not using any core area A-E courses (including humanities and social sciences), and that they are not using any courses for more than one minor or certificate. Free electives and technical electives may be used towards minors.

List the courses completed for the requested minor:

Course and Section	Course Title	Credit Hours	Grade	Semester Completed
MUSI 2010	Fundamentals of Musicianship I	3		
MUSI 2011	Fundamentals of Musicianship II	3		
MUSI 3710	Individual Applied Instruction	1		
MUSI 3720	Individual Applied Instruction	1		
MUSI 3730	Individual Applied Instruction	1		
MUSI	Chamber Ensemble	1		
MUSI	Chamber Ensemble	1		
MUSI		1		
MUSI		1		
MUSI		1		
MUSI		1		

Student Signature:
Major School Signature:
Minor School Signature:

Approved Program of Study for Undergraduate Minors
Georgia Institute of Technology
Office of the Registrar
2013-2014
Minor in Music Technology

Please type or print in ink:

Name (first/last):	GT Student ID Number:
GT Email Address:	Daytime Phone:
Major:	Anticipated Graduation Date:

In addition to the guidelines listed below, you are responsible for reviewing and following the general guidelines for minors: http://www.catalog.gatech.edu/academics/minorguide.php

The Music Technology minor must comprise at least 15 semester hours, of which at least 9 semester hours are upper-division coursework (numbered 3000 or above)

- Written application required -- no formal audition
- 6 credit hours of Fundamentals of Musicianship (MUSI 2010 and 2011)
- 9 credit hours of Music Technology as approved by the Music Minor Coordinator (MUSI 3500, 4450, 4455, 4630, 4650, 4670)

It is the **major advisor's responsibility** to verify that students are not using any courses required by name and number for their major, that they are not using any core area A-E courses (including humanities and social sciences), and that they are not using any courses for more than one minor or certificate. Free electives and technical electives may be used towards minors.

List the courses completed for the requested minor:

Course and Section	Course Title	Credit Hours	Grade	Semester Completed
MUSI 2010	Fundamentals of Musicianship I	3		
MUSI 2011	Fundamentals of Musicianship II	3		

Student Signature:
Major School Signature:
Minor School Signature:

Approved Program of Study for Undergraduate Minors
Georgia Institute of Technology
Office of the Registrar
2013-2014
Minor in Nuclear and Radiological Engineering

Please type or print in ink:

Name (first/last):	GT Student ID Number:
GT Email Address:	Daytime Phone:
Major:	Anticipated Graduation Date:

In addition to the guidelines listed below, you are responsible for reviewing and following the general guidelines for minors: http://www.catalog.gatech.edu/academics/minorguide.php

The NRE minor must comprise at least 15 semester hours, of which at least 12 semester hours are upper-division coursework (numbered 3000 or above). **Required courses include NRE 3301, 3208, and 3316. Completion of the minor includes 6 hours from the following: NRE 2110, 3112, 4208, 4214, 4232, 4234, 4266, 4328, 4404, 4610, 4750, 4770.**

It is the **major advisor's responsibility** to verify that students are not using any courses required by name and number for their major, that they are not using any core area A-E courses (including humanities and social sciences), and that they are not using any courses for more than one minor or certificate. Free electives and technical electives may be used towards minors.

List the courses completed for the requested minor:

Course and Section	Course Title	Credit Hours	Grade	Semester Completed
NRE 3301	Radiation Physics	3		
NRE 3208	Nuclear Reactor Physics I	3		
NRE 3316	Radiation Protection Engineering	3		

Student Signature:
Major School Signature:
Minor School Signature:

Approved Program of Study for Undergraduate Minors
Georgia Institute of Technology
Office of the Registrar
2013-2014
Minor in Performance Studies

Please type or print in ink:

Name (first/last):	GT Student ID Number:
GT Email Address:	Daytime Phone:
Major:	Anticipated Graduation Date:

In addition to the guidelines listed below, you are responsible for reviewing and following the general guidelines for minors: http://www.catalog.gatech.edu/academics/minorguide.php

The Performance Studies minor must comprise at least 15 semester hours, of which at least 12 semester hours are upper-division coursework (numbered 3000 or above). **Required courses include:**

Performance Studies (3 hours)
LCC 2600

Focused Studies in Performance (3 hours)
Select one: LCC 3262 or 3362 or 3863

Seminars in Performance (3 hours)
LCC 4600

Theatre, Film, Media Studies, Performance Practicum (6 hours)
Select two: LCC 2400 **or** 2500, 3216, 3218, 3220, 3226, 3228, 3252, 3254, 3256, 3352, 3406, 3853, 4400, 4500, 4602

It is the **major advisor's responsibility** to verify that students are not using any courses required by name and number for their major, that they are not using any core area A-E courses (including humanities and social sciences), and that they are not using any courses for more than one minor or certificate. Free electives and technical electives may be used towards minors.

List the courses completed for the requested minor:

Course and Section	Course Title	Credit Hours	Grade	Semester Completed
LCC 2600	Introduction to Performance Studies	3		
LCC 4600	Seminar in Performance	3		

Student Signature:
Major School Signature:
Minor School Signature:

SCHOOL OF PUBLIC POLICY

About the School
Undergraduate
BS Public Policy
Description
Degree Requirements
Minors & Certificates
Law, Science, & Tech
Leadership Studies
Philosophy
Political Science
Public Policy
Women, Science, & Tech
Graduate
Admissions
Certificates
MS Public Policy
PhD Public Policy
Joint PhD Program With GSU
Dual Degrees
Public Policy / MCRP
Ivan Allen College

PHILOSOPHY - MINORS AND CERTIFICATES

Established in 1990
Location: 107 D. M. Smith Building
685 Cherry Street
Telephone: 404.894.6822
Fax: 404.385.0504
Website: http://philosophy.gatech.edu

GENERAL INFORMATION

Georgia Tech offers undergraduate courses in philosophy with a particular focus on science and technology. The courses are intended to enable Georgia Tech students to reflect on the nature of their disciplines and to focus their understanding on the context of their lives as professionals and citizens. All Philosophy (PHIL) courses can be used to satisfy the distribution requirement in humanities, and some fulfill a variety of ethics requirements.

Certificate and minor programs in philosophy are available for students who wish to concentrate coursework in this field. The certificate program consists of twelve hours of coursework and the minor of fifteen hours. For the minor, PHIL 3115 and PHIL 3103 are required.

Approved Program of Study for Undergraduate Minors
Georgia Institute of Technology
Office of the Registrar
2013-2014
Minor in Philosophy

Please type or print in ink:

Name (first/last):	GT Student ID Number:
GT Email Address:	Daytime Phone:
Major:	Anticipated Graduation Date:

In addition to the guidelines listed below, you are responsible for reviewing and following the general guidelines for minors: http://www.catalog.gatech.edu/academics/minorguide.php

The PHIL minor must comprise at least 15 semester hours, of which at least 12 semester hours are upper-division coursework (numbered 3000 or above).

Required courses include: PHIL 3103, 3115

Choose 3 from the following list (at least 2 at 3000+ level):
INTA 2030, PHIL 2010, 2025, 3050, 3102, 3105, 3109, 3113, 3127, 4110, 4752, 4174, 4176, 4801-2-3

It is the **major advisor's responsibility** to verify that students are not using any courses required by name and number for their major, that they are not using any core area A-E courses (including humanities and social sciences), and that they are not using any courses for more than one minor or certificate. Free electives and technical electives may be used towards minors.

List the courses completed for the requested minor:

Course and Section	Course Title	Credit Hours	Grade	Semester Completed
PHIL 3103		3		
PHIL 3115		3		

Student Signature:
Major School Signature:
Minor School Signature:

POLITICAL SCIENCE - MINORS AND CERTIFICATES

Established in 1990
Location: 107 D. M. Smith Building,
685 Cherry Street
Telephone: 404.894.6822
Fax: 404.385.0504
Website: www.prelaw.gatech.edu

GENERAL INFORMATION

The discipline of political science is included within the Ivan Allen College within the School of Public Policy and the Sam Nunn School of International Affairs. Undergraduate courses in political science are intended to broaden students' perceptions of political processes and governmental institutions. Many of these courses are taught under the PUBP or INTA prefix. Students should consult with the political science faculty concerning course offerings.

Political science courses may be used to satisfy the distribution requirement in social sciences, including the state-mandated requirement on constitutions of the United States and Georgia. This requirement may be satisfied by completion of POL 1101 or PUBP 3000, or INTA 1200, or HIST 2111 or 2112. The requirement also may be satisfied by examination.

Certificate and minor programs in political science, administered by the School of Public Policy, are available for students who wish to concentrate coursework in this discipline. The certificate in political science requires twelve hours of coursework (at least nine hours at the 3000 level), chosen in consultation with the faculty coordinator. The minor in political science requires 18 hours of coursework (at least twelve hours at the 3000 level), also chosen with the advice of the faculty coordinator.

Approved Program of Study for Undergraduate Minors
Georgia Institute of Technology
Office of the Registrar
2013-2014
Minor in Political Science

Please type or print in ink:

Name (first/last):	GT Student ID Number:
GT Email Address:	Daytime Phone:
Major:	Anticipated Graduation Date:

In addition to the guidelines listed below, you are responsible for reviewing and following the general guidelines for minors: http://www.catalog.gatech.edu/academics/minorguide.php

A. The Political Science minor must comprise at least 15 semester hours, of which at least 12 semester hours are upper-division coursework (numbered 3000 or above). A student may seek permission from the School of Public Policy to allow 3 hours of upper-division coursework taught outside the School to count toward the completion of the minor if that coursework is clearly relevant to Political Science. **Required courses include:**

Choose 5 from the following (at least 4 at 3000+ level):
INTA 2210, POL 2101, PUBP 2012, 2014, 3000, 3010, 3016, 3200, 3201, 3212, 3214, 4120, 4200, 4212, 4226, 4314, 4410, 4416, 4512, 4514

B. Courses required by name and number and/or used to satisfy Core Areas A through E in a student's major degree program may not be used in satisfying the course requirements for a minor **(courses used to fulfill social science requirements cannot be applied towards the minor)**. However, courses used in a minor also may be used to fulfill other elective requirements (free electives, technical electives, etc.) in the student's major degree program. **Major advisors, please verify.**

List the courses completed for the requested minor:

Course and Section	Course Title	Credit Hours	Grade	Semester Completed

Student Signature:
Major School Signature:
Minor School Signature:

MINOR IN PSYCHOLOGY

A student may earn a minor in psychology by completing the following requirements.

FOUNDATION COURSES:

PSYC 2015 - Research Methods (four hours)
PSYC 2020 - Psychological Statistics (four hours)

ADVANCED COURSES:

Twelve semester hours of psychology courses at or above the 3000 level with the following restrictions:

Courses excluded:

Psyc 3031 - Experimental Analysis of Behavior
Psyc 4031 - Applied Experimental Psychology

Approved Program of Study for Undergraduate Minors
Georgia Institute of Technology
Office of the Registrar
2013-2014
Minor in Psychology

Please type or print in ink:

Name (first/last):	GT Student ID Number:
GT Email Address:	Daytime Phone:
Major:	Anticipated Graduation Date:

Guidelines:

1. The Psychology minor must comprise at least 18 semester hours, of which at least 12 semester hours are upper-division coursework (numbered 3000 or above).
2. Required courses include: PSYC 2015 and PSYC 2020 (or other statistics course as approved by the Undergraduate Coordinator in the School of Psychology).
   A. If PSYC 2015 (Research Methods) is counted as credit toward another program then it cannot be counted towards the psychology minor. In this case 15semester hours of Psychology at or above the 3000 level must be taken to complete the psychology minor.
   B. If PSYC 2020 (Psychological Statistics) is not taken (i.e., because some other statistics class has been allowed to replace it), then 15 semester hours of Psychology at or above the 3000 level must be taken to complete the psychology minor.
   C. If A and B above are both true, then 18 semester hours of Psychology at or above the 3000 level must be taken to complete the psychology minor.
3. **Courses to be excluded from the minor include: PSYC 3031, PSYC 4031, all special topics courses, all special problems courses, and all undergraduate research courses (e.g., PSYC 2699, PSYC 4699.)**
4. No more than 6 hours of Advanced Standing may be included in a minor program.
5. All courses counting toward the minor must be taken on a letter-grade basis, and completed with an overall average of at least 2.0.
6. No more than two minors may be awarded with a degree. Each must contain 18 semester hours not used in the other minor.
7. Courses required by name and number and/or used to satisfy Core Areas A through E in a student's major degree program may not be used in satisfying the course requirements for a minor. However, courses used in a minor also may be used to fulfill other elective requirements (free electives, technical electives, etc.) in the student's major degree program. Major advisors, please verify.
8. The minor will be conferred at the same time the degree is conferred and the degree and minor will be recorded on the student's transcript. The minor will not appear on the diploma. Minors may not be conferred retroactively upon students who have graduated.

List the courses completed for the requested minor:

Course and Section	Course Title	Credit Hours	Grade	Semester Completed
PSYC 2015	Research Methods	4		
PSYC 2020	Psychological Statistics	4		

Student Signature:
Major School Signature:
Minor School Signature:

MINORS AND CERTIFICATES

The School of Public Policy offers undergraduate certificates and minors in five areas:

Public Policy: featuring courses on government and business decision processes, especially those involving science, technology, environment, or regional development.

Law, Science, and Technology/Pre-Law: preparing students to make informed decisions about law school and careers in law through selected courses in public policy, business administration, international affairs, history, and other fields.

Leadership studies: providing students with an in-depth knowledge of leadership theory, skills, experience, and application through a rigorous program of study that is multi-disciplinary in nature

Philosophy: providing broad perspectives and critical thinking about science and technology, emphasizing values and ethics.

Political Science: focusing on how government works, from the local to the national level.

Women, Science, and Technology: Links science and technology issues with those issues associated with the study of women and gender in society.

The certificates enrich any Georgia Tech degree and particularly serve students who are planning graduate studies in law, medicine, business, or the social sciences. All the certificates require a minimum of twelve semester hours of concentration.

Minors are for students wishing a concentration outside their major that provides greater depth than the certificate programs. Each minor requires a minimum of fifteen hours of credit (twelve semester hours at the 3000 level or higher with a *C* or better in each. Completion of a minor will be recognized on the student's final university transcript.

Students interested in planning a certificate or minor program in one of the five areas should contact the School of Public Policy for further information. A faculty advisor assists each student in planning a program of study to meet his or her needs and interests.

HEALTH, MEDICINE, AND SOCIETY MINOR

The Health, Medicine, and Society minor is a program of study for undergraduate students who are interested in the health and medical professions. Humanities and social science perspectives on health and medicine equip students to address important topics, such as the ethics of biomedical research, the nature of medical discovery, the relationships among race, health, and gender, the global impact of public health, and the cost of health care delivery. Understanding these and related issues is essential to developing informed, thoughtful, and ethically enlightened leaders in the fields of health and medicine.

Approved Program of Study for Undergraduate Minors
Georgia Institute of Technology
Office of the Registrar
2013-2014
Minor in Public Policy

Please type or print in ink:

Name (first/last):	GT Student ID Number:
GT Email Address:	Daytime Phone:
Major:	Anticipated Graduation Date:

In addition to the guidelines listed below, you are responsible for reviewing and following the general guidelines for minors: http://www.catalog.gatech.edu/academics/minorguide.php

The Public Policy minor must comprise at least 15 semester hours, of which at least 12 semester hours are upper-division coursework (numbered 3000 or above). **POL 1101 or equivalent as determined by the administrator of the minor program is required in addition to the 15 semester hours for the minor.** A student may seek permission from the School of Public Policy to allow 3 hours of upper-division coursework taught outside the School to count toward the completion of the minor if that coursework is clearly relevant to Public Policy.

It is the **major advisor's responsibility** to verify that students are not using any courses required by name and number for their major, that they are not using any core area A-E courses (including humanities and social sciences), and that they are not using any courses for more than one minor or certificate. Free electives and technical electives may be used towards minors.

List the courses completed for the requested minor:

Course and Section	Course Title	Credit Hours	Grade	Semester Completed
Student Signature:				
Major School Signature:				
Minor School Signature:				

Approved Program of Study for Undergraduate Minors
Georgia Institute of Technology
Office of the Registrar
2013-2014
Minor in Science, Technology, and Society

Please type or print in ink:

Name (first/last):	GT Student ID Number:
GT Email Address:	Daytime Phone:
Major:	Anticipated Graduation Date:

In addition to the guidelines listed below, you are responsible for reviewing and following the general guidelines for minors: http://www.catalog.gatech.edu/academics/minorguide.php

The Science, Technology, and Society minor must comprise at least 15 semester hours, of which at least 9 semester hours are upper-division coursework (numbered 3000 or above).

Required Coursework (minimum of 2 courses from HTS and LCC):
Choose from the following:

HTS: (6 hours) 1081, 2081, 2082, 2084, 2100, 3001, 3007, 3020, 3021, 3046, 3081, 3082, 3083, 3084, 3085, 3086, 3087

LCC: (6 hours) 3102, 3104, 3106, 3108, 3110, 3112, 3144, 3116, 3118, 3214, 3219, 3302, 3304, 3306, 3308, 3318, 3352

Additional 3 hours from any of the above courses.

Three hours taken outside of STS courses may be counted toward the minor, with approval of the HTS minor advisor. Courses required by name and number and/or used to satisfy Core Areas A through E in a student's major degree program may not be used in satisfying the course requirements for a minor. * All courses must be taken on a letter-grade basis and must be completed with an overall grade-point average of 2.0. No more than six hours of Special Topics (elective) courses may be counted toward the minor. Special Problems courses may not be counted toward the minor.

It is the **major advisor's responsibility** to verify that students are not using any courses required by name and number for their major, that they are not using any core area A-E courses (including humanities and social sciences), and that they are not using any courses for more than one minor or certificate. Free electives and technical electives may be used towards minors.

List the courses completed for the requested minor:

Course and Section	Course Title	Credit Hours	Grade	Semester Completed

Student Signature:
Major School Signature:
Minor School Signature:

Approved Program of Study for Undergraduate Minors
Georgia Institute of Technology
Office of the Registrar
2013-2014
Minor in Scientific and Engineering Computing

Please type or print in ink:

Name (first/last):	GT Student ID Number:
GT Email Address:	Daytime Phone:
Major:	Anticipated Graduation Date:

In addition to the guidelines listed below, you are responsible for reviewing and following the general guidelines for minors: http://www.catalog.gatech.edu/academics/minorguide.php

The Scientific and Engineering Computing minor must comprise at least 15 semester hours, of which at least 9 semester hours are upper-division coursework (numbered 3000 or above). **Required courses include:**

Computer Programming (3 hours)
Select one: CS 1331 or 1372 or ECE 2036

Computational Problem Solving (3 hours)
CX 4010

Numerical Methods (3 hours)
Select one: AE 3090 or CHBE 2120 or CX 4640 or MATH 4640 or ME 2016 or MSE 3025

Intro to Parallel Computing (3 hours)
Select one: CX 4220 or CX 4777 or MATH 4777

Elective Course (3 hours)
AE 4040 or AE 4131 or BMED 4783 or CS 4710 or CX 4140 or CX 4220 or CX 4230 or CX 4240 or CX 4641 or CX 4777 or ECE 4580 or ECE 4783 or ECE 4823 or ECE 4893 or MATH 4261 or MATH 4305 or MATH 4581 or MATH 4641 or MATH 4777 or ME 4342 or NRE 4234 or PHYS 3266

Additional details and restrictions for some majors are listed on the follow pages.

It is the **major advisor's responsibility** to verify that students are not using any courses required by name and number for their major, that they are not using any core area A-E courses (including humanities and social sciences), and that they are not using any courses for more than one minor or certificate. Free electives and technical electives may be used towards minors.

List the courses completed for the requested minor:

Course and Section	Course Title	Credit Hours	Grade	Semester Completed

Student Signature:
Major School Signature:
Minor School Signature:

In accordance with institute guidelines, the minor require a minimum of 15 hours, including 9 hours at 3xxx or above. 6 hours may be in a student's major, but these courses cannot also be used to fulfill the requirements of the student's major. The curriculum includes (1) foundational courses in mathematics and computing, (2) core courses in the minor's field of study, and (3) one or more courses focusing on application in relevant problem domains. If any of the minor courses listed below are required by the students' major, the student should substitute an additional elective course in its place. The minor is not available to majors in computer science or computational media.

Prerequisites

1. Math through Calculus III and Differential Equations
2. CS 1371 Computing for Engineers

Required Core Courses (4 core courses, one in each of the following areas)

1. Computer Programming. This course may be taken before the prerequisites have been satisfied. If one of these courses is required by the student's major, the student should substitute an additional elective. Courses that satisfy this requirement are:
    a. CS 1331 Intro Object-Oriented Prog (Java)
    b. CS 1372 Program Design for Engineers (C)
    c. ECE 2036 Engineering Software Design

2. Numerical Methods. If Numerical Methods is required by the student's Major, then the student may take an additional elective. Numerical Methods courses include (ECE and computer engineering students are restricted to taking AE 3090, CX/Math 4640, or MSE 3025):
    a. AE 3090 Numerical Methods
    b. ChBE 2120 Numerical Methods
    c. CX/MATH 4640 Numerical Analysis I
    d. ME 2016 Computing Techniques
    e. MSE 3025 Stats and Numerical Methods

3. Computational Problem Solving. Computer engineering students should take both CX 4220 and CX/Math 4777 (see requirement [4]) rather than CX 4010.
    a. CX 4010 Computational Problem Solving for Scientists and Engineers

4. Introduction to Parallel Computing. Courses that satisfy this requirement are:
    a. CX 4220 (formerly CS 4225) Intro to High Performance Computing
    b. CX/MATH 4777 Parallel and Vector Scientific Computing

Electives
Students must take one of the following electives.

a. AE 4040 Computational Fluid Dynamics
b. AE 4131 Intro Finite Element Methods
c. BMED/ECE 4783 Intro Medical Image Proc
d. CX 4140 (formerly CS 4140) Computational Modeling Algorithms
e. CX 4220 (formerly CS 4225) Intro to High Performance Computing
f. CX 4230 (formerly CS 4335) Modeling and Computer Simulation
g. CX 4240 (formerly CS 4245) Intro Data Mining and Analysis
h. CX/MATH 4641 Numerical Analysis II
i. CS 4710 CS for Bioinformatics
j. CX/MATH 4777 Parallel and Vector Scientific Computing
k. ECE 4580 Computational Computer Vision
l. ECE 4823 Computational Methods in Electrical Engineering (permanent number forthcoming)
m. ECE 4893 Advanced Programming Techniques for Engineering Apps
n. MATH 4261 Mathematical Statistics I
o. MATH 4305 Topics in Linear Algebra
p. MATH 4581 Classical Math Methods in Engrg
q. ME 4342 Comput Fluid Dynamics
r. NRE 4234 Nuclear Criticality Safety Eng (infreq)
s. PHYS 3266 Computational Physics

Approved Program of Study for Undergraduate Minors
Georgia Institute of Technology
Office of the Registrar
2013-2014
Minor in Sociology

Please type or print in ink:

Name (first/last):	GT Student ID Number:
GT Email Address:	Daytime Phone:
Major:	Anticipated Graduation Date:

In addition to the guidelines listed below, you are responsible for reviewing and following the general guidelines for minors: http://www.catalog.gatech.edu/academics/minorguide.php

The sociology minor must comprise at least 15 semester hours, of which at least 9 semester hours are upper-division coursework (numbered 3000 or above). Three hours taken outside of sociology may be counted toward the minor, with the approval of the school. Courses required by name and number and/or used to satisfy Core Areas A through E in a student's major degree program may not be used in satisfying the course requirements for a minor. All courses must be taken on a letter grade basis and must be completed with an overall grade-point average of 2.0. No more than six hours of Special Topics (elective) courses may be counted toward the minor. Special Problems courses may not be counted toward the minor. Students majoring in HTS may not minor in sociology.

It is the **major advisor's responsibility** to verify that students are not using any courses required by name and number for their major, that they are not using any core area A-E courses (including humanities and social sciences), and that they are not using any courses for more than one minor or certificate. Free electives and technical electives may be used towards minors.

List the courses completed for the requested minor:

Course and Section	Course Title	Credit Hours	Grade	Semester Completed

Student Signature:
Major School Signature:
Minor School Signature:

Approved Program of Study for Undergraduate Minors
Georgia Institute of Technology
Office of the Registrar
2013-2014
Minor in Technical Communication

Please type or print in ink:

Name (first/last):	GT Student ID Number:
GT Email Address:	Daytime Phone:
Major:	Anticipated Graduation Date:

In addition to the guidelines listed below, you are responsible for reviewing and following the general guidelines for minors http://www.catalog.gatech.edu/academics/minorguide.php

The Technical Communication Minor offers students the opportunity to gain an in-depth knowledge of Technical Communication through concentrated study in courses offered by LCC. **In addition to the LCC 3401 or 3403 prerequisite, students will take 5 courses (15 total hours)** distributed according to the menu provided below and must attain an overall GPA of 2.5 in courses for the minor.

A. Each student must take at least one course selected from the following list (3 to 6 hours): LCC 3302: Science, Technology, and Ideology or LCC 3310: The Rhetoric of Scientific Inquiry.
B. Each student must take at least three courses selected from the following list (9 to 12 hours): LCC 3408: The Rhetoric of Technical Narratives; LCC 3410: The Rhetoric of Nonlinear Documents; LCC 3412: Communicating Science and Technology to the Public; LCC 3414: Intellectual Property Policy and Law in Communication and Technology; or LCC 4406: Contemporary Issues in Professional Communication.

It is the **major advisor's responsibility** to verify that students are not using any courses required by name and number for their major, that they are not using any core area A-E courses (including humanities and social sciences), and that they are not using any courses for more than one minor or certificate. Free electives and technical electives may be used towards minors.

List the courses completed for the requested minor:

Course and Section	Course Title	Credit Hours	Grade	Semester Completed

Student Signature:
Recommended (Major School Signature):
Approved (Minor School Signature):

SCHOOL OF PUBLIC POLICY
About the School
Undergraduate
BS Public Policy
Description
Degree Requirements
Minors & Certificates
Law, Science, & Tech
Leadership Studies
Philosophy
Political Science
Public Policy
Women, Science, & Tech
Graduate
Admissions
Certificates
MS Public Policy
PhD Public Policy
Joint PhD Program With GSU
Dual Degrees
Public Policy / MCRP
Ivan Allen College

WOMEN, SCIENCE, AND TECHNOLOGY - MINORS AND CERTIFICATES

The Women, Science, and Technology (WST) program does what no other gender studies program does: it links science and technology issues to those issues more traditionally associated with women's studies. The WST minor prepares Tech students (women and men majoring in engineering, science, social sciences, and humanities) to live and work in an increasingly diverse world. The minor helps students develop their understanding of the human side of science and engineering involving not only gender issues, but inequalities of race and class as well.

WST courses reflect on the theoretical and practical dimensions of diversity. Students are encouraged to explore the values associated with scientific culture and to learn to synthesize knowledge across the disciplines, while viewing science and engineering as social and cultural forces that shape relations among women and men.

Each minor is required to choose two courses from the following list. The courses must be from two different schools: LCC 3304, HTS 3020, HTS 3021, PUBP 4212, PUBP 4214.

Each minor also chooses three (3) courses from the following list OR from the list above. The three elective courses must be offered by at least two different Ivan Allen College schools:

HISTORY, TECHNOLOGY, AND SOCIETY

HTS 2082 Technology and Science in the Industrial Age

HTS 2084 Technology and Society

HTS 3007 Sociology of Work, Industry, and Occupations

HTS 3016 Women and Gender in the United States

HTS 3017 Sociology of Gender

HTS 3051 Women and Gender in the Middle East

HTS 3082 Sociology of Science

HTS 3083 Technology and American Society

HTS 3084 Culture and Technology

HTS 3086 Sociology of Medicine and Health

LITERATURE, COMMUNICATION, AND CULTURE

LCC 2100 Introduction to Science, Technology, and Culture

LCC 2200 Introduction to Gender Studies

LCC 3212 Women, Literature, and Culture

LCC 3219 Literature and Medicine

LCC 3225 Gender in the Disciplines

LCC 3302 Science, Technology, and Ideology

LCC 3306 Science, Technology, and Race

LCC 3308 Environmentalism and Ecocriticism

LCC 3316 Science, Technology, and Postmodernism

LCC 3318 Biomedicine and Culture

PUBLIC POLICY

PUBP 2013 Foundations of Public Policy

PUBP 4410 Science, Technology, and Public Policy

PUBP 4416 Critical Issues in Science and Technology

PUBP 4200 Social Policy Issues

PUBP 4214 Gender, Science, Technology, and Public Policy

INTERNATIONAL AFFAIRS:

INTA 4803/8803 Gender in International Relations

MODERN LANGUAGES:

SPAN 3241 The Individual and the Family in Hispanic Literature

SPAN 3242 Society in Hispanic Literature

ECONOMICS:

ECON 2100 Economic Analysis and Policy Problems

ECON 2101 The Global Economy

ECON 2105 Principles of Macroeconomics

ECON 2106 Principles of Microeconomics

NOTE: Students can receive credit for either ECON 2100 or ECON 2101, or for ECON 2105/2106. Students cannot receive credit for ECON 2100 and ECON 2101, or for ECON 2100 and ECON 2105/2106, or for ECON 2101 and ECON 2105/2106.

With permission of the WST coordinators, students may substitute one independent study course or course from another Georgia Tech unit. This may be chosen from special topics courses, seminars, and other courses that focus upon gender and social inequality or social issues of science and technology. Students may register and plan their courses of study for the WST minor by meeting with WST coordinators, Carol Colatrella (LMC) or Mary Frank Fox (PUBP). Students petition for the minor at the time they petition for their major degree. Minors are conferred upon graduation and appear on students' transcripts.

Approved Program of Study for Undergraduate Minors
Georgia Institute of Technology
Office of the Registrar
2013-2014
Minor in Women Science and Technology

Please type or print in ink:

Name (first/last):	GT Student ID Number:
GT Email Address:	Daytime Phone:
Major:	Anticipated Graduation Date:
In addition to the guidelines listed below, you are responsible for reviewing and following the general guidelines for minors: http://www.catalog.gatech.edu/academics/minorguide.php	

I. The WST minor must comprise at least 15 semester hours, of which at least 12 semester hours are upper-division coursework (numbered 3000 or above).

A. Required courses – Choose two from two different schools from the following: LCC 3304, HTS 3020, HTS 3021, PUBP 4212, PUBP 4214

B. Elective Courses – Choose three from the following list OR the A list; the three elective courses must be offered by at least two different Ivan Allen College schools:

History Technology and Society - HTS 2082, 2084, 3007, 3016, 3017, 3051, 3082, 3083, 3084, 3086
Literature, Communication, and Culture – LCC 2100, 2200, 3212, 3219, 3225, 3302, 3306, 3308, 3316, 3318
Public Policy – PUBP 2012, 4410, 4416, 4200
International Affairs – INTA 4803/8803
Modern Languages – SPAN 3241, 3242
Economics – ECON 2100, 2101, 2105, 2106 – Students can receive credit for either ECON 2100 or ECON 2101, or for ECON 2105/2106. Students cannot receive credit for ECON 2100 and ECON 2101, or for ECON 2100 and ECON 2105/2106, or for ECON 2101 and ECON 2105/2106.

II. Only one independent study course from another GT unit can substitute for one elective course as noted in B.

It is the **major advisor's responsibility** to verify that students are not using any courses required by name and number for their major, that they are not using any core area A-E courses (including humanities and social sciences), and that they are not using any courses for more than one minor or certificate. Free electives and technical electives may be used towards minors.

List the courses completed for the requested minor:

Course and Section	Course Title	Credit Hours	Grade	Semester Completed

Student Signature:
Major School Signature:
Minor School Signature:

BS/MS DEGREE PROGRAMS

Many schools at Georgia Tech offer BS/MS degree programs that, like the Graduate Course Option, allow eligible students to use up to 6 credit hours of graduate-level coursework in the major discipline for both degrees. The BS/MS programs typically include research and mentoring components and have their own GPA requirements.

Aerospace Engineering
Chemical & Biomolecular Engineering
Civil Engineering
Computational Media & Digital Media
Earth and Atmospheric Sciences
Electrical Engineering
Computer Engineering
Environmental Engineering
Materials Science Engineering
Mechanical Engineering
Nuclear and Radiological Engineering
Public Policy
Science, Technology, and Culture & Digital Media

SPECIAL ACADEMIC PROGRAMS

5-Year BS MS Degrees
Academic Common Market
CETL
Co-op Plan & Internships
Undergrad Co-Op & Internships
Graduate Co-Op
GT Lorraine (France)
Honors Program
International Plan
Joint Enrollment for HS
Learning Support
President's Scholarship
Preprofessional Pgms
ROTC
Summer Language Pgm
Transfer Programs
Dual Degree
RETP
Undergraduate Research

UNDERGRADUATE ACADEMIC COMMON MARKET

Georgia Tech made the decision to withdraw from the Academic Common Market on the undergraduate level. Undergraduate students who begin enrollment starting in the summer semester of 2011 or later at Georgia Tech will not be eligible for the Academic Common Market. Prior to the summer semester of 2011, Georgia Tech will continue to participate in the Academic Common Market in the following undergraduate degree programs and states listed below. Any student who enrolls prior to summer semester 2011 and is eligible for the Academic Common Market will be grandfathered into the program as long as the student remains eligible.

The Academic Common Market (ACM) is an interstate agreement for sharing educational programs and facilities, allowing students to participate in selected programs not offered in their home states without having to pay out-of-state tuition charges. The Southern Regional Education Board (SREB) coordinates the activities of the Academic Common Market for the sixteen participating states, which include Alabama, Arkansas, Delaware, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, and West Virginia.

One of the primary functions of the Academic Common Market is to assist states in offering together what they cannot offer alone. Programs are added to and removed from the Market on an annual basis in order to reflect the changing needs of participating states. The state of Georgia currently makes program changes once annually during the spring.

GRADUATE ACADEMIC COMMON MARKET

The Institute participates in the Academic Common Market (ACM) Program managed by the Southern Regional Education Board. By interstate agreement, the Market enables southern states to share academic programs. Residents of the participating states who qualify for admission and gain the approval of their state coordinators may enroll on an in-state tuition basis. The Georgia Tech programs currently participating in ACM are graduate programs in building construction and integrated facility management, architecture, city and regional planning, city planning/architecture joint program; as well as undergraduate programs in nuclear and radiological engineering, and polymer and fiber engineering.

CENTER FOR THE ENHANCEMENT OF TEACHING AND LEARNING (CETL)

The Center for the Enhancement of Teaching and Learning (CETL) was founded in 1986 with a mission to assist faculty and teaching assistants in becoming more effective instructors and hence to improve the learning of Georgia Tech students. CETL offers undergraduate courses in Undergraduate Teaching Assistant Preparation, Fundamentals of Tutoring, Residence Life, and Principles of Learning and Teaching, as well as graduate-level courses in Graduate Teaching Assistant Preparation, Academic Writing, and Academic Presentations. For international graduate students and teaching assistants who need to improve their English communication skills, CETL offers courses in conjunction with the Georgia Tech Language Institute. Finally, CETL offers courses and internships associated with its National Science Foundation - sponsored Tech to Teaching (T3) program.

No graduate student may take more than one CETL communication course or two courses total in any one semester. Students wishing to enroll in any of CETL's undergraduate or graduate courses must request a permit through the CETL home page (www.cetl.gatech.edu). Courses offered by the Center for the Enhancement of Teaching and Learning (CETL) can be viewed on the course catalog webpage.

DIVISION OF PROFESSIONAL PRACTICE (COOPERATIVE EDUCATION, INTERNSHIPS, AND WORK ABROAD)

Georgia Tech believes that obtaining relevant, academically related experience outside of the classroom is an integral part of the educational process. The Division of Professional Practice offers several methods to obtain such experience: the Cooperative Education Program (both undergraduate and graduate), the Georgia Tech Internship Program, and an innovative Work Abroad Program.

The Undergraduate Cooperative Plan (Co-op) has been offered at Georgia Tech since 1912. It is a (four- to five-year) program for students who wish to integrate practical experience with theory learned in the classroom. Approximately 2,500 students currently participate, working full time on alternate semesters for more than 1,000 employers throughout the United States (as well as numerous international assignments). Accredited by the Accreditation Council for Cooperative Education, it is the largest totally optional program in the country and the highest ranked program among public universities.

The Undergraduate Co-op Plan is available for all engineering majors as well as those students studying biology, chemistry, mathematics, physics, computer science, management, economics, earth and atmospheric sciences, international affairs, industrial design, building construction, and science, technology, and culture. The academic curricula are identical to those offered to regular four-year students, and co-ops remain on the school rolls while on work periods by registering for the appropriate co-op courses. The Graduate Co-op Program is described in greater detail in another section in this catalog.

Co-op offers the student practical experience and insight into human relations, as well as financial assistance. The work experience received is a valuable asset to graduates starting out in their chosen professions. Neither college laboratory experience nor employment during vacations can take the place of organized co-op training. The plan provides, to a substantial degree, the experience most companies require of their employees before promoting them to positions of higher responsibility. Work experience may also assist students who are undecided about their future plans in determining early in their college careers whether they wish to continue in a particular field.

Moreover, daily contact with diverse groups among their fellow employees offers students practical insight into sociology, psychology, economics, and ethics that no textbook can supply. Finally, students receive compensation for their services from the employer. Typically, co-op students can save enough from their earnings to pay for more than half of their school expenses.

The Georgia Tech Internship Program provides practical experience for students who choose not to follow the Undergraduate Co-op Plan. Although internships normally do not provide the same depth provided by the Co-op Plan experience, they are an extremely viable way to obtain out-of-classroom experience. Similar to cooperative education, the jobs and the students' performance are monitored by the Division of Professional Practice to ensure maximum benefit by all parties.

Students in all majors may participate in the internship program and may work any term during the academic year. There are also part-time internships available for those who wish to work while attending classes.

The Division of Professional Practice offers an extensive Work Abroad Program for those students interested in pursuing global careers and work experience. In the current global economy, Georgia Tech realizes the importance of students obtaining relevant experience in cultures outside of the United States. In order for students to have a complete "immersion" experience, it is necessary to live and work in those environments. Each year, Georgia Tech has dozens of students, both undergraduate and graduate, who take advantage of this opportunity. The Work Abroad Program is available to students in any major, and also for those who may be in the Co-op or Georgia Tech Internship programs.

For more information on any programs offered through the Division of Professional Practice, visit our website at www.profpractice.gatech.edu or write to:

Division of Professional Practice
Georgia Institute of Technology
Atlanta, Georgia 30332-0260

SPECIAL ACADEMIC PROGRAMS

5-Year BS MS Degrees
Academic Common Market
CETL
Co-op Plan & Internships
Undergrad Co-Op & Internships
Graduate Co-Op
GT Lorraine (France)
Honors Program
International Plan
Joint Enrollment for HS
Learning Support
President's Scholarship
Preprofessional Pgms
ROTC
Summer Language Pgm
Transfer Programs
Dual Degree
RETP
Undergraduate Research

GRADUATE COOPERATIVE PLAN

The Graduate Cooperative Education (Graduate Co-op) Program, one of four programs offered by the Georgia Tech Division of Professional Practice, provides master's and doctoral students majoring in any discipline at Georgia Tech the opportunity to supplement their graduate studies with specialized work experience. Graduate co-op students are paid by participating employers at salary levels consistent with the compensation of regular employees with comparable education and experience levels.

The Graduate Co-op Program is a certificate program that requires students to complete a minimum of one full-time and one part-time work term, or three part-time work terms. Students may chose to work two consecutive semesters, alternate semesters, or during summers only.

To participate in the Graduate Co-op Program, a student must have a 3.0 or better GPA, obtain a program participation letter from his or her major school, and attend a mandatory orientation session. After getting the participation letter and attending the orientation session, the student should arrange to meet with the Graduate Co-op Program advisor regarding required authorization letters, approvals, permits, and the student's job offer letter. Enrollment in a 6000-level co-op course, a non-credit/no-cost audit course with no student or Institute fees attached, is also required.

Participating students are normally responsible for identifying their own job opportunities, but, in some cases, the Graduate Co-op Office can provide limited assistance in this area.

International students (i.e., those on F-1 or J-1 visas) are required to be enrolled at Georgia Tech for a minimum of nine months before being eligible to work as graduate co-op students, and must work with the Office of International Education (OIE; www.oie.gatech.edu) to secure work authorization documentation.

For more information on the Georgia Tech Division of Professional Practice Graduate Co-op Program, visit: www.gradcoop.gatech.edu, contact us via email below, or write to:

Division of Professional Practice
Georgia Tech
Atlanta, GA 30332-0260

GEORGIA TECH-LORRAINE

Georgia Tech Lorraine (GTL) was established as Georgia Tech's first international campus in 1990 in Metz, France, a city recently named by the New York Times as one of the top 44 places to see in the world. Centrally located in eastern France along the Luxembourg and German borders, GTL is less than 90 minutes by train from Paris. A highly innovative institution offering year-round undergraduate, Masters and PhD programs, GTL is also home to a strong sponsored research program that fosters the flow of new ideas, creates new opportunities, and develops highly valuable qualities in our students, such as global leadership and innovative thinking.

GTL affords students the opportunity to pursue their Georgia Tech degree while being immersed in the rich culture of Europe. At GTL, students from around the world get the opportunity to study in the heart of Europe and take courses taught in English by Georgia Tech faculty. As a faculty-led program, Georgia Tech Lorraine offers a balance of engineering, management, computer science, humanities, French language, and social science courses from the Georgia Tech course catalog. Courses are specifically designed to fulfill the student's major and International Plan requirements and students may also take advantage of undergraduate research and international internship opportunities. GTL also provides tremendous value. Out-of-state students save an average of $6,000 in tuition versus studying on the Atlanta campus and in-state students may take advantage of the HOPE scholarship to study at GTL.

Georgia Tech Lorraine offers an extensive graduate program encompassing a broad range of study in the areas of mechanical engineering, electrical and computer engineering, as well as computer science. Programs are available leading to the Master's or PhD degree from the Georgia Institute of Technology. Cooperative agreements with local partner institutions enable GTL graduate students to pursue double degrees in engineering and sciences, in addition to degrees from Georgia Tech. Upon successful completion of these highly innovative and integrated programs, students are awarded a Master's degree from the Georgia Institute of Technology and a Master's degree from a partner institution.

For more information, visit our website at www.GT-Lorraine.eu or contact 404.385.1865.

GEORGIA TECH HONORS PROGRAM

The Georgia Tech Honors Program combines the challenging academic standards of one of the finest technological universities in the world with the closer connections between students and faculty one might expect to find at a small, selective college. The goal is to create a lively learning environment in which students and faculty members learn from each other through a common commitment to intellectual inquiry, careful analysis, and the energetic exchange of ideas. To promote and sustain this sort of close engagement between students and faculty, the Honors Program offers several features for undergraduate students at Georgia Tech, including the following:

- an Honors Program residence in the first year
- small sections of standard introductory courses
- a selection of innovative and interdisciplinary special topic courses
- a system of careful advising

SPECIAL ACADEMIC PROGRAMS

5-Year BS MS Degrees
Academic Common Market
CETL
Co-op Plan & Internships
Undergrad Co-Op & Internships
Graduate Co-Op
GT Lorraine (France)
Honors Program
International Plan
Joint Enrollment for HS
Learning Support
President's Scholarship
Preprofessional Pgms
ROTC
Summer Language Pgm
Transfer Programs
Dual Degree
RETP
Undergraduate Research

THE INTERNATIONAL PLAN

The International Plan is a challenging undergraduate academic program aimed at developing a student's global competence within the context of his or her major. It is a degree-long program that integrates international experiences, language acquisition, and intercultural learning into any participating major at Georgia Tech. It helps to prepare Georgia Tech graduates professionally and personally for successful lives in a global environment.

The International Plan builds on existing undergraduate degree requirements and international opportunities. Students in the program are encouraged to think strategically about their academic and international experience choices so they can, with the help of program advisors, develop a coherent path in which international competence is integrated into the degree program. The plan is intended to be completed within the normal time frame of a four-year undergraduate degree.

In order to earn the International Plan designation in a participating major, students must complete the following four components:

- International coursework: three courses, to include one from each of the following categories:
  1. International relations
  2. A course about a specific country or region
  3. Global economics
- International Experience: Two terms abroad (not less than twenty-six weeks) engaged in any combination of study abroad, research, and/or internship.
- Second language proficiency: All students in the program are expected to reach at least the proficiency level equivalent to two years of college-level language study. The language of study should be coherent with one of the locations where a student will spend their time abroad. Language proficiency is determined by testing or coursework.
- Culminating Course: A capstone course in the major designed to tie the international studies and experiences together with the student's discipline.

Completion of the International Plan is recognized by a designation on the student's diploma indicating completion of the degree with global competence, e.g., "BS in Electrical Engineering: International Plan."

For additional information about the International Plan visit www.internationalplan.gatech.edu.

INTERNATIONAL RELATIONS-INTERNATIONAL PLAN ELECTIVES

Course	HUM	SS	ETHICS	GP
HTS 2037		x		x
HTS 2062		x		x
HTS 2100		x	x	x
HTS 3012		x		x
HTS 3055				
HTS 3066		x		

HTS 3067		x		
INTA 1110		x		x
INTA 1200 - Section IP only		x		
INTA 2030		x	x	
INTA 2040		x		x
INTA 2100		x		x
INTA 2210		x		
INTA 3031		x		
INTA 3102		x		
INTA 3103		x		
INTA 4050		x		
INTA 4060		x		
INTA 4241		x		
PUBP 3600		x	x	

COUNTRY OR REGIONAL-INTERNATIONAL PLAN ELECTIVES

Course #	HUM	SS	ETHICS	GP
ARBC 2301	x			x
ARBC 3691	x			x
ARBC 3692	x			x
ARBC 3693	x			x
ARCH 4113	x			
ARCH 4123				
ARCH 4125				
ARCH 4126		x		
ARCH 4128	x			
CHIN 3692	x			
CHIN 3696				
CHIN 4006	x			
COA 3115	x			
COA 3116	x			
FREN 3001	x			
FREN 3002	x			
FREN 3004	x			
FREN 3011	x			
FREN 3012	x			
FREN 3061	x			
FREN 3062	x			
FREN 3691	x			
FREN 3692	x			
FREN 3693	x			
FREN 3694	x			
FREN 4061	x			
FREN 4062	x			
FREN 4101	x			
FREN 4102	x			

FREN 4241	x			
FREN 4242	x			
FREN 4500	x			
GRMN 3071	x			
GRMN 3695	x			
GRMN 3696	x			
GRMN 3697	x			
GRMN 4010	x			
GRMN 4012	x			
GRMN 4023	x			
GRMN 4024	x			
GRMN 4025	x			
GRMN 4026	x			
GRMN 4061	x			
GRMN 4065	x			
GRMN 4500	x			
GRMN 4694	x			
HTS 1031		x		x
HTS 2036		x		x
HTS 2040		x		
HTS 2041		x		x
HTS 2061		x		
HTS 3030		x		
HTS 3031		x		
HTS 3032		x		x
HTS 3033		x		
HTS 3035		x		
HTS 3036		x		
HTS 3038		x		
HTS 3039		x		
HTS 3041		x		
HTS 3043		x		
HTS 3045		x		
HTS 3046		x		
HTS 3051		x		x
HTS 3061		x		
HTS 3062		x		
HTS 3063		x		
HTS 3069		x		
ID 4203				
ID 4205				
INTA 2220		x		x
INTA 2230		x		x
INTA 3120		x		
INTA 3121		x		
INTA 3130		x		
INTA 3131		x		

INTA 3203		**x**		x
INTA 3220		**x**		
INTA 3221		**x**		
INTA 3230		**x**		
INTA 3231		**x**		
INTA 3240		**x**		x
INTA 3241		**x**		x
INTA 3330		**x**		
INTA 3331		**x**		
INTA 4121		**x**		
INTA 4240		**x**		
INTA 4331		**x**		
INTA 4332		**x**		
INTA 4333		**x**		
INTA 4743	**x**			
JAPN 3061	**x**			
JAPN 3062	**x**			
JAPN 3691	**x**			
JAPN 3692	**x**			
JAPN 3693	**x**			
JAPN 4123	**x**			
JAPN 4143	**x**			
JAPN 4163	**x**			
JAPN 4165	**x**			
JAPN 4173	**x**			
JAPN 4500	**x**			
JAPN 4743	**x**			
KOR 3691	**x**			
KOR 3692	**x**			
KOR 3693	**x**			
LCC 3102	**x**			
LCC 3104	**x**			
LCC 3106	**x**			x
LCC 3212	**x**			
LCC 3302	**x**			
LCC 3316	**x**			x
LCC 3518	**x**			
RUSS 3222	**x**			
RUSS 3691	**x**			
RUSS 3692	**x**			
RUSS 3698	**x**			
SPAN 3050	**x**			
SPAN 3061	**x**			
SPAN 3062	**x**			
SPAN 3064	**x**			
SPAN 3122	**x**			
SPAN 3211	**x**			

SPAN 3235	x			
SPAN 3241	x			
SPAN 3242	x			
SPAN 3254	x			
SPAN 3260	x			
SPAN 3500	x			
SPAN 3690				
SPAN 3691	x			
SPAN 3692	x			
SPAN 3693	x			
SPAN 3694	x			
SPAN 4061	x			
SPAN 4062	x			
SPAN 4101	x			
SPAN 4160	x			
SPAN 4165	x			
SPAN 4170	x			
SPAN 4220	x			
SPAN 4235	x			
SPAN 4236	x			
SPAN 4242	x			
SPAN 4255	x			
SPAN 4350	x			
SPAN 4400	x			
SPAN 4500	x			

GLOBAL ECONOMICS-INTERNATIONAL PLAN ELECTIVES

Course #	HUM	SS	ETHICS	GP
ECON 2101		x		x
ECON 4311		x		x
ECON 4350		x		x
HTS 3064		x		x
INTA 3301		x		x
INTA 3303		x		x
INTA 3304		x		x
INTA 3321		x		
INTA 4230		x		
INTA 4330		x		
INTA 4340		x		
MGT 3660				

CAPSTONE COURSE - INTERNATIONAL PLAN

Choose the appropriate course for your major. See your major IP faculty representative for additional information and instructions

Major	Course Number
Aerospace Engineering	AE4350/51 - IP or AE4356/57 - IP or AE4358/57 - IP

Architecture	ARCH 4012R
Biochemistry	CHEM 4699-IP
Biology	BIOL 4699 - IP
Biomedical Engineering	BMED 4600/4601 - IP
Civil and Environmental Engineering	CEE 4090 - IP
Chemistry	CHEM 4699-IP
Computer Science	Option 1: CS 4901 - IP plus 4XXX (crs taken abroad) - IP section
	Option 2: CS 4001-IP or CS 4002 - IP
	Option 3: CS 4911-IP
Computational Media	See IP Faculty Representative
Earth & Atmospheric Sciences	See IP Faculty Representative
Electrical and Computer Engineering	ECE 4007-IP
Economics	See IP Faculty Representative
Economics and International Affairs	See IP Faculty Representatives
Global Economics and Modern Languages	See IP Faculty Representatives
History, technology, and Science	HTS 4091
International Affairs	INTA 4500 - IP
International Affairs and Modern Languages	See IP Faculty Representatives
Industrial Design	ID 4012 - IP
Industrial and Systems Engineering	ISyE 4106 - IP
Mechanical Engineering	ME 4182 - IP
Management	MGT 4195 - IP
Psychology	See IP Faculty Representative
Science, Technology, and Culture	LCC 4100/4200/4300/4400/ or 4500 - IP or LCC 4102 - IP

JOINT ENROLLMENT PROGRAM FOR HIGH SCHOOL STUDENTS

High school students who have completed tenth or eleventh grade and have academic credentials comparable to those of scholastically superior first-year students at Tech may take courses at Georgia Tech. Courses taken at Georgia Tech will normally be at a level beyond those available in the student's high school. Courses completed at Georgia Tech can be used to satisfy high school requirements and will also carry college credit. Interested students should consult their high school counselor for specific program requirements. Applications for the program are available from the Office of Undergraduate Admission or www.admission.gatech.edu/jointenrollment.

LEARNING SUPPORT POLICIES

The Office of the Vice Provost for Undergraduate Education (OUE) administers the Learning Support Program. College preparatory courses are offered in mathematics, reading comprehension, and English composition for students who need further preparation before taking credit courses in English, mathematics, and related skills' courses.

Students who are required by the Institute to take courses in the Learning Support Program will be notified in writing. They must then either test out of the program or register for the required course(s) before they can register for any credit courses that require Learning Support (LS) courses as prerequisites. Until Learning Support requirements have been satisfied, students will not be permitted to take credit core courses that require the content or skills of the prerequisite courses. The Chair of the School teaching the credit core course must certify that the course being taken by the student does not contain the content or skills of the Learning Support course.

Students can test out of taking LS courses by passing the appropriate Georgia Collegiate Placement Exams (GCPEs) administered before the beginning of each semester through the OUE. Students who do not pass the appropriate examinations prior to their first semester in residence must register for the required LS courses. These students must pass all required LS courses and the appropriate GCPEs within their first three semesters in residence or be suspended for three years, and re-apply for admission. No more than 20 hours of degree credit work may be earned prior to exiting Learning Support.

Students who are mandated to take a Learning Support class must enroll in the course, pass it, and then pass an exit test (GCPE) provided to the LS instructor by the Office of the Senior Vice Provost. If the student fails the test, the student must re-take the course before re-taking the exit exam unless the student fails the test by one or two points. In which case, a re-take of the test may be given prior to the next semester (during the break prior to the first day of class).

In addition to those students who are required by the Institute to take LS courses, any student who desires further preparation may register for one or more courses. LS courses are not prerequisites to credit courses when taken on this elective basis.

LS courses are offered on a pass/fail basis and may not be counted as hours toward graduation.

PRESIDENT'S SCHOLARSHIP PROGRAM

The President's Scholarship Program is Georgia Tech's premier merit-based scholarship. Recipients are selected from the top applicants for admission to Georgia Tech based on demonstrated excellence in scholarship, leadership, progress, and service as described at http://psp.gatech.edu/pages/prospective/apply.php. From the applicant pool, students selected as semifinalists submit a one-page resume before being interviewed. The top semifinalists will be named finalists and invited, with their parents, to campus for additional interviews and an information weekend in March. Current Georgia Tech students and transfer students are not eligible.

Each year, approximately 50 incoming freshmen receive President's Scholarships, which are renewable for up to four academic years or eight semesters, contingent upon honors-level performance and continued leadership development as evidenced by involvement in program, campus, and community activities. Awards are worth up to a full ride, including tuition, room and board, books, fees, and personal expenses. See the website below for more information on stipends.

To ensure consideration, a student must apply as an incoming freshman, and submit the Georgia Tech Application for Freshman Admission, along with the application fee by October 15.

For more information, contact the President's Scholarship Program at 404.894.1615, via the Contact Us button below, or via the Web at www.psp.gatech.edu.

PREPROFESSIONAL PROGRAMS

Georgia Tech offers Pre-professional programs and advising in the following areas:

- Pre-Health (includes all health professions, including pre-med, pre-dentistry, pre-pharmacy, and more)
- Pre-law
- Pre-teaching (K-12)

Students can look these advisors up on the Advising Web page.

Professional schools typically admit students with strong academic credentials, a well-balanced education, good communication skills, and a broad range of experiences. With the appropriate selection of elective courses, most majors at Georgia Tech provide suitable preparation for professional schools in any area.

The best choice of a major is usually the one in which the student has the greatest inherent interest. No specific major offers an obvious competitive advantage in assuring admission to professional schools.

Georgia Tech has elected not to have majors designated as pre-medicine, pre-dentistry, or pre-law. This approach to pre-professional education has two major advantages. First, students who elect not to enter professional school upon graduation are prepared for alternative careers immediately. Second, students who do continue on to professional school have backgrounds that often provide them with unique opportunities within their selected professions. Examples include medical research, development of medical devices and apparatus, patent law, or the legal aspects of design and construction.

ROTC

Georgia Tech offers three voluntary ROTC programs: Army, Navy, and Air Force.

Depending on the student's major, Basic and Advanced ROTC classes count as a portion of elective credit. (Students may apply a maximum of 4 hours in Basic ROTC courses and six hours in Advanced ROTC courses toward meeting the elective requirements for any degree at the discretion of the school.) Consult specific colleges to determine the amount of hours that will count toward a degree. After earning a baccalaureate degree and completing the Advanced ROTC courses for any of the three services, a student may receive a commission as an officer in either the reserve or active forces.

Students accepted into the program earn more than just money for a college degree. Cadets and midshipmen receive training and experience in the one quality which is always in great demand: Leadership.

ROTC CREDIT

Students may apply a maximum of 4 hours in basic (1000-2000 level courses) ROTC courses and six hours in advanced (3000-4000 level) ROTC courses toward meeting the free elective requirements for any degree. Students should begin taking basic ROTC courses during the first term they are enrolled. For further information, see individual curricula for the schools. Please note some departments may have stricter guidelines regarding ROTC courses.

SUMMER LANGUAGE PROGRAMS--LANGUAGE FOR BUSINESS AND TECHNOLOGY (LBAT)

The School of Modern Languages offers special summer immersion programs in the countries/regions related to our areas of language study: Arabic, Chinese, French, German, Japanese, Korean, Russian, and Spanish. These intensive programs in Languages for Business and Technology (LBAT) consist of study abroad in which classroom lessons in business, culture, and technology are combined with fieldwork, cultural events, excursions, and visits to area businesses, all conducted in the target language. The professional visits provide students with firsthand experience of business life, the protocols and strategies of business transactions, and a heightened awareness of the current issues facing the economy of the host country. The LBAT experience offers a unique opportunity for rapid growth in proficiency, for building a deeper appreciation for the cultures and lifestyle patterns of other peoples, and for making lifelong social and professional contacts.

Depending on the particular program, students will spend six-to-eight weeks abroad and earn nine-to-fifteen semester hours at the 3000 level (with some programs including offerings at the 1000 or 2000 level); these credits often can count toward a certificate, a minor, or the joint majors offered by the School of Modern Languages. Program costs vary according to the country visited and the length of the program. The HOPE scholarship applies. See www.modlangs.gatech.edu/lbat for more information.

DUAL DEGREE PROGRAM

Under the Dual Degree Program, students attend the participating Dual Degree school for three years and then come to Georgia Tech for approximately two years. Students participating in the Dual Degree Program may seek a degree from any undergraduate degree-granting program in the College of Engineering. Upon completion of the program, the student receives a bachelor's degree from the first school and a bachelor's degree in one of the engineering disciplines at Georgia Tech.

Participating in the Dual Degree Program are many of the schools in the University System of Georgia, including Morehouse College, Spelman College, Clark Atlanta University, and other historically black colleges and universities (HBCU) and predominantly women's colleges in the southeast. For additional information on either of these programs, contact the College of Engineering at Georgia Tech or the Regents' Engineering Transfer Program (RETP) or Dual Degree coordinator at a participating RETP or Dual Degree institution.

REGENTS' ENGINEERING TRANSFER PROGRAM

The Regents' Engineering Transfer Program (RETP) is a cooperative program between Georgia Tech and colleges in the University System of Georgia.

For the first two years, students in this program attend one of the participating institutions, where they take all of the mathematics and science and many of the engineering courses required in the first two years of the Georgia Tech engineering curricula. Upon successful completion of the RETP requirements at the RETP institution, students are admitted to Georgia Tech to work toward completion of a Bachelor of Science in Engineering degree.

By enrolling in RETP, students may attend a college close to home, thereby decreasing the cost of their education and easing the adjustment to college life. At the same time, RETP students enjoy many of the advantages of Tech students: they have equal access to engineering majors at Tech, they can participate in the co-op program, and they are invited to the Tech campus once a year for campus tours, information sessions, and meetings with advisors in their engineering majors.

UNDERGRADUATE RESEARCH OPPORTUNITIES PROGRAM

Undergraduate research offers students a unique opportunity to apply knowledge in a meaningful, real-world context to solve problems and explore issues no one has ever addressed before. Students doing undergraduate research also have the chance to develop deeper relationships with faculty and graduate students and to add a résumé item that will make them stand out to both graduate schools and potential employers.

The Undergraduate Research Opportunities Program (UROP) facilitates research experiences for undergraduates across all disciplines. UROP creates initiatives to encourage students to participate in knowledge creation and research enterprise with Georgia Tech's world-class faculty. Students may participate in laboratory, scientific, or computing research, or they may be involved in new discoveries in literature, social sciences, architecture, or business. Undergraduate students can participate in part-time or full-time research for course credit or pay. Opportunities are available Institute-wide, within specific colleges and schools, or in interdisciplinary settings.

UROP is also charged with providing support and leadership in the area of student innovation. We assist students in finding practical applications for their work and promote the importance of moving research and innovation into society to solve the world's problems. The InVenture Prize, one of the largest invention competitions in the United States, is for students with an entrepreneurial and inventive interest to apply their skills and see the world as endless opportunities.

Additional opportunities include the President's Undergraduate Research Awards (PURA), Research Option, spring symposia, and research best practices workshops and training sessions. Students may also be interested in participating in the Student Activities Board for Undergraduate Research (SABUR) or in Georgia Tech's Undergraduate Research Journal, The Tower.

For information on how to participate, visit www.undergradresearch.gatech.edu.

THE RESEARCH OPTION

The Research Option offers students the opportunity for an in-depth, long-term research experience that culminates in a final paper or thesis. While the exact requirements for a research option vary by academic unit, students typically take the following steps:

1. Write a research proposal.
2. Complete at least nine units of undergraduate research.
   a. Over at least two, preferably three, terms
   b. Research may be for either pay or credit (specific option plans differ by department).
      a. 1. For research for-pay to count towards the Research Option, you must register for an audit-only class (2698 or 4698 in most but not all academic units).
3. Take the sequence of two one-hour courses:
   a. LCC 4701: Undergraduate Research Proposal Writing (typically taken during the first or second term of research in order to help students complete their required proposal), and
   b. LCC 4702: Undergraduate Research Thesis Writing (taken during the term in

which the thesis is completed).

4. Write an undergraduate thesis/report of research on their findings.

For more information on specific plans and a list of participating schools, visit http://www.undergradresearch.gatech.edu/research-option/.

ADVANCED TECHNOLOGY DEVELOPMENT CENTER

The Advanced Technology Development Center (ATDC) is the oldest and most experienced university-affiliated technology incubator in the country. It was formed in 1980 by the governor and General Assembly to increase the technology business base in Georgia. ATDC fulfills this mission by assisting in the formation and growth of advanced technology start-up companies, supporting technology commercialization, and attracting technology companies to the state. In 2004, ATDC received the "Excellence in Technology-led Economic Development" award from the United States Department of Commerce.

ATDC is headquartered in Technology Square, and also operates the ATDC Biosciences Center in the Ford Environmental Science and Technology Building. ATDC also has facilities in Columbus Georgia, Savannah Georgia, and Warner Robins Georgia. At these locations, early-stage companies enjoy a strong entrepreneurial working environment, access to professional business consulting, contact with university research faculty, and modern office and laboratory facilities. The ATDC also provides companies with access to facilities, personnel, and students in the University System. (www.atdc.org.)

Beyond ATDC, the Georgia Tech VentureLab program helps faculty members and students who wish to commercialize technology developed as part of Georgia Tech's research programs. Venture-Lab helps evaluate the commercial potential of innovations and matches faculty with experienced entrepreneurs who can help form new ventures. In mid-2004, four companies formed in Venture-Lab received a total of more than $6 million in venture capital investment (see www.venturelab.gatech.edu for more information).

ATDC is involved in commercializing technology developed as part of Georgia's new Innovation Centers program. The first such center, the Maritime Logistics Innovation Center, is located in Savannah as a collaboration of the Georgia Department of Economic Development, the Georgia Ports Authority, and the University System of Georgia. For more information, visit www.atdc.org.

RESEARCH SUPPORT FACILITIES

Adv Tech Development CTR
GT Research Corporation
GT Research Institute
Joint CNRS Research Lab
Oak Ridge Universities
Skidaway Oceanography

GEORGIA TECH RESEARCH CORPORATION

Founded in 1937, the Georgia Tech Research Corporation (GTRC) is a state-chartered, not-for-profit corporation serving Georgia Tech as a University System of Georgia-approved cooperative organization. By charter, GTRC "...shall be operated exclusively for scientific, literary, and educational purposes...conduct laboratories, engage in scientific research, and distribute and disseminate information resulting from research..." GTRC is an IRS section 501(c)(3) not-for-profit organization and serves as the contracting agency for all of the sponsored research activities at Georgia Tech. It also licenses all intellectual property (patents, software, trade secrets, etc.) created at Georgia Tech. Additionally, GTRC assists Georgia Tech in obtaining quality research space, enters into long-term leases for specialized research equipment, and conducts other research support programs as requested by the Institute. All funds collected by GTRC are used to support various Georgia Tech research programs requested by the Institute and as approved by the twelve-member board of trustees. GTRC is located on campus at 505 Tenth Street.

GEORGIA TECH RESEARCH INSTITUTE

The Georgia Tech Research Institute (GTRI) is one of the world's leading applied research and development organizations. GTRI's world-class engineers and scientists solve some of the toughest problems facing government and industry across the nation and around the globe. For more than seventy-seven years GTRI has been uniquely positioned within the Georgia Institute of Technology, one of America's top research universities.

GTRI is over 1,600 people strong, including some of the world's top scientists and engineers who conduct more than $248 million in sponsored research each year. Many of GTRI's experts are recognized worldwide as leaders in a vast array of research domains. GTRI's core research areas include complex and agile systems engineering, sensor design and integration, information management and cybersecurity, and defense technology development.

Chartered by the Georgia legislature in 1919 and activated in 1934, the GTRI mission is to serve the university, the state, the nation, and the world by maturing selected technologies and developing innovative engineering solutions to important and challenging problems of society.

GTRI's employees work in eight research laboratories and support units, that are housed on campus, at the Cobb County Research Facility, and in Huntsville, Alabama. GTRI also has field Offices located at Huntsville, Alabama; Tucson, Arizona; San Diego, California; , Florida; Panama City, Florida; Orlando, Florida; Warner Robins, Georgia; Pearl City, Hawaii; Aberdeen, Maryland; Dayton, Ohio; San Antonio, Texas; Hampton Roads, Virginia; Washington, D.C.; and Quantico, Virginia.

One of GTRI's goals is to support economic and technological development in Georgia. GTRI promotes economic growth in the state and the southeast through mutual programs with the Georgia Tech Enterprise Innovation Institute. GTRI operates strong technology transfer programs and GTRI researchers teach more than half of all courses offered through Georgia Tech's Distance Learning and Professional Education program. The newest offering is a Professional Master's Degree in Applied Systems Engineering, which was developed jointly by GTRI and the Georgia Tech College of Engineering. GTRI is also home to the state's Agricultural Research Technology Program, which conducts research and technology transfer for the poultry industry, one of Georgia's leading industries and employers.

For additional information, contact the Office of the Vice President and Director, GTRI, 250 14th Street, Atlanta, Georgia 30332-0801, or call 404.407.7400, or visit www.gtri.gatech.edu.

JOINT CNRS RESEARCH LABORATORY

As the result of a strategic alliance between the Georgia Institute of Technology and the French Centre National de la Recherche Scientifique (CNRS), a joint research laboratory, GT-CNRS UMI 2958 was established at Georgia Tech Lorraine in March of 2006. The laboratory conducts a unique transatlantic collaborative program of research in secure networks and smart materials. Research faculty and graduate students from Georgia Tech, French universities, and other CNRS laboratories work on joint research projects sponsored by industry and by local and national governments.

For more information, visit the CNRS website at www.georgiatech-metz.fr or contact Dr. Abdallah Ougazzaden, Director UMI 2958, at +33 387 20 3939.

OAK RIDGE ASSOCIATED UNIVERSITIES

Since 1946, students and faculty of the Georgia Institute of Technology have benefited from its membership in Oak Ridge Associated Universities (ORAU). ORAU is a consortium of ninety-one colleges and universities and a contractor for the United States Department of Energy (DOE) located in Oak Ridge, Tennessee. ORAU works with its member institutions to help their students and faculty gain access to federal research facilities throughout the country; to keep its members informed about opportunities for fellowship, scholarship, and research appointments; and to organize research alliances among its members.

Through the Oak Ridge Institute for Science and Education (ORISE), the DOE facility that ORAU operates, undergraduates, graduates, postgraduates, and faculty enjoy access to a multitude of opportunities for study and research. Students can participate in programs covering a wide variety of disciplines, including business, earth sciences, epidemiology, engineering, physics, geological sciences, pharmacology, ocean sciences, biomedical sciences, nuclear chemistry, and mathematics. Appointment and program length range from one month to four years. Many of these programs are especially designed to increase the numbers of underrepresented minority students pursuing degrees in science- and engineering-related disciplines. A comprehensive listing of these programs and other opportunities, their disciplines, and details on locations and benefits can be found in the ORISE Catalog of Education and Training Programs, which is available at www.orau.gov/orise/educ.htm, or by calling either of the contacts below.

ORAU's Office of Partnership Development seeks opportunities for partnerships and alliances among ORAU's members, private industry, and major federal facilities. Activities include faculty development programs, such as the Ralph E. Powe Junior Faculty Enhancement Awards, the Visiting Industrial Scholars Program, consortium research funding initiatives, faculty research and support programs, as well as services to chief research officers. For more information about ORAU and its programs, contact:

Charles L. Liotta
Vice Provost for Research and Dean of Graduate Studies
ORAU Councilor for Georgia Institute of Technology

Monnie E. Champion
ORAU Corporate Secretary
865.576.3306

You may also visit the ORAU website at: www.orau.org

SKIDAWAY INSTITUTE OF OCEANOGRAPHY

Located on Skidaway Island near Savannah, Georgia, the Skidaway Institute of Oceanography (SkIO) provides a complex of coastal- and ocean-related educational and research opportunities. School of Biology faculty have laboratory facilities at the Institute. Many SkIO faculty hold adjunct appointments with Tech schools, including Civil and Environmental Engineering, Earth and Atmospheric Sciences, and Biology, and actively participate in graduate research and education. SkIO maintains small boats for local studies and the 92-foot R/V Savannah for conducting ocean research. Other unique coastal research facilities include the Bioremediation and Environmental Research Mesocosms (BERM) facility, the Saltmarsh Ecosystem Research Facility (SERF), a large recirculating flume, and the SkIO library, which is the largest in the state devoted almost exclusively to marine sciences. Areas of faculty expertise at SkIO include chemical, physical, and biological oceanography, marine ecology, and marine geology. Visitor and graduate student housing is available on site, providing convenient access to these facilities.

GENERAL INFORMATION FOR FRESHMAN ADMISSION

Freshmen may only apply for the summer or fall terms. A completed Application for Freshman Admission includes a nonrefundable application fee, and SAT I and/or ACT scores to the Office of Undergraduate Admission. International applicants and applicants who have been homeschooled will be required to submit additional information. Our application is typically made available online by August 15 each year at www.admission.gatech.edu/apply. The Self-Reported Academic Record (SRAR) must cover the first three years of high school, with the applicant's full senior year schedule indicated. The SRAR should show the type of grading system and any honors-level or advanced courses completed by the applicant.

It is the applicant's responsibility to ensure that all required elements, including the application, nonrefundable application fee, and SAT I and/or ACT scores are submitted by stipulated deadlines. All elements must be received prior to the freshman application deadlines. More information regarding freshman application deadlines can be found at www.admission.gatech.edu/apply/freshman-application/application-dates.

The Office of Undergraduate Admission will consider all completed applications on file by the stated deadlines, provided spaces are available for the particular term or academic year for which the student applies. An application submitted after the deadline may receive consideration, but only at the discretion of the Institute.

For more information regarding freshman admission to the Georgia Institute of Technology, visit www.admission.gatech.edu, call 404.894.4154, or email admission@gatech.edu.

ACADEMIC ADVISING

The appointed academic advisor is the key source of information about the college. All entering students are assigned an academic advisor depending on their declared majors at Georgia Tech. To find the assigned advisor, visit the advising Web page. Students will meet their assigned advisors at orientation and at regular intervals during their college careers. Advisors welcome questions about different programs and areas.

Academic advisors are the guides through the college experience. They will help to identify the correct major, curriculum, minor, certificates, study abroad, internships, campus resources, and much more.

While the degree requirements are posted on the Registrar's Office Web page, it is essential to check in with the assigned advisor at least once a year (if not more) to ensure that requirements are being met and communication lines are open. Also, regular contact with the advisor will enhance each student's college experience and help them reach their future goals.

POLICY ON COMPETITIVE ADMISSION (FRESHMAN APPLICANTS)

The Georgia Institute of Technology is a top-ten public university determined to define the technological research university of the 21st century. Publicly funded and governed by the University System of Georgia, the Institute is committed to preparing students for global leadership, effectiveness, and innovation.

Consistent with its mission to improve the human condition in Georgia, the United States, and around the globe, Georgia Tech counts the diversity of its students among its greatest strengths and an integral component of its educational process and academic excellence.

The undergraduate admissions process, which reflects the Institute's educational mission and motto of "Progress and Service", seeks to identify those applicants, who as individuals and as a group, will benefit from the campus learning environment, and thus enrich the entire student body. The process is structured to build entering classes of students whose varied backgrounds and experiences provide substantial evidence of their potential to:

- Meet the Institute's requirements for academic success
- Embrace the diverse campus community
- Benefit substantially from the Institute's curriculum and scholarly pursuits
- Develop as leaders, innovators, global citizens, and engaged learners
- Contribute to the intellectual, cultural, social, and civic life of the Institute, state, and nation

Each year Georgia Tech must make fine distinctions among large numbers of highly qualified applicants. The ability to assess consistently all information presented in the application becomes increasingly important. Therefore, the Office of Undergraduate Admission employs a rigorous review process in order to provide an individualized and holistic evaluation of every application. Each applicant is assessed on the basis of achievements and potential in a broad range of categories, viewed in the context of the opportunities and challenges the applicant faced. These categories include:

- Strength of educational performance, as measured by the nature and rigor of high school curriculum and academic achievements
- Potential for academic success, as evidenced by performance on nationally normed standardized tests
- Potential to contribute to the overall intellectual climate and make a positive contribution to campus and community life
- Demonstrated commitment to intellectual engagement

Appeals concerning individual admission decisions shall be addressed to the director of the Office of Undergraduate Admission or the vice provost for Enrollment Services.

REQUIRED STUDENT COMPUTER OWNERSHIP

In an effort to foster equal access to computers and to make the most of the teaching and learning technology available at Georgia Tech, all undergraduate students entering Georgia Tech under this or subsequent catalogs are required to own or lease a computer. The minimum hardware and software requirements (as well as purchasing and financing options) are sent each spring to students accepted for the summer and fall semesters, and in the fall to students accepted for spring semester.

Because computer ownership is mandatory, an average cost for the minimum hardware and software required can be included in computing a new student's cost of education for the purpose of determining their eligibility for all forms of student financial aid. Students should contact the Office of Scholarships and Financial Aid for more information.

INTERNATIONAL STUDENTS

International students should access further information regarding application policies and procedures and other basic information helpful to applicants from other countries by visiting www.admission.gatech.edu/international. International students will not receive financial aid or institutional scholarships.

For more information, email the Office of Undergraduate Admission at admission@gatech.edu.

FASET ORIENTATION (NEW STUDENT ORIENTATION)

Part of the Office of New Student and Sophomore Programs, FASET (Familiarization and Adaptation to the Surroundings and Environs of Tech) is Georgia Tech's orientation program for new undergraduate students (freshmen and transfers) as well as their parents, family members, and guests. (is designed to help new students and their families become a part of the Georgia Tech community. FASET Orientation offers students the opportunity to become better acquainted with campus, the academic and social environment at Tech, the available support services, and Tech's rich traditions. Students meet with their academic advisors, register for classes, and complete essential college business. In addition, students, along with their parents and guests, meet other incoming Tech students, campus student leaders, faculty, staff, and administrators.

For more information, call 404.894.6897 or visit www.nssp.gatech.edu.

REGENTS' TESTING PROGRAM

EFFECTIVE SPRING 2010

The Regents' exam is no longer required at Georgia Tech as a result of a recent decision by The Board of Regents'.

GENERAL INFORMATION FOR TRANSFER ADMISSION

The Georgia Tech Application for Transfer Admission is available online at www.admission.gatech.edu/apply. In order to be eligible for admission, students must complete the application, submit the non-refundable application fee, and submit official transcripts from all United States colleges or universities ever attended. Students who have completed any coursework outside the United States will be required to submit additional information. All documents must be original and certified as appropriate.

The Office of Undergraduate Admission will consider all completed applications on file by the stated deadlines, provided spaces are available for the particular term or academic year for which the student applies. For more information including admission requirements and deadlines regarding transfer admission to the Georgia Institute of Technology, visit www.transfer.gatech.edu or call 404.894.4154.

POLICY ON COMPETITIVE ADMISSION (TRANSFER APPLICANTS)

All qualified persons are equally welcome to seek transfer admission to the Georgia Institute of Technology, and all persons may apply for and accept admission confident that the policy and regular practice of the Institute will not discriminate against them on the basis of race, religion, sex, or national origin.

Projections of the number of transfer students to be admitted and enrolled in any year will be determined (a) by the capacity of the Institute and (b) by approved enrollment levels. If the number of qualified applicants for admission exceeds the number of applicants who can be admitted and enrolled, those to be offered admission will be selected on the basis of (a) the Institute's judgment of the applicant's relative qualifications for satisfactory performance in the Institute and (b) recognition of the Institute's special responsibilities to the residents of Georgia.

The policy of competitive admissions, set forth above, will not prevent the admission of selected applicants who give evidence of possessing special talents for the Institute's programs requiring such special talents.

The admission of undergraduate students to pursue programs leading to a bachelor's degree shall be the responsibility of the Office of Undergraduate Admission. That office will apply policies and procedures that are approved by the Office of the President and the Board of Regents of the University System of Georgia.

The criteria used in determining each transfer applicant's qualifications for admission will include satisfactory evidence of scholastic promise based upon the applicant's previous academic transfer record.

Appeals concerning individual admission decisions shall be addressed to the director of the Office of Undergraduate Admission.

ACADEMIC ADVISING

The appointed academic advisor is the key source of information about the college. All entering students are assigned an academic advisor depending on their declared majors at Georgia Tech. To find the assigned advisor, visit the advising Web page. Students will meet their assigned advisors at orientation and at regular intervals during their college careers. Advisors welcome questions about different programs and areas.

Academic advisors are the guides through the college experience. They will help to identify the correct major, curriculum, minor, certificates, study abroad, internships, campus resources, and much more.

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In an effort to foster equal access to computers and to make the most of the teaching and learning technology available at Georgia Tech, all undergraduate students entering Georgia Tech under this or subsequent catalogs are required to own or lease a computer. The minimum hardware and software requirements (as well as purchasing and financing options) are sent each spring to students accepted for the summer and fall semesters, and in the fall to students accepted for spring semester.

Because computer ownership is mandatory, an average cost for the minimum hardware and software required can be included in computing a new student's cost of education for the purpose of determining their eligibility for all forms of student financial aid. Students should contact the Office of Scholarships and Financial Aid for more information.

INTERNATIONAL STUDENTS

International students should access further information regarding application policies and procedures and other basic information helpful to applicants from other countries by visiting www.admission.gatech.edu/international. International students will not receive financial aid or institutional scholarships.

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UNDERGRADUATE ADMISSIONS

Freshmen
General Information
Academic Advising
Apply Online
Competitive Admission Policy
Computer Ownership
International Students
Orientation (FASET)
Regents' Test
Transfer
General Information
Admission Policy
Academic Advising
Apply Online
Computer Ownership
International Students
Orientation (FASET)
Regents' Test
Transfer Credit
Readmission
General Information
Application
Academic Advising
Immunization Requirements
Regents' Test
Transfer Credit
Colleges & Degrees

FASET ORIENTATION (NEW STUDENT ORIENTATION)

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For more information, call 404.894.6897 or visit www.nssp.gatech.edu.

REGENTS' TESTING PROGRAM

EFFECTIVE SPRING 2010

The Regents' exam is no longer required at Georgia Tech as a result of a recent decision by The Board of Regents'.

TRANSFER CREDIT

The basic policy regarding the acceptance of courses by transfer is to allow credit for courses completed with satisfactory grades (*C* or better) at other accredited colleges and universities in the United States and Canada, provided the courses correspond in time and content to courses offered at the Georgia Institute of Technology. Georgia Tech will not accept credit for courses successfully completed at another institution but previously taken at Georgia Tech unless the final grade received at Georgia Tech is a W. The student must request and file an official transcript of transfer courses before the Institute can award credit. Coursework completed at colleges and universities outside the United States and Canada will be evaluated on a case-by-case basis. Transfer credit is not calculated in the Georgia Tech grade-point average.

Students may attend another institution as a transient student during terms when not enrolled at Georgia Tech. Students should discuss their course selection with their academic advisor to ensure transferability and applicability toward their degree programs. With the exception of officially sanctioned crossenrolled programs, students are not to be enrolled at Georgia Tech and another institution during the same term without the specific approval of the appropriate curriculum committee.

GENERAL INFORMATION FOR READMISSION

Georgia Tech students who are not enrolled for two or more consecutive terms must apply for readmission. The Application for Readmission, with all pertinent supporting information, must be submitted to the Registrar's Office before the deadline for the term for which readmission is requested as listed below:

TERM DEADLINE *

Term	Date
Fall	1-July
Spring	1-December
Summer	1-April

*** Former students on drop or review status should apply at least two months prior to these deadlines in order to ensure sufficient time for the review process.** The section "Rules and Regulations" in this catalog contains additional information on readmission.

Students who withdraw from school (receiving all Ws) will not ordinarily be permitted to enroll the next succeeding term. If an exception is requested due to unusual circumstances, a Petition to the Faculty must be filed.

Students who have been out two or more terms will be required to meet health, lawful presence, and other certification requirements in effect at the time of readmission.

ACADEMIC ADVISING

The appointed academic advisor is the key source of information about the college. All entering students are assigned an academic advisor depending on their declared majors at Georgia Tech. To find the assigned advisor, visit the advising Web page. Students will meet their assigned advisors at orientation and at regular intervals during their college careers. Advisors welcome questions about different programs and areas.

Academic advisors are the guides through the college experience. They will help to identify the correct major, curriculum, minor, certificates, study abroad, internships, campus resources, and much more.

While the degree requirements are posted on the Registrar's Office Web page, it is essential to check in with the assigned advisor at least once a year (if not more) to ensure that requirements are being met and communication lines are open. Also, regular contact with the advisor will enhance each student's college experience and help them reach their future goals.

READMISSION IMMUNIZATION REQUIREMENTS

Students who have been out two or more terms will be required to meet health, lawful presence, and other certification requirements in effect at the time of readmission.

REGENTS' TESTING PROGRAM

EFFECTIVE SPRING 2010

The Regents' exam is no longer required at Georgia Tech as a result of a recent decision by The Board of Regents'.

TRANSFER CREDIT

The basic policy regarding the acceptance of courses by transfer is to allow credit for courses completed with satisfactory grades (*C* or better) at other accredited colleges and universities in the United States and Canada, provided the courses correspond in time and content to courses offered at the Georgia Institute of Technology. Georgia Tech will not accept credit for courses successfully completed at another institution but previously taken at Georgia Tech unless the final grade received at Georgia Tech is a W. The student must request and file an official transcript of transfer courses before the Institute can award credit. Coursework completed at colleges and universities outside the United States and Canada will be evaluated on a case-by-case basis. Transfer credit is not calculated in the Georgia Tech grade-point average.

Students may attend another institution as a transient student during terms when not enrolled at Georgia Tech. Students should discuss their course selection with their academic advisor to ensure transferability and applicability toward their degree programs. With the exception of officially sanctioned crossenrolled programs, students are not to be enrolled at Georgia Tech and another institution during the same term without the specific approval of the appropriate curriculum committee.

ADMISSIONS INFORMATION

All qualified persons are equally welcome to seek admission to the Georgia Institute of Technology, and all persons may apply for and accept admission confident that the policy and regular practice of the Institute will not discriminate against them on the basis of race, religion, sex, or national origin.

Projections of the number of graduate students to be admitted and enrolled in any year will be determined (a) by the capacity of the Institute, (b) by the capacity of the admitting department, and (c) by approved enrollment levels. If the number of eligible applicants for admission exceeds the number of applicants who can be admitted and enrolled, those to be offered admission will be selected on the basis of (a) the department's judgment of the applicant's relative qualifications for satisfactory performance in the Institute/program/research area and (b) recognition of the Institute's special responsibilities to the residents of Georgia.

Verification of credentials and certification of compliance with Institute policies shall be the responsibility of the Office of Graduate Admissions. Policies and procedures that are approved by the Office of the President, Board of Regents of the University System of Georgia, and the Graduate Senate of the Institute shall be applied in determining eligibility for consideration for graduate study. From those eligible candidates, final admission decisions shall be the responsibility of the admitting department. Satisfying minimal standards, however, does not guarantee admission, since the number of eligible applicants generally far exceeds the number of places available. As a result, many well-qualified applicants cannot be accommodated.

The criteria used in determining each applicant's eligibility for consideration shall include:

1. evidence of award of a bachelor's degree or its equivalent (prior to matriculation) from a recognized institution, demonstrated academic excellence, and evidence of preparation in their chosen field sufficient to ensure successful graduate study; and
2. for international applicants, satisfactory scores on the Test of English as a Foreign Language (TOEFL).

From eligible candidates, departments may make final admission decisions based on a combination of factors, including academic degrees and records, the statement of purpose, letters of recommendation, test scores, and relevant work experience. Also considered is the appropriateness of the applicant's goals to the degree program in which they are interested and to the research interests of the program's faculty. In addition, consideration may be given to how the applicant's background and life experience would contribute significantly to an educationally beneficial mix of students.

GRADUATE RECORD EXAMINATIONS (GRE)

Official GRE general test scores are required by all graduate programs with the exception of the Master of Business Administration (MBA), Global Executive MBA, Executive Management of Technology MBA, and the PhD with a major in Management programs, which require official Graduate Management Admission Test (GMAT) scores. GRE subject test scores are required for some programs. Check the Graduate Admissions website for additional test requirements.

ORIENTATION - NEW STUDENTS

Each new graduate student should plan to attend one of the Institute's orientation sessions. Information will be posted on the Graduate Admissions website at www.grad.gatech.edu. In some cases, individual programs will also hold program orientations. New students should plan to attend both the Institute and the program orientation as the same information is not covered in these separate sessions.

REACTIVATION OF APPLICATION

Applicants to a Georgia Tech graduate program who do not enter in the term for which they originally applied and subsequently wish to be considered for a later term must reactivate their application for the new term by written request to the program to which they originally applied. Since the Graduate Admissions Office keeps files on never-entered students for one academic year only, students who delay more than one academic year in the reactivation request must reapply and provide a new set of application materials. The number of reactivations per applicant is limited.

READMISSION

Students who interrupt the continuity of their graduate programs by not registering for two or more consecutive terms must seek readmission by filing with the registrar a completed Request for Readmission form. Individuals who have received a graduate degree from Georgia Tech and who wish to reenter to receive an additional graduate degree (at the same level or higher) must also request readmission through this process (it is not necessary to file a new application). Readmission forms are available from the Registrar's Office. For more information, see Rules and Regulations.

Students who have been out two or more terms will be required to meet health, lawful presence, and other certification requirements in effect at the time of readmission.

TOEFL FOR INTERNATIONAL STUDENTS

All international students from countries in which English is not the primary native language must take the Test of English as a Foreign Language (TOEFL), except international students who have attended a college or university in the United States for at least one academic year (two semesters or three quarters); those students are exempt from the TOEFL requirement. No other language test may be substituted. The TOEFL is the only test accepted by Georgia Tech.

The minimum score for graduate admission required by Georgia Tech is 550 paper based, 213 computer based, or 79 internet based. Some academic programs require higher scores; see the program(s) of choice in the degree program listing found at www.grad.gatech.edu to determine the minimum scores required by each program. Since the results of this test constitute part of the material reviewed for admission to graduate study at Georgia Tech, students must arrange to have the Educational Testing Service (ETS) send their official scores to the Graduate Admissions Office as early as possible.

TRANSFER OF CREDIT

A student may not apply for transfer credit until after matriculation at Georgia Tech. The courses to be transferred would typically be those appearing on the approved program of study form for the master's degree. A doctoral student normally does not request transfer credit. The rules relative to and the process for obtaining transfer of credit for graduate-level courses are as follows:

1. A student in a master's degree program requiring fewer than 33 semester credit hours may receive up to six hours of transfer credit for graduate-level courses taken at an institution accredited by a Canadian or U.S. regional accrediting board, or at a foreign school or university that has a signed partner agreement with Georgia Tech, and not used for credit toward another degree. A student in a master's degree program requiring 33 semester credit hours or more may receive up to nine hours of transfer credit for graduate-level courses taken at an institution accredited by a Canadian or U.S. regional accrediting board, or at a foreign school or university that has a signed partner agreement with Georgia Tech, and not used for credit toward another degree. The student must supply a current transcript for this evaluation.
2. To obtain transfer of credit, the student must complete the following procedure:
   a. The student will confer with the graduate advisor to ascertain whether the courses to be transferred are a logical part of the student's graduate program;
   b. If the courses are appropriate, the student will deliver to the school that teaches such courses a copy of the current transcript, necessary descriptive materials including catalog descriptions, and textbooks used for evaluation. The faculty of the appropriate school will determine the equivalent Georgia Tech course and the number of credit hours accepted. The faculty member who prepares the transfer credit form should have the school chair cosign it. The school should then send the form directly to the registrar with a copy of the student's Approved Program of Study attached;
   c. If the student wishes to transfer more than the number of hours permitted in paragraph 1), a petition must be submitted to the Institute Graduate Curriculum Committee including statements of possible justification for the granting of such a petition, transfer credit forms, and the recommendation of the student's school chair.
3. A joint enrollment student may receive graduate credit for up to one-third of the hours required for the degree for graduate courses taken at Emory University or Georgia State University provided that
   a. Georgia Tech does not offer such courses;
   b. the student's advisor and school chair approve the courses in writing in advance;
   c. and the student passes the courses with a *C* or better. Advance approval is satisfied when the courses appear on the student's proposed Program of Study.
4. A student may not receive transfer credit from universities outside the United States and Canada except if the courses were taken at a foreign school or university that is accredited by a Canadian or U.S. regional accrediting board or has a signed partner agreement with Georgia Tech. In any other case, an international student can obtain credit for courses previously taken but not applied toward another degree by filling out an Examination for Advanced Standing Authorization Request Form, paying the appropriate fee at the Bursar's Office, and passing the examination for advanced standing. The school or college that normally teaches the equivalent course will

administer any necessary examinations.

TYPES OF STANDING

Applicants holding a bachelor's degree in an appropriate field from an accredited institution will be accorded full graduate standing upon acceptance and matriculation provided their previous work is of sufficient quality to indicate immediate success in advanced study.

If the work of an applicant holding an approved bachelor's degree is deficient in content or quality so that supplemental study or demonstrated ability is necessary, the applicant may be accorded conditional graduate standing upon acceptance.

Applicants who do not wish to qualify for an advanced degree at Georgia Tech, but demonstrate the potential benefits of their participation in advanced study, may gain admission as special non-degree graduate students. Students who are admitted with special non-degree standing for failure to submit official transcripts or for other administrative reasons may apply not more than sixteen semester credit hours taken on special non-degree standing toward a degree.

Graduate students in good standing at other U.S. universities may enroll at Georgia Tech as transient graduate students by filing an application for admission and by providing a letter of verification of good standing status from the registrar of the institution in which they are currently enrolled. Work undertaken in transient standing will not apply, however, toward a Georgia Tech degree.

The undergraduate school, not the graduate school, will admit students working toward a second bachelor's degree.

In addition to full, conditional, and special non-degree graduate standing, graduate students will be classified by academic standing according to their grade-point averages: good standing, warning, probation, or drop. For specific information, see Rules and Regulations.

The graduate average includes the grades on all courses scheduled by the student after admission to graduate study.

BILLING INFORMATION

The Bursar's Office does not mail invoices to students. A complete Student Invoice Statement is available to students via the Web Student Access System. Any changes that adjust tuition and fees (e.g. adding credit hours or a meal plan, making a payment, or canceling a parking permit) are updated immediately to show the most current information on the account. The Web invoice also facilitates online payment options.

It is the student's responsibility to make sure all requirements of his or her account are satisfied by the deadlines. Questions concerning fees and refunds should be directed only to the Bursar's Office. Verbal misinformation is not grounds for a waiver of a regulation. All tuition and other charges are subject to change without notice.

To access a Student Invoice Statement, go to the Web Student Access System. Select Secured Access Login (ID & PIN required), Student Services and Financial Aid, Registration, and Student Invoice Statement and Web Payment Options. All notices concerning billing are sent to the student's Georgia Tech e-mail account, which is the Institute's official means of communication with students. For more information, refer to www.bursar.gatech.edu.

FEE PAYMENT

All fees are payable by the deadline published on the official School Calendar and on the Bursar's Office Web page for each academic term. Registration is not complete until all fees are paid. The Institute reserves the right at any time during the semester to drop any student from classes for failure to pay fees. In no case is a regulation waived or an exception granted because a student pleads ignorance of the regulation or asserts that he or she was not informed of it by an advisor or other authority. Students who owe the Institute money and have been placed on "Hold" because of failure to pay may have their account forwarded to a professional collection agency, with the student incurring the full costs of collection.

Payment may be made with cash (U.S. dollars); a check payable in U.S. currency and drawn on a financial institution located in the United States (checks must be made payable to Georgia Tech and have the checking account number encoded); or a cashier's check. Georgia Tech does not accept credit card payments directly for payment of tuition, fees, and room and board that appear on the student's account summary. Credit card payments can only be made via the Web Student Access System and are processed by Georgia Tech's vendor. Credit card users are charged a service fee of 2.75 percent by the vendor for this service. A fee is not charged for WebCheck transactions. MasterCard, American Express, and Discover (credit and debit), and WebChecks are accepted for online payments. VISA credit, debit, or check cards are not accepted. Credit and debit card payments cannot be made by mail, phone, fax, or in person.

LATE REGISTRATION FEES

Students who do not meet fee payment deadlines may incur penalty fees. If a student does not pay all required fees by the published fee deadlines (www.bursar.gatech.edu/calendar.php), his or her registration may be cancelled. The late payment fee is $75.

MANDATORY STUDENT FEES

Published student fees are subject to change and should be considered estimates for use in planning future payments. All students registered for four or more semester hours are charged the mandatory student fees, which are due at the same time as tuition charges. These mandatory student fees are considered part of the registration process and must be paid in full for the student to be considered enrolled in school. The student activity, athletics, recreation, technology, transportation, and health fees are mandatory student fees used to provide cultural, social, and athletic programs for the entire student body. In addition, these fees provide financial support for student facilities at the Institute, guest speakers and lecturers, student publications, and many special events that are available exclusively for the students of Georgia Tech. These fees also assist in defraying shuttle costs for transporting students around campus. The technology fee supports the infrastructure necessary to provide students with the latest online computing services technology. Students registering for fewer than four semester hours are required to pay the technology, transportation, and institutional fees. See www.bursar.gatech.edu/tuiandfee.php for current information.

TUITION AND FEE RATES

The tuition and fees listed are estimates and subject to change. These amounts should be used only as a planning guide for future payments. Tuition charges can vary based on state residency status and degree program of study. Residency status is determined by the Office of Admission at the time of acceptance. Students are either classified as a resident or non-resident of Georgia for tuition purposes in accordance with the regulations of the Board of Regents of the University System of Georgia. The most current information on tuition and fees is available at www.bursar.gatech.edu/tuiandfee.php.

CHOOSING A PAYMENT OPTION

CHECK PAYMENTS ON THE WEB:

The Bursar's Office accepts check payments over the Web. To make a payment to an account, go to https://buzzport.gatech.edu and select the PayNow–Bursar icon on the Home or Student tab.

MAIL IN:

Make all checks or money orders payable to Georgia Institute of Technology. The student's ID number must be clearly printed on all checks or money orders. Payments must be received (not postmarked) by 4:00 p.m. on the fee deadline date. Mail payments to the following address: Georgia Institute of Technology, Bursar's Office, Lyman Hall, 225 North Avenue, Atlanta, Georgia 30332-0255.

ON CAMPUS:

Students who pay in person should bring their cash or check to the Bursar's Office Cashier Window; First Floor, Lyman Hall. Payment by check or money order may be deposited in the drop box (entry vestibule to Lyman Hall) at any hour of the day before the fee deadline. Do not put cash in the drop box.

PREPAYMENTS:

Prepayment of fees is accepted; however, prepayment does not guarantee the student will successfully register for any or all classes needed. It is the student's responsibility to properly register for classes by the registration deadline.

FEE PAYMENT USING FINANCIAL AID:

All tuition waivers, financial aid, scholarships, and fellowships awarded are disbursed to the student's account and applied to any outstanding balances. Financial aid is initially estimated before it is actually disbursed. The "Balance Due" for a student is reduced by this estimated amount. Actual disbursements begin approximately one week prior to the fee deadline. It is the student's responsibility to ensure all funds are properly credited by the fee deadline date by reviewing his or her student Web invoice. If funds are not/will not be disbursed or credited by the fee deadline, the student may be eligible to request a deferment from the Office of Scholarships and Financial Aid. Deferments must be requested and will be granted only for the lesser of the amount of the financial aid award or the amount due to the Institute.

DISBURSEMENT OF FINANCIAL AID CHECKS:

Financial aid processed by the Office of Scholarships and Financial Aid is applied directly to the student's account in the Bursar's Office. If a credit balance exists after all charges are posted and paid, the Bursar's Office will deposit the credit amount into the student's bank account. Many financial aid programs (including the HOPE scholarship, Federal Pell Grant, and Stafford Loan) do not require the student be enrolled full time in order for disbursement to occur. However, because some scholarships and grants do require full-time study, and some aid programs require registration for at least six hours of courses for disbursement, students who are planning to enroll for fewer than twelve hours and who are unsure of the requirements are advised to seek clarification from the Office of Scholarships and Financial

Aid.

RETURNED CHECKS

If a check is returned from the bank (for insufficient funds, stop payment, etc.), the student is required to redeem the returned check with cash or a cashier's check in the Bursar's Office. A returned check fee will be added to the amount of the check. Returned checks remaining unredeemed after a reasonable period of time may be forwarded to a collection agency with the student bearing the additional collections costs. Students who have three checks returned against their Georgia Tech accounts will be denied future check-writing privileges.

Checks returned against a student's fees might subject the student's classes to cancellation. If the student intends to withdraw from Georgia Tech, it remains the student's responsibility to formally withdraw by following the Withdrawal From School procedures on the Office of the Registrar's website.

REFUNDS FOR STUDENTS WITH FINANCIAL AID

For students withdrawing from school, a calculation is made on any financial aid received to determine whether a student who completely withdraws during a term has "earned" the monies disbursed. Students "earn" their aid based on the period of time they remain enrolled. During the first 60 percent of the term, a student earns financial aid funds in direct proportion to the length of time the student remains enrolled. Beyond the 60 percentage point, all aid is considered earned. The responsibility to repay "unearned" aid is shared by the Institute and the student in proportion to the aid each is assumed to possess. The most current refund schedule can be found at www.bursar.gatech.edu/refunds.php.

If a student intends to withdraw from Georgia Tech, it remains the student's responsibility to formally withdraw by following the Withdrawal From School Procedures on the Registrar's website.

REFUND POLICY

The refund amount for students withdrawing from the Institute shall be based on a pro rata percentage determined by dividing the number of calendar days in the semester that the student completed by the total number of calendar days in the semester. The total number of calendar days in a semester is calculated by using the first day of class through the last day of final exams for the Institute and excludes scheduled breaks of five or more consecutive days. Institutional charges are refunded up to the point in time that the percentage equals 60 percent. Students who withdraw from the Institute when the calculated percentage of completion is greater than 60 percent are not entitled to a refund of any portion of institutional charges. A full refund (100 percent) is available to students who fully withdraw from the Institute or to students who drop individual courses by the end of late registration, if the reduction in hours changes their tuition tier under the flat rate tuition model or they cease to be enrolled at least twelve hours under the fixed rate tuition model. No further refunds are given for individual classes dropped after the end of late registration.

Students suspended or expelled from the Institute for any reason forfeit their right to a refund of any credit balance on their student account.

If a student intends to withdraw from Georgia Tech it remains the student's responsibility to formally withdraw by following the Withdrawal From School Procedures on the Registrar's website.

CANCELLATION OF REGISTRATION

Students who register for classes and do not attend must cancel classes online. Failure to do so will result in awarded financial aid being applied to the student's account. Non-attendance then results in the student receiving a grade of *F* in each course.

CLASSIFICATION OF STUDENTS FOR TUITION PURPOSES

Under the Constitution and laws of Georgia, the Board of Regents of the University System of Georgia was created to govern, control, and manage a system of public institutions providing quality higher education for the benefit of Georgia citizens. The state, in turn, receives substantial benefit from individuals who attend or have attended these institutions through their significant contributions to the civic, political, economic, and social advancement of the citizens of Georgia.

Because the overwhelming proportion of financial support for the operation of the public institutions of higher education in Georgia comes from the citizens through the payment of taxes, the determination of whether a student is classified as a resident or a nonresident of the state for tuition purposes becomes a significant matter. The tuition paid by in-state students covers only about one-fourth of the total cost of their education in the University System. Therefore, Georgia taxpayers are contributing three-fourths of the necessary funds to provide quality education for the citizens of the state.

The practice followed by state colleges and universities of assessing out-of-state students a higher tuition rate is a rational attempt by states to achieve a partial cost equalization between those who have and those who have not recently contributed to the state's economy, even though no precise way exists to determine the degree to which higher tuition charges equalize the cost of educating in-state and out-of-state students.

Courts that have been faced with challenges to residency classification procedures have consistently recognized the right of public institutions of higher education to charge higher rates to out-of-state students and to adopt reasonable criteria for determining the establishment of in-state status.

For the purpose of these regulations, the question to be answered is not primarily whether a student is a resident or nonresident of Georgia, but whether the student should pay University System fees on an in-state basis. The term "resident" is confusing because it may have several definitions as it relates to voter registration, driver's licenses, automobile registration, deeds, contracts, wills, income taxes, and other matters. A student may be a resident of Georgia for some purposes, but not entitled to in-state status for tuition purposes.

The Board of Regents has adopted certain policies governing the classification of students as residents and nonresidents for tuition purposes in keeping with its responsibilities to the citizens of Georgia for an appropriate assessment of fees and reasonable share of the cost of their education. The taxpayers of Georgia are thereby assured that they are not assuming the financial burden of educating persons whose presence in the state is not intended to be permanent.

With these considerations in mind, the Board of Regents has adopted the following policies governing the classification of students for fee payment purposes:

http://www.usg.edu/policymanual/section4/policy/4.3_student_residency/

A. United States Citizens

1. a. An independent student who has established and maintained a domicile in the State of Georgia for a period of at least twelve consecutive months immediately preceding the first day of classes for the term shall be classified as "in-state" for tuition purposes.

It is presumed that no student shall have gained or acquired in-state classification while attending any postsecondary educational institution in this state without clear evidence of having established domicile in Georgia for purposes other than attending a postsecondary educational institution in this state.

b. A dependent student shall be classified as "in-state" for tuition purposes if either i) the dependent student's parent has established and maintained domicile in the State of Georgia for at least twelve consecutive months immediately preceding the first day of classes for the term and the student has graduated from a Georgia high school or ii) the dependent student's parent has established and maintained domicile in the State of Georgia for at least twelve consecutive months immediately preceding the first day of classes for the term and the parent claimed the student as a dependent on the parent's most recent federal income tax return.

c. A dependent student shall be classified as "in-state" for tuition purposes if a U.S. court-appointed legal guardian has established and maintained domicile in the State of Georgia for at least twelve consecutive months immediately preceding the first day of classes for the term, provided that appointment was not made to avoid payment of out-of-state tuition and the U.S. court-appointed legal guardian can provide clear evidence of having established and maintained domicile in the State of Georgia for a period of at least twelve consecutive months immediately preceding the first day of classes for the term.

2. a. If an independent student classified as "in-state" relocates temporarily but returns to the State of Georgia within 12 months, the student shall be entitled to retain in-state tuition classification.

b. If the parent or U.S. court-appointed legal guardian of a dependent student currently classified as "in-state" for tuition purposes establishes domicile outside of Georgia after having established and maintained domicile in the State of Georgia, the student may retain in-state tuition classification as long as the student remains continuously enrolled in a public postsecondary educational institution in the state, regardless of the domicile of the parent or U.S. court-appointed legal guardian.

B. Noncitizens

Noncitizens initially shall not be classified as "in-state" for tuition purposes unless there is evidence to warrant consideration of in-state classification. Lawful permanent residents, refugees, asylees, or other eligible noncitizens as defined by federal Title IV regulations may be extended the same consideration as citizens of the United States in determining whether they qualify for in-state classification. International students who reside in the United States under nonimmigrant status conditioned at least in part upon intent not to abandon a foreign domicile are not eligible for in-state classification.

OUT-OF-STATE TUITION WAIVERS

An institution may award out-of-state tuition differential waivers and assess in-state tuition for certain nonresidents of Georgia for the following reasons (under the following conditions):

Academic Common Market

Georgia Tech has made the decision to withdraw from the Academic Common Market on the undergraduate level. Undergraduate students who begin enrollment starting in the summer semester of 2011 or later at Georgia Tech will not be eligible for the Academic Common Market. More

International Students

International students selected by the institutional president or an authorized representative, provided the number of such waivers does not exceed 2 percent of the equivalent full-time students enrolled at the institution in the fall term immediately preceding the term for which the out-of-state waiver is to be waived; International students holding F1 or J1 visas may apply for the International Student Waiver via iStart

University System Employees and Dependents

Full-time employees of the University System, their spouses, and their dependent children;

Full-time School Employees

Full-time employees in the public schools of Georgia or the Technical College System of Georgia, their spouses, and their dependent children. Teachers employed full-time on military bases in Georgia shall also qualify for this waiver (BR Minutes, 1988-89, p.43);

Career Consular Officials

Career consular officers, their spouses, and their dependent children who are citizens of the foreign nation that their Consulate office represents and who are stationed and living in Georgia under orders of their respective governments;

Military Personnel

Military Personnel, their spouses, and their dependent children stationed in or assigned to Georgia and on active duty. The waiver can be retained by the military personnel, their spouses, and their dependent children if:

- The military sponsor is reassigned outside of Georgia, and the student(s) remain(s) continuously enrolled and the military sponsor remains on active military status;
- The military sponsor is reassigned out-of-state and the spouse and dependent children remain in Georgia and the sponsor remains on active military duty; or,
- The active military personnel and their spouse and dependent children are stationed in a state contiguous to the Georgia border and live in Georgia. (BoR Minutes, February 2009)

Research University Graduate Students

Graduate students attending the University of Georgia, the Georgia Institute of Technology, Georgia State University, and the Medical College of Georgia, which shall be authorized to waive the out-of-state tuition differential for a limited number of graduate students each year, with the understanding that the number of students at each of these institutions to whom such waivers are granted, shall not exceed the number assigned below at any one point in time:

1. University of Georgia 80
2. Georgia Institute of Technology 60
3. Georgia State University 80
4. Medical College of Georgia 20

Contact your major school

Georgia National Guard and U.S. Military Reservists

Active members of the Georgia National Guard, stationed or assigned to Georgia or active members of a unit of the U.S. Military Reserves based in Georgia, and their spouses and their dependent children;

International and Domestic Exchange Programs

Any student who enrolls in a University System institution as a participant in an international or domestic direct exchange program that provides reciprocal benefits to University System students.; and www.oie.gatech.edu

Economic Advantage

As of the first day of classes for the term, an economic advantage waiver may be granted to a U.S. citizen or U.S. legal permanent resident who is a dependent or independent student and can provide clear evidence that the student or the student's parent, spouse, or U.S. court-appointed legal guardian has relocated to the State of Georgia to accept full-time, self-sustaining employment and has established domicile in the State of Georgia. Relocation to the state must be for reasons other than enrolling in an institution of higher education. For U.S. citizens or U.S. legal permanent residents, this waiver will expire 12 months from the date the waiver was granted.

As of the first day of classes for the term, an economic advantage waiver may be granted to an independent non-citizen possessing a valid employment-related visa status who can provide clear evidence of having relocated to the State of Georgia to accept fulltime, self-sustaining employment. Relocation to the state must be for employment reasons and not for the purpose of required to show clear evidence of having taken all legally permissible steps toward establishing legal permanent residence in the United States and the establishment of legal domicile in the State of Georgia. Independent non-citizen students may continue to receive this waiver as long as they maintain a valid employment-related visa status and can demonstrate continued efforts to establish U.S. legal permanent residence and legal domicile in the State of Georgia.

A dependent non-citizen student who can provide clear evidence that the student's parent, spouse, or U.S. court-appointed legal guardian possesses a valid employment-related visa status and can provide clear evidence of having relocated to the State of Georgia to accept full-time, self-sustaining employment is also eligible to receive this waiver. Relocation to the state must be for employment reasons and not for the purpose of enrolling in an institution of higher education. These individuals must be able to show clear evidence of having taken legally permissible steps toward establishing legal permanent residence in the United States and the establishment of legal domicile in the State of Georgia. Non-citizen students currently receiving a waiver who are dependents of a parent, spouse, or U.S. court-appointed legal guardian possessing a valid employment-related visa status may continue to receive this waiver as long as they can demonstrate that their parent, spouse, or U.S. court-appointed legal guardian is maintaining full-time, self-sustaining employment in Georgia and is continuing efforts to pursue an adjustment of status to U.S. legal permanent resident and the establishment of legal domicile in the State of Georgia. (BR Minutes, October 2008.)

Recently Separated Military Service Personnel

Members of a uniformed military service of the United States who, within 12 months of separation from such service, enroll in an academic program and demonstrate an intent to become a permanent resident of Georgia. This waiver may also be granted to their spouses and dependent children. This waiver may be granted for not more than one year. (BR Minutes, October 2008)

Non-Resident Students

As of the first day of classes for the term, a non-resident student can be considered for this waiver under the following conditions:

1. Students under 24.
    1. If the parent, or United States court-appointed legal guardian has maintained domicile in Georgia for at least twelve (12) consecutive months and the student

can provide clear and legal evidence showing the relationship to the parent or United States court-appointed legal guardian has existed for at least twelve (12) consecutive months immediately preceding the first day of classes for the term. Under Georgia code, legal guardianship must be established prior to the student's 18th birthday (BoR Minutes, October 2008, title amended February 2010); or

    2. If the student can provide clear and legal evidence showing a familial relationship to the spouse and the spouse has maintained domicile in Georgia for at least twelve (12) consecutive months immediately preceding the first day of classes for the term (BoR Minutes, February 2010).

2. Students 24 and Older.
    1. If the student can provide clear and legal evidence showing a familial relationship to the spouse and the spouse has maintained domicile in Georgia for at least twelve (12) consecutive months immediately preceding the first day of classes for the term. This waiver can remain in effect as long as the student remains continuously enrolled (BoR Minutes, October 2008, title amended February 2010).

This waiver can remain in effect as long as the student remains continuously enrolled (BoR Minutes, October 2008).

Students who come to Georgia Tech from another state and work for companies in Georgia remain ineligible for in-state tuition in the absence of compelling evidence of intent to remain in Georgia permanently. Having Georgia voter registration, having employment in any position normally filled by a student (such as co-op, graduate research assistant, or graduate teaching assistant), having a lease of living quarters, having a Georgia automobile registration, and having Georgia driver's license do not constitute sufficient evidence of domicile to affect classification as an in-state student under the Board of Regents' policy.

For further information concerning residency, students should contact the Residency Office in Room 104 of the Tech Tower, write to the Registrar's Office, Residency, Georgia Tech, Atlanta, Ga 30332-0315, or email. The Residency Office must receive an application for classification as a legal resident for fee payment purposes no later than one month prior to the academic registration date for the term in which the student seeks to pay fees as a resident of Georgia. Requests for tuition waivers must be received by the Registrar's Office no later than the first day of classes for the term for which the out-of-state tuition is to be waived. See the official School Calendar for dates.

Updated May 2010

TUITION AND FEE RATES

The tuition and fees listed are estimates and subject to change. These amounts should be used only as a planning guide for future payments. Tuition charges can vary based on state residency status and degree program of study. Residency status is determined by the Office of Admission at the time of acceptance. Students are either classified as a resident or non-resident of Georgia for tuition purposes in accordance with the regulations of the Board of Regents of the University System of Georgia. The most current information on tuition and fees is available at www.bursar.gatech.edu/tuiandfee.php.

TUITION INFORMATION

Published tuition and fees are estimates and subject to change. These amounts should be used only as a planning guide for future payments. Tuition charges can vary based on state residency status and degree program. Residency status is determined by the Office of Admission at the time of acceptance. Students are either classified as a resident or non-resident of Georgia for tuition purposes in accordance with the regulations of the Board of Regents of the University System of Georgia. See www.bursar.gatech.edu/tuiandfee.php for the latest information on tuition and fees.

UNDERGRADUATE FINANCIAL ASSISTANCE

The Office of Scholarships and Financial Aid (OSFA) is dedicated to helping students and parents obtain the financial aid necessary to pay for a college education at Georgia Tech. The OSFA accomplishes this by awarding federal, state, and Institute funds to students and by directing students to other sources of aid. Additionally, the OSFA serves as the disbursement and delivery agent for all sources of assistance for students, including awards for Georgia Tech students from outside agencies.

All undergraduate students, including transfer students, who are interested in scholarships, grants, loans, and/or work opportunities for any semester of the academic year beginning in the fall semester must submit the "Georgia Tech Application for Scholarships and Financial Aid" and the "Free Application for Federal Student Aid" (FAFSA). The priority application deadline for entering freshmen is February 15 March 1. The deadline for returning undergraduate and transfer students is May 1.

For additional information, visit www.finaid.gatech.edu or contact the Office of Scholarships and Financial Aid , Georgia Institute of Technology, Atlanta, Georgia 30332-0460.

OUT-OF-STATE TUITION WAIVERS

An institution may award out-of-state tuition differential waivers and assess in-state tuition for certain nonresidents of Georgia for the following reasons (under the following conditions):

Academic Common Market
Georgia Tech has made the decision to withdraw from the Academic Common Market on the undergraduate level. Undergraduate students who begin enrollment starting in the summer semester of 2011 or later at Georgia Tech will not be eligible for the Academic Common Market. More

International Students
International students selected by the institutional president or an authorized representative, provided the number of such waivers does not exceed 2 percent of the equivalent full-time students enrolled at the institution in the fall term immediately preceding the term for which the out-of-state waiver is to be waived; International students holding F1 or J1 visas may apply for the International Student Waiver via iStart

University System Employees and Dependents
Full-time employees of the University System, their spouses, and their dependent children;

Full-time School Employees
Full-time employees in the public schools of Georgia or the Technical College System of Georgia, their spouses, and their dependent children. Teachers employed full-time on military bases in Georgia shall also qualify for this waiver (BR Minutes, 1988-89, p.43);

Career Consular Officials
Career consular officers, their spouses, and their dependent children who are citizens of the foreign nation that their Consulate office represents and who are stationed and living in Georgia under orders of their respective governments;

Military Personnel
Military Personnel, their spouses, and their dependent children stationed in or assigned to Georgia and on active duty. The waiver can be retained by the military personnel, their spouses, and their dependent children if:

- The military sponsor is reassigned outside of Georgia, and the student(s) remain(s) continuously enrolled and the military sponsor remains on active military status;
- The military sponsor is reassigned out-of-state and the spouse and dependent children remain in Georgia and the sponsor remains on active military duty; or,
- The active military personnel and their spouse and dependent children are stationed in a state contiguous to the Georgia border and live in Georgia. (BoR Minutes, February 2009)

Research University Graduate Students
Graduate students attending the University of Georgia, the Georgia Institute of Technology, Georgia State University, and the Medical College of Georgia, which shall be authorized to waive the out-of-state tuition differential for a limited number of graduate students each year, with the understanding that the number of students at each of these institutions to whom such waivers are granted, shall not exceed the number assigned below at any one point in time:

1. University of Georgia 80
2. Georgia Institute of Technology 60
3. Georgia State University 80
4. Medical College of Georgia 20

Contact your major school

Georgia National Guard and U.S. Military Reservists

Active members of the Georgia National Guard, stationed or assigned to Georgia or active members of a unit of the U.S. Military Reserves based in Georgia, and their spouses and their dependent children;

International and Domestic Exchange Programs

Any student who enrolls in a University System institution as a participant in an international or domestic direct exchange program that provides reciprocal benefits to University System students.; and www.oie.gatech.edu

Economic Advantage

As of the first day of classes for the term, an economic advantage waiver may be granted to a U.S. citizen or U.S. legal permanent resident who is a dependent or independent student and can provide clear evidence that the student or the student's parent, spouse, or U.S. court-appointed legal guardian has relocated to the State of Georgia to accept full-time, self-sustaining employment and has established domicile in the State of Georgia. Relocation to the state must be for reasons other than enrolling in an institution of higher education. For U.S. citizens or U.S. legal permanent residents, this waiver will expire 12 months from the date the waiver was granted.

As of the first day of classes for the term, an economic advantage waiver may be granted to an independent non-citizen possessing a valid employment-related visa status who can provide clear evidence of having relocated to the State of Georgia to accept fulltime, self-sustaining employment. Relocation to the state must be for employment reasons and not for the purpose of required to show clear evidence of having taken all legally permissible steps toward establishing legal permanent residence in the United States and the establishment of legal domicile in the State of Georgia. Independent non-citizen students may continue to receive this waiver as long as they maintain a valid employment-related visa status and can demonstrate continued efforts to establish U.S. legal permanent residence and legal domicile in the State of Georgia.

A dependent non-citizen student who can provide clear evidence that the student's parent, spouse, or U.S. court-appointed legal guardian possesses a valid employment-related visa status and can provide clear evidence of having relocated to the State of Georgia to accept full-time, self-sustaining employment is also eligible to receive this waiver. Relocation to the state must be for employment reasons and not for the purpose of enrolling in an institution of higher education. These individuals must be able to show clear evidence of having taken legally permissible steps toward establishing legal permanent residence in the United States and the establishment of legal domicile in the State of Georgia. Non-citizen students currently receiving a waiver who are dependents of a parent, spouse, or U.S. court-appointed legal guardian possessing a valid employment-related visa status may continue to receive this waiver as long as they can demonstrate that their parent, spouse, or U.S. court-appointed legal guardian is maintaining full-time, self-sustaining employment in Georgia and is continuing efforts to pursue an adjustment of status to U.S. legal permanent resident and the establishment of legal domicile in the State of Georgia. (BR Minutes, October 2008.)

Recently Separated Military Service Personnel

Members of a uniformed military service of the United States who, within 12 months of separation from such service, enroll in an academic program and demonstrate an intent to become a permanent resident of Georgia. This waiver may also be granted to their spouses and dependent children. This waiver may be granted for not more than one year. (BR Minutes, October 2008)

Non-Resident Students

As of the first day of classes for the term, a non-resident student can be considered for this waiver under the following conditions:

1. Students under 24.
    1. If the parent, or United States court-appointed legal guardian has maintained domicile in Georgia for at least twelve (12) consecutive months and the student

can provide clear and legal evidence showing the relationship to the parent or United States court-appointed legal guardian has existed for at least twelve (12) consecutive months immediately preceding the first day of classes for the term. Under Georgia code, legal guardianship must be established prior to the student's 18th birthday (BoR Minutes, October 2008, title amended February 2010); or

    2. If the student can provide clear and legal evidence showing a familial relationship to the spouse and the spouse has maintained domicile in Georgia for at least twelve (12) consecutive months immediately preceding the first day of classes for the term (BoR Minutes, February 2010).

2. Students 24 and Older.
    1. If the student can provide clear and legal evidence showing a familial relationship to the spouse and the spouse has maintained domicile in Georgia for at least twelve (12) consecutive months immediately preceding the first day of classes for the term. This waiver can remain in effect as long as the student remains continuously enrolled (BoR Minutes, October 2008, title amended February 2010).

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For further information concerning residency, students should contact the Residency Office in Room 104 of the Tech Tower, write to the Registrar's Office, Residency, Georgia Tech, Atlanta, Ga 30332-0315, or email. The Residency Office must receive an application for classification as a legal resident for fee payment purposes no later than one month prior to the academic registration date for the term in which the student seeks to pay fees as a resident of Georgia. Requests for tuition waivers must be received by the Registrar's Office no later than the first day of classes for the term for which the out-of-state tuition is to be waived. See the official School Calendar for dates.

Updated May 2010

OUTSIDE SPONSORSHIPS

A student whose tuition and fees are to be paid by a corporate or government sponsor must notify the Bursar's Office by submitting an authorization or voucher from the sponsor on original letterhead and signed by an official authorized to obligate payment by the organization. Authorizations must be received before the first fee payment deadline (Phase 1) of each semester. As a courtesy to students, the Bursar's Office will send a billing statement to the sponsor after the end of registration. Please refer to www.bursar.gatech.edu/thirdpartbill.php for additional information.

PRESIDENT'S SCHOLARSHIP PROGRAM

The President's Scholarship Program is Georgia Tech's premier merit-based scholarship. Recipients are selected from the top applicants for admission to Georgia Tech based on demonstrated excellence in scholarship, leadership, progress, and service as described at http://psp.gatech.edu/pages/prospective/apply.php. From the applicant pool, students selected as semifinalists submit a one-page resume before being interviewed. The top semifinalists will be named finalists and invited, with their parents, to campus for additional interviews and an information weekend in March. Current Georgia Tech students and transfer students are not eligible.

Each year, approximately 50 incoming freshmen receive President's Scholarships, which are renewable for up to four academic years or eight semesters, contingent upon honors-level performance and continued leadership development as evidenced by involvement in program, campus, and community activities. Awards are worth up to a full ride, including tuition, room and board, books, fees, and personal expenses. See the website below for more information on stipends.

To ensure consideration, a student must apply as an incoming freshman, and submit the Georgia Tech Application for Freshman Admission, along with the application fee by October 15.

For more information, contact the President's Scholarship Program at 404.894.1615, via the Contact Us button below, or via the Web at www.psp.gatech.edu.

MEDALS AND PRIZES

Fraternities, academic schools and departments, professional groups, and community organizations award medals and prizes, such as the Phi Kappa Phi Award, and present them at the annual Student Honors Day exercises.

VETERANS SERVICES

Because the Department of Veterans Affairs (VA) must receive certification of enrollment before issuing benefit payments, any student planning to enroll under any of the VA programs should initiate the certification procedure through the Georgia Tech Registrar's Office as early as possible. For further information about the certification procedure, contact the Office of the Registrar, or the Department of Veterans Affairs Atlanta Regional Office, 1700 Clairmont Road, Decatur, Georgia 30033-4032. Veterans information is also available at www.registrar.gatech.edu.

Veterans must apply to Georgia Tech through the usual admissions procedure. Eligibility for VA benefits does not guarantee acceptance to the Institute, nor does acceptance to Tech signify eligibility. The Institute serves only as a source of certification and information to the VA; the student must carry out all financial transactions with the Veterans Administration directly.

GRADUATE FINANCIAL ASSISTANCE

The Institute offers financial aid from a variety of sources to assist students with the pursuit and completion of their degrees as rapidly as circumstances permit.

Students should address inquiries for financial assistance to the graduate coordinator of the school in which they plan to study. Graduate school applicants should also investigate national fellowships offered by various foundations, professional organizations, and government agencies. Educational loans are available for qualified applicants through the Office of Scholarships and Financial Aid. More information about Federal Loan programs and various alternative loan programs may be found at www.finaid.gatech.edu.

GRADUATE RESEARCH ASSISTANTSHIPS

Students receiving graduate research assistantships must be registered for at least twelve total graduate credits with at least nine hours attempted for a letter grade or pass/fail, and be employed at least one-third of the time by the Institute. Students receiving graduate research assistantships are also eligible for a tuition waiver. For more information, refer to the GRA/GTA Fee Payment Program at www.bursar.gatech.edu.

GRADUATE TEACHING ASSISTANTSHIPS

Students receiving Graduate Teaching Assistantships must be registered for at least twelve total graduate credits with at least nine hours attempted for a letter grade or pass/fail, and employed at least 1/3 time by the Institute. Students receiving Graduate Teaching Assistantships are also eligible for a tuition waiver. For more information, refer to New GRA/GTA Fee Payment Program at www.bursar.gatech.edu.

FEDERAL FELLOWSHIPS AND TRAINEESHIPS

The Institute participates in a number of fellowship and traineeship programs sponsored by agencies of the federal government. In addition, the following traineeships associated with specific training programs are available: water resources planning and management through the Environmental Resources Center, radiation health specialist training program through the School of Mechanical Engineering's Nuclear and Radiological Engineering Program, air quality control through the School of Chemical and Biomolecular Engineering, and minerals and mining through the School of Materials Science and Engineering.

SPONSORED FELLOWSHIPS

The Institute awards a number of fellowships sponsored by various industrial organizations, foundations, and trust funds for the support of outstanding graduate students. These fellowships assist students in pursuing their studies and research full time. Most of these fellowships are restricted to specific areas of study. Similarly, the Institute participates in a number of fellowship and traineeship programs sponsored by agencies of the federal government. Interested students should contact the graduate coordinator in the department in which they plan to study.

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International students selected by the institutional president or an authorized representative, provided the number of such waivers does not exceed 2 percent of the equivalent full-time students enrolled at the institution in the fall term immediately preceding the term for which the out-of-state waiver is to be waived; International students holding F1 or J1 visas may apply for the International Student Waiver via iStart

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Full-time employees in the public schools of Georgia or the Technical College System of Georgia, their spouses, and their dependent children. Teachers employed full-time on military bases in Georgia shall also qualify for this waiver (BR Minutes, 1988-89, p.43);

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As of the first day of classes for the term, an economic advantage waiver may be granted to an independent non-citizen possessing a valid employment-related visa status who can provide clear evidence of having relocated to the State of Georgia to accept fulltime, self-sustaining employment. Relocation to the state must be for employment reasons and not for the purpose of required to show clear evidence of having taken all legally permissible steps toward establishing legal permanent residence in the United States and the establishment of legal domicile in the State of Georgia. Independent non-citizen students may continue to receive this waiver as long as they maintain a valid employment-related visa status and can demonstrate continued efforts to establish U.S. legal permanent residence and legal domicile in the State of Georgia.

A dependent non-citizen student who can provide clear evidence that the student's parent, spouse, or U.S. court-appointed legal guardian possesses a valid employment-related visa status and can provide clear evidence of having relocated to the State of Georgia to accept full-time, self-sustaining employment is also eligible to receive this waiver. Relocation to the state must be for employment reasons and not for the purpose of enrolling in an institution of higher education. These individuals must be able to show clear evidence of having taken legally permissible steps toward establishing legal permanent residence in the United States and the establishment of legal domicile in the State of Georgia. Non-citizen students currently receiving a waiver who are dependents of a parent, spouse, or U.S. court-appointed legal guardian possessing a valid employment-related visa status may continue to receive this waiver as long as they can demonstrate that their parent, spouse, or U.S. court-appointed legal guardian is maintaining full-time, self-sustaining employment in Georgia and is continuing efforts to pursue an adjustment of status to U.S. legal permanent resident and the establishment of legal domicile in the State of Georgia. (BR Minutes, October 2008.)

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    1. If the parent, or United States court-appointed legal guardian has maintained domicile in Georgia for at least twelve (12) consecutive months and the student

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    2. If the student can provide clear and legal evidence showing a familial relationship to the spouse and the spouse has maintained domicile in Georgia for at least twelve (12) consecutive months immediately preceding the first day of classes for the term (BoR Minutes, February 2010).

2. Students 24 and Older.
    1. If the student can provide clear and legal evidence showing a familial relationship to the spouse and the spouse has maintained domicile in Georgia for at least twelve (12) consecutive months immediately preceding the first day of classes for the term. This waiver can remain in effect as long as the student remains continuously enrolled (BoR Minutes, October 2008, title amended February 2010).

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Updated May 2010

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VETERANS SERVICES

Because the Department of Veterans Affairs (VA) must receive certification of enrollment before issuing benefit payments, any student planning to enroll under any of the VA programs should initiate the certification procedure through the Georgia Tech Registrar's Office as early as possible. For further information about the certification procedure, contact the Office of the Registrar, or the Department of Veterans Affairs Atlanta Regional Office, 1700 Clairmont Road, Decatur, Georgia 30033-4032. Veterans information is also available at www.registrar.gatech.edu.

Veterans must apply to Georgia Tech through the usual admissions procedure. Eligibility for VA benefits does not guarantee acceptance to the Institute, nor does acceptance to Tech signify eligibility. The Institute serves only as a source of certification and information to the VA; the student must carry out all financial transactions with the Veterans Administration directly.

ACADEMIC HONOR CODE

A student initiative, the Academic Honor Code became official Institute policy in 1996. Students are required to sign an honor agreement acknowledging their awareness of the Academic Honor Code. All students are strongly encouraged to understand each instructor's academic honor expectations. The objective of the Academic Honor Code is to strengthen the academic integrity and trust in the Georgia Tech community.

STUDENT ALCOHOL POLICY

Georgia Tech complies with all federal, state, and local laws and policies, including the policies of the Board of Regents of the University System of Georgia, on the abuse of alcohol and other drugs by its students. The legal drinking age in Georgia is twenty-one. Each member of the Tech community should be involved in the implementation of the Student Alcohol Policy. This policy is distributed via e-mail annually.

In accordance with federal and state laws and because of the potential detriment to the health, well-being, and success of students, all students are prohibited from engaging in the unlawful use or abuse, possession, manufacture, distribution, dispensation, and sale of alcoholic beverages, controlled substances (including marijuana), and other drugs.

PARENTAL NOTIFICATION POLICY

Parents or legal guardians of students under the age of twenty-one may be notified when a student is found responsible for violating the Georgia Tech Student Policy on Alcohol and Other Drugs when any of the following occur:

- A student endangers himself/herself or others while under the influence of alcohol or other substances. Specific instances include driving under the influence, fighting, alcohol poisoning, and hospitalization.
- When the dean of students determines that any future violation of Institute Policy will most likely result in suspension from Georgia Tech.
- When a student conduct administrator determines that any future violation of Institute policy will likely result in removal from housing.

GUIDELINES FOR GRADUATE CERTIFICATES

Certificates are intended to encourage students to use the elective requirements in their degree program to form a coherent concentration of coursework in a specified area.

1. Certificates will be granted only to students who, in addition to the certificate program requirements, have satisfied requirements for a graduate degree. The offering unit is responsible for verifying satisfaction of all certificate requirements, as well as completion of a graduate degree. Certificates are not recorded on the student's transcript or diploma. Arrangements must be made for awarding certificates within colleges or offering units. Certificates will not be awarded at the Institute level.
2. All graduate certificate programs must be approved by the Graduate Curriculum Committee and by the Academic Senate and forwarded to the Office of Program Review and Accreditation for USG notification and posting in the USG Degrees and Majors Authorized database.
3. Departments, schools, and colleges are eligible to offer graduate certificate programs in well-defined and coherent subject areas. Certificate programs sponsored jointly by more than one academic unit may be designated as multi-disciplinary certificates, subject to the special requirements listed below.
4. A certificate program generally will be available to all graduate students, subject to the restrictions below. Exceptions must be clearly justified in the certificate proposal.
5. All proposals for a certificate must originate from the faculty of the academic unit offering the certificate or, in the case of a multi-disciplinary certificate, from the faculty of each participating academic unit. Proposals must be endorsed by the appropriate College Dean(s) and by the Provost.
6. In addition to the academic requirements for the certificate, the proposal must define the procedures for management of the program and for awarding certificates. The offering unit must record and maintain enrollment and completion for certificates. The design and working of certificates must be approved by the Provost and a draft must be submitted with the proposal.
7. The certificate program must comprise at least 12 semester hours in a coherent program of which at least three semester hours are foundational to provide a broad overview of that discipline. A multi-disciplinary certificate program will additionally require that courses be taken from more than one academic unit and that at least three semester hours be taken outside the student's major field. Cross-listed courses may be counted as being outside the student's major field.
8. No more than a total of 4 semester hours of Special Problems courses may be included in a certificate program.
9. Courses used in a certificate also may be used to fulfill elective requirements in the student's major degree program.
10. A course may not be counted toward more than one certificate.
11. All courses counting toward the certificate must be taken on a letter-grade basis, and be completed with a grade of B or higher.
12. The availability of a certificate should be noted in the catalog, at least by title, under the appropriate academic unit(s). The academic unit(s) offering the certificate shall publish and make available to students the requirements for the certificate – the courses and total number of hours required, along with the enumeration of any particular courses that are mandated or excluded, and any grade requirements that differ from the general grade requirements of this policy.
13. All certificate programs are to be reviewed during the scheduled academic program

review in the sponsoring unit(s).

14. All certificates will be submitted to the USG Office of Academic Affairs for administrative approval following the approval by the GT Curriculum Committee and the Academic Senate. The appropriate form is available on the Curriculum Committee Website.

GUIDELINES FOR UNDERGRADUATE CERTIFICATES

Certificates are intended to encourage students to use the elective course requirements in their degree program to form a coherent package of coursework in a specified area.

1. Certificates will be granted only to students who, in addition to the certificate program requirements, have satisfied requirements for an undergraduate degree. The offering unit is responsible for verifying satisfaction of all certificate requirements, as well as completion of an undergraduate degree. Certificates are not recorded on the student's transcript or diploma. Arrangements must be made for awarding certificates within colleges or offering units. Certificates will not be awarded at the Institute level.
2. All undergraduate certificate programs must be approved by the Undergraduate Curriculum Committee and by the Academic Senate and forwarded to the Office of Program Review and Accreditation for USG notification and posting.
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6. In addition to the academic requirements for the certificate, the proposal must define the procedures for management of the program and for awarding certificates. The design and wording of certificates must be approved by the Provost and a draft must be submitted with the proposal.
7. A certificate program must comprise at least twelve semester hours in a coherent program, of which at least nine semester hours are upper-division coursework (numbered 3000 or above). A multi-disciplinary certificate program will additionally require that courses be taken from more than one academic unit and that at least three semester hours be taken outside the student's major field. Cross-listed courses may be counted as being outside the student's major field.
8. No more than 6 semester hours of Special Topics courses may be included in a certificate program. No more than a total of 4 semester hours of Special Problems or Undergraduate Research courses may be included in a certificate program.
9. Courses required by name and number in a student's major degree program may not be used in satisfying the course requirements for a certificate. However, courses used in a certificate also may be used to fulfill elective requirements (free electives, technical electives, humanities electives, social sciences electives, etc.) in the student's major degree program.
10. A course may not be counted toward more than one certificate and/or minor.
11. All courses counting toward the certificate must be taken on a letter-grade basis, and be completed with a grade of C or better.
12. The availability of a certificate should be noted in the catalog, at least by title, under the appropriate academic unit(s). The academic unit(s) offering the certificate shall publish and make available to students the requirements for the certificate - the courses and total number of hours required, along with the enumeration of any particular courses that are mandated or excluded, and any grade requirements that differ from the general

grade requirements of this policy.

13. All certificate programs are to be reviewed during the scheduled academic program review in the sponsoring unit(s).

REQUIRED STUDENT COMPUTER OWNERSHIP

In an effort to foster equal access to computers and to make the most of the teaching and learning technology available at Georgia Tech, all undergraduate students entering Georgia Tech under this or subsequent catalogs are required to own or lease a computer. The minimum hardware and software requirements (as well as purchasing and financing options) are sent each spring to students accepted for the summer and fall semesters, and in the fall to students accepted for spring semester.

Because computer ownership is mandatory, an average cost for the minimum hardware and software required can be included in computing a new student's cost of education for the purpose of determining their eligibility for all forms of student financial aid. Students should contact the Office of Scholarships and Financial Aid for more information.

ASSISTANCE FOR INDIVIDUALS WITH DISABILITIES

The Access Disabled Assistance Program for Tech Students (ADAPTS) provides accessible programs, services, activities, and reasonable accommodations for students with a disability as defined by section 504 of the Rehabilitation Act of 1973, as amended, and by the Americans with Disabilities Act of 1990. Services are available to ensure that individuals with disabilities have an equal opportunity to pursue education, employment, or other campus programs, activities, or services.

The ADAPTS program offers self-identified students with permanent or temporary disabilities assistance with registration, accessibility, transportation, parking, housing, counseling, note taking, recorded textbooks, advocacy, test proctoring, referral services, and other needs. ADAPTS promotes disability awareness programs for departmental faculty and staff, as well as the Georgia Tech community.

Students and prospective students who wish to learn more about accommodations for students with disabilities should contact ADAPTS, Student Services Building, Georgia Institute of Technology, Atlanta, Georgia 30332-0285, or call 404.894.2563 (voice) or 404.894.1664 (TDD), or visit www.adapts.gatech.edu or email your questions to adaptsinfo@gatech.edu. Faculty, staff, and visitors should contact Disability Services in the Office of Human Resources at 404.894.3344 (voice) or 404.894.9411 (TDD).

ACADEMIC ACCOMMODATIONS FOR STUDENTS WITH DISABILITIES

Reasonable accommodations are provided to self-identified students with disabilities who meet the academic and technical standards requisite to admission or participation in the program of study.

Consideration may be given to the substitution or modification of certain course requirements as long as such changes do not detract from the quality of the educational experience and the changes remain within the accreditation criteria for the degree program. Such substitutions or modifications must be approved by the school chair, department head, or college dean, and the Undergraduate Curriculum Committee and/or the Graduate Committee.

DISCRIMINATION

This institution is in compliance with Title VI of the Civil Rights Act of 1964 and does not discriminate on the basis of race, creed, color, or national origin and is also in compliance with the provisions of Title IX of the Educational Amendments of 1972, which prohibit discrimination on the basis of sex.

INSTITUTE COMMITMENT TO DIVERSITY, EQUITY AND INCLUSION

The Office of the President
Georgia Institute of Technology

Diversity is one of Georgia Tech's greatest strengths and one of the major priorities identified in our twenty-five-year strategic plan.

"We will recruit, develop, retain, and engage a diverse cadre of students, faculty, and staff with a wide variety of background, perspectives, interests, and talents, creating a campus community that exemplifies the best in all of us—in our intellectual pursuits, our diversity of thought, our personal integrity, and our inclusive excellence." —Georgia Tech Strategic Plan

At Tech, we embrace and leverage diversity in all its manifestations. We are proud that we are one of the most diverse universities in the world with students who represent every state in the nation and more than 100 countries. In the years ahead, our goal is to continue to build a campus culture of collegiality, close collaboration, global perspective, intercultural sensitivity, respect, and thoughtful interaction among a diverse community of students, employees, and alumni.

We realize that, in order to achieve our vision for Georgia Tech as a leader in influencing the major technological, social, and policy decisions in the twenty-first century, we must recruit and retain faculty, staff, and students from a wide array of backgrounds, perspectives, interests, and talents. In doing so, we will create a community that exemplifies the best in all of us---our intellectual pursuits, our diversity of thought, and our personal integrity. Our mission to achieve inclusive excellence means unleashing the full potential of Tech's human capacity to create a better, sustainable future for us all.

You are invited to join us on the journey of creating and sustaining a future that builds upon the talents of all members of our community in addressing the major challenges of this and future generations.

FAMILY EDUCATIONAL RIGHTS AND PRIVACY ACT (FERPA) AND APPLICANT RECORDS

A. NOTIFICATION OF STUDENT RIGHTS UNDER FERPA

The Family Educational Rights and Privacy Act (FERPA) affords students certain rights with respect to their education records. They are:

<u>The right to inspect and review the student's education records within forty-five days of the day that the Institute receives the request for access.</u>
Students should submit to the registrar written requests that identify the record(s) they wish to inspect. The registrar will make arrangements for access and notify the student of the time and place where the records may be inspected.
<u>The right to request the amendment of the student's education records that the student believes are inaccurate or misleading.</u>
Students may ask the Institute to amend a record that they believe is inaccurate or misleading. They should write the registrar, clearly identifying the part of the record they want changed, and specify why it is inaccurate or misleading.

If the Institute decides not to amend the record as requested by the student, the Institute will notify the student of the decision and advise the student of his or her right to a hearing regarding the request for amendment. Additional information regarding the hearing procedures will be provided to the student when notified of the right to a hearing.
<u>The right to consent to disclosures of personally identifiable information contained in the student's education records, except to the extent that FERPA authorizes disclosure without consent.</u>
One exception which permits disclosure without consent is disclosure to school officials with legitimate educational interests. A school official is a person whether volunteering for or employed by the Institute in an administrative, supervisory, academic or research, or support staff position (including law enforcement unit personnel and health staff); a person or company with whom the Institute has contracted (such as an attorney, auditor, or collection agent); a person serving on the Board of Regents; a staff member in the office of the Board of Regents; staff in the Office of the Attorney General; or a student serving on an official committee, such as a disciplinary or grievance committee, or assisting another school official in performing his or her tasks.

A school official has a legitimate educational interest if the official needs to review an education record in order to fulfill his or her professional responsibility.
<u>The right to file a complaint with the United States Department of Education concerning alleged failures by the Georgia Institute of Technology to comply with the requirements of FERPA.</u>
The name and address of the Office that administers FERPA is:
Family Policy Compliance Office
U.S. Department of Education
400 Maryland Avenue, SW
Washington, DC 20202-4605

B. APPLICANT RECORDS

Access to applicant records is strictly controlled and governed by Institute policy. These records are treated as confidential.

Annual Notice of Directory Information Contents

"Directory Information" is information not generally considered harmful or an invasion of privacy if disclosed. Effective November 1, 2009 the Georgia Institute of Technology considers the following information to be directory information:

- Name, address (including GT email address), and telephone listing
- Level (graduate or undergraduate)
- Field of study
- Enrollment status (full-time, part-time, less than part-time)
- Dates of attendance
- Degrees with associated honors and designations, and date(s) awarded
- Anticipated date of graduation

Directory information cannot include social security numbers.

Students who wish to prohibit the release of Directory Information can view information on the registrar's confidentiality Web page.

C. POSSIBLE FEDERAL AND STATE DATA COLLECTION AND USE

As of January 3, 2012, the U.S. Department of Education's FERPA regulations expand the circumstances under which your education records and personally identifiable information (PII) contained in such records — including your Social Security Number, grades, or other private information — may be accessed without your consent. First, the U.S. Comptroller General, the U.S. Attorney General, the U.S. Secretary of Education, or state and local education authorities ("Federal and State Authorities") may allow access to your records and PII without your consent to any third party designated by a Federal or State Authority to evaluate a federal- or state-supported education program. The evaluation may relate to any program that is "principally engaged in the provision of education," such as early childhood education and job training, as well as any program that is administered by an education agency or institution. Second, Federal and State Authorities may allow access to your education records and PII without your consent to researchers performing certain types of studies, in certain cases even when we object to or do not request such research. Federal and State Authorities must obtain certain use-restriction and data security promises from the entities that they authorize to receive your PII, but the Authorities need not maintain direct control over such entities. In addition, in connection with Statewide Longitudinal Data Systems, State Authorities may collect, compile, permanently retain, and share without your consent PII from your education records, and they may track your participation in education and other programs by linking such PII to other personal information about you that they obtain from other Federal or State data sources, including workforce development, unemployment insurance, child welfare, juvenile justice, military service, and migrant student records systems.

ADDITIONAL INFORMATION

Additional information on Georgia Tech's FERPA policies is available from the Registrar's Office.

V. GRADES AND SCHOLASTIC AVERAGE

C. GRADE SUBSTITUTION

Effective with the entering Fall 2005 first-time freshman class.

1. First-time freshman students who receive a grade of *D* or *F* in a course within their first two terms in residence (first three terms for those who begin in the Freshman Summer Session) are eligible to repeat the course and have the original grade excluded from the computation of the academic average. Grade substitution may be used only once per course, with a maximum of two courses total.
2. The course must be repeated at Georgia Tech within the student's first four terms in residence (first five terms for those who begin in the Freshman Summer Session). The application for grade substitution must be filed with the Registrar's Office no later than the deadline for withdrawing from a course during the student's next term in residence after the course is repeated.
3. The original course and grade will continue to appear on the student's transcript, with a notation that the course was repeated and that the original grade is not included in computation of the academic average. Credit for the course will be counted only once.
4. If the revised academic average results in a change in academic standing for any term, then the revised standing will be reflected on the student's transcript. If standing is changed from "Dismissal" to a higher standing, it will be recorded as "standing from Dismissal" and the dismissal will continue to be counted with respect to regulations and policies related to Withdrawal and Readmission.
5. A course is not eligible for grade substitution if the student was found responsible for any academic misconduct in that course regardless of how many times it is repeated.
6. The grade substitution policy (including, but not limited to, course eligibility, number of courses, time limits, and deadlines) is not subject to exceptions and may not be petitioned to the Undergraduate Curriculum Committee.

DOWNLOAD FORM

OTHER POLICIES
Academic Honor Code
Alcohol Policy
Alcohol Policy
Parental Notification
Certificate Guidelines
Graduate
Undergraduate
Computer Ownership
Disabled Assistance
Assistance
Academic Accommodations
Discrimination
Diversity
FERPA
Grading & GPA
Grade Substitution
Grading System
Auditing
Examination & Term Grades
Pass/Fail System Rules
Progress Reports
Scholastic Average (GPA)
Health Policies
Health Insurance Information
Immunizations
Eligibility For Treatment
Cost
Human Relations
Intellectual Property
Sexual Harassment

GRADING SYSTEM - RULES AND REGULATIONS SECTION V

A. GRADES

1. The letter grades for completed courses used in the calculation of scholastic average are the following:

   1. **A**-excellent (four quality points)
   2. **B**-good (three quality points)
   3. **C**-satisfactory (two quality points)
   4. **D**-passing (one quality point)
   5. ***F***-failure, must be repeated if in a required course (no quality points)
2. The following grades will be used in the cases indicated and will not be included in the calculation of scholastic average:

   1. **S**-satisfactory performance in a course
   2. ***U***-unsatisfactory performance in a course
   3. ***V***-assigned when the course has been audited; not credit given; and implies no academic achievement on the part of the student
3. The following grades will be used in the cases indicated and will not be included in the calculation of scholastic average:

   1. ***I***-incomplete. Assigned when a student was doing satisfactory work, but for nonacademic reasons beyond his/her control and deemed acceptable by the instructor, was unable to meet the full requirements of the course. If the student's performance was so poor as to preclude his/her passing, the instructor shall assign the grade of *F* . Refer to section VII. B for regulations regarding removal of the *I* grade.
   2. ***W***- withdrawal without penalty. Withdrawals from individual courses without penalty will not be permitted after 50 percent of the term has been completed, as specified by the official calendar, except in cases of hardship as determined by the Institute Undergraduate Curriculum Committee or Graduate Committee, as appropriate. Withdrawal from school will not be permitted after 60 percent of the term except in cases of hardship as determined by the Institute Undergraduate Curriculum Committee or Graduate Committee, as appropriate. With the exception of part-time graduate students, students who withdraw from school and receive all grades of *W* will not ordinarily be permitted to re-enroll the next succeeding term. Refer to section VIII .B for regulations regarding readmission. See Catalog regulation II. Academic Calendar, A. Standard Calendar for more information.
   3. ***NR***- not reported. Assigned when an instructor fails to submit grades by the published deadline, through no fault of the student.
4. Final grades are reported to the registrar at the end of each term.
5. Progress report grades will be submitted to the Registrar on all classes numbered 1000 and 2000 each term. These grades will be used for the advisement of students, not for the calculation of any GPA at Georgia Tech. Progress report grades will be *S* or *U* (a grade of *U* indicates that based on work completed to that point the student's standing is in the D or lower range). They will be submitted after 40 percent of the term has

been completed, as specified by the official calendar, and be available to students no later than the following Monday.

6. If a final course grade is believed to be in error, the student should contact the professor as soon as possible. In general, no change of grade will be made after the end of the student's next term in residence.

B. ACADEMIC AVERAGE

The academic average (or grade-point average) is calculated as the ratio of the total number of quality points earned to the total number of credit hours in which a final letter grade has been assigned. grade-point averages are truncated after two decimal places.

AUDITING

Officially enrolled students who have obtained approval of their advisors and the department of instruction concerned may audit courses at Tech; however, the student will not receive credit for courses scheduled on an auditing basis. If the student wishes to change to or from auditing status, he or she must follow the procedure for schedule changes during the time allotted for schedule modification in the official calendar. In order for a successful audit to show on the student's permanent record, the student must comply with all requirements listed by the instructor. If the instructor deems that the student did not successfully audit the course, the grade of *W* will be assigned. All students registered as auditors must pay tuition at the regular rate. Members of the faculty or staff of the Georgia Institute of Technology may sit in on a course with the permission of the school/college concerned.

EXAMINATION AND TERM GRADES

The Institute schedules final examinations during the last week of each term, and term grades are posted on the Student Access System.

INSTITUTE RULES FOR THE PASS/FAIL SYSTEM

At the discretion of the major school, a student may receive up to a maximum of nine hours credit toward a bachelor's degree or 3 hours credit toward a graduate degree for courses taken under the pass/fail system with a grade of satisfactory. Such courses apply toward the degree requirements only if the major school has approved the course, either for all majors or for the individual student. The department or school offering a course determines the criteria for a passing grade and may restrict the pass/fail enrollment in any course it offers. The rules for withdrawal from graded courses apply to pass/fail courses as well.

Faculty will record only a grade of satisfactory or unsatisfactory for any student so designated on the official class roll; The deadline to change the grade mode from letter grade to pass/fail (and vice-versa) is the same day as the last day to withdraw from a course without penalty.

Neither the professor nor the registrar may change a pass/fail grade to a letter grade, nor may the registrar include courses taken pass/ fail in the calculation of grade-point averages.

Under certain circumstances, a change in degree requirements may affect a department's position on a course previously approved for degree credit under the pass/fail system. In such cases, the student's major school will decide if a course completed with a grade of pass before the change will fulfill the amended requirements.

Only students who complete ninety-one or more hours toward a degree at Georgia Tech may use the entire maximum of nine hours credit taken on pass/fail toward a bachelor's degree. For transfer students, second undergraduate degree students, and dual degree students, the number of hours completed at Georgia Tech determines the maximum number of pass/fail hours allowed, according to the following schedule:

Hours included in program of study	Hours allowed on pass/fail basis
45 to 70 credit hours	3 credit hours
71 to 90 credit hours	6 credit hours
91 or more credit hours	9 credit hours

PROGRESS REPORTS

Progress Report grades of "*S*" or "*U*" are issued for all students enrolled in 1000 and 2000 level courses prior to midterm, a Progress Report grade of "*U*" indicates a performance level of "*D*" or lower. These are not permanent grades and never appear on a transcript, but are issued to help students assess where they stand in the class and obtain academic help from the faculty and the many academic resource services available on campus.

SCHOLASTIC AVERAGE

A student who passes a course receives both the designated number of credit hours and a number of quality points, calculated by multiplying the course credit hours and the numerical equivalent of the letter grade received (*A* = 4, *B* = 3, *C* = 2, *D* = 1). Thus, a student taking a 3 hour credit course and earning a *C* receives six quality points. To determine the undergraduate scholastic average, the total number of quality points earned by the student for all courses scheduled as an undergraduate is divided by the total number of credit hours scheduled; for the graduate scholastic average, only those courses scheduled by the student while enrolled in the graduate division are considered. If a student takes the same course more than once, the later grade does not replace the earlier one; rather, the scholastic average includes both grades unless grade substitution has been approved. Courses taken pass/fail are not included in the calculation of the student's grade-point average. grade-point averages are truncated after two decimal places.

HEALTH CENTER

HEALTH INSURANCE INFORMATION

The Georgia Institute of Technology offers student health insurance (SHIP) for students/spouses/domestic partners and their dependent(s). The Georgia Board of Regents mandates SHIP for graduate and undergraduate students as follows: Mandatory Graduates: Teaching Assistant, F1 or J1 visa holder, Research Assistant, Fellowship or Full tuition waiver. Mandatory Undergraduates: F1 or J1 visa holders. For Mandatory students, the charge for the SHIP is applied automatically to the student's account along with tuition. Mandatory students who already have health insurance may apply to waive the Georgia Institute of Technology student health insurance coverage. SHIP may also be purchased by students taking 4 or more credit hours under the voluntary plan, including Language Institute, J1 scholars and OPT students.

There is a 30 day open enrollment period at the start of each semester to enroll for student insurance coverage, to enroll for the voluntary plan, or for mandatory students to add spouse/domestic/dependents coverage. visit www.health.gatech.edu or www.studentbluega.com/gatech/ for more information.

HEALTH CENTER

IMMUNIZATIONS

All incoming students must comply with the Board of Regents of the University System of Georgia's immunization requirements. It is HIGHLY recommended that students satisfy the immunization requirements well before their first day of class to avoid a registration hold. A registration hold keeps students from registering for classes.

Each student is responsible for ensuring their immunization data is verified by Stamps Health Services. For more information and to download immunization forms, visit www.health.gatech.edu and click Immunization Requirements. Following the instructions will ensure Stamps Health Services has the time necessary to process your information and verify you have satisfied the requirements before your first day of class. You can also email us at immunizations@health.gatech.edu with questions.

HEALTH CENTER

ELIGIBILITY FOR TREATMENT

Stamps Health Services (SHS) offers comprehensive health care to students, spouses, and/or domestic partners of Georgia Tech students. Eligibility status is determined before an appointment is scheduled for services. Services are provided through payment of the student health fee or on a pay-per-visit basis. The health fee coverage period begins one business week before the first day of class of the upcoming term. The coverage period ends the last business day prior to the first day of class of the upcoming term. visit the website at www.health.gatech.edu/healthfees.

HEALTH CENTER

HEALTH FEE INFORMATION

A health fee is assessed every semester for Georgia Tech students (graduate and undergraduate) taking 4 or more credit hours. The health fee is not insurance; it is a fee for services rendered by Stamps Health Services personnel in the health center and across campus. Most services rendered at Stamps Health Services are at no charge. However, some lab tests, specialty clinic visits and prescriptions have an additional charge. For those in which the health fee is not assessed, a fee for service schedule is applied. visit website at www.health.gatech.edu/Pages/default.aspx.

HUMAN RELATIONS STATEMENT

Georgia Tech is a diverse community composed of individuals and groups with a variety of religious, racial, national, cultural, sexual, and educational identities. The continuing need to deal constructively with this diversity is one of the great challenges facing us over the next two decades. The challenge is both professional and personal. Professionally, we increase the opportunities in our lives if we are able to constructively manage and guide such diversity with tolerance. The challenge is also personal because each of us has a legacy of religious, racial, national, cultural, sexual, and educational prejudices that influences our lives.

Each member of our community must be committed to the creation of a harmonious climate because one cannot be neutral to this challenge. Those who are committed to it strengthen Georgia Tech and themselves. Individuals who choose not to commit to the challenge, via acts of intolerance, jeopardize their continued affiliation with the Institute. Those acts may be defined as attempts to injure, harm, malign, or harass a person because of race, religious belief, color, sexual orientation, national origin, disability, age, or gender.

To belong to a global society, Georgia Tech must be a pluralistic institution. Only by embracing diversity, multiformity, and variety can we gain stature, strength, and influence in that global society.

The Institute is committed to maintaining academic and working environments free of objectionable conduct and communication that would be construed as sexual harassment. The determination of what constitutes sexual harassment will vary with particular circumstances, but it can be described as unwanted sexual behavior, such as physical contact or verbal comments that adversely affect the environment of an individual.

INTELLECTUAL PROPERTY POLICY

The Institute's Intellectual Property Policy, concerning inventions, copyright, and computer software, applies to students as well as to faculty and staff. Adherence thereto is a condition of continued enrollment at the Institute. The Intellectual Property Policy can be found in section 50 of the Faculty Handbook.

POLICY ON SEXUAL HARASSMENT

Sexual harassment of employees or students in the University System is prohibited and shall subject the offender to dismissal or other sanctions after compliance with procedural due process requirements. Unwelcome sexual advances, requests for sexual favors, and other conduct of a sexual nature can constitute sexual harassment. For more information, contact the Dean of Students Office at 404.894.2564 or the Director of the Employee Relations at 404.894.3249.

RULES & REGULATIONS

I. PURPOSE

These regulations are intended to set forth the requirements of the faculty to the end that a large student body may live and work together harmoniously with a minimum of friction and misunderstanding. Each student is expected to be a law-abiding citizen and to obey the laws of the city of Atlanta, Fulton County, the state of Georgia, and the United States.

COLLEGE OF ARCHITECTURE ACCREDITATION STATEMENT

In the United States, most state registration boards require a degree from an accredited professional degree program as a prerequisite for licensure. The National Architectural Accrediting Board (NAAB), which is the sole agency authorized to accredit U.S. professional degree programs in architecture, recognizes three types of degrees: the Bachelor of Architecture, the Master of Architecture, and the Doctor of Architecture. A program may be granted a 6-year, 3-year, or 2-year term of accreditation, depending on the extent of its conformance with established educational standards.

The Doctor of Architecture and Master of Architecture degree programs may consist of a pre-professional undergraduate degree and a professional graduate degree that, when earned sequentially, constitute an accredited professional education. However, the pre-professional degree is not, by itself, recognized as an accredited degree.

The Georgia Institute of Technology, School of Architecture, offers the following NAAB-accredited degree programs:

1. Master of Architecture, Two-year track (pre-professional degree in Architecture + 60 credits required)
2. Master of Architecture, Three-year track (non-pre-professional degree + 108 credits required)

The Bachelor of Science in Building Construction is accredited by the American Council for Construction Education (ACCE). The Master of Science in Building Construction and Facility Management is accredited by the International Facility Management Association (IFMA) Foundation. The School of Building Construction has also received international recognition by the Royal Institute of Chartered Surveyors (RICS).

The Master of City and Regional Planning program is fully accredited by the Planning Accreditation Board (PAB), www.planningaccreditationboard.org.

The Bachelor of Science in Industrial Design and the Master of Industrial Design degree programs have been accredited by the National Association of Schools in Art and Design (NASAD) and are recognized by the Industrial Designers Society of America.

COMMON FIRST YEAR

All undergraduate students entering the College of Architecture spend the first year together in the Common First Year, learning shared skills and approaches to the problems and challenges of the designed, built, and lived environment. This year provides student with the time to get to know each other and the faculty. Common First Year courses also help students familiarize themselves with the different disciplines and professions within the College. With this knowledge in hand, graduates are better prepared to work collaboratively and productively with students and professionals from other disciplines.

The Common First Year is comprised of three courses:

COA 1060, a lecture course in the fall, and
a sequence of two studio courses -- COA 1011 and COA 1012 -- in the fall and spring semesters.

COLLEGE OF ARCHITECTURE

SCHOOL OF ARCHITECTURE

- **Bachelor's Degrees**
- **Master's Degrees**
- **Doctoral Degrees**

SCHOOL OF BUILDING CONSTRUCTION

- **Bachelor's Degrees**
- **Master's Degrees**
- **Doctoral Degrees**

SCHOOL OF CITY AND REGIONAL PLANNING

- **Master's Degrees**
- **Doctoral Degrees**

SCHOOL OF INDUSTRIAL DESIGN

- **Bachelor's Degrees**
- **Master's Degrees**

SCHOOL OF MUSIC

- **Master's Degrees**
- **Doctoral Degrees**

ACCREDITATION

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BACHELOR OF SCIENCE IN ARCHITECTURE

The undergraduate program in architecture is a four-year, pre-professional program leading to the degree of Bachelor of Science in Architecture. It seeks to provide:

1. a general university education in the liberal arts, fine arts, and technology;
2. a multidisciplinary foundation in architectural studies with the design studio as a major focus of the curriculum; and
3. substantial opportunities for students to explore other disciplines and to concentrate studies in certificate programs, cluster electives, or dual degree programs.

This Bachelor of Science in Architecture program prepares students for graduate-level studies in architecture, for graduate study in related fields, or a variety of careers related to architecture, the building industry, or government service.

GRADE REQUIREMENTS

Students must maintain a minimum 2.0 grade-point average in each year's grouping of architectural design studio courses (e.g., ARCH 2011, 2012, etc.) in order to enter the next sequence of studio courses. Each sequence of design studio courses must be started in the fall semester. A maximum of 9 credit hours may be taken on a pass/fail basis. Only courses taken as free electives within the undergraduate curriculum are eligible for pass/fail credit. See Institute regulations regarding pass/fail courses.

Students who complete both the Bachelor of Science in Architecture (BS Arch) and Master of Architecture (M.Arch.) in the Georgia Tech School of Architecture may apply up to 6 credit hours of graduate coursework toward both degrees. In order to qualify for this option, the student must complete the undergraduate degree with a cumulative grade-point average of 3.5 or higher and complete the master's degree within a four-year period from the award date of the bachelor's degree.

INTERNATIONAL PLAN

The International Plan (IP) in the School of Architecture is a challenging and coherent academic program for undergraduate students who will develop an introductory level of global competence within the study of architecture. The International Plan is an intensive degree-long program designed to prepare students with the ability to:

1. assimilate comfortably in a constantly evolving international context within the profession of architecture,
2. value how architecture is practiced in different global contexts,
3. function effectively in a multi-national academic and work environment, and
4. understand the complexity of the global economy and the importance of developing a sensibility to international relations.

While many students gain some exposure to these aspects of today's world through the patchwork of traditional international opportunities such as study abroad and international internships, IP is designed to develop a deeper level of competency in these areas within the study of architecture.

The requirements of IP are:

1. Proficiency in a Foreign Language
2. Globally Focused Courses
3. International Experience, and
4. A Capstone Course

IP students in the School or Architecture can fulfill the International Experience requirement of the International Plan by participation in a university-approved international program with the approval of the School of Architecture.

Undergraduate students in the School of Architecture must hold a minimum 2.5 GPA at the time of application to be eligible for the International Plan . Students must maintain a minimum 3.0 grade-point average in each year's grouping of architectural design studio courses (e.g., ARCH 2011, 2012, etc.) in order to maintain eligibility for IP. Each sequence of design studio courses must be started in the fall semester.

For more information on IP, visit: www.arch.gatech.edu/undergraduate/international_studies

www.arch.gatech.edu

BACHELOR OF SCIENCE IN ARCHITECTURE 2013 - 2014 DEGREE REQUIREMENTS

REQUIREMENT	REQ HRS	COURSE(S)	NOTES
Wellness	2	HPS 1040 or APPH 1040 or APPH 1050	
Core A - Essential Skills	3	ENGL 1101	
	3	ENGL 1102	
	4	MATH 1501	
Core B - Institutional Options	3	CS 1301 or CS 1315	
Core C - Humanities	6	Any HUM	a
Core D - Science, Math, & Technology	4	PHYS 2211	b
	4	Lab Science	
	4	MATH 1502	
Core E - Social Sciences	3	HIST 2111 or HIST 2112 or INTA 1200 or POL 1101 or PUBP 3000	
	3	ARCH 4126 or HTS 3011	
	6	Any SS	
Core F - Courses Related to Major	3	COA 1011	
	3	COA 1060	
	4	COA 1012	
	4	ARCH 2011	d
	4	ARCH 2012	d
Major Requirements	3	ARCH 2111	
	3	ARCH 2112	
	3	ARCH 2211	
	5	ARCH 3011	e
	5	ARCH 3012	e
	3	ARCH 3231	
	3	ARCH 3241	
ARCH Electives	3	ARCH 4411 or ARCH 4414 or ARCH 4415 or ARCH 4420 or ARCH 4853	
	9	Any ARCH, BC, COA, CP, or ID	f
	10	ARCH 4011 and ARCH 4012	g
Free Electives	21	Free Electives	
TOTAL:	131		

Pass-fail only allowed for Free Electives.

NOTES

a = No ARCH courses allowed.

b = If PHYS 2231 (5cr) is taken, excess hour applies to Free Electives.

d = C-average required for ARCH 2011 and ARCH 2012.

e = C-average required for ARCH 3011 and ARCH 3012.

f = Limit 3 hours of ARCH undergraduate research. Excess apply to Free Electives.

g = Students may also complete a 10cr concentration approved by faculty. Please consult with your advisor on course selection.

SCHOOL OF ARCHITECTURE

About the School
Accreditation
Undergraduate
BS Architecture
Description
Degree Requirements
Minors
Certificates
Foreign Study
Graduate
Admissions
General Information
Master's Degrees
Applications
Master of Science
M.Arch.
M.Arch./MCRP Dual Degree
Certificates
Multidisciplinary Study
Foreign Study Programs
PhD Architecture
College of Architecture

UNDERGRADUATE MINORS

The School of Architecture offers an undergraduate minor in Architectural History for students in all disciplines at Georgia Tech. The minor requires completion of a two-semester core sequence of ARCH 2111 and 2112, in addition to four courses (six courses for Bachelor of Science in Architecture students) from an approved list.

Interested students should consult www.catalog.gatech.edu/academics/minorguide.php for detailed information.

In addition, the College of Architecture (COA) offers a separate undergraduate minor in Multidisciplinary Design/Arts History for students in all disciplines at Georgia Tech. The minor requires completion of one of three available core survey sequences in the history of design (ARCH 2111 and 2112 [or ARCH 4105 and 4106] or COA 2241 and 2242 or ID 2202) in addition to four courses from at least three lists of courses in: history of architecture, the history of industrial design, the history of the city/landscape/garden, history of art and foreign study, and music history. Architecture and industrial design program students must select a core-survey sequence outside their major, or select two additional electives from approved lists.

Interested students should see www.catalog.gatech.edu/academics/minorguide.php and consult with an academic advisor for more details.

CERTIFICATE PROGRAMS

The School of Architecture offers three certificate programs for which undergraduate students may apply:

- **American Architectural History** - The American Architectural History Certificate recognizes completion of a general survey of American architecture with designated, specialized studies.
- **European Design History** - The European Design History Certificate is especially appropriate for students in the International Plan or intense study abroad, such as, the Greece and Italy Summer Program, and recognizes the successful completion of a focused program of study in various areas of the history of European architecture.
- **History of Architecture and Design** - The History of Architecture and Design Certificate recognizes completion of focused study in the history of architecture and design from a wide range of designated courses.

Certificates will be granted only to students who, in addition to the certificate program requirements, have satisfied requirements for a Georgia Tech degree. Each certificate requires a minimum of twelve credit hours, at least nine of which are at the 3000 level or higher in the designated area. Courses required by a student's program of study may not be credited by that student toward a certificate. Courses counting toward a certificate must be taken on a letter-grade basis, and a *C* or better must be received in each course. Interested students should consult www.arch.gatech.edu/undergraduate/minors_certificates for more details.

SUMMER STUDY IN GREECE AND ITALY (AVAILABLE TO ALL MAJORS)

The College of Architecture offers a summer semester program intended to provide students the opportunity to study the civilization of the ancient Mediterranean through the art and architecture of Greece and Italy. The primary academic mission of the program is to expand the opportunities for study of the humanities at Georgia Tech. Headquartered in Athens, Rome, Florence, and Venice, the program involves an eight-week concentrated and intensive study at the buildings, sites, and museums where the foundations of western civilization began. The program extends through the Renaissance with the study of works by Michelangelo, Uccello, Leonardo, Brunelleschi, and Caravaggio. In addition to painting, sculpture, and architecture, attention is given to the urban context extending from classical antiquity through the Renaissance and late Baroque periods. On-site studies at the Athenian Agora, the Acropolis, Olympia, Delphi, the Roman Forum, Pompeii, Herculaneum, Ostia, and Paestum, as well as Renaissance sites including Villa D'Este, Villa Giulia, The Vatican Museum, Borghese Museum, Basilica of St. Peter, and other sites provide students with a deeper understanding and appreciation for the role that Mediterranean and Classical civilization has played as the artistic, engineering, and political cornerstone of the western world. Twelve credit hours are offered, nine of which satisfy Institute undergraduate humanities requirements. The remaining three hours are taken as free electives and involve faculty-directed independent study of topics developed during the spring term.

All Georgia Tech students are eligible to participate in the COA-affiliated foreign study programs.

BARCELONA STUDY ABROAD PROGRAM IN SPAIN

The Barcelona Study Abroad Program in Spain, which is jointly administered by Georgia Tech and the Facultat d'Informatica de Barcelona (FIB) at Universidad Politecnica de Catalonia (UPC). This program offers summer courses ranging from architecture to computing and Spanish-language instruction as part of a cross-disciplinary, transcultural experience.

All Georgia Tech students are eligible to participate in the COA-affiliated foreign study programs.

GRADUATE STUDIES IN ARCHITECTURE

Graduate studies in architecture at Georgia Tech are comprised of four distinct degree-granting programs: the Master of Architecture (M.Arch.), the Master of Science in Urban Design (MSUD), the Master of Science with a major in Architecture (MS Arch) with several possible research emphases, and the Doctor of Philosophy (PhD) with a major in Architecture.

The M.Arch. Program is the professional program in architecture leading to the NAAB-accredited Master of Architecture degree. This program accommodates both a two-year curriculum for those students with a four-year, pre-professional degree in architecture and a three-and-a-half-year curriculum for those students without a pre-professional degree in architecture.

The MSUD Program is oriented to those who wish to expand upon their previous professional education and professional experience, as architects, landscape architects, city planners, or civil engineers, and to enter urban design practices either in private firms or public agencies. The program is interdisciplinary in nature, offering an interdisciplinary experience, with required courses in urban design, architecture, and city planning, with additional opportunities in civil and environmental engineering, real estate development, heritage preservation, and other fields. Students in the MSUD Program are in daily contact with architecture and planning students and faculty throughout the College of Architecture. The MSUD program requires a minimum of 39 credit hours of coursework.

The MS Program is a nonprofessional, research-oriented degree program that requires a minimum of 30 credit hours of coursework. Current research areas are available in Digital Design & Fabrication, High Performance Buildings, and Health & Design. These MS programs are linked with the M.Arch. program through a rich array of studios and courses that engage particular aspects of architectural knowledge and practice.

Within the School of Architecture, the PhD with a major in Architecture develops knowledge and technologies that enhance design imagination, design evaluation, and the design process; articulates design choices and predicts the consequences of design decisions; helps to learn from precedents; supports better building performance; and situates the practice of architecture within a critical understanding of culture, history, and the profession. Our program includes research emphases in Design Computation; Evidence-Based Design; Building Technology; History and Culture; and Organizational and Cognitive Performance. In each of these research areas, we intersect the perspectives of architectural design, science, technology, and the humanities even as we expect individual research projects to rigorously pursue specific disciplinary agendas. With fifty-two students currently enrolled and more than seventy graduates (1987-2010), we are one of the largest PhD programs in architecture in the country.

For more information on graduate programs within the School of Architecture, contact the academic advisor.

APPLICATIONS

The deadline for applications is December 1 for international applicants and December 15 for US applicants for the following fall semester. Each applicant must have an outstanding undergraduate record and must submit a portfolio of creative work. The Graduate Record Examination (GRE) is required for all applicants. A minimum TOEFL score of 600 (paper-based), 250 (computer-based), or 100 (Internet-based) is required for all foreign applicants. All applicants should be aware that each program in the School of Architecture has specific application requirements; therefore, all applicants should consult the relevant requirements for their chosen degree programs; by visiting the School of Architecture website or contacting an academic advisor.

MASTER OF SCIENCE WITH A MAJOR IN ARCHITECTURE

The School of Architecture's Master of Science (MS) Program is a non-professional program requiring a minimum of 30 semester hours of advanced study and is oriented toward advanced practice, scholarship and research. Applicants may have previous degrees in architecture or other related fields. The program accepts students with a professional degree in a design or design-related field, as well as students with a baccalaureate degree in a non-design field who wish to pursue an area of study offered in the Master of Science degree.

Concentrations:

- Digital Design and Fabrication
- High Performance Buildings
- Health and Design

For further details on the program, see www.arch.gatech.edu or contact an academic advisor in the School of Architecture.

MASTER OF ARCHITECTURE (M.ARCH.)

The M.Arch. Program, leading to the Master of Architecture as the first professional degree, is oriented toward the professional practice of architecture and is fully accredited by the National Architectural Accrediting Board (NAAB). This degree option provides flexibility for students who have an undergraduate degree with a major in architecture as well as those who have a degree in a field other than architecture. The M.Arch. Program requires a minimum of 60 credit hours and a maximum of 108 credit hours of study, depending upon the applicant's prior education in architecture and the amount of advanced standing credit granted upon admission to the program.

Normally, a student admitted to the program with maximum advanced standing can expect to complete the program within two academic years of full-time study. A student admitted to the program with no advanced standing can expect the program to require three and one-half academic years of full-time study. Graduates from four-year undergraduate programs in architecture similar to that at Georgia Tech can normally expect to complete the program in two academic years, provided they have pursued architecturally related elective coursework during their undergraduate years. Specific information regarding applications for advanced standing and degree requirements is available from the School of Architecture.

The minimum requirements for the M.Arch. degree, for a student with a previous degree in architecture, are as follows:

Course	Credit Hours
Architectural Design Studios	18
Professional Core Requirements	12
Master's Project/Thesis Option	9
Approved Professional Electives	21
TOTAL (Minimum)	60

Total Minimum Required Credit Hours for M.Arch. Program = 60

The maximum requirements for the M.Arch. degree, for a student with a previous degree in a discipline other than architecture, are as follows:

Course	Credit Hours
Architectural Design Studios	33
Preparatory Requirements	15
Professional Core Requirements	30
Master's Project/Thesis Option	9
Approved Professional Electives	21
TOTAL (Minimum)	108

Total Maximum Required Credit Hours for M.Arch. Program = 108

DUAL DEGREE M.ARCH./MCRP

The dual Master of Architecture and Master of City and Regional Planning degree program trains those who wish to engage directly in the process of city building. The program is intended to meet the needs of planning agencies, consultants, institutions, and architectural firms for graduates who can deal competently with the complexities of urban areas.

MASTER'S CERTIFICATE PROGRAM IN DESIGN COMPUTING

Graduate students in the College of Architecture and the College of Computing may sign up to participate in the Certificate Program in Design Computing. This option allows students to enroll in a program jointly administered by the College of Architecture and the College of Computing, providing studies in computing, computer graphics, Web technologies, and other digital technology areas.

Students eligible for this certificate program are master's students in the School of Architecture or College of Computing. They are admitted through the regular admissions process, but are designated as being also signed up for this certificate option. Students admitted to the certificate program through the College of Architecture may do so through multiple degree programs:

a. Master of Architecture program: Students in the M.Arch. program may also enroll in this certificate program as part of their professional electives.
b. Master of Science with a major in architecture in the School of Architecture, Master of Building Construction, and Master of Industrial Design: Students in these programs may enroll in this certificate program if their interests and background correspond to those of the certificate.

The requirements for the certificate program for College of Architecture students are fifteen units of coursework in computing or design. Students taking the certificate program from the College of Architecture are expected to focus on courses in computer science and design computing within the College. The core courses in design computing are those identified as crucial for base knowledge in the field. Students interested in the certificate program should discuss it with their advisor. For further details on the program, contact the School of Architecture graduate advisor.

http://dcom.arch.gatech.edu/dcom_htm/index.php-cat1=1.htm

MULTIDISCIPLINARY STUDY

Multidisciplinary studies are strongly encouraged in all of the master's programs in architecture. These studies may be part of a formal dual degree program, including architecture and city and regional planning. Other multidisciplinary studies are possible within the College of Architecture, the Institute, and at Emory University, and Georgia State University, among other Atlanta area colleges and universities. Coursework outside the School of Architecture frequently includes city and regional planning, public policy, history, philosophy, real estate development, engineering, and studio art.

FOREIGN STUDY PROGRAMS

Graduate students in architecture are eligible to participate in three COA-affiliated foreign study programs. The first is the Graduate Summer Program in Europe - Modern Architecture and the Modern City, which has a primary focus on modern and contemporary architecture in Spain, Germany, and Denmark. The second is the Summer Study in Greece and Italy Program, which focuses on architecture, painting, and sculpture at a variety of sites in Greece and Italy. The third is the Barcelona Study Abroad Program, which is jointly administered by Georgia Tech and the Facultat d'Informatica de Barcelona (FIB) at Universidad Politecnica de Catalonia (UPC). This program offers summer courses ranging from architecture to computing and Spanish-language instruction as part of a cross-disciplinary, transcultural experience. Based on space availability, graduate students may also participate. Interested students should contact the School of Architecture office.

SCHOOL OF ARCHITECTURE
About the School
Accreditation
Undergraduate
BS Architecture
Description
Degree Requirements
Minors
Certificates
Foreign Study
Graduate
Admissions
General Information
Master's Degrees
Applications
Master of Science
M.Arch.
M.Arch./MCRP Dual Degree
Certificates
Multidisciplinary Study
Foreign Study Programs
PhD Architecture
College of Architecture

DOCTOR OF PHILOSOPHY WITH A MAJOR IN ARCHITECTURE

The program leading to the Doctor of Philosophy degree in the College of Architecture has been developed to enable students of exceptional ability to undertake advanced study and original research in the fields of study within the College of Architecture. Currently the program includes several areas of research emphasis:

1. Design Computation
2. Evidence-Based Design
3. Building Technology
4. History and Culture
5. Organizational and Cognitive Performance

Design Computation: It is a commonplace that all aspects of our lives are affected by digital computation. Digital-based information technologies have affected how we think about ourselves and thinking in general. They have changed how every field practices. They have affected how people communicate and view the world (literally and metaphorically). Design Computation addresses the research interests of faculty at various levels within this broad spectrum. The research at Georgia Tech ranges from the details of development of new digital technologies, applications and digital standards to the extension of these capabilities to support collaborative and creative teamwork. It includes the development of new representations—graphical, mathematical, linguistic and logical—that provide new means to understand and act on design knowledge. It includes the study of thinking and cognition when augmented by our new computational environments. It also considers the larger palette of the impacts of these technologies and their new mindsets on the structure and cultural environment of contemporary design, from the small scale of fabrication and prototyping to integrated project delivery. We encourage interested parties to review the work of the associated faculty and determine the potential fit with their work and to communicate with them about potential collaborations.

Evidence-Based Design: Architecture reflects and creates human experience. It operates at multiple scales (from object, to room, to building and site, to city) and impacts individual experience and behavior, organizational functioning, and cultural patterns. A growing multidisciplinary area of evidence-based design is applying rigorous quantitative and qualitative research methods to understanding these relationships, teaching and applying results to design and solve important social problems. Evidence-Based Design draws on the research programs of faculty inside and outside the College of Architecture to create the critical evidence base and to apply it to emerging problems, from courthouses that are secure and reflect the transparency of United States justice, to buildings and sites that promote health and physical activity, to healthcare settings that are higher quality, safer, more efficient, and more patient centered.

Building Technology: The construction of commercial and residential buildings constitutes one third of all investment in the United States and buildings consume roughly 40% of all energy in the US economy. Innovations in materials, manufacturing, IT for building automation systems, solar and other renewable systems, LED lighting, and advances in the thermo-sciences need to be absorbed in the design and construction of new buildings and in the retrofit or rehabilitation of existing buildings. This requires a thorough understanding of their physical behavior, acquired through modeling and simulation. This enables us to study the effect of predicted behavior on technical performance and indoor environment and thus inform design decisions, at the product level as well as whole building scale. The technical performance of buildings is the result of the interplay of many components with complex physical behavior. Components and their assemblies are designed and their control orchestrated such that the performance targets of the overall system is reached. This involves the study of physical behavior of all interacting building components in various domains such as temperature, moisture, ventilation, light, and acoustics. It generates a need for constant discovery of new knowledge with respect to building performance in fields such as energy, sustainability, comfort, health, daylighting, productivity and other performance aspects. Advanced systems for optimal control, sensing, diagnostics and others, require our special attention as we move towards (net) zero-energy buildings. High performance buildings rest on the premise that we are able to design, verify, and guarantee the type of systems that meet the highest expectations of the client. In spite of advances, many significant challenges remain, e.g. to develop robust building design strategies that guarantee a required level of performance in the light of many uncontrollable uncertainties; optimal energy control and management strategies, especially at the interface of building and urban scale; flexible next-generation simulation tools that can be rapidly deployed in the simulation driven design process; efficient human centric control strategies; and many others.

History and Culture: The PhD Program in Architecture at Georgia Tech has a distinguished tradition of scholarship in the field of History, Theory, and Criticism. While still open to a large span of chronological periods, geographical areas, and methodological approaches, the newly reorganized research area of History and Culture aims to promote studies in specific and innovative areas of research for which the College of Architecture at Georgia Tech, and the Georgia Tech community as a whole, offer an unequalled pool of human and technical resources. The recent development of digital tools for design and manufacturing has prompted a new demand for critical enquiry into the history of the cultural technologies that have been, over time, instrumental to the evolution of the modern processes and methods of architectural design. This field of study includes the history and theory of instruments of quantification, drawing tools, notational systems and conventions, media and information technologies, and devices of visualization and representation; the history of the cultural and technical logics underpinning the quantification, design, and production of architectural form; and the history of the social organization of the design and production processes. Consequently, this research area promotes interdisciplinary studies that may relate to research in fields such as computational design, building technologies, morphological studies, as well as to the larger domain of media studies and to the history and theory of media and communication technologies; and it encourages proposals where research in any of the areas mentioned above may involve topical issues of architectural design, and where historical scholarship may inspire, derive from, or be brought to bear on, architectural practice.

Organizational and Cognitive Performance: Buildings and cities are designed to organize and make intelligible patterns of life, understanding, and feeling. This is their generic function, over and above the accommodation of the particular program that initiates their design. Good design is distinguished by the precision of intention and insight which it expresses relative to such generic functions. But as a profession we have few tools by which to measure good design. When it comes to the fundamental connection between the design of physical form and its intended outcomes or consequences, architectural practice often relies on folk theories. In studying the organizational and cognitive performance of buildings and cities, our first step is the development of rigorous comparative descriptions of built form that are adequate to the development of theories of function, perception or cognition, with the description of formal and spatial patterns, whether embedded in buildings and cities or arising from their use, is the distinctive domain knowledge that we bring to interdisciplinary inquiries. If, as architects, we are uniquely able to intuit the significant properties of form, then as architectural researchers we are uniquely qualified to develop rigorous descriptions of them and to embed these descriptions in computational models of form and function. Recent research contributions to better understanding how office design supports knowledge work, how museums support informal learning, how street layouts support vibrant urban cultures, development and changing patterns of land use over time, or how hospital design supports effective medical processes have all grown on this foundation. Another line of inquiry has explored how architectural works are able to engage the imagination and develop specific conceptual content through organization of space and visual form. This same foundation naturally supports contributions to design practice, whether through the formulation of a design concept, or through the evaluation of design alternatives.

PhD in Architecture: Major program requirements and key milestones

Course work associated with the major.
In their first two years students take a minimum of thirty-six credits in the School of Architecture, as follows:

1. The core courses on Introduction to Architectural Research (six Credits)
2. Five 3-credit courses in an area of research specialization within the School (twelve credits)
3. An additional twelve credits at the 6000 level and above chosen in consultation with the advisor.

Qualifying paper.
In the second year of their studies students complete a qualifying paper, a paper of publishable standard that makes a contribution to knowledge.

Comprehensive examination in the architecture major
At the end of the second year of their studies students take a comprehensive examination covering both the core curriculum and their area of specialization.

Thesis topic proposal
In their third year of studies students are expected to defend a PhD topic proposal. Upon successful defense of the proposal they are admitted to candidacy and proceed to work on their doctoral theses. The development of a thesis topic normally requires students to register for at least six credits of COA8999.

Minor field of studies
In order to graduate students must also satisfy minimum Institute requirements regarding the minor field of study, as described in the relevant link provided in section 2 above. At this time (2010) students satisfy the minor by taking nine credit hours in related courses 6000 level and above, in a field of studies outside the School of Architecture to be determined in consultation with their advisor. This means that the minimum total number of course credits necessary in order to complete the program is fourty-five: thirty-six for the major and nine for the minor.

Doctoral thesis
The preparation of a Doctoral thesis normally requires a minimum of 12 credits COA9000. The defense of the doctoral thesis is the final step in the program. A successful defense results in the student being recommended for the award of the PhD degree.

Time to completion of degree
The minimum requirement to complete the PhD with a major in Architecture is seventy-two credits, which is equivalent to six semesters or three years of full time study. We strive to ensure that the average time required to complete the PhD degree is no longer than four years. However, students who teach or work as GRAs, particularly those who seek to build a strong record of research, publications and teaching, sometimes take longer.

For further details on the program, contact:

Academic Advisor
School of Architecture
Georgia Institute of Technology
Atlanta, Georgia 30332-0155
Phone: 404.894.3476
Website: www.arch.gatech.edu/

ACCREDITATION

The Bachelor of Science in Building Construction offered by the School of Building Construction is accredited by the American Council for Construction Education (ACCE). This accreditation ensures a high level of quality in both the curriculum and overall educational experience in the School of Building Construction. Additionally, it helps the School remain at the cutting edge by providing students with an innovative construction education. ACCE is recognized by the Council for Higher Education Accreditation as the only accrediting agency for baccalaureate and associate degree programs in construction education.

The Master of Science in Building Construction and Facility Management is recognized by the International Facility Management Association (IFMA) Foundation. The accreditation ensures the School continues to meet the standards set by the IFMA Foundation for quality facility management education; Georgia Tech is one of three universities in the country to hold this designation.

The School of Building Construction has also received international recognition through accreditation by the Royal Institute of Chartered Surveyors (RICS). The RICS designation provides the School's faculty and students with access to online forums, professional development opportunities and the world's most extensive international library of research and policy analysis on land, property, economics and environmental issues.

BACHELOR OF SCIENCE IN BUILDING CONSTRUCTION

The Georgia Tech School of Building Construction (BC) is a technology and management-centered course of study that prepares students for leadership roles in the construction industry. The curriculum is designed to teach students the basic principles and practices of construction management, project delivery, building science, and technology. Students are taught to manage the functions and processes of every aspect of the construction industry. The curriculum provides a well-rounded course of study conducted by award-winning faculty and staff and offers hands-on experience and guidance by industry professionals.

SCHOOL OF BUILDING CONSTRUCTION

About the School
Accreditation
Undergraduate
BS Building Construction
Description
Degree Requirements
Graduate
Admissions
Master's Degrees
Building Construction & FM
Professional Electives
PhD Building Construction
College of Architecture

BACHELOR OF SCIENCE IN BUILDING CONSTRUCTION 2013 - 2014 DEGREE REQUIREMENTS

REQUIREMENT	REQ HRS	COURSE(S)	NOTES
Wellness	2	HPS 1040 or APPH 1040 or APPH 1050	
Core A - Essential Skills	3	ENGL 1101	
	3	ENGL 1102	
	4	MATH 1501	
Core B - Institutional Options	3	CS 1301 or CS 1315	
Core C - Humanities	3	Any HUM	
	3	LCC 2000- or 3000-level HUM	
Core D - Science, Math, & Technology	4	EAS 2600	
	4	PHYS 2211	a
	4	MATH 1502	
Core E - Social Sciences	3	HIST 2111 or HIST 2112 or INTA 1200 or POL 1101 or PUBP 3000	
	3	ECON 2100	
	6	Any SS	
Core F - Courses Related to Major	3	ACCT 2101 or MGT 3000	
	3	BC 2600	
	3	BC 2610	
	3	BC 2620	
	3	COA 1011	
	3	COA 1060	
Major Requirements	4	COA 1012	
	1	BC 2630	
	3	BC 3600	
	3	BC 3610	
	3	BC 3620	
	3	BC 3630	
	3	BC 3640	
	3	BC 4600	
	3	BC 4610	
	3	BC 4620	
	3	BC 4630	
	3	BC 4660	
	3	BC 4672	
	3	BC 4680	
	3	BC 4710	
Non-Major Required Courses	3	MGT 2200	
	3	MGT 3062 or MGT 3078	
	3	MGT 3150	
	3	MGT 3102 or MGT 3660	
Professional Electives	6	ARCH 3000- or 4000-level courses, BC 4699-4900, CE 3000- or 4000-level courses, CP 3000- or 4000-level courses, COA 3000- or 4000-level courses, and MGT 3000- or 4000-level courses	b
Free Electives	6	Free Electives	
TOTAL:	131		

Pass-fail only allowed for Free Electives and BC 4680.

NOTES

a = If PHYS 2231 (5cr) is taken, excess hour applies to Free Electives.
b = Maximum of 3cr in BC 4900.

SCHOOL OF BUILDING CONSTRUCTION

About the School
Accreditation
Undergraduate
BS Building Construction
Description
Degree Requirements
Graduate
Admissions
Master's Degrees
Building Construction & FM
Professional Electives
PhD Building Construction
College of Architecture

MASTER OF SCIENCE IN BUILDING CONSTRUCTION AND FACILITY MANAGEMENT

The master's degree program in the School of Building Construction focus on management-based education for industry professionals seeking executive leadership positions in the industry. Our graduate training offers a holistic approach to business processes, integrating coursework, seminars, and hands-on learning to equip today's industry professionals with the resources they need to excel in their professional careers. The graduate program consists of three tracks:

1. Integrated Facility Management
2. Integrated Project Delivery Systems
3. Residential Construction Development

Students can complete either a thesis or non-thesis option for the degree.

Students in the program come from a variety of backgrounds, often with experience in facility management, construction, architecture, engineering, city planning, management, or business. The program is tailored to meet the needs of professionals by offering evening classes, giving students the flexibility of continuing to work while taking courses.

THE MINIMUM REQUIREMENTS FOR A GRADUATE DEGREE IN BC ARE AS FOLLOWS:

Thesis Option:

The curriculum for graduate study with the Thesis Option consists of the following 36 semester hours:

Courses	Hours
Core courses	18
Approved Professional Electives	6
Master's Thesis	12
Total	36

Non-Thesis Option:

The curriculum for graduate study with the Non-Thesis Option substitutes twelve semester hours of coursework for the thesis and consists of the following 36 semester hours:

Courses	Hours
Core courses	18
Approved Professional Electives	18
Total	36

The Graduate Record Exam (GRE) or Graduate Management Admission Test (GMAT) is required for all students. The application can be completed online at www.grad. gatech.edu/admissions. Many applicants will also submit a resume of professional accomplishments.

International applicants must also submit a minimum TOEFL score of 79 (internet-based) or 213 (computer-based) and financial documentation of support.

THE BUILDING CONSTRUCTION INTEGRATED FACILITY MANAGEMENT TRACK:

The graduate track in Integrated Facility and Property Management offers a clear understanding of this complex field and its theoretical concepts. It focuses on developing and fine-tuning the management skills necessary for success in the facility and property management industry. Courses explore the many facets of integrated facility management including asset management, project management, facility operations and maintenance, energy management, workplace design and consulting, facility technology integration, design and construction, and real estate development. The program is accredited by the International Facility Management Association (IFMA) Foundation; Georgia Tech is one of three universities in the country to hold this prestigious designation.

THE BUILDING CONSTRUCTION INTEGRATED PROJECT DELIVERY SYSTEMS TRACK

The Integrated Project Delivery Systems track educates students to understand, analyze, select, and manage the most appropriate and effective project delivery systems for constructing a facility. The curriculum emphasizes integrated problem-solving through state-of-the-art technical and management techniques. A variety of project delivery systems, that can be used independently or integrated, are examined. The delivery methods explored include the design-build system, the construction management/agent method, the hybrid bridging and partnering system; the negotiated select team method, as well as the traditional delivery method.

THE BUILDING CONSTRUCTION RESIDENTIAL CONSTRUCTION DEVELOPMENT TRACK:

The graduate track in Residential Construction Development focuses on the largest and fastest growing area of the construction industry. Students are exposed to the complexities and challenges associated with Residential Construction and Development. All segments of the housing industry are studied, including single family, multi-family, mixed-use, affordable, senior, and renovation. Students are provided with a comprehensive view of relevant public policy, development, design, and construction issues, and gain a realistic understanding of the current business environment and prospects for the future.

PROFESSIONAL ELECTIVES

Students have several options to customize their graduate study through professional electives. Graduate students may select their electives from the core of the other Building Construction tracks of study, from a rotating list of BC electives, and from other academic area including: City Planning, Public Policy, Management, Architecture, and Engineering.

DOCTOR OF PHILOSOPHY WITH A MAJOR IN BUILDING CONSTRUCTION

The Doctor of Philosophy degree program in the School of Building Construction (BC) was approved by the Board of Regents in October 2011; the degree awarded is the Doctor of Philosophy with a major in Building Construction.

The program of study requires a minimum of two years of full-time residency (not fewer than four semesters excluding summer) devoted to coursework and other preparation for advancement to candidacy. A total of 60 credit hours will be required for this PhD degree beyond the master's degree. Programs of study must include a program core of 13 credit hours, a minimum of twelve credit hours of concentration electives and a minimum of nine hours in a minor field; a minimum of 26 credit hours of thesis hours is also required. The major and minor requirements are minimums; the particular field of study may require additional work.

The required minimum core courses for all students in this program will be:

- BC 7100 Quantitative Methods in Construction Research (3 credit hours)
- BC 7200 Advanced Readings in Building Construction (6 credit hours)
- BC 8000 PhD Seminar (1 credit hour)
- BC 8100 Research Methodology (3 credit hours)

A minimum of twelve credit hours of concentration electives, chosen from a list of approved electives (revised every semester by the faculty in the School of Building Construction), will be required. This list is composed of graduate courses offered by other graduate programs at Georgia Tech. A minimum of 9 credit hours of coursework will be required for the minor. A minimum of 26 credit hours of thesis, including a minimum of twelve credit hours of BC 8999 Doctoral Thesis Preparation and a minimum of 14 credit hours of BC 9000 Doctoral Thesis, will be required. Additional requirements will be established by the PhD advisor, in consultation with the BC Graduate Faculty on a case-by-case basis, in order to ensure each student is taking courses which can directly assist them toward gaining advanced proficiency in their chosen area of research.

A program of study must be approved by the student's PhD Advisor. Each student will have a plan of study to ensure that the student’s educational goals may be achieved while meeting the academic policies of the Institute and the PhD program. The Building Construction PhD program will enable students of exceptional ability and with a strong interest in research to undertake advance study in the field of building construction and facility management; it will also build off existing collaborations between the School and other academic units in the Institute to encourage interdisciplinary scholarship.

A student must choose a minor field of study that is most relevant to her or his research, with the major field being in Building Construction. The minor field must be outside of the School of Building Construction, must include at least nine hours of coursework, taken on a letter grade basis of “B” or better, and must be approved by the PhD Advisor, working in consultation with Graduate Faculty in the School of Building Construction, and the Office of Graduate Studies and Admissions. Although the student’s plan of study will be approved, the student must additionally submit a letter and receive approval for the completion of the coursework on the chosen minor.

An overview of program requirements includes:

- A Program of Study must be approved by the student's PhD Advisor. Additional requirements may be set by the Graduate Faculty in the School of Building Construction.
- The student must have a minor field of study; the minor field must be outside of the School of Building Construction and must include at least nine hours of coursework. The minor must be approved by the PhD Advisor, working in consultation with BC Graduate Faculty, and the Office of Graduate Studies.
- Complete a Qualifying Paper, if applicable.
- Pass a PhD comprehensive (qualifying) examination consisting of written and oral portions.
- Complete a PhD proposal and orally defend the proposal. The student is considered a PhD candidate at that time.
- Complete a PhD dissertation and orally defend the dissertation.

To remain in good standing in the program, a student must be enrolled in a minimum of 6 credit hours of coursework (not including independent study) per semester during completion of the required four semesters in residence. Exceptions to this requirement will be allowed upon approval of the BC Graduate Faculty.

After or while taking the required six credit hours of Advanced Readings in Building Construction (BC 7200), that will prepare the student for the Comprehensive Examinations, the student must register for a minimum of twelve hours of Doctoral Thesis Preparation (BC 8999); generally these hours are taken in the third year of study in preparation for the Dissertation Proposal. Typically, an additional year or more is required to complete the dissertation. During semesters the student is working on the dissertation, he/she must register for a minimum of 3 credit hours of Doctoral Thesis Preparation (BC 9000). In total, a minimum of 14 credit hours of BC 9000 are required for graduation, and a minimum of 26 credit hours of thesis hours are required. Satisfaction of the requirements for the Ph. D. degree includes successful public defense of the dissertation.

CURRICULUM OVERVIEW:

Program Core	**13 credit hours**
Four program core courses:	
BC 7100 Quantitative Methods in Construction Research	(3 credit hours)
BC 7200 Advanced Readings in Building Construction	(6 credit hours)
BC 8000 PhD Seminar	(1 credit hour)
BC 8100 Research Methodology	(3 credit hours)

Concentration Electives	**12 credit hours (minimum)**

To include the study of: history and precedent in the field; theory and concepts and their evolution; current debate; and methods of analysis and inquiry.

Minor Field of Study	**9 credit hours (minimum)**

To include the study of: relevant history and precedent in the field; relevant theory; current debate; and methods of analysis and inquiry.

Thesis Preparation	**26 credit hours (minimum)**
BC 8999 Doctoral Thesis Preparation	(12 credit hours minimum)
BC 9000 Doctoral Thesis	(14 credit hours minimum)

Total Course Requirements: 60 credit hours (minimum)

For more information, contact:

Academic Advisor
School of Building Construction
Georgia Institute of Technology
Atlanta, Georgia 30332-0680
(404) 385-7089
www.bc.gatech.edu

ACCREDITATION

The Master of City and Regional Planning (MCRP) program offered by the School of City and Regional Planning is fully accredited by the Planning Accreditation Board, a joint accrediting body of the American Institute of Certified Planners, the American Planning Association, and the Association of Collegiate Schools of Planning.

The MCRP degree is the recognized basis for a career as a professional planner.

SCHOOL OF CITY AND REGIONAL PLANNING

About the School
Accreditation
Certificates
Graduate
Admissions
MCRP
MS GIST
Dual Degrees
General Information
Planning Law
Public Policy
Civil Engineering
Architecture
PhD City Planning
College of Architecture

CERTIFICATE PROGRAM IN HISTORIC PRESERVATION

MCRP students in good standing may cross-enroll at Georgia State University to earn a certificate in Historic Preservation. Specific requirements are described in the GSU Graduate Catalog for the College of Arts and Sciences. Coursework may be counted toward the MCRP degree, so the certificate can be received without taking more than the fifty-five credit hours required for the MCRP. Additional information is available from the GSU Heritage Preservation Program, University Plaza, Atlanta, GA, 404.413.6365.

CERTIFICATE PROGRAM IN REAL ESTATE DEVELOPMENT

MCRP students in good standing may cross-enroll at Georgia State University to earn a Graduate Certificate in Real Estate from the Robinson College of Business. This eighteen-hour program includes nine hours of Georgia Tech coursework and nine hours of Georgia State coursework, all of which count within the fifty-five-hour MCRP degree requirements.

CERTIFICATE PROGRAM IN REMOTE SENSING

Students completing the master's or doctoral degree requirements of the School may earn a Remote Sensing Certificate. Additional details can be found in this catalog under http://www.catalog.gatech.edu/colleges/cos/eas/grad/certificates.php

MASTER OF CITY AND REGIONAL PLANNING

The Master of City and Regional Planning (MCRP) degree program prepares students to excel as professionals capable of understanding and resolving complex urban planning problems. The curriculum gives students both a broad understanding of the urban and regional environment and a foundation of skills needed to plan for this environment.

The MCRP program strives for a careful balance between the theoretical, historical, and conceptual knowledge about urban and regional development on the one hand, and the acquisition of practical skills and methods of analysis on the other. The program offers seven specializations as well as several dual degree programs with architecture, civil engineering, law, and public policy.

The curriculum is a two-year, fifty-five-semester-hour program. The curriculum requirements include seven core courses, a specialization, electives, an internship, and a thesis or applied research paper. Two options exist for completing the curriculum: the formal thesis or the applied research option paper.

The core courses are designed to impart fundamental planning knowledge applicable to wide sectors of the discipline. These include courses examining planning theory, planning methods, planning law, economic analysis, and planning practice. Students must earn a grade of C or better in all core courses to meet the core course requirements.

In the specialization coursework and the internship, the student develops skills focused on a particular aspect of city and regional planning. To enable students to focus their education on a consistent and cumulative body of knowledge, the program offers seven specializations: economic development, environment and health planning, geographic information systems, land and community development, land use planning, transportation planning, and urban design.

In addition to the core and specialization areas, the curriculum includes electives that can be used to deepen the student's knowledge in a specialization or to broaden exposure to additional areas of planning. Students may take electives within the school, within the College of Architecture, in other schools and departments at Georgia Tech (e.g. Civil Engineering, Public Policy, Information Systems, Earth and Atmospheric Sciences), or at other area universities such as Georgia State University or Emory University. Through the cross-registration system, students are allowed to enroll in a number of courses that are not offered at Georgia Tech.

The applied studio course is an accumulation of the core program that allow students to synthesize their planning knowledge and skills in a real-world situation ranging from large city neighborhoods to moderately sized cities and towns. Our studios are conducted locally throughout Atlanta, which provides an excellent laboratory, as well as nationally and internationally. Finally, a thesis or applied research paper provides an opportunity for focused study in the student's major area of specialization.

Students are admitted to the MCRP program to begin studies in the fall term only. Only with rare exceptions, involving transfer students and dual degree students, will applicants be considered for late admission. Applications must be completed by February 1 to ensure consideration for financial aid, and by March 1 if no financial aid is sought.

For more information about the MCRP program, contact:
Dracy Blackwell

Graduate Student Admissions, Advising, and Graduation Clearance
School of City and Regional Planning
College of Architecture
Georgia Institute of Technology
Atlanta, Georgia 30332-0155
Phone: 404.894.2352

MASTER OF SCIENCE IN GEOGRAPHIC INFORMATION SCIENCE AND TECHNOLOGY

Beginning in August 2013 the Georgia Tech School of City and Regional Planning will offer a new professional degree program: the Master of Science in Geographic Information Science and Technology (MS-GIST). Geographic information science (GIS) is an emerging field of study centered on the acquisition, management, analysis, and dissemination of information that is spatially-referenced to locations on, above, and below the surface of the earth. This field is highly transdisciplinary with substantial and growing importance in a number of traditional academic disciplines and related professions including city and regional planning, architecture, civil and environmental engineering, earth and atmospheric sciences, environmental science, demography, logistics, management, public policy and sustainability studies.

Students can complete the 34 credit-hour curriculum in one calendar year including two semesters of full-time coursework and a capstone project course offered during the summer. Part-time students may complete the program in two or three academic years plus one summer session for the capstone project course.

The MS-GIST degree provides students with a common core of required knowledge, a strong foundation of technology skills, and the flexibility to apply those skills to a broad range of professional and academic fields. Many of the GIST graduates will continue to view themselves as members of traditional professions such as engineering, environmental science, or architecture, but many others will place themselves within the newly-emerging professions directly related to geospatial technologies.

The minimum GRE scores for MS-GIST admission are 150 for Verbal Reasoning, 148 for Quantitative Reasoning, and 4.0 Analytical Writing. The MS-GIST program has two deadlines. To be considered for merit-based departmental aid, such as fellowships and GRAs applications must be submitted in full by February 1st. All other applications should be submitted by May 1st.

For more information about the MS-GIST program, contact:
Dr. Bill Drummond
Program Director
School of City and Regional Planning
College of Architecture
Georgia Institute of Technology
Atlanta, Georgia 30332-0155

DUAL DEGREE GENERAL INFORMATION

The School of City and Regional Planning offers several dual degree programs pairing the Master of City and Regional Planning with allied professional studies. By enrolling in a dual degree program, students are able to obtain two degrees in less time than it would take if the degrees were being pursued separately. Both degrees are awarded simultaneously upon completion of the program of study. Dual degrees position graduates to tackle urban and regional policy problems that would benefit from a multidisciplinary perspective. Dual degrees also position graduates to be competitive for work settings that traditionally involve professionals from multiple fields.

Candidates seeking dual degree program admission should apply to each of the two degree programs separately, indicating in their statements that they are seeking dual degree admission. The two schools involved will each make their decisions independently so that the applicant will have the option to pursue only one degree if not admitted to both degree programs. Please refer to the catalog listings of both degree programs involved, as admissions requirements and deadlines may differ.

DUAL DEGREE MCRP AND GSU JURIS DOCTOR DEGREE

This dual Georgia Tech Master of City and Regional Planning and Georgia State University Juris Doctor degree program broadens the intellectual horizons of both Georgia State University College of Law and the Georgia Institute of Technology College of Architecture by facilitating interdisciplinary study. The program supports the interest of students who wish to pursue study in the field of both law and urban planning. Students are exposed to an educational opportunity that reflects the fact that land management law and city and regional planning have become increasingly integrated and interdisciplinary in nature and that training for today's land use law or planning profession requires expertise in both disciplines. Dual MCRP/JD studies typically required four years of study rather than the five normally require to complete both degrees.

DUAL DEGREE MCRP/MASTER OF SCIENCE IN PUBLIC POLICY

The objective of the dual degree program in City and Regional Planning and Public Policy is to provide an education and research experience to students wishing to work in urban environmental and/or economic development policy analysis at the national, state, and local level. The dual degree student receives both degrees in less time than it would take to receive the two degrees sequentially—typically three academic years, rather than four.

SCHOOL OF CITY AND REGIONAL PLANNING

About the School
Accreditation
Certificates
Graduate
Admissions
MCRP
MS GIST
Dual Degrees
General Information
Planning Law
Public Policy
Civil Engineering
Architecture
PhD City Planning
College of Architecture

DUAL DEGREE MCRP/MSCE OR MCRP/MS-CE (TRANSPORTATION PLANNING/TRANSPORTATION SYSTEMS ENGINEERING)

This dual degree program is designed to meet the need of planning agencies and transportation departments for staff who combine expertise in city and regional planning and transportation systems engineering. The program consists of coursework in city and regional planning, transportation systems engineering, and transportation planning. It is administered jointly by the School of City and Regional Planning and the School of Civil and Environmental Engineering.

DUAL DEGREE M.ARCH./MCRP

The dual Master of Architecture and Master of City and Regional Planning degree program trains those who wish to engage directly in the process of city building. The program is intended to meet the needs of planning agencies, consultants, institutions, and architectural firms for graduates who can deal competently with the complexities of urban areas.

SCHOOL OF CITY AND REGIONAL PLANNING

About the School
Accreditation
Certificates
Graduate
Admissions
MCRP
MS GIST
Dual Degrees
General Information
Planning Law
Public Policy
Civil Engineering
Architecture
PhD City Planning
College of Architecture

DOCTOR OF PHILOSOPHY WITH A MAJOR IN CITY AND REGIONAL PLANNING

Georgia Tech has been awarding doctoral degrees with concentrations in city and regional planning since 1985, producing distinguished academics and scholars who work in universities and other research settings.

PhD students pursue advanced studies and research on issues most critical to the field of city and regional planning. The PhD program engages extensively with other programs, research centers, and colleges as it delivers its major and minor fields of study. Program graduates are expected to be well qualified to serve in a range of settings such as universities, planning consultancies, research and development firms, government agencies, and advanced practice.

Successful applicants have exceptional ability and fit with the School's research capabilities. Many applicants have completed an accredited master's degree in city and regional planning or a related field and have backgrounds in their proposed area of specialization. The program does admit capable applicants lacking this preparation, but these applicants may be required to undertake remedial work. Students are generally admitted for first enrollment for the fall semester only.

The program requires Graduate Record Examination (GRE) test scores taken within the last five years. Scores are expected to be well above the average unless a student's record documents substantial professional or scholarly achievement as evidence of exceptional ability. Non-native speakers of English are expected to have a minimum IB TOEFL score of at least 620/261/102 (paper, computer, and internet tests respectively). Prior study in the United States does not waive this requirement.

For more information about the PhD program, contact:

Academic Advisor
School of City and Regional Planning
College of Architecture
Georgia Institute of Technology
Atlanta, Georgia 30332-0155.

ACCREDITATION

The Bachelor of Science in Industrial Design and the Master of Industrial Design degree programs offered by the School of Industrial Design are accredited by the National Association of Schools in Art and Design (NASAD). Georgia Tech is recognized by the Industrial Designers Society of America (IDSA) as a NASAD-accredited institution.

BACHELOR OF SCIENCE IN INDUSTRIAL DESIGN

Undergraduate education in industrial design at Georgia Tech leads to the Bachelor of Science Degree in Industrial Design that is accredited by the National Association of Schools of Art and Design (NASAD). The undergraduate program prepares students for a career in design practice as well as for graduate education in industrial design and in related fields. The School of Industrial Design at Georgia Tech offers the only industrial design degree program in the University System of Georgia.

Industrial design is the professional practice of creating products that enhance the function, usability, value, and appearance of products with the goal of benefiting the user, manufacturer, community, and the environment. Also known as product design, industrial design education prepares students to design systems and tangible artifacts including, consumer and recreational products, business and industrial products, medical and computer equipment, and transportation and environments. Both generalist and specialist, industrial designers tend to be part artist, part entrepreneur and engineer.

Cross-disciplinary education is the primary focus of the four-year industrial design program. The university education provides: 1) an understanding of the arts (liberal and visual arts), technology (engineering and sciences), humanities (sociology and psychology), and management (marketing and branding), 2) a collaborative and shared education through an emphasis on the design studio, and 3) an opportunity to periodically participate in real-life design projects through sponsored studio projects. The undergraduate program offers a well-rounded course of study with an emphasis on critical thinking, basic design, design skills, and design communication. There are 6 industrial design studios after the first year studios. The industrial design studios focus on a sequential learning path which begins with form making to product design to post design that involves development and manufacturing. Design projects stress developing a broad education through an exposure to academic and professional considerations. The School encourages students to develop a diverse background in order to expand individual talents and respond to emerging opportunities in the field. Faculty members are scholars and design practitioners, giving students the opportunity to learn about both.

All work executed in the College becomes the property of the College and will be retained or returned at the discretion of the faculty. The faculty also reserves the right to refuse credit for any project executed outside the precincts of the College or otherwise executed without proper coordination with the instructor.

GRADE REQUIREMENTS

All industrial design required studio courses must be completed with a grade of C or higher. A student may not enter a more advanced studio design course until this requirement is met; students with such academic deficiencies may be required to delay their studies for one year. Studio design courses must be taken in sequence beginning fall semester. A maximum of 9 credit hours may be taken on a pass/fail basis. Only courses taken as free electives in the undergraduate curriculum maybe taken for pass/fail credit. See "Information for Undergraduate Students" for Institute regulations regarding pass/fail courses.

INTERNATIONAL PLAN

The International Plan offers a challenging academic program that develops global competence within the context of Industrial Design.

The International Plan is a four-year program that builds global competence by requiring students to spend two full terms at an Industrial Design program in another country, to develop a proficiency in a second language, and to take internationally oriented coursework. This experience provides students a deeper global competency than traditional international opportunities. The eight-semester sequence is structured to allow for the Fall and Spring third year semester to be completed at an industrial design program in another country. Students are responsible for locating those courses at the host institution that will serve as equivalents to the courses listed in the curriculum.

Degree requirements are not modified but are satisfied with specialized courses and appropriate choices of elective courses, which includes globally focused courses within the major area and a capstone Senior Studio: Global Awareness. Consult with the Industrial Design Program for the suggested curriculum.

All International Plan participants must develop proficiency in a language other than English. Unless otherwise approved, the language chosen to fulfill this requirement will have a relationship to the country or region in which the student plans to fulfill the 26 week requirement. Any variance will require approval from the IP faculty representative and the IP Committee.

Admission Requirements:

- Applicants must be undergraduate degree-seeking Georgia Tech students in one of the participating majors.
- Students must submit an application via the International Plan website. Notification of acceptance will be communicated via the student's Georgia Tech e-mail address.
- There is no GPA requirement for first-semester freshmen applying to the International Plan. All other applicants must have at least a 2.5 GPA at the time of application.

SCHOOL OF INDUSTRIAL DESIGN

About the School
Accreditation
Undergraduate
BS Industrial Design
Description
Degree Requirements
Graduate
Admissions
Master Of Industrial Design
Certificates
College of Architecture

BACHELOR OF SCIENCE IN INDUSTRIAL DESIGN 2013 - 2014 DEGREE REQUIREMENTS

REQUIREMENT	REQ HRS	COURSE(S)	NOTES
Wellness	2	HPS 1040 or APPH 1040 or APPH 1050	
Core A - Essential Skills	3	ENGL 1101	
	3	ENGL 1102	
	4	MATH 1501	
Core B - Institutional Options	3	CS 1315	
Core C - Humanities	3	COA 2241	
	3	COA 2242	
Core D - Science, Math, & Technology	4	Lab Science	
	4	PHYS 2211	a
	4	MATH 1502	
Core E - Social Sciences	3	HIST 2111 or HIST 2112 or INTA 1200 or POL 1101 or PUBP 3000	
	9	Any SS	
Core F - Courses Related to Major	3	COA 1011	
	3	COA 1012	
	4	COA 1060	
	4	ID 2011	c
	4	ID 2012	c
Major Requirements	3	ID 2202	c
	5	ID 3011	c
	5	ID 3012	c
	3	ID 3103	c
	3	ID 3104	c
	3	ID 3301	c
	3	ID 3302	c
	5	ID 4011	c
	5	ID 4012	c
	3	ID 4201	c
	3	ID 4202	c
Non-Major Required Course	2	LCC 3401	
Departmental Electives	9	Any ID course	c
	3	ARCH 2111 or ARCH 2112 or ARCH 2115 or ARCH 4107 or ARCH 4109 or ARCH 4112 or ARCH 4113 or ARCH 4114 or ARCH 4115 or ARCH 4117 or ARCH 4118 or ARCH 4119 or ARCH 4120 or ARCH 4123 or ARCH 4124 or ARCH 4125 or ARCH 4126 or ARCH 4127 or ARCH 4128 or ARCH 4129 or ARCH 4133 or ARCH 4137 or ARCH 4140 or ARCH 4151 or ARCH 4821 or ARCH 4822 or ARCH 4823 or ARCH 4921 or ARCH 4922 or ARCH 4923 or CP 4010 or CP 4020 or ID 4203 or ID 4205 or ID 4843 or MUSI 3610 or MUSI 3620 or MUSI 3630	
Free Electives	13	Free Electives	
TOTAL:	131		

Pass-fail only allowed for Free Electives.

NOTES

a = If PHYS 2231 (5cr) is taken, excess hour applies to Free Electives.
c = C-minimum required

MASTER OF INDUSTRIAL DESIGN (MID)

Industrial design is the professional service of creating and developing concepts and specifications that optimize the function, value, and appearance of products and systems for the mutual benefit of both user and manufacturer. The industrial designer's work touches all of our lives in the form of home products and furnishings, communication devices, healthcare equipment, rehabilitation technologies, and a myriad of other consumer and industrial products and services. While giving form to the efforts of industry, the designer is at the same time a consumer advocate, providing the humanizing link between technology and people. As such, the industrial designer's central responsibilities include fitting the artifact, system, or service to the person through considering appropriate aesthetics and ergonomics, technical processes, requirements for manufacture, marketing opportunities, and economic constraints.

At the graduate-level, Georgia Tech's Master's of Industrial Design (MID) focuses on an inclusive design approach that is dedicated to the creation and development of products, systems, services and environments that are usable by all segments of the population. With the growing diversity of the population, inclusive design is becoming increasingly important to designers of tomorrow to ensure that design is responsive to the individual and collective needs of all people.

Capitalizing on Georgia Tech's rich traditions in technology and research, the MID program stresses a user-centered design process and evidence-based design practice that offers students unique opportunities to explore the design of new and existing technologies. Faculty members, who are practicing designers and experts in their fields, maintain active research programs in tangible products within communication technologies, enabling environments, supportive product systems, rehabilitation technologies, and healthcare systems technologies.

The Georgia Tech MID program offers a well-rounded course of study with early emphasis on exercising design principles and developing project-based design skills. Design projects stress realistic design situations, where students can have the opportunity to be involved in sponsored and/or funded projects. Within this model, the program encourages students to expand individual disciplinary talents and respond to changing opportunities in the field.

Students who have an undergraduate degree in industrial design from an undergraduate ID program similar to Georgia Tech's can complete a two-year program consisting of 48 graduate credits.

Students who do not have an undergraduate degree in industrial design will need to successfully complete an additional 28 undergraduate industrial design credits, which at a minimum includes one year of undergraduate industrial design studios, Advanced Sketching, History of Industrial Design, Industrial Design Computing I and II, and Professional ID Practices. These classes are the minimum requirements students with a previous degree other than industrial design need before proceeding into the graduate-level studios and coursework.

All graduate students will be reviewed each year for satisfactory progress. Credit toward the MID degree will be granted for courses in which a grade of C or higher is earned.

The minimum requirements for the two-year MID degree for a student with a previous degree in industrial design are as follows:

		Credit

Course Number	Course Name	Hours
ID 6100	GRADUATE STUDIES IN ID	3
ID 6101	HUMAN-CENTERED DESIGN	3
ID 6200	GRADUATE STUDIO I	6
ID 6201	GRADUATE STUDIO II	6
GRADUATE ELECTIVES (ALL ELECTIVES MUST BE APPROVED BY THE SCHOOL CHAIR)		18
ID 7000 (THESIS) or ID 6400 (NON-THESIS)		12
TOTAL MINIMUM REQUIRED CREDIT HOURS		48

All work executed in the College becomes the property of the College and will be retained or returned at the discretion of the faculty. The faculty also reserves the right to refuse credit for any project executed outside the precincts of the College or otherwise executed without proper coordination with the instructor.

MASTER'S CERTIFICATE PROGRAM IN DESIGN COMPUTING

Graduate students in the College of Architecture and the College of Computing may sign up to participate in the Certificate Program in Design Computing. This option allows students to enroll in a program jointly administered by the College of Architecture and the College of Computing, providing studies in computing, computer graphics, Web technologies, and other digital technology areas.

Students eligible for this certificate program are master's students in the School of Architecture or College of Computing. They are admitted through the regular admissions process, but are designated as being also signed up for this certificate option. Students admitted to the certificate program through the College of Architecture may do so through multiple degree programs:

a. Master of Architecture program: Students in the M.Arch. program may also enroll in this certificate program as part of their professional electives.
b. Master of Science with a major in architecture in the School of Architecture, Master of Building Construction, and Master of Industrial Design: Students in these programs may enroll in this certificate program if their interests and background correspond to those of the certificate.

The requirements for the certificate program for College of Architecture students are fifteen units of coursework in computing or design. Students taking the certificate program from the College of Architecture are expected to focus on courses in computer science and design computing within the College. The core courses in design computing are those identified as crucial for base knowledge in the field. Students interested in the certificate program should discuss it with their advisor. For further details on the program, contact the School of Architecture graduate advisor.

http://dcom.arch.gatech.edu/dcom_htm/index.php-cat1=1.htm

SCHOOL OF MUSIC

Admissions
About the School
MS in Music Technology
PhD in Music Technology
Minors
Certificates
Humanities Credit
Bands
Ensembles
Orchestra
College of Architecture

MASTER OF SCIENCE IN MUSIC TECHNOLOGY

Digital technology led to a cultural and social transformation in the manner in which we make, perform, and listen to music. Recent technological developments in areas such as music recording, compression, distribution, and playback have fundamentally changed musical practices and created a need in the industry and academia for well-educated music and audio technologists able to design, develop, and creatively employ the next generation of musical performances, products, and services. The Georgia Tech Music Department's Master of Science in Music Technology program prepares students for careers in the arts and entertainment industries, professional audio software and hardware, as well as in the education/academic markets. This interdisciplinary degree program is executed in close collaboration with other leading programs at Georgia Tech including Human Computer Interaction, Electrical Engineering, Industrial Design, Interactive Digital Technology, and Mechanical Engineering.

The Master of Science in Music Technology is a four-semester program for a total of 48 credit hours. Applicants will be admitted to the program with an undergraduate degree in music, computing, engineering, or a related degree. Applicants will have to demonstrate their musical background in performance, composition and/or theory, as well as basic skills in programming and/or engineering in order to be admitted to the program. An interview process, which will include a portfolio examination, will be used to determine applicant's qualifications. Upon acceptance, each student will be assigned an academic advisor who will consult and approve student's course selections. After the first year of study and with the approval of their academic advisor, students will choose between two academic tracks:

- **Project Track** - Students will complete a set of requirements that will include twenty-one music technology course credit hours, fifteen elective course credit hours, and twelve research credit hours, leading to the development of a final master's project in Music Technology.
- **Thesis Track** - Students will complete a set of requirements that will include twenty-one music technology course credit hours, nine elective course credit hours, twelve research credit hours, and six Thesis Preparation credit hours, leading to the completion and submission of an master's thesis in Music Technology.

The 48 credit hours program focuses on the design and development of novel enabling music technologies. 36 of the credit hours are course credits (21 required and 15 electives) and a minimum of 12 credits are dedicated to research.

For more information see - http://gtcmt.gatech.edu/?p=2530

DOCTOR OF PHILOSOPHY WITH A MAJOR IN MUSIC TECHNOLOGY

The PhD in Music Technology is a full-time day program. Students accepted into the PhD program in Music Technology are expected to hold a Masters degree in Music Technology or from an allied field, such as computing, music, engineering, or media arts and sciences. All applicants must demonstrate mastery of core masters-level material covered in Music Technology. This includes proficiency in: Music theory, performance, composition, and/or analysis; Music Information Retrieval, Digital Signal Processing and Synthesis; Interactive Music Systems Design; and Music Cognition.

Proficiency will be assessed through review of a portfolio of the applicant's work and an interview process. Students may waive the requirement to enroll in specific courses by appealing to the Music Technology Graduate Program Committee. Such appeals will typically be granted only if the student has already taken the same course at Georgia Tech or has taken a substantially equivalent course at another institution, and if the student has earned an exceptional grade in that course.

The Graduate Record Examination (GRE) is required for all applicants. A minimum TOEFL score of 600 (paper-based), 250 (computer-based), or 100 (Internet-based) is required for all non-native English speaking applicants.

For more information see: http://gtcmt.gatech.edu/?p=2526

SCHOOL OF MUSIC

Admissions
About the School
MS in Music Technology
PhD in Music Technology
Minors
Certificates
Humanities Credit
Bands
Ensembles
Orchestra
College of Architecture

CERTIFICATE IN FINE ARTS - MUSIC

A Certificate in Fine Arts-Music can be earned by Georgia Tech students upon completion of thirteen hours of coursework in music as approved by the Chair of the School of Music . Students following certificate guidelines will be exposed to an introduction to fine arts, including the development of personal aesthetic and critical skills, and will go on to more in-depth study in music analysis and history. A core component of this program involves sustained performance in one of Georgia Tech's instrumental or vocal ensembles.

At least nine hours must be at the 3000 level or higher. All other Undergraduate Certificate Academic Requirements, as they appear in the Undergraduate Certificate Program Guidelines, must be met. Courses must be taken on a letter-grade basis, and a C or better must be received in order to obtain course credit toward the Certificate. This Certificate Program is designed mainly for students with an interest in gaining an in-depth knowledge of music within the context of a technical undergraduate education. Required and elective courses are as follows:

REQUIRED COURSES (ELEVEN CREDIT HOURS):

- 3 hours of Survey of Music Technology (MUSI 3450)
- Two hours of Composers and Their Music
- Two hours of Music Theory (MUSI 2600, 3600)
- Four hours core from one of the following areas:
    - Band (Concert Band-MUSI 1102-3, 2102-3, 3102-3, 4102-3) and/or Woodwind Ensemble (1112-4, 2112-4, 3112-4, 4112-4)
    - Chamber Ensemble (MUSI 1401-3, 2401-3, 3401-3, 4401-3)
    - Chorale (MUSI 1201-3, 2201-3, 3201-3, 4201-3)
    - Jazz (MUSI 1301-3, 2301-3, 3301-3, 4301-3)
    - Orchestra (MUSI 1601-3, 2601-3, 3601-3, 4601-3)
    - Vocal Ensemble (MUSI 1211-3, 2211-3, 3211-3, 4211-3)

ELECTIVE COURSES (TWO CREDIT HOURS):

2 hours of elective music courses with MUSI prefix.

SCHOOL OF MUSIC HUMANITIES CREDIT INFORMATION

CORE AREA C**:**

Students are permitted to earn 4 hours of humanities credit for participation in ensembles.

HUMANITIES CREDIT FOR ENSEMBLE PARTICIPATION

Students are permitted to earn 4 hours of humanities credit for participating in ensembles in the School of Music, provided the selection and concentration criteria are satisfied. Specifically, the selection must satisfy Criterion 1, and the concentration must satisfy either Criterion 2 or Criterion 3.

- **Criterion 1**-The ensemble is chosen from the following list: Percussion Ensemble, Orchestra, Chorale, Concert Band, Jazz Ensemble, Woodwind Ensemble (Symphonic Band), Vocal Ensemble, and Men's Glee Club.
- **Criterion 2**-The student earns at least four credits in one of the ensembles chosen from the list in Criterion 1.
- **Criterion 3**-The student earns at least four credits in a combination of Woodwind Ensemble (Symphonic Band) and Concert Band.

ATHLETIC BANDS

The Yellow Jacket Marching Band and Basketball Pep Bands are elements of the Georgia Tech Band Program. The Marching Band and Pep Bands perform at all home games and travel to several out-of-state events, including the ACC Tournament, NCAA Tournament, football games, and bowl appearances. These trips are financed by the Georgia Tech Athletic Association. Tryouts for the auxiliary units are held each spring. There is a mandatory band camp the week before fall classes begin. All members must sign up for the class.

CONCERT BAND

The Concert Band is open to all experienced wind and percussion players at Georgia Tech. Auditions, which include scales and sight-reading, are held on the first Tuesday of each semester. This is a performing ensemble that covers both traditional and contemporary wind band literature, including works by Grainger, Ticheli, and Holst. Students may earn humanities credit by participating in a series of Concert Band and/or Wind Ensemble courses.

CHAMBER ENSEMBLES

Small ensembles for experienced instrumentalists are organized prior to the first day of classes. Participation must be pre-approved by a faculty member in the School of Music. Members of these small ensembles must be participating in a large ensemble. Chamber Ensembles include string quartet, brass quintet, woodwind quintet, clarinet quartet, trumpet quartet, saxophone quartet, flute choir, etc. Students receiving class credit for these chamber groups must rehearse at least 3 hours a week and must be coached by a faculty member. Performances vary depending on the semester and may include appearances at school-related functions.

THE CHAMBER CHOIR

The Chamber Choir is an elite vocal ensemble chosen by audition and performs on campus and community concerts throughout the academic year. The choir rehearses and performs challenging choral music literature written especially for smaller choirs.

THE CHORALE

A mixed ensemble focused upon the rehearsal, study and performance of choral music. Repertoire may include accompanied and unaccompanied works from all style eras and genres, modern music, world music, and performances of multiple mediums. Choral music experience is recommended. No audition is required.

ELECTRONIC PERCUSSION ENSEMBLE

This ensemble performs a variety of student-designed and arranged music. All pieces are performed on student-designed and built instruments, as well as the latest in commercial controllers and interfaces. The use of multimedia is also encouraged in each arrangement.

JAZZ ENSEMBLE

The Jazz Ensemble's repertoire ranges from the concert jazz compositions of Leonard Bernstein, Duke Ellington, and Stan Kenton to the contemporary works of Bob Mintzer and Pat Metheny, and to works commissioned for the band. The group performs at area jazz festivals and has appeared in hundreds of concerts on campus and in the community. Members sharpen their improvisational skills and strive to grow as instrumentalists in various jazz styles. Students rightfully take pride in the group's accomplished level of performance. Professional clinicians, guest artists, and conductors bring additional musical perspective. Auditions are scheduled by appointment during the first two days of classes.

MEN'S GLEE CLUB

The Men's Glee Club was organized in 1906 and is the oldest student organization on campus. The Glee Club performs frequently on and off campus. Repertoire includes traditional men's chorus music, contemporary vocal percussion, and original compositions.

PERCUSSION ENSEMBLE

The percussion ensembles meet in the Fall and Spring and focus on traditional and contemporary ensemble literature as well as transcriptions of popular music. These ensembles are offered to students with prior percussion background. Interested students should contact Chris Moore for permission.

WOODWIND ENSEMBLE

This auditioned instrumental ensemble for the more serious student has established a reputation of musical excellence through the performance of challenging band literature. Individual performance time, sectionals, and a high level of musical standards in rehearsals are expected. Repertoire has consisted of the compositions of Grainger, Persichetti, Copland, Bernstein, Hindemith, Giannini, and Holst. Guest clinicians and conductors are frequently invited to enhance performance preparation. Auditions are scheduled by contacting the director before the first day of class.

ORCHESTRA

The Georgia Tech Orchestra was founded in 1993 and has grown to full orchestration including brass, woodwinds, and percussion. The group performs a balance of classical, romantic, contemporary, and popular literature. The Orchestra performs during Parent's Weekend, the Music of the Season concert, and many other community appearances. Auditions are scheduled by appointment during the first two days of class.

COLLEGE OF BUSINESS ACCREDITATION STATEMENT

The College of Business and all of its degrees are accredited by the Association to Advance Collegiate Schools of Business (AACSB) International.

COLLEGE OF BUSINESS

- **Bachelor's Degrees**
- **Master's Degrees**
- **Doctoral Degrees**

BACHELOR OF SCIENCE IN BUSINESS ADMINISTRATION

Students with a broad interest in business and management activities and operating problems would profit from the Bachelor of Science in Business Administration degree program. The program builds upon knowledge of the functional, environmental, behavioral, and legal aspects of business and provides analytical and conceptual tools for analyzing complicated problems. It prepares the student for business and managerial responsibilities and decision making. The large number of elective hours allows the student to tailor a program to his or her individual educational objectives. Students must complete a concentration of electives in one of the following areas: finance, accounting, marketing, operations and supply chain management, and information technology management, leading and managing human capital, and general management.

The new BS Business Administration degree replaces the BS Management degree previously offered by the College of Business. Starting summer 2011, all new freshmen and transfer students will be admitted to the B.S. Business Administration (BSBA) degree as the B.S. Management (BSM) degree will no longer be offered to new students. Current Tech students who submit change of major forms to join the College of Business after January 17, 2011 will have the BSBA degree, as the BSM degree will no longer be available to new change of major students. Current BSM students can change their majors to BSBA, but are not required to change majors.

INTERNATIONAL PLAN

The International Plan degree option is available to all College of Business undergraduate students. This option has been specifically designed to increase the international competence of our students through foreign language instruction, selected international courses, overseas residential experience, and a capstone, culminating course. This international competence is characterized by a graduate's ability to communicate in a second world language, discuss substantively the major international socioeconomic processes, assimilate into foreign lifestyles and work environments, and communicate with confidence the specifics of management and business in a global context. Given the ever-increasing pace of globalization of business, this option should help students prepare for the business world of the future. All College of Business students should seek advising through the College of Business Undergraduate Programs Office.

CHANGE OF MAJOR POLICY

The College of Business requires a 2.3 cumulative GPA for any non-College of Business students requesting a change of major to Business Administration if the student has completed sixty credits (junior standing) or more. There is no GPA requirement for freshmen and sophomores (less than sixty credits) requesting a major change. This policy was approved by the College of Business faculty in April 2007. All students seeking a major change to Business Administration must attend a "change of major" meeting. Contact the College of Business Undergraduate Program Office for dates and times of upcoming meetings.

Current Georgia Tech students who submit change of major forms to join the College of Business after January 17, 2011 will have the BS Business Administration degree, as the BS Management degree will no longer be available to new change of major students.

Students who submit change of major forms before January 17, 2011 will have the BS Management degree. BS Management students may choose to stay in the BSM degree or may change into the BSBA degree. Once a student changes majors to BSBA, he or she cannot return to the BSM degree.

The BSBA and BSM degrees have different degree requirements. Students joining the BSBA degree must complete all BSBA degree requirements, including one of the newly approved management concentrations and several other courses not currently required of all BSM students. Current BSM students MUST attend a change of major meeting to change their majors to BSBA so they understand the requirements of the new degree which are different than the BSM requirements.

Current BSM students who decide to continue pursuing the BSM degree should review previous Georgia Tech catalogs and the College of Business website to see the BSM requirements.

BACHELOR OF SCIENCE IN BUSINESS ADMINISTRATION - ACCOUNTING 2013 - 2014 DEGREE REQUIREMENTS

REQUIREMENT	REQ HRS	COURSE(S)	NOTES
Wellness	2	HPS 1040 or APPH 1040 or APPH 1050	
Core A - Essential Skills	3	ENGL 1101	
	3	ENGL 1102	
	4	MATH 1501 or MATH 1712	
Core B - Institutional Options	3	CS 1301 or CS 1315	
Core C - Humanities	6	Any HUM	
Core D - Science, Math, & Technology	4	Lab Science	
	4	Lab Science	
	4	MATH 1502 or MATH 1711	
Core E - Social Sciences	3	HIST 2111 or HIST 2112 or INTA 1200 or POL 1101 or PUBP 3000	
	3	ECON 2105	
	3	ECON 2106	
	3	Any SS	
Core F - Courses Related to Major	3	ACCT 2101	
	3	ACCT 2102	
	3	MGT 2106	
	3	MGT 2200	
	3	MGT 2250	
	3	MGT 2251	
Major Requirements	3	LCC 3403	
	3	MGT 3062	
	3	MGT 3101	
	3	MGT 3102	
	3	MGT 3300	
	3	MGT 3501	
	1	MGT 3599	
	3	MGT 3660	
	3	MGT 4195	
Accounting Concentration	3	MGT 4010	c
	3	MGT 4026	c
	3	MGT 4027	c
	3	MGT 4041	c
	6	MGT 4015 or MGT 4028 or MGT 4030 or MGT 4043 or MGT 4045 or MGT 4047	c, d
Non-MGT Electives	6	Non-MGT Electives	a
Free Electives	10	Free Electives	b
TOTAL:	122		

Pass-fail only allowed for Free Electives.

NOTES

a = Any courses except for MGT or ACCT.

b = Maximum 3 credits of internship; Maximum 9 credits of undergraduate research; Maximum 3 credits of Special Problems/Independent Study.

c = C-minimum required

d = Consult your Academic Advisor for approval to use one Special Problems MGT 4910 course (3 hours) for a concentration elective. Course must be taught by a College of Business Accounting faculty member.

SCHELLER COLLEGE OF BUSINESS

About the College
Accreditation
Degrees Offered
Undergraduate
BS Business Administration
Description
Degree Requirements
BSBA - Accounting
BSBA - Finance
BSBA - General Mgt
BSBA - IT Mgt
BSBA - Leading & Mgt Human Capital
BSBA - Marketing
BSBA - Operations & Supply Chain Mgt
Minors
Certificates
Transfer Credit Policy
Graduate
Admissions
Master's Degrees
MBA
MBA Full-time Viewbook
MBA Evening Viewbook
MS Quantitative & Computational Finance
Executive MBAs
MBA Global Business
MBA GB Viewbook
Evening MBA GB Viewbook
MBA Management of Tech
MBA MOT Viewbook
MS
PhD Management
PhD Viewbook

BACHELOR OF SCIENCE IN BUSINESS ADMINISTRATION - FINANCE 2013 - 2014 DEGREE REQUIREMENTS

REQUIREMENT	REQ HRS	COURSE(S)	NOTES
Wellness	2	HPS 1040 or APPH 1040 or APPH 1050	
Core A - Essential Skills	3	ENGL 1101	
	3	ENGL 1102	
	4	MATH 1501 or MATH 1712	
Core B - Institutional Options	3	CS 1301 or CS 1315	
Core C - Humanities	6	Any HUM	
Core D - Science, Math, & Technology	4	Lab Science	
	4	Lab Science	
	4	MATH 1502 or MATH 1711	
Core E - Social Sciences	3	HIST 2111 or HIST 2112 or INTA 1200 or POL 1101 or PUBP 3000	
	3	ECON 2105	
	3	ECON 2106	
	3	Any SS	
Core F - Courses Related to Major	3	ACCT 2101	
	3	ACCT 2102	
	3	MGT 2106	
	3	MGT 2200	
	3	MGT 2250	
	3	MGT 2251	
Major Requirements	3	LCC 3403	
	3	MGT 3062	
	3	MGT 3101	
	3	MGT 3102	
	3	MGT 3300	
	3	MGT 3501	
	1	MGT 3599	
	3	MGT 3660	
	3	MGT 4195	
Finance Concentration	3	MGT 3076	c
	3	MGT 3079	c
	3	MGT 4070	c
	3	MGT 4067	c
	6	MGT 3075 or MGT 3082 or MGT 3084 or MGT 4026 or MGT 4066 or MGT 4068 or MGT 4072	c, d
Non-MGT Electives	6	Non-MGT Electives	a
Free Electives	10	Free Electives	b
TOTAL:	122		

Pass-fail only allowed for Free Electives.

NOTES

a = Any courses except for MGT or ACCT.

b = Maximum 3 credits of internship; Maximum 9 credits of undergraduate research; Maximum 3 credits of Special Problems/Independent Study.

c = C-minimum required

d = Consult your Academic Advisor for approval to use one Special Problems MGT 4910 course (3 hours) for a concentration elective. Course must be taught by a College of Business Accounting faculty member.

SCHELLER COLLEGE OF BUSINESS

About the College
Accreditation
Degrees Offered
Undergraduate
BS Business Administration
Description
Degree Requirements
BSBA - Accounting
BSBA - Finance
BSBA - General Mgt
BSBA - IT Mgt
BSBA - Leading & Mgt Human Capital
BSBA - Marketing
BSBA - Operations & Supply Chain Mgt
Minors
Certificates
Transfer Credit Policy
Graduate
Admissions
Master's Degrees
MBA
MBA Full-time Viewbook
MBA Evening Viewbook
MS Quantitative & Computational Finance
Executive MBAs
MBA Global Business
MBA GB Viewbook
Evening MBA GB Viewbook
MBA Management of Tech
MBA MOT Viewbook
MS
PhD Management
PhD Viewbook

BACHELOR OF SCIENCE IN BUSINESS ADMINISTRATION - GENERAL MGT 2013 - 2014 DEGREE REQUIREMENTS

REQUIREMENT	REQ HRS	COURSE(S)	NOTES
Wellness	2	HPS 1040 or APPH 1040 or APPH 1050	
Core A - Essential Skills	3	ENGL 1101	
	3	ENGL 1102	
	4	MATH 1501 or MATH 1712	
Core B - Institutional Options	3	CS 1301 or CS 1315	
Core C - Humanities	6	Any HUM	
Core D - Science, Math, & Technology	4	Lab Science	
	4	Lab Science	
	4	MATH 1502 or MATH 1711	
Core E - Social Sciences	3	HIST 2111 or HIST 2112 or INTA 1200 or POL 1101 or PUBP 3000	
	3	ECON 2105	
	3	ECON 2106	
	3	Any SS	
Core F - Courses Related to Major	3	ACCT 2101	
	3	ACCT 2102	
	3	MGT 2106	
	3	MGT 2200	
	3	MGT 2250	
	3	MGT 2251	
Major Requirements	3	LCC 3403	
	3	MGT 3062	
	3	MGT 3101	
	3	MGT 3102	
	3	MGT 3300	
	3	MGT 3501	
	1	MGT 3599	
	3	MGT 3660	
	3	MGT 4195	
General Management Concentration	18	MGT 3075 or MGT 3076 or MGT 3079 or MGT 3082 or MGT 3084 or MGT 3103 or MGT 3310 or MGT 3510 or MGT 3605 or MGT 3606 or MGT 3607 or MGT 3608 or MGT 3609 or MGT 3661 or MGT 3662 or MGT 3663 or MGT 3743 or MGT 3744 or MGT 4010 or MGT 4015 or MGT 4026 or MGT 4027 or MGT 4028 or MGT 4030 or MGT 4041 or MGT 4043 or MGT 4045 or MGT 4047 or MGT 4052 or MGT 4053 or MGT 4056 or MGT 4057 or MGT 4058 or MGT 4066 or MGT 4067 or MGT 4068 or MGT 4070 or MGT 4072 or MGT 4102 or MGT 4106 or MGT 4116 or MGT 4191 or MGT 4192 or MGT 4193 or MGT 4194 or MGT 4303 or MGT 4304 or MGT 4308 or MGT 4309 or MGT 4311 or MGT 4331 or MGT 4332 or MGT 4335 or MGT 4352 or MGT 4353 or MGT 4360 or MGT 4366 or MGT 4401 or MGT 4670 or MGT 4803 or MGT 4910	a, b, c, f
Non-MGT Electives	6	Non-MGT Electives	d
Free Electives	10	Free Electives	e

TOTAL:	122

Pass-fail only allowed for Free Electives.

NOTES

a = MGT 4803 must have a title of Business Analytics, or Business Forecasting, or Business and Government Regulation, or Business Programming, or Corporate Governance, or Employment, Benefits, and Compensation Law, or Innovation and Entrepreneurial Behavior, or International HR, or Law for Entrepreneurs, or Leadership: Managing Professionals, or Legal Issues in Sports Management or Management of Healthcare Operations, or Managerial Economics, or Motivation and Rewards, or Project Management, or Sales Management.

b = Students may not use both MGT 4191 and MGT 4192 towards the General Management Concentration

c = C-minimum required

d = Any courses except for MGT or ACCT.

e = Maximum 3 credits of internship; Maximum 9 credits of undergraduate research; Maximum 3 credits of Special Problems/Independent Study.

f = Complete five courses from five different clusters. Complete one additional course from any cluster.

Accounting Cluster: MGT 4010 or MGT 4015 or MGT 4026 or MGT 4027 or MGT 4028 or MGT 4030 or MGT 4041 or MGT 4043 or MGT 4045 or MGT 4047

Business Ethics and Law: MGT 3605 or MGT 3606 or MGT 3607 or MGT 3608 or MGT 3609 or MGT 4803 Business and Government Regulation or MGT 4803 Corporate Governance or MGT 4803 Employment, Benefits, and Compensation Law or MGT 4803 Law for Entrepreneurs or MGT 4803 Legal Issues in Sports Management

Finance Cluster: MGT 3075 or MGT 3076 or MGT 3079 or MGT 3082 or MGT 3084 or MGT 4066 or MGT 4067 or MGT 4068 or MGT 4070 or MGT 4072

Information Technology Management Cluster: MGT 3743 or MGT 4052 or MGT 4053 or MGT 4056 or MGT 4057 or MGT 4058 or MGT 4803 Project Management or MGT 4803 Business Programming or MGT 4803 Business Analytics

Marketing Cluster: MGT 3310 or MGT 4303 or MGT 4304 or MGT 4308 or MGT 4309 or MGT 4311 or MGT 4331 or MGT 4332 or MGT 4335 or MGT 4803 Sales Management, or MGT 4803 Marketing Analysis

Operations and Supply Chain Management Cluster: MGT 3510 or MGT 3744 or MGT 4352 or MGT 4353 or MGT 4360 or MGT 4366 or MGT 4401 or MGT 4803 Management of Healthcare Operations

Leading and Managing Human Capital: MGT 3103 or MGT 3607 or MGT 4102 or MGT 4106 or MGT 4116 or MGT 4803 International HR or MGT 4803 Motivation and Rewards or MGT 4803 Innovation and Entrepreneurial Behavior or MGT 4803 Leadership: Managing Professionals

Institute for Leadership and Entrepreneurship Cluster: MGT 4191 or MGT 4192 or MGT 4193 or MGT 4194 or MGT 4610 or MGT 4670

Strategy Cluster: MGT 3661 or MGT 3662 or MGT 3663 or MGT 4803 Business Forecasting or MGT 4803 Managerial Economics

SCHELLER COLLEGE OF BUSINESS

About the College
Accreditation
Degrees Offered
Undergraduate
BS Business Administration
Description
Degree Requirements
BSBA - Accounting
BSBA - Finance
BSBA - General Mgt
BSBA - IT Mgt
BSBA - Leading & Mgt Human Capital
BSBA - Marketing
BSBA - Operations & Supply Chain Mgt
Minors
Certificates
Transfer Credit Policy
Graduate
Admissions
Master's Degrees
MBA
MBA Full-time Viewbook
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MBA Management of Tech
MBA MOT Viewbook
MS
PhD Management
PhD Viewbook

BACHELOR OF SCIENCE IN BUSINESS ADMINISTRATION - IT MANAGEMENT 2013 - 2014 DEGREE REQUIREMENTS

REQUIREMENT	REQ HRS	COURSE(S)	NOTES
Wellness	2	HPS 1040 or APPH 1040 or APPH 1050	
Core A - Essential Skills	3	ENGL 1101	
	3	ENGL 1102	
	4	MATH 1501 or MATH 1712	
Core B - Institutional Options	3	CS 1301 or CS 1315	
Core C - Humanities	6	Any HUM	
Core D - Science, Math, & Technology	4	Lab Science	
	4	Lab Science	
	4	MATH 1502 or MATH 1711	
Core E - Social Sciences	3	HIST 2111 or HIST 2112 or INTA 1200 or POL 1101 or PUBP 3000	
	3	ECON 2105	
	3	ECON 2106	
	3	Any SS	
Core F - Courses Related to Major	3	ACCT 2101	
	3	ACCT 2102	
	3	MGT 2106	
	3	MGT 2200	
	3	MGT 2250	
	3	MGT 2251	
Major Requirements	3	LCC 3403	
	3	MGT 3062	
	3	MGT 3101	
	3	MGT 3102	
	3	MGT 3300	
	3	MGT 3501	
	1	MGT 3599	
	3	MGT 3660	
	3	MGT 4195	
IT Management Concentration	12	MGT 3743 or MGT 4052 or MGT 4053 or MGT 4056 or MGT 4057 or MGT 4058 or MGT 4803	a, c
	6	MGT 3310 or MGT 3663 or MGT 3744 or MGT 4028 or MGT 4041 or MGT 4067 or MGT 4311 or MGT 4366 or MGT 4670 or MGT 4803	b, c
Non-MGT Electives	6	Non-MGT Electives	d
Free Electives	10	Free Electives	e
TOTAL:	122		

Pass-fail only allowed for Free Electives.

NOTES

a = MGT 4803 must have a title of Project Management or Business Programming, or Business Analytics.

b = MGT 4803 must have a title of Management of Healthcare Operations.

c = C-minimum required

d = Any courses except for MGT or ACCT.

e = Maximum 3 credits of internship; Maximum 9 credits of undergraduate research; Maximum 3 credits of Special Problems/Independent Study.

BS IN BUSINESS ADMINISTRATION - LEADING & MANAGING HUMAN CAPITAL 2013 - 2014

DEGREE REQUIREMENTS

REQUIREMENT	REQ HRS	COURSE(S)	NOTES
Wellness	2	HPS 1040 or APPH 1040 or APPH 1050	
Core A - Essential Skills	3	ENGL 1101	
	3	ENGL 1102	
	4	MATH 1501 or MATH 1712	
Core B - Institutional Options	3	CS 1301 or CS 1315	
Core C - Humanities	6	Any HUM	
Core D - Science, Math, & Technology	4	Lab Science	
	4	Lab Science	
	4	MATH 1502 or MATH 1711	
Core E - Social Sciences	3	HIST 2111 or HIST 2112 or INTA 1200 or POL 1101 or PUBP 3000	
	3	ECON 2105	
	3	ECON 2106	
	3	Any SS	
Core F - Courses Related to Major	3	ACCT 2101	
	3	ACCT 2102	
	3	MGT 2106	
	3	MGT 2200	
	3	MGT 2250	
	3	MGT 2251	
Major Requirements	3	LCC 3403	
	3	MGT 3062	
	3	MGT 3101	
	3	MGT 3102	
	3	MGT 3300	
	3	MGT 3501	
	1	MGT 3599	
	3	MGT 3660	
	3	MGT 4195	
Leading and Managing Human Capital Concentration	12	MGT 3103 or MGT 3607 or MGT 4102 or MGT 4106 or MGT 4803	a, c
	6	MGT 3744 or MGT 4116 or MGT 4191 or MGT 4192 or MGT 4193 or MGT 4194 or MGT 4670 or MGT 4803	b, c
Non-MGT Electives	6	Non-MGT Electives	d
Free Electives	10	Free Electives	e
TOTAL:	122		

Pass-fail only allowed for Free Electives.

NOTES

a = MGT 4803 must have a title of Innovation and Entrepreneurial Behavior, or International HR, or Leadership: Managing Professionals, or Motivation and Rewards.

b = MGT 4803 must have a title of Employment, Benefits, and Compensation Law. May not use both MGT 4191 and MGT 4192 towards requirement

c = C-minimum required

d = Any courses except for MGT or ACCT.

e = Maximum 3 credits of internship; Maximum 9 credits of undergraduate research; Maximum 3 credits of Special Problems/Independent Study.

SCHELLER COLLEGE OF BUSINESS

About the College
Accreditation
Degrees Offered
Undergraduate
BS Business Administration
Description
Degree Requirements
BSBA - Accounting
BSBA - Finance
BSBA - General Mgt
BSBA - IT Mgt
BSBA - Leading & Mgt Human Capital
BSBA - Marketing
BSBA - Operations & Supply Chain Mgt
Minors
Certificates
Transfer Credit Policy
Graduate
Admissions
Master's Degrees
MBA
MBA Full-time Viewbook
MBA Evening Viewbook
MS Quantitative & Computational Finance
Executive MBAs
MBA Global Business
MBA GB Viewbook
Evening MBA GB Viewbook
MBA Management of Tech
MBA MOT Viewbook
MS
PhD Management
PhD Viewbook

BACHELOR OF SCIENCE IN BUSINESS ADMINISTRATION - MARKETING 2013 - 2014 DEGREE REQUIREMENTS

REQUIREMENT	REQ HRS	COURSE(S)	NOTES
Wellness	2	HPS 1040 or APPH 1040 or APPH 1050	
Core A - Essential Skills	3	ENGL 1101	
	3	ENGL 1102	
	4	MATH 1501 or MATH 1712	
Core B - Institutional Options	3	CS 1301 or CS 1315	
Core C - Humanities	6	Any HUM	
Core D - Science, Math, & Technology	4	Lab Science	
	4	Lab Science	
	4	MATH 1502 or MATH 1711	
Core E - Social Sciences	3	HIST 2111 or HIST 2112 or INTA 1200 or POL 1101 or PUBP 3000	
	3	ECON 2105	
	3	ECON 2106	
	3	Any SS	
Core F - Courses Related to Major	3	ACCT 2101	
	3	ACCT 2102	
	3	MGT 2106	
	3	MGT 2200	
	3	MGT 2250	
	3	MGT 2251	
Major Requirements	3	LCC 3403	
	3	MGT 3062	
	3	MGT 3101	
	3	MGT 3102	
	3	MGT 3300	
	3	MGT 3501	
	1	MGT 3599	
	3	MGT 3660	
	3	MGT 4195	
Marketing Concentration	3	MGT 3310 or MGT 4332	c
	9	MGT 4303 or MGT 4304 or MGT 4308 or MGT 4309 or MGT 4311 or MGT 4331 or MGT 4335 or MGT 4803	a, c, f
	6	MGT 3744 or MGT 4056 or MGT 4058 or MGT 4360 or MGT 4803	b, c
Non-MGT Electives	6	Non-MGT Electives	d
Free Electives	10	Free Electives	e
TOTAL:	122		

Pass-fail only allowed for Free Electives.

NOTES

a = MGT 4803 must have title of Sales Management.
b = MGT 4803 must have a title of Business Forecasting.
c = C-minimum required
d = Any courses except for MGT or ACCT.

e = Maximum 3 credits of internship; Maximum 9 credits of undergraduate research; Maximum 3 credits of Special Problems/Independent Study.

f = Consult your Academic Advisor for approval to use one Special Problems MGT 4910 course (3 hours) for a concentration elective. Course must be taught by a College of Business Marketing faculty member.

SCHELLER COLLEGE OF BUSINESS

About the College
Accreditation
Degrees Offered
Undergraduate
BS Business Administration
Description
Degree Requirements
BSBA - Accounting
BSBA - Finance
BSBA - General Mgt
BSBA - IT Mgt
BSBA - Leading & Mgt Human Capital
BSBA - Marketing
BSBA - Operations & Supply Chain Mgt
Minors
Certificates
Transfer Credit Policy
Graduate
Admissions
Master's Degrees
MBA
MBA Full-time Viewbook
MBA Evening Viewbook
MS Quantitative & Computational Finance
Executive MBAs
MBA Global Business
MBA GB Viewbook
Evening MBA GB Viewbook
MBA Management of Tech
MBA MOT Viewbook
MS
PhD Management
PhD Viewbook

BS IN BUSINESS ADMINISTRATION - OPERATIONS AND SUPPLY CHAIN MGT 2013 - 2014 DEGREE REQUIREMENTS

REQUIREMENT	REQ HRS	COURSE(S)	NOTES
Wellness	2	HPS 1040 or APPH 1040 or APPH 1050	
Core A - Essential Skills	3	ENGL 1101	
	3	ENGL 1102	
	4	MATH 1501 or MATH 1712	
Core B - Institutional Options	3	CS 1301 or CS 1315	
Core C - Humanities	6	Any HUM	
Core D - Science, Math, & Technology	4	Lab Science	
	4	Lab Science	
	4	MATH 1502 or MATH 1711	
Core E - Social Sciences	3	HIST 2111 or HIST 2112 or INTA 1200 or POL 1101 or PUBP 3000	
	3	ECON 2105	
	3	ECON 2106	
	3	Any SS	
Core F - Courses Related to Major	3	ACCT 2101	
	3	ACCT 2102	
	3	MGT 2106	
	3	MGT 2200	
	3	MGT 2250	
	3	MGT 2251	
Major Requirements	3	LCC 3403	
	3	MGT 3062	
	3	MGT 3101	
	3	MGT 3102	
	3	MGT 3300	
	3	MGT 3501	
	1	MGT 3599	
	3	MGT 3660	
	3	MGT 4195	
Operations and Supply Chain Management Concentration	12	MGT 3510 or MGT 3744 or MGT 4352 or MGT 4353 or MGT 4360 or MGT 4366 or MGT 4401	c
	6	MGT 3743 or MGT 4056 or MGT 4057 or MGT 4193 or MGT 4309 or MGT 4670 or MGT 4803	a, c, e
Non-MGT Electives	6	Non-MGT Electives	b
Free Electives	10	Free Electives	d
TOTAL:	122		

Pass-fail only allowed for Free Electives.

NOTES

a = MGT 4803 must have title of Management of Healthcare Operations.

b = Any courses except for MGT or ACCT.

c = C-minimum required

d = Maximum 3 credits of internship; Maximum 9 credits of undergraduate research; Maximum 3 credits of Special Problems/Independent Study.

e = Consult your Academic Advisor for approval to use one Special Problems MGT 4910 course

(3 hours) for a concentration elective. Course must be taught by a College of Business Operations faculty member.

SCHELLER COLLEGE OF BUSINESS

About the College
Accreditation
Degrees Offered
Undergraduate
BS Business Administration
Description
Degree Requirements
BSBA - Accounting
BSBA - Finance
BSBA - General Mgt
BSBA - IT Mgt
BSBA - Leading & Mgt Human Capital
BSBA - Marketing
BSBA - Operations & Supply Chain Mgt
Minors
Certificates
Transfer Credit Policy
Graduate
Admissions
Master's Degrees
MBA
MBA Full-time Viewbook
MBA Evening Viewbook
MS Quantitative & Computational Finance
Executive MBAs
MBA Global Business
MBA GB Viewbook
Evening MBA GB Viewbook
MBA Management of Tech
MBA MOT Viewbook
MS
PhD Management
PhD Viewbook

CERTIFICATE PROGRAMS

In addition to its degree programs, the College of Business offers students in good standing an opportunity to broaden their areas of expertise or acquire skills or information beyond their major degree requirements. Students who satisfactorily complete this special program will receive a certificate of recognition. Certificates are only available to degree-seeking Georgia Tech undergraduates. Certificates are awarded upon graduation from a Georgia Tech undergraduate program. For certificate requirements, please see the College of Business Website: www.mgt.gatech.edu

The following certificate programs are available for undergraduate students:

- Accounting
- Business Law and Ethics
- Entrepreneurship
- Finance
- Information Technology Management
- International Management
- Marketing
- Operations and Supply Chain Management

TRANSFER CREDIT POLICY FOR UNDERGRADUATE STUDENTS

Students may transfer business and management courses taken at another accredited institution if the courses are passed with a C or better and are deemed by the College of Business to be equivalent to a Georgia Tech course. Such courses will be transferred for the same number of credits as the corresponding College of Business courses, provided they are equal to three or more semester hours of credit. Transfer credits will be accepted from newly-formed institutions of the University System of Georgia prior to accreditation.

Junior- or senior-level courses with three or more semester hours of credit that have no corresponding College of Business course may transfer as electives in management if they are approved by the College of Business.

Because of the difference in the intellectual level of various courses, freshman- or sophomore-level courses taken at other institutions may only be transferred for equivalent freshman- or sophomore-level courses offered at Georgia Tech. Before taking courses at other institutions, students should refer to the Georgia Tech transfer credit policies at www.registrar.gatech.edu/students/transfercredit.php. Management students considering taking courses at other institutions should keep in mind Georgia Tech's 36-hour Residency Rule, which states that "no student may be considered a candidate for a degree unless the final thirty-six credit hours required for the degree are earned in residence at Georgia Tech and approved by the major school."

MASTER OF BUSINESS ADMINISTRATION (MBA)

The MBA Program at the Scheller College of Business provides a professional management education for students with baccalaureate degrees in any discipline. Calculus is the only prerequisite. The MBA is an innovative and rigorous program with a technical and quantitative instructional focus. Highly qualified candidates from all academic backgrounds enter the program, which is designed to foster teamwork and a closely knit class.

The MBA Program is offered in both full-time and evening formats. For the full-time program, entry is in the fall semester only. For the evening program, admission is offered in both fall and spring semesters. Excellence in management education has long been a hallmark of Georgia Tech. The Georgia Tech MBA helps students develop the skills they will need to effectively lead in the high-tech, global businesses of the twenty-first century, and the vision and ingenuity to become valued leaders in their fields. At Georgia Tech, MBA students are exposed to the social, environmental, political, and international factors shaping the global marketplace. Some of the primary advantages of the MBA program include a close community that promotes enriched student-faculty relationships; classmates with diverse educational and work experiences; small class sizes that foster group cooperation and a true understanding of the business environment; an innovative curriculum that keeps pace with the rapidly changing environment of technology and management; and a wide range of educational, social, and professional opportunities in the metro Atlanta area.

During the summer term between the first and second academic years, full-time MBA students work in summer internships with companies ranging from major employers to small entrepreneurial ventures. Summer internships enhance permanent employment opportunities.

The MBA program requires 54 hours; 30 semester hours are core classes. The core courses develop a common body of knowledge essential to all MBA students. The remainder of the curriculum consists of electives, which provide flexibility for students to build competence in one or more concentration areas. This freedom permits students to fashion a curriculum directed toward their own educational and career goals.

MBA elective areas include accounting, entrepreneurship, finance, information technology, international business, marketing, operations management, organizational behavior, and strategic management.

Note: Effective Spring 2010, MBA students are allowed to use up to 4 credit hours of pass/fail courses toward their degree program.

Applications and view books are available online at www.mgt.gatech.edu/mba.

For more information, call 404.894.8722 or contact the:

Scheller College of Business Graduate Office
Georgia Institute of Technology
Atlanta, Georgia 30308-0520

MASTER OF SCIENCE IN QUANTITATIVE AND COMPUTATIONAL FINANCE

The Master of Science in Quantitative and Computational Finance (MS QCF) is a collaboration among the College of Business, the School of Mathematics, and the H. Milton Stewart School of Industrial and Systems Engineering. This is a sixteen-month interdisciplinary degree program that provides students with the practical skills and theoretical understanding they need to become experts in the formulation, implementation, and evaluation of the models used by the financial sector to structure transactions, manage risk, and construct investment strategies. Students require a thorough understanding of the principles, structures, and everyday activities of finance; an understanding of the mathematics used to model these financial activities; and knowledge of the techniques, such as programming, numerical analysis, statistics, optimization, and intuition, used to implement these models in finance.

Contact:
Dr. Shijie Deng, Director
Shijie.deng@isye.gatech.edu
404.894.6519

Website: www.qcf.gatech.edu

SCHELLER COLLEGE OF BUSINESS

About the College
Accreditation
Degrees Offered
Undergraduate
BS Business Administration
Description
Degree Requirements
BSBA - Accounting
BSBA - Finance
BSBA - General Mgt
BSBA - IT Mgt
BSBA - Leading & Mgt Human Capital
BSBA - Marketing
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Minors
Certificates
Transfer Credit Policy
Graduate
Admissions
Master's Degrees
MBA
MBA Full-time Viewbook
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MBA GB Viewbook
Evening MBA GB Viewbook
MBA Management of Tech
MBA MOT Viewbook
MS
PhD Management
PhD Viewbook

MASTER OF BUSINESS ADMINISTRATION - GLOBAL BUSINESS

As the business world becomes increasingly global, executives must understand and actively manage its impact on current business operations and future business trends. Georgia Tech's MBA - Global Business (Global Executive MBA) program trains executives to take leadership positions in businesses that have global aspirations. Whether you want to work overseas or grow your company at home, understanding how global issues are increasingly affecting every type of business is essential. The MBA - Global Business program will prepare you to effectively lead your business in a global environment of increasing complexity and technological sophistication.

RIGOROUS CURRICULUM

The MBA - Global Business program enhances traditional MBA coursework to include international perspectives on finance, operations, economics, technology, and marketing. The core MBA curriculum is supplemented with coursework on global markets, global trade, global supply chain, and global organizations. The curriculum takes advantage of Georgia Tech's unique academic strengths and international presence.

INTERNATIONAL BUSINESS EXPERIENCE

Designed to be a truly international experience, the MBA - Global Business program includes two trips overseas to gain firsthand knowledge of key issues in international commerce. These destinations vary from year to year, but focus on regions of emerging importance such as China, India, Latin America, and Eastern Europe. Through lectures and company visits, these international trips examine the cultural, social, and economic aspects of each location. A year-long global strategy capstone project ties together the international residencies and classroom learning to provide an integrative experience across all aspects of the curriculum.

DEGREE REQUIREMENTS AND SCHEDULE

The MBA - Global Business degree is a specialized MBA degree requiring fifty semester credit hours of study. It consists of a fixed sequence of courses over a seventeen-month period with a new class beginning each fall semester and graduating at the end of the following fall semester. Classes are held on select weekends (Friday evening and all day Saturday), allowing participants to minimize time away from their jobs. In addition, there are four residencies, including two weeklong sessions at Georgia Tech and two trips abroad. To graduate, students must earn a cumulative grade point average of at least 2.7. To remain on good standing during the program, students must earn the minimum satisfactory cumulative grade point average of 2.7. Any student receiving three or more grades of U, D, or F, in any combination, may be dismissed from the program.

WHO SHOULD APPLY?

Qualified candidates for the MBA-Global Business program have ten to fifteen years of professional experience (a minimum of five years is required), during which they have demonstrated increased responsibility, professional growth, and leadership.

These candidates are highly motivated to develop the business skills that are critical for leaders in a global setting. Industry background, company size, and titles of participants vary, allowing students to gain a broad understanding of global issues and scenarios.

ADMISSION

Applications are reviewed and accepted throughout the year. Priority will be given to applications received prior to April 1. After that date, applications received will be reviewed on a space-available basis. Taking the GMAT may be required based on a review of your application portfolio. For additional information on admission requirements, please contact us at GlobalEMBA@gatech.edu.

CONTACT INFORMATION

MBA - Global Business
Georgia Tech College of Business
800 West Peachtree Street
Suite 310
Atlanta, GA 30308
Phone: 404.385.2254
Fax: 404.894.1464
MBA – Global Business Website

MASTER OF BUSINESS ADMINISTRATION IN MANAGEMENT OF TECHNOLOGY

As technology alters the business landscape at an unprecedented pace, the Master of Business Administration – Management of Technology (Executive MBA in Management of Technology or EMBA-MOT) program will help you stay ahead of the curve and the competition. Leverage your technology background for competitive advantage as you learn to cope with the challenges presented by rapid innovation, shorter product life cycles, and emerging technologies.

No one understands innovation and technical experts like Georgia Tech, and the professors in our top-ranked business school know how to enhance your technical knowledge and increase your business savvy. In addition to gaining a foundation in business through MBA core courses, you will learn how to manage innovation and organizational change, conduct technology forecasting, and identify promising emerging technologies.

Through the EMBA-MOT program, you will gain the leadership and communication skills that are essential to maintain an upward trajectory in your career. The program will complement your technology background and help you leverage it for advancement. You will learn not only to speak the language of business fluently, but also to think and plan strategically. You will gain the confidence to communicate with senior leadership and manage teams of technical professionals at home and abroad. As more and more technical jobs are outsourced to employees in newly industrialized countries such as China and India, the role of the technical professional in the U.S. is rapidly changing. You may find that your role is shifting from performing technical duties to managing an international workforce or multiple vendors. The EMBA-MOT program will equip you to handle these new challenges while improving the performance of your company.

At the conclusion of the seventeen-month program, you will go on an international study tour of China, which includes visits to global research and development centers and meetings with executives from top companies. The trip also includes cultural excursions and networking events with local executives to complement your international learning experience.

DEGREE REQUIREMENTS AND SCHEDULE

The MBA - Global Business degree is a specialized MBA degree requiring fifty semester credit hours of study. It consists of a fixed sequence of courses over a seventeen-month period with a new class beginning each fall semester and graduating at the end of the following fall semester. Classes are held on select weekends (Friday evening and all day Saturday), allowing participants to minimize time away from their jobs. In addition, there are four residencies, including two weeklong sessions at Georgia Tech and two trips abroad. To graduate, students must earn a cumulative grade point average of at least 2.7. To remain on good standing during the program, students must earn the minimum satisfactory cumulative grade point average of 2.7. Any student receiving three or more grades of U, D, or F, in any combination, may be dismissed from the program.

WHO SHOULD APPLY?

Candidates should have a minimum of five years of professional work experience, a baccalaureate degree from an accredited institution, and a record of positive career growth and achievements through positions of increasing responsibility. The Executive MBA in Management of Technology program is particularly well-suited for technical professionals as well as for professionals working in companies strongly impacted by technology and/or increasing demands for innovative new products and services.

ADMISSION

Applications are reviewed and accepted throughout the year. Priority will be given to applications received prior to April 1. After that date, applications will be reviewed on a space-available basis. Taking the GMAT may be required based on a review of your application portfolio. For additional information on admission requirements, please contact us at
emba-mot@gatech.edu.

CONTACT INFORMATION

MBA – Management of Technology
Georgia Tech College of Business
800 West Peachtree St. NW
Atlanta, GA 30308-0520
Phone: 404.385.2254
Fax: 404.894.1464
MBA – Management of Technology Website

MASTER OF SCIENCE WITH A MAJOR IN MANAGEMENT

The undesignated Master of Science degree program serves students whose educational and career goals may not be best served by the MBA program. Under these circumstances, the student may pursue a specially tailored master's-level curriculum that satisfies the American Assembly of Collegiate Schools of Business (AACSB) common body of knowledge requirements and provides a coherent concentration of elective courses chosen in consultation with an academic advisor. This specialized degree program is designed primarily for students who are admitted to Georgia Tech in approved foreign education programs, but may also be completed by students in the PhD program who are unable to complete the full doctoral degree. Admission to this program must be approved by the MBA Admissions Committee prior to enrollment.

DOCTOR OF PHILOSOPHY WITH A MAJOR IN MANAGEMENT

The PhD program in Management is designed to produce graduates who can make scholarly contributions to their chosen fields. Most graduates undertake careers as researchers, scholars and teachers, in academic environments.

The doctoral program in the Scheller College of Business is intended for full-time students who will complete their entire doctoral program prior to leaving campus. Full-time residence in or near Atlanta is expected. The doctoral program is strongly research-oriented and emphasizes early and effective involvement in research, with students experiencing considerable personal attention and close interaction with faculty. The PhD program complements and reflects the technological emphasis of the Institute and places considerable weight on learning outside the classroom. The tutorial model is the basic educational approach employed throughout the program.

All doctoral students take comprehensive examinations in their area of study., After successful completion of the comprehensive examination and the formal approval of his or her dissertation, the student becomes a candidate for the degree. On completion of the dissertation, the student must take a final oral examination as prescribed in the general regulations of the Graduate Division.

Applicants to the doctoral program in management should note that supplementary application materials are required by the College of Business in addition to those required by Georgia Tech's Office of Graduate Admissions and Enrollment Services.

Applications and viewbooks are available online at www.mgt.gatech.edu/phd.

For more information, call 404.894.8722 or contact the:

Scheller College of Business Graduate Office
Georgia Institute of Technology
Atlanta, Georgia 30308-0520

COLLEGE OF COMPUTING ACCREDITATION STATEMENT

The following undergraduate computing programs are accredited by the Computing Accreditation Commission of ABET, www.abet.org.

- Bachelor of Science in Computer Science
- Bachelor of Science in Computational Media

COLLEGE OF COMPUTING

General Information
About The College
Accreditation
Research Centers
Faculty
BS Computer Science
Schools / Divisions
Computer Science
Interactive Computing
Computational Science & Eng
Degrees Offered
Minors
Certificates

COLLEGE OF COMPUTING RESEARCH CENTERS

GEORGIA TECH INFORMATION SECURITY CENTER (GTISC)

The Georgia Tech Information Security Center, a National Center of Academic Excellence in Information Assurance Education, is an interdisciplinary center involving faculty from the College of Computing, School of Electrical and Computer Engineering, Georgia Tech Research Institute (GTRI), the Sam Nunn School of International Affairs, and the School of Public Policy.
www.gtisc.gatech.edu

ROBOTICS AND INTELLIGENT MACHINES AT GEORGIA TECH (RIM@GT)

The Center for Robotics and Intelligent Machines (RIM@Georgia Tech) leverages the strengths and resources of Georgia Tech in robotics education, research, and leadership by reaching across traditional boundaries to embrace a multidisciplinary approach. The College of Computing, College of Engineering and the Georgia Tech Research Institute play key, complementary roles through Tech's traditional expertise in interactive and intelligent computing, control, and mechanical engineering. Emphasizing personal and everyday robotics as well as the future of automation, faculty involved with RIM@Georgia Tech help students understand and define the future role of robotics in society.
www.robotics.gatech.edu

ALGORITHMS AND RANDOMNESS CENTER AND THINKTANK (ARC THINKTANK)

The ARC ThinkTank brings together faculty from the College of Computing, the School of Mathematics and the School of Industrial Systems Engineering at Georgia Tech to find algorithms and algorithmic models for real-world problems across the sciences and, in the process, seeking new directions and techniques for the emerging theory of algorithms.
www.arc.gatech.edu/

GVU CENTER AT GEORGIA TECH

The GVU Center at Georgia Tech is an interdisciplinary research center encompassing a number of individual colleges at Georgia Tech as well as external collaborators. GVU focuses on unlocking and amplifying human potential through technical innovation in computing technologies. The faculty and students associated with GVU bring expertise ranging from computer science and engineering to the humanities and design. It is through deep collaboration between these diverse domains that the GVU Center is able to engage in research that would otherwise be difficult to tackle in traditional academic and industrial settings. www.gvu.gatech.edu

CENTER FOR EXPERIMENTAL RESEARCH IN COMPUTER SYSTEMS (CERCS)

CERCS is one of the largest experimental systems programs in the U.S. focusing on complex hardware, communications and system-level software, and applications that lead the innovation of new information and computing technologies. http://www.cercs.gatech.edu/

BACHELOR OF SCIENCE IN COMPUTER SCIENCE WITH THREADS

The undergraduate degree in computer science (CS) offered by the College of Computing provides a solid foundation of knowledge and skills for applying digital processes effectively to issues of broad interest in a global society. Our program is based on a unique concept, Threads™ , a significant College of Computing innovation in undergraduate CS education. The curriculum builds on a base of fundamentals in programming and computational theory to allow each student the opportunity to explore a variety of computing paths in depth. There are eight Threads, each providing a focused journey through a broad spectrum of course offerings at Georgia Tech in preparation for a distinctive future in a changing and interconnected world. Each student selects two Threads to fulfill the requirements for an accredited Bachelor of Science degree in computer science. It is at the intersection of the two paths that the unique synergistic value of this educational experience is realized. Graduates will leave the College of Computing fully aware of the limitless potential of their dynamic discipline and be able to adapt and continuously add value to society throughout their careers.

The Threads™ represent partial paths through the curriculum. Thus, a student weaves a degree from these Threads. Students are not forced to make Thread decisions very early in their academic careers; however, they may if they want. We define the Threads so they are flexible enough to allow for a variety of technical and creative experiences. Threads are coherent enough that students develop computing skills even if their focus shifts as they go along.

The CS curriculum also offers opportunities in undergraduate research and international study. In addition to the standard four-year plan, a five-year cooperative plan is offered for students who wish to combine their academic education with industry experience.

The undergraduate program requires a total of 124 credit hours for graduation, plus a two-hour Wellness course. With the exception of free electives, all Bachelor of Science degree coursework must be taken on a letter-grade basis. Up to six hours of free electives may be taken on a pass/fail basis. No 1000- or 2000-level HPS hours or precalculus hours (currently MATH 113) may be used as free electives. No course that covers the same material as other courses in a student's plan of study can be used as a free elective.

All required CS courses, whether Thread or non-Thread, must be completed with a *C* or better to be counted toward degree requirements. All courses listed as required for a Thread, whether CS or non-CS, must be completed with a *C* or better to be counted toward degree requirements.

THE COLLEGE OF COMPUTING DEFINES EIGHT THREADS

A Thread provides an intuitive, flexible, and mutually strengthening set of courses that allows a student to craft a distinctive future in an area that is certain to have societal value in the emerging world. A Thread provides a skill and credential basis that allows graduates to create value in ways beyond what would be possible with only a narrowly focused tool set.

Choose any two threads to create your own path and special variation on an area of study.

- Computing and Devices: creating devices embedded in physical objects that interact in the physical world
- Computing and Information Internetworks: representing, transforming, transmitting, and

presenting information

- Computing and Intelligence: building top-to-bottom models of human-level intelligence
- Computing and Media: building systems in order to exploit computing's abilities to provide creative outlets
- Computing and Modeling - Simulation: representing natural and physical processes
- Computing and People: designing, building, and evaluating systems that treat the human as a central component
- Computing and Systems and Architecture : creating computer architectures, systems, and languages
- Computing and Theory: theoretical foundations underlying a wide range of computing disciplines

Threads™ are defined as partial paths through the course offerings of the Institute. Students constructs their own personalized computer science degree by weaving through two Threads™. Each Thread™ is about 2/3 of a degree, but with Thread™ arithmetic, since there's so much overlap, 2/3 + 2/3 = 1. Each pair of Threads™ fulfills the requirements for an accredited Bachelor of Science degree in computer science.

THE POWER OF ONE THREAD

Are you a computationalist who is interested in the expressive arts (telling stories, making games, creating emotional experiences)? Join the Computing and Media Thread. Here you'll see courses on topics ranging from computational graphics to Hamlet, from human perception to interactive fiction engines.

Are you a computationalist who is interested in placing intelligence in physical objects like robots, airplanes, or cell phones? Join the Computing and Devices Thread. Here you'll see courses on everything from computational sensors to dealing with noisy data, from real-time operating systems to mobile power issues and computational autonomy.

WEAVING TWO THREADS TOGETHER - A LEAP

Are you interested in computer security? Then perhaps choose Computing and Information to learn how data is stored, retrieved, encoded, transmitted, etc. And perhaps also choose Computing and People to learn how people use technology, how to run experiments with human subjects, etc. The kind of person you will become is the kind of person who will be able to invent and build secure systems that are usable by people.

For more information about the BS CS undergraduate program or the College of Computing, visit www.cc.gatech.edu

or

COLLEGE OF COMPUTING

- **Bachelor's Degrees**

SCHOOL OF COMPUTER SCIENCE

- **Master's Degrees**
- **Doctoral Degrees**

SCHOOL OF INTERACTIVE COMPUTING

- **Bachelor's Degrees**
- **Master's Degrees**
- **Doctoral Degrees**

COMPUTATIONAL SCIENCE AND ENGINEERING DIVISION

- **Master's Degrees**
- **Doctoral Degrees**

CERTIFICATE IN SOFTWARE ENGINEERING

This certificate program provides students with emphasis in Software Engineering through a focused set of courses. The certificate requires twelve semester hours of coursework.

Certificate requirements are the same for all students, whether enrolled in the College of Computing or in another school within the Institute.

There are two required courses in the certificate that must be take on a letter grade basis, and the student must earn a grade of *C* or better. These required courses are:

CS2335 Software Practicum

CS3300 Introduction to Software Engineering

For students in Threads where CS3300 is a required course, an additional elective course below must be substituted since Institute policy prohibits required courses from being used as certificate credit.

Students must take two additional courses within the Software Engineering field on a letter grade basis and must earn a grade of *C* or better. The elective courses to choose from are:

CS4320 Software Process

CS4330 Software Applications

CS4332 Software Generation, Testing, and Maintenance

CS4400 Introduction to Database Systems

CS4560 Verification of Systems

If CS4400 is required by your field of study, you may not use it as an elective for the Software Engineering Certificate.

BIOENGINEERING PROGRAMS

In response to the increased need for engineers and medical scientists with advanced training in bioengineering, Georgia Tech now offers master's and PhD degrees in bioengineering. The purpose of bioengineering as a research discipline is to develop new and better physical and mathematical concepts and techniques that may be applied to problems in medicine and biology, to the development of new medical technologies, and to the organization and delivery of cost-effective healthcare. Interdisciplinary graduate programs in bioengineering are offered by the College of Computing in conjunction with the Bioengineering Center (in the Office of Interdisciplinary Programs), the College of Engineering, and the College of Sciences. The student's home unit will be the College of Computing, which, upon completion of the student's requirements, will recommend the degree. This interdisciplinary approach has been approved by the faculty in the Schools of Aerospace Engineering, Chemical and Biomolecular Engineering, Electrical and Computer Engineering, Materials Science and Engineering, Mechanical Engineering, and Polymer, Textile and Fiber Engineering, and by the deans of the Colleges of Computing, Engineering, and Sciences.

The program is for computer science or engineering graduates who wish to pursue a degree in bioengineering rather than in a traditional field of computing or engineering, or who have done bioengineering research in other disciplines. In addition, those interested students with non-engineering backgrounds (with degrees in such fields as physics, chemistry, biology, or mathematics) who meet the admission requirements will be admitted to the program. Applications from physicians with undergraduate degrees in engineering or the physical sciences will also be considered. All applications will be processed through the Bioengineering Center.

Additional information is available at www.bme.gatech.edu.

MASTER OF SCIENCE IN BIOENGINEERING

Students who wish to pursue a master's degree in bioengineering may also do so through the College of Computing. The specific requirements differ from those of the computer science master's program, and while the degree is granted from the College, applications for this program are processed through the Bioengineering Center of the Office of Interdisciplinary Programs.

Additional information is available at www.bme.gatech.edu.

COMPUTER SCIENCE

About the School
Graduate
Admissions
Bioengineering Programs
Master's Degrees
Bioengineering
Computer Science
Information Security
Doctoral Degrees
Algorithms Combinatorics & Optimization
Bioengineering
Bioinformatics
Computer Science
Cooperative Plan
College of Computing

MASTER OF SCIENCE IN COMPUTER SCIENCE

The program for the Master of Science in Computer Science (MS CS) prepares students for more highly productive careers in industry. Graduates receive the MS CS for completing one of three options in the program as described in this section. Students may apply to the program if they possess a bachelor's degree in computer science from an accredited institution. Students without a bachelor's degree in computer science are encouraged to apply as well, with the understanding that they will be required to complete remedial coursework appropriate to their background in addition to the requirements of the MS CS degree. All applicants are evaluated according to their prior academic record, scores on the Graduate Record Examination, a personal statement, and letters of recommendation. Applicants are selected for fall semester admission only. The application deadline is February 1. However, all applicants are encouraged to apply as early as possible because the selection process may begin well before the deadline.

The College's master's degree requirements supplement the Institute's master's requirements listed in this catalog. Students must achieve a grade-point average of at least 3.0 to graduate, and no course grades below C will count toward graduation. Undergraduate courses required for the BS CS degree may not be used toward the MS CS degree. In addition, no graduate credit will be given for 3000 level courses or lower-level courses. Students must take all master's degree coursework on a letter-grade basis. The maximum total credit hours of Special Problems that may be applied toward the MS CS degree is three. Students may choose from one of three options in pursuing the MS CS degree, including:

Course option: This option requires the student to complete 36 hours of coursework.

Total Course Credit Hours 36
Minimum Credit Hours in CS 24
Minimum Credit Hours(6000/8000 Level) in CS 18
Minimum Credit Hours (6000/8000 Level) 24

Project option: This option requires the student to complete 27 hours of coursework and a 9 hour project. The project requires approval by a faculty advisor and the MS program coordinator in the semester prior to its inception.

Total Credit Hours 36
MS Project Hours 9
Total Course Credit Hours 27
Minimum Credit Hours in CS 24*
Minimum Credit Hours (6000/8000 Level) in CS 18*

Thesis option: This option requires the student to complete twenty-four hours of coursework and a 12 hour thesis. The thesis process is defined elsewhere in this catalog.

Total Credit Hours 36
MS Thesis Hours 12 hour
Total Course Credit Hours 24

Minimum Credit Hours in CS 24*
Minimum Credit Hours (6000/8000 Level) in CS 18*

* May not include MS project or thesis hours.

All three of these options require students to complete 3 hours of courses in each of the core areas of Systems and Theory at the graduate-level. In addition, students entering the program must demonstrate a core competency in computing equivalent to undergraduate-level courses in the following areas: systems, design and analysis of algorithms, formal languages and automata theory, databases, networking and communications, computer architecture, and human-computer interaction. This requirement can be satisfied by having taken undergraduate courses as a part of an undergraduate degree, taking remedial courses in the MS CS program, or by examination. Beyond the core requirements, students may specialize in areas of their choice. A specialization is achieved by completing at least two graduate-level courses in the selected area. Every student must complete at least one specialization as a part of his or her degree program. The current eleven specialization areas are: computer architecture, database systems, graphics and visualization, human-computer interaction, information security, intelligent systems, networking and communications, programming languages and compilers, software methodology and engineering, systems, and theoretical computer science.

A student who is enrolled in another graduate program of the Institute may pursue an MS CS while that student is also pursuing his or her degree in the other major. To be granted permission to pursue the MS CS, a student must submit to the MS program coordinator of the College of Computing the material required for admission to the MS CS program. This includes transcripts, letters of recommendation, and GRE General Test and Computer Science Subject Test scores. If the student is approved by the College to pursue the MS CS, the student will be notified in writing. At no time will a student outside the College be allowed to pursue a concurrent degree without prior permission of the MS program coordinator of the College of Computing.

A student enrolled in the MS degree program in computer science who wishes to be admitted to the PhD program in computer science should apply via the same process as external students. It is expected that such a student will have at least two letters of recommendation from College of Computing faculty.

For more information about the MS CS program, visit www.cc.gatech.edu.

MASTER OF SCIENCE IN INFORMATION SECURITY

The Master of Science in Information Security (MS INFS) program is a terminal degree program that provides specialized advanced technical training in computer and information security. The program offers background and insight into general knowledge issues and a concentration in a depth area of information security. The program addresses issues surrounding the impact of information security on our lives, private citizens' concern for privacy, information security risks to business and government, and the impact of laws and public policy. It is a technically rigorous program operated by the School of Computer Science suitable for students able to perform at a graduate level in Computer Sciences.

COURSE OF STUDY

The Master of Science in Information Security program requires a total of 32 semester hours. Each student is required to take a set of core courses, elective courses from one depth concentration, and a free elective from any concentration. The core is composed of six courses and the concentrations are three focused courses tailored to each student's interests. Students who successfully complete the degree will have their concentration listed on their official transcript.

CORE COURSES (20 HOURS)

Take all of the following courses:

1. CS 6035 Introduction to Information Security
2. CS 6238 Secure Computer Systems
3. CS 6260 Applied Cryptography
4. CS 6262 Network Security
5. CS 6265 Information Security Laboratory
6. CS 6266 Information Security Practicum

CONCENTRATION COURSES (9 HOURS)

Take three courses from one of the following depth areas.

1. **A: SYSTEMS**

   CS 6210 Advanced Operating Systems
   CS 6250 Computer Networks
   CS 6255 Network Management
   CS 6300 Software Development Process
   CS 6310 Software Architecture and Design
   CS 6340 Software Analysis & Testing
   CS 6365 Introduction to Enterprise Computing
   CS 6390 Programming Languages
   CS 6400 Database Systems Concepts and Designs
   CS 6675 Advanced Internet Computing
   CS 7210 Distributed Computing
   CS 7230 Software Design, Implementation, & Evaluation
   CS 7260 Internetworking Architecture and Protocols
   CS 7270 Networked Applications & Services
   CS 7292 Reliable, Secure Computer Architectures

CS 8803 CNS Cellular and Mobile Network Security
CS 8803 IMS Mobile Applications and Services with IMS
CS 8803 MAL Mobile Applications and Services
CS 8803 SS Software Security
ECE 6612 Computer Network Security

2. **B: POLICY**

CS 6150 Computing for Good
CS 6725 Information Security Strategies and Policies
CS 8803 CCI Computing, Communications, and International Development
CS 8803 CNS Cellular and Mobile Network Security
ECON 6150 Cost and Benefit Analysis
MGT 6123 Information Tech Mgt
PUBP 6501 Information Policy & Management
INTA 8803 G The Challenge of Terrorism
CIS 8080 Security and Privacy of Information and Information Systems
CIS 8630 Business Computer Forensics and Incident Response

3. **C: USERS AND USABILITY**

CS 6455 User Interface Design and Evaluation
CS 6456 Principles-UI Software
CS 6470 Online Communities
CS 6750 Human-Computer Interact
CS 7460 Collaborative Computing
CS 7470 Mobile & Ubiquitous Computing

ELECTIVE COURSE (3 HOURS)

Take one course from any of the concentration areas, or take 3 credits of CS 8903. Use of CS 8903 to satisfy the elective requirement requires prior approval of the MSINFS Program Coordinator to ensure that it is a security-related study.

ACADEMIC PERFORMANCE

The School's master's degree requirements supplement the Institute's master's requirements listed in this catalog. No grade below B in a core course will count towards graduation. No grade below C in a concentration or elective course will count towards graduation. Students must achieve a cumulative grade-point average of at least 3.0 to graduate. At most 3 credits of CS 8903 may be applied towards degree requirements.

For more information about the MS IS program, visit www.cc.gatech.edu.

DOCTOR OF PHILOSOPHY WITH A MAJOR IN ALGORITHMS, COMBINATORICS, AND OPTIMIZATION

The College of Computing is one of the sponsors of the multidisciplinary program in Algorithms, Combinatorics, and Optimization (ACO), an approved doctoral degree program at Georgia Tech. The other sponsoring units are the Stewart School of Industrial and Systems Engineering and the School of Mathematics. The degree program is administered by an oversight committee drawn primarily from the sponsoring units.

The study of discrete structures is a rapidly growing area in computer science, applied mathematics, and operations research, most obviously in the analysis of algorithms, combinatorics, and discrete optimization. Collaborative work among the three traditionally separate disciplines is already common. The doctorate in Algorithms, Combinatorics, and Optimization will prepare students for careers in this exciting and expanding field.

Students are expected to be well prepared in at least one of the three fields represented by the sponsoring units (computer science, mathematics, and operations research). Each student in the program is admitted through one of the three sponsoring units, which serves as the home department. Coursework is drawn from all three disciplines. The research advisor may be any member of the ACO program faculty, which is drawn from electrical and computer engineering, management, and other disciplines in addition to the three sponsoring units.

Additional details about the ACO program are available at www.math.gatech.edu/academics/graduate/phd-program-algorithms-combinatorics-and-optimization.

DOCTOR OF PHILOSOPHY WITH A MAJOR IN BIOENGINEERING

The Bioengineering PhD degree requires a thesis based on independent study of a bioengineering research topic under the guidance of a bioengineering program faculty member.

The Georgia Tech Interdisciplinary Bioengineering (BioE) Graduate Program was established in 1992. Over 170 students have graduated from the program in a broad spectrum of research by our ninety participating faculty from the Colleges of Engineering, Computing, Sciences, and Architecture as well as Emory University School of Medicine.

The BioE Program is interdisciplinary in that it is not a standalone academic unit like most departments or schools at Georgia Tech. Rather, eight different academic units from the Colleges of Engineering and Computing make up the program.

However, the BioE Program provides the degree requirements for students accepted into the program. This approach allows a flexible, integrative, and individualized degree program that enforces depth and breadth in coursework, a solid bioengineering research experience, and yet is reflective of the disciplinary background of the student's home school. Importantly, the BioE Program provides research opportunities for students with any participating program faculty, allowing tremendous diversity and flexibility for research topics and advisors.

See www.bioengineering.gatech.edu for more information.

DOCTOR OF PHILOSOPHY WITH A MAJOR IN BIOINFORMATICS

The mission of the Georgia Tech Bioinformatics PhD Program is to educate and prepare graduate students to reach the forefront of leadership in the field of bioinformatics and computational biology; and to integrate research and education on the use of information technologies in biology and medicine. Thus, the program leading to a PhD in Bioinformatics is an interdisciplinary program spanning a variety of academic departments at Georgia Tech.

Bioinformatics is a multidisciplinary field in which physical sciences, life sciences, computer science, and engineering are merged to solve both fundamental and applied problems in biology and medicine. The outcomes of bioinformatics and computational biology particularly include

1. new and global perspectives into the organization and function of biological systems (fundamental biology);
2. new and novel targets for drug discovery and development; and
3. genetic/proteomic profiling for pharmaco-genomics or personalized medicine.

Thus, bioinformatics is emerging as a strategic discipline at the frontier between biology, biochemistry, biomedicine, bioengineering, computer science, and mathematics, impacting fundamental science, medicine, biotechnology, and society.

With its broad mission statement, this program at Georgia Tech has the following focus / strength areas:

1. Development of software tools, algorithms, and databases for gene identification, protein structural prediction, clustering analysis, and data mining.
2. Application of bioinformatics to disease diagnosis, classification, prognosis, and treatment.
3. Application of bioinformatics to fundamental biology and systems biology.

There is an increasing demand for scientists with advanced training in bioinformatics. Professionals in this area should have a thorough knowledge of molecular biology, mathematics, and statistics as well as computer science and engineering.

In 1997 the College of Sciences at Georgia Tech proposed and established a professional Master of Science in Bioinformatics degree program, the first of its kind in the United States. This interdisciplinary program consists of a unique combination of courses. Students are taught with equal strength in several scientific disciplines and are prepared for further successful work in industry or academia. At present there are more than forty students in the program, with twelve graduates already employed in academia and industry, particularly at SmithKlineGlaxo, Navartis, Johnson & Johnson, Informax, Los Alamos National Lab, Vanderbilt University, and the U.S. Centers for Disease Control and Prevention.

In 1993, the School of Biology at Georgia Tech implemented a PhD in Biology with a concentration in Bioinformatics. This option will stay in place for those students who would like to pursue a PhD in Biology.

The group of prospective applicants for the PhD program is expected to consist of students with an MS in Bioinformatics as well as holders of BS/BA and higher degrees in different disciplines. The applicants with life science degrees are usually looking for an interdisciplinary education with a focus on mathematics, physics, and computer science. This demand fits perfectly with what Georgia Tech can offer: high- quality education in mathematics, physics, and computing along with advanced courses in biology and biochemistry.

DOCTOR OF PHILOSOPHY WITH A MAJOR IN COMPUTER SCIENCE

The Computer Science Doctoral Program begins with research and breadth components. The research component helps students place an early focus on research. Students must complete an "Introduction to Graduate Studies" course (CS 7001) and then take at least three hours of directed research study (CS 8903) under faculty guidance each semester until their qualifying examination. The breadth component is intended to facilitate students' learning about a variety of areas within computing, as well as core computer science areas. Students must take at least twelve courses from the different areas of study within the College. The current twelve areas are computer architecture, database systems, graphics and visualization, human-computer interaction, information security, intelligent systems and robotics, learning sciences and technology, networking and communications, programming languages and compilers, software methodology and engineering, systems (including operating systems, distributed and parallel systems), and theoretical computer science. Students must include courses from the systems and theory areas in those breadth courses.

As students' research progresses, they must select a primary, and possibly secondary, area of focus from the areas listed previously, and then pass a qualifier (comprehensive exam) in that area or areas. The qualifier consists of three parts:

1. A one-day written examination covering the pertinent research area(s)
2. The submission of a high-quality research deliverable, as evidenced by a portfolio consisting of at least an exam committee-reviewed and publishable article, and possibly other work products as approved by the exam committee
3. An oral presentation and examination

After successfully completing the qualifier, a student focuses on research leading toward a dissertation. The topic of the student's research is formalized through a written dissertation proposal followed by an oral presentation. When the student passes his or her proposal, the student is admitted to candidacy and proceeds with dissertation research. This phase is completed with the successful defense and submission of the approved doctoral dissertation. Students are also required to complete a nine-hour minor outside the College.

For more information about the Computer Science PhD program, visit www.cc.gatech.edu.

COOPERATIVE PROGRAMS

The College of Computing participates in the undergraduate and graduate Cooperative Programs.
See links below for further Information.

BACHELOR OF SCIENCE IN COMPUTATIONAL MEDIA

The Bachelor of Science in Computational Media is a collaborative effort by the College of Computing and the School of Literature, Media, and Communication (LMC). The program offers a thorough education in all aspects of the computer as a medium: the technical, the historical-critical, and the applied. Program graduates will have both significant hands-on and theoretical knowledge of computing and an understanding of visual design and the history of media. Graduates will be uniquely positioned to plan, create, and critique new digital media forms for entertainment, education, and business communication.

The program requires 36 semester hours of courses in computer science and 30 hours of courses in LCC (in addition to the humanities requirement). A substantial number of required courses in each unit ensures that every student has basic competence in:

- computational principles;
- the representation and manipulation of digital media, including graphics and sound;
- software design;
- visual and interactive design;
- digital arts; and
- media theory and history.

After completing required courses, students specialize in a specific area of media computing. Typical specialty areas include:

- Interactive games design: This is one of the fastest growing areas of digital media production and is already a $7 billion industry.
- Special effects: As special effects become more complex and focused on computer-generated imagery, employment in this area will increasingly require expertise in both media and computer science.
- Culturally informed program design: As programming work is increasingly outsourced to nations offering lower labor costs, programming that adds value through a sophisticated response to the needs of specific corporate and group cultures will offer job security to American programmers.

Depending on their coursework within the BS program, students will also be qualified to enter graduate studies in computer science, digital arts, digital media studies, and human-computer interface.

COOPERATIVE PROGRAMS

The College of Computing participates in the undergraduate and graduate Cooperative Programs.
See links below for further Information.

INTERNATIONAL PLAN

The Computational Media (CM) International Plan follows the Institute model to develop a global competence within the student's major program of study. It thus integrates international studies and experiences with work in all aspects of the computer as a medium, preparing graduates to plan, create, and critique new digital media forms within an international professional environment.

As in the basic CM program, students following the International Plan will take 36 hours of courses in CS and 30 hours of courses in LCC (in addition to the basic humanities requirement). Students will also:

1. take three international courses, including one from each of the following categories: International Relations, Global Economics, and a course on a specific country or region;
2. spend two terms abroad engaged in any combination of study abroad, research, or internship;
3. demonstrate language proficiency equivalent to two years of college-level language study (to be determined by testing); and
4. complete a CM capstone course that links international studies with the major.

RESEARCH OPTION

The CM Research Plan follows the Institute model to allow students to incorporate research experiences into the major program of study. Students will complete nine hours of credit research work on various aspects of the computer as a medium, working in such areas as computational principles, the representation and manipulation of digital media, software design, visual and interactive design, digital art, and media theory and history.

As in the basic CM program, students following the Research Plan will take 36 hours of courses in CS and 30 hours of courses in LCC (in addition to the basic humanities requirement). Students will also:

1. complete nine hours of undergraduate research;
2. complete 1 hour of LCC 4701 Undergraduate Research Proposal Writing; and
3. complete 1 hour of LCC 4702, Undergraduate Thesis Writing.

BS/MS COMPUTATIONAL MEDIA AND DIGITAL MEDIA

Students who desire to pursue the BS/MS combination in CM and DM must apply to the School after completing at least seventy-five hours of work towards the CM degree. Applicants should have shown a cumulative grade-point average (GPA) of at least 3.5.

Students admitted to the program will take a total of twelve hours of graduate course work during their final undergraduate year. six hours of that work, in DM courses, will count toward the CM Advanced Studio and Capstone requirements and will count for both undergraduate and graduate credit. During the summer term after their fourth year, students will participate in an approved internship program. During their fifth year, students will take a total of 24 hours, including either LCC 6800 (Project) or LCC 7000 (Thesis), and with no more than three courses taken outside of the DM program.

SCHOOL OF INTERACTIVE COMPUTING

About the School
Undergraduate
BS Computational Media
Description
Degree Requirements
Intel-Film, Performance, & Media Studies
Intel-Game Studies
Intel-Interaction Design & Experimental Media
Intel-Narrative Studies
Media-Film, Performance, & Media Studies
Media-Game Studies
Media-Interaction Design & Experimental Media
Media-Narrative Studies
People-Film, Performance, & Media Studies
People-Game Studies
People-Interaction Design & Experimental Media
People-Narrative Studies
Graduate
Admissions
Master's Degrees
Computer Science
Human-Computer Interaction
Doctoral Degrees
Computer Science
Human-Centered Computing
Robotics
Cooperative Plan
College of Computing

BACHELOR OF SCIENCE IN COMPUTATIONAL MEDIA INTELLIGENCE-FILM, PERFORMANCE, & MEDIA STUDIES

REQUIREMENT	REQ HRS	COURSE(S)	NOTES
Wellness	2	HPS 1040 or APPH 1040 or APPH 1050	
Core A - Essential Skills	3	ENGL 1101	
	3	ENGL 1102	
	4	MATH 1501	
Core B - Institutional Options	3	CS 1301	c
Core C - Humanities	3	Any HUM	
	3	Any LCC HUM	
Core D - Science, Math, & Technology	8	Lab Science	
	4	MATH 1502	
Core E - Social Sciences	3	HIST 2111 or HIST 2112 or INTA 1200 or POL 1101 or PUBP 3000	
	3	PSYC 1101	
	6	Any SS	
Core F - Courses Related to Major	3	CS 1331	c
	3	CS 1332	c
	3	CS 2050	c
	3	CS 2340	c
	3	LCC 2700	c
	4	MATH 2605	
Major Requirement	4	CS 2110	c
	3	CS 4001	
Capstone Requirement	3	CS 4912	c
Intelligence Requirements	3	CS 3510	c
	3	CS 3600	c
	3	CS 3240 or CS 4510	c
	3	CS 3630 or CS 3790 or PSYC 3040	c
	6	CS 4495 or CS 4635 or CS 4641 or CS 4731	c
Film, Performance, & Media Studies Requirements	3	LCC 2400 or LCC 2500 or LCC 2600	c
	12	LCC 3206 or LCC 3252 or LCC 3254 or LCC 3256 or LCC 3257 or LCC 3258 or LCC 3259 or LCC 3314 or LCC 3352 or LCC 3362	c
	12	CM or Media Courses	a, c
Free Electives	3	Free Electives	
TOTAL:	122		

Pass Fail **is allowed for courses in core areas C, D, E and Free.**

NOTES

a = CM or LCC media courses include 2700-, 3700-, and 4700-level courses, as well as 3250-level courses, and LCC 2400, 2500, 3206, 3314, 3354, 3362, 3406, and 3853

c = C-minimum required

SCHOOL OF INTERACTIVE COMPUTING

About the School
Undergraduate
BS Computational Media
Description
Degree Requirements
Intel-Film, Performance, & Media Studies
Intel-Game Studies
Intel-Interaction Design & Experimental Media
Intel-Narrative Studies
Media-Film, Performance, & Media Studies
Media-Game Studies
Media-Interaction Design & Experimental Media
Media-Narrative Studies
People-Film, Performance, & Media Studies
People-Game Studies
People-Interaction Design & Experimental Media
People-Narrative Studies
Graduate
Admissions
Master's Degrees
Computer Science
Human-Computer Interaction
Doctoral Degrees
Computer Science
Human-Centered Computing
Robotics
Cooperative Plan
College of Computing

BACHELOR OF SCIENCE IN COMPUTATIONAL MEDIA INTELLIGENCE-GAME STUDIES

REQUIREMENT	REQ HRS	COURSE(S)	NOTES
Wellness	2	HPS 1040 or APPH 1040 or APPH 1050	
Core A - Essential Skills	3	ENGL 1101	
	3	ENGL 1102	
	4	MATH 1501	
Core B - Institutional Options	3	CS 1301	c
Core C - Humanities	3	Any HUM	
	3	Any LCC HUM	
Core D - Science, Math, & Technology	8	Lab Science	
	4	MATH 1502	
Core E - Social Sciences	3	HIST 2111 or HIST 2112 or INTA 1200 or POL 1101 or PUBP 3000	
	3	PSYC 1101	
	6	Any SS	
Core F - Courses Related to Major	3	CS 1331	c
	3	CS 1332	c
	3	CS 2050	c
	3	CS 2340	c
	3	LCC 2700	c
	4	MATH 2605	
Major Requirement	4	CS 2110	c
	3	CS 4001	
Capstone Requirement	3	CS 4912	c
Intelligence Requirements	3	CS 3510	c
	3	CS 3600	c
	3	CS 3240 or CS 4510	c
	3	CS 3630 or CS 3790 or PSYC 3040	c
	6	CS 4495 or CS 4635 or CS 4641 or CS 4731	c
Game Studies Requirements	9	LCC 4720 or LCC 4725 or LCC 4731 or LCC 4732	c
	18	CM or Media Courses	a, c
Free Electives	3	Free Electives	
TOTAL:	122		

Pass Fail **is allowed for courses in core areas C, D, E and Free.**

NOTES

a = CM or LCC media courses include 2700-, 3700-, and 4700-level courses, as well as 3250-level courses, and LCC 2400, 2500, 3206, 3314, 3354, 3362, 3406, and 3853

c = C-minimum required

BACHELOR OF SCIENCE IN COMPUTATIONAL MEDIA INTELLIGENCE-INTERACTION DESIGN & EXPERIMENTAL MEDIA

REQUIREMENT	REQ HRS	COURSE(S)	NOTES
Wellness	2	HPS 1040 or APPH 1040 or APPH 1050	
Core A - Essential Skills	3	ENGL 1101	
	3	ENGL 1102	
	4	MATH 1501	
Core B - Institutional Options	3	CS 1301	c
Core C - Humanities	3	Any HUM	
	3	Any LCC HUM	
Core D - Science, Math, & Technology	8	Lab Science	
	4	MATH 1502	
Core E - Social Sciences	3	HIST 2111 or HIST 2112 or INTA 1200 or POL 1101 or PUBP 3000	
	3	PSYC 1101	
	6	Any SS	
Core F - Courses Related to Major	3	CS 1331	c
	3	CS 1332	c
	3	CS 2050	c
	3	CS 2340	c
	3	LCC 2700	c
	4	MATH 2605	
Major Requirement	4	CS 2110	c
	3	CS 4001	
Capstone Requirement	3	CS 4912	c
Intelligence Requirements	3	CS 3510	c
	3	CS 3600	c
	3	CS 3240 or CS 4510	c
	3	CS 3630 or CS 3790 or PSYC 3040	c
	6	CS 4495 or CS 4635 or CS 4641 or CS 4731	c
Interaction Design & Experimental Media Requirements	3	LCC 2720	c
	3	LCC 3710 or LCC 4730	c
	9	LCC 2730 or LCC 3206 or LCC 3406 or LCC 3705 or LCC 3710 or LCC 4730	c
	12	CM or Media Courses	a, c
Free Electives	3	Free Electives	
TOTAL:	122		

Pass Fail **is allowed for courses in core areas C, D, E and Free.**

NOTES

a = CM or LCC media courses include 2700-, 3700-, and 4700-level courses, as well as 3250-level courses, and LCC 2400, 2500, 3206, 3314, 3354, 3362, 3406, and 3853

c = C-minimum required

BACHELOR OF SCIENCE IN COMPUTATIONAL MEDIA INTELLIGENCE-NARRATIVE STUDIES

REQUIREMENT	REQ HRS	COURSE(S)	NOTES
Wellness	2	HPS 1040 or APPH 1040 or APPH 1050	
Core A - Essential Skills	3	ENGL 1101	
	3	ENGL 1102	
	4	MATH 1501	
Core B - Institutional Options	3	CS 1301	c
Core C - Humanities	3	Any HUM	
	3	Any LCC HUM	
Core D - Science, Math, & Technology	8	Lab Science	
	4	MATH 1502	
Core E - Social Sciences	3	HIST 2111 or HIST 2112 or INTA 1200 or POL 1101 or PUBP 3000	
	3	PSYC 1101	
	6	Any SS	
Core F - Courses Related to Major	3	CS 1331	c
	3	CS 1332	c
	3	CS 2050	c
	3	CS 2340	c
	3	LCC 2700	c
	4	MATH 2605	
Major Requirement	4	CS 2110	c
	3	CS 4001	
Capstone Requirement	3	CS 4912	c
Intelligence Requirements	3	CS 3510	c
	3	CS 3600	c
	3	CS 3240 or CS 4510	c
	3	CS 3630 or CS 3790 or PSYC 3040	c
	6	CS 4495 or CS 4635 or CS 4641 or CS 4731	c
Narrative Studies Requirements	3	LCC 3202	c
	3	LCC 4720 or LCC 4732	c
	6	LCC 2730 or LCC 3206 or LCC 3710	c
	15	CM or LCC Literary Courses	a, c
Free Electives	3	Free Electives	
TOTAL:	122		

Pass Fail **is allowed for courses in core areas C, D, E and Free.**

NOTES

a = CM or LCC literary courses include 2700-, 3700-, and 4700-level courses, as well as 3200- and 3500-level courses and LCC 2823, 3823, and 3853

c = C-minimum required

SCHOOL OF INTERACTIVE COMPUTING

About the School
Undergraduate
BS Computational Media
Description
Degree Requirements
Intel-Film, Performance, & Media Studies
Intel-Game Studies
Intel-Interaction Design & Experimental Media
Intel-Narrative Studies
Media-Film, Performance, & Media Studies
Media-Game Studies
Media-Interaction Design & Experimental Media
Media-Narrative Studies
People-Film, Performance, & Media Studies
People-Game Studies
People-Interaction Design & Experimental Media
People-Narrative Studies
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Human-Computer Interaction
Doctoral Degrees
Computer Science
Human-Centered Computing
Robotics
Cooperative Plan
College of Computing

BACHELOR OF SCIENCE IN COMPUTATIONAL MEDIA MEDIA-FILM, PERFORMANCE, & MEDIA STUDIES

REQUIREMENT	REQ HRS	COURSE(S)	NOTES
Wellness	2	HPS 1040 or APPH 1040 or APPH 1050	
Core A - Essential Skills	3	ENGL 1101	
	3	ENGL 1102	
	4	MATH 1501	
Core B - Institutional Options	3	CS 1301	c
Core C - Humanities	3	Any HUM	
	3	Any LCC HUM	
Core D - Science, Math, & Technology	8	Lab Science	
	4	MATH 1502	
Core E - Social Sciences	3	HIST 2111 or HIST 2112 or INTA 1200 or POL 1101 or PUBP 3000	
	9	Any SS	
Core F - Courses Related to Major	3	CS 1331	c
	3	CS 1332	c
	3	CS 2050	c
	3	CS 2340	c
	3	LCC 2700	c
	4	MATH 2605	
Major Requirement	4	CS 2261	c
	3	CS 4001	
Capstone Requirement	3	CS 4912	c
Media Requirements	3	CS 3451	c
	6	CS 4455 or CS 4460 or CS 4464 or CS 4475 or CS 4480 or CS 4496 or CS 4590	c
Film, Performance, & Media Studies Requirements	3	LCC 2400 or LCC 2500 or LCC 2600	c
	12	LCC 3206 or LCC 3252 or LCC 3254 or LCC 3256 or LCC 3257 or LCC 3258 or LCC 3259 or LCC 3314 or LCC 3352 or LCC 3362	c
	12	CM or Media Courses	a, c
Free Electives	12	Free Electives	
TOTAL:	122		

Pass Fail **is allowed for courses in core areas C, D, E and Free.**

NOTES

a = CM or LCC media courses include 2700-, 3700-, and 4700-level courses, as well as 3250-level courses, and LCC 2400, 2500, 3206, 3314, 3354, 3362, 3406, and 3853.

c = C-minimum required

BACHELOR OF SCIENCE IN COMPUTATIONAL MEDIA MEDIA-GAME STUDIES

REQUIREMENT	REQ HRS	COURSE(S)	NOTES
Wellness	2	HPS 1040 or APPH 1040 or APPH 1050	
Core A - Essential Skills	3	ENGL 1101	
	3	ENGL 1102	
	4	MATH 1501	
Core B - Institutional Options	3	CS 1301	c
Core C - Humanities	3	Any HUM	
	3	Any LCC HUM	
Core D - Science, Math, & Technology	8	Lab Science	
	4	MATH 1502	
Core E - Social Sciences	3	HIST 2111 or HIST 2112 or INTA 1200 or POL 1101 or PUBP 3000	
	9	Any SS	
Core F - Courses Related to Major	3	CS 1331	c
	3	CS 1332	c
	3	CS 2050	c
	3	CS 2340	c
	3	LCC 2700	c
	4	MATH 2605	
Major Requirement	4	CS 2261	c
	3	CS 4001	
Capstone Requirement	3	CS 4912	c
Media Requirements	3	CS 3451	c
	6	CS 4455 or CS 4460 or CS 4464 or CS 4475 or CS 4480 or CS 4496 or CS 4590	c
Game Studies Requirements	9	LCC 4720 or LCC 4725 or LCC 4731 or LCC 4732	c
	18	CM or Media Courses	a, c
Free Electives	12	Free Electives	
TOTAL:	122		

Pass Fail **is allowed for courses in core areas C, D, E and Free.**

NOTES

a = CM or LCC media courses include 2700-, 3700-, and 4700-level courses, as well as 3250-level courses, and LCC 2400, 2500, 3206, 3314, 3354, 3362, 3406, and 3853.

c = C-minimum required

BACHELOR OF SCIENCE IN COMPUTATIONAL MEDIA MEDIA-INTERACTION DESIGN & EXPERIMENTAL MEDIA

REQUIREMENT	REQ HRS	COURSE(S)	NOTES
Wellness	2	HPS 1040 or APPH 1040 or APPH 1050	
Core A - Essential Skills	3	ENGL 1101	
	3	ENGL 1102	
	4	MATH 1501	
Core B - Institutional Options	3	CS 1301	c
Core C - Humanities	3	Any HUM	
	3	Any LCC HUM	
Core D - Science, Math, & Technology	8	Lab Science	
	4	MATH 1502	
Core E - Social Sciences	3	HIST 2111 or HIST 2112 or INTA 1200 or POL 1101 or PUBP 3000	
	9	Any SS	
Core F - Courses Related to Major	3	CS 1331	c
	3	CS 1332	c
	3	CS 2050	c
	3	CS 2340	c
	3	LCC 2700	c
	4	MATH 2605	
Major Requirement	4	CS 2261	c
	3	CS 4001	
Capstone Requirement	3	CS 4912	c
Media Requirements	3	CS 3451	c
	6	CS 4455 or CS 4460 or CS 4464 or CS 4475 or CS 4480 or CS 4496 or CS 4590	c
Interaction Design & Experimental Media Requirements	3	LCC 2720	c
	3	LCC 3710 or LCC 4730	c
	9	LCC 2730 or LCC 3206 or LCC 3406 or LCC 3705 or LCC 3710 or LCC 4730	c
	12	CM or Media Courses	a, c
Free Electives	12	Free Electives	
TOTAL:	122		

Pass Fail **is allowed for courses in core areas C, D, E and Free.**

NOTES

a = CM or LCC media courses include 2700-, 3700-, and 4700-level courses, as well as 3250-level courses, and LCC 2400, 2500, 3206, 3314, 3354, 3362, 3406, and 3853.

c = C-minimum required

BACHELOR OF SCIENCE IN COMPUTATIONAL MEDIA MEDIA-NARRATIVE STUDIES

REQUIREMENT	REQ HRS	COURSE(S)	NOTES
Wellness	2	HPS 1040 or APPH 1040 or APPH 1050	
Core A - Essential Skills	3	ENGL 1101	
	3	ENGL 1102	
	4	MATH 1501	
Core B - Institutional Options	3	CS 1301	c
Core C - Humanities	3	Any HUM	
	3	Any LCC HUM	
Core D - Science, Math, & Technology	8	Lab Science	
	4	MATH 1502	
Core E - Social Sciences	3	HIST 2111 or HIST 2112 or INTA 1200 or POL 1101 or PUBP 3000	
	9	Any SS	
Core F - Courses Related to Major	3	CS 1331	c
	3	CS 1332	c
	3	CS 2050	c
	3	CS 2340	c
	3	LCC 2700	c
	4	MATH 2605	
Major Requirement	4	CS 2261	c
	3	CS 4001	
Capstone Requirement	3	CS 4912	c
Media Requirements	3	CS 3451	c
	6	CS 4455 or CS 4460 or CS 4464 or CS 4475 or CS 4480 or CS 4496 or CS 4590	c
Narrative Studies Requirements	3	LCC 3202	c
	3	LCC 4720 or LCC 4732	c
	6	LCC 2730 or LCC 3206 or LCC 3710	c
	15	CM or LCC Literary Courses	a, c
Free Electives	12	Free Electives	
TOTAL:	122		

Pass Fail **is allowed for courses in core areas C, D, E and Free.**

NOTES

a = CM or LCC literary courses include 2700-, 3700-, and 4700-level courses, as well as 3200- and 3500-level courses and LCC 2823, 3823, and 3853

c = C-minimum required

BACHELOR OF SCIENCE IN COMPUTATIONAL MEDIA PEOPLE-FILM, PERFORMANCE, & MEDIA STUDIES

REQUIREMENT	REQ HRS	COURSE(S)	NOTES
Wellness	2	HPS 1040 or APPH 1040 or APPH 1050	
Core A - Essential Skills	3	ENGL 1101	
	3	ENGL 1102	
	4	MATH 1501	
Core B - Institutional Options	3	CS 1301	c
Core C - Humanities	3	Any HUM	
	3	Any LCC HUM	
Core D - Science, Math, & Technology	8	Lab Science	
	4	MATH 1502	
Core E - Social Sciences	3	HIST 2111 or HIST 2112 or INTA 1200 or POL 1101 or PUBP 3000	
	3	PSYC 1101	
	6	Any SS	
Core F - Courses Related to Major	3	CS 1331	c
	3	CS 1332	c
	3	CS 2050	c
	3	CS 2340	c
	3	LCC 2700	c
	4	MATH 2605	
Major Requirement	4	CS 2261	c
	3	CS 4001	
Capstone Requirement	3	CS 4912	c
People Requirements	4	PSYC 2015	c
	3	PSYC 2210 or PSYC 2760 or PSYC 3040	c
	6	CS 3750 or CS 3790 or CS 4660	c
	3	CS 4460 or CS 4470 or CS 4605 or CS 4625	c
Film, Performance, & Media Studies Requirements	3	LCC 2400 or LCC 2500 or LCC 2600	c
	12	LCC 3206 or LCC 3252 or LCC 3254 or LCC 3256 or LCC 3257 or LCC 3258 or LCC 3259 or LCC 3314 or LCC 3352 or LCC 3362	c
	12	CM or Media Courses	a, c
Free Electives	5	Free Electives	
TOTAL:	122		

Pass Fail **is allowed for courses in core areas C, D, E and Free.**

NOTES

a = CM or LCC media courses include 2700-, 3700-, and 4700-level courses, as well as 3250-level courses, and LCC 2400, 2500, 3206, 3314, 3354, 3362, 3406, and 3853

c = C-minimum required

BACHELOR OF SCIENCE IN COMPUTATIONAL MEDIA PEOPLE-GAME STUDIES

REQUIREMENT	REQ HRS	COURSE(S)	NOTES
Wellness	2	HPS 1040 or APPH 1040 or APPH 1050	
Core A - Essential Skills	3	ENGL 1101	
	3	ENGL 1102	
	4	MATH 1501	
Core B - Institutional Options	3	CS 1301	c
Core C - Humanities	3	Any HUM	
	3	Any LCC HUM	
Core D - Science, Math, & Technology	8	Lab Science	
	4	MATH 1502	
Core E - Social Sciences	3	HIST 2111 or HIST 2112 or INTA 1200 or POL 1101 or PUBP 3000	
	3	PSYC 1101	
	6	Any SS	
Core F - Courses Related to Major	3	CS 1331	c
	3	CS 1332	c
	3	CS 2050	c
	3	CS 2340	c
	3	LCC 2700	c
	4	MATH 2605	
Major Requirement	4	CS 2261	c
	3	CS 4001	
Capstone Requirement	3	CS 4912	c
People Requirements	4	PSYC 2015	c
	3	PSYC 2210 or PSYC 2760 or PSYC 3040	c
	6	CS 3750 or CS 3790 or CS 4660	c
	3	CS 4460 or CS 4470 or CS 4605 or CS 4625	c
Game Studies Requirements	9	LCC 4720 or LCC 4725 or LCC 4731 or LCC 4732	c
	18	CM or Media Courses	a, c
Free Electives	5	Free Electives	
TOTAL:	122		

Pass Fail **is allowed for courses in core areas C, D, E and Free.**

NOTES

a = CM or LCC media courses include 2700-, 3700-, and 4700-level courses, as well as 3250-level courses, and LCC 2400, 2500, 3206, 3314, 3354, 3362, 3406, and 3853

c = C-minimum required

BACHELOR OF SCIENCE IN COMPUTATIONAL MEDIA PEOPLE-INTERACTION DESIGN & EXPERIMENTAL MEDIA

REQUIREMENT	REQ HRS	COURSE(S)	NOTES
Wellness	2	HPS 1040 or APPH 1040 or APPH 1050	
Core A - Essential Skills	3	ENGL 1101	
	3	ENGL 1102	
	4	MATH 1501	
Core B - Institutional Options	3	CS 1301	c
Core C - Humanities	3	Any HUM	
	3	Any LCC HUM	
Core D - Science, Math, & Technology	8	Lab Science	
	4	MATH 1502	
Core E - Social Sciences	3	HIST 2111 or HIST 2112 or INTA 1200 or POL 1101 or PUBP 3000	
	3	PSYC 1101	
	6	Any SS	
Core F - Courses Related to Major	3	CS 1331	c
	3	CS 1332	c
	3	CS 2050	c
	3	CS 2340	c
	3	LCC 2700	c
	4	MATH 2605	
Major Requirement	4	CS 2261	c
	3	CS 4001	
Capstone Requirement	3	CS 4912	c
People Requirements	4	PSYC 2015	c
	3	PSYC 2210 or PSYC 2760 or PSYC 3040	c
	6	CS 3750 or CS 3790 or CS 4660	c
	3	CS 4460 or CS 4470 or CS 4605 or CS 4625	c
Interaction Design & Experimental Media Requirements	3	LCC 2720	c
	3	LCC 3710 or LCC 4730	c
	9	LCC 2730 or LCC 3206 or LCC 3406 or LCC 3705 or LCC 3710 or LCC 4730	c
	12	CM or Media Courses	a, c
Free Electives	5	Free Electives	
TOTAL:	122		

Pass Fail **is allowed for courses in core areas C, D, E and Free.**

NOTES

a = CM or LCC media courses include 2700-, 3700-, and 4700-level courses, as well as 3250-level courses, and LCC 2400, 2500, 3206, 3314, 3354, 3362, 3406, and 3853

c = C-minimum required

BACHELOR OF SCIENCE IN COMPUTATIONAL MEDIA PEOPLE-NARRATIVE STUDIES

REQUIREMENT	REQ HRS	COURSE(S)	NOTES
Wellness	2	HPS 1040 or APPH 1040 or APPH 1050	
Core A - Essential Skills	3	ENGL 1101	
	3	ENGL 1102	
	4	MATH 1501	
Core B - Institutional Options	3	CS 1301	c
Core C - Humanities	3	Any HUM	
	3	Any LCC HUM	
Core D - Science, Math, & Technology	8	Lab Science	
	4	MATH 1502	
Core E - Social Sciences	3	HIST 2111 or HIST 2112 or INTA 1200 or POL 1101 or PUBP 3000	
	3	PSYC 1101	
	6	Any SS	
Core F - Courses Related to Major	3	CS 1331	c
	3	CS 1332	c
	3	CS 2050	c
	3	CS 2340	c
	3	LCC 2700	c
	4	MATH 2605	
Major Requirement	4	CS 2261	c
	3	CS 4001	
Capstone Requirement	3	CS 4912	c
People Requirements	4	PSYC 2015	c
	3	PSYC 2210 or PSYC 2760 or PSYC 3040	c
	6	CS 3750 or CS 3790 or CS 4660	c
	3	CS 4460 or CS 4470 or CS 4605 or CS 4625	c
Narrative Studies Requirements	3	LCC 3202	c
	3	LCC 4720 or LCC 4732	c
	6	LCC 2730 or LCC 3206 or LCC 3710	c
	15	CM or LCC Literary Courses	a, c
Free Electives	5	Free Electives	
TOTAL:	122		

Pass Fail **is allowed for courses in core areas C, D, E and Free.**

NOTES

a = CM or LCC literary courses include 2700-, 3700-, and 4700-level courses, as well as 3200- and 3500-level courses and LCC 2823, 3823, and 3853

c = C-minimum required

MASTER OF SCIENCE IN COMPUTER SCIENCE

The program for the Master of Science in Computer Science (MS CS) prepares students for more highly productive careers in industry. Graduates receive the MS CS for completing one of three options in the program as described in this section. Students may apply to the program if they possess a bachelor's degree in computer science from an accredited institution. Students without a bachelor's degree in computer science are encouraged to apply as well, with the understanding that they will be required to complete remedial coursework appropriate to their background in addition to the requirements of the MS CS degree. All applicants are evaluated according to their prior academic record, scores on the Graduate Record Examination, a personal statement, and letters of recommendation. Applicants are selected for fall semester admission only. The application deadline is February 1. However, all applicants are encouraged to apply as early as possible because the selection process may begin well before the deadline.

The College's master's degree requirements supplement the Institute's master's requirements listed in this catalog. Students must achieve a grade-point average of at least 3.0 to graduate, and no course grades below C will count toward graduation. Undergraduate courses required for the BS CS degree may not be used toward the MS CS degree. In addition, no graduate credit will be given for 3000 level courses or lower-level courses. Students must take all master's degree coursework on a letter-grade basis. The maximum total credit hours of Special Problems that may be applied toward the MS CS degree is three. Students may choose from one of three options in pursuing the MS CS degree, including:

Course option: This option requires the student to complete 36 hours of coursework.

Total Course Credit Hours 36
Minimum Credit Hours in CS 24
Minimum Credit Hours(6000/8000 Level) in CS 18
Minimum Credit Hours (6000/8000 Level) 24

Project option: This option requires the student to complete 27 hours of coursework and a 9 hour project. The project requires approval by a faculty advisor and the MS program coordinator in the semester prior to its inception.

Total Credit Hours 36
MS Project Hours 9
Total Course Credit Hours 27
Minimum Credit Hours in CS 24*
Minimum Credit Hours (6000/8000 Level) in CS 18*

Thesis option: This option requires the student to complete twenty-four hours of coursework and a 12 hour thesis. The thesis process is defined elsewhere in this catalog.

Total Credit Hours 36
MS Thesis Hours 12 hour
Total Course Credit Hours 24

Minimum Credit Hours in CS 24*
Minimum Credit Hours (6000/8000 Level) in CS 18*

* May not include MS project or thesis hours.

All three of these options require students to complete 3 hours of courses in each of the core areas of Systems and Theory at the graduate-level. In addition, students entering the program must demonstrate a core competency in computing equivalent to undergraduate-level courses in the following areas: systems, design and analysis of algorithms, formal languages and automata theory, databases, networking and communications, computer architecture, and human-computer interaction. This requirement can be satisfied by having taken undergraduate courses as a part of an undergraduate degree, taking remedial courses in the MS CS program, or by examination. Beyond the core requirements, students may specialize in areas of their choice. A specialization is achieved by completing at least two graduate-level courses in the selected area. Every student must complete at least one specialization as a part of his or her degree program. The current eleven specialization areas are: computer architecture, database systems, graphics and visualization, human-computer interaction, information security, intelligent systems, networking and communications, programming languages and compilers, software methodology and engineering, systems, and theoretical computer science.

A student who is enrolled in another graduate program of the Institute may pursue an MS CS while that student is also pursuing his or her degree in the other major. To be granted permission to pursue the MS CS, a student must submit to the MS program coordinator of the College of Computing the material required for admission to the MS CS program. This includes transcripts, letters of recommendation, and GRE General Test and Computer Science Subject Test scores. If the student is approved by the College to pursue the MS CS, the student will be notified in writing. At no time will a student outside the College be allowed to pursue a concurrent degree without prior permission of the MS program coordinator of the College of Computing.

A student enrolled in the MS degree program in computer science who wishes to be admitted to the PhD program in computer science should apply via the same process as external students. It is expected that such a student will have at least two letters of recommendation from College of Computing faculty.

For more information about the MS CS program, visit www.cc.gatech.edu.

MASTER OF SCIENCE IN HUMAN - COMPUTER INTERACTION

OVERVIEW

The interdisciplinary Master of Science in Human - Computer Interaction (HCI) degree program is a cooperative effort of the School of Interactive Computing; the School of Literature, Communication, and Culture; and the School of Psychology. The program provides students with the practical, interdisciplinary skills and theoretical understanding they will need to become leaders in the design, implementation, and evaluation of the computer interfaces of the future.

COURSE OF STUDY

The HCI master's degree is a four - semester program consisting of a total of thirty-six credit hours. Each student is required to complete a set of four core courses, a set of elective courses based on their academic background and interests, a set of area specialization courses based on the academic unit in which they reside, and a Master's project. The specific courses for each student will be determined by the HCI program coordinator in consultation with the academic unit. The area specialization courses are determined by the academic unit in which the student resides. The areas of specialization are: Computing; Digital Media (DM, through the School of Literature, Communication, and Culture); and Psychology.

Specializations	Fixed Core Credit Hours	Specialization Credit Hours	Elective Credit Hours	Project Credit Hours
Computing	11	9	12	4
Digital Media	11	10	9	6
Psychology	11	11	10	4

CORE COURSES (11 CREDIT HOURS)

CS/PSYC 6750, Human - Computer Interaction (must be taken during the first semester)
PSYC 6023 Psychology Research Methods for HCI (4 credit hours with lab)
PSYC 6031 Engineering Psychology Analysis Techniques (2 credit hours)
CS/LCC/PSYC6753 Human - Computer Interaction – Professional Preparation and Practice (one hour credit Fall of first year and one credit hour Fall of second year)

ELECTIVE COURSES (TWELVE CREDIT HOURS FOR COMPUTING SPECIALIZATION; TEN CREDIT HOURS FOR PSYCHOLOGY SPECIALIZATION; NINE CREDIT HOURS FOR DIGITAL MEDIA SPECIALIZATION)

All specialization courses may also be taken as part of the Elective courses. For the computing and psychology tracks, at least nine credit hours of the Elective must be taken outside your specialization. For the Digital Media specialization, at least six credit hours must be taken outside your specialization. **A maximum of three credit hours of Special Problems in HCI (CS/LCC/PSYC 8903) may count toward the Elective Courses**.

ARCHITECTURE

COA 8823 - ED Special Topics in Architecture and Behavior: Health Environment of the Future
COA 8823 Special Topics: Patient Room of the Future
COA 8843 - ED Special Topics in Design Computing: Design Games

COMPUTER SCIENCE

Software

CS 6300 - Software Development Process
CS 6452 - Prototyping Interactive Systems
CS 6456 - Principles of User Interface Software
CS 7470 - Ubiquitous Computing
CS 8803 - MAS Special Topics: Mobile Apps and Services
CS 8803 - Special Topics: Adaptive Personalized Information Environments Interaction (variable hours)

Design, Evaluation, and Cognitive Modeling

CS 6010 - Principles of Design
CS 6150 - Computing for Good
CS 6451 - Introduction to Human Centered Computing
CS 6455 - User Interface Design and Evaluation
CS 6460 - Educational Technology: Conceptual Foundations
CS 6465 Computational Journalism
CS 6470 - Design of Online Communities
CS 6795 - Introduction to Cognitive Science
CS 7450 - Information Visualization
CS 7460 - Collaborative Computing
CS 7610 - Modeling and Design
CS/PSYC 7790 - Cognitive Modeling
CS 8803 - DG Special Topics: Design Games
CS 8803 - HEF Special Topics: Healthcare Informatics
CS 8803 - HAR Special Topics: Handheld Augmented Reality Game Studio
CS 8803 - HRI Special Topics Human - Robot Interaction
CS 8803 - IBI Special Topics: Introduction to Bio Informatics
CS 8803 - VG Special Topics: Video Game Design
CS 8803 - SOC Social Computing
CS 8903 - Special Problems in Human - Computer Interaction (variable hours)

INTERNATIONAL AFFAIRS

INTA 8803 - Special Topics: Computers, Communications, and International Development

INDUSTRIAL DESIGN

ID 6100 Human Centered Design
ID 6101 Human Centered Design
ID 6200 Graduate Studio II
ID 8900 Healthcare Environment of the Future
ID 8900 Web Design Accessibility
ID 8900 Advanced Sketching
ID 8900 Interactive Product Design for Home Health & Well - Being
ID 8900 Service Design and Organizational Activation
ID 8900 Universal Design: Exploration & Investigation of Real World Applications

INDUSTRIAL AND SYSTEMS ENGINEERING

ISYE 6205 / AE 8803 - Cognitive Engineering
ISYE 6215 - Models in Human - Machine Systems
ISYE 6231 - Design of Human - Integrated Systems
ISYE 6413 - Design and Analysis of Experiments
ISYE 6414 - Regression Analysis
ISYE 6739 - Basic Statistical Methods
ISYE 6772 - Managing the Resources of Technological Firms
ISYE 7210 - Real - Time Interactive Simulations

LITERATURE - COMMUNICATION - AND CULTURE (DIGITAL MEDIA)

LCC 6215 - Issues in Media Studies
LCC 6310 - The Computer as an Expressive Medium

LCC 6311 - Visual Culture and Design
LCC 6312 - Design Technology and Representation
LCC 6313 - Principles of Interactive Design
LCC 6314 - Design of Networked Media
LCC 6315 - Project Production
LCC 6316 - Historical Approaches to Digital Media
LCC 6317 - Interactive Fiction
LCC 6318 - Experimental Media
LCC 6319 - Intellectual Property Policy and Law
LCC 6325 - Game Design and Analysis
LCC 6399 - Discovery and Invention in Digital Media
LCC 6650 - Project Studio
LCC 8000 - Proseminar in Media Theory
LCC 8001 - Pro - Seminar in Digital Media Studies
LCC 8903 - Special Problems in Human - Computer Interaction

MANAGEMENT OF TECHNOLOGY (MOT)
MGT 6056 - Electronic Commerce
MGT 6326 - Collaborative Product Development
MGT 6772 - (K - TSA) Managing Resources of the Technological Firm
MGT 8803 - Software Project Management

MUSIC
MUSI 6001 - Music Perception and Cognition
MUSI 6003 - Music Technology History and Repertoire
MUSI 6104 - Integrating Music in Multimedia
MUSI 6301 - Music Interface Design
MUSI 6303 - Network Music
MUSI 7100 - Music Technology Research Lab

PSYCHOLOGY
PSYC 6011 - Cognitive Psychology (3 credit hours)
PSYC 6012 - Social Psychology (3 credit hours)
PSYC 6014 - Sensation and Perception (3 credit hours)
PSYC 6022 - Psychological Statistics for HCI (4 credit hours including lab - Fall or Spring)
PSYC 6032 - Engineering Psychology Stressors (1 credit hour minicourse - Fall)
PSYC 6033 - Engineering Psychology Cognitive Ergonomics (1 credit hour minicourse - Spring)
PSYC 6034 - Engineering Psychology Displays (1 credit hour minicourse - Spring)
PSYC 6035 - Engineering Psychology Controls &Workspaces (1 credit hour minicourse - Spring)
PSYC 6041 - Topics in Cognitive Aging (3 credit hours)
PSYC 7104 - Psychomotor and Cognitive Skills
PSYC 8040 - Seminar in Engineering Psychology: Assistive Technologies
PSYC 8040 - Seminar in Engineering Psychology: The Psychology of HCI
PSYC 8903 - Special Problems in Human - Computer Interaction

PUBLIC POLICY
PUBP 6111 - Special Topics: The Internet and Public Policy
PUBP 6401 - Science, Technology, and Public Policy

COMPUTING SPECIALIZATION (NINE CREDIT HOURS)

Software (3 credit hours):
CS 6300 - Software Development Process
CS 6452 - Prototyping Interactive Systems
CS 6456 - Principles of User Interface Software
CS 7470 - Ubiquitous Computing
CS 8803 - MAS, Special Topics: Mobile Apps and Services

Design - Evaluation - and Cognitive Modeling (6 credit hours):

CS 6010 - Principles of Design
CS 6150 - Computing for Good
CS 6451 - Introduction to Human - Centered Computing
CS 6455 - User Interface Design and Evaluation
CS 6460 - Educational Technology: Conceptual Foundations
CS 6465 - Computational Journalism
CS 6470 - Design of Online Communities
CS 6470 - Mixed Reality Experience Design
CS 6795 - Introduction to Cognitive Science
CS 7450 - Information Visualization
CS 7460 - Collaborative Computing
CS/PSYC 7790 - Cognitive Modeling
CS 8803 - DG, Special Topics: Design Games
CS 8803 - HEF, Special Topics: Healthcare Informatics
CS 8803 - HAR, Special Topics: Handheld Augmented Reality Game Studio
CS 8803 - HRI, Special Topics Human - Robot Interaction
CS 8803 - IBI, Special Topics: Introduction to Bio Informatics
CS 8803 - VG, Special Topics: Video Game Design
CS 8803 - SOC, Social Computing
CS 8903 - Special Problems (variable hours)

A maximum of 3 hours of CS 8903 may count toward the Computing specialization. The master's degree requirements for students in the College of Computing supplement those of the Institute. Students must achieve a grade-point average of at least 3.0 to graduate - and no course grade below C will count toward graduation.

DIGITAL MEDIA (DM) SPECIALIZATION (TEN CREDIT HOURS)

Required (may be repeated)

LCC 6650 - Project Studio (enrollment by permission of instructor)

One of the following courses - preferably taken in the first year of study:

LCC 6310 - The Computer as an Expressive Medium
LCC 6313 - Principles of Interactive Design
LCC 6399 - Discovery and Invention in Digital Media
LCC 8903 - Special Problems in HCI

Students may fulfill the rest of the required credits hours with any other LCC 6000 or 8000 level course.

A maximum of 3 hours of LCC 8903 may count toward the Digital Media specialization.

PSYCHOLOGY SPECIALIZATION (11 CREDIT HOURS)

Required (8 credit hours):

PSYC 6022 - Psychological Statistics for HCI (4 credit hours including lab - Fall or Spring)
PSYC 6032 - Engineering Psychology Stressors (1 credit hour minicourse - Fall)
PSYC 6033 - Engineering Psychology Cognitive Ergonomics (1 credit hour minicourse - Spring)
PSYC 6034 - Engineering Psychology Displays (1 credit hour minicourse - Spring)
PSYC 6035 - Engineering Psychology Controls &Workspaces (1 credit hour minicourse - Spring)

3 credit hours from the following courses:

PSYC 6011 - Cognitive Psychology (3 credit hours)
PSYC 6012 - Social Psychology (3 credit hours)
PSYC 6014 - Sensation and Perception (3 credit hours)
PSYC 6041 - Topics in Cognitive Aging (3 credit hours)

PROJECT (4 CREDIT HOURS; 6 CREDIT HOURS FOR STUDENTS IN THE DM SPECIALIZATION)

Each student completes this requirement, under the supervision of a faculty member, normally during the last two semesters of their program. Students must submit a project proposal and final report and present their work to the three school faculty coordinators and other MS - HCI students late during the semester of graduation.

CS 6998 - MS, HCI Project (repeatable; variable semester hours), or
LCC 6998 - MS, HCI Project (repeatable; variable semester hours), or
PSYC 6998 - MS, HCI Project (repeatable; variable semester hours)

SEMINAR

The HCI MS professional preparation and practice course aims to prepare students for success in their studies and careers. It includes presentations by leading HCI practitioners concerning career choices and preparation and new developments, visits to corporate HCI labs in the Atlanta area, research presentations, skills tutorials, discussion of potential MS projects and "how to succeed" in graduate school and as a professional.

Students take this seminar in the fall semester of their first and second years of study.

CS 6753 - Human, Computer Interaction, Professional Preparation and Practice (may be repeated for credit once), or
LCC 6753 - Human, Computer Interaction, Professional Preparation and Practice (may be repeated for credit once), or
PSYC 6753 - Human, Computer Interaction, Professional Preparation and Practice (may be repeated for credit once)

DOCTOR OF PHILOSOPHY WITH A MAJOR IN COMPUTER SCIENCE

The Computer Science Doctoral Program begins with research and breadth components. The research component helps students place an early focus on research. Students must complete an "Introduction to Graduate Studies" course (CS 7001) and then take at least three hours of directed research study (CS 8903) under faculty guidance each semester until their qualifying examination. The breadth component is intended to facilitate students' learning about a variety of areas within computing, as well as core computer science areas. Students must take at least twelve courses from the different areas of study within the College. The current twelve areas are computer architecture, database systems, graphics and visualization, human-computer interaction, information security, intelligent systems and robotics, learning sciences and technology, networking and communications, programming languages and compilers, software methodology and engineering, systems (including operating systems, distributed and parallel systems), and theoretical computer science. Students must include courses from the systems and theory areas in those breadth courses.

As students' research progresses, they must select a primary, and possibly secondary, area of focus from the areas listed previously, and then pass a qualifier (comprehensive exam) in that area or areas. The qualifier consists of three parts:

1. A one-day written examination covering the pertinent research area(s)
2. The submission of a high-quality research deliverable, as evidenced by a portfolio consisting of at least an exam committee-reviewed and publishable article, and possibly other work products as approved by the exam committee
3. An oral presentation and examination

After successfully completing the qualifier, a student focuses on research leading toward a dissertation. The topic of the student's research is formalized through a written dissertation proposal followed by an oral presentation. When the student passes his or her proposal, the student is admitted to candidacy and proceeds with dissertation research. This phase is completed with the successful defense and submission of the approved doctoral dissertation. Students are also required to complete a nine-hour minor outside the College.

For more information about the Computer Science PhD program, visit www.cc.gatech.edu.

DOCTOR OF PHILOSOPHY WITH A MAJOR IN HUMAN-CENTERED COMPUTING (HCC)

Human - Centered Computing (HCC) is the interdisciplinary science of designing computational artifacts that better support human endeavors. HCC students examine issues - such as computer-supported collaborative work and learning, human-computer interaction, human-robot interaction, learning sciences and technology, and mobile and ubiquitous computing - that lie at the intersection of human concerns (such as anthropology, cognitive science, human factors, industrial design, media studies, psychology, and sociology) and computing studies (such as artificial intelligence, computational perception, databases, graphics, information security, networks, programming languages, and robotics).

Students must complete a core of the three courses described below. The required courses will help students develop the first two of the four competencies that must be demonstrated; these competency areas are computing concepts and skills, evaluation of HCC systems, written research communication, and oral research communication. In consultation with their advisors, students must also complete at least three elective courses, including at least one outside the area of HCC specialization. Areas of elective study may include, but are not restricted to, artificial intelligence, cognitive science, collaboration, human-computer interaction, information security, learning sciences and technology, software, software engineering, and visualization. Students must also pass a written and oral qualifier (comprehensive examination) and submit and receive approval for a dissertation topic and committee. Students may then be admitted to candidacy.

Students begin to familiarize themselves with HCC concepts and work on HCC projects in their first required course, CS 6451, Introduction to Human-Centered Computing. In the same semester, students who need to develop skills in programming may do so by taking CS 4452, Human-Centered Computing Concepts. This class will prepare students for the second required course, CS 6452, Prototyping Interactive Systems. In their second year, students take the third required course, CS 7455, Issues in Human-Centered Computing, which delves deeply into theoretical, methodological, conceptual, and technical issues.

Concurrently, each student develops a research portfolio under the supervision of a faculty advisor. The submission of a conference- or journal-quality paper, and a conference-style presentation, satisfies the competencies of written and oral research communications.

Students are also required to complete a nine-hour minor outside the College of Computing, in accordance with Institute requirements.

For more information about the HCC program, visit www.cc.gatech.edu.

DOCTOR OF PHILOSOPHY WITH A MAJOR IN ROBOTICS

Students pursuing a PhD in Robotics must take 36 semester hours of core research and elective courses, pass a comprehensive qualifying exam with written and oral components, and successfully complete, document, and defend a piece of original research culminating in a doctoral thesis. Students select a home school, such as ECE, AE, ME, or CS, and apply for admission to the PhD program in robotics through that home school.

COOPERATIVE PROGRAMS

The College of Computing participates in the undergraduate and graduate Cooperative Programs.
See links below for further Information.

BIOENGINEERING PROGRAMS

In response to the increased need for engineers and medical scientists with advanced training in bioengineering, Georgia Tech now offers master's and PhD degrees in bioengineering. The purpose of bioengineering as a research discipline is to develop new and better physical and mathematical concepts and techniques that may be applied to problems in medicine and biology, to the development of new medical technologies, and to the organization and delivery of cost-effective healthcare. Interdisciplinary graduate programs in bioengineering are offered by the College of Computing in conjunction with the Bioengineering Center (in the Office of Interdisciplinary Programs), the College of Engineering, and the College of Sciences. The student's home unit will be the College of Computing, which, upon completion of the student's requirements, will recommend the degree. This interdisciplinary approach has been approved by the faculty in the Schools of Aerospace Engineering, Chemical and Biomolecular Engineering, Electrical and Computer Engineering, Materials Science and Engineering, Mechanical Engineering, and Polymer, Textile and Fiber Engineering, and by the deans of the Colleges of Computing, Engineering, and Sciences.

The program is for computer science or engineering graduates who wish to pursue a degree in bioengineering rather than in a traditional field of computing or engineering, or who have done bioengineering research in other disciplines. In addition, those interested students with non-engineering backgrounds (with degrees in such fields as physics, chemistry, biology, or mathematics) who meet the admission requirements will be admitted to the program. Applications from physicians with undergraduate degrees in engineering or the physical sciences will also be considered. All applications will be processed through the Bioengineering Center.

Additional information is available at www.bme.gatech.edu.

MASTER OF SCIENCE IN BIOENGINEERING

Students who wish to pursue a master's degree in bioengineering may also do so through the College of Computing. The specific requirements differ from those of the computer science master's program, and while the degree is granted from the College, applications for this program are processed through the Bioengineering Center of the Office of Interdisciplinary Programs.

Additional information is available at www.bme.gatech.edu.

MASTER OF SCIENCE IN COMPUTATIONAL SCIENCE AND ENGINEERING

The School of Civil and Environmental Engineering (CEE) participates in the Computational Science and Engineering (CSE) Program. CSE is an interdisciplinary program addressing the body of knowledge, skills, and practices associated with the study of computer-based models of natural phenomena and engineered systems. Students will be required to obtain a breadth of knowledge across a set of core areas in the CSE discipline, depth of knowledge in a specific computational specialization (e.g., numerical computing), and knowledge to apply computational techniques in a domain of application. Students will be expected to integrate principles from mathematics, computer science, and engineering to be able to create significant computational artifacts (e.g., software).

The CSE Master of Science degree program is an interdisciplinary program offered by the College of Computing, the College of Engineering, and the College of Sciences. Interested applicants with a Civil and/or Environmental Engineering background apply for admission in the CSE program through CEE. Once admitted, students follow the CSE program's degree requirements and curriculum.

Students must complete four of the five courses making up the core curriculum: CSE/Math 6643 (Numerical Linear Algebra), CSE 6140 (Computational Science and Engineering Algorithms), CSE 6730 (Modeling and Simulation: Fundamentals & Implementation), CSE/ISYE 6740 (Computational Data Analysis), and CSE 6220 (High Performance Computing). A specialization (CEE) minor is required consisting of twelve hours of coursework relevant to the CSE discipline that includes one applications area; this must include at least six hours of courses that do not carry the CS/CSE course designation. Finally, students must either complete 6 additional hours of approved coursework (course option) or an MS thesis (thesis option) that is defended to the student's thesis committee who is responsible for overseeing the student's research. six hours of thesis credit are required in the thesis option. A program of study must be approved by the CSE Program Director and CEE's Associate Chair for Graduate Programs.

MASTER OF SCIENCE IN COMPUTER SCIENCE

The program for the Master of Science in Computer Science (MS CS) prepares students for more highly productive careers in industry. Graduates receive the MS CS for completing one of three options in the program as described in this section. Students may apply to the program if they possess a bachelor's degree in computer science from an accredited institution. Students without a bachelor's degree in computer science are encouraged to apply as well, with the understanding that they will be required to complete remedial coursework appropriate to their background in addition to the requirements of the MS CS degree. All applicants are evaluated according to their prior academic record, scores on the Graduate Record Examination, a personal statement, and letters of recommendation. Applicants are selected for fall semester admission only. The application deadline is February 1. However, all applicants are encouraged to apply as early as possible because the selection process may begin well before the deadline.

The College's master's degree requirements supplement the Institute's master's requirements listed in this catalog. Students must achieve a grade-point average of at least 3.0 to graduate, and no course grades below C will count toward graduation. Undergraduate courses required for the BS CS degree may not be used toward the MS CS degree. In addition, no graduate credit will be given for 3000 level courses or lower-level courses. Students must take all master's degree coursework on a letter-grade basis. The maximum total credit hours of Special Problems that may be applied toward the MS CS degree is three. Students may choose from one of three options in pursuing the MS CS degree, including:

Course option: This option requires the student to complete 36 hours of coursework.

Total Course Credit Hours 36
Minimum Credit Hours in CS 24
Minimum Credit Hours(6000/8000 Level) in CS 18
Minimum Credit Hours (6000/8000 Level) 24

Project option: This option requires the student to complete 27 hours of coursework and a 9 hour project. The project requires approval by a faculty advisor and the MS program coordinator in the semester prior to its inception.

Total Credit Hours 36
MS Project Hours 9
Total Course Credit Hours 27
Minimum Credit Hours in CS 24*
Minimum Credit Hours (6000/8000 Level) in CS 18*

Thesis option: This option requires the student to complete twenty-four hours of coursework and a 12 hour thesis. The thesis process is defined elsewhere in this catalog.

Total Credit Hours 36
MS Thesis Hours 12 hour
Total Course Credit Hours 24

Minimum Credit Hours in CS 24*
Minimum Credit Hours (6000/8000 Level) in CS 18*

* May not include MS project or thesis hours.

All three of these options require students to complete 3 hours of courses in each of the core areas of Systems and Theory at the graduate-level. In addition, students entering the program must demonstrate a core competency in computing equivalent to undergraduate-level courses in the following areas: systems, design and analysis of algorithms, formal languages and automata theory, databases, networking and communications, computer architecture, and human-computer interaction. This requirement can be satisfied by having taken undergraduate courses as a part of an undergraduate degree, taking remedial courses in the MS CS program, or by examination. Beyond the core requirements, students may specialize in areas of their choice. A specialization is achieved by completing at least two graduate-level courses in the selected area. Every student must complete at least one specialization as a part of his or her degree program. The current eleven specialization areas are: computer architecture, database systems, graphics and visualization, human-computer interaction, information security, intelligent systems, networking and communications, programming languages and compilers, software methodology and engineering, systems, and theoretical computer science.

A student who is enrolled in another graduate program of the Institute may pursue an MS CS while that student is also pursuing his or her degree in the other major. To be granted permission to pursue the MS CS, a student must submit to the MS program coordinator of the College of Computing the material required for admission to the MS CS program. This includes transcripts, letters of recommendation, and GRE General Test and Computer Science Subject Test scores. If the student is approved by the College to pursue the MS CS, the student will be notified in writing. At no time will a student outside the College be allowed to pursue a concurrent degree without prior permission of the MS program coordinator of the College of Computing.

A student enrolled in the MS degree program in computer science who wishes to be admitted to the PhD program in computer science should apply via the same process as external students. It is expected that such a student will have at least two letters of recommendation from College of Computing faculty.

For more information about the MS CS program, visit www.cc.gatech.edu.

DOCTOR OF PHILOSOPHY WITH A MAJOR IN BIOENGINEERING

The Bioengineering PhD degree requires a thesis based on independent study of a bioengineering research topic under the guidance of a bioengineering program faculty member.

The Georgia Tech Interdisciplinary Bioengineering (BioE) Graduate Program was established in 1992. Over 170 students have graduated from the program in a broad spectrum of research by our ninety participating faculty from the Colleges of Engineering, Computing, Sciences, and Architecture as well as Emory University School of Medicine.

The BioE Program is interdisciplinary in that it is not a standalone academic unit like most departments or schools at Georgia Tech. Rather, eight different academic units from the Colleges of Engineering and Computing make up the program.

However, the BioE Program provides the degree requirements for students accepted into the program. This approach allows a flexible, integrative, and individualized degree program that enforces depth and breadth in coursework, a solid bioengineering research experience, and yet is reflective of the disciplinary background of the student's home school. Importantly, the BioE Program provides research opportunities for students with any participating program faculty, allowing tremendous diversity and flexibility for research topics and advisors.

See www.bioengineering.gatech.edu for more information.

DOCTOR OF PHILOSOPHY WITH A MAJOR IN BIOINFORMATICS

The mission of the Georgia Tech Bioinformatics PhD Program is to educate and prepare graduate students to reach the forefront of leadership in the field of bioinformatics and computational biology; and to integrate research and education on the use of information technologies in biology and medicine. Thus, the program leading to a PhD in Bioinformatics is an interdisciplinary program spanning a variety of academic departments at Georgia Tech.

Bioinformatics is a multidisciplinary field in which physical sciences, life sciences, computer science, and engineering are merged to solve both fundamental and applied problems in biology and medicine. The outcomes of bioinformatics and computational biology particularly include

1. new and global perspectives into the organization and function of biological systems (fundamental biology);
2. new and novel targets for drug discovery and development; and
3. genetic/proteomic profiling for pharmaco-genomics or personalized medicine.

Thus, bioinformatics is emerging as a strategic discipline at the frontier between biology, biochemistry, biomedicine, bioengineering, computer science, and mathematics, impacting fundamental science, medicine, biotechnology, and society.

With its broad mission statement, this program at Georgia Tech has the following focus / strength areas:

1. Development of software tools, algorithms, and databases for gene identification, protein structural prediction, clustering analysis, and data mining.
2. Application of bioinformatics to disease diagnosis, classification, prognosis, and treatment.
3. Application of bioinformatics to fundamental biology and systems biology.

There is an increasing demand for scientists with advanced training in bioinformatics. Professionals in this area should have a thorough knowledge of molecular biology, mathematics, and statistics as well as computer science and engineering.

In 1997 the College of Sciences at Georgia Tech proposed and established a professional Master of Science in Bioinformatics degree program, the first of its kind in the United States. This interdisciplinary program consists of a unique combination of courses. Students are taught with equal strength in several scientific disciplines and are prepared for further successful work in industry or academia. At present there are more than forty students in the program, with twelve graduates already employed in academia and industry, particularly at SmithKlineGlaxo, Navartis, Johnson & Johnson, Informax, Los Alamos National Lab, Vanderbilt University, and the U.S. Centers for Disease Control and Prevention.

In 1993, the School of Biology at Georgia Tech implemented a PhD in Biology with a concentration in Bioinformatics. This option will stay in place for those students who would like to pursue a PhD in Biology.

The group of prospective applicants for the PhD program is expected to consist of students with an MS in Bioinformatics as well as holders of BS/BA and higher degrees in different disciplines. The applicants with life science degrees are usually looking for an interdisciplinary education with a focus on mathematics, physics, and computer science. This demand fits perfectly with what Georgia Tech can offer: high- quality education in mathematics, physics, and computing along with advanced courses in biology and biochemistry.

DOCTOR OF PHILOSOPHY WITH A MAJOR IN COMPUTATIONAL SCIENCE AND ENGINEERING

The School of Civil and Environmental Engineering (CEE) participates in the Computational Science and Engineering (CSE) Program.Â CSE is an interdisciplinary program addressing the body of knowledge, skills, and practices associated with the study of computer-based models of natural phenomena and engineered systems. Students will be required to obtain a breadth of knowledge across a set of core areas, depth of knowledge in a specific computational specialization (e.g., numerical computing), and knowledge to apply computational techniques in a domain of application. Students will be expected to integrate principles from mathematics, computing, science, and engineering to be able to create significant computational artifacts (e.g., software), and to complete independent research that advances the state-of-the-art in the CSE discipline.

The CSE Ph.D. degree program is an interdisciplinary program offered by the College of Computing, the College of Engineering, and the College of Sciences. Interested applicants with a civil and/or environmental engineering background apply for admission in the CSE program through CEE. Once admitted, students follow the CSE program's degree requirements and curriculum.

Required coursework includes CSE 6001 (Introduction to Computational Science and Engineering), CSE core courses (12 hours), a computation specialization (nine hours), and an application specialization (nine hours). To complete the core course requirement, students must complete four of the five courses making up the core curriculum: CSE/Math 6643 (Numerical Linear Algebra), CSE 6140 (Computational Science and Engineering Algorithms), CSE 6730 (Modeling and Simulation: Fundamentals & Implementation), CSE/ISYE 6740 (Computational Data Analysis), and CSE 6220 (High Performance Computing). The computational specialization includes at least nine hours of courses that increase the student's depth of understanding of computational methods in a specific area, as approved by the student's academic advisor. These courses must go beyond "using computers" to deepen understanding of computational methods, preferably in the context of some application domain. The application specialization includes at least nine hours of courses that increase depth of understanding in an application field; these need not be computation-focused courses. At least nine hours of Ph.D. courses must be courses that do not carry the CS/CSE course designation. These hours may be taken in CEE. Hours taken as part of the computation and/or application specialization can be used to fulfill this requirement.

A qualifying examination must be attempted by the end of the second year of enrollment in the CSE doctoral program (normally taken after the student completes CSE core coursework). A qualifying examination committee shall be appointed by the CSE program coordinator for each student and is responsible for making an overall recommendation concerning the outcome of the qualifying examination.

Students are required to complete a doctoral thesis reporting the results of independent research that advances the state-of-the-art in the computational science and engineering discipline. The thesis must be successfully defended to the student's thesis committee.

SCHOOL OF COMPUTATIONAL SCIENCE & ENGINEERING

About the School
Graduate
Bioengineering Programs
Master's Degrees
Bioengineering
Computational Science & Eng
Computer Science
Doctoral Degrees
Bioengineering
Bioinformatics
Computational Science & Eng
Computer Science
Cooperative Plan
College of Computing

DOCTOR OF PHILOSOPHY WITH A MAJOR IN COMPUTER SCIENCE

The Computer Science Doctoral Program begins with research and breadth components. The research component helps students place an early focus on research. Students must complete an "Introduction to Graduate Studies" course (CS 7001) and then take at least three hours of directed research study (CS 8903) under faculty guidance each semester until their qualifying examination. The breadth component is intended to facilitate students' learning about a variety of areas within computing, as well as core computer science areas. Students must take at least twelve courses from the different areas of study within the College. The current twelve areas are computer architecture, database systems, graphics and visualization, human-computer interaction, information security, intelligent systems and robotics, learning sciences and technology, networking and communications, programming languages and compilers, software methodology and engineering, systems (including operating systems, distributed and parallel systems), and theoretical computer science. Students must include courses from the systems and theory areas in those breadth courses.

As students' research progresses, they must select a primary, and possibly secondary, area of focus from the areas listed previously, and then pass a qualifier (comprehensive exam) in that area or areas. The qualifier consists of three parts:

1. A one-day written examination covering the pertinent research area(s)
2. The submission of a high-quality research deliverable, as evidenced by a portfolio consisting of at least an exam committee-reviewed and publishable article, and possibly other work products as approved by the exam committee
3. An oral presentation and examination

After successfully completing the qualifier, a student focuses on research leading toward a dissertation. The topic of the student's research is formalized through a written dissertation proposal followed by an oral presentation. When the student passes his or her proposal, the student is admitted to candidacy and proceeds with dissertation research. This phase is completed with the successful defense and submission of the approved doctoral dissertation. Students are also required to complete a nine-hour minor outside the College.

For more information about the Computer Science PhD program, visit www.cc.gatech.edu.

COOPERATIVE PROGRAMS

The College of Computing participates in the undergraduate and graduate Cooperative Programs.
See links below for further Information.

COLLEGE OF ENGINEERING ACCREDITATION STATEMENT

The following undergraduate engineering programs are accredited by the Engineering Accreditation Commission of ABET, www.abet.org.

- Bachelor of Science in Aerospace Engineering
- Bachelor of Science in Biomedical Engineering
- Bachelor of Science in Chemical and Biomolecular Engineering
- Bachelor of Science in Civil Engineering
- Bachelor of Science in Civil Engineering - Regional Engineering Program (offered through Georgia Tech-Savannah)
- Bachelor of Science in Computer Engineering
- Bachelor of Science in Computer Engineering - Regional Engineering Program (offered through Georgia Tech-Savannah)
- Bachelor of Science in Electrical Engineering
- Bachelor of Science in Electrical Engineering - Regional Engineering Program (offered through Georgia Tech-Savannah)
- Bachelor of Science in Environmental Engineering
- Bachelor of Science in Industrial Engineering
- Bachelor of Science in Materials Science and Engineering
- Bachelor of Science in Mechanical Engineering
- Bachelor of Science in Mechanical Engineering - Regional Engineering Program (offered through Georgia Tech-Savannah)
- Bachelor of Science in Nuclear and Radiological Engineering
- Bachelor of Science in Polymer and Fiber Engineering

The Master of Science in Medical Physics and the PhD in Nuclear and Radiological Engineering - Medical Physics Option programs are accredited by the Commission on Accreditation of Medical Physics Educational Programs, CAMPEP, www.campep.org/campeplstgrad.asp.

COURSES OF INSTRUCTION

Courses offered by the College of Engineering can be viewed on the online course catalog.

MULTIDISCIPLINARY ACTIVITIES AND PROGRAMS

The College of Engineering encourages cross-unit collaboration within the College and supports the interdisciplinary culture of Georgia Tech and the merging of disciplines that is the trait of modern technology development. Engineering faculty provide leadership for such activities through their involvement in more than thirty research centers and institutes on campus.

The College also provides opportunities for engineering students to participate in interdisciplinary activities by working with faculty in the centers as research assistants, by taking part in interdisciplinary design projects and competitions, and by completing one or more of the College's multidisciplinary certificate programs.

Any student in good academic standing who is pursuing a degree in one of the participating schools of the College of Engineering or a participating school in any of the other colleges may select elective courses and the subjects of special problems to satisfy simultaneously both the requirements of his or her major degree program and those of a specialized multidisciplinary program. Upon graduation, the student receives both the degree in the major field of study and a certificate attesting to successful completion of the particular related multidisciplinary program.

The following table shows available program offerings and the degree levels of the programs.

Multidisciplinary Certificate Programs

Program	Degree Level		
Biomaterials	BS		
Composites Engineering	BS	MS	PhD
Geohydrology		MS	PhD
Manufacturing		MS	PhD
Mechanical Properties of Materials		MS	PhD
Nanomaterials	BS		
Pulp and Paper Engineering	BS		
Technology & Management	BS		

GENERAL REQUIREMENTS OF UNDERGRADUATE MULTIDISCIPLINARY PROGRAMS

The specific design of the multidisciplinary program of any participating undergraduate student, while individualized, must meet certain general requirements as well as requirements that are specific to that multidisciplinary area. The general (minimum) undergraduate multidisciplinary requirements are as follows:

1. The program must relate the student's major area to the given multidisciplinary area.
2. Courses must be taken under more than one academic unit.
3. At least twelve credit hours (not required by name and number in the student's major) must be taken in a coherent program.
4. At least nine credit hours must be at the 3000 level or higher.
5. At least three credit hours must be outside the major field. (Cross-listed courses may be counted outside the student's major)

6. Courses must be taken on a letter-grade basis, and a *C* or better must be earned in each course counting toward a multidisciplinary certificate.

GENERAL REQUIREMENTS OF GRADUATE MULTIDISCIPLINARY PROGRAMS

The specific design of the multidisciplinary program of any participating graduate student, while individualized, must meet certain general requirements as well as requirements that are specific to that multidisciplinary area. The general (minimum) graduate multidisciplinary requirements are the same as those listed previously for the undergraduate programs, with the following exceptions:

1. At least three of the coherent multidisciplinary program courses as well as nine credit hours must be at the 6000 level or higher
2. Students at the doctoral level must, on an individual basis, meet additional requirements specified by the student's doctoral committee, consistent with a program beyond the master's level that has as it's objective the development of a doctoral-level multidisciplinary program.

Interested students may obtain detailed information on the various undergraduate-level and graduate-level multidisciplinary programs from the main office of the school in which they are enrolled.

CERTIFICATE PROCEDURES

Petitions for multidisciplinary program certificates are processed as follows:

1. During the semester in which the student expects to graduate, the student completes a Petition for Multidisciplinary Certificate form and obtains the signature of the chair of his or her school, as well as the signature of the chair of the certificate program.
2. When complete, the petition is forwarded to the Office of the Dean of Engineering.
3. At the end of the semester in which all graduation requirements have been met, the certificate will be signed by the dean of the College of Engineering and mailed to the student.

TRANSFER PROGRAMS IN THE COLLEGE OF ENGINEERING

To encourage and accommodate students who desire to study engineering, but who for various reasons may prefer to attend another college before coming to Georgia Tech, the College of Engineering offers the opportunity to transfer to Georgia Tech through the Regents' Engineering Transfer Program (RETP) or the Dual Degree Program.

DUAL DEGREE PROGRAM

Under the Dual Degree Program, students attend the participating Dual Degree school for three years and then come to Georgia Tech for approximately two years. Students participating in the Dual Degree Program may seek a degree from any undergraduate degree-granting program in the College of Engineering. Upon completion of the program, the student receives a bachelor's degree from the first school and a bachelor's degree in one of the engineering disciplines at Georgia Tech.

Participating in the Dual Degree Program are many of the schools in the University System of Georgia, Morehouse College, Spelman College, Clark Atlanta University, and other liberal arts colleges, historically black colleges, and women's colleges in the Southeast. For additional information on either of these programs, contact the College of Engineering at Georgia Tech or the RETP or Dual Degree coordinator at a participating RETP or Dual Degree institution.

COLLEGE OF ENGINEERING

SCHOOL OF AEROSPACE ENGINEERING

- Bachelor's Degrees
- Master's Degrees
- Doctoral Degrees

SCHOOL OF CHEMICAL AND BIOMOLECULAR ENGINEERING

- Bachelor's Degrees
- Master's Degrees
- Doctoral Degrees

SCHOOL OF CIVIL & ENVIRONMENTAL ENGINEERING

- Bachelor's Degrees
- Master's Degrees
- Doctoral Degrees

SCHOOL OF ELECTRICAL & COMPUTER ENGINEERING

- Bachelor's Degrees
- Master's Degrees
- Doctoral Degrees

SCHOOL OF INDUSTRIAL & SYSTEMS ENGINEERING

- Bachelor's Degrees
- Master's Degrees
- Doctoral Degrees

SCHOOL OF MATERIALS SCIENCE & ENGINEERING

- Bachelor's Degrees
- Master's Degrees
- Doctoral Degrees

SCHOOL OF MECHANICAL ENGINEERING

- Bachelor's Degrees
- Master's Degrees
- Doctoral Degrees

GT/EMORY DEPARTMENT OF BIOMEDICAL ENGINEERING

- Bachelor's Degrees
- Master's Degrees
- Doctoral Degrees

COLLEGE OF ENGINEERING

- Master's Degrees

BACHELOR OF SCIENCE IN AEROSPACE ENGINEERING ACCREDITATION

The BS in Aerospace Engineering program is accredited by the Engineering Accreditation Commission of ABET, www.abet.org.

BACHELOR OF SCIENCE IN AEROSPACE ENGINEERING

The first two years focus on coursework in the areas of chemistry, mathematics, physics, humanities, social sciences, and general engineering sciences. The third and fourth years emphasize aerospace disciplines and vehicle systems integration. The undergraduate curriculum is designed to provide each student with a general background for either employment in industry or government laboratories, or advanced study in graduate school at the end of four years. The program stresses the theoretical, experimental, and design aspects of aerospace engineering. Courses do not have to be taken during the specific semester indicated in the curriculum, but all prerequisites must be satisfied for each course. Advisement by an assigned faculty member is required before registration. Each student is assigned a faculty advisor who remains the same for the full undergraduate program, unless the student requests a change. A certain degree of specialization is available to undergraduate students through the proper choice of electives, as are opportunities for undergraduate research, depending on the student's abilities and career objectives. Students should consult with academic advisors for the availability of courses and recommended course sequences.

EDUCATIONAL OBJECTIVES

The undergraduate aerospace engineering degree program will:

- provide students with a comprehensive education that includes in-depth instruction in aerodynamics, aircraft and spacecraft structures (including structural dynamics and aeroelasticity), flight and orbital mechanics and controls, and design of aerospace systems;
- prepare students for careers in aerospace engineering by emphasizing aerospace vehicle, analysis, and problem solving, by providing methods to deal with open-ended problems and design, including costs, manufacturing, and maintenance, and by fostering teamwork, communication skills, and individual professionalism; and
- provide adequate research and independent study opportunities that cultivate lifelong learning skills and nourish creative talents.

REQUIREMENTS

A grade of *C* or better is required in each 1000 and 2000 level mathematics and physics course; a course with a *D* or *F* grade must be repeated the next semester the student is in residence. A 2.0 or higher overall grade-point average is required to schedule COE 2001 or AE 2020. No more than two *D* grades are permitted in AE and COE courses listed by number in the sophomore, junior, and senior years. Courses in which a D was earned may be repeated at any time with the approval of an advisor.

PROGRAM OBJECTIVES

A. Our graduates will have the necessary understanding of the essential disciplines of aerodynamics, structures, vehicle dynamics and control, propulsion, and interdisciplinary design to be well prepared for careers in aerospace and related engineering fields.

B. Our graduates will be well trained to function as professionals who can formulate, analyze and solve open-ended problems that may include economic and societal constraints.

C. Our graduates will have good communication skills, and be able to function well in teams and in a global environment.

D. Our graduates will be trained to be lifelong learners who can continuously acquire the knowledge required to research, develop and implement next generation systems and applications.

COOPERATIVE PLAN

The School of Aerospace Engineering offers BSAE with COOP option. Students graduating under this program will complete all the requirements of the BSAE degree program, and the coop work requirements. Students beginning work as freshmen or at the end of the freshman year will typically complete at least five terms of work, with no more than three of those terms being summer. Students beginning work as sophomores will typically complete at least four terms of work, with no more than two of those terms being summer. RETP, GTREP, dual degree, and second undergraduate degree students must complete a total of three terms of work (at least two of which must be completed after enrolling at Georgia Tech), with no more than one work term being a summer. For additional information about the Georgia Tech Co-Op program, visit www.coop.gatech.edu.

The BSAE capstone design experience requires that the students complete a two course sequence during their senior year. This sequence begins in fall and is completed in spring. Students are advised to complete their co-op work before entering the 2 term design sequence.

INTERNATIONAL PLAN

The International Plan is a challenging and coherent academic program for undergraduates emphasizing global competence within the context of the aerospace engineering major. This program has specific language requirements. There are also coursework requirements related to history, global economy, international culture, and residential foreign experience. Refer to www.internationalplan.gatech.edu for the general requirements of the International Plan. These requirements may be satisfied by carefully selecting the humanities, social sciences, and free elective hours available in the program, in consultation with a faculty advisor.

EDUCATIONAL OBJECTIVES

The BS AE International Plan program will:

1. provide students with a comprehensive education that includes in-depth instruction in aerodynamics, aircraft and spacecraft structures (including structural dynamics and aeroelasticity), flight and orbital mechanics and controls, and design of aerospace systems;
2. prepare students for careers in aerospace engineering by emphasizing aerospace vehicles analysis, and problem solving, by providing methods to deal with open-ended problems and design, including costs, manufacturing, maintenance, and by fostering teamwork, communication skills, and individual professionalism;
3. provide adequate research and independent study opportunities that cultivate lifelong learning skills and nourish creative talents; and

4. prepare students for aerospace careers related to a country or region of their choice.

REQUIREMENTS

A grade of *C* or better is required in each 1000 and 2000 level mathematics and physics course; a course with a *D* or *F* grade must be repeated the next semester the student is in residence. A 2.0 or higher overall grade-point average is required to schedule COE 2001 or AE 2020. No more than two *D* grades are permitted in AE and COE courses listed by number in the sophomore, junior, and senior years. Courses in which a D was earned may be repeated at any time with the approval of an advisor.

RESEARCH OPTION

The school of Aerospace Engineering offers the "Research Option" under the BSAE degree program. In order to graduate with a BSAE (RO) degree, the students must

- Complete at least nine units of undergraduate research (over at least two, preferably three terms). Research may be for either pay (AE 2698 or AE 4698) or credit (AE 2699 or 4699). Research for credit may be used towards the BSAE free elective requirements.
- Write an undergraduate thesis/report of research on their findings. This is usually done during the graduating term.
- Take both LCC 4701: Undergraduate Research Proposal Writing (typically taken during the first or second semester of research) and LCC 4702: Undergraduate Research Thesis Writing (taken during the thesis-writing semester).

At least six of the nine required hours of research should be on the same topic. A research proposal must be approved by a faculty advisor and one other faculty member. This proposal will be written in LCC 4701 which serves as a prerequisite for LCC 4702. Completion of Research Option is noted on the student's transcript.

For additional details, please contact either:

or

BS/MS HONORS PROGRAM

A combined BS/MS honors program is also offered that prepares students for graduate studies and research. Please see www.ae.gatech.edu for more information.

BACHELOR OF SCIENCE IN AEROSPACE ENGINEERING 2013 - 2014 DEGREE REQUIREMENTS

REQUIREMENT	REQ HRS	COURSE(S)	NOTES
Wellness	2	HPS 1040 or APPH 1040 or APPH 1050	
Core A - Essential Skills	3	ENGL 1101	
	3	ENGL 1102	
	4	MATH 1501	c
Core B - Institutional Options	3	CS 1371	
Core C - Humanities	6	Any HUM	
Core D - Science, Math, & Technology	4	CHEM 1310	
	4	PHYS 2211	a
	4	MATH 1502	
Core E - Social Sciences	3	HIST 2111 or HIST 2112 or INTA 1200 or POL 1101 or PUBP 3000	
	3	ECON 2100 or ECON 2101 or ECON 2105 or ECON 2106	
	6	Any SS	
Core F - Courses Related to Major	4	MATH 2401	c
	4	MATH 2403	c
	3	MSE 2001	
	4	PHYS 2212	b, c
	3	Technical Elective	d, e
Major Requirements	2	AE 1350	
	2	COE 2001	
	3	AE 2020	
	3	AE 2220	
	3	COE 3001	
	3	AE 3021	
	2	AE 3051	
	4	AE 3125	
	1	AE 3145	
	3	AE 3310	
	3	AE 3450	
	4	AE 3515	
	4	AE 3521	
	3	AE 4220	
	3	AE 4451	
	2	AE 4525	
	6	AE 4350 and AE 4351, or AE 4356 and AE 4357, or AE 4358 and AE 4359	
Non-AE Required Courses	3	CEE 1770 or ME 1770	
	2	ECE 3710	
	1	ECE 3741	
	3	LCC 3403	
Free Electives	9	Free Electives	f
TOTAL:	132		

Pass-fail only allowed for Free Electives.

Limit of two D's allowed for all AE 2000-level course or higher, COE 2001, and COE 3001.

NOTES

a = If PHYS 2231 (5cr) is taken, excess hour applies to Free Electives.

b = If PHYS 2232 (5cr) is taken, excess hour applies to Free Electives.

c = C-minimum required

d = Technical Electives include: Any AE 4000-level course not used toward the program, except for AE 4355 and 4699. Also, BIOL 1510, BIOL 1520, CHEM 1311, CS 1331, EAS 1600, EAS 1601, EAS 2600, EAS 2750, EAS 4300, EAS 4430, EAS 4520, PHYS 2022, PHYS 2213, PHYS 2750, PHYS 3021, PHYS 3043, PHYS 3122, PHYS 3143, PHYS 3223, PHYS 3225.

e = Students pursuing Space Systems Design should choose AE 4310.

f = ME 2202, ME 3015, and ME 3322 are not allowed.

MASTER OF SCIENCE IN AEROSPACE ENGINEERING

At the graduate-level, the School of Aerospace Engineering offers master's and doctoral degrees. In addition, the School offers a distance learning-based master's degree.

The master's degree may be earned by completing 33 semester hours of coursework, which must include 3 hours of Special Problems research credit. Alternatively, the candidate may elect to complete twenty-four semester hours of coursework along with nine hours of MS thesis work. The candidate must propose a thesis topic, complete the thesis, and successfully defend it before being awarded the degree. A GPA of 2.7 is required to graduate with an MS degree. All coursework, including Special Problems, must be taken on a letter-grade basis. The program of study for the master's degree is very flexible and can be tailored, in agreement with the student's advisor, to meet the candidate's professional goals.

For further details governing the graduate program, access the *Aerospace Engineering Graduate Handbook* at www.ae.gatech.edu. Graduate students may specialize in the following areas: aerodynamics and fluid mechanics, aeroelasticity and structural dynamics, flight mechanics and control, propulsion and combustion, structural mechanics and materials behavior, and system design and optimization. Further information on these areas of specialization and research can be found at www.ae.gatech.edu/research.

BS/MS HONORS PROGRAM

A combined BS/MS honors program is also offered that prepares students for graduate studies and research. Please see www.ae.gatech.edu for more information.

MASTER OF SCIENCE IN COMPUTATIONAL SCIENCE AND ENGINEERING

The School of Civil and Environmental Engineering (CEE) participates in the Computational Science and Engineering (CSE) Program. CSE is an interdisciplinary program addressing the body of knowledge, skills, and practices associated with the study of computer-based models of natural phenomena and engineered systems. Students will be required to obtain a breadth of knowledge across a set of core areas in the CSE discipline, depth of knowledge in a specific computational specialization (e.g., numerical computing), and knowledge to apply computational techniques in a domain of application. Students will be expected to integrate principles from mathematics, computer science, and engineering to be able to create significant computational artifacts (e.g., software).

The CSE Master of Science degree program is an interdisciplinary program offered by the College of Computing, the College of Engineering, and the College of Sciences. Interested applicants with a Civil and/or Environmental Engineering background apply for admission in the CSE program through CEE. Once admitted, students follow the CSE program's degree requirements and curriculum.

Students must complete four of the five courses making up the core curriculum: CSE/Math 6643 (Numerical Linear Algebra), CSE 6140 (Computational Science and Engineering Algorithms), CSE 6730 (Modeling and Simulation: Fundamentals & Implementation), CSE/ISYE 6740 (Computational Data Analysis), and CSE 6220 (High Performance Computing). A specialization (CEE) minor is required consisting of twelve hours of coursework relevant to the CSE discipline that includes one applications area; this must include at least six hours of courses that do not carry the CS/CSE course designation. Finally, students must either complete 6 additional hours of approved coursework (course option) or an MS thesis (thesis option) that is defended to the student's thesis committee who is responsible for overseeing the student's research. six hours of thesis credit are required in the thesis option. A program of study must be approved by the CSE Program Director and CEE's Associate Chair for Graduate Programs.

DOCTOR OF PHILOSOPHY WITH A MAJOR IN AEROSPACE ENGINEERING

The School of Aerospace Engineering offers a doctoral degree. The PhD degree is a research degree.

The degree requires fifty semester hours of coursework beyond the bachelor's degree; however, the main emphasis is on the research leading to a PhD dissertation. The candidate must pass a qualifying examination and present a thesis proposal and a thesis defense. A GPA of 3.25 is required to graduate with a PhD degree. All coursework, including Special Problems, must be taken on a letter-grade basis. The programs of study for both the master's and doctoral degrees are very flexible and can be tailored, in agreement with the student's advisor, to meet the candidate's professional goals.

For further details governing the graduate program, access the *Aerospace Engineering Graduate Handbook* at www.ae.gatech.edu. Graduate students may specialize in the following areas: aerodynamics and fluid mechanics, aeroelasticity and structural dynamics, flight mechanics and control, propulsion and combustion, structural mechanics and materials behavior, and system design and optimization. Further information on these areas of specialization and research can be found at www.ae.gatech.edu/research.

DOCTOR OF PHILOSOPHY WITH A MAJOR IN COMPUTATIONAL SCIENCE AND ENGINEERING

The School of Civil and Environmental Engineering (CEE) participates in the Computational Science and Engineering (CSE) Program.Â CSE is an interdisciplinary program addressing the body of knowledge, skills, and practices associated with the study of computer-based models of natural phenomena and engineered systems. Students will be required to obtain a breadth of knowledge across a set of core areas, depth of knowledge in a specific computational specialization (e.g., numerical computing), and knowledge to apply computational techniques in a domain of application. Students will be expected to integrate principles from mathematics, computing, science, and engineering to be able to create significant computational artifacts (e.g., software), and to complete independent research that advances the state-of-the-art in the CSE discipline.

The CSE Ph.D. degree program is an interdisciplinary program offered by the College of Computing, the College of Engineering, and the College of Sciences. Interested applicants with a civil and/or environmental engineering background apply for admission in the CSE program through CEE. Once admitted, students follow the CSE program's degree requirements and curriculum.

Required coursework includes CSE 6001 (Introduction to Computational Science and Engineering), CSE core courses (12 hours), a computation specialization (nine hours), and an application specialization (nine hours). To complete the core course requirement, students must complete four of the five courses making up the core curriculum: CSE/Math 6643 (Numerical Linear Algebra), CSE 6140 (Computational Science and Engineering Algorithms), CSE 6730 (Modeling and Simulation: Fundamentals & Implementation), CSE/ISYE 6740 (Computational Data Analysis), and CSE 6220 (High Performance Computing). The computational specialization includes at least nine hours of courses that increase the student's depth of understanding of computational methods in a specific area, as approved by the student's academic advisor. These courses must go beyond "using computers" to deepen understanding of computational methods, preferably in the context of some application domain. The application specialization includes at least nine hours of courses that increase depth of understanding in an application field; these need not be computation-focused courses. At least nine hours of Ph.D. courses must be courses that do not carry the CS/CSE course designation. These hours may be taken in CEE. Hours taken as part of the computation and/or application specialization can be used to fulfill this requirement.

A qualifying examination must be attempted by the end of the second year of enrollment in the CSE doctoral program (normally taken after the student completes CSE core coursework). A qualifying examination committee shall be appointed by the CSE program coordinator for each student and is responsible for making an overall recommendation concerning the outcome of the qualifying examination.

Students are required to complete a doctoral thesis reporting the results of independent research that advances the state-of-the-art in the computational science and engineering discipline. The thesis must be successfully defended to the student's thesis committee.

DOCTOR OF PHILOSOPHY WITH A MAJOR IN ROBOTICS

Students pursuing a PhD in Robotics must take 36 semester hours of core research and elective courses, pass a comprehensive qualifying exam with written and oral components, and successfully complete, document, and defend a piece of original research culminating in a doctoral thesis. Students select a home school, such as ECE, AE, ME, or CS, and apply for admission to the PhD program in robotics through that home school.

CERTIFICATE PROGRAM IN REMOTE SENSING

Students completing the master's or doctoral degree requirements of the School may earn a Remote Sensing Certificate. Additional details can be found in this catalog at http://www.catalog.gatech.edu/colleges/cos/eas/grad/certificates.php.

BACHELOR OF SCIENCE IN BIOMEDICAL ENGINEERING ACCREDITATION

The BS in Biomedical Engineering program is accredited by the Engineering Accreditation Commission of ABET, www.abet.org.

BACHELOR OF SCIENCE IN BIOMEDICAL ENGINEERING

The true integration of the life sciences and engineering is essential in educating a substantial percentage of the next generation of biomedical engineers in order to benefit from the biological revolution and its applications to medicine. This degree program attracts outstanding students who wish to have that integration in their undergraduate education, so that they may be equipped with the tools to be leaders in this field in the 21st Century.

The curriculum includes a solid foundation in fundamental engineering, mathematics, and sciences - biology, chemistry, and physics - as well as grounding in humanities, social sciences, and communication skills. A unique aspect of the curriculum is the incorporation of problem-based learning (PBL) methodologies to foster development of both self-directed learning skills and problem-solving skills in a team-based environment.

PROGRAM EDUCATIONAL OBJECTIVES

The program strives to produce graduates who are expected to demonstrate the following during the first few years after graduation:

1. mathematics, science, and engineering fundamentals expertise at the interface of engineering and the life sciences which enables them to take leadership roles in the field of biomedical engineering;
2. an ability to use their multidisciplinary background to foster communication across professional and disciplinary boundaries with the highest professional and ethical standards; and
3. the ability to recognize the limits of their knowledge and initiate self-directed learning opportunities to be able to continue to identify and create professional opportunities for themselves in the field of biomedical engineering.

BACHELOR OF SCIENCE IN BIOMEDICAL ENGINEERING - COOPERATIVE PLAN

The Georgia Tech Undergrad Co-op Program is a five-year, academic program designed to complement a student's formal education with paid practical work experience directly related to the student's academic major. It is available in all engineering majors, as well as in many majors in other colleges at Georgia Tech.

Co-ops alternate semesters of on-campus study with semesters of full-time employment through their junior year, then continue in school through their senior year. Co-ops are classified as full-time students during each term, regardless of whether they are attending classes on campus or working full-time at an employer location. Most undergrad Co-op students begin the program as freshmen or sophomores. With more than 2,700 students participating, Georgia Tech's program is currently the largest optional co-op program in the United States and has perennially been listed in U.S. News & World Report as one of the "Top Ten" co-op programs in America.

As an integral part of the overall education experience, the co-op program allows students to take on increasing levels of responsibility and to use their job knowledge and classroom learning to make meaningful contributions to the organizations in which they work. Many co-op graduates are hired by their co-op employer, and more than 700 companies or government organizations throughout the United States and abroad currently employ Georgia Tech Undergrad Co-op Program students.

To learn more about Biomedical Engineering Co-op opportunities at Georgia Tech, contact Rob Rogers. Rob is an Assistant Director with the Division of Professional Practice, and the point person for BME students. Rob is located in the Savant Building, Room 103. His phone number is (404) 894-3320.

BACHELOR OF SCIENCE IN BIOMEDICAL ENGINEERING - INTERNATIONAL PLAN

The International Plan is a challenging and coherent academic program for undergraduates that develops global competence within the context of a student's major. It is a degree-long program that integrates international studies and experiences into any participating major at Georgia Tech. It helps to prepare Georgia Tech graduates professionally and personally for successful lives in the twenty-first century.

The International Plan is not intended to replace current international programs; it supplements them. Existing study abroad opportunities continue to be offered. It is also not intended to be an add-on to the current degree programs. It is intended to be another curriculum path to earn a degree in which international competence is integrated into the program of study. The Plan can be completed within the normal timeframe of four years of undergraduate study.

The overarching model for the International Plan has four components:

1. International coursework: Three courses to include one from each of the following categories:
    1. International relations
    2. Global economics
    3. A course about a specific country or region
2. International experience: Two terms abroad (not less than 26 weeks) engaged in any combination of study abroad, research, or internship
3. Second language proficiency: All students in the program are expected to reach at least the proficiency level equivalent to two years of college-level language study. Students who use the language to study, conduct research, or participate in an internship during their international experience are expected to attain a higher level of proficiency. Language proficiency is determined by testing (not course credits).
4. Culminating course: A capstone course in the major designed to tie the international studies and experiences together with the student's major. The senior design project sequence (i.e. BMED 4600/4601) will be used to satisfy this requirement. The design project must incorporate a significant element of the international experience (e.g. foreign client, location of work, project customers, motivation, regulatory issues, etc).

Completion of the International Plan is recognized by a designation on the student's diploma indicating completion of the degree with global competence.

For additional information about the International Plan visit www.oie.gatech.edu/internationalplan.

BACHELOR OF SCIENCE IN BIOMEDICAL ENGINEERING - RESEARCH OPTION

The Research Option is intended for students who seek a concentrated research experience, culminating in an undergraduate thesis, integrated into their undergraduate studies in biomedical engineering. Students are strongly encouraged at the end of their experience to work with their faculty mentor to develop a journal publication or conference presentation on the research in addition to the actual thesis. Students who complete this option receive a designation on their transcript.

Students may be able to satisfy the additional requirements imposed for the Research Option designation through appropriate choices of electives without additional credit hours to complete the degree. The Research Option designation may be pursued separately, or in combination with the Cooperative Plan and/or the International Plan.

The Research Option requirements are as follows:

1. Complete at least nine credit hours of undergraduate research (i.e. BMED 2698, 2699, 4698, or 4699) spanning typically at least three terms. The research may be for either pay or credit, and at least six hours must be on the same research project, broadly defined.
2. Take the course LCC 4701 Undergraduate Research Proposal Writing, typically in the second semester of research. The research proposal outlining the research topic and project for the thesis will be written for this course. The proposal must be approved by a faculty advisor and one other faculty member.
3. Take the course LCC 4702 Undergraduate Research Thesis Writing during the thesis-writing semester. The thesis documenting the results of the research will be written as part of this course. It must be approved by two faculty members and will be archived in the Georgia Tech Library.

BIOMEDICAL ENGINEERING
About the Department
Undergraduate
Accreditation
BS Biomedical Engineering
Description
Degree Requirements
Minors
Certificates
Graduate
Admissions
Master's Degrees
Biomedical Innovation & Development
Doctoral Degrees
Bioengineering
Bioinformatics
Biomedical Engineering
Computational Science & Eng
Robotics
M.D. / PhD Program
Graduate Handbook
College of Engineering

BACHELOR OF SCIENCE IN BIOMEDICAL ENGINEERING 2013 - 2014 DEGREE REQUIREMENTS

REQUIREMENT	REQ HRS	COURSE(S)	NOTES
Wellness	2	HPS 1040 or APPH 1040 or APPH 1050	
Core A - Essential Skills	3	ENGL 1101	
	3	ENGL 1102	
	4	MATH 1501	a
Core B - Institutional Options	3	CS 1371	
Core C - Humanities	6	Any HUM	b
Core D - Science, Math, & Technology	4	CHEM 1211K	c
	4	PHYS 2211	c, d
	4	MATH 1502	a
Core E - Social Sciences	3	HIST 2111 or HIST 2112 or INTA 1200 or POL 1101 or PUBP 3000	
	9	Any SS	
Core F - Courses Related to Major	1	BMED 1000	
	3	BMED 1300	c
	2	COE 2001	c
	4	MATH 2401	a, c
	4	MATH 2403	a, c
	4	PHYS 2212	e
	--	Ethics Requirement	f
Major Requirements	4	BMED 2210	c
	3	BMED 2300	
	3	BMED 3100	
	2	BMED 3110	
	4	BMED 3300	
	4	BMED 3400	
	4	BMED 3510	
	3	BMED 3600	
	2	BMED 3610	
	3	BMED 4602	
Other Engineering and Science Requirements	3	CHEM 1315	
	3	CEE 3770 or ISYE 3770 or MATH 3770 or BMED 2400	
	3	MSE 2001	
BMED Depth Electives	12	BMED Depth Electives	g
BMED Breadth Electives	15	BMED Breadth Electives.	h
TOTAL:	131		

Pass-fail only allowed for BMED 1000, Free Electives, Humanities, and Social Sciences. Students must average a 2.0 for all BMED coursework.

NOTES

a = Student must earn a 2.0 average in MATH 1501, 1502, 2401 and 2403.
b = Students must complete an Ethics requirement. See below for allowable Ethics courses.
c = C-minimum required
d = If PHYS 2231 is taken, extra hour goes to Free Electives.

e = If PHYS 2232 is taken, extra hour goes to Free Electives.

f = Students must complete one of the following courses at some point in their program: LCC 3318, PHIL 3105, PHIL 3109, PHIL 3127, or PHIL 4176.

g = BMED 2699, any 3000- or 4000-level BMED course. Maximum of six hours of undergraduate research.

h = Breadth Electives can be satisfied with a minor, certificate, or other coursework. Please consult with advisor on course selection.

DEPARTMENT OF BIOMEDICAL ENGINEERING

The Department of Biomedical Engineering participates in an undergraduate Multidisciplinary Certificate in "Biomaterials".

See http://www.mse.gatech.edu/undergraduate-program/certificate-program for more details.

MASTER OF BIOMEDICAL INNOVATION AND DEVELOPMENT

This new BioID master's program will bring together students from mechanical, electrical and computer, human factors, systems analysis and manufacturing backgrounds to learn and work in multi-disciplinary teams on clinically relevant needs for new techniques and medical products. This masters program is composed of thirty-six (36) credit hours over three (3) contiguous semesters with seven (7) required courses, two (2) graduate electives, and a two-semester clinically focused team master's project. The faculty, composed of GT biomedical engineering and management professors, clinical/hospital faculty and industry professionals, will create a multi disciplinary teaching approach to educate graduate students from multiple engineering and science backgrounds. The first class of 20 to 40 students will matriculate in the fall of 2013.

BIOMEDICAL ENGINEERING

About the Department
Undergraduate
Accreditation
BS Biomedical Engineering
Description
Degree Requirements
Minors
Certificates
Graduate
Admissions
Master's Degrees
Biomedical Innovation & Development
Doctoral Degrees
Bioengineering
Bioinformatics
Biomedical Engineering
Computational Science & Eng
Robotics
M.D. / PhD Program
Graduate Handbook
College of Engineering

DOCTOR OF PHILOSOPHY WITH A MAJOR IN BIOENGINEERING

This program is interdisciplinary in scope, where advanced courses in engineering specialties, life sciences, and bioengineering are combined with training in biomedical research. The PhD in bioengineering is being offered by the College of Engineering. Students select a home school within the College of Engineering (Aerospace Engineering, Biomedical Engineering, Chemical and Biomolecular Engineering, Civil Engineering, Materials Science and Engineering, Mechanical Engineering, and/or Polymer, Textile and Fiber Engineering). Only students selecting biomedical engineering as their home school are reviewed and admitted by the Department of Biomedical Engineering. The department participates in the Bioengineering program only at the PhD level (no MS considered or admitted). High-quality students with engineering or non-engineering backgrounds (degrees in computer science, physics, chemistry, biology, or mathematics, or physicians with undergraduate degrees in engineering or the physical sciences) are eligible to apply to the program.

DOCTOR OF PHILOSOPHY WITH A MAJOR IN BIOINFORMATICS

PARTICIPATING SCHOOLS

College of Computing
School of Biology
School of Biomedical Engineering
School of Chemistry and Biochemistry
School of Industrial and Systems Engineering
School of Mathematics

OBJECTIVE OF THE PROGRAM

The mission of the Georgia Tech Bioinformatics PhD program is to educate and prepare graduate students to reach the forefront of leadership in the field of bioinformatics and computational biology and to integrate research and education on the use of information technologies in biology and medicine. Thus, the program leading to a PhD in Bioinformatics is an interdisciplinary program spanning a variety of academic departments at Georgia Tech.

Bioinformatics is a multidisciplinary field in which physical sciences, life sciences, computer science, and engineering are merged to solve both fundamental and applied problems in biology and medicine. The outcomes of bioinformatics and computational biology particularly include:

- new and global perspectives into the organization and function of biological systems (fundamental biology);
- new and novel targets for drug discovery and development; and
- genetic/proteomic profiling for pharmaco-genomics or personalized medicine.

Thus, bioinformatics is emerging as a strategic discipline at the frontier of biology, biochemistry, biomedicine, bioengineering, computer science, and mathematics, impacting fundamental science, medicine, biotechnology, and society.

With its broad mission statement, this program at Georgia Tech has the following strengths and focus areas:

1. Development of software tools, algorithms, and databases for gene identification, protein structural prediction, clustering analysis, and data mining
2. Application of bioinformatics to disease diagnosis, classification, prognosis, and treatment
3. Application of bioinformatics to fundamental biology and systems biology

There is an increasing demand for scientists with advanced training in bioinformatics. Professionals in this area should have a thorough knowledge of molecular biology, mathematics, and statistics, as well as computer science and engineering.

For more information visit www.biology.gatech.edu/graduate-programs/bioinformatics/new/bioinformatics_phd.php.

DOCTOR OF PHILOSOPHY WITH A MAJOR IN BIOMEDICAL ENGINEERING

The Joint Biomedical Engineering PhD program is offered through the Wallace H. Coulter (WHC) Department of Biomedical Engineering at Georgia Tech and Emory University. The degree is conferred jointly by both Georgia Tech and Emory. The curriculum is based on an integration of life sciences, engineering, and mathematics. The goal is to enable students to postulate and solve biomedical problems quantitatively and with a systems perspective. Both Georgia Tech and Emory faculty provide an integrative teaching medium for students by team teaching courses.

The curriculum will facilitate individual flexibility and depth of study through coursework selected by the student (and thesis advisor) in specific categories: BME Integrative Core, Engineering/Bioscience Fundamentals, and BME Advanced Graduate Seminar. Other requirements include a bioethics course, a teaching course, a teaching practicum, and a nine-hour minor program of study outside the student's thesis research area. The resulting total minimum number of required hours is 35. It is anticipated (although not required) that students may take other elective coursework to fulfill the requirements of their individual research projects and/or training grants.

After completion of research rotations in either the summer prior to enrollment or during the first semester, students are matched with a thesis advisor based upon mutual interest. After successfully passing the qualifying examination, students submit a request for approval of their Thesis Reading Committee. Upon successful completion of all degree requirements, students will be awarded the PhD degree by the graduate schools of Georgia Tech and Emory.

Minimum Prerequisites
BS in Engineering or Life Sciences
One year of calculus-based physics
One semester of organic chemistry (two semesters recommended)
Calculus through differential equations

An additional option for the joint biomedical engineering degree is offered between the WHC Department of Biomedical Engineering at Georgia Tech & Emory University and Peking University in Beijing, China. The curriculum is the same with the addition of global perspectives courses. Students spend the majority of their time in the program on the "home" campus (either Atlanta or Beijing) with one year abroad for research with a faculty co-advisor. This partnership provides the opportunity to create a new paradigm for global biomedical engineering education and research. The program offers a unique means for U.S. and Chinese students who want to learn and work in a global economy and in global health settings. Program graduates will be prepared to become global leaders of innovation who can contribute to cultural, political, economic and health concerns in their home countries and around the world.

DOCTOR OF PHILOSOPHY WITH A MAJOR IN COMPUTATIONAL SCIENCE AND ENGINEERING

The School of Civil and Environmental Engineering (CEE) participates in the Computational Science and Engineering (CSE) Program.Â CSE is an interdisciplinary program addressing the body of knowledge, skills, and practices associated with the study of computer-based models of natural phenomena and engineered systems. Students will be required to obtain a breadth of knowledge across a set of core areas, depth of knowledge in a specific computational specialization (e.g., numerical computing), and knowledge to apply computational techniques in a domain of application. Students will be expected to integrate principles from mathematics, computing, science, and engineering to be able to create significant computational artifacts (e.g., software), and to complete independent research that advances the state-of-the-art in the CSE discipline.

The CSE Ph.D. degree program is an interdisciplinary program offered by the College of Computing, the College of Engineering, and the College of Sciences. Interested applicants with a civil and/or environmental engineering background apply for admission in the CSE program through CEE. Once admitted, students follow the CSE program's degree requirements and curriculum.

Required coursework includes CSE 6001 (Introduction to Computational Science and Engineering), CSE core courses (12 hours), a computation specialization (nine hours), and an application specialization (nine hours). To complete the core course requirement, students must complete four of the five courses making up the core curriculum: CSE/Math 6643 (Numerical Linear Algebra), CSE 6140 (Computational Science and Engineering Algorithms), CSE 6730 (Modeling and Simulation: Fundamentals & Implementation), CSE/ISYE 6740 (Computational Data Analysis), and CSE 6220 (High Performance Computing). The computational specialization includes at least nine hours of courses that increase the student's depth of understanding of computational methods in a specific area, as approved by the student's academic advisor. These courses must go beyond "using computers" to deepen understanding of computational methods, preferably in the context of some application domain. The application specialization includes at least nine hours of courses that increase depth of understanding in an application field; these need not be computation-focused courses. At least nine hours of Ph.D. courses must be courses that do not carry the CS/CSE course designation. These hours may be taken in CEE. Hours taken as part of the computation and/or application specialization can be used to fulfill this requirement.

A qualifying examination must be attempted by the end of the second year of enrollment in the CSE doctoral program (normally taken after the student completes CSE core coursework). A qualifying examination committee shall be appointed by the CSE program coordinator for each student and is responsible for making an overall recommendation concerning the outcome of the qualifying examination.

Students are required to complete a doctoral thesis reporting the results of independent research that advances the state-of-the-art in the computational science and engineering discipline. The thesis must be successfully defended to the student's thesis committee.

DOCTOR OF PHILOSOPHY WITH A MAJOR IN ROBOTICS

Students pursuing a PhD in Robotics must take 36 semester hours of core research and elective courses, pass a comprehensive qualifying exam with written and oral components, and successfully complete, document, and defend a piece of original research culminating in a doctoral thesis. Students select a home school, such as ECE, AE, ME, or CS, and apply for admission to the PhD program in robotics through that home school.

M.D./PHD PROGRAM

The Coulter Department of Biomedical Engineering participates with the Emory University School of Medicine and the Georgia Health Sciences University to offer students an opportunity to combine their M.D. with a PhD in Biomedical Engineering or Bioengineering. Prospective students should contact the medical school of interest to begin the exploration and application processes.

BACHELOR OF SCIENCE IN CHEMICAL AND BIOMOLECULAR ENGINEERING ACCREDITATION

The BS in Chemical and Biomolecular Engineering program is accredited by the Engineering Accreditation Commission of ABET, www.abet.org.

BACHELOR OF SCIENCE IN CHEMICAL AND BIOMOLECULAR ENGINEERING

The Bachelor of Science in Chemical and Biomolecular Engineering provides the basics of biomolecular engineering but allows flexibility for the student to pursue other areas of chemical engineering such as microelectronics, materials, and the environment.

The curriculum has two options. The Biotechnology Option is for students who wish to focus their education on the biomolecular aspects of chemical and biomolecular engineering. This option includes the core chemical engineering courses, specialized biomolecular engineering courses, biochemistry, and technical electives focused in the biotechnology area. The Standard Option provides the basics of biomolecular engineering but allows much more flexibility for the student to pursue other areas of chemical engineering such as microelectronics, materials, and the environment. Special opportunities exist for students wishing to pursue minors or certificates in fields of particular interest, and students are encouraged to explore the frontiers of knowledge through involvement in faculty-directed research.

PROGRAM OBJECTIVES

The mission of the School of Chemical and Biomolecular Engineering is to provide students with the intellectual basis to be educated citizens, to prepare them for successful professional careers, and to advance the science and technology that form the basis of chemical and biomolecular engineering. In pursuit of this mission, the School has adopted the following:

Program Educational Objectives

- Graduates will demonstrate proficiency in the principles and methods essential to modern chemical and biomolecular engineering.
- Graduates will demonstrate broadened perspectives regarding social issues and responsibilities, ethics, and professionalism.
- Graduates will be recognized for excellence and leadership and selected for high-quality industrial, academic, government, and other professional positions.
- Graduates will demonstrate an understanding of the global nature of engineering practice and business activities.
- Graduates will understand the importance of further professional growth through continuing education and research.

Program Outcomes

In pursuit of its educational objectives, the School has adopted the following program outcomes:

- Students will demonstrate the ability to apply knowledge of mathematics, science, and engineering.
- Students will demonstrate the ability to design and conduct experiments, as well as to analyze and interpret data.

- Students will demonstrate the ability to design a system, component, product, and/or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability.
- Students will demonstrate an ability to lead and function on multidisciplinary teams.
- Students will demonstrate an ability to identify, formulate, and solve engineering problems.
- Students will demonstrate an understanding of professional and ethical responsibility.
- Students will demonstrate the ability to communicate effectively.
- Students will demonstrate a breadth in education that facilitates understanding the impact of engineering solutions in a global, economic, environmental, and societal context.
- Students will demonstrate recognition of the need for and an ability to engage in lifelong learning.
- Students will demonstrate knowledge of contemporary issues, especially as related to chemical engineering practice.
- Students will demonstrate the ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.
- Students will have an understanding of the chemical engineering profession as obtained through professional organizations, cooperative education, internships, undergraduate research, and/or required laboratory courses.
- Students will have a thorough grounding in the basic sciences including chemistry, physics, and biology appropriate to the program objectives.
- Students will demonstrate knowledge in the applications of these basic sciences to enable graduates to design, analyze, and control physical, chemical, and biological processes consistent with the program's educational objectives.

COOPERATIVE OPTION

Since 1912, Georgia Tech has offered a five-year Undergraduate Cooperative Program to those students who wish to combine career-related experience with classroom studies. The program is the fourth oldest of its kind in the world and the largest optional co-op program in the country. Traditionally, 35 to 40 percent of chemical and biomolecular engineering students participate in the program each year at Georgia Tech.

Students alternate between industrial assignments and classroom studies until they complete four or five semesters of work. Co-op students with chemical and biomolecular engineering majors complete the same coursework on campus that is completed by regular four-year students. Most co-op students begin the program as sophomores and are classified as full-time students regardless of whether they are attending classes on campus or are working full time at an employer's location.

Students who participate in the program have the opportunity to develop career interests, become more confident in their career choices, and develop human relation skills through their work experience. Graduates of the program receive a bachelor's degree with a Cooperative Plan designation.

RESEARCH OPTION

The Chemical and Biomolecular Engineering undergraduate program offers an undergraduate Research Option that allows students to participate in undergraduate research and complete an undergraduate thesis. The words "Research Option" will appear on the transcript of each student completing the requirements to indicate that the student has had substantial, in-depth research experience.

BS/MS CHEMICAL AND BIOMOLECULAR ENGINEERING

The program seeks to engage undergraduate students at Georgia Tech who indicate an interest in, and ability for, additional education beyond the BS degree. Students with significant AP credit will be especially well positioned to take full advantage of this opportunity.

Students in the BS/MS Program will remain undergraduates until they meet the requirements for the BS degree; after which, their status will change to graduate student.
Students are eligible to apply for the program after completion of thirty semester credit hours at Georgia Tech (i.e., at the end of freshman year). As a practical matter, it is recommended that students apply to the program immediately after completion of ChBE 3110. Students must have a Georgia Tech GPA of 3.5 or higher for admission into the program.

Admission into the program will be based on academic performance at Georgia Tech, as well as the potential for advanced study and/or research as assessed from the essay and recommendation letter.

Continuation in the program will require the student to maintain a GPA of 3.0 or higher. This GPA requirement should not deter students from taking challenging courses. The program will not penalize students who opt out after receiving the BS degree. Additionally, students participating in the program will be eligible for the six credit-hour Graduate Course Option as described here.

Course Number	Course Name	Credit Hours
ChE 6XXX	Chemical Engineering Elective	3
ChE 6100	Chemical Engineering Thermodynamics	3
ChE 6200	Transport Phenomena: Momentum and Heat Transfer	3
ChE 6260	Mass Transfer	3
ChE 6300	Kinetics and Reactor Design	3
ChE 6500	Mathematical Modeling of Chemical Processes	3
	Other Elective	3
ChE 7000	Master's Thesis or other electives	9
	Total Credit Hours	30

About the School
Undergraduate
Accreditation
BS CHBE
Description
Degree Requirements
BS CHBE
Biotechnology Option
Minors
Undergraduate Information
Graduate
Admissions
Master's Degrees
BS/MS C.H.B.E.
Bioengineering
Chemical Engineering
Paper Science & Eng
Doctoral Degrees
Bioengineering
Chemical Engineering
Paper Science & Eng
College of Engineering

BS IN CHEMICAL AND BIOMOLECULAR ENGINEERING 2013 - 2014 DEGREE REQUIREMENTS - STANDARD OPTION

REQUIREMENT	REQ HRS	COURSE(S)	NOTES
Wellness	2	HPS 1040 or APPH 1040 or APPH 1050	
Core A - Essential Skills	3	ENGL 1101	
	3	ENGL 1102	
	4	MATH 1501	c
Core B - Institutional Options	3	CS 1371	
Core C - Humanities	6	Any HUM	
Core D - Science, Math, & Technology	4	CHEM 1211K	
	4	BIOL 1510	
	4	MATH 1502	c
Core E - Social Sciences	3	HIST 2111 or HIST 2112 or INTA 1200 or POL 1101 or PUBP 3000	
	3	ECON 2100	
	6	Any SS	
Core F - Courses Related to Major	2	CHEM 2380	
	4	MATH 2401	c
	4	MATH 2403	c
	4	PHYS 2211	a
	4	PHYS 2212	b
Major Requirements	3	CHBE 2100	c
	3	CHBE 2120	c
	2	CHBE 2130	c
	3	CHBE 3130	c
	3	CHBE 3200	c
	3	CHBE 3210	c
	3	CHBE 3225	c
	3	CHBE 4200	c
	3	CHBE 4300	c
	4	CHBE 4400	c
	2	CHBE 4510	c
	1	CHBE 4515	c
	2	CHBE 4520	c
CHBE Electives	6	CHBE Electives	c, d
CHBE Technical Electives	3	2000-level Technical Elective or higher	e
	3	3000-level Technical Elective or higher	e
Other Engineering and Science Requirements	4	CHEM 1212K	
	3	CHEM 2311	
	3	CHEM 2312	
	3	CHEM 3412	
	3	CHEM 3281 or CHEM 3511	
	3	MSE 2001	
Free Electives	3	Free Electives	
TOTAL:	132		

Pass-fail only allowed for Free Electives, Humanities, and Social Sciences.

NOTES

a = If PHYS 2231 is taken, extra hour goes to Free Electives.

b = If PHYS 2232 is taken, extra hour goes to Free Electives.

c = C-minimum required

d = CHBE Electives must be chosen from the following list: CHBE 4020, CHBE 4310, CHBE 4535, CHBE 4752, CHBE 4757, CHBE 4760, CHBE 4763, CHBE 4764, CHBE 4765, CHBE 4770, CHBE 4775, CHBE 4776, CHBE 4791, CHBE 4793, CHBE 4794, CHBE 4803 (must be titled Microfluidics and NanoFluidics,
Surfaces and Calloids, or Data-Driven Modeling and Analysis for Chemical and Biomolecular Systems.), or any 6000-level CHBE course or higher.

e = Technical Electives must be chosen from the following list: AE 2020, AE 2120, AE 4451, AE 4461, AE 4883,

BMED 2400, BMED 3400, BMED 3510, BMED 4477, BMED 4751, BMED 4784,

CEE 2040, CEE 2300, CEE 4300, CEE 4330, CEE 4620,

CHBE 4020, CHBE 4310, CHBE 4535, CHBE 4752, CHBE4757, CHBE 4763, CHBE 4764, CHBE 4765, CHBE 4770, CHBE 4775, CHBE 4776, CHBE 4791, CHBE 4793, CHBE 4794, CHBE 4803 (must include title of Data-Driven Modeling & Anal. for Ch, Microfluidics/BioMEMS, Surface & Colloid Chemistry & Engineering), CHBE 6120, CHBE 6794,

COE 2001, COE 3001, COE 3002,

ECE 2025, ECE 2030, ECE 2040, ECE 3025, ECE 3040, ECE 3065, ECE 3071, ECE 3080, ECE 3710, ECE 3741,

ISYE 2027, ISYE 2028, ISYE 3025, ISYE 3039, ISYE 3133, ISYE 3232, ISYE 4803 (must include title of EDA Supply Chain Econom., or Regression/Forecasting),

ME 2202, ME 3057, ME 4011, ME 4210,

MSE 2021, MSE 3002, MSE 3003, MSE 4751, MSE 4803 (must include title of Biologically Inspired Design, or Fund. of Nanomater. & Struct.),

NRE 3301, NRE 4204, NRE 4328, NRE 4610, NRE 4803 (must include title of Nuclear & Radiation Technol., Probabilistic Risk Assessment), NRE 6501,

PTFE 2200, PTFE 3720, PTFE 4100, PTFE 4140, or PTFE 4141.

BS IN CHEMICAL AND BIOMOLECULAR ENGINEERING - BIOTECHNOLOGY OPTION 2013 - 2014

DEGREE REQUIREMENTS

REQUIREMENT	REQ HRS	COURSE(S)	NOTES
Wellness	2	HPS 1040 or APPH 1040 or APPH 1050	
Core A - Essential Skills	3	ENGL 1101	
	3	ENGL 1102	
	4	MATH 1501	c
Core B - Institutional Options	3	CS 1371	
Core C - Humanities	6	Any HUM	
Core D - Science, Math, & Technology	4	CHEM 1211K	
	4	BIOL 1510	
	4	MATH 1502	c
Core E - Social Sciences	3	HIST 2111 or HIST 2112 or INTA 1200 or POL 1101 or PUBP 3000	
	3	ECON 2100	
	6	Any SS	
Core F - Courses Related to Major	2	CHEM 2380	
	4	MATH 2401	c
	4	MATH 2403	c
	4	PHYS 2211	a
	4	PHYS 2212	b
Major Requirements	3	CHBE 2100	c
	3	CHBE 2120	c
	2	CHBE 2130	c
	3	CHBE 3130	c
	3	CHBE 3200	c
	3	CHBE 3210	c
	3	CHBE 3225	c
	3	CHBE 4210	c
	3	CHBE 4300	c
	3	CHBE 4310	
	4	CHBE 4400	c
	2	CHBE 4510	c
	1	CHBE 4515	c
	2	CHBE 4530	c
Biotech Electives	3	Biotech Elective	c, d
	3	BMED 3510 or BMED 4477 or BMED 4699 or BMED 4751 or BMED 4783 or BMED 4784 or CHBE 4699 or CHBE 4757 or CHBE 4760 or CHBE 4765 or CHBE 4803 or CHBE 6760 or CHBE 6765 or CHBE 6794 or CHBE 8803	e
Other Engineering and Science Requirements	3	BIOL 3450	
	4	CHEM 1212K	
	3	CHEM 2311	
	3	CHEM 2312	
	3	CHEM 4511	
	3	CHEM 4512	
	3	MSE 2001	
Free Electives	3	Free Electives	
TOTAL:	132		

Pass-fail only allowed for Free Electives, Humanities, and Social Sciences.

NOTES

a = If PHYS 2231 is taken, extra hour goes to Free Electives.

b = If PHYS 2232 is taken, extra hour goes to Free Electives.

c = C-minimum required

d = Biotech Elective must be chosen from the following list: CHBE 4020, CHBE 4310, CHBE 4535, CHBE 4752, CHBE 4757, CHBE 4760, CHBE 4763, CHBE 4764, CHBE 4765, CHBE 4770, CHBE 4775, CHBE 4776, CHBE 4791, CHBE 4793, CHBE 4794, CHBE 4803 (must be titled Microfluidics and NanoFluidics, Surfaces and Calloids, or Data-Driven Modeling and Analysis for Chemical and Biomolecular Systems.), or any 6000-level CHBE course or higher.

e = CHBE 4803 and 8803 must have a title of Microfluidics/Nanofluidics.

SCHOOL OF CHEMICAL & BIOMOLECULAR ENGINEERING

MINORS

Special opportunities exist for students wishing to pursue minors or certificates in fields of particular interest, and students are encouraged to explore the frontiers of knowledge through involvement in faculty-directed research.

visit our website at www.chbe.gatech.edu for more information.

SCHOOL OF CHEMICAL & BIOMOLECULAR ENGINEERING
About the School
Undergraduate
Accreditation
BS CHBE
Description
Degree Requirements
BS CHBE
Biotechnology Option
Minors
Undergraduate Information
Graduate
Admissions
Master's Degrees
BS/MS C.H.B.E.
Bioengineering
Chemical Engineering
Paper Science & Eng
Doctoral Degrees
Bioengineering
Chemical Engineering
Paper Science & Eng
College of Engineering

UNDERGRADUATE INFORMATION

Chemical engineering is a discipline that traditionally has been based in the application of chemistry as an enabling science. The strength of that foundation has resulted in enormous advances in the chemical, petroleum, and related industries that have relied on chemical engineering to provide much of the intellectual capital on which they depend. Over time, and with increasing speed, the discipline has expanded so that biological sciences and chemistry now fill the position once uniquely held by chemistry. Georgia Tech's School of Chemical & Biomolecular Engineering is a national leader in restructuring its curriculum and research initiatives to reflect that evolution.

The chemical and biomolecular engineering undergraduate curriculum leads to a Bachelor of Science in Chemical and Biomolecular Engineering. Chemical and biomolecular engineering principles are taught as the foundation of that degree but students also are expected to develop an ability to solve all kinds of problems, to view systems in their entirety, and to formulate and test solutions irrespective of the framework of the problem. Completion of the BS degree prepares students for entry into the workforce, for advanced study in chemical and biomolecular engineering, or for countless other graduate programs.

Degrees Offered:

- BS: Chemical and Biomolecular Engineering—Standard Option
- BS: Chemical and Biomolecular Engineering—Biotechnology Option
- BS/MS: Chemical and Biomolecular Engineering

The mission of the School of Chemical & Biomolecular Engineering is to provide students with the intellectual basis to be educated citizens, to prepare them for successful professional careers, and to advance the science and technology that form the basis of chemical and biomolecular engineering. In pursuit of this mission, the School has adopted the following:

Program Educational Objectives

- Graduates will demonstrate proficiency in the principles and methods essential to modern chemical and biomolecular engineering.
- Graduates will demonstrate broadened perspectives regarding social issues and responsibilities, ethics, and professionalism.
- Graduates will be recognized for excellence and leadership and selected for high-quality industrial, academic, government, and other professional positions.
- Graduates will demonstrate an understanding of the global nature of engineering practice and business activities.
- Graduates will understand the importance of further professional growth through continuing education and research.

Program Outcomes

In pursuit of its educational objectives, the School has adopted the following program outcomes:

- Students will demonstrate the ability to apply knowledge of mathematics, science, and engineering.
- Students will demonstrate the ability to design and conduct experiments, as well as to analyze and interpret data.
- Students will demonstrate the ability to design a system, component, product, and/or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability.
- Students will demonstrate an ability to lead and function on multidisciplinary teams.
- Students will demonstrate an ability to identify, formulate, and solve engineering problems.
- Students will demonstrate an understanding of professional and ethical responsibility.
- Students will demonstrate the ability to communicate effectively.
- Students will demonstrate a breadth in education that facilitates understanding the impact of engineering solutions in a global, economic, environmental, and societal context.
- Students will demonstrate recognition of the need for and an ability to engage in lifelong learning.
- Students will demonstrate knowledge of contemporary issues, especially as related to chemical engineering practice.
- Students will demonstrate the ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.
- Students will have an understanding of the chemical engineering profession as obtained through professional organizations, cooperative education, internships, undergraduate research, and/or required laboratory courses.
- Students will have a thorough grounding in the basic sciences including chemistry, physics, and biology appropriate to the program objectives.
- Students will demonstrate knowledge in the applications of these basic sciences to enable graduates to design, analyze, and control physical, chemical, and biological processes consistent with the program's educational objectives.

In pursuit of these objectives, the following curriculum is designed to provide coverage of core areas of chemical and biomolecular engineering, and to allow students opportunities to explore the breadth of the discipline. The curriculum requires a total of 132 hours for the BS degree. The biotechnology option allows the student to focus intensely in this rapidly emerging area of chemical engineering. The standard option provides the flexibility to explore other areas of chemical engineering practice while providing an understanding of the biomolecular aspects of modern chemical engineering. The standard program will also allow chemical and biomolecular engineering students to tailor their educations to their particular interests and plans for their professional careers. Students are encouraged to use the required elective hours to earn a minor or certificate, or at least to focus their electives in an area of particular interest.

Many graduates have found international experience obtained as a student to be valuable later in their careers. The School is developing special initiatives to facilitate such experiences, and it has a longstanding six-week summer program at University College London in which students receive six hours of elective credit and credit for CHBE 4200 (Transport and Unit Operations Laboratory).

Finally, although the focus of the curriculum is development of technical skills, it has elements geared to enhance communication, teamwork, and business skills.

TRANSFER STUDENTS

Due to the sequence of courses and the order in which they must be taken, students who transfer into the school of Chemical and Biomolecular Engineering (ChBE) from another university should expect to be enrolled for a minimum of six terms (a term is a semester or a summer session). If, for financial aid purposes, insurance, etc., students are required to be full-time, they should transfer to Georgia Tech having sufficient non-chemical and biomolecular engineering courses remaining to enroll full-time for six terms. All prerequisites and co-requisites must be followed.

BS/MS CHEMICAL AND BIOMOLECULAR ENGINEERING

The program seeks to engage undergraduate students at Georgia Tech who indicate an interest in, and ability for, additional education beyond the BS degree. Students with significant AP credit will be especially well positioned to take full advantage of this opportunity.

Students in the BS/MS Program will remain undergraduates until they meet the requirements for the BS degree; after which, their status will change to graduate student.
Students are eligible to apply for the program after completion of thirty semester credit hours at Georgia Tech (i.e., at the end of freshman year). As a practical matter, it is recommended that students apply to the program immediately after completion of ChBE 3110. Students must have a Georgia Tech GPA of 3.5 or higher for admission into the program.

Admission into the program will be based on academic performance at Georgia Tech, as well as the potential for advanced study and/or research as assessed from the essay and recommendation letter.

Continuation in the program will require the student to maintain a GPA of 3.0 or higher. This GPA requirement should not deter students from taking challenging courses. The program will not penalize students who opt out after receiving the BS degree. Additionally, students participating in the program will be eligible for the six credit-hour Graduate Course Option as described here.

Course Number	Course Name	Credit Hours
ChE 6XXX	Chemical Engineering Elective	3
ChE 6100	Chemical Engineering Thermodynamics	3
ChE 6200	Transport Phenomena: Momentum and Heat Transfer	3
ChE 6260	Mass Transfer	3
ChE 6300	Kinetics and Reactor Design	3
ChE 6500	Mathematical Modeling of Chemical Processes	3
	Other Elective	3
ChE 7000	Master's Thesis or other electives	9
	Total Credit Hours	30

MASTER OF SCIENCE IN BIOENGINEERING

The Georgia Tech Interdisciplinary Bioengineering Graduate Program was established in 1992. Over 170 students have graduated from the program in a broad spectrum of research by our ninety participating faculty from the Colleges of Engineering, Computing, Sciences, and Architecture as well as Emory University School of Medicine.

The BioE Program is interdisciplinary in that it is not a standalone academic unit like most departments or schools at Georgia Tech. Rather, eight different academic units from the Colleges of Engineering and Computing make up the program.

However, the BioE Program provides the degree requirements for students accepted into the program. This approach allows a flexible, integrative, and individualized degree program that enforces depth and breadth in coursework, a solid bioengineering research experience, and yet is reflective of the disciplinary background of the student's home school. Importantly, the BioE Program provides research opportunities for students with any participating program faculty, allowing tremendous diversity and flexibility for research topics and advisors.

See www.bioengineering.gatech.edu for more information.

MASTER OF SCIENCE IN CHEMICAL ENGINEERING

The School of Chemical & Biomolecular Engineering offers graduate programs involving advanced-level coursework and independent research leading to MS and PhD degrees in chemical engineering. The MS degree may also be obtained by coursework only. Course selection for both the MS and doctoral degrees is quite flexible, with individual plans of study developed for each student. Research opportunities exist in a broad range of areas of importance to chemical engineers and society, including catalysis, reaction kinetics, complex fluids, microelectronics, microfluidics, optimization, bioinformatics, polymers, sustainable development, pulp and paper, separations, CO2 capture, biomedicine, solar energy, thermodynamics, MEMS, environmental science, reaction engineering, cancer diagnostics and therapeutics, biofuels, air quality, modeling, and process synthesis and control. Furthermore, the School of Chemical & Biomolecular Engineering participates with several other schools in offering MS and PhD degrees in Bioengineering and Paper Science and Engineering.

MASTER OF SCIENCE IN PAPER SCIENCE AND ENGINEERING

The Institute of Paper Science and Technology supports the MS degree programs offered by the Georgia Institute of Technology. The Paper Science and Engineering (PSE) program provides students with a multidisciplinary graduate education in the science and engineering involved in the production of paper, tissue, and other products from natural fiber and related industries. The processing and consolidation of natural fiber into a paper web involve complex chemical and mechanical processes. The advantages of a multidisciplinary approach in research and education supporting this field have long been recognized. The Georgia Tech PSE program integrates the former Institute of Paper Science and Technology multidisciplinary graduate program with the science and engineering programs available at Georgia Tech.

The MS degree in PSE is a unique multidisciplinary degree covering basic engineering and science disciplines involved in the production and consolidation of wood fiber products. Students are enrolled in the participating Georgia Tech school (referred to as the "home school") and, upon completion of degree requirements, the home school recommends the award of its MS degree with an emphasis in paper science and engineering. Degrees are being offered by the Schools of Chemical and Biomolecular Engineering, Chemistry and Biochemistry, Mechanical Engineering, and Materials Science and Engineering.

The paper industry continues to evolve through considerable consolidation and reorganization, and the need for innovation in the science and engineering of pulp and paper technology from plant biology to chemical treatment and processes involved in paper production is greater than ever. The PSE program provides research results and equips students with a unique set of skills to lead in this effort.

For more information, visit www.ipst.gatech.edu/degree_progs/index.html.

DOCTOR OF PHILOSOPHY WITH A MAJOR IN BIOENGINEERING

The Bioengineering PhD degree requires a thesis based on independent study of a bioengineering research topic under the guidance of a bioengineering program faculty member.

The Georgia Tech Interdisciplinary Bioengineering (BioE) Graduate Program was established in 1992. Over 170 students have graduated from the program in a broad spectrum of research by our ninety participating faculty from the Colleges of Engineering, Computing, Sciences, and Architecture as well as Emory University School of Medicine.

The BioE Program is interdisciplinary in that it is not a standalone academic unit like most departments or schools at Georgia Tech. Rather, eight different academic units from the Colleges of Engineering and Computing make up the program.

However, the BioE Program provides the degree requirements for students accepted into the program. This approach allows a flexible, integrative, and individualized degree program that enforces depth and breadth in coursework, a solid bioengineering research experience, and yet is reflective of the disciplinary background of the student's home school. Importantly, the BioE Program provides research opportunities for students with any participating program faculty, allowing tremendous diversity and flexibility for research topics and advisors.

See www.bioengineering.gatech.edu for more information.

DOCTOR OF PHILOSOPHY WITH A MAJOR IN CHEMICAL ENGINEERING

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SCHOOL OF CIVIL & ENVIRONMENTAL ENGINEERING

ACCREDITATION

The following undergraduate engineering programs are accredited by the Engineering Accreditation Commission of ABET, www.abet.org.

- Bachelor of Science in Civil Engineering
- Bachelor of Science in Environmental Engineering
- Bachelor of Science in Civil Engineering - Regional Engineering Program (offered through Georgia Tech-Savannah)

BACHELOR OF SCIENCE IN CIVIL ENGINEERING

The four-year curriculum leading to the Bachelor of Science in Civil Engineering (BS CE) enables the graduate to enter professional practice as an engineer or to continue his or her studies in programs leading to advanced degrees in the following broad fields of specialization: construction engineering and management, environmental engineering, environmental hydraulics, geotechnical engineering, hydrology, materials, structural engineering and mechanics, transportation, and water resources planning and management. The BS CE degree program is designed to offer depth in course material considered essential for all civil engineers, as well as flexibility in selecting elective courses that offer breadth of topic exposure. Civil engineers contribute to society in numerous ways; thus, the School's philosophy is to provide the student with a range of electives that meet student interests. Civil engineers must not only be technically proficient, but also must be effective in working with people and with professionals in other disciplines.

The course requirements of the BS CE degree are listed in the Degree Requirements page. Although students are not obligated to take the courses during the semester indicated, they must satisfy all prerequisites for a particular course. In addition to campus-wide academic requirements for graduation with a bachelor's degree, the following are also required for the BS CE degree:

A *C* or better must have been earned in MATH 1501-1502, PHYS 2211, CHEM 1310, and COE 2001.

The number of quality points earned in CEE courses taken toward the degree must be at least twice the number of credit hours in those courses. If a course is repeated, the latest grade will be included in applying this rule. No CEE course may be repeated for the purpose of satisfying this rule if the original grade was a *C* or higher.

PROGRAM OBJECTIVES

Graduates will pursue a diverse range of careers that build on their engineering education. During the initial years of their careers, graduates will:

A. apply technical proficiency in the principles and methods essential to modern civil engineering practice.
B. demonstrate understanding of global, societal, environmental, and sustainability issues related to civil engineering.
C. exhibit effective communication, teamwork, entrepreneurial, and leadership skills.
D. engage in ethical and responsible practice while pursuing professional growth.

COOPERATIVE PLAN

Since 1912, Georgia Tech has offered a five-year Undergraduate Cooperative Program to those students who wish to combine career-related experience with classroom studies. The program is the fourth oldest of its kind in the world and the largest optional co-op program in the country.

Students alternate between work assignments and classroom studies until they complete four or five semesters of work. Co-op students with a civil engineering major complete the same coursework on campus that is completed by regular four-year students. Most co-op students begin the program as freshmen or sophomores and are classified as full-time students regardless of whether they are attending classes on campus or are full time at an employer's location.

Students who participate in the program have the opportunity to develop career interests, become more confident in their career choices, and develop human relations skills through their work experience. Graduates of the program receive a bachelor's degree with a Cooperative Plan Designation.

The Georgia Tech Internship Program is for civil engineering students who do not participate in the Cooperative Program, but want some career-related experience before graduation. Students generally work for one semester, usually in the summer, with an option for more work experiences. Students must have completed at least 30 hours of coursework at Georgia Tech before they can participate in the program. For more details, visit www.gtip.gatech.edu/.

In addition, there is the Work Abroad Program (www.workabroad.gatech.edu), which complements a student's formal education with paid international work experience directly related to civil engineering. Participating students typically are juniors and seniors. The international work assignments are designed to include practical training, cross-cultural exposure and learning, and the acquisition of needed skills. This program satisfies requirements for the International Plan, which is available to civil engineering students.

For more information about all of the programs in the Division of Professional Practice, visit www.profpractice.gatech.edu.

INTERNATIONAL PLAN

The International Plan is a challenging and coherent academic program for undergraduates that develops global competence within the context of a student's major. It is a degree-long program that integrates international studies and experiences into any participating major at Georgia Tech. It helps to prepare Georgia Tech graduates professionally and personally for successful lives in the twenty-first century.

The International Plan is not intended to replace current international programs; it supplements them. Existing study abroad opportunities continue to be offered. It is also not intended to be an add-on to the current degree programs. It is intended to be another curriculum path to earn a degree in which international competence is integrated into the program of study. The plan can be completed within the normal timeframe of four years of undergraduate study.

The overarching model for the International Plan has four components:

1. International coursework: Three courses to include one from each of the following categories:
    1. International relations
    2. Global economics
    3. A course about a specific country or region
2. International experience: Two terms abroad (not less than 26 weeks) engaged in any combination of study abroad, research, or internship
3. Second language proficiency: All students in the program are expected to reach at least the proficiency level equivalent to two years of college-level language study. Students who use the language to study, conduct research, or participate in an internship during

their international experience are expected to attain a higher level of proficiency. Language proficiency is determined by testing (not course credits).

4. Culminating course: A capstone course in the major designed to tie the international studies and experiences together with the student's major

Completion of the International Plan is recognized by a designation on the student's diploma indicating completion of the degree with global competence.

For additional information about the International Plan visit www.oie.gatech.edu/internationalplan.

RESEARCH OPTION

The Research Option is intended for students who seek a concentrated research experience, culminating in an undergraduate thesis, integrated into their undergraduate studies in civil engineering. In order to graduate with a BSC.E – Research Option degree, the students must:

Complete at least nine units of undergraduate research (over at least two, preferably three terms). Research may be for either pay (CEE 2698 or CEE 4698) or credit (CEE 2699 or CEE 4699). Research for credit may be used towards the BS CE approved elective requirements.

Write an undergraduate thesis/report of research on their findings. This is usually done during the graduating term. The thesis will be published in the Georgia Tech Library.

Take two 1-hour classes: LCC 4701: Undergraduate Research Proposal Writing (typically taken during the first or second semester of research) and LCC 4702: Undergraduate Research Thesis Writing (taken during the thesis-writing semester).

At least six of the nine required hours of research should be on the same topic. A research proposal must be approved by a faculty advisor and one other faculty member. This proposal will be completed in LCC 4701 which serves as a prerequisite for LCC 4702. Completion of Research Option is noted on the student's transcript.

JOINT BS/MS DEGREE PROGRAM – CIVIL ENGINEERING

The joint BS/MS program is designed to attract the best-of-the-best undergraduate students and is especially intended for students who demonstrate an interest in, and ability for, additional education beyond the bachelor's degree.

Students will be eligible to apply for the program after completion of 30 semester credit hours at Georgia Tech and appropriate progress in their degree program.

Students should apply for the program at least three semesters prior to graduation in order to take graduate-level courses prior to receiving their BS degree. Students must have a Georgia Tech GPA of 3.5 or higher for admission into the BS/MS Program in Civil Engineering.

The key components of this program are intense interaction among students and faculty, including mentoring and undergraduate research, and careful advising and course planning to enable students to begin challenging coursework in their fourth year of study.

This program is available only to those completing a Bachelor's degree with a major of Civil Engineering.

Students in the joint BS/MS program remain undergraduates until they meet the requirements for the bachelor's degree, at which point they will receive the BSCE degree. Their status will then be changed to graduate status. Graduate school application fees and the GRE requirements are waived.

Once admitted, a GPA of at least 3.0 must be maintained to remain in the program. Additionally, students in the BS/MS program are eligible to use the Graduate Course Option even if their cumulative grade-point average is below 3.5 at the time they complete their bachelor's degree.

SCHOOL OF CIVIL & ENVIRONMENTAL ENGINEERING

About the School
Undergraduate
Accreditation
BS Civil Engineering
Description
Degree Requirements
BS Environmental Engineering
Description
Degree Requirements
Graduate
Admissions
Master's Degrees
Bioengineering
Civil Engineering
Computational Science & Eng
Eng Sci & Mechanics
Environmental Eng
Undesignated
Dual Degree
Doctoral Degrees
Bioengineering
Civil Engineering
Computational Science & Eng
Eng Science Mechanics
Environmental Engineering
Certificates
College of Engineering

BACHELOR OF SCIENCE IN CIVIL ENGINEERING 2013 - 2014 DEGREE REQUIREMENTS

REQUIREMENT	REQ HRS	COURSE(S)	NOTES
Wellness	2	HPS 1040 or APPH 1040 or APPH 1050	
Core A - Essential Skills	3	ENGL 1101	
	3	ENGL 1102	
	4	MATH 1501	c
Core B - Institutional Options	3	CS 1371	
Core C - Humanities	6	Any HUM	a
Core D - Science, Math, & Technology	4	CHEM 1310	c
	4	PHYS 2211	b, c
	4	MATH 1502	c
Core E - Social Sciences	3	HIST 2111 or HIST 2112 or INTA 1200 or POL 1101 or PUBP 3000	
	3	ECON 2100 or ECON 2101 or ECON 2105 or ECON 2106	
	6	Any SS	
Core F - Courses Related to Major	2	COE 2001	c
	4	MATH 2401	
	4	MATH 2403	
	4	PHYS 2212	
	4	BIOL 1510 or BIOL 1511 or BIOL 1520 or BIOL 1521 or EAS 2600	
	--	Ethics Requirement	d
Major Requirements	3	AE 1770 or CEE 1770 or ME 1770	
	2	CEE 2040	
	3	CEE 2300	
	3	CEE 3000	
	3	CEE 3020	
	3	CEE 3040	
	3	CEE 3770 or ISYE 3770 or MATH 3770	
	3	CEE 4090	
College of Engineering Requirements	3	COE 3001	
	3	CHBE 2110 or ME 3322 or MSE 3000	
CE Breadth Electives	9	CEE 3055 or CEE 4100 or CEE 4200 or CEE 4300 or CEE 4405 or CEE 4600	
	3	CEE 4200 or CEE 4405	
CE Technical Electives	18	CE Electives	e
Approved Electives	6	Approved Electives	f
TOTAL:	128		

No pass-fail allowed, except for CS 1171.
CEE 4801 not allowed toward degree.
Students must earn a 2.0 average in all CEE courses.

NOTES

a = Students must complete an Ethics requirement. See below for allowable Ethics courses.
b = If PHYS 2231 is taken, extra hour goes to Free Electives.

c = C-minimum required

d = Students must complete one of the following courses during their program: CS 4001, HTS 2084, HTS 3032, INTA 2030, LCC 3318, PHIL 3105, PHIL 3109, PHIL 3127, PHIL 4176, or PUBP 3600.

e = Any 3000-level or higher CEE course, with the exception of CEE 4801, CEE 8811, and CEE 8812. Maximum of 3 hrs CEE 4699 and CEE 4900. Non-CEE courses allowed are: COA 4010, CP 4010, CP 4020, CP 4310, and CP 4510.

f = Maximum 3 hrs CEE 2699. MATH 1113, PHYS 2802, one-hour MUSI courses, GT 1000, and FREE XXXX are not allowed.

SCHOOL OF CIVIL & ENVIRONMENTAL ENGINEERING
About the School
Undergraduate
Accreditation
BS Civil Engineering
Description
Degree Requirements
BS Environmental Engineering
Description
Degree Requirements
Graduate
Admissions
Master's Degrees
Bioengineering
Civil Engineering
Computational Science & Eng
Eng Sci & Mechanics
Environmental Eng
Undesignated
Dual Degree
Doctoral Degrees
Bioengineering
Civil Engineering
Computational Science & Eng
Eng Science Mechanics
Environmental Engineering
Certificates
College of Engineering

BACHELOR OF SCIENCE IN ENVIRONMENTAL ENGINEERING

The School of Civil and Environmental Engineering (CEE) offers a BS degree in Environmental Engineering (BS EnvE). The curriculum is designed to provide students with fundamental knowledge of scientific disciplines and engineering principles that are used to address emerging environmental issues such as sustainable air, water, and land resources; human health; and environmental restoration. In the first and second years, students take courses in physics, chemistry, biology, mathematics, English composition, and introductory engineering. The third year incorporates advanced engineering topics, including solid and fluid mechanics, thermodynamics, and laboratories in engineering materials, hydraulic engineering, and environmental monitoring and process engineering. The fourth year is elective based, allowing students to select courses from specific focus areas, including biological processes, sustainability, air pollution, and water resources, in addition to technical and design electives. A senior-level capstone design course serves to integrate principles from a range of disciplines. The curriculum is intended to provide students with the flexibility to develop tailored sequences of electives to meet individual education and career objectives, while ensuring a comprehensive engineering design experience.

Specific course requirements for the BS EnvE degree are listed in the Degree Requirements page. Although students are not required to take courses during the indicated semester, all prerequisites must be satisfied. In addition to Institute academic requirements for graduation with a BS degree, the following requirements must be satisfied for the BS EnvE:

1. A letter grade of *C* or better must be earned in MATH 1501 and 1502, PHYS 2211, CHEM 1310, and COE 2001.
2. The total number of quality points earned in CEE courses used to satisfy degree requirements must be at least twice the number of credit hours in those courses. If a course is repeated, the most recent grade will be used in applying this rule. No CEE courses may be repeated for the purpose of satisfying this rule if the original grade was a *C* or higher.

PROGRAM OBJECTIVES

Graduates will pursue a diverse range of careers that build on their engineering education. During the initial years of their careers, graduates will:

A. apply technical proficiency in the principles and methods essential to modern environmental engineering practice.

B. demonstrate understanding of global, societal, environmental, and sustainability issues related to environmental engineering.

C. exhibit effective communication, teamwork, entrepreneurial, and leadership skills.

D. engage in ethical and responsible practice while pursuing professional growth.

COOPERATIVE PLAN

Since 1912, Georgia Tech has offered a five-year Undergraduate Cooperative Program to those students who wish to combine career-related experience with classroom studies. The program is the fourth oldest of its kind in the world and the largest optional co-op program in the country.

Students alternate between work assignments and classroom studies until they complete four or five semesters of work. Co-op students with an environmental engineering major complete the same coursework on campus that is completed by regular four-year students. Most co-op students begin the program as freshmen or sophomores and are classified as full time students regardless of whether they are attending classes on campus or are full time at an employer's location.

Students who participate in the program have the opportunity to develop career interests, become more confident in their career choices, and develop human relations skills through their work experience. Graduates of the program receive a bachelor's degree with a Cooperative Plan Designation.

The Undergraduate Professional Internship Program is for environmental engineering students who do not participate in the Cooperative Program, but want some career-related experience before graduation. Students generally work for one semester, usually in the summer, with an option for more work experiences. Students must have completed at least 30 hours of coursework at Georgia Tech before they can participate in the program. For more details, see: www.upi.gatech.edu.

In addition, there is a Work Abroad Program (www.workabroad.gatech.edu), which complements a student's formal education with paid international work experience directly related to environmental engineering. Participating students typically are juniors and seniors. The international work assignments are designed to include practical training, cross-cultural exposure and learning, and the acquisition of needed skills. This program satisfies requirements for the International Plan, which is available to environmental engineering students.

For more information about all of the programs in the Division of Professional Practice, view www.profpractice.gatech.edu.

INTERNATIONAL PLAN

The International Plan is a challenging and coherent academic program for undergraduates that develops global competence within the context of a student's major. It is a degree-long program that integrates international studies and experiences into any participating major at Georgia Tech. It helps to prepare Georgia Tech graduates professionally and personally for successful lives in the twenty-first century.

The International Plan is not intended to replace current international programs; it supplements them. Existing study abroad opportunities continue to be offered. It is also not intended to be an add-on to the current degree programs. It is intended to be another curriculum path to earn a degree in which international competence is integrated into the program of study. The plan can be completed within the normal timeframe of four years of undergraduate study.

The overarching model for the International Plan has four components:

1. International coursework: Three courses to include one from each of the following categories:
    1. International relations
    2. Global economics
    3. A course about a specific country or region

2. International experience: Two terms abroad (not less than 26 weeks) engaged in any combination of study abroad, research, or internship
3. Second language proficiency: All students in the program are expected to reach at least the proficiency level equivalent to two years of college-level language study. Students who use the language to study, conduct research, or participate in an internship during their international experience are expected to attain a higher level of proficiency. Language proficiency is determined by testing (not course credits).
4. Culminating course: A capstone course in the major designed to tie the international studies and experiences together with the student's major

Completion of the International Plan is recognized by a designation on the student's diploma indicating completion of the degree with global competence.

For additional information about the International Plan visit www.oie.gatech.edu/internationalplan.

RESEARCH OPTION

The Research Option is intended for students who seek a concentrated research experience, culminating in an undergraduate thesis, integrated into their undergraduate studies in environmental engineering. In order to graduate with a BS EnvE – Research Option degree, the students must:

Complete at least nine units of undergraduate research (over at least two, preferably three terms). Research may be for either pay (CEE 2698 or CEE 4698) or credit (CEE 2699 or CEE 4699). Research for credit may be used towards the BS EnvE approved elective requirements. Write an undergraduate thesis/report of research on their findings. This is usually done during the graduating term. The thesis will be published in the Georgia Tech Library.

Take two 1-hour classes: LCC 4701: Undergraduate Research Proposal Writing (typically taken during the first or second semester of research) and LCC 4702: Undergraduate Research Thesis Writing (taken during the thesis-writing semester).

At least six of the nine required hours of research should be on the same topic. A research proposal must be approved by a faculty advisor and one other faculty member. This proposal will be completed in LCC 4701 which serves as a prerequisite for LCC 4702. Completion of Research Option is noted on the student's transcript.

JOINT BS/MS DEGREE PROGRAM

The joint BS/MS program is designed to attract the best-of-the-best undergraduate students and is especially intended for students who demonstrate an interest in, and ability for, additional education beyond the bachelor's degree.

Students will be eligible to apply for the program after completion of 30 semester credit hours at Georgia Tech and appropriate progress in their degree program. As a practical matter, students should apply for the program at least three semesters prior to graduation in order to take graduate-level courses prior to receiving their BS degree. Students must have a Georgia Tech GPA of 3.5 or higher for admission into the BS/MS Program in Environmental Engineering.

This program is available only to those completing a Bachelor's degree with majors of Civil Engineering or Environmental Engineering.

The key components of this program are intense interaction among students and faculty, including mentoring and undergraduate research, and careful advising and course planning to enable students to begin challenging coursework in their fourth year of study.

Students in the joint BS/MS program remain undergraduates until they meet the requirements for the bachelor's degree, at which point they will receive the BSEnvE degree. Their status will then be changed to graduate status. Graduate school application fees and the GRE requirements are waived.

Once admitted, a GPA of at least 3.0 must be maintained to remain in the program. Additionally, students in the BS/MS program are eligible to use the Graduate Course Option even if their cumulative grade-point average is below 3.5 at the time they complete their bachelor's degree.

SCHOOL OF CIVIL & ENVIRONMENTAL ENGINEERING

BACHELOR OF SCIENCE IN ENVIRONMENTAL ENGINEERING 2013 - 2014 DEGREE REQUIREMENTS

REQUIREMENT	REQ HRS	COURSE(S)	NOTES
Wellness	2	HPS 1040 or APPH 1040 or APPH 1050	
Core A - Essential Skills	3	ENGL 1101	
	3	ENGL 1102	
	4	MATH 1501	c
Core B - Institutional Options	3	CS 1371	
Core C - Humanities	6	Any HUM	a
Core D - Science, Math, & Technology	4	CHEM 1310	c
	4	PHYS 2211	b, c
	4	MATH 1502	c
Core E - Social Sciences	3	HIST 2111 or HIST 2112 or INTA 1200 or POL 1101 or PUBP 3000	
	3	ECON 2100 or ECON 2101 or ECON 2105 or ECON 2106	
	6	Any SS	
Core F - Courses Related to Major	2	COE 2001	c
	4	MATH 2401	
	4	MATH 2403	
	4	PHYS 2212	
	4	BIOL 1510	
	--	Ethics Requirement	d
Major Requirements	2	CEE 2040	
	3	CEE 2300	
	3	CEE 3000	
	3	CEE 3020	
	3	CEE 3040	
	3	CEE 3340	
	3	CEE 3770 or ISYE 3770	
	3	CEE 4090	
	3	CEE 4200	
	3	CEE 4300	
	3	COE 3001	
Additional Requirements	3	CHEM 1315	
	4	EAS 2600	
	3	CHBE 2110 or CHEM 3411 or EAS 3603 or ME 3322	
Environmental Engineering Technical Electives	3	CEE 4210 or CEE 4405 or CEE 4620 or CEE 4795	
	3	CEE 4310 or CEE 4320 or CEE 4330 or CEE 4395	
Technical Elective Focus	9	Technical Electives	e
	3	Additional Technical Elective	f
Approved Electives	6	Approved Electives	g
TOTAL:	129		

No pass-fail allowed, except for CS 1171. CEE 4801 not allowed toward degree.
Students must earn a 2.0 average in all CEE courses.
Students must earn a minimum of 52 hours from the College of Engineering. (40 hours of

required courses plus a minimum of twelve hours from electives.)

NOTES

a = Students must complete an Ethics requirement. See below for allowable Ethics courses.

b = If PHYS 2231 is taken, extra hour goes to Free Electives.

c = C-minimum required

d = Students must complete one of the following courses during their program: CS 4001, HTS 2084, HTS 3032, INTA 2030, LCC 3318, PHIL 3105, PHIL 3109, PHIL 3127, PHIL 4176, or PUBP 3600.

e = Technical Electives must be chosen from the following list: BIOL 2335 or BIOL 3380 or BIOL 4010 or BIOL 4430 or BMED 3400 or BMED 4757 or BMED 4758 or CEE 3010 or CEE 4100 or CEE 4210 or CEE 4225 or CEE 4230 or CEE 4310 or CEE 4320 or CEE 4330 or CEE 4405 or CEE 4420 or CEE 4600 or CEE 4620 or CEE 4795 or CHBE 3200 or CHEM 3281 or CHEM 3511 or CHEM 4740 or CP 4210 or CP 4510 or EAS 4110 or EAS 4300 or EAS 4410 or EAS 4420 or EAS 4430 or EAS 4480 or EAS 4610 or EAS 4625 or EAS 4740 or ECE 3710 or ECE 3741 or ME 4171 or ME 4172 or ME 4782. Maximum of 3 hrs CEE 4699 and CEE 4900.

f = Additional Technical Elective must be chosen from this list: BIOL 2335 or BIOL 3380 or BIOL 4010 or BIOL 4430 or CHEM 3281 or CHEM 3511 or CHEM 4740 or CP 4210 or CP 4510 or EAS 4420 or EAS 4430 or EAS 4610 or EAS 4740.

g = Maximum 3 hrs CEE 2699. MATH 1113, PHYS 2802, one-hour MUSI courses, GT 1000, and FREE XXXX are not allowed.

MASTER OF SCIENCE IN BIOENGINEERING

The School of Civil and Environmental Engineering (CEE) participates in the Bioengineering Program. This interdisciplinary graduate program offers advanced courses in bioengineering, engineering specialties, and life sciences combined with training in cutting-edge bioengineering research. Bioengineering research focuses on the development of new or improved physical and mathematical concepts and techniques that may be applied to problems in medicine and biology, including the fundamental study of biological phenomena and development of new medical devices.

The Bioengineering Program offers master's and doctoral degrees through participating Schools in the College of Engineering and the College of Computing. The curriculum involves engineering and life sciences coursework and provides flexibility to concentrate in specific areas to develop a multidisciplinary and integrated training. Interested applicants with a Civil and/or Environmental Engineering background apply for admission in the Bioengineering Program through CEE. Once admitted, students follow the Bioengineering Program's degree requirements and curriculum.

Additional information on the Bioengineering Program, including how to apply and a comparison between the Bioengineering Program and traditional engineering programs, can be found at www.bioengineering.gatech.edu.

MASTER OF SCIENCE IN CIVIL ENGINEERING

The School of Civil & Environmental Engineering (CEE) offers a challenging graduate program that encompasses advanced study and research leading to the degree of Master of Science in Civil Engineering. Students seeking this degree must have previously earned a Bachelor of Science in Civil Engineering or its equivalent.

a. **Non-Thesis Option**
   Credit Hours in Major Area of Specialization: 18
   Credit Hours in Approved Electives: 12
   Total Credit Hours: 30*
b. **Thesis Option**
   Credit Hours in Major Area of Specialization: twelve credit hours in Approved Electives: twelve credit hours in CEE 7000 Master's Thesis: 6 Total Credit Hours: 30*

Major Areas of Specialization are:

Construction Engineering
Environmental Engineering
Environmental Fluid Mechanics and Water Resources
Geosystems Engineering
Structural Engineering, Mechanics and Materials
Transportation Systems Engineering

*21 of the 30 hours of coursework must be at the 6000 level or higher

JOINT BS/MS DEGREE PROGRAM – CIVIL ENGINEERING

The joint BS/MS program is designed to attract the best-of-the-best undergraduate students and is especially intended for students who demonstrate an interest in, and ability for, additional education beyond the bachelor's degree.

Students will be eligible to apply for the program after completion of 30 semester credit hours at Georgia Tech and appropriate progress in their degree program.

Students should apply for the program at least three semesters prior to graduation in order to take graduate-level courses prior to receiving their BS degree. Students must have a Georgia Tech GPA of 3.5 or higher for admission into the BS/MS Program in Civil Engineering.

The key components of this program are intense interaction among students and faculty, including mentoring and undergraduate research, and careful advising and course planning to enable students to begin challenging coursework in their fourth year of study.

This program is available only to those completing a Bachelor's degree with a major of Civil Engineering.

Students in the joint BS/MS program remain undergraduates until they meet the requirements for the bachelor's degree, at which point they will receive the BSCE degree. Their status will then be changed to graduate status. Graduate school application fees and the GRE requirements are waived.

Once admitted, a GPA of at least 3.0 must be maintained to remain in the program. Additionally, students in the BS/MS program are eligible to use the Graduate Course Option even if their cumulative grade-point average is below 3.5 at the time they complete their bachelor's degree.

MASTER OF SCIENCE IN COMPUTATIONAL SCIENCE AND ENGINEERING

The School of Civil and Environmental Engineering (CEE) participates in the Computational Science and Engineering (CSE) Program. CSE is an interdisciplinary program addressing the body of knowledge, skills, and practices associated with the study of computer-based models of natural phenomena and engineered systems. Students will be required to obtain a breadth of knowledge across a set of core areas in the CSE discipline, depth of knowledge in a specific computational specialization (e.g., numerical computing), and knowledge to apply computational techniques in a domain of application. Students will be expected to integrate principles from mathematics, computer science, and engineering to be able to create significant computational artifacts (e.g., software).

The CSE Master of Science degree program is an interdisciplinary program offered by the College of Computing, the College of Engineering, and the College of Sciences. Interested applicants with a Civil and/or Environmental Engineering background apply for admission in the CSE program through CEE. Once admitted, students follow the CSE program's degree requirements and curriculum.

Students must complete four of the five courses making up the core curriculum: CSE/Math 6643 (Numerical Linear Algebra), CSE 6140 (Computational Science and Engineering Algorithms), CSE 6730 (Modeling and Simulation: Fundamentals & Implementation), CSE/ISYE 6740 (Computational Data Analysis), and CSE 6220 (High Performance Computing). A specialization (CEE) minor is required consisting of twelve hours of coursework relevant to the CSE discipline that includes one applications area; this must include at least six hours of courses that do not carry the CS/CSE course designation. Finally, students must either complete 6 additional hours of approved coursework (course option) or an MS thesis (thesis option) that is defended to the student's thesis committee who is responsible for overseeing the student's research. six hours of thesis credit are required in the thesis option. A program of study must be approved by the CSE Program Director and CEE's Associate Chair for Graduate Programs.

MASTER OF SCIENCE IN ENGINEERING SCIENCE AND MECHANICS

The School of Civil & Environmental Engineering (CEE) offers a challenging graduate program that encompasses advanced study and research leading to the degree of Master of Science in Engineering Science and Mechanics. Students seeking this degree must have a Bachelor of Science in engineering or the physical sciences.

a. **Non-Thesis Option**
   Credit Hours in Mechanics: 18
   Credit Hours in Mathematics: 6
   Credit Hours in Approved Electives: 6
   Total Credit Hours: 30*
b. **Thesis Option**
   Credit Hours in Mechanics: 12
   Credit Hours in Mathematics: 6
   Credit Hours in Approved Electives: 6
   Credit Hours in CEE 7000 Master's Thesis: 6
   Total Credit Hours: 30*

*21 of the 30 hours of coursework must be at the 6000 level or higher

MASTER OF SCIENCE IN ENVIRONMENTAL ENGINEERING

The School of Civil & Environmental Engineering (CEE) offers a challenging graduate program that encompasses advanced study and research leading to the degree of Master of Science in Environmental Engineering. Students seeking this degree must have previously earned a Bachelor of Science in engineering.

a. **Non-Thesis Option**
   Credit Hours in Environmental Engineering Core Courses: 15
   Credit Hours in Approved Electives: 15
   Total Credit Hours: 30
   *
b. **Thesis Option**
   Credit Hours in Environmental Engineering Core Courses: 15
   Credit Hours in Approved Electives: 9
   Credit Hours in CEE 7000 Master's Thesis: 6
   Total Credit Hours: 30*

*21 of the total hours must be at the 6000 level or higher

JOINT BS/MS DEGREE PROGRAM – ENVIRONMENTAL ENGINEERING

The joint BS/MS program is designed to attract the best-of-the-best undergraduate students and is especially intended for students who demonstrate an interest in, and ability for, additional education beyond the bachelor's degree.

Students will be eligible to apply for the program after completion of 30 semester credit hours at Georgia Tech and appropriate progress in their degree program. As a practical matter, students should apply for the program at least three semesters prior to graduation in order to take graduate-level courses prior to receiving their BS degree. Students must have a Georgia Tech GPA of 3.5 or higher for admission into the BS/MS Program in Environmental Engineering.

This program is available only to those completing a Bachelor's degree with majors of Civil Engineering or Environmental Engineering.

The key components of this program are intense interaction among students and faculty, including mentoring and undergraduate research, and careful advising and course planning to enable students to begin challenging coursework in their fourth year of study.

Students in the joint BS/MS program remain undergraduates until they meet the requirements for the bachelor's degree, at which point they will receive the BSEnvE or BSCE degree. Their status will then be changed to graduate status. Graduate school application fees and the GRE requirements are waived.

Once admitted, a GPA of at least 3.0 must be maintained to remain in the program. Additionally, students in the BS/MS program are eligible to use the Graduate Course Option even if their cumulative grade-point average is below 3.5 at the time they complete their bachelor's degree.

MASTER OF SCIENCE (UNDESIGNATED)

The School of Civil & Environmental Engineering (CEE) offers a challenging graduate program that encompasses advanced study and research leading to the degree of Master of Science. Students who satisfy the degree requirements, and who have not earned an undergraduate degree required for CEE's designated degrees, receive the undesignated Master of Science degree.

a. **Non-Thesis Option**
   Credit Hours in Major Area of Specialization: 18
   Credit Hours in Approved Electives: 12
   Total Credit Hours: 30*
b. **Thesis Option**
   Credit Hours in Major Area of Specialization: 12
   Credit Hours in Approved Electives: 12
   Credit Hours in CEE 7000 Master's Thesis: 6
   Total Credit Hours: 30*

Major Areas of Specialization are:

Construction Engineering
Environmental Engineering
Environmental Fluid Mechanics and Water Resources
Geosystems Engineering
Structural Engineering, Mechanics and Materials
Transportation Systems Engineering

*21 of the 30 hours of coursework must be at the 6000 level or higher

DUAL DEGREE MCRP/MSCE OR MCRP/MS-CE (TRANSPORTATION PLANNING/TRANSPORTATION SYSTEMS ENGINEERING)

This dual degree program is designed to meet the need of planning agencies and transportation departments for staff who combine expertise in city and regional planning and transportation systems engineering. The program consists of coursework in city and regional planning, transportation systems engineering, and transportation planning. It is administered jointly by the School of City and Regional Planning and the School of Civil and Environmental Engineering.

DOCTOR OF PHILOSOPHY WITH A MAJOR IN BIOENGINEERING

The School of Civil and Environmental Engineering (CEE) participates in the Bioengineering Program. This interdisciplinary graduate program offers advanced courses in bioengineering, engineering specialties, and life sciences combined with training in cutting-edge bioengineering research. Bioengineering research focuses on the development of new or improved physical and mathematical concepts and techniques that may be applied to problems in medicine and biology, including the fundamental study of biological phenomena and development of new medical devices.

The Bioengineering Program offers master's and doctoral degrees through participating Schools in the College of Engineering and the College of Computing. The curriculum involves engineering and life sciences coursework and provides flexibility to concentrate in specific areas to develop multidisciplinary and integrated training. Interested applicants with a Civil and/or Environmental Engineering background apply for admission in the Bioengineering Program through CEE. Once admitted, students follow the Bioengineering Program's degree requirements and curriculum.

Additional information on the Bioengineering Program, including how to apply and a comparison between the Bioengineering Program and traditional engineering programs, can be found at www.bioengineering.gatech.edu.

DOCTOR OF PHILOSOPHY WITH A MAJOR IN CIVIL ENGINEERING

The Ph.D. program in the School of Civil and Environmental Engineering is offered to students with an excellent academic background and a capacity for independent research. Doctoral candidates tailor a highly individualized Program of Study (typically 50 credit hours of courses beyond the bachelor's degree) to develop expertise in their major specialization area. As part of the Program of Study, candidates must complete a Minor Field of Study. To demonstrate the ability for independent research, the candidate must pass a qualifying examination, a thesis proposal, and a thesis defense. Candidates are required to complete a doctoral thesis reporting the results of independent research that advances the state-of-the-art in Civil Engineering.

Major Areas of Specialization are:

Construction Engineering
Environmental Engineering
Environmental Fluid Mechanics and Water Resources
Geosystems Engineering
Structural Engineering, Mechanics and Materials
Transportation Systems Engineering

DOCTOR OF PHILOSOPHY WITH A MAJOR IN COMPUTATIONAL SCIENCE AND ENGINEERING

The School of Civil and Environmental Engineering (CEE) participates in the Computational Science and Engineering (CSE) Program.Â CSE is an interdisciplinary program addressing the body of knowledge, skills, and practices associated with the study of computer-based models of natural phenomena and engineered systems. Students will be required to obtain a breadth of knowledge across a set of core areas, depth of knowledge in a specific computational specialization (e.g., numerical computing), and knowledge to apply computational techniques in a domain of application. Students will be expected to integrate principles from mathematics, computing, science, and engineering to be able to create significant computational artifacts (e.g., software), and to complete independent research that advances the state-of-the-art in the CSE discipline.

The CSE Ph.D. degree program is an interdisciplinary program offered by the College of Computing, the College of Engineering, and the College of Sciences. Interested applicants with a civil and/or environmental engineering background apply for admission in the CSE program through CEE. Once admitted, students follow the CSE program's degree requirements and curriculum.

Required coursework includes CSE 6001 (Introduction to Computational Science and Engineering), CSE core courses (12 hours), a computation specialization (nine hours), and an application specialization (nine hours). To complete the core course requirement, students must complete four of the five courses making up the core curriculum: CSE/Math 6643 (Numerical Linear Algebra), CSE 6140 (Computational Science and Engineering Algorithms), CSE 6730 (Modeling and Simulation: Fundamentals & Implementation), CSE/ISYE 6740 (Computational Data Analysis), and CSE 6220 (High Performance Computing). The computational specialization includes at least nine hours of courses that increase the student's depth of understanding of computational methods in a specific area, as approved by the student's academic advisor. These courses must go beyond "using computers" to deepen understanding of computational methods, preferably in the context of some application domain. The application specialization includes at least nine hours of courses that increase depth of understanding in an application field; these need not be computation-focused courses. At least nine hours of Ph.D. courses must be courses that do not carry the CS/CSE course designation. These hours may be taken in CEE. Hours taken as part of the computation and/or application specialization can be used to fulfill this requirement.

A qualifying examination must be attempted by the end of the second year of enrollment in the CSE doctoral program (normally taken after the student completes CSE core coursework). A qualifying examination committee shall be appointed by the CSE program coordinator for each student and is responsible for making an overall recommendation concerning the outcome of the qualifying examination.

Students are required to complete a doctoral thesis reporting the results of independent research that advances the state-of-the-art in the computational science and engineering discipline. The thesis must be successfully defended to the student's thesis committee.

DOCTOR OF PHILOSOPHY WITH A MAJOR IN ENGINEERING SCIENCE AND MECHANICS

The Ph.D. program in the School of Civil and Environmental Engineering is offered to students with an excellent academic background and a capacity for independent research. Doctoral students tailor a highly individualized Program of Study (typically around 50 credit hours of courses beyond the bachelor's degree) to develop expertise in the major area of Engineering Science and Mechanics. As part of the Program of Study, candidates must complete a Minor Field of Study. To demonstrate the ability for independent research, the candidate must pass a qualifying examination, a thesis proposal, and a thesis defense. Candidates are required to complete a doctoral thesis reporting the results of independent research that advances the state-of-the-art in Engineering Science and Mechanics.

DOCTOR OF PHILOSOPHY WITH A MAJOR IN ENVIRONMENTAL ENGINEERING

The Ph.D. program in the School of Civil and Environmental Engineering is offered to students with an excellent academic background and a capacity for independent research. Doctoral students tailor a highly individualized Program of Study (typically around 50 credit hours of courses beyond the bachelor's degree) to develop expertise in the major area of Environmental Engineering. As part of the Program of Study, candidates must complete a Minor Field of Study. To demonstrate the ability for independent research, the candidate must pass a qualifying examination, a thesis proposal, and a thesis defense. Candidates are required to complete a doctoral thesis reporting the results of independent research that advances the state-of-the-art in Environmental Engineering.

SCHOOL OF CIVIL & ENVIRONMENTAL ENGINEERING

CERTIFICATE PROGRAM IN REMOTE SENSING

Students completing the master's or doctoral degree requirements of the School may earn a Remote Sensing Certificate. Additional details can be found in this catalog at http://www.catalog.gatech.edu/colleges/cos/eas/grad/certificates.php.

ACCREDITATION

The following undergraduate engineering programs are accredited by the Engineering Accreditation Commission of ABET, www.abet.org.

- Bachelor of Science in Computer Engineering
- Bachelor of Science in Computer Engineering - Regional Engineering Program (offered through Georgia Tech-Savannah)
- Bachelor of Science in Electrical Engineering
- Bachelor of Science in Electrical Engineering - Regional Engineering Program (offered through Georgia Tech-Savannah)

BACHELOR OF SCIENCE IN COMPUTER ENGINEERING

The School of Electrical and Computer Engineering offers two undergraduate degree programs: electrical engineering (EE) and computer engineering (CmpE). Both programs include elective hours, enabling students to individually tailor their programs to provide emphasis in a particular specialization or exposure to a broad range of subjects. Engineering analysis and design concepts are integrated throughout both programs, culminating in a common major design experience involving a broad range of issues including economic and societal considerations.

The field of computer engineering is centered in digital design, computer architecture, computer networks and internetworking, and computer applications. The BS CmpE program offers elective courses in a wide variety of specializations, including computer architecture; embedded systems and software; design tools, test, and verification; computer networks and internetworking; distributed systems and software; and VLSI design. Additionally, students may elect to take advanced courses in other EE specializations, computer science, or programs, such as mathematics, physics, or management. As an alternative to the BS CmpE degree, students may choose a computer engineering specialization within the BS EE degree program.

PROGRAM OBJECTIVES

The School of Electrical and Computer Engineering has established the following student educational objectives for its undergraduate programs:

A. Graduates will be successful in the professional practice of engineering or other related fields. They will obtain employment appropriate to their background, interests, and education and will advance in their career field.
B. Graduates will engage in life-long learning; e.g., advanced education/degrees, professional development activities, and/or other career-appropriate options.
C. Graduates who are employed within engineering fields will demonstrate technical competence, such as identifying, formulating, analyzing, and creating engineering solutions using appropriate current engineering techniques, skills, and tools.
D. As appropriate to their professional or educational positions, graduates will (i) effectively communicate technical information in multiple formats, (ii) function effectively on teams, and (iii) develop and apply electrical/computer engineering solutions within global, societal, and environmental contexts.

Additional information about program assessment for all of the School's programs is available on the ECE website.

COOPERATIVE PLAN

The Georgia Tech Undergraduate Cooperative Education Program allows students to combine classroom study with paid practical work experience directly related to the academic major. Co-ops alternate semesters of on-campus study with semesters of full-time employment, normally beginning the program as freshmen or sophomores. Over 30 percent of ECE undergraduates participate in the co-op program.

The degree requirements for students in the co-op program are the same as those for other students in the major. The Cooperative Plan designation may be pursued separately or in combination with the International Plan and/or the Research Option.

Begun in 1912, Georgia Tech's program is currently the largest optional co-op program in the United States and has perennially been listed in U.S. News & World Report as one of the top ten co-op programs in America. As an integral part of the overall education experience, the co-op program allows students to take on increasing levels of responsibility and to use their job knowledge and classroom learning to make meaningful contributions to the organizations in which they work. Many co-op graduates are hired by their co-op employer, and more than 700 companies or government organizations throughout the United States and abroad currently employ Georgia Tech Undergrad Co-op Program students.

Because the School of ECE in Atlanta offers a wide range of electives and almost all required courses every term, including summer, co-op students have substantial flexibility in completing their degree requirements. Many students continue their co-op work assignments through the senior year. Additionally, co-op students working in the Atlanta area may be able to take certain ECE courses, particularly laboratories offered in the evening, during the work term.

In addition to the co-op program, the Division of Professional Practice also offers the Undergraduate Professional Internship and Work Abroad programs. These programs also provide opportunities for students to gain practical work experience, without the long-term commitment of the co-op program.

INTERNATIONAL PLAN

The International Plan is intended for students who seek an intensive international experience integrated into their undergraduate studies in computer engineering. The International Plan develops global competence through a combination of coursework, language study, and residential overseas experience. Students who complete this option receive a designation on their transcript and diploma.

The computer engineering aspects of the BS CmpE - International Plan degree requirements are identical to those for the regular BS CmpE . Please refer to the BS CmpE catalog description for general information about the degree program. Students may be able to satisfy the additional requirements imposed for the International Plan designation through appropriate choices of electives without additional credit hours to complete the degree. The International Plan designation may be pursued separately, or in combination with the Cooperative Plan and/or the Research Option.

The School of Electrical and Computer Engineering offers a junior-year program at the Georgia Tech-Lorraine campus in Metz, France, that is designed to facilitate participation in the International Plan. However, computer engineering majors are not restricted to this option and may complete any allowable courses, languages, and overseas experiences that satisfy the International Plan requirements.

RESEARCH OPTION

The Research Option is intended for students who seek a concentrated research experience, culminating in an undergraduate thesis, integrated into their undergraduate studies in computer engineering. This option includes three or four semesters of structured research and provides an open evaluation of a student's research capabilities, viewable by the public via a required Web-based research portfolio. Students who complete this option receive a designation on their transcript.

The computer engineering aspects of the BS CmpE-Research Option degree requirements are identical to those for the regular BS CmpE . Please refer to the BS CmpE catalog description for general information about the degree program. Students may be able to satisfy the additional requirements imposed for the Research Option designation through appropriate choices of electives without additional credit hours to complete the degree. The Research Option designation may be pursued separately, or in combination with the Cooperative Plan and/or the International Plan.

The School of Electrical and Computer Engineering (ECE) offers a two-semester Undergraduate Research Opportunity Program (UROP), which may be completed to provide a less-intensive research experience or as the initial phase of the Research Option. Contact the ECE Academic Office for additional information about the Research Option, including specific Institute and ECE requirements, and assistance in planning your schedule to allow participation in this program.

BS/MS ELECTRICAL AND COMPUTER ENGINEERING

This program allows highly qualified students to receive the Bachelor of Science in either Electrical Engineering or Computer Engineering and a master's degree in Electrical and Computer Engineering. The joint BS/MS degree program affords undergraduate electrical or computer engineering majors the opportunity to broaden their studies and improve their career prospects.

Eligible Georgia Tech undergraduates normally apply for this program during their junior year. Contact the Electrical and Computer Engineering Graduate Affairs Office for program information, eligibility requirements, and applications.

DUAL BS IN COMPUTER ENGINEERING GEORGIA TECH & KOREA ADVANCED INSTITUTE OF SCIENCE & TECH

Students may pursue the BSEE degree from the Korea Advanced Institute of Science and Technology (KAIST) as they earn the BSEE or BSCmpE from Georgia Tech. KAIST offers one of the top engineering programs in Korea and the Far East. All lectures at KAIST are given in English to better serve a growing number of students from overseas. While earning their dual degrees, students spend two years each at both Georgia Tech and KAIST.

BACHELOR OF SCIENCE IN COMPUTER ENGINEERING 2013 - 2014 DEGREE REQUIREMENTS

REQUIREMENT	REQ HRS	COURSE(S)	NOTES
Wellness	2	HPS 1040 or APPH 1040 or APPH 1050	
Core A - Essential Skills	3	ENGL 1101	
	3	ENGL 1102	
	4	MATH 1501	c
Core B - Institutional Options	3	CS 1371	c
Core C - Humanities	6	Any HUM	a
Core D - Science, Math, & Technology	4	CHEM 1310 or CHEM 1211K	
	4	PHYS 2211	c, b
	4	MATH 1502	c
Core E - Social Sciences	3	HIST 2111 or HIST 2112 or INTA 1200 or POL 1101 or PUBP 3000	
	3	ECON 2100 or ECON 2101 or ECON 2105 or ECON 2106	
	6	Any SS	
Core F - Courses Related to Major	3	ECE 2020	c
	4	MATH 2401	c
	4	MATH 2403	c
	4	PHYS 2212	c
	3	Science Elective	d
	--	Ethics Requirement	e
	--	Probability/Statistics	i
	--	Professional Communications	j
Major Requirements	3	ECE 2026	c
	2	ECE 2031	c
	4	ECE 2035	c
	4	ECE 2036	c
	3	ECE 2040	c
	3	ECE 3020	c
	3	ECE 3030	c
	3	ECE 3056	c
	2	ECE 4011	c
	3	ECE 4012	c
Non-ECE Engineering Electives	5	Electives	c, h
CMPE Upper Level Electives	22	ECE/CS 3-4000-Level Electives	f,k
Approved Electives	12	Approved Electives	g
TOTAL:	132		

Pass-fail only allowed for Humanities Electives, Social Sciences Electives, Science Electives, and Free Elective courses.

NOTES

a = Students must complete an Ethics requirement. See below for allowable Ethics courses.
b = If PHYS 2231 is taken, extra hour goes to Free Electives.
c = C-minimum required
d = Science Elective must be chosen from the following list: APPH 3751, BIOL 1510, BIOL 1520,

BIOL 3751, CHEM 1212K, CHEM 1311, CHEM 1315, EAS 1600, EAS 1601, EAS 2600, EAS 2601, PHYS 2021, PHYS 2022, or PHYS 2213.

e = Students must complete one Ethics course during their program. For a complete list of Ethics courses, please see: http://www.catalog.gatech.edu/students/ugrad/core/ethics.php

f = ECE 3005, ECE 3710, ECE 3741, ECE 4699 CS 4699, ECE 3900 -level, CS 3900 -level, ECE 4900 -level, CS 4900 -level, CS 3800 -level, and CS 4800 -level not allowed.

g = The following courses are not allowed: ECE 3710, ECE 3741, HPS 1XXX, LCC 2661, LCC 2662, LCC 3661, LCC 3662, MATH 1113, MUSI 1008, MUSI 1009, MUSI 2008, MUSI 2009, MUSI 3008, MUSI 3009, MUSI 4008, and MUSI 4009. Maximum of six hours of Special Problems.

h = Course must be 2000 -level or higher and 2 credit hours or more. BMED 2400, COE 3002, ISYE 2027, ISYE 2028, CHBE 2120, ME 2016, ME 2110, not allowed. 2800- , 2900-, 3900-, or 4900-level classes not allowed. Engineering courses outside of ECE must be 2000-level or higher and 2 hours or more.

i = CEE 3770 or ISYE 3770 or MATH 3770 or ECE 3077 (Must be taken on Letter/Grade basis)

j = ECE 3005 or ECE 3006

k = 9 hours must be 4000-level and each 4000-level course must have a 3000- or 4000-level ECE/CS course as a prerequisite.

l = A minimum of 9 credit hours at the 4000-level or higher, where each 4000-level course must have a 3000- or 4000-level ECE/CS course as a prerequisite.

BACHELOR OF SCIENCE IN ELECTRICAL ENGINEERING

The School of Electrical and Computer Engineering offers two undergraduate degree programs: electrical engineering (EE) and computer engineering (CmpE). Both programs include elective hours, enabling students to individually tailor their programs to provide emphasis in a particular specialization or exposure to a broad range of subjects. Engineering analysis and design concepts are integrated throughout both programs, culminating in a common major design experience involving a broad range of issues including economic and societal considerations.

The EE program offers elective courses in a wide variety of specializations including analog electronics, bioengineering, computer engineering, systems and controls, microsystems and nanosystems, electronics packaging, digital signal processing, optics and photonics, electrical energy, electromagnetics, and telecommunications. Additionally, students may elect to take advanced courses in other programs such as computer science, mathematics, physics, or management.

PROGRAM OBJECTIVES

The School of Electrical and Computer Engineering has established the following student educational objectives for its undergraduate programs:

A. Graduates will be successful in the professional practice of engineering or other related fields. They will obtain employment appropriate to their background, interests, and education and will advance in their career field.

B. Graduates will engage in life-long learning; e.g., advanced education/degrees, professional development activities, and/or other career-appropriate options.

C. Graduates who are employed within engineering fields will demonstrate technical competence, such as identifying, formulating, analyzing, and creating engineering solutions using appropriate current engineering techniques, skills, and tools.

D. As appropriate to their professional or educational positions, graduates will (i) effectively communicate technical information in multiple formats, (ii) function effectively on teams, and (iii) develop and apply electrical/computer engineering solutions within global, societal, and environmental contexts.

Additional information about program assessment for all of the School's programs is available on the ECE website.

COOPERATIVE PLAN

The Georgia Tech Undergraduate Cooperative Education Program allows students to combine classroom study with paid practical work experience directly related to the academic major. Co-ops alternate semesters of on-campus study with semesters of full-time employment, normally beginning the program as freshmen or sophomores. Over 30 percent of ECE undergraduates participate in the co-op program.

The degree requirements for students in the co-op program are the same as those for other students in the major. The Cooperative Plan designation may be pursued separately or in combination with the International Plan and/or the Research Option.

Begun in 1912, Georgia Tech's program is currently the largest optional co-op program in the United States and has perennially been listed in U.S. News & World Report as one of the top ten co-op programs in America. As an integral part of the overall education experience, the co-op program allows students to take on increasing levels of responsibility and to use their job knowledge and classroom learning to make meaningful contributions to the organizations in which they work. Many co-op graduates are hired by their co-op employer, and more than 700 companies or government organizations throughout the United States and abroad currently employ Georgia Tech Undergrad Co-op Program students.

Because the School of ECE in Atlanta offers a wide range of electives and almost all required courses every term, including summer, co-op students have substantial flexibility in completing their degree requirements. Many students continue their co-op work assignments through the senior year. Additionally, co-op students working in the Atlanta area may be able to take certain ECE courses, particularly laboratories offered in the evening, during the work term.

In addition to the co-op program, the Division of Professional Practice also offers the Undergraduate Professional Internship and Work Abroad programs. These programs also provide opportunities for students to gain practical work experience, without the long-term commitment of the co-op program.

INTERNATIONAL PLAN

The International Plan is intended for students who seek an intensive international experience integrated into their undergraduate studies in electrical engineering. The International Plan develops global competence through a combination of coursework, language study, and residential overseas experience. Students who complete this option receive a designation on their transcript and diploma.

The electrical engineering aspects of the BS EE - International Plan degree requirements are identical to those for the regular BS EE. Please refer to the BS EE catalog description for general information about the degree program. Students may be able to satisfy the additional requirements imposed for the International Plan designation through appropriate choices of electives without additional credit hours to complete the degree. The International Plan designation may be pursued separately or in combination with the Cooperative Plan and/or the Research Option.

The School of Electrical and Computer Engineering offers a junior-year program at the Georgia Tech-Lorraine campus in Metz, France, that is designed to facilitate participation in the International Plan. However, electrical engineering majors are not restricted to this option and may complete any allowable courses, languages, and overseas experiences that satisfy the International Plan requirements.

RESEARCH OPTION

The Research Option is intended for students who seek a concentrated research experience, culminating in an undergraduate thesis, integrated into their undergraduate studies in electrical engineering. This option includes three or four semesters of structured research and provides an open evaluation of a student's research capabilities, viewable by the public via a required Web-based research portfolio. Students who complete this option receive a designation on their transcript.

The electrical engineering aspects of the BS EE - Research Option degree requirements are identical to those for the regular BS EE. Please refer to the BS EE catalog description for general information about the degree program. Students may be able to satisfy the additional requirements imposed for the Research Option designation through appropriate choices of electives without additional credit hours to complete the degree. The Research Option designation may be pursued separately, or in combination with the Cooperative Plan and/or the International Plan.

The School of Electrical and Computer Engineering (ECE) offers a two-semester Undergraduate Research Opportunity Program (UROP), which may be completed to provide a less-intensive research experience or as the initial phase of the Research Option. Contact the ECE Academic Office for additional information about the Research Option, including specific Institute and ECE requirements, and assistance in planning your schedule to allow participation in this program.

BS/MS ELECTRICAL AND COMPUTER ENGINEERING

This program allows highly qualified students to receive the Bachelor of Science in either Electrical Engineering or Computer Engineering and a master's degree in Electrical and Computer Engineering. The joint BS/MS degree program affords undergraduate electrical or computer engineering majors the opportunity to broaden their studies and improve their career prospects.

Eligible Georgia Tech undergraduates normally apply for this program during their junior year. Contact the Electrical and Computer Engineering Graduate Affairs Office for program information, eligibility requirements, and applications.

DUAL BS IN ELECTRICAL ENGINEERING
GEORGIA TECH & KOREA ADVANCED INSTITUTE OF SCIENCE & TECH

Students may pursue the BSEE degree from the Korea Advanced Institute of Science and Technology (KAIST) as they earn the BSEE or BSCmpE from Georgia Tech. KAIST offers one of the top engineering programs in Korea and the Far East. All lectures at KAIST are given in English to better serve a growing number of students from overseas. While earning their dual degrees, students spend two years each at both Georgia Tech and KAIST.

SCHOOL OF ELECTRICAL & COMPUTER ENGINEERING

BACHELOR OF SCIENCE IN ELECTRICAL ENGINEERING 2013 - 2014 DEGREE REQUIREMENTS

REQUIREMENT	REQ HRS	COURSE(S)	NOTES
Wellness	2	HPS 1040 or APPH 1040 or APPH 1050	
Core A - Essential Skills	3	ENGL 1101	
	3	ENGL 1102	
	4	MATH 1501	c
Core B - Institutional Options	3	CS 1371	c
Core C - Humanities	6	Any HUM	a
Core D - Science, Math, & Technology	4	CHEM 1310	
	4	PHYS 2211	b,c
	4	MATH 1502	c
Core E - Social Sciences	3	HIST 2111 or HIST 2112 or INTA 1200 or POL 1101 or PUBP 3000	
	3	ECON 2100 or ECON 2101 or ECON 2105 or ECON 2106	
	6	Any SS	a
Core F - Courses Related to Major	3	ECE 2020	c
	4	MATH 2401	c
	4	MATH 2403	c
	4	PHYS 2212	c
	3	Science Elective	d
	--	Ethics Requirement	e
	--	Probability/Statistics	h
	--	Professional Communications	i
Major Requirements	3	ECE 2026	c
	2	ECE 2031	c
	4	ECE 2035 or ECE 2036	c
	3	ECE 2040	c
	3	ECE 3025	c
	4	ECE 3040	c
	2	ECE 3043	c
	3	ECE 3072	c
	3	ECE 3084	c
	2	ECE 4011	c
	3	ECE 4012	c
ECE Electives	-	Senior Lab Elective	c, j
	9	ECE 4000-level Electives	c, f
	11	ECE 3000-level Electives	c, f
Non-ECE Engineering Electives	5	Non-Engineering Electives	k, l, m
Approved Electives	12	Approved Electives	a,g
TOTAL:	132		

Pass-fail only allowed for Approved Electives, Humanities, and Social Sciences.
Courses that are cross-listed with ECE must be taken under the ECE number.

NOTES

a = Students must complete an Ethics requirement. See below for allowable Ethics courses.

b = If PHYS 2231 is taken, extra hour goes to Free Electives.

c = C-minimum required

d = Science Elective must be chosen from the following list: APPH 3751, BIOL 1510, BIOL 1520, BIOL 3751, CHEM 1212K, CHEM 1311, CHEM 1315, EAS 1600, EAS 1601, EAS 2600, PHYS 2021, PHYS 2022, or PHYS 2213.

e = Students must complete one Ethics course during their program. For a complete list of Ethics courses, please see: http://www.catalog.gatech.edu/students/ugrad/core/ethics.php

f = ECE 3811, ECE 3812, ECE 3901, ECE 3902, ECE 3903, ECE 4699, ECE 4811, ECE 4812, ECE 4901, ECE 4902, and ECE 4903 not allowed.

g = The following courses are not allowed: HPS 1XXX, LCC 2661, LCC 2662, LCC 3661, LCC 3662, MATH 1113, MUSI 1008, MUSI 1009, MUSI 2008, MUSI 2009, MUSI 3008, MUSI 3009, MUSI 4008, and MUSI 4009. Maximum of six hours of Special Problems.

h = CEE 3770 or ISYE 3770 or MATH 3770 or ECE 3077 (Must be taken on Letter/Grade basis)

i = ECE 3005 or ECE 3006

j = ECE 4043 or ECE 4180 or ECE 4185 or ECE 4550 or (ECE 4445 and ECE 4881)

k = Non-ECE Engineering Electives (5 Hours; 2 Courses) 2000-level or above. Each course must be at least a 2 hour course. Allow only subject codes of AE, BMED, CEE, CHBE, COE, ISYE, ME, MSE, NRE, or PTFE.Â Â

l = Cannot include BMED 2400, BMED 4781, BMED 4782, BMED 4783, BMED 4784, CHBE 2120, CHBE 4752, COE 3002, ISYE 2027, ISYE 2028, ME 2016, ME 2110, ME 4781, ME 4782, ME 4783, ME 4784

m = NOTE: Cannot include courses cross-listed with an ECE course. Cannot include any 28XX Special Topics courses or any Special Problems courses. Can only include one therodynamics course. Can only include on dynamics course. Cannot include courses cross-listed with and ECE course.

MASTER OF SCIENCE IN ELECTRICAL AND COMPUTER ENGINEERING

The master's degree allows students to pursue advanced work in electrical and computer engineering technical interest areas including bioengineering, computer engineering, digital signal processing, electrical energy, electromagnetics, electronic design and applications, microsystems, optics and photonics, systems and controls, and telecommunications.

The master's degree program requires 30 semester credit hours beyond the bachelor's degree, including a minor outside ECE. Both thesis and non-thesis options are available. Courses are offered all three terms; however, full-time students planning to complete the MS degree in 12 months should start their programs in the fall semester.

BS/MS ELECTRICAL AND COMPUTER ENGINEERING

This program allows highly qualified students to receive the Bachelor of Science in either Electrical Engineering or Computer Engineering and a master's degree in Electrical and Computer Engineering. The joint BS/MS degree program affords undergraduate electrical or computer engineering majors the opportunity to broaden their studies and improve their career prospects.

Eligible Georgia Tech undergraduates normally apply for this program during their junior year. Contact the Electrical and Computer Engineering Graduate Affairs Office for program information, eligibility requirements, and applications.

MASTER OF SCIENCE IN BIOENGINEERING

The School of Electrical and Computer Engineering (ECE) participates in the Bioengineering Program. This interdisciplinary graduate program offers advanced courses in bioengineering, engineering specialties, and life sciences combined with training in cutting-edge bioengineering research. Bioengineering research focuses on the development of new or improved physical and mathematical concepts and techniques that may be applied to problems in medicine and biology, including the fundamental study of biological phenomena and development of new medical devices.

The Bioengineering Program offers master's and doctoral degrees through participating schools in the College of Engineering and the College of Computing. The curriculum involves engineering and life sciences coursework and provides flexibility to concentrate in specific areas to develop a multidisciplinary and integrated training. Interested applicants with an electrical and/or computer engineering background apply for admission in the Bioengineering Program through ECE. Once admitted, students follow the Bioengineering Program's degree requirements and curriculum.

Additional information on the Bioengineering Program, including how to apply and a comparison between the Bioengineering Program and traditional engineering programs, can be found at www.bioengineering.gatech.edu.

Students with an interest in bioengineering with a more traditional engineering approach, should apply directly to the ECE graduate program. Students with this focus would follow ECE's degree requirements and could possibly include up to five bioengineering-related classes in their program of study.

DUAL MS PROGRAM IN ECE
GEORGIA TECH & KOREA ADVANCED INSTITUTE OF SCIENCE AND TECHNOLOGY

Students may pursue dual MS degrees from the Korea Advanced Institute of Science and Technology (KAIST) and from Georgia Tech. KAIST offers one of the top engineering programs in Korea and the Far East. All lectures at KAIST are given in English to better serve a growing number of students from overseas. While earning their dual degrees, students spend two semesters each at both Georgia Tech and KAIST. Students completing this dual degree program earn the MSECE from Georgia Tech and the MS in Electrical Engineering from KAIST.

DUAL MS PROGRAM IN ECE WITH THE POLITECNICO DI TORINO (ITALY)

Georgia Tech offers several dual master's degree programs for students interested in a global educational experience. Each program leads to two MS degrees, one from Georgia Tech and the other from a partner school.

The Politecnico di Torino is Georgia Tech's newest European Dual Master's Degree partner. Students from Georgia Tech and from the Politecnico di Torino can pursue dual master's degrees from both institutions: a non-thesis master's degree from the School of Electrical and Computer Engineering at Georgia Tech and a thesis master's degree from the School of Information Technologies at the Politecnico di Torino located in Torino, Italy. Both degrees can be earned in two years with two semesters spent at Georgia Tech.

DUAL MS PROGRAM IN ECE WITH SHANGHAI JIAO TONG UNIVERSITY

Georgia Tech offers several dual master's degree programs for students interested in a global educational experience. Each program leads to two MS degrees, one from Georgia Tech and the other from a partner school.

Georgia Tech-Shanghai coordinates a dual MS program with Shanghai Jiao Tong University (SJTU), located in Shanghai, China. Students enrolled at SJTU can pursue dual master's degrees from both institutions: a non-thesis master's degree from the School of Electrical and Computer Engineering at Georgia Tech and a thesis master's degree from a closely related discipline at SJTU.

DUAL MS PROGRAM IN ECE GT LORRAINE AND EUROPEAN PARTNER UNIVERSITIES

Georgia Tech offers several dual master's degree programs for students interested in a global educational experience. Each program leads to two MS degrees, one from Georgia Tech and the other from a partner school.

Programs coordinated by Georgia Tech-Lorraine include partner schools in France such as Supelec, ENSEEIHT, Institut d'Electronique de Microélectronique et de Nanotechnologies, and Groupe des Ecoles des Mines and a partner school in Germany, TU-Munich. These programs typically entail three semesters of coursework and a required internship in an industrial setting.

BS/MS ELECTRICAL AND COMPUTER ENGINEERING

This program allows highly qualified students to receive the Bachelor of Science in either Electrical Engineering or Computer Engineering and a master's degree in Electrical and Computer Engineering. The joint BS/MS degree program affords undergraduate electrical or computer engineering majors the opportunity to broaden their studies and improve their career prospects.

Eligible Georgia Tech undergraduates normally apply for this program during their junior year. Contact the Electrical and Computer Engineering Graduate Affairs Office for program information, eligibility requirements, and applications.

DOCTOR OF PHILOSOPHY WITH A MAJOR IN BIOENGINEERING

The Bioengineering PhD degree requires a thesis based on independent study of a bioengineering research topic under the guidance of a bioengineering program faculty member. It also requires 36 hours of coursework in a mixture of bioscience, mathematics, bioengineering, traditional engineering, and elective classes.

DOCTOR OF PHILOSOPHY WITH A MAJOR IN ELECTRICAL AND COMPUTER ENGINEERING

Programs leading to the master's and doctoral degrees in Electrical and Computer Engineering are provided by the School. Technical interest areas include bioengineering, computer engineering, digital signal processing, electrical energy, electromagnetics, electronic design and applications, microsystems, optics and photonics, systems and controls, and telecommunications.

The doctoral degree program is research-oriented and highly individualized. Typically, at least four years of study beyond the bachelor's degree are required to complete the doctoral program.

JOINT DOCTOR OF PHILOSOPHY WITH A MAJOR IN ELECTRICAL AND COMPUTER ENGINEERING WITH THE POLITECNICO DI MILANO

The School of Electrical and Computer Engineering (ECE) offers a joint doctorate degree program between the Georgia Institute of Technology (Georgia Tech) and the Politecnico di Milano (PdM).

Politecnico di Milano is a highly ranked technical university located in one of the most industrialized regions of Italy Lombardy. It has close ties with industry at the national, European, and international levels; it shares similar strategic goals as those of Georgia Tech; it has complimentary resources that fully support students and faculty; and it participates in a number of important academic and economic projects within Europe and abroad.

This joint Ph.D. program will afford graduate students from each university the opportunity to: study and conduct research at an international peer engineering, science and computer research institution; gain confidence in working as a member of an international team; and live and study in an environment outside of their home country.

JOINT DOCTOR OF PHILOSOPHY WITH A MAJOR IN ELECTRICAL AND COMPUTER ENGINEERING WITH THE POLITECNICO DI TORINO - ITALY

The School of Electrical and Computer Engineering (ECE) offers a joint doctorate degree program between the Georgia Institute of Technology (Georgia Tech) and the Politecnico di Torino (PdT).

Politecnico di Torino is a highly ranked technical university located in one of the most industrialized regions of Italy - Piedmont. It has close ties with industry at the national, European, and international levels; it shares similar strategic goals as those of Georgia Tech; it has complimentary resources that fully support students and faculty; and it participates in a number of important academic and economic projects within Europe and abroad.

This joint Ph.D. program will afford graduate students from each university the opportunity to: study and conduct research at an international peer engineering, science and computer research institution; gain confidence in working as a member of an international team; and live and study in an environment outside of their home country.

DOCTOR OF PHILOSOPHY WITH A MAJOR IN ROBOTICS

Students pursuing a PhD in Robotics must take 36 semester hours of core research and elective courses, pass a comprehensive qualifying exam with written and oral components, and successfully complete, document, and defend a piece of original research culminating in a doctoral thesis. Students select a home school, such as ECE, AE, ME, or CS, and apply for admission to the PhD program in robotics through that home school.

CERTIFICATE PROGRAM IN REMOTE SENSING

Students completing the master's or doctoral degree requirements of the School may earn a Remote Sensing Certificate. Additional details can be found in this catalog at http://www.catalog.gatech.edu/colleges/cos/eas/grad/certificates.php.

GEORGIA TECH-LORRAINE

Students may choose to pursue graduate degrees in Electrical and Computer Engineering at Georgia Tech-Lorraine, the European campus of the Georgia Institute of Technology, located in Metz, France. Undergraduate programs are also offered in the fall, spring, and summer terms at Georgia Tech-Lorraine. In addition to courses taught in English by regular Georgia Tech faculty, students also may participate in courses and academic programs offered by partner French universities.

GEORGIA TECH SHANGHAI

Students may pursue an MSECE degree at Georgia Tech Shanghai, China, through a partnership with Shanghai Jiao Tong University. SJTU is a leading engineering university comprised of several campuses, with over 2,800 faculty and nearly 38,000 full-time students. Selected Georgia Tech graduate courses are taught at SJTU by Georgia Tech faculty during the summer and fall semesters each year. Students may pursue dual MS degrees from Georgia Tech and from SJTU.

In addition to the MS program, the Georgia Tech Shanghai Summer Program, initiated in 2005, is a summer study abroad program for undergraduate students from all over the United States.

BACHELOR OF SCIENCE IN INDUSTRIAL ENGINEERING ACCREDITATION

The Bachelor of Science in Industrial Engineering is accredited by the Engineering Accreditation Commission of ABET, www.abet.org.

BACHELOR OF SCIENCE IN INDUSTRIAL ENGINEERING

The principal strength of the academic program leading to the Bachelor of Science in Industrial Engineering (BS IE) is its blend of mathematics, physical sciences and business applications. The methodology foundation is built on probability, optimization, statistics, computing, economics, and psychology. The program features a unique concentration system that allows students to get a broad industrial engineering education and to specialize in areas such as Economic and Financial Systems, Operations Research, Statistics with Quality, Supply Chain Engineering and General Industrial Engineering. This blend produces the flexibility that is inherent in the field of industrial and systems engineering, and that affords BSIE graduates a wide array of career options. Our graduates are constantly looking for ways to make anything in life work better, more efficiently and more productively.

PROGRAM OBJECTIVES

A. To prepare our graduates to become accomplished Industrial Engineers
B. To prepare our graduates to communicate effectively
C. To prepare our graduates to achieve leadership positions
D. To prepare our graduates to achieve life-long learning

BACHELOR OF SCIENCE IN INDUSTRIAL ENGINEERING - COOPERATIVE PLAN

The Co-op Program enhances the student's education, employability and earnings potential. For more details, visit co-op pages from Georgia Tech's co-op Website.

- Co-op courses are designated in the schedule of classes as co-op. All students interested in registering for this course(s) must have been accepted into the co-op Program. Students must have met with their co-op advisor to be issued a permit to register for restricted course(s). Students must register for the co-op course every semester they are at work in order to receive credit for the work term.
- Students who are in the Co-op Program (U.S. citizens and Permanent Residents) and are returning to work should automatically receive a permit but are advised to remain in close contact with their co-op advisor.
- International students must receive work authorization from the Office of International Education prior to each work term before a course registration permit will be issued.
- Neither co-op nor internship courses count for credit towards the industrial engineering degree; however, successful completion of the Co-op Program leads to a degree designator.

For more details, visit the Division of Professional Practice.

BACHELOR OF SCIENCE IN INDUSTRIAL ENGINEERING - INTERNATIONAL PLAN

The Georgia Tech International Plan is designed to prepare graduates to develop significant global competence. Many Industrial Engineers work in consulting companies, supply chain, economic decision systems, etc. Global perspectives are very important. The significant global competence will give them an additional advantage on the job market and on the jobs.

The major components of International Plan include

1. Twenty six weeks of international experience (work, research or study)
2. Foreign language requirements. This can be satisfied by oral proficiency measured tested by an exam by the American Council for the Teaching of Foreign Languages (ACTFL). The foreign language requirement can also be satisfied by course work. It means the passing of two 2XXX level language classes.
3. Three internationally oriented courses plus an addendum in the capstone design on international perspective.

For more details of the International Plan, including application materials, visit the Office of International Education. Please also see The International Plan Option in ISyE.

SCHOOL OF INDUSTRIAL & SYSTEMS ENGINEERING
About the School
Undergraduate
Accreditation
BS Industrial Engineering
Description
Degree Requirements
Economic & Financial Systems
General
Operations Research
Statistics with Quality
Supply Chain Engineering
Undergraduate Information
Graduate
Admissions
Graduate Handbook
Master's Degrees
Computational Science & Eng
Health Systems
Industrial Engineering
International Logistics
Operations Research
Q.C.F.
Statistics
Supply Chain Engineering
Doctoral Degrees
General Information
Financial Aid
Algorithms Combinatorics Opt
Bioinformatics
Computational Science & Eng
I.E. Applied Statistics
I.E. Econ Decision Analysis
I.E. Supply Chain Engineering
I.E. Sys Informatics & Control
Operations Research
Distance Learning
College of Engineering

BACHELOR OF SCIENCE IN INDUSTRIAL ENGINEERING CONCENTRATION:ECONOMIC AND FINANCIAL SYSTEMS

REQUIREMENT	REQ HRS	COURSE(S)	NOTES
Wellness	2	HPS 1040 or APPH 1040 or APPH 1050	
Core A - Essential Skills	3	ENGL 1101	
	3	ENGL 1102	
	4	MATH 1501	c
Core B - Institutional Options	3	CS 1301	
Core C - Humanities	6	Any HUM	
Core D - Science, Math, & Technology	4	Lab Science	a
	4	Lab Science	a
	4	MATH 1502	c
Core E - Social Sciences	3	HIST 2111 or HIST 2112 or INTA 1200 or POL 1101 or PUBP 3000	
	3	ECON 2100	
	3	PSYC 1101	
	3	Any SS	
Core F - Courses Related to Major	3	CS 2316	
	3	CS 4400	
	4	MATH 2401	c
	4	PHYS 2211	b
	4	PHYS 2212	d
Major Requirements	3	ACCT 2101 or MGT 3000 or MGT 3150	
	4	MATH 2602	c
	3	ISYE 2027	
	3	ISYE 2028	
	1	ISYE 3025	
	3	ISYE 3133	
	3	ISYE 3232	
	3	ISYE 3044	
	4	ISYE 4106	
Engineering or Science Electives	9	AE 2020 or AE 2220 or AE 3310 or CHBE 2100 or CHBE 2110 or COE 2001 or COE 3001 or CEE 3000 or CEE 3010 or CEE 4100 or CEE 4300 or CEE 4600 or ECE 2025 or ECE 2030 or ECE 2040 or ECE 3035 or ECE 3076 or ECE 3710 or ECE 3741 or ECE 4823 or ME 2202 or ME 3057 or ME 3720 or ME 4763 or ME 4764 or MSE 2001 or MSE 2020 or MSE 3012 or MSE 3025 or NRE 4803 or PTFE 2200 or PTFE 3200 or PTFE 3220 or PTFE 3720	
Economic and Financial Systems Track	3	ISYE 4301	
	3	ISYE 4803	e
	3	ECON 3150 or ECON 4340 or ECON 4350 or MGT 3078	
	9	CS 4245 or ISYE 3039 or ISYE 3103 or ISYE 3104 or ISYE 4031 or ISYE 4111 or ISYE 4133 or ISYE 4803 or MATH 4262	f, h
Free Electives	11	Free Electives	g
TOTAL:	128		

Pass-fail only allowed for Free Electives, Humanities, and Social Sciences.

NOTES

a = Only one EAS course can be used toward ISYE Lab Science requirements.

b = If PHYS 2231 is taken, extra hour goes to Free Electives.

c = C-minimum required

d = If PHYS 2232 is taken, extra hour goes to Free Electives.

e = ISYE 4803 must be titled 'Econ Decision Analysis.'

f = ISYE 4803 must be titled 'Adv Manufacturing,' 'Adv Stimulation,' or 'Adv Stochastics.'

g = MATH 1113 not allowed.

h = These 3 courses must be from at least 2 of the following groups: Supply Chain Engineering (ISYE 3103 or ISYE 3104 or ISYE 4111 or ISYE 4803 'Adv Manufacturing.') or Quality & Statistics (ISYE 3039 or ISYE 4031 or CS 4245 or MATH 4262) or Operations Research (ISYE 4133 or ISYE 4803 'Adv Stimulation' or ISYE 4803 ' Adv Stochastics')

SCHOOL OF INDUSTRIAL & SYSTEMS ENGINEERING

About the School
Undergraduate
Accreditation
BS Industrial Engineering
Description
Degree Requirements
Economic & Financial Systems
General
Operations Research
Statistics with Quality
Supply Chain Engineering
Undergraduate Information
Graduate
Admissions
Graduate Handbook
Master's Degrees
Computational Science & Eng
Health Systems
Industrial Engineering
International Logistics
Operations Research
Q.C.F.
Statistics
Supply Chain Engineering
Doctoral Degrees
General Information
Financial Aid
Algorithms Combinatorics Opt
Bioinformatics
Computational Science & Eng
I.E. Applied Statistics
I.E. Econ Decision Analysis
I.E. Supply Chain Engineering
I.E. Sys Informatics & Control
Operations Research
Distance Learning
College of Engineering

BACHELOR OF SCIENCE IN INDUSTRIAL ENGINEERING CONCENTRATION: GENERAL

REQUIREMENT	REQ HRS	COURSE(S)	NOTES
Wellness	2	HPS 1040 or APPH 1040 or APPH 1050	
Core A - Essential Skills	3	ENGL 1101	
	3	ENGL 1102	
	4	MATH 1501	c
Core B - Institutional Options	3	CS 1301	
Core C - Humanities	6	Any HUM	
Core D - Science, Math, & Technology	4	Lab Science	a
	4	Lab Science	a
	4	MATH 1502	c
Core E - Social Sciences	3	HIST 2111 or HIST 2112 or INTA 1200 or POL 1101 or PUBP 3000	
	3	ECON 2100	
	3	PSYC 1101	
	3	Any SS	
Core F - Courses Related to Major	3	CS 2316	
	3	CS 4400	
	4	MATH 2401	c
	4	PHYS 2211	b
	4	PHYS 2212	d
Major Requirements	3	ACCT 2101 or MGT 3000 or MGT 3150	
	4	MATH 2602	c
	3	ISYE 2027	
	3	ISYE 2028	
	1	ISYE 3025	
	3	ISYE 3133	
	3	ISYE 3232	
	3	ISYE 3044	
	4	ISYE 4106	
Engineering or Science Electives	9	AE 2020 or AE 2220 or AE 3310 or CHBE 2100 or CHBE 2110 or COE 2001 or COE 3001 or CEE 3000 or CEE 3010 or CEE 4100 or CEE 4300 or CEE 4600 or ECE 2025 or ECE 2030 or ECE 2040 or ECE 3035 or ECE 3076 or ECE 3710 or ECE 3741 or ECE 4823 or ME 2202 or ME 3057 or ME 3720 or ME 4763 or ME 4764 or MSE 2001 or MSE 2020 or MSE 3012 or MSE 3025 or NRE 4803 or PTFE 2200 or PTFE 3200 or PTFE 3220 or PTFE 3720	
General Track	3	ISYE 4111 or ISYE 4133 or ISYE 4803	e
	3	ISYE 3039	
	3	ISYE 3103	
	3	ISYE 3104	
	3	ISYE 4031	
	3	ISYE 4301	
Free Electives	11	Free Electives	f
TOTAL:	128		

Pass-fail only allowed for Free Electives, Humanities, and Social Sciences.

NOTES

a = Only one EAS course can be used toward ISYE Lab Science requirements.

b = If PHYS 2231 is taken, extra hour goes to Free Electives.

c = C-minimum required

d = If PHYS 2232 is taken, extra hour goes to Free Electives.

e = ISYE 4803 only allowed with titles of 'Adv Manufacturing,' 'Adv EDA,' 'Adv Stimulation,' or 'Adv Stochastics.'

f = MATH 1113 not allowed.

SCHOOL OF INDUSTRIAL & SYSTEMS ENGINEERING

BACHELOR OF SCIENCE IN INDUSTRIAL ENGINEERING CONCENTRATION: OPERATIONS RESEARCH

REQUIREMENT	REQ HRS	COURSE(S)	NOTES
Wellness	2	HPS 1040 or APPH 1040 or APPH 1050	
Core A - Essential Skills	3	ENGL 1101	
	3	ENGL 1102	
	4	MATH 1501	c
Core B - Institutional Options	3	CS 1301	
Core C - Humanities	6	Any HUM	
Core D - Science, Math, & Technology	4	Lab Science	a
	4	Lab Science	a
	4	MATH 1502	c
Core E - Social Sciences	3	HIST 2111 or HIST 2112 or INTA 1200 or POL 1101 or PUBP 3000	
	3	ECON 2100	
	3	PSYC 1101	
	3	Any SS	
Core F - Courses Related to Major	3	CS 2316	
	3	CS 4400	
	4	MATH 2401	c
	4	PHYS 2211	b
	4	PHYS 2212	d
Major Requirements	3	ACCT 2101 or MGT 3000 or MGT 3150	
	4	MATH 2602	c
	3	ISYE 2027	
	3	ISYE 2028	
	1	ISYE 3025	
	3	ISYE 3133	
	3	ISYE 3232	
	3	ISYE 3044	
	4	ISYE 4106	
Engineering or Science Electives	9	AE 2020 or AE 2220 or AE 3310 or CHBE 2100 or CHBE 2110 or COE 2001 or COE 3001 or CEE 3000 or CEE 3010 or CEE 4100 or CEE 4300 or CEE 4600 or ECE 2025 or ECE 2030 or ECE 2040 or ECE 3035 or ECE 3076 or ECE 3710 or ECE 3741 or ECE 4823 or ME 2202 or ME 3057 or ME 3720 or ME 4763 or ME 4764 or MSE 2001 or MSE 2020 or MSE 3012 or MSE 3025 or NRE 4803 or PTFE 2200 or PTFE 3200 or PTFE 3220 or PTFE 3720	
Operations Research Track	3	ISYE 4133	
	3	ISYE 4803	e
	3	ISYE 4803	f
	9	CS 4245 or ECON 3150 or ECON 4340 or ECON 4350 or ISYE 3039 or ISYE 3103 or ISYE 3104 or ISYE 4031 or ISYE 4111 or ISYE 4301 or ISYE 4803 or MATH 4262 or MGT 3078	g, i
Free Electives	11	Free Electives	h
TOTAL:	128		

Pass-fail only allowed for Free Electives, Humanities, and Social Sciences.

NOTES

a = Only one EAS course can be used toward ISYE Lab Science requirements.
b = If PHYS 2231 is taken, extra hour goes to Free Electives.
c = C-minimum required
d = If PHYS 2232 is taken, extra hour goes to Free Electives.

SCHOOL OF INDUSTRIAL & SYSTEMS ENGINEERING

About the School
Undergraduate
Accreditation
BS Industrial Engineering
Description
Degree Requirements
Economic & Financial Systems
General
Operations Research
Statistics with Quality
Supply Chain Engineering
Undergraduate Information
Graduate
Admissions
Graduate Handbook
Master's Degrees
Computational Science & Eng
Health Systems
Industrial Engineering
International Logistics
Operations Research
Q.C.F.
Statistics
Supply Chain Engineering
Doctoral Degrees
General Information
Financial Aid
Algorithms Combinatorics Opt
Bioinformatics
Computational Science & Eng
I.E. Applied Statistics
I.E. Econ Decision Analysis
I.E. Supply Chain Engineering
I.E. Sys Informatics & Control
Operations Research
Distance Learning
College of Engineering

BACHELOR OF SCIENCE IN INDUSTRIAL ENGINEERING CONCENTRATION: STATISTICS WITH QUALITY

REQUIREMENT	REQ HRS	COURSE(S)	NOTES
Wellness	2	HPS 1040 or APPH 1040 or APPH 1050	
Core A - Essential Skills	3	ENGL 1101	
	3	ENGL 1102	
	4	MATH 1501	c
Core B - Institutional Options	3	CS 1301	
Core C - Humanities	6	Any HUM	
Core D - Science, Math, & Technology	4	Lab Science	a
	4	Lab Science	a
	4	MATH 1502	c
Core E - Social Sciences	3	HIST 2111 or HIST 2112 or INTA 1200 or POL 1101 or PUBP 3000	
	3	ECON 2100	
	3	PSYC 1101	
	3	Any SS	
Core F - Courses Related to Major	3	CS 2316	
	3	CS 4400	
	4	MATH 2401	c
	4	PHYS 2211	b
	4	PHYS 2212	d
Major Requirements	3	ACCT 2101 or MGT 3000 or MGT 3150	
	4	MATH 2602	c
	3	ISYE 2027	
	3	ISYE 2028	
	1	ISYE 3025	
	3	ISYE 3133	
	3	ISYE 3232	
	3	ISYE 3044	
	4	ISYE 4106	
Engineering or Science Electives	9	AE 2020 or AE 2220 or AE 3310 or CHBE 2100 or CHBE 2110 or COE 2001 or COE 3001 or CEE 3000 or CEE 3010 or CEE 4100 or CEE 4300 or CEE 4600 or ECE 2025 or ECE 2030 or ECE 2040 or ECE 3035 or ECE 3076 or ECE 3710 or ECE 3741 or ECE 4823 or ME 2202 or ME 3057 or ME 3720 or ME 4763 or ME 4764 or MSE 2001 or MSE 2020 or MSE 3012 or MSE 3025 or NRE 4803 or PTFE 2200 or PTFE 3200 or PTFE 3220 or PTFE 3720	
Statistics with Quality Track	3	ISYE 3039	
	3	ISYE 4031	
	3	CS 4245 or MATH 4262	
	9	ECON 3150 or ECON 4340 or ECON 4350 or ISYE 3103 or ISYE 3104 or ISYE 4111 or ISYE 4133 or ISYE 4301 or ISYE 4803 or MGT 3078	e, g
Free Electives	11	Free Electives	f
TOTAL:	128		

Pass-fail only allowed for Free Electives, Humanities, and Social Sciences.

NOTES

a = Only one EAS course can be used toward ISYE Lab Science requirements.

b = If PHYS 2231 is taken, extra hour goes to Free Electives.

c = C-minimum required

d = If PHYS 2232 is taken, extra hour goes to Free Electives.

e = ISYE 4803 only allowed with titles of 'Adv Manufacturing,' 'Adv EDA,' 'Adv Stimulation,' or 'Adv Stochastics,' or 'Econ Decision Analysis.'

f = MATH 1113 not allowed.

g = These 3 courses must be from at least 2 of the following groups: Supply Chain Engineering (ISYE 3103 or ISYE 3104 or ISYE 4111 or ISYE 4803 'Adv Manufacturing.') or Economic & Financial Systems (ISYE 4301 or ISYE 4803 'Econ Decision Analysis' or ECON 3150 or ECON 4340 or ECON 4350 or MGT 3078) or Operations Research (ISYE 4133 or ISYE 4803 'Adv Stimulation' or ISYE 4803 ' Adv Stochastics')

SCHOOL OF INDUSTRIAL & SYSTEMS ENGINEERING

About the School
Undergraduate
Accreditation
BS Industrial Engineering
Description
Degree Requirements
Economic & Financial Systems
General
Operations Research
Statistics with Quality
Supply Chain Engineering
Undergraduate Information
Graduate
Admissions
Graduate Handbook
Master's Degrees
Computational Science & Eng
Health Systems
Industrial Engineering
International Logistics
Operations Research
Q.C.F.
Statistics
Supply Chain Engineering
Doctoral Degrees
General Information
Financial Aid
Algorithms Combinatorics Opt
Bioinformatics
Computational Science & Eng
I.E. Applied Statistics
I.E. Econ Decision Analysis
I.E. Supply Chain Engineering
I.E. Sys Informatics & Control
Operations Research
Distance Learning
College of Engineering

BACHELOR OF SCIENCE IN INDUSTRIAL ENGINEERING CONCENTRATION: SUPPLY CHAIN ENGINEERING

REQUIREMENT	REQ HRS	COURSE(S)	NOTES
Wellness	2	HPS 1040 or APPH 1040 or APPH 1050	
Core A - Essential Skills	3	ENGL 1101	
	3	ENGL 1102	
	4	MATH 1501	c
Core B - Institutional Options	3	CS 1301	
Core C - Humanities	6	Any HUM	
Core D - Science, Math, & Technology	4	Lab Science	a
	4	Lab Science	a
	4	MATH 1502	c
Core E - Social Sciences	3	HIST 2111 or HIST 2112 or INTA 1200 or POL 1101 or PUBP 3000	
	3	ECON 2100	
	3	PSYC 1101	
	3	Any SS	
Core F - Courses Related to Major	3	CS 2316	
	3	CS 4400	
	4	MATH 2401	c
	4	PHYS 2211	b
	4	PHYS 2212	d
Major Requirements	3	ACCT 2101 or MGT 3000 or MGT 3150	
	4	MATH 2602	c
	3	ISYE 2027	
	3	ISYE 2028	
	1	ISYE 3025	
	3	ISYE 3133	
	3	ISYE 3232	
	3	ISYE 3044	
	4	ISYE 4106	
Engineering or Science Electives	9	AE 2020 or AE 2220 or AE 3310 or CHBE 2100 or CHBE 2110 or COE 2001 or COE 3001 or CEE 3000 or CEE 3010 or CEE 4100 or CEE 4300 or CEE 4600 or ECE 2025 or ECE 2030 or ECE 2040 or ECE 3035 or ECE 3076 or ECE 3710 or ECE 3741 or ECE 4823 or ME 2202 or ME 3057 or ME 3720 or ME 4763 or ME 4764 or MSE 2001 or MSE 2020 or MSE 3012 or MSE 3025 or NRE 4803 or PTFE 2200 or PTFE 3200 or PTFE 3220 or PTFE 3720	
Supply Chain Engineering Track	3	ISYE 3103	
	3	ISYE 3104	
	3	ISYE 4111 or ISYE 4803	e
	9	CS 4245 or ECON 3150 or ECON 4340 or ECON 4350 or ISYE 3039 or ISYE 4031 or ISYE 4133 or ISYE 4301 or ISYE 4803 or MATH 4262 or MGT 3078	g
Free Electives	11	Free Electives	f
TOTAL:	128		

Pass-fail only allowed for Free Electives, Humanities, and Social Sciences.

NOTES

a = Only one EAS course can be used toward ISYE Lab Science requirements.

b = If PHYS 2231 is taken, extra hour goes to Free Electives.

c = C-minimum required

d = If PHYS 2232 is taken, extra hour goes to Free Electives.

e = ISYE 4803 must be 'Adv Manufacturing.'

f = MATH 1113 not allowed.

g = These 3 courses must be from at least 2 of the following groups: Quality & Statistics (ISYE 3039 or ISYE 4031 or CS 4245 or MATH 4262) or Economic & Financial Systems (ISYE 4301 or ISYE 4803 'Econ Decision Analysis' or ECON 3150 or ECON 4340 or ECON 4350 or MGT 3078) or Operations Research (ISYE 4133 or ISYE 4803 'Adv Stimulation' or ISYE 4803 ' Adv Stochastics')

EXCEPTIONAL STUDENTS OPTIONS

Program activities and options are available to encourage and reward students with superior records and abilities. Participation in these programs requires demonstrated scholastic excellence and prior arrangement with the student's advisor and/or the Associate Chair for Undergraduate Studies.

GRADUATE-LEVEL COURSES

With approval, students with a cumulative grade-point average of 3.0 or above may take up to 9 credit hours of graduate-level courses. Students who would get both BS and MS in ISyE may use up to 6 credit hours of graduate-level course for both degrees. To take a graduate-level course for both degrees, the grade-point average must be 3.5 or higher.

HONORS COURSES

When faculty resources permit, the School offers honors versions of some of the required courses for the BS IE Students with a cumulative grade-point average of at least 3.3 are allowed to enroll in these courses and use them as replacements for the analogous course requirements in the curriculum.

VISITING SCHOLAR/PRACTITIONER OFFERINGS

Occasionally, the School brings to campus selected individuals of unique accomplishment for course offerings built around their special areas of activity, thus making available a broader range of course materials than regularly provided. Prominent in this regard is the James C. Edenfield Executive-in-Residence program, which brings highly successful executives to the School. Participating much like visiting faculty, these executives bring to a classroom setting, both graduate and undergraduate, the benefit of their work experiences as they support the ISYE curriculum.

MASTER OF SCIENCE IN COMPUTATIONAL SCIENCE AND ENGINEERING

The School of Civil and Environmental Engineering (CEE) participates in the Computational Science and Engineering (CSE) Program. CSE is an interdisciplinary program addressing the body of knowledge, skills, and practices associated with the study of computer-based models of natural phenomena and engineered systems. Students will be required to obtain a breadth of knowledge across a set of core areas in the CSE discipline, depth of knowledge in a specific computational specialization (e.g., numerical computing), and knowledge to apply computational techniques in a domain of application. Students will be expected to integrate principles from mathematics, computer science, and engineering to be able to create significant computational artifacts (e.g., software).

The CSE Master of Science degree program is an interdisciplinary program offered by the College of Computing, the College of Engineering, and the College of Sciences. Interested applicants with a Civil and/or Environmental Engineering background apply for admission in the CSE program through CEE. Once admitted, students follow the CSE program's degree requirements and curriculum.

Students must complete four of the five courses making up the core curriculum: CSE/Math 6643 (Numerical Linear Algebra), CSE 6140 (Computational Science and Engineering Algorithms), CSE 6730 (Modeling and Simulation: Fundamentals & Implementation), CSE/ISYE 6740 (Computational Data Analysis), and CSE 6220 (High Performance Computing). A specialization (CEE) minor is required consisting of twelve hours of coursework relevant to the CSE discipline that includes one applications area; this must include at least six hours of courses that do not carry the CS/CSE course designation. Finally, students must either complete 6 additional hours of approved coursework (course option) or an MS thesis (thesis option) that is defended to the student's thesis committee who is responsible for overseeing the student's research. six hours of thesis credit are required in the thesis option. A program of study must be approved by the CSE Program Director and CEE's Associate Chair for Graduate Programs.

MASTER OF SCIENCE IN HEALTH SYSTEMS

The focus of the Health Systems is to develop, apply, and disseminate new knowledge with respect to the analysis, planning, implementation, demonstration, and evaluation of operational and managerial systems for the delivery of healthcare services to the public.

MASTER OF SCIENCE IN INDUSTRIAL ENGINEERING

The School of Industrial and Systems Engineering (ISYE) offers eight master's degrees: the Master of Science in Industrial Engineering (MS IE); the Master of Science in Operations Research (MS OR); the Master of Science in Supply Chain Engineering (MS SCE); the Master of Science in Statistics (MS STAT); the Master of Science in Health Systems (MS HS); the Master of Science in Quantitative and Computational Finance (MS QCF); the Master of Science in International Logistics(MS IL) that is part of the executive program; and Master of Science in Computational Science and Engineering (MS CSE).

Three of these programs are interdisciplinary: MS QCF (joint with School of Mathematics, College of Business), MS STAT (joint with School of Mathematics) and MS SCE (joint with College of Computing, School of Mathematics). All proposed master's degree programs require thirty semester hours with the exception of MS IL and MS QCF (thirty-six hours) and MS HS (thirty-three hours). None of these MS programs contains a thesis option.

A student seeking a master's degree must have a bachelor's degree and typically one earned in engineering, science, mathematics, or some other field that provides an adequate background for the successful completion of one of ISyE's programs. Students having backgrounds from unaccredited degree programs or in programs that are found lacking in relative substance can expect to first take preliminary coursework in order to elevate their preparation to the level required. The prerequisite coursework for the various master's degrees includes strong performance in probability, statistics, linear algebra, and calculus.

Every MS curriculum is based on core classes offered from the School of ISyE, as well as electives offered by ISyE and other Georgia Tech schools in engineering and science. The MS SCE, MS QCF, and MS IL are professional degree programs with separate curriculums from the other regular MS degrees.

MASTER OF SCIENCE IN INTERNATIONAL LOGISTICS

The School of Industrial and Systems Engineering (ISYE) offers eight master's degrees: the Master of Science in Industrial Engineering (MS IE); the Master of Science in Operations Research (MS OR); the Master of Science in Supply Chain Engineering (MS SCE); the Master of Science in Statistics (MS STAT); the Master of Science in Health Systems (MS HS); the Master of Science in Quantitative and Computational Finance (MS QCF); the Master of Science in International Logistics(MS IL) that is part of the executive program; and Master of Science in Computational Science and Engineering (MS CSE).

Three of these programs are interdisciplinary: MS QCF (joint with School of Mathematics, College of Business), MS STAT (joint with School of Mathematics) and MS SCE (joint with College of Computing, School of Mathematics). All proposed master's degree programs require thirty semester hours with the exception of MS IL and MS QCF (thirty-six hours) and MS HS (thirty-three hours). None of these MS programs contains a thesis option.

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MASTER OF SCIENCE IN OPERATIONS RESEARCH

The School of Industrial and Systems Engineering (ISYE) offers eight master's degrees: the Master of Science in Industrial Engineering (MS IE); the Master of Science in Operations Research (MS OR); the Master of Science in Supply Chain Engineering (MS SCE); the Master of Science in Statistics (MS STAT); the Master of Science in Health Systems (MS HS); the Master of Science in Quantitative and Computational Finance (MS QCF); the Master of Science in International Logistics(MS IL) that is part of the executive program; and Master of Science in Computational Science and Engineering (MS CSE).

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Every MS curriculum is based on core classes offered from the School of ISyE, as well as electives offered by ISyE and other Georgia Tech schools in engineering and science. The MS SCE, MS QCF, and MS IL are professional degree programs with separate curriculums from the other regular MS degrees.

MASTER OF SCIENCE IN QUANTITATIVE AND COMPUTATIONAL FINANCE

The School of Industrial and Systems Engineering (ISYE) offers eight master's degrees: the Master of Science in Industrial Engineering (MS IE); the Master of Science in Operations Research (MS OR); the Master of Science in Supply Chain Engineering (MS SCE); the Master of Science in Statistics (MS STAT); the Master of Science in Health Systems (MS HS); the Master of Science in Quantitative and Computational Finance (MS QCF); the Master of Science in International Logistics(MS IL) that is part of the executive program; and Master of Science in Computational Science and Engineering (MS CSE).

Three of these programs are interdisciplinary: MS QCF (joint with School of Mathematics, College of Business), MS STAT (joint with School of Mathematics) and MS SCE (joint with College of Computing, School of Mathematics). All proposed master's degree programs require thirty semester hours with the exception of MS IL and MS QCF (thirty-six hours) and MS HS (thirty-three hours). None of these MS programs contains a thesis option.

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Every MS curriculum is based on core classes offered from the School of ISyE, as well as electives offered by ISyE and other Georgia Tech schools in engineering and science. The MS SCE, MS QCF, and MS IL are professional degree programs with separate curriculums from the other regular MS degrees.

MASTER OF SCIENCE IN STATISTICS

The School of Industrial and Systems Engineering (ISYE) offers eight master's degrees: the Master of Science in Industrial Engineering (MS IE); the Master of Science in Operations Research (MS OR); the Master of Science in Supply Chain Engineering (MS SCE); the Master of Science in Statistics (MS STAT); the Master of Science in Health Systems (MS HS); the Master of Science in Quantitative and Computational Finance (MS QCF); the Master of Science in International Logistics(MS IL) that is part of the executive program; and Master of Science in Computational Science and Engineering (MS CSE).

Three of these programs are interdisciplinary: MS QCF (joint with School of Mathematics, College of Business), MS STAT (joint with School of Mathematics) and MS SCE (joint with College of Computing, School of Mathematics). All proposed master's degree programs require thirty semester hours with the exception of MS IL and MS QCF (thirty-six hours) and MS HS (thirty-three hours). None of these MS programs contains a thesis option.

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Every MS curriculum is based on core classes offered from the School of ISyE, as well as electives offered by ISyE and other Georgia Tech schools in engineering and science. The MS SCE, MS QCF, and MS IL are professional degree programs with separate curriculums from the other regular MS degrees.

MASTER OF SCIENCE IN SUPPLY CHAIN ENGINEERING

The Master of Science in Supply Chain Engineering is a new professional graduate degree program created to meet the growing demand for business-savvy engineers who can design and synchronize highly complex global supply chains. The program's intensive 12-month curriculum delivers academic knowledge in analytic methods, supply chain engineering, and enterprise management while building professional practice skills and real-world industry experience.

Program applicants may come from a wide range of academic, business, and geographical backgrounds, but they will share a common motivation: to pursue a highly focused graduate education experience in supply chain engineering and to subsequently explore immediate career opportunities with global enterprises.

The curriculum includes ten required courses and two prerequisite courses (ISYE 6331 and 6332).

ISYE 6331: Statistics for Supply Chain Engineering

ISYE 6332: Finance for Supply Chain Engineering

ISYE 6333: Operations Research for Supply Chain Engineering 1

ISYE 6334: Operations Research for Supply Chain Engineering 2

ISYE 6335: Supply Chain Engineering 1

ISYE 6336: Supply Chain Engineering 2

ISYE 6337: Supply Chain Engineering 3

ISYE 6338: Supply Chain Strategy

ISYE 6339: Supply Chain Information Systems

ISYE 6340: Supply Chain Engineering Seminar

ISYE 6341: Capstone Project for Supply Chain Engineering 1

ISYE 6342: Capstone Project for Supply Chain Engineering 2

DOCTOR OF PHILOSOPHY WITH A MAJOR IN INDUSTRIAL ENGINEERING

The PhD Program in Industrial Engineering is intended for qualified individuals for whom past accomplishments and evaluation indicate a high potential for successful completion of the program requirements and a subsequent creative intellectual contribution to the field. Admitted students may pursue their work in various concentrations related to common themes associated with industrial engineering: supply chain logistics and manufacturing, economic decision analysis, applied statistics, and human-integrated systems. Admission is dependent upon student qualification rather than educational background in any specified discipline. Consideration for admission is based largely upon performance in prior academic work, the Graduate Record Examination (GRE), and credible letters of reference.

FINANCIAL AID FOR PHD

Financial aid for PhD study is available in the form of traineeships, fellowships, sponsored externships, and research and teaching assistantships.

DOCTOR OF PHILOSOPHY WITH A MAJOR IN ALGORITHMS, COMBINATORICS, AND OPTIMIZATION

The PhD program in algorithms, combinatorics, and optimization (ACO) is a multidisciplinary graduate program sponsored jointly by the School of Industrial and Systems Engineering, the College of Computing, and the School of Mathematics. The program is arranged to bring together the study of discrete structures and the design and analysis of algorithms in areas such as graph theory, integer programming, combinatorial optimization, network flows, and polyhedral theory. It is intended for students possessing a strong mathematical perspective and background in one or more of the fields represented by the sponsoring units.

Students in the program will have a single home department chosen from among the participating units, all of which contribute courses for the program. Students may apply to the ACO program at Georgia Tech through any one of these three units.

DOCTOR OF PHILOSOPHY WITH A MAJOR IN BIOINFORMATICS

PARTICIPATING SCHOOLS

College of Computing
School of Biology
School of Biomedical Engineering
School of Chemistry and Biochemistry
School of Industrial and Systems Engineering
School of Mathematics

OBJECTIVE OF THE PROGRAM

The mission of the Georgia Tech Bioinformatics PhD program is to educate and prepare graduate students to reach the forefront of leadership in the field of bioinformatics and computational biology and to integrate research and education on the use of information technologies in biology and medicine. Thus, the program leading to a PhD in Bioinformatics is an interdisciplinary program spanning a variety of academic departments at Georgia Tech.

Bioinformatics is a multidisciplinary field in which physical sciences, life sciences, computer science, and engineering are merged to solve both fundamental and applied problems in biology and medicine. The outcomes of bioinformatics and computational biology particularly include:

- new and global perspectives into the organization and function of biological systems (fundamental biology);
- new and novel targets for drug discovery and development; and
- genetic/proteomic profiling for pharmaco-genomics or personalized medicine.

Thus, bioinformatics is emerging as a strategic discipline at the frontier of biology, biochemistry, biomedicine, bioengineering, computer science, and mathematics, impacting fundamental science, medicine, biotechnology, and society.

With its broad mission statement, this program at Georgia Tech has the following strengths and focus areas:

1. Development of software tools, algorithms, and databases for gene identification, protein structural prediction, clustering analysis, and data mining
2. Application of bioinformatics to disease diagnosis, classification, prognosis, and treatment
3. Application of bioinformatics to fundamental biology and systems biology

There is an increasing demand for scientists with advanced training in bioinformatics. Professionals in this area should have a thorough knowledge of molecular biology, mathematics, and statistics, as well as computer science and engineering.

For more information visit www.biology.gatech.edu/graduate-programs/bioinformatics/new/bioinformatics_phd.php.

DOCTOR OF PHILOSOPHY WITH A MAJOR IN COMPUTATIONAL SCIENCE AND ENGINEERING

The School of Civil and Environmental Engineering (CEE) participates in the Computational Science and Engineering (CSE) Program. CSE is an interdisciplinary program addressing the body of knowledge, skills, and practices associated with the study of computer-based models of natural phenomena and engineered systems. Students will be required to obtain a breadth of knowledge across a set of core areas, depth of knowledge in a specific computational specialization (e.g., numerical computing), and knowledge to apply computational techniques in a domain of application. Students will be expected to integrate principles from mathematics, computing, science, and engineering to be able to create significant computational artifacts (e.g., software), and to complete independent research that advances the state-of-the-art in the CSE discipline.

The CSE Ph.D. degree program is an interdisciplinary program offered by the College of Computing, the College of Engineering, and the College of Sciences. Interested applicants with a civil and/or environmental engineering background apply for admission in the CSE program through CEE. Once admitted, students follow the CSE program's degree requirements and curriculum.

Required coursework includes CSE 6001 (Introduction to Computational Science and Engineering), CSE core courses (12 hours), a computation specialization (nine hours), and an application specialization (nine hours). To complete the core course requirement, students must complete four of the five courses making up the core curriculum: CSE/Math 6643 (Numerical Linear Algebra), CSE 6140 (Computational Science and Engineering Algorithms), CSE 6730 (Modeling and Simulation: Fundamentals & Implementation), CSE/ISYE 6740 (Computational Data Analysis), and CSE 6220 (High Performance Computing). The computational specialization includes at least nine hours of courses that increase the student's depth of understanding of computational methods in a specific area, as approved by the student's academic advisor. These courses must go beyond "using computers" to deepen understanding of computational methods, preferably in the context of some application domain. The application specialization includes at least nine hours of courses that increase depth of understanding in an application field; these need not be computation-focused courses. At least nine hours of Ph.D. courses must be courses that do not carry the CS/CSE course designation. These hours may be taken in CEE. Hours taken as part of the computation and/or application specialization can be used to fulfill this requirement.

A qualifying examination must be attempted by the end of the second year of enrollment in the CSE doctoral program (normally taken after the student completes CSE core coursework). A qualifying examination committee shall be appointed by the CSE program coordinator for each student and is responsible for making an overall recommendation concerning the outcome of the qualifying examination.

Students are required to complete a doctoral thesis reporting the results of independent research that advances the state-of-the-art in the computational science and engineering discipline. The thesis must be successfully defended to the student's thesis committee.

DOCTOR OF PHILOSOPHY WITH A MAJOR IN INDUSTRIAL ENGINEERING APPLIED STATISTICS TRACK

The emphasis in this track is on the use of statistics as a science that is employed in a technological environment. Within this context, a student takes fundamental coursework in mathematics, probability and statistics suitable to conduct advanced work and research in a variety of application domains. Among these are quality systems, manufacturing, production, and simulation.

DOCTOR OF PHILOSOPHY WITH A MAJOR IN INDUSTRIAL ENGINEERING ECONOMIC DECISION ANALYSIS TRACK

Engineering economic decision analysis is a broad-based area of study that concentrates on both theoretical approaches and the applied methodologies in various decision-making domains within an economic environment. Typical settings that attract students to this program include multicriteria decision-making, capital budgeting, auctions, portfolio analysis and selection, economic forecasting, utility theory, and quantitative finance.

About the School
Undergraduate
Accreditation
BS Industrial Engineering
Description
Degree Requirements
Economic & Financial Systems
General
Operations Research
Statistics with Quality
Supply Chain Engineering
Undergraduate Information
Graduate
Admissions
Graduate Handbook
Master's Degrees
Computational Science & Eng
Health Systems
Industrial Engineering
International Logistics
Operations Research
Q.C.F.
Statistics
Supply Chain Engineering
Doctoral Degrees
General Information
Financial Aid
Algorithms Combinatorics Opt
Bioinformatics
Computational Science & Eng
I.E. Applied Statistics
I.E. Econ Decision Analysis
I.E. Supply Chain Engineering
I.E. Sys Informatics & Control
Operations Research
Distance Learning
College of Engineering

DOCTOR OF PHILOSOPHY WITH A MAJOR IN INDUSTRIAL ENGINEERING SUPPLY CHAIN ENGINEERING TRACK

This program focuses on the design and analysis of manufacturing, distribution, and transportation systems. Students take fundamental coursework in optimization, stochastics, and statistics in order to build a firm base from which to deal with the myriad of issues that arise in settings involving modern supply chain systems modeling and analysis: production and inventory systems, vehicle routing and scheduling, warehousing, and logistics.

DOCTOR OF PHILOSOPHY WITH A MAJOR IN INDUSTRIAL ENGINEERING SYSTEM INFORMATICS & CONTROL TRACK

DOMAIN CORE

- ISyE 6810 System Monitoring and Prognostics
- ISyE 7201 Production Systems Engineering
- ISyE 7204 Informatics in Production and Service Systems

METHODS CORE (SELECT THREE)

- ISyE 6661 Linear Optimization
- ISyE 6761 Stochastic Processes I
- ISyE 7406 Data Mining
- ECE 6550 Linear Systems and Control

METHODS BREADTH (SELECT AT LEAST THREE COURSES FROM AT LEAST TWO OF THE FOLLOWING AREAS)

- **Stochastics and Simulation**
  - ISyE 6644 Simulation
  - ISyE 6831 Advanced Simulation
  - ISyE 6656 Queueing Theory
  - ISyE 6762 Stochastic Processes II
- **Statistics**
  - ISyE 6402 Time Series
  - ISyE 6405 Statistcal Methods for Manufacturing Systems Design/Improvement
  - ISyE 6412 Theoretical Statistics
  - ISyE 6413 Design and Analysis of Experiments
  - ISyE 6420 Bayesian Statistics
  - ISyE 7401 Advanced Statistical Modeling
  - ISyE 7405 Multivariate Data Analysis
  - ECE 6555 Optimal Estimation
- **Computing and Algorithms**
  - ISyE 6679 Computational Methods in Operations research
  - ISyE 6416 Computational Statistics
  - CS 6650 Design and Analysis of Algorithms
- **Dynamics and Control**
  - ECE 6559 Advanced Linear Systems
  - ECE 6552 Nonlinear Systems
  - ECE 6553 Optimal Control

- ECE 6554 Adaptive Control
    - ECE 6551 Digital Control
    - ECE 6556 Intelligent Control
    - ECE 6120 Automata Theory
    - ME 6401 Linear Systems Control
    - ME 6402 Nonlinear Control Systems
    - ME 6443 Variational Methods
    - ME 6403 Digital Control Systems
    - ME 6404 Advanced Control Systems Design and Implementation
- **Optimization**
    - ISyE 6664 Stochastic Optimization
    - ISyE 6662 Discrete Optimization
    - ISyE 6663 Nonlinear Optimization
- **Other possible methodology courses (consent of advisor required)**

SEMINAR (REQUIRED)

- ISyE 8014 Contemporary Topics in System Informatics and Control

APPLICATIONS (SELECT AT LEAST ONE COURSE)

- ISyE 6201 Manufacturing Systems
- ISyE 6202 Warehousing Systems
- ISyE 6203 Transportation and Supply Chain Systems
- ECE 6557 Manufacturing Systems Design
- ME 6222 Manufacturing Processes and Systems
- ME 6223 Automated Manufacturing Process Planning
- ME6225 Metrology and Measurement Systems
- ME 6754 Engineering Database Management Systems

It is recommended that students complete the domain and methods core courses before they sit for the comprehensive examination.

A student is not admitted to candidacy until all of the stated course requirements in the Program of Study have been completed.

DOCTOR OF PHILOSOPHY WITH A MAJOR IN OPERATIONS RESEARCH

The PhD Program in Operations Research is intended for qualified individuals with strong mathematical/quantitative skills who are interested in the theory and application of complex mathematical and/or simulation models to solve problems involving operational systems. The Program encompasses fundamental methodological coursework in subjects that include mathematical optimization, stochastic and probabilistic methods, statistical modeling and analysis, design and analysis of algorithms, computational and numerical methods, and others. Admission is based largely on prior academic accomplishments/records, GRE scores, and credible letters of reference.

SCHOOL OF INDUSTRIAL & SYSTEMS ENGINEERING

DISTANCE LEARNING AND PROFESSIONAL EDUCATION

The School of Industrial and Systems Engineering offers off-campus working professionals the opportunity to enroll in many of its graduate courses through video technologies. Qualified individuals can complete the requirements for the MS IE or MS OR utilizing the video-based delivery system. Admission as a degree-seeking student in the video program is based upon the same criteria as for regular students. See Distance Learning and Professional Education for more information.

BS IN MATERIALS SCIENCE AND ENGINEERING ACCREDITATION

The BS in Materials Science and Engineering program is accredited by the Engineering Accreditation Commission of ABET, www.abet.org.

SCHOOL OF MATERIALS SCIENCE & ENGINEERING
About the School
Undergraduate
Accreditation
Undergraduate Handbook
BS Materials Science & Eng
Description
Degree Requirements
BSMSE - Biomaterials
BSMSE - Polymer & Fiber Materials
BSMSE - Structural & Functional Materials
Minors
Certificates
Graduate
Admissions
General Information
Graduate Programs
Graduate Financial Aid
C.E.R.C
M.P.R.L.
Graduate Handbook
Master's Degrees
General Information
Materials Science & Eng
Paper Science & Eng
Bioengineering
Undesignated
Doctoral Degrees
General Information
Bioengineering
Materials Science & Eng
Joint PhD GT - Peking
Paper Science & Eng
College of Engineering

BACHELOR OF SCIENCE IN MATERIALS SCIENCE AND ENGINEERING

The materials science and engineering undergraduate program offers a BS degree in Materials Science and Engineering with concentrations in Polymer and Fiber materials, Structural and Functional materials and Biomaterials. This versatile degree combines traditional instruction in ceramic, metallurgy, and polymer and fiber science and engineering with modern materials, including nano-, bio-, composite, electronic, and optical and magnetic materials. Freshmen and sophomores study basic chemistry, physics, mathematics, and engineering science and are introduced to the fundamental aspects of both hard and soft materials. Two English courses taken in the freshman year provide the foundation for further instruction in communications that is integrated throughout the curriculum. Juniors and seniors take courses in the engineering and science of materials including the details of materials processing, structure, and properties. The curriculum culminates in a two-course senior design sequence in which students work in teams to design a material, component, or process using previously learned skills and knowledge.

Five concentration related courses provide flexibility that allow students in their junior-senior years to focus in a particular area of materials. Five hours of free electives allows students to further specialize or to pursue other interests. Courses in the humanities/fine arts and social sciences ensure that graduates appreciate the role of engineering in today's global society.

BACHELOR OF SCIENCE IN MATERIALS SCIENCE AND ENGINEERING MISSION STATEMENT

The mission of the Bachelor of Science in Materials Science and Engineering program is to produce graduates well-rounded in the fundamentals of materials science and engineering who are prepared to meet the related needs of industry and government, and prepared for advanced academic study in materials related disciplines. This will be accomplished by providing students with up-to-date knowledge and skills through coursework, modern laboratories, opportunities to conduct cutting edge research with distinguished faculty mentors, and opportunities to participate in leadership and service activities.

PROGRAM EDUCATIONAL OBJECTIVES

The general educational objective of the Materials Science and Engineering undergraduate program is to provide its graduates with the fundamental knowledge to function effectively in materials-related positions in industry, government, and academics. The following specific Program Educational Objectives were established to ensure the attainment of this general objective consistent with the visions and missions of Georgia Tech and the College of Engineering, and ABET Criteria for Evaluating Engineering Programs:

1. To produce graduates with the fundamental knowledge and skills to function effectively in materials science and engineering related positions in industry and government, or to successfully pursue advanced study.
2. To produce graduates who advance in their chosen fields.
3. To produce graduates who function effectively in the global arena.

BACHELOR OF SCIENCE IN MATERIALS SCIENCE & ENGINEERING COOPERATIVE PLAN

Since 1912, Georgia Tech has offered a five-year Undergraduate Cooperative Program to those students who wish to combine career-related work experience with classroom studies. The program is the fourth oldest of its kind in the world.

Students typically alternate between industrial assignments and classroom studies until they complete at least three terms of work (two of which must be fall or spring). Co-op students complete the same coursework on campus that is completed by non-co-op students. Most co-op students begin the program as freshman or sophomores and are can be classified as full-time students regardless whether they are attending classes on campus or are full-time at an employer's location.

Participants have the opportunity to develop career interests, gain hands-on work experience, develop human relation skills and earn a paycheck. Graduates of the program receive a bachelor's degree with the Cooperative Plan Designation.

Students can also complete work assignments in a foreign country as part of the International Cooperative Program. This program is a great opportunity to utilize foreign language skills, gain a global perspective, and experience a diverse culture. Proficiency in a foreign language is necessary to earn the International Cooperative Plan degree designation. For more information on the Cooperative Program, visit: www.coop.gatech.edu.

INTERNSHIPS

The Undergraduate Professional Internship Program is for students who do not participate in the Cooperative Program, but want some career-related work experience before graduation. Students generally work for one semester, usually in the summer, with an option for more work. Students must have completed at least thirty hours of coursework at Georgia Tech before they can participate in the program. For more details, visit: www.upi.gatech.edu.

In addition, there is a Work Abroad Program (www.workabroad.gatech.edu), which complements a student's formal education with paid international work experience directly related to Materials Science and Engineering. Participating students typically include juniors and seniors. The international work assignments are designed to include practical training, cross-cultural exposure and learning, and the acquisition of professional skills.

For more information about all of the programs in the Division of Professional Practice, visit: www.profpractice.gatech.edu.

BACHELOR OF SCIENCE IN MATERIALS SCIENCE & ENGINEERING RESEARCH OPTION

The Materials Science and Engineering undergraduate program offers a Research Option that allows students to participate in undergraduate research in faculty laboratories. The words **"Research Option in Materials Science and Engineering"** will appear on the transcript of each student completing the requirements to indicate that the student has had a substantial, in-depth, research experience.

The requirements for the **"Research Option"** in Materials Science and Engineering are:

1. Selection of a faculty advisor and research topic in conjunction with the faculty advisor. The topic and expected scope of the project must be approved in advance by the MSE Undergraduate Curriculum Committee. A key criterion will be whether the research may lead to a publishable paper.
2. Completion of nine units (see item 3 below) of supervised research, over a period of at least two, but preferably three, terms. Research may be either for pay or credit. At least six credit hours must involve work on a single research project.
3. Registration in nine hours of undergraduate research courses MSE 2698 and 4698 (for pay), or MSE 2699 and 4699 (for credit). MSE 2699 or 4699 can be used to satisfy the

free elective requirements of the BS degree in MSE.

4. Completion of LCC 4701 Undergraduate Research Proposal Writing (one hr. credit typically taken during the first or second semester of research). The student should write a Research Proposal while taking this class.
5. Obtain approval of the Research Proposal from the MSE Undergraduate Curriculum Committee. This is required before taking LCC 4702.
6. Completion of LCC 4702 Undergraduate Research Thesis Writing (one hr. credit). This course is taken during the term in which the thesis is written.
7. Have research thesis approved by the faculty advisor and one other MSE faculty member approved by the MSE Undergraduate Curriculum Committee. The thesis will be evaluated on the basis of publishability, originality, creativity, and clarity. The MSE Undergraduate Curriculum Committee must approve each "Research Option" awarded under the BS MSE program.

BS/MS MATERIALS SCIENCE AND ENGINEERING

The School of Materials Science and Engineering (MSE) offers a BS/MS program for outstanding students who want to obtain a graduate degree in addition to their BS degree. The advanced degree provides the additional knowledge and specialization needed to further facilitate a technical career. As a participant in this program, students have an opportunity to work with individual faculty members on projects in one of the traditional or innovative research areas in MSE. See www.mse.gatech.edu for more details.

GRADE REQUIREMENTS

In order to encourage students to explore subjects of personal or professional interest without jeopardizing their GPA, the Institute has a limited pass/fail option. The policy of the School of Materials Science and Engineering regarding the use of pass/fail hours for credit is as follows: no course specifically required by name and number by the materials science and engineering curriculum may be taken on a pass/fail basis and used toward graduation, unless the course is offered only on that basis.

In cases of deficiencies obtained for the intended graduation term, refer to Section VII (on Deficiencies) of the Rules and Regulations published in the on-line General Catalog. Note that a deficiency (e.g., a single D deficiency) obtained the intended graduation term will delay graduation by at least one term.

TRANSFER STUDENTS

Students transferring into Materials Science and Engineering from another university or major should meet with the Associate Chair for Undergraduate Programs to discuss possible course substitutions and plan their remaining coursework.

SCHOOL OF MATERIALS SCIENCE & ENGINEERING

BS IN MATERIALS SCIENCE AND ENGINEERING - BIOMATERIALS 2013 - 2014 DEGREE REQUIREMENTS

REQUIREMENT	REQ HRS	COURSE(S)	NOTES
Wellness	2	HPS 1040 or APPH 1040 or APPH 1050	
Core A - Essential Skills	3	ENGL 1101	
	3	ENGL 1102	
	4	MATH 1501	
Core B - Institutional Options	3	CS 1371	
Core C - Humanities	6	Any HUM	
Core D - Science, Math, & Technology	4	PHYS 2211	a
	4	PHYS 2212	b
	4	MATH 1502	
Core E - Social Sciences	3	HIST 2111 or HIST 2112 or INTA 1200 or POL 1101 or PUBP 3000	
	3	ECON 2100 or ECON 2105 or ECON 2106	
	6	Any SS	
Core F - Courses Related to Major	4	CHEM 1211K	
	4	CHEM 1212K	
	3	CHEM 1315	
	4	MATH 2401	
	4	MATH 2403	
	--	Ethics Requirement	e
Major Requirements	1	MSE 1111	
	3	MSE 2001	
	4	MSE 2021	
	3	MSE 3001	
	3	MSE 3002	
	3	MSE 3005	
	3	MSE 3015	
	2	MSE 3021	
	3	MSE 3025	
	3	MSE 3210	
	2	MSE 4022	
	3	MSE 4410	
	3	MSE 4420	
	3	MSE 4775	
Non-Major Requirements	2	COE 2001	
	3	COE 3001	
	2	ECE 3710	
	1	ECE 3741	
	1	ISYE 3025	
Biomaterials Concentration	4	BIOL 1510	
	3	MSE 4002	
	3	MSE 4006	
	3	MSE 4751	
	3	MSE 3012 or MSE 3220 or MSE 3225 or MSE 3230 or MSE 4004 or MSE 4010 or MSE 4025 or MSE 4140 or MSE 4330 or MSE 4335 or MSE 4754 or MSE 4755 or MSE 4761 or MSE 4791 or MSE 4793	
Free Electives	4	Free Electives	d

TOTAL:	132

Pass-fail only allowed for Free Electives, Humanities, and Social Sciences.

NOTES

a = If PHYS 2231 is taken, extra hour goes to Free Electives.

b = If PHYS 2232 is taken, extra hour goes to Free Electives.

d = MATH 1113 are not allowed.

e = Allow CS 4001 or CS 4002 or HTS 2084 or HTS 3032 or INTA 2030 or LCC 3318 or PHIL 3105 or PST 3105 or PHIL 3109 or PST 3109 or PHIL 3127 or PST 3127 or PHIL

BS IN MATERIALS SCIENCE AND ENGINEERING - POLYMER & FIBER MATERIALS 2013 - 2014

DEGREE REQUIREMENTS

REQUIREMENT	REQ HRS	COURSE(S)	NOTES
Wellness	2	HPS 1040 or APPH 1040 or APPH 1050	
Core A - Essential Skills	3	ENGL 1101	
	3	ENGL 1102	
	4	MATH 1501	
Core B - Institutional Options	3	CS 1371	
Core C - Humanities	6	Any HUM	
Core D - Science, Math, & Technology	4	PHYS 2211	a
	4	PHYS 2212	b
	4	MATH 1502	
Core E - Social Sciences	3	HIST 2111 or HIST 2112 or INTA 1200 or POL 1101 or PUBP 3000	
	3	ECON 2100 or ECON 2105 or ECON 2106	
	6	Any SS	
Core F - Courses Related to Major	4	CHEM 1211K	
	4	CHEM 1212K	
	3	CHEM 1315	
	4	MATH 2401	
	4	MATH 2403	
	--	Ethics Requirement	e
Major Requirements	1	MSE 1111	
	3	MSE 2001	
	4	MSE 2021	
	3	MSE 3001	
	3	MSE 3002	
	3	MSE 3005	
	3	MSE 3015	
	2	MSE 3021	
	3	MSE 3025	
	3	MSE 3210	
	2	MSE 4022	
	3	MSE 4410	
	3	MSE 4420	
	3	MSE 4775	
Non-Major Requirements	2	COE 2001	
	3	COE 3001	
	2	ECE 3710	
	1	ECE 3741	
	1	ISYE 3025	
Polymer & Fiber Materials Concentration	3	ME 3340	
	3	MSE 3225	
	3	MSE 3230	
	3	MSE 4140	
	3	MSE 3220 or MSE 4025 or MSE 4761	
Free Electives	5	Free Electives	d
TOTAL:	132		

Pass-fail only allowed for Free Electives, Humanities, and Social Sciences.

NOTES

a = If PHYS 2231 is taken, extra hour goes to Free Electives.

b = If PHYS 2232 is taken, extra hour goes to Free Electives.

d = MATH 1113 are not allowed.

e = Allow CS 4001 or CS 4002 or HTS 2084 or HTS 3032 or INTA 2030 or LCC 3318 or PHIL 3105 or PST 3105 or PHIL 3109 or PST 3109 or PHIL 3127 or PST 3127 or PHIL

SCHOOL OF MATERIALS SCIENCE & ENGINEERING
About the School
Undergraduate
Accreditation
Undergraduate Handbook
BS Materials Science & Eng
Description
Degree Requirements
BSMSE - Biomaterials
BSMSE - Polymer & Fiber Materials
BSMSE - Structural & Functional Materials
Minors
Certificates
Graduate
Admissions
General Information
Graduate Programs
Graduate Financial Aid
C.E.R.C
M.P.R.L.
Graduate Handbook
Master's Degrees
General Information
Materials Science & Eng
Paper Science & Eng
Bioengineering
Undesignated
Doctoral Degrees
General Information
Bioengineering
Materials Science & Eng
Joint PhD GT - Peking
Paper Science & Eng
College of Engineering

BS IN MATERIALS SCIENCE AND ENGINEERING - STRUCTURAL & FUNCTIONAL MATERIALS 2013-2014 DEGREE REQUIREMENTS

REQUIREMENT	REQ HRS	COURSE(S)	NOTES
Wellness	2	HPS 1040 or APPH 1040 or APPH 1050	
Core A - Essential Skills	3	ENGL 1101	
	3	ENGL 1102	
	4	MATH 1501	
Core B - Institutional Options	3	CS 1371	
Core C - Humanities	6	Any HUM	
Core D - Science, Math, & Technology	4	PHYS 2211	a
	4	PHYS 2212	b
	4	MATH 1502	
Core E - Social Sciences	3	HIST 2111 or HIST 2112 or INTA 1200 or POL 1101 or PUBP 3000	
	3	ECON 2100 or ECON 2105 or ECON 2106	
	6	Any SS	
Core F - Courses Related to Major	4	CHEM 1211K	
	4	CHEM 1212K	
	3	CHEM 1315	
	4	MATH 2401	
	4	MATH 2403	
	--	Ethics Requirement	e
Major Requirements	1	MSE 1111	
	3	MSE 2001	
	4	MSE 2021	
	3	MSE 3001	
	3	MSE 3002	
	3	MSE 3005	
	3	MSE 3015	
	2	MSE 3021	
	3	MSE 3025	
	3	MSE 3210	
	2	MSE 4022	
	3	MSE 4410	
	3	MSE 4420	
	3	MSE 4775	
Non-Major Requirements	2	COE 2001	
	3	COE 3001	
	2	ECE 3710	
	1	ECE 3741	
	1	ISYE 3025	
Structural & Functional Materials Concentration	3	MSE 4002	
	3	MSE 4006	
	3	MSE 4010	
	6	MSE 3012 or MSE 3220 or MSE 3225 or MSE 3230 or MSE 4004 or MSE 4025 or MSE 4140 or MSE 4330 or MSE 4335 or MSE 4751 or MSE 4754 or MSE 4755 or MSE 4761 or MSE 4791 or MSE 4793	
Free Electives	4	Free Electives	d

TOTAL:	132

Pass-fail only allowed for Free Electives, Humanities, and Social Sciences.

NOTES

a = If PHYS 2231 is taken, extra hour goes to Free Electives.

b = If PHYS 2232 is taken, extra hour goes to Free Electives.

d = MATH 1113 are not allowed.

e = Allow CS 4001 or CS 4002 or HTS 2084 or HTS 3032 or INTA 2030 or LCC 3318 or PHIL 3105 or PST 3105 or PHIL 3109 or PST 3109 or PHIL 3127 or PST 3127 or PHIL

CERTIFICATES

The School of Materials Science and Engineering offers certificates in biomaterials (jointly with BME), polymers, composites, and nanomaterials. Students may fulfill the certificate requirements by taking twelve credit hours* of approved courses. By appropriate choice of technical and free electives, only one course outside of those required for the BS MSE degree is required for any certificate and up to 3 hours of related undergraduate research credit may be applied towards a certificate. Contact the Associate Chair for Undergraduate Programs or visit: www.mse.gatech.edu/Academics/Certificate_Programs/certificate_programs.html for eligibility requirements and a updated list of approved courses.

*BIOL 1510 is required for the Biomaterials certificate. Since this is a four-credit hour course, thirteen hours are often taken by MSE students who obtain this certificate.

GRADUATE PROGRAMS

Materials graduates are essential to the economic growth of the country. They contribute to the development, selection, and use of materials in all engineering and scientific applications. Master's and doctoral degrees in materials science and engineering are offered. An excellent selection of undergraduate courses is also offered in preparation and support of graduate studies. Course offerings and research activities cover a diversity of subjects in the broad field of materials. Subjects include biomaterials, nanotechnology, computational materials science, physical metallurgy, mechanical properties, fracture mechanics, corrosion phenomena, processing, thermodynamics and phase equilibria, non-destructive testing, X-ray analysis, phase transformations, glass science, electronic/technical ceramics, thin-film semiconductors, electronic and optical microscopy, dispersions and rheology, refractories, surface analysis, fiber science, polymerization reaction engineering, polymer process simulation, mechanical properties of polymers, and process-structure-property characterization of polymers. State-of-the-art research facilities in the School of Materials Science and Engineering contribute to the strength of both the academic and research programs.

MSE graduates find employment with manufacturing firms in light and heavy industry, in research laboratories of private firms and federal agencies, and in academic institutions. Several recent graduates have filled positions of high responsibility in these areas and have been instrumental in advancing the level of materials engineering practice in the United States. The MSE faculty participate in numerous multidisciplinary programs including manufacturing engineering, surface science technology, microelectronics, electronic packaging, and composites.

FINANCIAL AID

A number of fellowships and research assistantships from outside sources and industry are available to provide financial assistance for qualified graduate students. In addition, a limited number of presidential fellowships, as well as research assistantships, are available from the Institute. Further information can be obtained by contacting the director of graduate programs in the School of Materials Science and Engineering.

SCHOOL OF MATERIALS SCIENCE & ENGINEERING

COMPOSITES EDUCATION AND RESEARCH CENTER

The Composites Education and Research Center (CERC) is another interdisciplinary center similar to MPRL, providing students with the opportunity to participate in interdisciplinary coursework and research projects in the area of composites. An undergraduate-level certificate program is available to students of materials science and engineering in composites.

MECHANICAL PROPERTIES RESEARCH LABORATORY

The Mechanical Properties Research Laboratory (MPRL) is an interdisciplinary College of Engineering laboratory that supports education and research with emphasis on structural materials. Its principal activities are directed toward the measurement and modeling of the mechanical properties of engineering materials, primarily related to deformation, fatigue, and fracture. The MPRL has an international reputation for excellence in areas of:

- fatigue and fracture studies of structural materials, structures and joints
- development of constitutive equations for deformation and damage, incorporating these advances into life prediction methodologies
- characterization and quantitative analysis of microstructure and damage in engineering materials such as structural alloys, composites, metal foams, biomaterials and nanostructured materials and alloys
- development of improved constitutive models for material deformation, fatigue and fracture behaviors
- multiscale simulation of materials and microstructure-sensitive fatigue and fraction approaches
- durability and degradation of aging materials and structures

THE MASTER'S DEGREE

MSE offers graduate work leading to the degrees of Master of Science in Materials Science and Engineering, Master of Science in Paper Science and Engineering, and Master of Science with a major in Materials Science and Engineering. The student admitted for graduate work will normally have completed an undergraduate program in materials, ceramics, metallurgy, or polymers. However, students with undergraduate degrees or backgrounds in other fields (e.g., physics, chemistry, geology, and chemical, mechanical, nuclear, or geological engineering) may qualify by taking certain minimum prerequisites during the early part of their graduate studies. To assure a smooth transition into the graduate program, the student should select appropriate electives during his or her undergraduate studies.

Students in the MS program must complete a core of graduate materials courses and prepare an individualized program of study for this degree in consultation with their graduate advisors. The proposed program must receive the approval of the graduate coordinator and the School chair. Thesis, nonthesis, and industrial internship options are available. The minimum credit hour requirements for the MS degree include nineteen credit hours of courses and a minimum of eleven credit hours of thesis research, or 31 credit hours of courses, or twenty-five hours of courses and six hours of project work conducted as part of an industrial internship. A total of twelve course hours must be in the major, and twelve course hours must be at the 6000 level or higher. A minimum GPA of 2.7 is required for graduation.

MASTER OF SCIENCE IN MATERIALS SCIENCE, AND ENGINEERING

The School of Materials Science and Engineering provides an array of options to both the Undergraduate and Graduate students. The Graduate degrees offered include a MS in Materials Science and Engineering with three program options (thesis, non-thesis, and industrial internship).

MASTER OF SCIENCE IN PAPER SCIENCE AND ENGINEERING

The School of Materials Science and Engineering offers a Master of Science and PhD in Paper Science and Engineering. The multidiscipinary degree covers engineering and science disciplines involved in the production of paper, tissue, and other products from natural fiber. Degree requirements include completion of all MSE core courses and degree requirements for the appropriate degree. In addition to satisfying curriculum requirements as set forth in the PSE curriculum, PhD students take the qualifying examination in MSE. Individual programs of study are reviewed at the school level.

MASTER OF SCIENCE IN BIOENGINEERING

The School of Materials Science and Engineering participates in the interdisciplinary program leading to a Master of Science and PhD in Bioengineering and Biomedical Engineering. The program curriculum was developed by a broadly based faculty group with research activities in bioengineering and the life sciences. Students in the program are enrolled in a participating school, such as the School of Materials Science and Engineering, as their home department. The program is directed toward engineering graduates who wish to pursue a graduate degree in bioengineering or biomedical engineering rather than in a traditional field of engineering.

MASTER OF SCIENCE WITH A MAJOR IN MSE

The School of Materials Science and Engineering offers MS degrees in MSE. An undesignated MS degree is also available for students with special interests. The degree requirements vary somewhat with the option being pursued.

BS/MS MATERIALS SCIENCE AND ENGINEERING

The School of Materials Science and Engineering (MSE) offers a BS/MS program for outstanding students who want to obtain a graduate degree in addition to their BS degree. The advanced degree provides the additional knowledge and specialization needed to further facilitate a technical career. As a participant in this program, students have an opportunity to work with individual faculty members on projects in one of the traditional or innovative research areas in MSE. See www.mse.gatech.edu for more details.

THE DOCTORAL DEGREE

The Doctor of Philosophy degree is directed to attain proficiency in the pursuit of independent scholarly work. The degree comprises coursework in the general principles of materials, with emphasis on metallurgy, polymers, ceramics, paper science and engineering, or electronic materials. Additional requirements include specialized courses both in the area of the doctoral thesis and in one or two other areas, passing comprehensive examinations, and an independent research investigation.

Candidates for the doctoral degree are required to complete at least twenty-two credit hours of graduate-level coursework beyond the MS degree, with a minimum GPA of 3.0, and pass the written proposal and oral parts of the PhD qualification examination. Each student must also earn 9 credit hours in a coherent minor field, chosen in consultation with the advisor, to satisfy the School of Material Science and Engineering's core course requirements. Students should commence participation in the School's research programs early in their graduate careers.

DOCTOR OF PHILOSOPHY WITH A MAJOR IN BIOENGINEERING

The School of Materials Science and Engineering participates in the interdisciplinary program leading to a Master of Science and PhD in Bioengineering and Biomedical Engineering. The program curriculum was developed by a broadly based faculty group with research activities in bioengineering and the life sciences. Students in the program are enrolled in a participating school, such as the School of Materials Science and Engineering, as their home department. The program is directed toward engineering graduates who wish to pursue a graduate degree in bioengineering or biomedical engineering rather than in a traditional field of engineering.

DOCTOR OF PHILOSOPHY WITH A MAJOR IN MATERIALS SCIENCE AND ENGINEERING

The Doctor of Philosophy degree is directed to attain proficiency in the pursuit of independent scholarly work. The degree comprises coursework in the general principles of materials, with emphasis on metallurgy, polymers, ceramics, paper science and engineering, or functional electronic materials. Additional requirements include specialized courses both in the area of the doctoral thesis and in one or two other areas, passing qualifying examinations, and an independent research investigation.

GT-PKU JOINT PHD WITH A MAJOR IN MATERIALS SCIENCE AND ENGINEERING

The School of Materials Science (MSE) offers a joint doctoral degree for students interested in a global educational experience.

Peking University is one of the leading academic institutions in science and medicine in Asia. Georgia Tech and Peking University are complementary in nature. Georgia Tech is one of the leading engineering programs in the US and PKU enhances our strengths in engineering with theirs in science and medicine.

DOCTOR OF PHILOSOPHY WITH A MAJOR IN PAPER SCIENCE AND ENGINEERING

The School of Materials Science and Engineering offers a Master of Science and PhD with a major in Paper Science and Engineering. The multidiscipinary degree covers engineering and science disciplines involved in the production of paper, tissue, and other products from natural fiber. Degree requirements include completion of all MSE core courses and degree requirements for the appropriate degree. In addition to satisfying curriculum requirements as set forth in the PSE curriculum, PhD students take the qualifying examination in MSE. Individual programs of study are reviewed at the school level.

ACCREDITATION

The following undergraduate engineering programs are accredited by the Engineering Accreditation Commission of ABET, www.abet.org.

- Bachelor of Science in Mechanical Engineering
- Bachelor of Science in Nuclear and Radiological Engineering
- Bachelor of Science in Mechanical Engineering - Regional Engineering Program (offered through Georgia Tech-Savannah)

BACHELOR OF SCIENCE IN MECHANICAL ENGINEERING

DESCRIPTION

The undergraduate curriculum in mechanical engineering (ME) covers the fundamental aspects of the field, emphasizes basic principles, and educates the student in the use of these principles to reach optimal design solutions for engineering problems. Specific design subject matter and materials are also drawn from engineering activities such as biomechanical systems, as well as from the more traditional areas. Emphasis in the freshman and sophomore years is on mathematics, chemistry, physics, mechanics of materials, applied mechanics, graphic communications, and an introduction to design. The junior and senior years are devoted to thermodynamics, heat transfer, fluid mechanics, systems dynamics, design, manufacturing, and the application of fundamentals to the diverse problems of mechanical engineering. The curriculum stresses laboratory work and design projects. Computer skills developed during the first two years are a prerequisite for junior- and senior-level courses. Satisfactory completion of the curriculum leads to the degree Bachelor of Science in Mechanical Engineering (BS ME).

PROGRAM EDUCATIONAL OBJECTIVES

The faculty of the Woodruff School strives to continuously improve our undergraduate programs in mechanical engineering. The educational objectives reflect the needs, and have been reviewed by, among others, the Advisory Board of the Woodruff School, the faculty, and the students.

- Our graduates will be successfully employed in ME-related fields or other career paths, including industry, academe, government, and non-governmental organizations.
- Our graduates will be global collaborators, leading and participating in culturally diverse teams.
- Our graduates will continue professional development by obtaining continuing education credits, professional registration or certifications, or post-graduate credits or degrees.

CONCENTRATIONS

The Woodruff School of Mechanical Engineering has established concentration areas in sub-fields of Mechanical Engineering. Concentrations are option for the students; they are not required. The Concentrations are each fifteen hours of classes, and will satisfy the Design Elective, the ME Elective and nine hours of Free Electives. The current Concentrations are:

- Automation and Robotic System
- Manufacturing
- Mechanics of Materials
- Micro- and Nano-Engineering
- Thermal, Fluid and Energy Systems

COOPERATIVE PLAN

Since 1912, Georgia Tech has offered a five-year Undergraduate Cooperative Program to those students who wish to combine career-related experience with classroom studies. The program is the fourth oldest of its kind in the world and the largest optional co-op program in the country. Over the years, mechanical engineering students have been the largest group participating in the program at Georgia Tech.

Students alternate between industrial assignments and classroom studies until they complete three semesters of work. Co-op students with mechanical engineering majors complete the same coursework on campus that is completed by regular four-year students. Most co-op students begin the program as sophomores or juniors and are classified as full-time students regardless of whether they are attending classes on campus or are full-time at an employer's location.

Students who participate in the program have the opportunity to develop career interests, become more confident in their career choices, and develop human relation skills through their work experience. Graduates of the program receive a bachelor's degree with a Cooperative Plan Designation. Woodruff School students have traditionally been the largest group participating in the program. For more information about the Cooperative Program, go to www.coop.gatech.edu.

Students can also complete work assignments in a foreign country as part of the International Cooperative Program (Work Abroad Program). This program is a great opportunity to utilize foreign language skills, gain a global perspective, and experience a diverse culture. Proficiency in a foreign language is necessary to earn the International Cooperative Plan degree designation. Mechanical engineering students have worked in countries such as Germany, China, and Japan. For more information on the Work Abroad Program, go to www.workabroad.gatech.edu.

The Undergraduate Professional Internship Program is for mechanical engineering students who do not participate in the Cooperative Program but want some career-related experience before graduation. Students generally work for one semester with an option for more work. Students must have completed at least 30 hours of coursework at Georgia Tech before they can participate in the program. For more details, see www.upi.gatech.edu.

In addition, there is a Work Abroad Program (www.workabroad.gatech.edu), which complements a student's formal education with paid international work experience directly related to mechanical engineering. Participating students typically include juniors and seniors. The international work assignments are designed to include practical training, cross-cultural exposure and learning, and the acquisition of needed skills. This program satisfies requirements for the International Plan, which is available to mechanical engineering students.

For more information about all of the programs in the Division of Professional Practice, visit www.profpractice.gatech.edu.

INTERNATIONAL PLAN

The Woodruff School has joined thirteen other programs at the Institute in the Undergraduate International Plan. This is a new degree designation, similar to the Cooperative Plan. Mechanical engineering students must spend two semesters abroad (a minimum of 26 weeks), gaining valuable international experience. This is especially important in today's global economy, where more companies are looking for graduates with international experience in their major area. Mechanical engineering students can spend a year at Georgia Tech-Lorraine in Metz, France, at the Technical University in Munich, or at other approved locations.

In order to receive the BS ME-International Plan degree, students will have to meet several requirements. The first is to show proficiency in a language through at least the second year of study; a proficiency exam must be passed. The second requirement is specific coursework: international relations, global economy, and society/culture. The third requirement is for two semesters abroad (a minimum of 26 weeks). This can be done either in residence at a university, or one semester in residence plus one as an engineering intern, or both semesters as an intern. Finally, the student's capstone design experience must meet certain international requirements. Ideally, this would be a joint project including students from Georgia Tech and the selected school abroad. For more information this program, visit www.oie.gatech.edu.

THE BS/MS PROGRAM

The Woodruff School offers a BS/MS program for those students who demonstrate an interest in and ability for additional education beyond the BS degree. The program fosters intense interaction among students and faculty and includes mentoring and undergraduate research. Careful advising and course planning will enable students to begin graduate coursework in their fourth year of study. Woodruff School students with a GPA of 3.5 or higher are eligible to apply for the program after completion of 30 semester credit hours at Georgia Tech, but before the completion of seventy-five semester credit hours, including transfer and advanced placement credits. Students who have more than 75 credit hours will be considered for the program on a case-by-case basis.

Participants in the BS/MS Program in the Woodruff School can obtain a master's degree in mechanical engineering, nuclear and radiological engineering, medical physics, paper science and engineering, or bioengineering. There are two options to consider:

- The Non-Thesis Option is similar to your undergraduate degree in that you simply take classes according to the MS degree requirements. There is no funding available in this case. With proper planning, the MS non-thesis degree could be completed in one year. Well-motivated students can complete the MS in medical physics in one-and-a-half years.
- The Thesis Option involves working with a faculty member on a project in one of the traditional or cutting-edge research areas in the Woodruff School. This will give you hands-on experience in working with a faculty mentor; the opportunity to work in a laboratory or a research environment; and the change to perform theoretical and experimental work. These events will foster your career interests and expand your selection of possible employers. You will have a graduate research assistantship and receive a stipend and a tuition waiver. The time to graduation depends on your thesis project, your advisor, and your work ethic.

During the first year of your graduate studies, you will be encouraged to continue for the PhD In many cases, you might be working on an interesting topic of study as part of your master's degree research that could provide the basis for doctoral research.

SCHOOL OF MECHANICAL ENGINEERING
About the School
Undergraduate
Accreditation
BS Mechanical Engineering
Description
Degree Requirements
BS Mechanical Engineering
ME - Automation & Robotic Systems
ME - Manufacturing
ME - Mechanics of Materials
ME - Micro- and Nanoengineering
ME - Thermal, Fluid, & Energy Systems
BS Nuclear & Radiological Eng
Description
Degree Requirements
Minors
Undergraduate Research
Graduate
Admissions
Accreditation
General Information
Master's Degrees
Bioengineering
Mechanical Engineering
Medical Physics
Nuclear Engineering
Paper Science & Eng
Undesignated
Distance Learning Programs
Georgia Tech-Lorraine
Multidisciplinary Programs
Doctoral Degrees
Bioengineering
Mechanical Engineering
Nuclear & Radiological
Nuclear & Radiological - MP
Paper Science & Eng
Robotics
College of Engineering

BACHELOR OF SCIENCE IN MECHANICAL ENGINEERING 2013 - 2014 DEGREE REQUIREMENTS

REQUIREMENT	REQ HRS	COURSE(S)	NOTES
Wellness	2	HPS 1040 or APPH 1040 or APPH 1050	
Core A - Essential Skills	3	ENGL 1101	
	3	ENGL 1102	
	4	MATH 1501	c
Core B - Institutional Options	3	CS 1371	
Core C - Humanities	6	Any HUM	b
Core D - Science, Math, & Technology	4	CHEM 1310	
	4	PHYS 2211	c
	4	MATH 1502	c
Core E - Social Sciences	3	HIST 2111 or HIST 2112 or INTA 1200 or POL 1101 or PUBP 3000	
	3	ECON 2100 or ECON 2101 or ECON 2105 or ECON 2106	
	6	Any SS	
Core F - Courses Related to Major	4	PHYS 2212	
	3	ME 1770	
	4	MATH 2401	c
	4	MATH 2403	c
	3	MSE 2001	
	--	Ethics Requirement	
Major Requirements	3	ME 3180 or ME 4315	
	2	COE 2001	c
	3	ME 2016	
	3	ME 2110	
	3	ME 2202	
	3	ME 3017	
	3	ME 3057	
	3	ME 3322	
	3	ME 3340	
	3	ME 3345	
	3	COE 3001	
	3	ME 3210	
	3	ME 4056	
	3	ME 4182	
ME Electives	3	ME 3000-level Electives	d
Other Engineering Requirements	2	ECE 3710	
	1	ECE 3741	
	1	ISYE 3025	
	3	MATH 3770	
Free Electives	9	2000-Level Electives	e,f
	6	Free Electives	e
TOTAL:	129		

No pass-fail courses allowed.

Student must earn a 2.0 GPA within Major Requirements and MSE 2001, ECE 3710, ECE 3741 and ISYE 3025.

No more than six hours total in 2699, 4699, or 4903 courses.

NOTES

b = Students must complete one Ethics course during their program. For a complete list of Ethics courses, please see: http://www.catalog.gatech.edu/students/ugrad/core/ethics.php

c = C-minimum required

d = ME Electives must be 3000-level electives. ME 3141, ME 3700, ME 3720, ME 3743, ME 3744, ME 4699, ME 4741, ME 4742, ME 4753, and ME 4903 are not allowed. ME Elective must not duplicate any other material used for BSME degree.

e = Cannot include CEE 2040, PHYS 2802, MGT 2250.

f = Must be at 2000-Level or above; four of these 9 hours may be satisfied with one of the following: BIOL 1510, BIOL 1520, or CHEM 1212K.

SCHOOL OF MECHANICAL ENGINEERING
About the School
Undergraduate
Accreditation
BS Mechanical Engineering
Description
Degree Requirements
BS Mechanical Engineering
ME - Automation & Robotic Systems
ME - Manufacturing
ME - Mechanics of Materials
ME - Micro- and Nanoengineering
ME - Thermal, Fluid, & Energy Systems
BS Nuclear & Radiological Eng
Description
Degree Requirements
Minors
Undergraduate Research
Graduate
Admissions
Accreditation
General Information
Master's Degrees
Bioengineering
Mechanical Engineering
Medical Physics
Nuclear Engineering
Paper Science & Eng
Undesignated
Distance Learning Programs
Georgia Tech-Lorraine
Multidisciplinary Programs
Doctoral Degrees
Bioengineering
Mechanical Engineering
Nuclear & Radiological
Nuclear & Radiological - MP
Paper Science & Eng
Robotics
College of Engineering

BACHELOR OF SCIENCE IN MECHANICAL ENGINEERING - AUTOMATION AND ROBOTIC SYSTEMS 2013 - 2014 DEGREE REQUIREMENTS

REQUIREMENT	REQ HRS	COURSE(S)	NOTES
Wellness	2	HPS 1040 or APPH 1040 or APPH 1050	
Core A - Essential Skills	3	ENGL 1101	
	3	ENGL 1102	
	4	MATH 1501	c
Core B - Institutional Options	3	CS 1371	
Core C - Humanities	6	Any HUM	
Core D - Science, Math, & Technology	4	CHEM 1310	
	4	PHYS 2211	c
	4	MATH 1502	c
Core E - Social Sciences	3	HIST 2111 or HIST 2112 or INTA 1200 or POL 1101 or PUBP 3000	
	3	ECON 2100 or ECON 2101 or ECON 2105 or ECON 2106	
	6	Any SS	
Core F - Courses Related to Major	4	PHYS 2212	
	3	ME 1770	
	4	MATH 2401	c
	4	MATH 2403	c
	3	MSE 2001	
	--	Ethics Requirement	b
Major Requirements	2	COE 2001	c
	3	ME 2016	
	3	ME 2110	
	3	ME 2202	
	3	ME 3017	
	3	ME 3057	
	3	ME 3322	
	3	ME 3340	
	3	ME 3345	
	3	COE 3001	
	3	ME 3210	
	3	ME 4056	
	3	ME 4182	
Other Engineering Requirements	2	ECE 3710	
	1	ECE 3741	
	1	ISYE 3025	
	3	MATH 3770	
Automation and Robotic Systems Concentration	3	ME 3180	
	3	ME 4452	
	9	CS 3600 or CS 4641 or ISYE 4257 or ME 4012 or ME 4189 or ME 4447 or ME 4451	d
Free Electives	6	Free Electives	d,e
TOTAL:	129		

No pass-fail courses allowed.

Student must earn a 2.0 GPA within Major Requirements and MSE 2001, ECE 3710, ECE 3741 and ISYE 3025.

NOTES

b = Students must complete one Ethics course during their program. For a complete list of Ethics courses, please see: http://www.catalog.gatech.edu/students/ugrad/core/ethics.php

c = C-minimum required

d = At least 3 hours in either the Concentration Electives or Free Electives must be a 3000-level or higher ME course. ME 3141, ME 3700, ME 3720, ME 3743, ME 3744, ME 4699, ME 4741, ME 4742, ME 4753, and ME 4903 are not allowed.

e = Excludes CEE 2040, PHYS 2802, and MGT 2250.

SCHOOL OF MECHANICAL ENGINEERING

About the School
Undergraduate
Accreditation
BS Mechanical Engineering
Description
Degree Requirements
BS Mechanical Engineering
ME - Automation & Robotic Systems
ME - Manufacturing
ME - Mechanics of Materials
ME - Micro- and Nanoengineering
ME - Thermal, Fluid, & Energy Systems
BS Nuclear & Radiological Eng
Description
Degree Requirements
Minors
Undergraduate Research
Graduate
Admissions
Accreditation
General Information
Master's Degrees
Bioengineering
Mechanical Engineering
Medical Physics
Nuclear Engineering
Paper Science & Eng
Undesignated
Distance Learning Programs
Georgia Tech-Lorraine
Multidisciplinary Programs
Doctoral Degrees
Bioengineering
Mechanical Engineering
Nuclear & Radiological
Nuclear & Radiological - MP
Paper Science & Eng
Robotics
College of Engineering

BACHELOR OF SCIENCE IN MECHANICAL ENGINEERING - MANUFACTURING 2013 - 2014 DEGREE REQUIREMENTS

REQUIREMENT	REQ HRS	COURSE(S)	NOTES
Wellness	2	HPS 1040 or APPH 1040 or APPH 1050	
Core A - Essential Skills	3	ENGL 1101	
	3	ENGL 1102	
	4	MATH 1501	c
Core B - Institutional Options	3	CS 1371	
Core C - Humanities	6	Any HUM	
Core D - Science, Math, & Technology	4	CHEM 1310	
	4	PHYS 2211	c
	4	MATH 1502	c
Core E - Social Sciences	3	HIST 2111 or HIST 2112 or INTA 1200 or POL 1101 or PUBP 3000	
	3	ECON 2100 or ECON 2101 or ECON 2105 or ECON 2106	
	6	Any SS	
Core F - Courses Related to Major	4	PHYS 2212	
	3	ME 1770	
	4	MATH 2401	c
	4	MATH 2403	c
	3	MSE 2001	
	--	Ethics Requirement	b
Major Requirements	2	COE 2001	c
	3	ME 2016	
	3	ME 2110	
	3	ME 2202	
	3	ME 3017	
	3	ME 3057	
	3	ME 3322	
	3	ME 3340	
	3	ME 3345	
	3	COE 3001	
	3	ME 3210	
	3	ME 4056	
	3	ME 4182	
Other Engineering Requirements	2	ECE 3710	
	1	ECE 3741	
	1	ISYE 3025	
	3	MATH 3770	
Manufacturing Concentration	3	ME 3180	
	3	ME 4215	
	9	ECE 4761 or ME 4214 or ME 4447 or ME 4452 or ME 4766 or (ME 4793 or AE 4793 or CEE 4793 or CHBE 4793)	
Free Electives	6	Free Electives	d,f
TOTAL:	129		

No pass-fail courses allowed.

Student must earn a 2.0 GPA within Major Requirements and MSE 2001, ECE 3710, ECE 3741 and ISYE 3025.

NOTES

b = Students must complete one Ethics course during their program. For a complete list of Ethics courses, please see: http://www.catalog.gatech.edu/students/ugrad/core/ethics.php

c = C-minimum required

d = At least 3 hours in either the Concentration Electives or Free Electives must be a 3000-level or higher ME course. ME 3141, ME 3700, ME 3720, ME 3743, ME 3744, ME 4699, ME 4741, ME 4742, ME 4753, and ME 4903 are not allowed.

f = Excludes CEE 2040, PHYS 2802, and MGT 2250.

SCHOOL OF MECHANICAL ENGINEERING

About the School
Undergraduate
Accreditation
BS Mechanical Engineering
Description
Degree Requirements
BS Mechanical Engineering
ME - Automation & Robotic Systems
ME - Manufacturing
ME - Mechanics of Materials
ME - Micro- and Nanoengineering
ME - Thermal, Fluid, & Energy Systems
BS Nuclear & Radiological Eng
Description
Degree Requirements
Minors
Undergraduate Research
Graduate
Admissions
Accreditation
General Information
Master's Degrees
Bioengineering
Mechanical Engineering
Medical Physics
Nuclear Engineering
Paper Science & Eng
Undesignated
Distance Learning Programs
Georgia Tech-Lorraine
Multidisciplinary Programs
Doctoral Degrees
Bioengineering
Mechanical Engineering
Nuclear & Radiological
Nuclear & Radiological - MP
Paper Science & Eng
Robotics
College of Engineering

BACHELOR OF SCIENCE IN MECHANICAL ENGINEERING - MECHANICS OF MATERIALS 2013 - 2014 DEGREE REQUIREMENTS

REQUIREMENT	REQ HRS	COURSE(S)	NOTES
Wellness	2	HPS 1040 or APPH 1040 or APPH 1050	
Core A - Essential Skills	3	ENGL 1101	
	3	ENGL 1102	
	4	MATH 1501	c
Core B - Institutional Options	3	CS 1371	
Core C - Humanities	6	Any HUM	
Core D - Science, Math, & Technology	4	CHEM 1310	
	4	PHYS 2211	c
	4	MATH 1502	c
Core E - Social Sciences	3	HIST 2111 or HIST 2112 or INTA 1200 or POL 1101 or PUBP 3000	
	3	ECON 2100 or ECON 2101 or ECON 2105 or ECON 2106	
	6	Any SS	
Core F - Courses Related to Major	4	PHYS 2212	
	3	ME 1770	
	4	MATH 2401	c
	4	MATH 2403	c
	3	MSE 2001	
	--	Ethics Requirement	b
Major Requirements	2	COE 2001	c
	3	ME 2016	
	3	ME 2110	
	3	ME 2202	
	3	ME 3017	
	3	ME 3057	
	3	ME 3322	
	3	ME 3340	
	3	ME 3345	
	3	COE 3001	
	3	ME 3210	
	3	ME 4056	
	3	ME 4182	
Other Engineering Requirements	2	ECE 3710	
	1	ECE 3741	
	1	ISYE 3025	
	3	MATH 3770	
Mechanics of Materials Concentration	3	ME 3180	
	3	ME 4214	
	9	CEE 3020 or CEE 3055 or CEE 4550 or ME 4041 or MSE 4010 or MSE 4325 or (BMED 4751 or MSE 4751) or (ME 4790 or MSE 4790) or (ME 4777 or MSE 4777) or (AE 4791 or CEE 4791 or CHBE 4791 or ME 4791 or MSE 4791) or (AE 4758 or BMED 4758 or CHBE 4758 or ME 4758)	

Free Electives	6	Free Electives	d,e
TOTAL:	129		

No pass-fail courses allowed.

Student must earn a 2.0 GPA within Major Requirements and MSE 2001, ECE 3710, ECE 3741 and ISYE 3025.

NOTES

b = Students must complete one Ethics course during their program. For a complete list of Ethics courses, please see: http://www.catalog.gatech.edu/students/ugrad/core/ethics.php

c = C-minimum required

d = At least 3 hours in either the Concentration Electives or Free Electives must be a 3000-level or higher ME course. ME 3141, ME 3700, ME 3720, ME 3743, ME 3744, ME 4699, ME 4741, ME 4742, ME 4753, and ME 4903 are not allowed.

e = Excludes CEE 2040, PHYS 2802, and MGT 2250.

BACHELOR OF SCIENCE IN MECHANICAL ENGINEERING - MICRO- AND NANOENGINEERING
2013 - 2014 DEGREE REQUIREMENTS

REQUIREMENT	REQ HRS	COURSE(S)	NOTES
Wellness	2	HPS 1040 or APPH 1040 or APPH 1050	
Core A - Essential Skills	3	ENGL 1101	
	3	ENGL 1102	
	4	MATH 1501	c
Core B - Institutional Options	3	CS 1371	
Core C - Humanities	6	Any HUM	
Core D - Science, Math, & Technology	4	CHEM 1310	
	4	PHYS 2211	c
	4	MATH 1502	c
Core E - Social Sciences	3	HIST 2111 or HIST 2112 or INTA 1200 or POL 1101 or PUBP 3000	
	3	ECON 2100 or ECON 2101 or ECON 2105 or ECON 2106	
	6	Any SS	
Core F - Courses Related to Major	4	PHYS 2212	
	3	ME 1770	
	4	MATH 2401	c
	4	MATH 2403	c
	3	MSE 2001	
	--	Ethics Requirement	b
Major Requirements	2	COE 2001	c
	3	ME 2016	
	3	ME 2110	
	3	ME 2202	
	3	ME 3017	
	3	ME 3057	
	3	ME 3322	
	3	ME 3340	
	3	ME 3345	
	3	COE 3001	
	3	ME 3210	
	3	ME 4056	
	3	ME 4182	
Other Engineering Requirements	2	ECE 3710	
	1	ECE 3741	
	1	ISYE 3025	
	3	MATH 3770	
Micro- and Nanoengineering Concentration	3	ME 4315	
	12	CHBE 4020 or CHEM 3412 or ME 4766 or MSE 4325 or MSE 4335 or PHYS 4262	d
Free Electives	6	Free Electives	d,f
TOTAL:	129		

No pass-fail courses allowed.

Student must earn a 2.0 GPA within Major Requirements and MSE 2001, ECE 3710, ECE

3741 and ISYE 3025.

NOTES

b = Students must complete one Ethics course during their program. For a complete list of Ethics courses, please see: http://www.catalog.gatech.edu/students/ugrad/core/ethics.php

c = C-minimum required

d = At least 3 hours in either the Concentration Electives or Free Electives must be a 3000-level or higher ME course. ME 3141, ME 3700, ME 3720, ME 3743, ME 3744, ME 4699, ME 4741, ME 4742, ME 4753, and ME 4903 are not allowed.

f = Excludes CEE 2040, PHYS 2802, and MGT 2250.

BACHELOR OF SCIENCE IN MECHANICAL ENGINEERING - THERMAL, FLUID, AND ENERGY SYSTEMS 2013 - 2014 DEGREE REQUIREMENTS

REQUIREMENT	REQ HRS	COURSE(S)	NOTES
Wellness	2	HPS 1040 or APPH 1040 or APPH 1050	
Core A - Essential Skills	3	ENGL 1101	
	3	ENGL 1102	
	4	MATH 1501	c
Core B - Institutional Options	3	CS 1371	
Core C - Humanities	6	Any HUM	
Core D - Science, Math, & Technology	4	CHEM 1310	
	4	PHYS 2211	c
	4	MATH 1502	c
Core E - Social Sciences	3	HIST 2111 or HIST 2112 or INTA 1200 or POL 1101 or PUBP 3000	
	3	ECON 2100 or ECON 2101 or ECON 2105 or ECON 2106	
	6	Any SS	
Core F - Courses Related to Major	4	PHYS 2212	
	3	ME 1770	
	4	MATH 2401	c
	4	MATH 2403	c
	3	MSE 2001	
	--	Ethics Requirement	b
Major Requirements	2	COE 2001	c
	3	ME 2016	
	3	ME 2110	
	3	ME 2202	
	3	ME 3017	
	3	ME 3057	
	3	ME 3322	
	3	ME 3340	
	3	ME 3345	
	3	COE 3001	
	3	ME 3210	
	3	ME 4056	
	3	ME 4182	
Other Engineering Requirements	2	ECE 3710	
	1	ECE 3741	
	1	ISYE 3025	
	3	MATH 3770	
Thermal, Fluid, and Energy Systems Concentration	3	ME 4315	
	12	ME 4011 or ME 4321 or ME 4325 or ME 4340 or ME 4342 or ME 4701	d
Free Electives	6	Free Electives	d,e
TOTAL:	129		

No pass-fail courses allowed.

Student must earn a 2.0 GPA within Major Requirements and MSE 2001, ECE 3710, ECE

3741 and ISYE 3025.

NOTES

b = Students must complete one Ethics course during their program. For a complete list of Ethics courses, please see: http://www.catalog.gatech.edu/students/ugrad/core/ethics.php

c = C-minimum required

d = At least 3 hours in either the Concentration Electives or Free Electives must be a 3000-level or higher ME course. ME 3141, ME 3700, ME 3720, ME 3743, ME 3744, ME 4699, ME 4741, ME 4742, ME 4753, and ME 4903 are not allowed.

e = Excludes CEE 2040, PHYS 2802, and MGT 2250.

BACHELOR OF SCIENCE NUCLEAR AND RADIOLOGICAL ENGINEERING

The program educational objectives of the Nuclear and Radiological Engineering (NRE) undergraduate program are:

NRE graduates will:

- have a successful career in nuclear and radiological engineering or other fields
- conduct themselves with the highest professional and ethical principles; and
- engage in life-long learning through continuing education, professional development activities, and other career appropriate options.

The undergraduate curriculum in nuclear and radiological engineering is structured to meet the needs of both the student who contemplates employment immediately after graduation and the student planning to pursue graduate study. It provides maximum flexibility in the form of options for each student to develop his or her unique interests and capabilities. The core curriculum covers the basic principles of nuclear engineering, nuclear reactor core design, reactor systems engineering, nuclear power economics, reactor operations, radiation sources and detection instruments, radiation transport, radiation protection, criticality safety, regulatory requirements, and radioactive materials management.

In addition to the Institute's academic requirements for graduation with a bachelor's degree, the following are required for a BS NRE degree.

- A *C* or better must be earned in MATH 1501, MATH 1502, MATH 2401, MATH 2403, and ISYE/MATH 3770
- The aggregate GPA of all NRE classes must be a 2.0 or higher

PROGRAM OBJECTIVES

The program educational objectives of the Nuclear and Radiological Engineering undergraduate program are:

NRE graduates will

- Have a successful career in nuclear and radiological engineering or other fields
- Conduct themselves with the highest professional and ethical principles
- Engage in life-long learning through continuing education, professional development activities, and other career appropriate options.

COOPERATIVE PLAN

Since 1912, Georgia Tech has offered a five-year **Undergraduate Cooperative Program** to those students who wish to combine career-related experience with classroom studies. The program is the fourth oldest of its kind in the world and the largest optional co-op program in the country.

Students alternate between industrial assignments and classroom studies until they complete four or five semesters of work. Co-op students with nuclear and radiological engineering majors complete the same coursework on campus that is completed by regular four-year students. Most co-op students begin the program as freshman or sophomores and are classified as full-time students regardless whether they are attending classes on campus or are full-time at an employer's location.

Students who participate in the program have the opportunity to develop career interests, become more confident in their career choices, and develop human relation skills through their work experience. Graduates of the program receive a bachelor's degree with a Cooperative Plan Designation. Woodruff School students have traditionally been the largest group participating in the program.

Students can also complete work assignments in a foreign country as part of the **International Cooperative Program**. This program is a great opportunity to utilize foreign language skills, gain a global perspective, and experience a diverse culture. Proficiency in a foreign language is necessary to earn the International Cooperative Plan degree designation. For more information on the Cooperative Program, go to www.coop.gatech.edu.

The **Undergraduate Professional Internship Program** is for nuclear and radiological engineering students who do not participate in the Cooperative Program, but want some career-related experience before graduation. Students generally work for one semester, usually in the summer, with an option for more work. Students must have completed at least thirty hours of coursework at Georgia Tech before they can participate in the program. For more details, see: www.upi.gatech.edu.

In addition, there is a **Work Abroad Program** (www.workabroad.gatech.edu), which complements a student's formal education with paid international work experience directly related to nuclear and radiological engineering. Participating students typically include juniors and seniors. The international work assignments are designed to include practical training, cross-cultural exposure and learning, and the acquisition of needed skills.

For more information about all of the programs in the Division of Professional Practice, view www.profpractice.gatech.edu.

THE BS/MS PROGRAM

The Woodruff School offers a BS/MS program for those students who demonstrate an interest in and ability for additional education beyond the BS degree. The program fosters intense interaction among students and faculty and includes mentoring and undergraduate research. Careful advising and course planning will enable students to begin graduate coursework in their fourth year of study. Woodruff School students with a GPA of 3.5 or higher are eligible to apply for the program after completion of 30 semester credit hours at Georgia Tech, but before the completion of seventy-five semester credit hours, including transfer and advanced placement credits. Students who have more than 75 credit hours will be considered for the program on a case-by-case basis.

Participants in the BS/MS Program in the Woodruff School can obtain a master's degree in mechanical engineering, nuclear and radiological engineering, medical physics, paper science and engineering, or bioengineering. There are two options to consider:

- The Non-Thesis Option is similar to your undergraduate degree in that you simply take classes according to the MS degree requirements. There is no funding available in this case. With proper planning, the MS non-thesis degree could be completed in one year. Well-motivated students can complete the MS in medical physics in one-and-a-half years.

- The Thesis Option involves working with a faculty member on a project in one of the traditional or cutting-edge research areas in the Woodruff School. This will give you hands-on experience in working with a faculty mentor; the opportunity to work in a laboratory or a research environment; and the change to perform theoretical and experimental work. These events will foster your career interests and expand your selection of possible employers. You will have a graduate research assistantship and receive a stipend and a tuition waiver. The time to graduation depends on your thesis project, your advisor, and your work ethic.

During the first year of your graduate studies, you will be encouraged to continue for the PhD In many cases, you might be working on an interesting topic of study as part of your master's degree research that could provide the basis for doctoral research.

SCHOOL OF MECHANICAL ENGINEERING

BS IN NUCLEAR AND RADIOLOGICAL ENGINEERING 2013 - 2014 DEGREE REQUIREMENTS

REQUIREMENT	REQ HRS	COURSE(S)	NOTES
Wellness	2	HPS 1040 or APPH 1040 or APPH 1050	
Core A - Essential Skills	3	ENGL 1101	
	3	ENGL 1102	
	4	MATH 1501	c
Core B - Institutional Options	3	CS 1371	
Core C - Humanities	6	Any HUM	a
Core D - Science, Math, & Technology	4	CHEM 1310	
	4	PHYS 2211	
	4	MATH 1502	c
Core E - Social Sciences	3	HIST 2111 or HIST 2112 or INTA 1200 or POL 1101 or PUBP 3000	
	3	ECON 2100 or ECON 2101 or ECON 2105 or ECON 2106	
	6	Any SS	a
Core F - Courses Related to Major	4	PHYS 2212	
	3	PHYS 2213	
	4	MATH 2401	c
	4	MATH 2403	c
	3	MATH 3770	c
	--	Ethics Requirement	b
Major Requirements	2	NRE 2110	
	3	NRE 3112	
	3	NRE 3208	
	3	NRE 3301	
	3	NRE 3316	
	2	NRE 4206	
	4	NRE 4208	
	3	NRE 4214	
	4	NRE 4232	
	3	NRE 4328	
Non-NRE Requirements	2	COE 2001	
	3	COE 3001	
	3	ECE 3025	
	2	ECE 3710	
	1	ECE 3741	
	1	ISYE 3025	
	3	ME 3322	
	3	ME 3340	
	3	ME 3345	
	3	MSE 2001	
Technical Electives	9	Technical Electives	d
TOTAL:	126		

No pass-fail courses allowed.
Student must earn a 2.0 GPA within NRE courses.

NOTES

a = Students must complete an Ethics requirement. See below for allowable Ethics courses.

b = Students must complete one Ethics course during their program. Allowable Ethics courses include: HTS 2084, INTA 2030, PHIL 3105, PHIL 3109, PHIL 3127, or PHIL 4176.

c = C-minimum required

d = Any 3000-level or higher course from the College of Computing, Engineering, or Sciences. APPH and PSYC courses not allowed.

UNDERGRADUATE RESEARCH

Georgia Tech encourages undergraduate students to participate in quality and substantive research. There are several options in the Woodruff School for both mechanical engineering and nuclear and radiological engineering majors to do a special problem course or an undergraduate research course. Students can do a non-research special problem course. This is usually a design course and it might be combined with the capstone design class for a two-semester design problem. There are two types of undergraduate research courses; an ME or NRE class; and research internships, where students are paid for working on a project either part time or full time. For both options, the course appears on the transcript. In all cases, the student must find a faculty member to work with. Each special problem and research course requires a written final report, which is to be submitted to the faculty advisor for grading. All special problems courses taken for credit receive a letter grade and appear on the transcript. Funding opportunities are available through the President's Undergraduate Research Awards.

For more information on undergraduate research at Georgia Tech, visit www.undergradresearch.gatech.edu and for specific ME/NRE program information, visit www.me.gatech.edu.

ACCREDITATION

The M.S. in Medical Physics and the Ph.D. in Nuclear and Radiological Engineering-Medical Physics Option programs are accredited by the Commission on Accreditation of Medical Physics Educational Programs, CAMPEP, www.campep.org/campeplstgrad.asp.

GRADUATE PROGRAMS - GENERAL INFORMATION

PROGRAM EDUCATIONAL OBJECTIVES

The educational objectives of the doctoral programs in the Woodruff School are:

- to prepare students for successful careers in industry and/or academia and to promote and instill an ethic for lifelong learning;
- to educate students in methods of advanced analysis, including the mathematical, computational, and experimental skills appropriate for professionals to use when solving problems;
- to provide a substantial depth of knowledge in a particular field or subfield of study that allows the student to be recognized as an expert;
- to provide a breadth of knowledge in a minor field of study that fosters an awareness of and skill in interdisciplinary approaches to problem solving;
- to develop the skills pertinent to the research process, including the students' ability to formulate problems, to synthesize and integrate information, to work collaboratively, to communicate effectively, and to publish the results of their research; and
- to promote a sense of scholarship, leadership, and service among our graduates.

The educational objectives of the master's degree programs in the Woodruff School are:

- to prepare students for successful careers in industry and to promote and instill an ethic for lifelong learning;
- to educate students in methods of advanced analysis appropriate for professionals to use when solving problems;
- to provide a depth of knowledge in a particular field of study that allows the student to apply innovative techniques to solve problems;
- to provide a breadth of knowledge that fosters an awareness of and skill in interdisciplinary approaches to problem solving; and
- to develop the skills pertinent to the research process, including the students' ability to formulate problems, to synthesize and integrate information, to work collaboratively, to communicate effectively, and to publish the results of their research (MS thesis students).

The graduate program in mechanical engineering offers advanced study and research in the areas of acoustics and dynamics; automation and mechatronics; bioengineering; computer-aided engineering and design; fluid mechanics; heat transfer, combustion, and energy systems; manufacturing; mechanics of materials; microelectromechanical systems; and tribology. The graduate programs lead to the degrees of Master of Science in Mechanical Engineering, Master of Science, Master of Science in Bioengineering, Master of Science in Paper Science and Engineering, and Doctor of Philosophy for qualified graduates having backgrounds in engineering, mechanics, mathematics, the physical sciences, or the biological sciences.

The master's degree requires a minimum of thirty approved credit hours. Students may elect to earn nine of these hours by writing a thesis, or they may earn all credit toward the degree through coursework. six hours of credit for graduate courses taken as an undergraduate at Georgia Tech and used for credit toward the BS ME may be included in the MS program of study if the student graduated with an undergraduate grade-point average of at least 3.5. Students must earn a graduate grade-point average of at least 3.0 and satisfy all remaining requirements to be certified for the master's degree. Candidates for the Doctor of Philosophy degree must earn a graduate grade-point average of at least 3.3. Students may obtain additional information about the programs by viewing the Woodruff School Handbook for Graduate Students. Every student enrolled must consult this source of information with respect to special rules and degree requirements.

The graduate program in nuclear and radiological engineering/medical physics leads to the degrees of Master of Science in Nuclear Engineering, Master of Science in Medical Physics, Master of Science, and Doctor of Philosophy. In nuclear and radiological engineering, students with a bachelor's degree in engineering pursue the Master of Science in Nuclear Engineering degree, while students with a Bachelor of Science degree in other fields enroll for the Master of Science degree. Depending on the career objectives of the student, the Woodruff School may encourage a thesis as part of the Master of Science program. Nuclear and radiological engineering students must earn a graduate grade-point average of at least 3.0 and satisfy all remaining requirements to be certified for the master's degree.

The doctoral program is designed with great latitude to capitalize on variations in experience and interests of individual students. Candidates for the Doctor of Philosophy degree must earn a graduate grade-point average of at least 3.3.

MASTER OF SCIENCE IN BIOENGINEERING

The Woodruff School participates in Georgia Tech's interdisciplinary bioengineering graduate program, offering both the MS and the PhD degrees. The program enrolls students in a participating school (the home school) and upon completion of the degree requirements, the home school (the Woodruff School) recommends the award of the degree. Bioengineering research focuses on the development of new or improved physical and mathematical concepts and techniques that may be applied to problems in medicine and biology, including the development of new medical devices. The curriculum provides the flexibility to concentrate in special areas so that the training is both multidiciplinary and integrated. For more information, see www.bioengineering.gatech.edu.

MASTER OF SCIENCE IN MECHANICAL ENGINEERING

The Woodruff School has a challenging graduate program that encompasses advanced study and research leading to the degree of Master of Science in Mechanical Engineering for qualified graduates with backgrounds in engineering, mechanics, mathematics, physical sciences, and life sciences. Most graduate coursework is elective, but the program of study must meet the Woodruff School's requirements of breadth, depth, and level. Graduate degrees in mechanical engineering can be completed through a combination of studies at Georgia Tech-Lorraine, Georgia Tech Savannah, via video and online course offerings, or by attending classes at the Atlanta campus.

THE BS/MS PROGRAM

The Woodruff School offers a BS/MS program for those students who demonstrate an interest in and ability for additional education beyond the BS degree. The program fosters intense interaction among students and faculty and includes mentoring and undergraduate research. Careful advising and course planning will enable students to begin graduate coursework in their fourth year of study. Woodruff School students with a GPA of 3.5 or higher are eligible to apply for the program after completion of 30 semester credit hours at Georgia Tech, but before the completion of seventy-five semester credit hours, including transfer and advanced placement credits. Students who have more than 75 credit hours will be considered for the program on a case-by-case basis.

Participants in the BS/MS Program in the Woodruff School can obtain a master's degree in mechanical engineering, nuclear and radiological engineering, medical physics, paper science and engineering, or bioengineering. There are two options to consider:

- The Non-Thesis Option is similar to your undergraduate degree in that you simply take classes according to the MS degree requirements. There is no funding available in this case. With proper planning, the MS non-thesis degree could be completed in one year. Well-motivated students can complete the MS in medical physics in one-and-a-half years.
- The Thesis Option involves working with a faculty member on a project in one of the traditional or cutting-edge research areas in the Woodruff School. This will give you hands-on experience in working with a faculty mentor; the opportunity to work in a laboratory or a research environment; and the change to perform theoretical and experimental work. These events will foster your career interests and expand your selection of possible employers. You will have a graduate research assistantship and receive a stipend and a tuition waiver. The time to graduation depends on your thesis project, your advisor, and your work ethic.

During the first year of your graduate studies, you will be encouraged to continue for the PhD In many cases, you might be working on an interesting topic of study as part of your master's degree research that could provide the basis for doctoral research.

MASTER OF SCIENCE IN MEDICAL PHYSICS

The graduate program in medical physics leads to the degree of Master of Science in Medical Physics (MS MP) and a Doctor of Philosophy as an option under the PhD program in nuclear engineering. The program focuses on the application of radiation to medicine, particularly in the diagnosis and treatment of human disease. In addition to the traditional on-campus MS program, a distance learning program leading to the MS MP degree is also offered to accommodate the needs of professionals in the field. A large number of medical physics practitioners in government and industry participate in the video-based program.

3 hours of credit for graduate courses taken as an undergraduate at Georgia Tech and used for credit toward an undergraduate degree in science or engineering may also be included in the MS MP program of study if the student graduated with an undergraduate grade-point average of at least 3.5. Medical physics students must earn a graduate grade-point average of at least 3.0 and satisfy all remaining requirements to be certified for the master's degree.

MASTER OF SCIENCE IN NUCLEAR ENGINEERING

The graduate program in nuclear and radiological engineering/medical physics leads to the degrees of Master of Science in Nuclear Engineering, Master of Science in Medical Physics, Master of Science, and Doctor of Philosophy. In nuclear and radiological engineering, students with a bachelor's degree in engineering pursue the Master of Science in Nuclear Engineering degree, while students with a Bachelor of Science degree in other fields enroll for the Master of Science degree. Depending on the career objectives of the student, the Woodruff School may encourage a thesis as part of the Master of Science program. Nuclear and radiological engineering students must earn a graduate grade-point average of at least 3.0 and satisfy all remaining requirements to be certified for the master's degree.

MASTER OF SCIENCE IN PAPER SCIENCE AND ENGINEERING

The Master's (MS PS) and PhD degrees in Paper Science and Engineering (PSE) provide an education in the science and engineering involved in the production of paper, tissue, and other products from natural fiber. PSE students are enrolled in a participating school (the home school) and, upon completion of the degree requirements, the home school (in this case, the Woodruff School) recommends the award of an MS or PhD degree.

MASTER OF SCIENCE (UNDESIGNATED)

The undesignated master's degree (MS) enables you to pursue a program of highly interdisciplinary coursework. For the undesignated degree, the major area is a coherent field of interest in the Woodruff School, but courses taken in the major area need not all have ME designations. Examples of major areas are acoustics and dynamics, bioengineering, materials science, MEMS, and thermal sciences. The list of major areas is limited only by the current interests of the faculty in the Woodruff School. The requirement for a major area is motivated by the need to have some coherent area of special expertise.

DISTANCE LEARNING PROGRAMS

The Woodruff School offers working professionals the opportunity to enroll in many of its graduate courses through video, CD-ROM, or Internet technologies. The distance-learning program has the same admission, course, and degree requirements as those for graduate students attending classes at the Atlanta campus or at Georgia Tech-Lorraine. Qualified individuals may complete the requirements for the master's degrees in mechanical engineering (MS ME) and medical physics (MS MP) by utilizing the distance-learning mode.

GEORGIA TECH-LORRAINE (GTL)

The Woodruff School's program at Georgia Tech-Lorraine in Metz, France has a number of components. In addition to the master's of science degree in mechanical engineering (MS ME) there is also a doctoral program, which has grown as a result of major funding from CNRS and Georgia Tech; a new fall/spring semester undergraduate program; and the undergraduate summer program. Most graduate students focus on the MS ME French students from partner institutions, such as ENSAM and the Ecole des Mines, take courses at Georgia Tech-Lorraine, typically for two semesters, before coming to the Atlanta campus to finish their master's degree. U.S. students take classes at GTL as well as at ENSAM for three semesters and receive both the MS ME and the Master Professionel of ENSAM. Students must also complete an internship in France during the summer. The mechanical engineering programs offered at GTL have the same admission, course, and degree requirements as those for graduate students in mechanical engineering attending classes on the Atlanta campus or through the distance-learning program. ENSAM is a leading institution for the study of mechanical and industrial engineering with eight campuses across France, including one in Metz. For more information on the Georgia Tech-Lorraine program, view www.georgiatech-metz.fr.

MULTIDISCIPLINARY PROGRAMS

Mechanical engineering students may plan electives that satisfy simultaneously the requirements of the degree program and a designated multidisciplinary field within the College of Engineering, thus earning both a graduate degree and a certificate indicating expertise in a related specialty. For a complete description of these and other multidisciplinary programs, contact us below.

DOCTOR OF PHILOSOPHY WITH A MAJOR IN BIOENGINEERING

The Woodruff School participates in Georgia Tech's interdisciplinary bioengineering graduate program, offering both the MS and the PhD degrees. The program enrolls students in a participating school (the home school) and upon completion of the degree requirements, the home school (the Woodruff School) recommends the award of the degree. Bioengineering research focuses on the development of new or improved physical and mathematical concepts and techniques that may be applied to problems in medicine and biology, including the development of new medical devices. The curriculum provides the flexibility to concentrate in special areas so that the training is both multidiciplinary and integrated. For more information, see www.bioengineering.gatech.edu.

DOCTOR OF PHILOSOPHY WITH A MAJOR IN MECHANICAL ENGINEERING

The doctoral program is designed with great latitude to capitalize on variations in experience and interests of individual students. The PhD degree recognizes proficiency and high achievement in research. Candidates for the Doctor of Philosophy degree must earn a graduate grade-point average of at least 3.3.

DOCTOR OF PHILOSOPHY WITH A MAJOR IN NUCLEAR AND RADIOLOGICAL ENGINEERING

The graduate program in nuclear and radiological engineering/medical physics leads to the degrees of Master of Science in Nuclear Engineering, Master of Science in Medical Physics, Master of Science, and Doctor of Philosophy. The doctoral program is designed with great latitude to capitalize on variations in experience and interests of individual students (e.g., nuclear power engineering, radiological engineering, and medical physics). Candidates for the Doctor of Philosophy degree must earn a graduate grade-point average of at least 3.3.

DOCTOR OF PHILOSOPHY WITH A MAJOR IN NUCLEAR AND RADIOLOGICAL ENGINEERING - MEDICAL PHYSICS OPTION

The graduate program in nuclear and radiological engineering/medical physics leads to the degrees of Master of Science in Nuclear Engineering, Master of Science in Medical Physics, Master of Science, and Doctor of Philosophy. The medical physics option in the doctoral program is designed for students with a specific interest in the fields of medical physics and leads to a Doctor of Philosophy with a major in Nuclear and Radiological Engineering. Candidates for the Doctor of Philosophy degree must earn a graduate grade-point average of at least 3.3.

DOCTOR OF PHILOSOPHY WITH A MAJOR IN PAPER SCIENCE AND ENGINEERING

The Master's (MS PS) and PhD degrees in Paper Science and Engineering (PSE) provide an education in the science and engineering involved in the production of paper, tissue, and other products from natural fiber. PSE students are enrolled in a participating school (the home school) and, upon completion of the degree requirements, the home school (in this case, the Woodruff School) recommends the award of an MS or PhD degree.

DOCTOR OF PHILOSOPHY WITH A MAJOR IN ROBOTICS

Students pursuing a PhD in Robotics must take 36 semester hours of core research and elective courses, pass a comprehensive qualifying exam with written and oral components, and successfully complete, document, and defend a piece of original research culminating in a doctoral thesis. Students select a home school, such as ECE, AE, ME, or CS, and apply for admission to the PhD program in robotics through that home school.

DEPARTMENT OF AIR FORCE AEROSPACE STUDIES

Established in 1946
Location: 151 6th Street O'Keefe Bldg. 2nd Floor
Telephone: 404.894.4175
Fax: 404.894.6857
Website
Faculty

GENERAL INFORMATION

The Air Force Reserve Officer Training Corps, Air Force ROTC, is a three- or four-year educational program designed to give men and women the opportunity to become Air Force officers while completing a degree. It involves an elective curriculum taken along with required college classes. Students participating in the program will attend Air Force ROTC classes on Tuesdays and Thursdays. Students earn a college degree and an officer's commission in the U.S. Air Force at the same time.

Air Force ROTC offers competitive four, three and a half, three, two and a half, and two year college scholarships to qualified college students based on merit. Non-competitive scholarships are also available based on major, including certain foreign languages and engineering specialties. Scholarships vary from $3,000, $9,000, $15,000, all the way up to full tuition and required fees. Scholarship winners also receive a stipend of up to $500 for each academic month, in addition to a $900 allowance for books and other educational items. Non-scholarship students also receive the stipend and book allowance as Professional Officer Course cadets in the program.

The curriculum is divided into two courses: a General Military Course open to all freshmen and sophomores, and a Professional Officer Course for qualified juniors, seniors, and graduate students. Students undecided about pursuing a commission can participate in the General Military Course without incurring a military obligation.

Successful completion of the General Military Course, a minimum 2.0 GPA, and the appropriate physical and medical qualifications are prerequisites for enrollment in the Professional Officer Course. Successful completion of both courses with the award of a bachelor's degree allows students to become commissioned second lieutenants in the United States Air Force.

DEPARTMENT OF MILITARY SCIENCE/ARMY ROTC

Established in 1917
151 6th Street
Location: Building 033
Telephone: 404.894.4760 or 404.894.9938
Website:
Faculty

GENERAL INFORMATION

The purpose of the Army ROTC is to prepare students for commissioning as officers in the Active Army, Army Reserve, or Army National Guard. The overall program is designed to aid students in developing the abilities and attitudes that will make them academically successful and to develop well-educated junior officers.

The curriculum is divided into two courses: a basic course that is open to all freshmen and sophomores and an advanced course for qualified juniors, seniors, and graduate students. Students who are undecided about pursuing a commission have the option of participating in the basic course without incurring a military obligation. Successful completion of the basic course (or commensurate training), a minimum 2.0 cumulative grade-point average, and the appropriate medical and physical qualifications are prerequisites for enrollment in the advanced course. Successful completion of both courses and the award of a bachelor's degree constitute the normal progression to gaining a commission as a second lieutenant. Courses are available to both men and women.

The overall Army ROTC curriculum prepares students to become effective leaders and managers in a variety of responsible and challenging commissioned officer fields, thus facilitating early middle-management career development and progression.

DEPARTMENT OF NAVAL SCIENCE

Established in 1926
O'Keefe Building, Second Floor
Telephone: 404.894.4771 or 404.894.4772
Fax: 404.894.6029
Website
Faculty

GENERAL INFORMATION

The NROTC program offers students the opportunity to qualify for service as commissioned officers in the United States Navy or Marine Corps. The program's objectives are to provide students with an understanding of the basic concepts and principles of naval science, associated professional knowledge, and the requirements for national security. NROTC students receive an educational background that allows them to later undertake advanced education in the naval service.

The NROTC program is an officer accession program for the unrestricted line communities (Surface Warfare, Submarines, Aviation, Marine Corps). Upon graduation, the student is commissioned as an officer in the Navy or Marine Corps. Naval officers are ordered to active duty in submarines, surface combatants, or the aviation community. Marines undergo training leading to a variety of specialties. NROTC students are enrolled in one of the following three categories: three-year or four-year scholarship students, college programmers, or two-year scholarship students.

The NROTC Program was established to develop midshipmen mentally, morally and physically and to imbue them with the highest ideals of duty, and loyalty, and with the core values of honor, courage and commitment in order to commission college graduates as naval officers who possess a basic professional background, are motivated toward careers in the naval service, and have a potential for future development in mind and character so as to assume the highest responsibilities of command, citizenship and government.

MINOR PROGRAMS AND CERTIFICATE PROGRAMS

The schools of the Ivan Allen College offer certificates and minor programs in a variety of areas for students who wish to concentrate on coursework in areas of particular interest. All certificates require a minimum of twelve semester hours of concentration. Faculty advisors in the relevant schools should be consulted for details.

View Minors

COLLEGE OF LIBERAL ARTS

SCHOOL OF ECONOMICS

- Bachelor's Degrees
- Master's Degrees
- Doctoral Degrees

SCHOOL OF HISTORY, TECHNOLOGY, & SOCIETY

- Bachelor's Degrees
- Master's Degrees
- Doctoral Degrees

SCHOOL OF INTERNATIONAL AFFAIRS

- Bachelor's Degrees
- Master's Degrees
- Doctoral Degrees

SCHOOL OF LITERATURE, MEDIA, & COMMUNICATION

- Bachelor's Degrees
- Master's Degrees
- Doctoral Degrees

SCHOOL OF MODERN LANGUAGES

- Bachelor's Degrees

PUBLIC POLICY

- Bachelor's Degrees
- Master's Degrees
- Doctoral Degrees

RESERVE OFFICERS' TRAINING CORPS (ROTC)

Air Force Reserve Officers' Training Corps (ROTC)

Army Reserve Officers' Training Corps (ROTC)

Navy Reserve Officers' Training Corps (ROTC)

BACHELOR OF SCIENCE IN ECONOMICS

The program of study provides a thorough grounding in science, the humanities, and mathematics as well as the tools of economic analysis and decision making. In addition, the curriculum provides ample opportunities for career-oriented studies in fields such as accounting, finance, management science, public policy, and international affairs. Life-enriching studies in history and literature are also available.

INTERNATIONAL PLAN

All degree programs offered by the School of Economics including the BS degree in Economics offer an International Plan (IP) Designation. In general the IP designation can be obtained by completing courses in three specified area:

1. Students are required to complete a general course in Global Economics.
2. Students are also required to complete a region specific course. Any number of International Affairs course can be used to fulfill this requirement
3. Student are also required to complete a capstone course rounding out the international experience. The IP designation also requires students to become proficient in a language as well as spending at least twenty-six weeks in a foreign culture enrolled in school and/or participating in an internship experience.

RESEARCH OPTION

The School of Economics also participates in the Research Option plan offered by the Undergraduate Research Opportunities Program (UROP). The Research Option offers students the opportunity for in-depth research experience working under the guidance of a faculty mentor. Requirements for participation in the Research Option include completing nine hours of undergraduate research, at least six of which are on the same topic, writing a research proposal, taking two 1-hour courses: LCC 4701 Undergraduate Research Proposal Writing (typically taken during the first or second semester of research) and LCC 4702 Undergraduate Research Thesis Writing (taken during the term in which the thesis is written), and completing the thesis.

BACHELOR OF SCIENCE IN ECONOMICS 2013 - 2014 DEGREE REQUIREMENTS

REQUIREMENT	REQ HRS	COURSE(S)	NOTES
Wellness	2	HPS 1040 or APPH 1040 or APPH 1050	
Core A - Essential Skills	3	ENGL 1101	
	3	ENGL 1102	
	4	MATH 1501 or MATH 1712	
Core B - Institutional Options	3	CS 1315	
Core C - Humanities	6	Any HUM	
Core D - Science, Math, & Technology	4	Lab Science	
	4	Lab Science	
	4	MATH 1502 or MATH 1711	
Core E - Social Sciences	3	HIST 2111 or HIST 2112 or INTA 1200 or POL 1101 or PUBP 3000	
	9	Any SS	
Core F - Courses Related to Major	3	ECON 2105	c
	3	ECON 2106	c
	3	MGT 2250	
	3	INTA 1000- or 2000-level course	
	3	Engineering or Science Elective	a
	3	Second Tech Course	b
Major Requirements	3	ECON 3110	c
	3	ECON 3120	c
	3	ECON 3161	c
	3	ECON 4160	c
	3	ECON 4610	c
	3	ECON 4910	c
ECON Electives	9	Any ECON	c
Non-Major Cluster	12	Non-Major Cluster	d
Free Electives	20	Free Electives	
TOTAL:	122		

Pass-fail only allowed for Free Electives.

NOTES

a = 1000- or 2000-level course from the College of Engineering or College of Sciences. Please consult with advisor.

b = Must be selected from: AE 1770 or CEE 1770 or CS 1316 or CS 1331 or CS 1332 or ECE 2030 or ME 1770 or ME 2016 or MGT 2200.

c = C-minimum required.

d = All twelve hours must come from the same discipline, or be part of a coherent theme. Please consult with advisor on course selection.

BACHELOR OF SCIENCE IN ECONOMICS AND INTERNATIONAL AFFAIRS

The primary objectives of the Bachelor of Science degree in Economics and International Affairs are to provide students with:

1. a detailed understanding of economic theory and practice in the contemporary world;
2. an understanding of the global, interdependent, and multicultural environment in which they live; and
3. a set of quantitative and qualitative analytical skills centered around policy-oriented issue areas in economics and international affairs. These skills will provide graduates with the capabilities to engage in strategic planning and analysis efforts in economic and international contexts.

INTERNATIONAL PLAN

The BS degree in Economics and International Affairs with the International Plan designator provide students with:

1. a detailed understanding of economic theory and practice in the contemporary world;
2. an understanding of the global, interdependent, and multicultural environment in which they live; and
3. a set of quantitative and qualitative analytical skills centered around policy-oriented issue areas in economics and international affairs. These skills will provide graduates with the capabilities to engage in strategic planning and analysis efforts in economic and international contexts

All degree programs offered by the School of Economics including the BS Degree Economics International Affairs offer an International Plan (IP) Designation. In general the IP designation can be obtained by completing courses in three specified area:

1. Students are required to complete a general course in Global Economics. Economics 2101 has been approved by the IP committee to fulfill this requirement
2. Students are also required to complete a region specific course. Any number of International Affairs course can be used to fulfill this requirement
3. Student are also required to complete are capstone course rounding out the international experience. The IP designation also requires students to become proficient in a language as well as spending at least twenty-six week in a foreign culture enrolled School and/or participating in an internship experience

BACHELOR OF SCIENCE IN ECONOMICS AND INTERNATIONAL AFFAIRS 2013 - 2014 DEGREE REQUIREMENTS

REQUIREMENT	REQ HRS	COURSE(S)	NOTES
Wellness	2	HPS 1040 or APPH 1040 or APPH 1050	
Core A - Essential Skills	3	ENGL 1101	
	3	ENGL 1102	
	4	MATH 1501 or MATH 1712	
Core B - Institutional Options	3	CS 1315	
Core C - Humanities	6	Modern Language	c
Core D - Science, Math, & Technology	4	Lab Science	
	4	Lab Science	
	4	MATH 1502 or MATH 1711	
Core E - Social Sciences	3	HIST 2111 or HIST 2112 or INTA 1200 or POL 1101 or PUBP 3000	
	3	INTA 2040	c
	3	INTA 3301	c
	3	HTS 1031 or HTS 2036 or HTS 2037 or HTS 2041 or HTS 2061 or HTS 2062 or HTS 2823 or HTS 3028 or HTS 3029 or HTS 3030 or HTS 3033 or HTS 3035 or HTS 3036 or HTS 3038 or HTS 3039 or HTS 3041 or HTS 3043 or HTS 3045 or HTS 3061 or HTS 3062 or HTS 3063 or HTS 3069	
Core F - Courses Related to Major	3	ECON 2105	c
	3	ECON 2106	c
	3	MGT 2250	
	3	INTA 1110	
	6	Modern Language	a, c
Major Requirements	3	ECON 3110	c
	3	ECON 3120	c
	3	ECON 3161	c
	3	ECON 4350	c
	1	INTA 2001	c
	3	INTA 3110	c
	3	INTA 3203	c
	3	INTA 4740 or ECON 4740	c
	3	INTA 4741 or ECON 4741	c
EIA Electives	6	Any ECON	c
	6	Any INTA	c
Non-Major Cluster	9	Non-Major Cluster	b
Technical Requirement	3	AE 1770 or ARCH 4420 or BC 3630 or BMED 2803 or CEE 1770 or CHEM 2211 or CP 4510 or CS 1316 or CS 1331 or CS 1332 or CS 4235 or EAS 4430 or EAS 4610 or ECE 2030 or ID 3103 or ID 4103 or LCC 3402 or LCC 3404 or LCC 3410 or ME 1770 or ME 2016 or MGT 2200 or MGT 4051 or MGT 4052 or MGT 4058 or MGT 4661 or MUSI 4630 or PHYS 3266	
Free Electives	10	Free Electives	
TOTAL:	122		

Pass-fail only allowed for Free Electives.

NOTES

a = Modern Language courses must be in the same language as used in Core Area C.

b = All nine hours must come from the same discipline, or be part of a coherent theme. Please consult with advisor on course selection.

c = C-minimum required.

BACHELOR OF SCIENCE IN GLOBAL ECONOMICS AND MODERN LANGUAGES

In partnership with the School of Modern Languages, the Sam Nunn School offers the Bachelor of Science in International Affairs and Modern Language, with separate concentrations in French, German, Japanese, and Spanish. Students in this program receive intensive foreign language training and learn the fundamentals of dealing with foreign cultures and societies. A detailed description of the degree program is found in the School of Modern Languages section of this Catalog.

All degree programs offered by the School of Economics including the BS Degree Global Economics and Modern Languages offer an International Plan Designation (IP). In general the IP designation can be obtained by completing courses in three specified area: (1) Students are required to complete a general course in Global Economics. Economics 2101 has been approved by the IP committee to fulfill this requirement. (2) Students are also required to complete a region specific course. Any number of International Affairs course can be used to fulfill this requirement. (3) Student are also required to complete are capstone course rounding out the international experience. The IP designation also requires students to become proficient in a language as well as spending at least twenty-six week in a foreign culture enrolled School and/or participating in an internship experience.

INTERNATIONAL PLAN

The degree requirements for the Global Economics and Modern Languages (Chinese, French, German, Japanese and Spanish)-International Plan are basically the same as for the GEML degree, except that students are required to spend two terms abroad and then achieve Intermediate High (for Chinese and Japanese: Intermediate Low) on the standardized ACTFL testing scale during an oral interview. The costs of the test will be paid for by the School of Modern Languages for each student. The terms abroad may typically consist of one semester of study plus a significant amount of time spent with a research or work project abroad. Students may also opt for a second semester. GEML-IP majors are also strongly encouraged to enroll in the LBAT intensive summer programs offered by the School of Modern Languages.

In addition to gaining advanced global competence, the International Plan designation will set you apart from other applicants with recruiters from top companies and governmental agencies.

Other Required Courses include the following, and these can easily be obtained within the regular required curriculum offerings of ECON and Modern Languages. These requirements can also be met with courses taken abroad, upon consultation with ECON degree advisors.

5. At least one course focused on international relations historically and theoretically, including topics such as the role of state sovereignty and nationalism and non-state actors in the international system; international conflict, peace, security, intervention, and nation-building; international organizations, law, and ethics; transnational problems of the environment, terrorism, health, and migration; among other issues (see INTA courses).
6. At least one course that provides a historical and theoretical understanding of the

global economy, including topics such as international trade, finance, investment, and production; regional economic integration (such as the EU); economic development and modernization; and questions of natural resource sustainability.

7. At least one course that provides familiarity with an area of the world or a country that allows them to make systematic comparisons with their own society and culture. This course could come from various disciplinary perspectives, including history, public policy, philosophy, international affairs, literature, economics, management, architecture, among others. Upper division Modern Language course will count here.

8. A culminating course, occurring either at the end of or after the international experience that integrates knowledge of the discipline and the international experience in a global context.

BS IN GLOBAL ECONOMICS AND MODERN LANGUAGES - CHINESE 2013 - 2014 DEGREE REQUIREMENTS

REQUIREMENT	REQ HRS	COURSE(S)	NOTES
Wellness	2	HPS 1040 or APPH 1040 or APPH 1050	
Core A - Essential Skills	3	ENGL 1101	
	3	ENGL 1102	
	4	MATH 1501 or MATH 1712	
Core B - Institutional Options	3	CS 1315	
Core C - Humanities	6	Modern Languages	c
Core D - Science, Math, & Technology	4	Lab Science	
	4	Lab Science	
	4	MATH 1502 or MATH 1711	
Core E - Social Sciences	3	HIST 2111 or HIST 2112 or INTA 1200 or POL 1101 or PUBP 3000	
	9	Any SS	
Core F - Courses Related to Major	3	ECON 2105	c
	3	ECON 2106	c
	3	Statistics Elective	e, c
	3	Engineering/Science/Math Elective	a
	6	Modern Languages	b, c
Major Requirements	3	ECON 3110	c
	3	ECON 3120	c
	3	ECON 3150	c
	3	ECON 3161	c
	3	ECON 4311 or ECON 4350	c
	3	ECON 4910	c
ECON Electives	6	ECON Electives	c
Non-Major Cluster	12	Cluster Electives	c, d
Modern Languages	3	CHIN 4500	c
	9	Modern Languages	b, c
Free Electives	11	Free Electives	g
TOTAL:	122		

Note: Non-credit requirement With the goal of enhanced educational and career prospects and in accordance with the pedagogical objectives of the degree in Global Economics and Modern Languages, all GEML students are required to fulfill an International Experience as part of their graduation requirements. This requirement can met through one of two ways:

1. Complete a minimum 6-week overseas experience. If this is not a country whose primary language is in the student's language of study, the student must justify and receive prior approval.
2. Complete a 15-week internship or similar experience of at least 10 hours per week at an international organization such as consulate, CNN International, etc. The internship must be approved in advance.

NOTES

a = Any 1000- or 2000-level course with the following prefixes: AE, APPH, BIOL, BMED, CEE,

CHBE, CHE, CHEM, EAS, ECE, ISYE, MATH, ME, MSE, NRE, PHYS, PTFE.

b = Students must complete 21 hours of Chinese electives at 2002 level or above. Six hours are counted in Humanities, six in Core Area F, and 9 in Modern Languages Requirements.

c = C-minimum required.

d = ECON and CHIN courses not allowed for cluster electives.

e = One course from MATH 3215, MATH 3770, ISYE 3770 or (MGT 2250 - minimum B)

f = Six hours of Econ Electives must be chosen from one of the following Specialization areas (Industrial Organization: ECON 4340 or ECON 4180 or ECON 4360) or (International Economics: ECON 4311 or ECON 4350 or ECON 4355 or ECON 4610) or (Environmental Economics: ECON 3300 or ECON 4421 or ECON 4440)

g = CHIN courses below 2002 may count toward the free elective courses.

BS IN GLOBAL ECONOMICS AND MODERN LANGUAGES - FRENCH 2013 - 2014 DEGREE REQUIREMENTS

REQUIREMENT	REQ HRS	COURSE(S)	NOTES
Wellness	2	HPS 1040 or APPH 1040 or APPH 1050	
Core A - Essential Skills	3	ENGL 1101	
	3	ENGL 1102	
	4	MATH 1501 or MATH 1712	
Core B - Institutional Options	3	CS 1315	
Core C - Humanities	6	Modern Languages	c
Core D - Science, Math, & Technology	4	Lab Science	
	4	Lab Science	
	4	MATH 1502 or MATH 1711	
Core E - Social Sciences	3	HIST 2111 or HIST 2112 or INTA 1200 or POL 1101 or PUBP 3000	
	9	Any SS	
Core F - Courses Related to Major	3	ECON 2105	c
	3	ECON 2106	c
	3	Statistics Elective	e, c
	3	Engineering/Science/Math Elective	a
	6	Modern Languages	b, c
Major Requirements	3	ECON 3110	c
	3	ECON 3120	c
	3	ECON 3150	c
	3	ECON 3161	c
	3	ECON 4311 or ECON 4350	c
	3	ECON 4910	c
ECON Electives	6	ECON Electives	c
Non-Major Cluster	12	Cluster Electives	c, d
Modern Languages	3	FREN 4500	c
	9	Modern Languages	b, c
Free Electives	11	Free Electives	g
TOTAL:	122		

Note: Non-credit requirement With the goal of enhanced educational and career prospects and in accordance with the pedagogical objectives of the degree in Global Economics and Modern Languages, all GEML students are required to fulfill an International Experience as part of their graduation requirements. This requirement can met through one of two ways:

1. Complete a minimum 6-week overseas experience. If this is not a country whose primary language is in the student's language of study, the student must justify and receive prior approval.
2. Complete a 15-week internship or similar experience of at least 10 hours per week at an international organization such as consulate, CNN International, etc. The internship must be approved in advance.

NOTES

a = Any 1000- or 2000-level course with the following prefixes: AE, APPH, BIOL, BMED, CEE,

CHBE, CHE, CHEM, EAS, ECE, ISYE, MATH, ME, MSE, NRE, PHYS, PTFE.

b = Students must complete 21 hours of French electives at 3000 level or above. Six hours are counted in Humanities, six in Core Area F, and 9 in Modern Languages Requirements.

c = C-minimum required.

d = ECON and FREN courses not allowed for cluster electives.

e = One course from MATH 3215, MATH 3770, ISYE 3770 or (MGT 2250 - minimum B)

f = Six hours of Econ Electives must be chosen from one of the following Specialization areas (Industrial Organization: ECON 4340 or ECON 4180 or ECON 4360) or (International Economics: ECON 4311 or ECON 4350 or ECON 4355 or ECON 4610) or (Environmental Economics: ECON 3300 or ECON 4421 or ECON 4440)

g = FREN courses below 3000 may count toward the free elective courses.

BS IN GLOBAL ECONOMICS AND MODERN LANGUAGES - GERMAN 2013 - 2014 DEGREE REQUIREMENTS

REQUIREMENT	REQ HRS	COURSE(S)	NOTES
Wellness	2	HPS 1040 or APPH 1040 or APPH 1050	
Core A - Essential Skills	3	ENGL 1101	
	3	ENGL 1102	
	4	MATH 1501 or MATH 1712	
Core B - Institutional Options	3	CS 1315	
Core C - Humanities	6	Modern Languages	c
Core D - Science, Math, & Technology	4	Lab Science	
	4	Lab Science	
	4	MATH 1502 or MATH 1711	
Core E - Social Sciences	3	HIST 2111 or HIST 2112 or INTA 1200 or POL 1101 or PUBP 3000	
	9	Any SS	
Core F - Courses Related to Major	3	ECON 2105	c
	3	ECON 2106	c
	3	Statistics Elective	e, c
	3	Engineering/Science/Math Elective	a
	6	Modern Languages	b, c
Major Requirements	3	ECON 3110	c
	3	ECON 3120	c
	3	ECON 3150	c
	3	ECON 3161	c
	3	ECON 4311 or ECON 4350	c
	3	ECON 4910	c
ECON Electives	6	ECON Electives	c
Non-Major Cluster	12	Cluster Electives	c, d
Modern Languages	3	GRMN 4500	c
	9	Modern Languages	b, c
Free Electives	11	Free Electives	g
TOTAL:	122		

Note: Non-credit requirement With the goal of enhanced educational and career prospects and in accordance with the pedagogical objectives of the degree in Global Economics and Modern Languages, all GEML students are required to fulfill an International Experience as part of their graduation requirements. This requirement can met through one of two ways:

1. Complete a minimum 6-week overseas experience. If this is not a country whose primary language is in the student's language of study, the student must justify and receive prior approval.
2. Complete a 15-week internship or similar experience of at least 10 hours per week at an international organization such as consulate, CNN International, etc. The internship must be approved in advance.

NOTES

a = Any 1000- or 2000-level course with the following prefixes: AE, APPH, BIOL, BMED, CEE,

CHBE, CHE, CHEM, EAS, ECE, ISYE, MATH, ME, MSE, NRE, PHYS, PTFE.

b = Students must complete 21 hours of German electives at 3000 level or above. Six hours are counted in Humanities, six in Core Area F, and 9 in Modern Languages Requirements.

c = C-minimum required.

d = ECON and GRMN courses not allowed for cluster electives.

e = One course from MATH 3215, MATH 3770, ISYE 3770 or (MGT 2250 - minimum B)

f = Six hours of Econ Electives must be chosen from one of the following Specialization areas (Industrial Organization: ECON 4340 or ECON 4180 or ECON 4360) or (International Economics: ECON 4311 or ECON 4350 or ECON 4355 or ECON 4610) or (Environmental Economics: ECON 3300 or ECON 4421 or ECON 4440)

g = GRMN courses below 3000 may count toward the free elective courses.

SCHOOL OF ECONOMICS

About the School
Undergraduate
BS Economics
Description
Degree Requirements
BS Econ & INTA
Description
Degree Requirements
BS Global Econ & ML
Description
Degree Requirements
Chinese
French
German
Japanese
Russian
Spanish
Minors
Certificates
Graduate
Admissions
Certificates
MS Economics
PhD Economics
Ivan Allen College

BS IN GLOBAL ECONOMICS AND MODERN LANGUAGES - JAPANESE 2013 - 2014 DEGREE REQUIREMENTS

REQUIREMENT	REQ HRS	COURSE(S)	NOTES
Wellness	2	HPS 1040 or APPH 1040 or APPH 1050	
Core A - Essential Skills	3	ENGL 1101	
	3	ENGL 1102	
	4	MATH 1501 or MATH 1712	
Core B - Institutional Options	3	CS 1315	
Core C - Humanities	6	Modern Languages	c
Core D - Science, Math, & Technology	4	Lab Science	
	4	Lab Science	
	4	MATH 1502 or MATH 1711	
Core E - Social Sciences	3	HIST 2111 or HIST 2112 or INTA 1200 or POL 1101 or PUBP 3000	
	9	Any SS	
Core F - Courses Related to Major	3	ECON 2105	c
	3	ECON 2106	c
	3	Statistics Elective	e, c
	3	Engineering/Science/Math Elective	a
	6	Modern Languages	b, c
Major Requirements	3	ECON 3110	c
	3	ECON 3120	c
	3	ECON 3150	c
	3	ECON 3161	c
	3	ECON 4311 or ECON 4350	c
	3	ECON 4910	c
ECON Electives	6	ECON Electives	c
Non-Major Cluster	12	Cluster Electives	c, d
Modern Languages	3	JAPN 4500	c
	9	Modern Languages	b, c
Free Electives	11	Free Electives	g
TOTAL:	122		

Note: Non-credit requirement With the goal of enhanced educational and career prospects and in accordance with the pedagogical objectives of the degree in Global Economics and Modern Languages, all GEML students are required to fulfill an International Experience as part of their graduation requirements. This requirement can met through one of two ways:

1. Complete a minimum 6-week overseas experience. If this is not a country whose primary language is in the student's language of study, the student must justify and receive prior approval.
2. Complete a 15-week internship or similar experience of at least 10 hours per week at an international organization such as consulate, CNN International, etc. The internship must be approved in advance.

NOTES

a = Any 1000- or 2000-level course with the following prefixes: AE, APPH, BIOL, BMED, CEE,

CHBE, CHE, CHEM, EAS, ECE, ISYE, MATH, ME, MSE, NRE, PHYS, PTFE.

b = Students must complete 21 hours of Japanese electives at 2002 level or above. Six hours are counted in Humanities, six in Core Area F, and 9 in Modern Languages Requirements.

c = C-minimum required.

d = ECON and JAPN courses not allowed for cluster electives.

e = One course from MATH 3215, MATH 3770, ISYE 3770 or (MGT 2250 - minimum B)

f = Six hours of Econ Electives must be chosen from one of the following Specialization areas (Industrial Organization: ECON 4340 or ECON 4180 or ECON 4360) or (International Economics: ECON 4311 or ECON 4350 or ECON 4355 or ECON 4610) or (Environmental Economics: ECON 3300 or ECON 4421 or ECON 4440)

g = JAPN courses below 2002 may count toward the free elective courses.

BS IN GLOBAL ECONOMICS AND MODERN LANGUAGES - RUSSIAN 2013 - 2014 DEGREE REQUIREMENTS

REQUIREMENT	REQ HRS	COURSE(S)	NOTES
Wellness	2	HPS 1040 or APPH 1040 or APPH 1050	
Core A - Essential Skills	3	ENGL 1101	
	3	ENGL 1102	
	4	MATH 1501 or MATH 1712	
Core B - Institutional Options	3	CS 1315	
Core C - Humanities	6	Modern Languages	c
Core D - Science, Math, & Technology	4	Lab Science	
	4	Lab Science	
	4	MATH 1502 or MATH 1711	
Core E - Social Sciences	3	HIST 2111 or HIST 2112 or INTA 1200 or POL 1101 or PUBP 3000	
	9	Any SS	
Core F - Courses Related to Major	3	ECON 2105	c
	3	ECON 2106	c
	3	Statistics Elective	e, c
	3	Engineering/Science/Math Elective	a
	6	Modern Languages	b, c
Major Requirements	3	ECON 3110	c
	3	ECON 3120	c
	3	ECON 3150	c
	3	ECON 3161	c
	3	ECON 4311 or ECON 4350	c
	3	ECON 4910	c
ECON Electives	6	ECON Electives	c
Non-Major Cluster	12	Cluster Electives	c, d
Modern Languages	3	RUSS 4500	c
	9	Modern Languages	b, c
Free Electives	11	Free Electives	g
TOTAL:	122		

Note: Non-credit requirement With the goal of enhanced educational and career prospects and in accordance with the pedagogical objectives of the degree in Global Economics and Modern Languages, all GEML students are required to fulfill an International Experience as part of their graduation requirements. This requirement can met through one of two ways:

1. Complete a minimum 6-week overseas experience. If this is not a country whose primary language is in the student's language of study, the student must justify and receive prior approval.
2. Complete a 15-week internship or similar experience of at least 10 hours per week at an international organization such as consulate, CNN International, etc. The internship must be approved in advance.

NOTES

a = Any 1000- or 2000-level course with the following prefixes: AE, APPH, BIOL, BMED, CEE,

CHBE, CHE, CHEM, EAS, ECE, ISYE, MATH, ME, MSE, NRE, PHYS, PTFE.

b = Students must complete 21 hours of Russian electives at 2002 level or above. Six hours are counted in Humanities, six in Core Area F, and 9 in Modern Languages Requirements.

c = C-minimum required.

d = ECON and RUSS courses not allowed for cluster electives.

e = One course from MATH 3215, MATH 3770, ISYE 3770 or (MGT 2250 - minimum B)

f = Six hours of Econ Electives must be chosen from one of the following Specialization areas (Industrial Organization: ECON 4340 or ECON 4180 or ECON 4360) or (International Economics: ECON 4311 or ECON 4350 or ECON 4355 or ECON 4610) or (Environmental Economics: ECON 3300 or ECON 4421 or ECON 4440)

g = RUSS courses below 2002 may count toward the free elective courses.

SCHOOL OF ECONOMICS

About the School
Undergraduate
BS Economics
Description
Degree Requirements
BS Econ & INTA
Description
Degree Requirements
BS Global Econ & ML
Description
Degree Requirements
Chinese
French
German
Japanese
Russian
Spanish
Minors
Certificates
Graduate
Admissions
Certificates
MS Economics
PhD Economics
Ivan Allen College

BS IN GLOBAL ECONOMICS AND MODERN LANGUAGES - SPANISH 2013 - 2014 DEGREE REQUIREMENTS

REQUIREMENT	REQ HRS	COURSE(S)	NOTES
Wellness	2	HPS 1040 or APPH 1040 or APPH 1050	
Core A - Essential Skills	3	ENGL 1101	
	3	ENGL 1102	
	4	MATH 1501 or MATH 1712	
Core B - Institutional Options	3	CS 1315	
Core C - Humanities	6	Modern Languages	b,c
Core D - Science, Math, & Technology	4	Lab Science	
	4	Lab Science	
	4	MATH 1502 or MATH 1711	
Core E - Social Sciences	3	HIST 2111 or HIST 2112 or INTA 1200 or POL 1101 or PUBP 3000	
	9	Any SS	
Core F - Courses Related to Major	3	ECON 2105	c
	3	ECON 2106	c
	3	Statistics Elective	e, c
	3	Engineering/Science/Math Elective	a
	6	Modern Languages	b, c
Major Requirements	3	ECON 3110	c
	3	ECON 3120	c
	3	ECON 3150	c
	3	ECON 3161	c
	3	ECON 4311 or ECON 4350	c
	3	ECON 4910	c
ECON Electives	6	ECON Electives	c
Non-Major Cluster	12	Cluster Electives	c, d
Modern Languages	3	SPAN 4500	c
	9	Modern Languages	b, c
Free Electives	11	Free Electives	g
TOTAL:	122		

Note: Non-credit requirement With the goal of enhanced educational and career prospects and in accordance with the pedagogical objectives of the degree in Global Economics and Modern Languages, all GEML students are required to fulfill an International Experience as part of their graduation requirements. This requirement can met through one of two ways:

1. Complete a minimum 6-week overseas experience. If this is not a country whose primary language is in the student's language of study, the student must justify and receive prior approval.
2. Complete a 15-week internship or similar experience of at least 10 hours per week at an international organization such as consulate, CNN International, etc. The internship must be approved in advance.

NOTES

a = Any 1000- or 2000-level course with the following prefixes: AE, APPH, BIOL, BMED, CEE,

CHBE, CHE, CHEM, EAS, ECE, ISYE, MATH, ME, MSE, NRE, PHYS, PTFE.

b = Students must complete 21 hours of Spanish electives at 3000 level or above. Six hours are counted in Humanities, six in Core Area F, and 9 in Modern Languages Requirements.

c = C-minimum required.

d = ECON and SPAN courses not allowed for cluster electives.

e = One course from MATH 3215, MATH 3770, ISYE 3770 or (MGT 2250 - minimum B)

f = Six hours of Econ Electives must be chosen from one of the following Specialization areas (Industrial Organization: ECON 4340 or ECON 4180 or ECON 4360) or (International Economics: ECON 4311 or ECON 4350 or ECON 4355 or ECON 4610) or (Environmental Economics: ECON 3300 or ECON 4421 or ECON 4440)

g = SPAN courses below 3000 may count toward the free elective courses.

SCHOOL OF ECONOMICS

About the School
Undergraduate
BS Economics
Description
Degree Requirements
BS Econ & INTA
Description
Degree Requirements
BS Global Econ & ML
Description
Degree Requirements
Chinese
French
German
Japanese
Russian
Spanish
Minors
Certificates
Graduate
Admissions
Certificates
MS Economics
PhD Economics
Ivan Allen College

CERTIFICATE IN ECONOMICS

The School of Economics offers the Certificate in Economics for students in all disciplines at Georgia Tech (other than Economics majors, including GEML and EIA majors). The certificate program introduces students to core economic concepts and tools and their application to real-world problems. The certificate is especially valuable for students considering graduate work in law, public policy, or business administration. The certificate will also be attractive to students who wish to broaden their education and economic proficiency but have limited curricular flexibility in their major degree program that prevents them from participating in the Minor in Economics.

Some of the 3000/4000-level courses that may be considered for certificate credit are (at least nine hours):

ECON 3110 Advanced Microeconomic Analysis

ECON 3120 Advanced Macroeconomics

ECON 3150 Economic and Financial Modeling

ECON 3161 Introduction to Econometrics

ECON 4160 Economic Forecasting

ECON 4311 Strategic Economics of Global Enterprises

ECON 4340 Industrial Organization

ECON 4350 International Economics

ECON 4355 Global Financial

ECON 4360 Network Economics

ECON 4421 Urban and Regional Economics

ECON 4411 Economic Development

ECON 4450 African-American Entrepreneur

ECON 4510 Health Economics

Other 3000 and 4000 level courses may be approved by the Assistant Director of Academic Programs.

2000 level courses that may be considered for certificate credit are (no more than 3 hours, and if not required by name and number by the major school):

ECON 2100 Economic Analysis and Policy Problems

ECON 2106 Principles of Microeconomics

ECON 2105 Principles of Macroeconomics

Only students enrolled at Georgia Tech may enroll in this certificate program. Enrolled students must contact the Assistant Director of Academic Programs in the School of Economics. They are required to complete an application form indicating their program of study towards the Certificate. The Assistant Director of Academic Programs will approve the plan of study for the Certificate. Students who have completed all requirements for the Certificate will complete a form listing the courses taken and the grades earned towards the Certificate and submit it to the School of Economics at the beginning of their graduating semester. The Certificate will be issued by the School of Economics upon verification that all requirements for the Certificate in Economics have been fulfilled.

SCHOOL OF ECONOMICS

About the School
Undergraduate
BS Economics
Description
Degree Requirements
BS Econ & INTA
Description
Degree Requirements
BS Global Econ & ML
Description
Degree Requirements
Chinese
French
German
Japanese
Russian
Spanish
Minors
Certificates
Graduate
Admissions
Certificates
MS Economics
PhD Economics
Ivan Allen College

GRADUATE CERTIFICATE IN SCIENCE, TECHNOLOGY AND SOCIETY

The Science, Technology and Society Graduate Certificate is designed for students already enrolled in a graduate degree program at Georgia Tech. This certificate is for graduate students who would like to demonstrate additional competence in some aspect of STS or special competence in STS in their home discipline. The certificate is open to students in good standing in any graduate program at Georgia Tech.

The 12-credit certificate program helps students to:

- Understand the social, cultural, and epistemic dynamics of science and technology
- Explore these dynamics across world societies and cultures
- Develop sensitivity to issues of gender, race, and justice across areas of knowledge, including: engineering, medicine, environment, cognition, security, innovation, design
- Employ STS approaches as scholars or practitioners (e.g. engineers, scientists, or policy makers)

PROGRAM OF STUDY: 4 Courses Total

Core Course: 1 Required	
HTS 6743 / PUBP 6743 / LCC 6743	STS Core Seminar
HTS 6118	Science, Technology and the Economy
HTS 6121 / INTA 8803	Science, Technology, and Security
HTS 6123 / LCC 8803	Social and Cultural Studies of Biomedicine
HTS 6124	Science and Technology Beyond Borders
PUBP 6748 / LCC 6748	Social Justice, Critical Theory and Philosophy of Design
LCC 6749 / PUBP 6749	Feminist Theory and STS
Up to One Other Elective, Subject to Student Interest and STS Coordinator Approval Many appropriate courses are offered across the Ivan Allen College and the Institute, for example:	
CS 8893	Cognition and Culture

MASTER OF SCIENCE WITH A MAJOR IN ECONOMICS

The School of Economics offers a Master of Science degree for those desiring to pursue economics at an advanced level. It is grounded in applied economic theory and econometrics. The program allows for three tracks to graduate: Thesis, Internship, and Coursework. These options are as follows:

Thesis Option

ECON 6105	Required	3
ECON 6106	Required	3
ECON 6121	Required	3
ECON 6140	Required	3
ECON 6160	Required	3
Economics electives		3 to 9
ECON 7000 Thesis		6 to 12
TOTAL:		30*

Internship Option

ECON 6105	Required	3
ECON 6106	Required	3
ECON 6121	Required	3
ECON 6140	Required	3
ECON 6160	Required	3
Economics electives		3 to 9
Internship		6
TOTAL:		30*

Coursework Option

ECON 6105	Required	3
ECON 6106	Required	3
ECON 6121	Required	3
ECON 6140	Required	3
ECON 6160	Required	3
Economics electives		15
TOTAL:		30*

*Minimum course credit hours at 6000 to 9000 level: 21

Within those 30 hours, at least 24 hours must be in courses addressing the subject of economics. The student must obtain approval of the School of Economics to apply any course outside of the fifteen hours of courses required to be taught by the School of Economics.

DOCTOR OF PHILOSOPHY WITH A MAJOR IN ECONOMICS

The School of Economics will start its PhD program with a major in Economics in August 2010. The program is unique in its focus on the common globalization and innovation issues that interconnect environmental economics, industrial organization and international economics. It emphasizes the economic forces that generate the impetus for individuals to compete globally and analyzes the interrelated effects that these forces have on the environment, international trade, and the behavior of firms in a variety of industrial sectors in the U.S. In the new millennium, globalization and creative activity, as fundamental precursors and outputs of industrial activities, have important implications for environmental, trade, and industrial policies. Policy changes in one arena (e.g. trade) may have significant effects in other areas (e.g. environment, antitrust). There is an increasing demand for PhD economists who have the training and skill sets to carefully think through these issues. Our doctoral program will prepare students to meet this increasing demand, qualifying them for positions in academia, private and public sectors.

Our curriculum features 27 credit hours of first year core courses, at least twenty-one credit hours of fields, electives and workshop, at least 18 credit hours of departmental seminars and at least thirty-three credit hours of dissertation research (see Table below). Thus, the minimum number of credit hours to be fulfilled is 99. Students receive rigorous training in microeconomic theory and quantitative methods during their first year of study. Our first year core coursework also features a two-course sequence in the economics of innovation. This cluster is designed to teach students the key microeconomic and macroeconomic foundations of innovation. In Microeconomics of Innovation, students will be taught the microeconomic theoretical concepts, techniques and reasoning that underlie innovation processes.

Table: Planned Curriculum and Sample Schedule for the PhD Program – All courses 3 credit hours

Fall	Spring
First Year	
Mathematics for Economists (July-August)	Microeconomic Theory II
Microeconomic Theory I	Econometrics II
Econometrics I	Microeconomics of Innovation
Game Theory	Macroeconomics of Innovation
Elective I	
Second Year	
Major Economics Field, Course I	Major Economics Field, Course II
Minor Economics Field, Course I	Minor Economics Field, Course II
Empirical Research Methods	Elective II
Seminar I	Seminar II
Third Year	
Research Dev. & Presentation Workshop	Dissertation Research
Dissertation Research	Seminar IV
Seminar III	
Fourth Year	
Dissertation Research	Dissertation Research
Seminar V	Seminar VI

In Macroeconomics of Innovation, students will learn the macroeconomic factors that lead to technological change, the roles played by technological innovation and knowledge spillovers as promoters of economic growth, and the scope for fiscal and monetary policies to foment research and development and hence economic growth.

With the exception of the two-course sequence in the economics of innovation, our core courses are standard. Mathematics for Economists introduces students to the core coursework. This is an intensive three-week course, offered to students during July-August, ending in the week before the start of the fall semester. The main goal of this course is to provide students with the necessary quantitative skills to perform well in the subsequent core coursework. Microeconomic Theory I and Microeconomic Theory II cover standard topics in microeconomics. Game Theory complements the knowledge in microeconomics and examines static and dynamic games of complete and incomplete information. In addition to Mathematics for Economists, students take three courses in quantitative methods, a two-course sequence in statistics and econometrics and a course in empirical research methods.

We offer three specialization fields, Environmental Economics, Industrial Organization and International Economics. Our fields build on our set of core courses, providing students with opportunities to explore research topics within three distinct but related areas while simultaneously preserving and enhancing our program's focus on globalization and innovation. Each field shares globalization and innovation as a "common language," since a substantial share of its content pertains to the importance played by globalization and innovation within the field. Each field provides an equal mix of theory and practice, consisting of two 3 hour courses.

Students are required to have a major and at least one minor in fields offered by the Department of Economics. Occasionally, the Department of Economics will offer elective courses that complement our field courses. In addition, students are allowed to take elective courses outside of Economics subject to the approval of the Director of Graduate Studies. A set of elective courses taken in another discipline will constitute a minor in that particular discipline if at least two courses are taken from this discipline.

The goals of the Research Development & Presentation Workshop are threefold. First, the workshop provides an extra incentive for students to start working early on the topic of their third year paper, since students present papers closely related to their third year papers to peers and the instructor. Second, the workshop provides each student with regular feedback from the instructor and peers on the student's ability to deliver lectures. Third, the workshop serves the purpose of enhancing the student's ability of writing a research paper. Students will not only present papers closely related to their own, but will also discuss papers presented by peers, evaluate their peers regarding presentation skills and present the first drafts of their third year papers at the end of the term.

School Seminars provide students with an opportunity to get involved in the research life of the Department. They also enable students to start acquiring key presentation skills. Each student is required to attend all School seminars each semester, starting in the fall semester of the second year. The Director of Graduate Studies will keep an attendance list, and students will have to submit weekly reports summarizing the papers presented. Absences will have to be justified in writing – copies of such documents are kept in the student's file together with other student records. Absences may affect the student's eligibility for funding or the amount of funding in the subsequent semester. At the end of each semester, the Director of Graduate Studies will evaluate the students' performances and issue "pass" or "no pass" grades. Those who receive pass grades will earn three credits. Each student must earn a minimum of 18 Seminar credit hours to graduate.

In addition to the School Seminar, students must also register each semester for Dissertation Research, starting in the fall semester of the third year. In such a semester, students must register for at least six hours of Dissertation Research. In every subsequent semester, students must register for at least nine hours of Dissertation Research. Students must complete a minimum of 33 Dissertation Research credit hours to graduate.

BACHELOR OF SCIENCE IN HISTORY, TECHNOLOGY, AND SOCIETY

The bachelor's degree in History, Technology, and Society is comparable to traditional degrees in history and sociology, but HTS has several attributes that make it unique and give our students an edge over other liberal arts majors. A degree in HTS requires broad-based training in humanities, mathematics, computing, science, and social sciences, giving our majors a truly rigorous and broad education. The program's focus on global issues related to the origin and impact of technology and science is also distinctive, providing students with the critical tools needed to understand the development of the modern world. Students in HTS may participate in both the International Plan and the Research Option, which enhance the undergraduate experience. Finally, the HTS curriculum allows one of the largest numbers of free electives of any major at Georgia Tech, giving our students a chance to pursue minor degrees, certificates, and other interests that prepare them for the broadest possible range of careers, from government and politics to law and medicine to journalism and business.

INTERNATIONAL PLAN

This degree program combines the traditional benefits of an HTS degree with the additional benefits of international education. HTS strongly encourages study abroad programs and believes that international experiences greatly enhance one's undergraduate education.

The number of credit hours needed for this degree (BS in History, Technology, and Society-International Plan) is the same as for the traditional bachelor's degree in HTS. However, the International Plan (IP) degree has different requirements. These requirements are discussed briefly in the next paragraph. In most cases, HTS majors will be able to use their non-major cluster and free-elective hours to fulfill the HTS-IP requirements.

There are two IP tracks: the English Language Option and the Foreign Language Option. HTS supports both options, which the Institute deems to be equal in difficulty and value. Both tracks require a total of twenty-six weeks in residence in a specific foreign country or region. These weeks must be accumulated in one or two trips abroad; any combination of coursework, research, internship, or work may apply to this twenty-six week total, given the approval of the HTS undergraduate coordinator. Both IP tracks require a minimum of twelve credit hours in one foreign language and demonstration of proficiency in that language. Both require participants to take a cluster of courses from a menu of IP-designated electives; both require completion of a capstone course, which will be offered through HTS.

For more complete information, see the official Institute IP website through Georgia Tech's Office of International Education.

RESEARCH OPTION

The HTS Research Option allows students to incorporate additional research, writing, and presentation experiences into the major program of study. Students interested in going on to graduate or professional school are encouraged to consider the research option, which allows a student to complete a significant scholarly work for presentation at a professional conference and/or publication.

In addition to the courses required of all HTS majors, including eight credit hours of research seminars and the three-credit HTS research methods course, students enrolled in the Research Plan will also complete six hours of supervised individual undergraduate research and two 1-hour writing courses: LCC 4701 Undergraduate Research Proposal Writing (typically taken during the first or second semester of research) and LCC 4702 Undergraduate Research Thesis Writing (taken during the term in which the thesis is written).

BACHELOR OF SCIENCE IN HISTORY, TECHNOLOGY, AND SOCIETY 2013 - 2014 DEGREE REQUIREMENTS

REQUIREMENT	REQ HRS	COURSE(S)	NOTES
Wellness	2	HPS 1040 or APPH 1040 or APPH 1050	
Core A - Essential Skills	3	ENGL 1101	
	3	ENGL 1102	
	4	MATH 1501 or MATH 1712	
Core B - Institutional Options	3	CS 1301 or CS 1315	
Core C - Humanities	6	Modern Language	
Core D - Science, Math, & Technology	4	Lab Science	
	4	Lab Science	
	4	MATH 1502 or MATH 1711	
Core E - Social Sciences	3	HIST 2111 or HIST 2112 or INTA 1200 or POL 1101 or PUBP 3000	
	9	HTS Electives	b
Core F - Courses Related to Major	3	ECON 2100 or ECON 2101 or ECON 2105 or ECON 2106	c
	3	HTS 1001	c
	3	HTS 1031 or HTS 2036 or HTS 2037 or HTS 2061 or HTS 2062 or HTS 3028 or HTS 3029 or HTS 3030 or HTS 3031 or HTS 3032 or HTS 3033 or HTS 3035 or HTS 3036 or HTS 3038 or HTS 3039 or HTS 3041 or HTS 3043 or HTS 3045 or HTS 3046 or HTS 3051 or HTS 3061 or HTS 3062 or HTS 3063 or HTS 3064 or HTS 3065 or HTS 3069	c
	3	HTS 2101	c
	3	HIST 2111 or HIST 2112	a, c
	3	SOC 1101	c
Major Requirements	9	HTS 2081 or HTS 2082 or HTS 2084 or HTS 2100 or HTS 3001 or HTS 3007 or HTS 3020 or HTS 3021 or HTS 3046 or HTS 3082 or HTS 3083 or HTS 3084 or HTS 3085 or HTS 3086 or HTS 3087	c
	8	HTS 4001 or HTS 4002 or HTS 4003 or HTS 4004 or HTS 4005 or HTS 4011 or HTS 4012 or HTS 4013 or HTS 4014 or HTS 4015 or HTS 4031 or HTS 4032 or HTS 4033 or HTS 4034 or HTS 4035 or HTS 4061 or HTS 4062 or HTS 4063 or HTS 4064 or HTS 4065 or HTS 4081 or HTS 4082 or HTS 4083 or HTS 4084 or HTS 4084 or HTS 4085	c
	12	HTS Electives	
Non-Major Cluster	12	Non-Major Cluster	d
Free Electives	18	Free Electives	
TOTAL:	122		

Pass/fail: Students can do pass/fail for HTS electives, non-major cluster, and free electives. All courses in the HTS core must be taken for a letter grade and the student must earn a C or better.

NOTES

a = This must be a different class from that used to satisfy the Legislative Requirement.
b = Any HTS course that carries a Social Science attribute.

c = C-minimum required.

d = 12 credits required in either the same prefix or part of a coherent theme. Please consult with advisor on course selection.

SCHOOL OF HISTORY, TECHNOLOGY, AND SOCIETY

About the School
Undergraduate
BS History, Tech, & Society
Description
Degree Requirements
Minors & Certificate
Graduate
Admissions
Certificates
MS In HSTS
PhD HSTS
Ivan Allen College

GRADUATE CERTIFICATE IN SCIENCE, TECHNOLOGY AND SOCIETY

The Science, Technology and Society Graduate Certificate is designed for students already enrolled in a graduate degree program at Georgia Tech. This certificate is for graduate students who would like to demonstrate additional competence in some aspect of STS or special competence in STS in their home discipline. The certificate is open to students in good standing in any graduate program at Georgia Tech.

The 12-credit certificate program helps students to:

- Understand the social, cultural, and epistemic dynamics of science and technology
- Explore these dynamics across world societies and cultures
- Develop sensitivity to issues of gender, race, and justice across areas of knowledge, including: engineering, medicine, environment, cognition, security, innovation, design
- Employ STS approaches as scholars or practitioners (e.g. engineers, scientists, or policy makers)

PROGRAM OF STUDY: 4 Courses Total

Core Course: 1 Required	
HTS 6743 / PUBP 6743 / LCC 6743	STS Core Seminar
HTS 6118	Science, Technology and the Economy
HTS 6121 / INTA 8803	Science, Technology, and Security
HTS 6123 / LCC 8803	Social and Cultural Studies of Biomedicine
HTS 6124	Science and Technology Beyond Borders
PUBP 6748 / LCC 6748	Social Justice, Critical Theory and Philosophy of Design
LCC 6749 / PUBP 6749	Feminist Theory and STS
Up to One Other Elective, Subject to Student Interest and STS Coordinator Approval Many appropriate courses are offered across the Ivan Allen College and the Institute, for example:	
CS 8893	Cognition and Culture

MASTER OF SCIENCE IN HISTORY AND SOCIOLOGY OF TECHNOLOGY AND SCIENCE

The School offers a program of graduate study in the history and sociology of technology and science at both the master's and doctoral levels. The two-year master's program consists of foundation courses in history, social theory, and research methods, as well as more specialized reading and research seminars. The program emphasizes the understanding of technology and science within a broad social and historical context. Students develop a strong general background in history and sociology, and acquire skills in research, social analysis, and writing. The basic curriculum of thirty hours consists of fifteen hours of required mandatory courses, plus fifteen hours of electives for those who do not wish to proceed to the PhD, or plus nine hours of electives and six hours of special problems (research paper) for those who wish to proceed to the PhD. The curriculum has been changed to establish two tracks, a History Track and a Sociology Track. The specific changes to the curriculum are outlined below:

HISTORY TRACK – CURRICULUM

Mandatory Courses

- HTS 6001 Social Theory
- HTS 6002 History of Technology
- HTS 6101/6102/6103 Social and Political History of the U.S./ Europe/non-Western World
- HTS 6743-STS Core Seminar
- HTS 7001 Foundations of Socio-Historical Analysis

Electives

- HTS 6101 Social and Political History of the United States
- HTS 6102 Social and Political History of Europe
- HTS 6103 Social and Political History of the Nonwestern World
- HTS 6106 Business Organizations and Political Economy
- HTS 6110 Gender, Science, and Technology
- HTS 6111 Technology and Modern Culture
- HTS 6112 Studies in Science and Engineering
- HTS 6113 Development, Science, and Technology
- HTS 6114 Topics in the History of Science
- HTS 6115 Sociology of Science and Technology
- HTS 6116 The Environment and World History
- HTS 6117 Urbanization
- HTS 6118 Science, Technology, and the Economy
- HTS 6119 Race and Ethnicity
- HTS 6120 Inequality, Science, and Technology
- HTS 6121 Science,Technology,and Security

- HTS 6122 Topics in the History of Medicine
- HTS 6123 Social and Cultural Studies of Biomedicine
- HTS 6124 Science and Technology Beyond Borders

Notes

- Students who have taken either HTS 6101, HTS 6102, or HTS 6103 to satisfy their mandatory course requirements may take one or both of the other courses, if they are offered, as an elective.
- As this is a multidisciplinary degree, students in the history track can take electives from the sociology track, with the agreement of their advisor.
- Students who wish to proceed to the PhD must take at least one, and no more than two Special Topics courses (HTS 8xxx). This is a writing seminar that produces a research paper.

SOCIOLOGY TRACK - CURRICULUM

Mandatory Courses

- HTS 6001 Social Theory
- HTS 6002 History of Technology
- HTS 6743 STS Core Seminar
- HTS 7001 Foundations of Socio-Historical Analysis
- Advanced Sociological Methods

    This course is chosen from a wide variety of courses available in other programs on campus and at Georgia State University, in consultation with their advisor.

Electives

- HTS 6101 Social and Political History of the United States
- HTS 6102 Social and Political History of Europe
- HTS 6103 Social and Political History of the Nonwestern World
- HTS 6106 Business Organizations and Political Economy
- HTS 6110 Gender, Science, and Technology
- HTS 6111 Technology and Modern Culture
- HTS 6112 Studies in Science and Engineering
- HTS 6113 Development, Science, and Technology
- HTS 6114 Topics in the History of Science
- HTS 6115 Sociology of Science and Technology
- HTS 6116 The Environment and World History
- HTS 6117 Urbanization
- HTS 6118 Science, Technology, and the Economy
- HTS 6119 Race and Ethnicity
- HTS 6120 Inequality, Science, and Technology
- HTS 6121 Science,Technology,and Security
- HTS 6122 Topics in the History of Medicine
- HTS 6123 Social and Cultural Studies of Biomedicine

- HTS 6124 Science and Technology Beyond Borders

Notes

- Students may be required to take a second course in Advanced Sociological Methods if required to do so by their advisor.
- As this is a multidisciplinary degree students in the sociology track can take electives from the history track, with the agreement of their advisor.
- Students who wish to proceed to the PhD must take at least one, and no more than two, Special Topics courses.

DOCTOR OF PHILOSOPHY WITH A MAJOR IN HISTORY & SOCIOLOGY OF TECHNOLOGY & SCIENCE

The School offers a program of graduate study in the history and sociology of technology and science at both the master's and doctoral levels. The two-year master's program consists of foundation courses in history, social theory, and research methods, as well as more specialized reading and research seminars. The program emphasizes the understanding of technology and science within a broad social and historical context. Students develop a strong general background in history and sociology, and acquire skills in research, social analysis, and writing.

The basic curriculum of thirty hours for the MS consists of fifteen hours of required mandatory courses, plus nine hours of electives and six hours of special problems (research paper). Completion of a satisfactory research paper is essential for those students wishing to proceed to doctoral candidacy. It is followed by comprehensive examinations, which are normally taken in the third academic year.

The examinations cover material from three fields of study, which will be determined by a student's selection of history or sociology as the area of concentration.

In addition to satisfactory performance in the comprehensive examinations, students pursuing the degree in history must also pass a foreign language examination (normally in French, German, or Spanish) before being admitted to candidacy for the PhD. For students in sociology, an advanced sociological methods course replaces the language requirement. Having met these requirements, the candidate will submit a dissertation proposal, which must meet the approval of his or her dissertation committee. The candidate will then proceed to the final requirement for the degree: the completion of the PhD dissertation and its successful defense by oral examination.

BACHELOR OF SCIENCE IN HISTORY, TECHNOLOGY, AND SOCIETY INTERNATIONAL PLAN

This degree program combines the traditional benefits of an HTS degree with the additional benefits of international education. HTS strongly encourages study abroad programs and believes that international experiences greatly enhance one's undergraduate education.

The number of credit hours needed for this degree (BS in History, Technology, and Society-International Plan) is the same as for the traditional bachelor's degree in HTS. However, the International Plan (IP) degree has different requirements. These requirements are discussed briefly in the next paragraph. In most cases, HTS majors will be able to use their non-major cluster and free-elective hours to fulfill the HTS-IP requirements.

There are two IP tracks: the English Language Option and the Foreign Language Option. HTS supports both options, which the Institute deems to be equal in difficulty and value. Both tracks require a total of twenty-six weeks in residence in a specific foreign country or region. These weeks must be accumulated in one or two trips abroad; any combination of coursework, research, internship, or work may apply to this twenty-six week total, given the approval of the HTS undergraduate coordinator. Both IP tracks require a minimum of twelve credit hours in one foreign language and demonstration of proficiency in that language. Both require participants to take a cluster of courses from a menu of IP-designated electives; both require completion of a capstone course, which will be offered through HTS.

For more complete information, see the official Institute IP website through Georgia Tech's Office of International Education.

BACHELOR OF SCIENCE IN HISTORY, TECHNOLOGY, AND SOCIETY RESEARCH OPTION

The HTS Research Option allows students to incorporate additional research, writing, and presentation experiences into the major program of study. Students interested in going on to graduate or professional school are encouraged to consider the research option, which allows a student to complete a significant scholarly work for presentation at a professional conference and/or publication.

In addition to the courses required of all HTS majors, including eight credit hours of research seminars and the three-credit HTS research methods course, students enrolled in the Research Plan will also complete six hours of supervised individual undergraduate research and two 1-hour writing courses: LCC 4701 Undergraduate Research Proposal Writing (typically taken during the first or second semester of research) and LCC 4702 Undergraduate Research Thesis Writing (taken during the term in which the thesis is written).

UNDERGRADUATE PROGRAMS - GENERAL INFORMATION

The Sam Nunn School offers three outstanding undergraduate degree programs: the Bachelor of Science in International Affairs, the Bachelor of Science in International Affairs and Modern Language, and the Bachelor of Science in Economics and International Affairs. Please note that graduation checklists for these degrees are available on the Sam Nunn School Website: www.inta.gatech.edu

GRADUATE COURSE OPTION

Under the Graduate Course Option, undergraduate students with a final grade-point average of 3.5 or higher may count six hours of their undergraduate credits toward a master's degree at Georgia Tech in the same field. This applies to EIA, IAML, and INTA majors. This means that qualified students could complete the Master of Science in International Affairs with thirty-six additional hours rather than forty-two hours if completed within two years of earning a bachelor's degree.

BACHELOR OF SCIENCE IN INTERNATIONAL AFFAIRS

The Bachelor of Science in International Affairs (BS INTA) program includes instruction in international affairs, foreign languages, ethics and philosophy, social and natural sciences, and computer science. Upper-division coursework provides training in four substantive areas:

- technology, and scientific analysis, and ethics;
- international security and diplomacy;
- comparative politics, cultures, and societies; and
- international political economy.

Graduates of the BS INTA program are prepared for advanced graduate and professional study and are ready for employment in internationally oriented firms, government agencies, and nonprofit organizations.

International Affairs majors are expected to enhance their education through participation in the International Plan, study abroad programs, internships, and a host of on- and off-campus programs. In addition to the numerous opportunities afforded through Georgia Tech's Office of International Education, the Sam Nunn School sponsors rigorous summer study abroad programs in the European Union (Brussels), East Asia (China, Japan, Taiwan), Latin America (Argentina and Brazil), and Iberia (Portugal and Spain).Recognizing the importance of professional experience in enhancing a student's education, the Sam Nunn School encourages majors to pursue an internship or participate in the Cooperative Plan in their field of interest. In addition, students are strongly encouraged to get involved in a range of extracurricular activities, including Model United Nations;; AIESEC; Sigma Iota Rho (the International Affairs honor society); the Center for International Strategy, Technology, and Policy; the International Affairs Student Organization; and student conferences. Students are actively involved in the guest lecture series and participate in the biennial Sam Nunn/Bank of America Policy Forum.

INTERNATIONAL PLAN

International Affairs majors with the International Plan are engaged in a combination of study, research, or internship abroad for a total of twenty-six weeks. This overseas experience must be obtained over two terms (a summer and semester, or two semesters). In addition to gaining advanced global competence, the International Plan designation will set INTA students apart from other applicants with recruiters from top companies and governmental agencies. Required coursework for the International Plan is easily satisfied by the International Affairs core curriculum as follows:

- One course that focuses on international relations historically and theoretically (satisfied by INTA 1110).
- One course that provides a historical and theoretical understanding of the global economy, including topics such as international trade, finance, investment, and production; regional economic integration, economic development and modernization; and questions of natural resource sustainability (satisfied by INTA 3301).

- One course that provides familiarity with an area of the world or a country that allows students to make systematic comparisons with their own society and culture (satisfied by INTA 3203, or approved INTA elective or upper-division Modern Language courses).
- A culminating course, occurring either at the end of or after the international experience that integrates knowledge of the discipline and the international experience in a global context (satisfied by INTA 4500 or equivalent ML 4500).

BACHELOR OF SCIENCE IN INTERNATIONAL AFFAIRS 2013 - 2014 DEGREE REQUIREMENTS

REQUIREMENT	REQ HRS	COURSE(S)	NOTES
Wellness	2	HPS 1040 or APPH 1040 or APPH 1050	
Core A - Essential Skills	3	ENGL 1101	
	3	ENGL 1102	
	4	MATH 1501 or MATH 1712	
Core B - Institutional Options	3	CS 1315	
Core C - Humanities	6	Modern Languages	c
Core D - Science, Math, & Technology	4	Lab Science	
	4	Lab Science	
	4	MATH 1502 or MATH 1711	
Core E - Social Sciences	3	HIST 2111 or HIST 2112 or INTA 1200 or POL 1101 or PUBP 3000	
	3	ECON 2100 or ECON 2101 or ECON 2105 or ECON 2106	
	3	HTS 1031 or HTS 2036 or HTS 2037 or HTS 2041 or HTS 2061 or HTS 2062 or HTS 2823 or HTS 3028 or HTS 3029 or HTS 3030 or HTS 3033 or HTS 3035 or HTS 3036 or HTS 3038 or HTS 3039 or HTS 3041 or HTS 3043 or HTS 3045 or HTS 3061 or HTS 3062 or HTS 3063 or HTS 3069	
	3	INTA Social Science	a
Core F - Courses Related to Major	1	INTA 2001	
	3	INTA 1110	c
	3	INTA 2010	c
	3	INTA 2040	c
	9	INTA Electives	c
Major Requirements	3	INTA 3110	c
	3	INTA 3203	c
	3	INTA 3301	c
	3	INTA 4500	c
Non-INTA Requirements	3	AE 1770 or ARCH 4420 or BC 3630 or BMED 2400 or CEE 1770 or CHBE 2120 or CP 4510 or CS 1301 or CS 1315 or CS 1316 or CS 1331 or CS 1332 or CS 4235 or EAS 4430 or EAS 4610 or ECE 2030 or ID 3103 or ID 4103 or LCC 3402 or LCC 3404 or LCC 3410 or ME 1770 or ME 2016 or MGT 2200 or MGT 4051 or MGT 4052 or MGT 4058 or MGT 4661 or MUSI 4630 or PHYS 3266	
	6	Modern Languages	b
Additional INTA Electives	9	INTA Electives	c
Non-Major Cluster	15	Non-Major Cluster	d
Free Electives	13	Free Electives	
TOTAL:	122		

NOTES

a = Students must complete a Social Science course with INTA prefix. Consult approved Social

Sciences here: http://www.catalog.gatech.edu/students/ugrad/core/coree.php

b = Students must complete twelve hours of the same language. Six hours are counted in Humanities, and six in Non-INTA requirements.

c = C-minimum required.

d = 15 credits required in either the same prefix or part of a coherent theme. Please consult with advisor on course selection.

BACHELOR OF SCIENCE IN INTERNATIONAL AFFAIRS AND MODERN LANGUAGE

In partnership with the School of Modern Languages, the Sam Nunn School offers the Bachelor of Science in International Affairs and Modern Language, with separate concentrations in Chinese, French, German, Japanese, Russian, and Spanish. Students in this program receive intensive foreign language training and learn the fundamentals of dealing with foreign cultures and societies. A detailed description of the degree program is found in the School of Modern Languages section of this catalog.

INTERNATIONAL PLAN

In partnership with the School of Modern Languages, the Sam Nunn School offers the Bachelor of Science in International Affairs and Modern Language - International Plan, with separate concentrations in Chinese, French, German, Japanese, Russian, and Spanish. Students in this program receive intensive foreign language training and learn the fundamentals of dealing with foreign cultures and societies. A detailed description of the degree program is found in the School of Modern Languages section of this catalog.

SCHOOL OF INTERNATIONAL AFFAIRS

About the School
Undergraduate
General Information
BS International Affairs
Description
Degree Requirements
BS INTA & Modern Language
Description
Degree Requirements
Chinese
French
German
Japanese
Russian
Spanish
BS Economics & INTA
Description
Degree Requirements
Minors
Certificates
Graduate
Admissions
Certificates
MS International Affairs
PhD INTA, Science, & Tech
Ivan Allen College

REQUIREMENT	REQ HRS	COURSE(S)	NOTES
Wellness	2	HPS 1040 or APPH 1040 or APPH 1050	
Core A - Essential Skills	3	ENGL 1101	
	3	ENGL 1102	
	4	MATH 1501 or MATH 1712	
Core B - Institutional Options	3	CS 1315	
Core C - Humanities	6	Modern Languages	b,c
Core D - Science, Math, & Technology	4	Lab Science	
	4	Lab Science	
	4	MATH 1502 or MATH 1711	
Core E - Social Sciences	3	HIST 2111 or HIST 2112 or INTA 1200 or POL 1101 or PUBP 3000	
	3	ECON 2100 or ECON 2101 or ECON 2105 or ECON 2106	
	3	HTS 1031 or HTS 2036 or HTS 2037 or HTS 2041 or HTS 2061 or HTS 2062 or HTS 2823 or HTS 3028 or HTS 3029 or HTS 3030 or HTS 3033 or HTS 3035 or HTS 3036 or HTS 3038 or HTS 3039 or HTS 3041 or HTS 3043 or HTS 3045 or HTS 3061 or HTS 3062 or HTS 3063 or HTS 3069	
	3	INTA 1000/2000 level Social Science	a
Core F - Courses Related to Major	3	INTA 1110	c
	3	INTA 2010	c
	3	INTA 2040	c
	9	INTA 1000- or 2000-level Electives	c
Major Requirements	1	INTA 2001	
	3	INTA 3110	c
	3	INTA 3203	c
	3	INTA 3301	c
	3	INTA 4500	c
	12	INTA 3000- or 4000-level Electives	c
Capstone Requirement	3	CHIN 4500	c
Modern Language	15	Modern Languages	b, c
Non-INTA Requirements	3	AE 1770 or ARCH 4420 or BC 3630 or BMED 2400 or CEE 1770 or CHBE 2120 or CP 4510 or CS 1301 or CS 1315 or CS 1316 or CS 1331 or CS 1332 or CS 4235 or EAS 4430 or EAS 4610 or ECE 2030 or ID 3103 or ID 4103 or LCC 3402 or LCC 3404 or LCC 3410 or ME 1770 or ME 2016 or MGT 2200 or MGT 4051 or MGT 4052 or MGT 4058 or MGT 4661 or MUSI 4630 or PHYS 3266	
Free Electives	13	Free Electives	d
TOTAL:	122		

Non-credit requirement

With the goal of enhanced educational and career prospects and in accordance with the pedagogical objectives of the degree in International Affairs and Modern Languages, all IAML students are required to fulfill an International Experience as part of their graduation requirements. This requirement can be met through one of two ways:

- Complete a minimum 6-week overseas experience. If this is not a country whose primary language is in the student's language of study, the student must justify and receive prior approval.
- Complete a 15-week internship or similar experience of at least 10 hours per week at an international organization such as consulate, CNN International, etc. The internship must be approved in advance.

NOTES

a = Students must complete a Social Science course with INTA prefix. Consult approved Social Sciences here: http://www.catalog.gatech.edu/students/ugrad/core/coree.php

b = Students must complete 21 hours of CHIN electives from 2002, 3000- or 4000-level courses. Six hours are counted in Humanities, and 15 in Modern Languages Electives.

c = C-minimum required.

d = CHIN courses below 2002 may count toward the free elective courses.

SCHOOL OF INTERNATIONAL AFFAIRS
About the School
Undergraduate
General Information
BS International Affairs
Description
Degree Requirements
BS INTA & Modern Language
Description
Degree Requirements
Chinese
French
German
Japanese
Russian
Spanish
BS Economics & INTA
Description
Degree Requirements
Minors
Certificates
Graduate
Admissions
Certificates
MS International Affairs
PhD INTA, Science, & Tech
Ivan Allen College

REQUIREMENT	REQ HRS	COURSE(S)	NOTES
Wellness	2	HPS 1040 or APPH 1040 or APPH 1050	
Core A - Essential Skills	3	ENGL 1101	
	3	ENGL 1102	
	4	MATH 1501 or MATH 1712	
Core B - Institutional Options	3	CS 1315	
Core C - Humanities	6	Modern Languages	b,c
Core D - Science, Math, & Technology	4	Lab Science	
	4	Lab Science	
	4	MATH 1502 or MATH 1711	
Core E - Social Sciences	3	HIST 2111 or HIST 2112 or INTA 1200 or POL 1101 or PUBP 3000	
	3	ECON 2100 or ECON 2101 or ECON 2105 or ECON 2106	
	3	HTS 1031 or HTS 2036 or HTS 2037 or HTS 2041 or HTS 2061 or HTS 2062 or HTS 2823 or HTS 3028 or HTS 3029 or HTS 3030 or HTS 3033 or HTS 3035 or HTS 3036 or HTS 3038 or HTS 3039 or HTS 3041 or HTS 3043 or HTS 3045 or HTS 3061 or HTS 3062 or HTS 3063 or HTS 3069	
	3	INTA Social Science	a
Core F - Courses Related to Major	3	INTA 1110	c
	3	INTA 2010	c
	3	INTA 2040	c
	9	INTA 1000- or 2000-level Electives	c
Major Requirements	1	INTA 2001	
	3	INTA 3110	c
	3	INTA 3203	c
	3	INTA 3301	c
	3	INTA 4500	c
	12	INTA 3000- or 4000-level Electives	c
Modern Language	3	FREN 4500	c
	15	Modern Languages	b,c
Non-INTA Requirements	3	AE 1770 or ARCH 4420 or BC 3630 or BMED 2400 or CEE 1770 or CHBE 2120 or CP 4510 or CS 1301 or CS 1315 or CS 1316 or CS 1331 or CS 1332 or CS 4235 or EAS 4430 or EAS 4610 or ECE 2030 or ID 3103 or ID 4103 or LCC 3402 or LCC 3404 or LCC 3410 or ME 1770 or ME 2016 or MGT 2200 or MGT 4051 or MGT 4052 or MGT 4058 or MGT 4661 or MUSI 4630 or PHYS 3266	
Free Electives	13	Free Electives	d
TOTAL:	122		

Note: Non-credit requirement With the goal of enhanced educational and career prospects and in accordance with the pedagogical objectives of the degree in International Affairs and Modern

Languages, all IAML students are required to fulfill an International Experience as part of their graduation requirements. This requirement can be met through one of two ways:

1. Complete a minimum 6-week overseas experience. If this is not a country whose primary language is in the student's language of study, the student must justify and receive prior approval.
2. Complete a 15-week internship or similar experience of at least 10 hours per week at an international organization such as consulate, CNN International, etc. The internship must be approved in advance.

NOTES

a = Students must complete a Social Science course with INTA prefix. Consult approved Social Sciences here: http://www.catalog.gatech.edu/students/ugrad/core/coree.php

b = Students must complete 21 hours of FREN electives from 3000- or 4000-level courses. Six hours are counted in Humanities, and 15 in Modern Languages Electives.

c = C-minimum required.

d = FREN courses below 3000 may count toward the free elective courses.

REQUIREMENT	REQ HRS	COURSE(S)	NOTES
Wellness	2	HPS 1040 or APPH 1040 or APPH 1050	
Core A - Essential Skills	3	ENGL 1101	
	3	ENGL 1102	
	4	MATH 1501 or MATH 1712	
Core B - Institutional Options	3	CS 1315	
Core C - Humanities	6	Modern Languages	b,c
Core D - Science, Math, & Technology	4	Lab Science	
	4	Lab Science	
	4	MATH 1502 or MATH 1711	
Core E - Social Sciences	3	HIST 2111 or HIST 2112 or INTA 1200 or POL 1101 or PUBP 3000	
	3	ECON 2100 or ECON 2101 or ECON 2105 or ECON 2106	
	3	HTS 1031 or HTS 2036 or HTS 2037 or HTS 2041 or HTS 2061 or HTS 2062 or HTS 2823 or HTS 3028 or HTS 3029 or HTS 3030 or HTS 3033 or HTS 3035 or HTS 3036 or HTS 3038 or HTS 3039 or HTS 3041 or HTS 3043 or HTS 3045 or HTS 3061 or HTS 3062 or HTS 3063 or HTS 3069	
	3	INTA Social Science	a
Core F - Courses Related to Major	3	INTA 1110	c
	3	INTA 2010	c
	3	INTA 2040	c
	9	INTA 1000- or 2000-level Electives	c
Major Requirements	1	INTA 2001	
	3	INTA 3110	c
	3	INTA 3203	c
	3	INTA 3301	c
	3	INTA 4500	c
	12	INTA 3000- or 4000-level Electives	c
Modern Language	3	GRMN 4500	c
	15	Modern Languages	b,c
Non-INTA Requirements	3	AE 1770 or ARCH 4420 or BC 3630 or BMED 2400 or CEE 1770 or CHBE 2120 or CP 4510 or CS 1301 or CS 1315 or CS 1316 or CS 1331 or CS 1332 or CS 4235 or EAS 4430 or EAS 4610 or ECE 2030 or ID 3103 or ID 4103 or LCC 3402 or LCC 3404 or LCC 3410 or ME 1770 or ME 2016 or MGT 2200 or MGT 4051 or MGT 4052 or MGT 4058 or MGT 4661 or MUSI 4630 or PHYS 3266	
Free Electives	13	Free Electives	d
TOTAL:	122		

Note: Non-credit requirement With the goal of enhanced educational and career prospects and in accordance with the pedagogical objectives of the degree in International Affairs and Modern Languages, all IAML students are required to fulfill an International Experience as part of their

graduation requirements. This requirement can be met through one of two ways:

1. Complete a minimum 6-week overseas experience. If this is not a country whose primary language is in the student's language of study, the student must justify and receive prior approval.
2. Complete a 15-week internship or similar experience of at least 10 hours per week at an international organization such as consulate, CNN International, etc. The internship must be approved in advance.

NOTES

a = Students must complete a Social Science course with INTA prefix. Consult approved Social Sciences here: http://www.catalog.gatech.edu/students/ugrad/core/coree.php

b = Students must complete 21 hours of GRMN electives from 3000- or 4000-level courses. Six hours are counted in Humanities, and 15 in Modern Languages Electives.

c = C-minimum required.

d = GRMN courses below 3000 may count toward the free elective courses.

REQUIREMENT	REQ HRS	COURSE(S)	NOTES
Wellness	2	HPS 1040 or APPH 1040 or APPH 1050	
Core A - Essential Skills	3	ENGL 1101	
	3	ENGL 1102	
	4	MATH 1501 or MATH 1712	
Core B - Institutional Options	3	CS 1315	
Core C - Humanities	6	Modern Languages	b,c
Core D - Science, Math, & Technology	4	Lab Science	
	4	Lab Science	
	4	MATH 1502 or MATH 1711	
Core E - Social Sciences	3	HIST 2111 or HIST 2112 or INTA 1200 or POL 1101 or PUBP 3000	
	3	ECON 2100 or ECON 2101 or ECON 2105 or ECON 2106	
	3	HTS 1031 or HTS 2036 or HTS 2037 or HTS 2041 or HTS 2061 or HTS 2062 or HTS 2823 or HTS 3028 or HTS 3029 or HTS 3030 or HTS 3033 or HTS 3035 or HTS 3036 or HTS 3038 or HTS 3039 or HTS 3041 or HTS 3043 or HTS 3045 or HTS 3061 or HTS 3062 or HTS 3063 or HTS 3069	
	3	INTA Social Science	a
Core F - Courses Related to Major	3	INTA 1110	c
	3	INTA 2010	c
	3	INTA 2040	c
	9	INTA 1000- or 2000-level Electives	c
Major Requirements	1	INTA 2001	
	3	INTA 3110	c
	3	INTA 3203	c
	3	INTA 3301	c
	3	INTA 4500	c
	12	INTA 3000- or 4000-level Electives	c
Modern Language	3	JAPN 4500	c
	15	Modern Languages	b, c
Non-INTA Requirements	3	AE 1770 or ARCH 4420 or BC 3630 or BMED 2400 or CEE 1770 or CHBE 2120 or CP 4510 or CS 1301 or CS 1315 or CS 1316 or CS 1331 or CS 1332 or CS 4235 or EAS 4430 or EAS 4610 or ECE 2030 or ID 3103 or ID 4103 or LCC 3402 or LCC 3404 or LCC 3410 or ME 1770 or ME 2016 or MGT 2200 or MGT 4051 or MGT 4052 or MGT 4058 or MGT 4661 or MUSI 4630 or PHYS 3266	
Free Electives	13	Free Electives	d
TOTAL:	122		

Note: Non-credit requirement With the goal of enhanced educational and career prospects and in accordance with the pedagogical objectives of the degree in International Affairs and Modern Languages, all IAML students are required to fulfill an International Experience as part of their

graduation requirements. This requirement can be met through one of two ways:

1. Complete a minimum 6-week overseas experience. If this is not a country whose primary language is in the student's language of study, the student must justify and receive prior approval.
2. Complete a 15-week internship or similar experience of at least 10 hours per week at an international organization such as consulate, CNN International, etc. The internship must be approved in advance.

NOTES

a = Students must complete a Social Science course with INTA prefix. Consult approved Social Sciences here: http://www.catalog.gatech.edu/students/ugrad/core/coree.php

b = Students must complete 21 hours of JAPN electives from 2002, 3000- or 4000-level courses. Six hours are counted in Humanities, and 15 in Modern Languages Electives.

c = C-minimum required.

d = JAPN courses below 2002 may count toward the free elective courses.

REQUIREMENT	REQ HRS	COURSE(S)	NOTES
Wellness	2	HPS 1040 or APPH 1040 or APPH 1050	
Core A - Essential Skills	3	ENGL 1101	
	3	ENGL 1102	
	4	MATH 1501 or MATH 1712	
Core B - Institutional Options	3	CS 1315	
Core C - Humanities	6	Modern Languages	b,c
Core D - Science, Math, & Technology	4	Lab Science	
	4	Lab Science	
	4	MATH 1502 or MATH 1711	
Core E - Social Sciences	3	HIST 2111 or HIST 2112 or INTA 1200 or POL 1101 or PUBP 3000	
	3	ECON 2100 or ECON 2101 or ECON 2105 or ECON 2106	
	3	HTS 1031 or HTS 2036 or HTS 2037 or HTS 2041 or HTS 2061 or HTS 2062 or HTS 2823 or HTS 3028 or HTS 3029 or HTS 3030 or HTS 3033 or HTS 3035 or HTS 3036 or HTS 3038 or HTS 3039 or HTS 3041 or HTS 3043 or HTS 3045 or HTS 3061 or HTS 3062 or HTS 3063 or HTS 3069	
	3	INTA Social Science	a
Core F - Courses Related to Major	3	INTA 1110	c
	3	INTA 2010	c
	3	INTA 2040	c
	9	INTA 1000- or 2000-level Electives	c
Major Requirements	1	INTA 2001	
	3	INTA 3110	c
	3	INTA 3203	c
	3	INTA 3301	c
	3	INTA 4500	c
	12	INTA 3000- or 4000-level Electives	c
Modern Language	3	RUSS 4500	c
	15	Modern Languages	b, c
Non-INTA Requirements	3	AE 1770 or ARCH 4420 or BC 3630 or BMED 2400 or CEE 1770 or CHBE 2120 or CP 4510 or CS 1301 or CS 1315 or CS 1316 or CS 1331 or CS 1332 or CS 4235 or EAS 4430 or EAS 4610 or ECE 2030 or ID 3103 or ID 4103 or LCC 3402 or LCC 3404 or LCC 3410 or ME 1770 or ME 2016 or MGT 2200 or MGT 4051 or MGT 4052 or MGT 4058 or MGT 4661 or MUSI 4630 or PHYS 3266	
Free Electives	13	Free Electives	d
TOTAL:	122		

Note: Non-credit requirement With the goal of enhanced educational and career prospects and in accordance with the pedagogical objectives of the degree in International Affairs and Modern Languages, all IAML students are required to fulfill an International Experience as part of their

graduation requirements. This requirement can be met through one of two ways:

1. Complete a minimum 6-week overseas experience. If this is not a country whose primary language is in the student's language of study, the student must justify and receive prior approval.
2. Complete a 15-week internship or similar experience of at least 10 hours per week at an international organization such as consulate, CNN International, etc. The internship must be approved in advance.

NOTES

a = Students must complete a Social Science course with INTA prefix. Consult approved Social Sciences here: http://www.catalog.gatech.edu/students/ugrad/core/coree.php

b = Students must complete 21 hours of RUSS electives from 2002, 3000- or 4000-level courses. Six hours are counted in Humanities, and 15 in Modern Languages Electives.

c = C-minimum required.

d = RUSS courses below 2002 may count toward the free elective courses.

SCHOOL OF INTERNATIONAL AFFAIRS

About the School
Undergraduate
General Information
BS International Affairs
Description
Degree Requirements
BS INTA & Modern Language
Description
Degree Requirements
Chinese
French
German
Japanese
Russian
Spanish
BS Economics & INTA
Description
Degree Requirements
Minors
Certificates
Graduate
Admissions
Certificates
MS International Affairs
PhD INTA, Science, & Tech
Ivan Allen College

REQUIREMENT	REQ HRS	COURSE(S)	NOTES
Wellness	2	HPS 1040 or APPH 1040 or APPH 1050	
Core A - Essential Skills	3	ENGL 1101	
	3	ENGL 1102	
	4	MATH 1501 or MATH 1712	
Core B - Institutional Options	3	CS 1315	
Core C - Humanities	6	Modern Languages	b,c
Core D - Science, Math, & Technology	4	Lab Science	
	4	Lab Science	
	4	MATH 1502 or MATH 1711	
Core E - Social Sciences	3	HIST 2111 or HIST 2112 or INTA 1200 or POL 1101 or PUBP 3000	
	3	ECON 2100 or ECON 2101 or ECON 2105 or ECON 2106	
	3	HTS 1031 or HTS 2036 or HTS 2037 or HTS 2041 or HTS 2061 or HTS 2062 or HTS 2823 or HTS 3028 or HTS 3029 or HTS 3030 or HTS 3033 or HTS 3035 or HTS 3036 or HTS 3038 or HTS 3039 or HTS 3041 or HTS 3043 or HTS 3045 or HTS 3061 or HTS 3062 or HTS 3063 or HTS 3069	
	3	INTA 1000/2000 level Social Science	a
Core F - Courses Related to Major	3	INTA 1110	c
	3	INTA 2010	c
	3	INTA 2040	c
	9	INTA 1000- or 2000-level Electives	c
Major Requirements	1	INTA 2001	
	3	INTA 3110	c
	3	INTA 3203	c
	3	INTA 3301	c
	3	INTA 4500	c
	12	INTA 3000- or 4000-level Electives	c
Capstone Requirement	3	SPAN 4500	c
Modern Language	15	Modern Languages	b,c
Non-INTA Requirements	3	AE 1770 or ARCH 4420 or BC 3630 or BMED 2400 or CEE 1770 or CHBE 2120 or CP 4510 or CS 1301 or CS 1315 or CS 1316 or CS 1331 or CS 1332 or CS 4235 or EAS 4430 or EAS 4610 or ECE 2030 or ID 3103 or ID 4103 or LCC 3402 or LCC 3404 or LCC 3410 or ME 1770 or ME 2016 or MGT 2200 or MGT 4051 or MGT 4052 or MGT 4058 or MGT 4661 or MUSI 4630 or PHYS 3266	
Free Electives	13	Free Electives	d
TOTAL:	122		

Note: Non-credit requirement With the goal of enhanced educational and career prospects and in accordance with the pedagogical objectives of the degree in International Affairs and Modern Languages, all IAML students are required to fulfill an International Experience as part of their

graduation requirements. This requirement can be met through one of two ways:

1. Complete a minimum 6-week overseas experience. If this is not a country whose primary language is in the student's language of study, the student must justify and receive prior approval.
2. Complete a 15-week internship or similar experience of at least 10 hours per week at an international organization such as consulate, CNN International, etc. The internship must be approved in advance.

NOTES

a = Students must complete a Social Science course with INTA prefix. Consult approved Social Sciences here: http://www.catalog.gatech.edu/students/ugrad/core/coree.php

b = Students must complete 21 hours of SPAN electives from 3000- or 4000-level courses. Six hours are counted in Humanities, and 15 in Modern Languages Electives.

c = C-minimum required.

d = SPAN courses below 3000 may count toward the free elective courses.

BACHELOR OF SCIENCE IN ECONOMICS AND INTERNATIONAL AFFAIRS

In partnership with the School of Economics, the Sam Nunn School offers the Bachelor of Science degree in Economics and International Affairs. Students in this program are provided with an understanding of economic theory and practice in the contemporary world; an understanding of the global, interdependent, and multicultural environment in which they live; and a set of quantitative and qualitative analytical skills centered upon policy-relevant issues in the economic and international arenas.

INTERNATIONAL PLAN

The BS degree in Economics and International Affairs with the International Plan (IP) designator provides students with:

1. a detailed understanding of economic theory and practice in the contemporary world;
2. an understanding of the global, interdependent, and multicultural environment in which they live; and
3. a set of quantitative and qualitative analytical skills centered around policy-oriented issue areas in economics and international affairs. These skills will provide graduates with the capabilities to engage in strategic planning and analysis efforts in economic and international contexts

All degree programs offered by the School of Economics including the BS Degree in Economics International Affairs offer an IP designation. In general, the IP designation can be obtained by completing courses in three specified areas:

1. Students are required to complete a general course in Global Economics. Economics 2101 has been approved by the IP committee to fulfill this requirement.
2. Students are also required to complete a region-specific course. Any number of International Affairs courses can be used to fulfill this requirement.
3. Student are also required to complete capstone course rounding out the international experience. The IP designation also requires students to become proficient in a language as well as spend at least twenty-six weeks in a foreign culture enrolled school and/or participate in an internship experience.

SCHOOL OF INTERNATIONAL AFFAIRS

About the School
Undergraduate
General Information
BS International Affairs
Description
Degree Requirements
BS INTA & Modern Language
Description
Degree Requirements
Chinese
French
German
Japanese
Russian
Spanish
BS Economics & INTA
Description
Degree Requirements
Minors
Certificates
Graduate
Admissions
Certificates
MS International Affairs
PhD INTA, Science, & Tech
Ivan Allen College

BACHELOR OF SCIENCE IN ECONOMICS AND INTERNATIONAL AFFAIRS 2013 - 2014 DEGREE REQUIREMENTS

REQUIREMENT	REQ HRS	COURSE(S)	NOTES
Wellness	2	HPS 1040 or APPH 1040 or APPH 1050	
Core A - Essential Skills	3	ENGL 1101	
	3	ENGL 1102	
	4	MATH 1501 or MATH 1712	
Core B - Institutional Options	3	CS 1315	
Core C - Humanities	6	Modern Language	c
Core D - Science, Math, & Technology	4	Lab Science	
	4	Lab Science	
	4	MATH 1502 or MATH 1711	
Core E - Social Sciences	3	HIST 2111 or HIST 2112 or INTA 1200 or POL 1101 or PUBP 3000	
	3	INTA 2040	c
	3	INTA 3301	c
	3	HTS 1031 or HTS 2036 or HTS 2037 or HTS 2041 or HTS 2061 or HTS 2062 or HTS 2823 or HTS 3028 or HTS 3029 or HTS 3030 or HTS 3033 or HTS 3035 or HTS 3036 or HTS 3038 or HTS 3039 or HTS 3041 or HTS 3043 or HTS 3045 or HTS 3061 or HTS 3062 or HTS 3063 or HTS 3069	
Core F - Courses Related to Major	3	ECON 2105	c
	3	ECON 2106	c
	3	MGT 2250	
	3	INTA 1110	
	6	Modern Language	a, c
Major Requirements	3	ECON 3110	c
	3	ECON 3120	c
	3	ECON 3161	c
	3	ECON 4350	c
	1	INTA 2001	c
	3	INTA 3110	c
	3	INTA 3203	c
	3	INTA 4740 or ECON 4740	c
	3	INTA 4741 or ECON 4741	c
EIA Electives	6	Any ECON	c
	6	Any INTA	c
Non-Major Cluster	9	Non-Major Cluster	b
Technical Requirement	3	AE 1770 or ARCH 4420 or BC 3630 or BMED 2803 or CEE 1770 or CHEM 2211 or CP 4510 or CS 1316 or CS 1331 or CS 1332 or CS 4235 or EAS 4430 or EAS 4610 or ECE 2030 or ID 3103 or ID 4103 or LCC 3402 or LCC 3404 or LCC 3410 or ME 1770 or ME 2016 or MGT 2200 or MGT 4051 or MGT 4052 or MGT 4058 or MGT 4661 or MUSI 4630 or PHYS 3266	
Free Electives	10	Free Electives	
TOTAL:	122		

Pass-fail only allowed for Free Electives.

NOTES

a = Modern Language courses must be in the same language as used in Core Area C.

b = All nine hours must come from the same discipline, or be part of a coherent theme. Please consult with advisor on course selection.

c = C-minimum required.

CERTIFICATES

The Sam Nunn School, often in conjunction with other units of the Ivan Allen College, administers six certificate programs. These programs enable students to pursue a focused program of study in a specific area of regional/international specialization. The School awards the following certificates:

- Asian Affairs Certificate (available to majors and non-majors)
- Latin American Affairs Certificate (available to majors and non-majors)
- European Affairs Certificate (available to majors and non-majors)
- European Union Certificate (available to majors and non-majors)
- International Affairs Certificate (available only to non-majors)
- Scenarios, Modeling and Military Games (available to majors and non-majors)

A certificate is awarded upon successful completion of a predetermined 12 hour cluster of courses approved by the academic advisor or a specific faculty member. All courses must be taken on a letter-grade basis, and a *C* or better must be received in each course. Certificates will be granted only to students who, in addition to the Certificate program requirements, have satisfied requirements for an undergraduate degree. Detailed information concerning these programs and their requirements is available through the School.

GRADUATE CERTIFICATE IN SCIENCE, TECHNOLOGY AND SOCIETY

The Science, Technology and Society Graduate Certificate is designed for students already enrolled in a graduate degree program at Georgia Tech. This certificate is for graduate students who would like to demonstrate additional competence in some aspect of STS or special competence in STS in their home discipline. The certificate is open to students in good standing in any graduate program at Georgia Tech.

The 12-credit certificate program helps students to:

- Understand the social, cultural, and epistemic dynamics of science and technology
- Explore these dynamics across world societies and cultures
- Develop sensitivity to issues of gender, race, and justice across areas of knowledge, including: engineering, medicine, environment, cognition, security, innovation, design
- Employ STS approaches as scholars or practitioners (e.g. engineers, scientists, or policy makers)

PROGRAM OF STUDY: 4 Courses Total

Core Course: 1 Required	
HTS 6743 / PUBP 6743 / LCC 6743	STS Core Seminar
HTS 6118	Science, Technology and the Economy
HTS 6121 / INTA 8803	Science, Technology, and Security
HTS 6123 / LCC 8803	Social and Cultural Studies of Biomedicine
HTS 6124	Science and Technology Beyond Borders
PUBP 6748 / LCC 6748	Social Justice, Critical Theory and Philosophy of Design
LCC 6749 / PUBP 6749	Feminist Theory and STS
Up to One Other Elective, Subject to Student Interest and STS Coordinator Approval Many appropriate courses are offered across the Ivan Allen College and the Institute, for example:	
CS 8893	Cognition and Culture

MASTER OF SCIENCE IN INTERNATIONAL AFFAIRS

The Master of Science in International Affairs degree program is a program that is adaptable to the interests and needs of a student who intends to enter a professional career requiring advanced training in international affairs or intends to continue studying at the doctoral level. The program emphasizes both traditional theoretical knowledge of international relations and strategic planning and analysis.

The program includes core courses in the following:

1. International relations theory
2. Comparative politics
3. International political economy
4. International security
5. Empirical research methods

Students must also choose two of four elective tracks to in order to focus their studies. The four track options are:

1. Comparative and Regional Studies
2. Globalization and Development
3. International Affairs and Security
4. Science and Technology

Students also have the opportunity to design the program to meet their individual interests through elective offerings in the School and interdisciplinary work in the other schools in the Ivan Allen College as well as the Colleges of Sciences, Management, Architecture and Engineering. Overseas programs and internships are encouraged and facilitated by the School.

Three (3) hours of technology literacy is required and is satisfied by successfully completing (B or higher) at least one semester of classes with content including at least one of the following while in the Master's program:

1. programming computers;
2. database design and operation;
3. development and operation;
4. data analysis (if part of statistics courses, at least two quarters or two semesters);
5. simulation model design and use;
6. development and use of geographic information or cartography systems; or
7. operation of large computer systems/ computer networks.

In addition to 42 semester hours of coursework, students must demonstrate foreign language familiarity and economics. These abilities are essential tools for professional or scholarly work in international affairs. Students must satisfy these requirements before graduating from the program, either through previous undergraduate work or during the Master's program.

Foreign language familiarity is defined as a minimum of two years of college-level work in a single language. This requirement can be fulfilled while in residence or can be demonstrated through an examination taken in the School of Modern Languages.

Economics literacy is satisfied by successful completion of a course or courses in microeconomic and macroeconomic principles and a course in international economics undertaken while at Georgia Tech, or by successful completion of equivalent courses at another institution, either during undergraduate work or while in the Master's program.

The School's master's degree requirements supplement the Institute's master's degree requirements listed in the General Catalog. Students must achieve a grade-point average of at least 3.0 to graduate, and no course below grade C will count toward graduation. For more information about the MSIA program, visit www.inta.gatech.edu.

DOCTOR OF PHILOSOPHY WITH A MAJOR IN INTERNATIONAL AFFAIRS, SCIENCE, & TECHNOLOGY

The PhD in International Affairs, Science and Technology program provides a unique opportunity for students with backgrounds in either social sciences or science and technology to deepen their understanding of international affairs through the advanced study of sub-fields such as international relations theory, international security, international political economy, comparative politics, and methods for social scientific research. There is widespread recognition that a number of important problems in international affairs – such as how to control the proliferation of weapons of mass destruction, or how to promote economic growth in the developing world – cannot properly be understood without an appreciation of the scientific and technological issues involved. At the same time, it is evident that neither the development nor the impact of new technologies is confined within state or national boundaries. Scientific innovation increasingly depends on international collaboration, while the consequences of those innovations, for example in terms of their environmental impact, similarly demand international coordination to be monitored and regulated. Graduates of this research-oriented program will be well placed to embark on careers in academic research, or to move into the policy world where their dual expertise will be rare and highly valued.

DEGREE REQUIREMENTS

The PhD program is founded upon a broad, rigorous, and student-centered curriculum. All students must complete International Relations Theory (INTA 6102) and Empirical Research Methods (INTA 6003). Because students come from a wide range of backgrounds, they may petition to substitute or pass-out of certain core requirements based upon previous experiences and coursework and under the guidance and approval of the dissertation committee. However, reduction in credit is limited to a total of nine hours . In addition, students in the PhD program must successfully complete three additional core courses that include:

1. INTA 8010 International Affairs Proseminar
2. INTA 8000 Seminar in Science, Technology, and International Affairs
3. INTA 8001 Seminar in Science, Technology, and International Affairs II

Additionally, students must choose two of four tracks for concentration within the program:

- International Affairs and Security
- Globalization and Development
- Comparative and Regional Studies
- Student-created (Unique Track): Graduate Program Director- and Faculty-approved Track

Each of the predesigned tracks includes a core class and two electives. These tracks are considered core classes and must be completed before examinations.

In addition, students must complete a minor concentration that focuses on an approved topic in the field of science, technology, and international affairs. This may be satisfied by completing three related INTA courses at the 6000 and 8000 levels in international innovation or security or three courses in other Schools of the Ivan Allen College, or in colleges or interdisciplinary fields of the Institute or elsewhere. Students must also satisfy either the language or advanced methods requirement. The language requirement is satisfied through demonstrated competency (reading proficiency only) in one language other than English (equivalent of four semesters of college-level coursework or an equivalent exam). The advanced methods requirement may be satisfied through completion of two semesters of coursework (in addition to core requirements) of advanced statistics, methods, and/or computer science taken either within the School or in other colleges of the Institute.

BREAKDOWN OF HOURS REQUIRED FOR DEGREE:

Thesis Research (INTA 9000) - 18 hours
INTA 6102 – 3 hours
INTA 6003 – 3 hours
INTA 8010 (Proseminar) - 1 hour
INTA 8000/8001 (Seminar in Science, Tech, and INTA - six hours
Track courses - 18 hours
Minor concentration - nine hours
Advanced Methods OR Language Requirement - 0-18 hours

Other requirements for the PhD include admission to candidacy for the degree through a qualification process that includes successful completion of two comprehensive examinations in specified fields of international affairs; submission and oral defense of a Science, Technology, and International Affairs Field Exam Paper on an approved topic; and submission and defense of a dissertation prospectus that must be approved and supervised by the dissertation committee composed of relevant experts in the fields and a member external to the school. Finally, students must complete and successfully defend a doctoral dissertation.

WRITING AND COMMUNICATION INTENSIVE COURSES

A number of majors require students to complete writing intensive and communication intensive courses. Several LCC classes may be counted toward this requirement. Consult course offerings each semester to determine which courses may be counted toward this requirement.

ADVANCED PLACEMENT

Students with a score of 4 or 5 on the College Board Advanced Placement Exam (taken in conjunction with high school classes) in Composition and Literature or Language and Composition receive credit for English 1101. Students with a score of 750 or higher on the SAT II Subject Test in English receive credit for English 1101. Students with a score of four or higher on the International Baccalaureate Exam receive credit for English 1101. Advanced placement credit is not ordinarily given for English 1102.

BACHELOR OF SCIENCE IN COMPUTATIONAL MEDIA

The BS in Computational Media is a collaborative effort by the College of Computing and the School of Literature, Media, and Communication. The program offers a thorough education in all aspects of the computer as a medium: the technical, the historical-critical, and the applied. Program graduates will have both significant hands-on and theoretical knowledge of computing and an understanding of visual design and the history of media. Graduates will be uniquely positioned to plan, create, and critique new digital media forms for entertainment, education, and business communication.

To anticipate the various fields CM students may pursue after graduation, threads are available within the major. Each student will choose an LMC thread, which will serve to foster the creative side of the program, and a Computer Science thread, which makes up the technical side of the degree. The Literature, Media, and Communication threads include the Film, Performance and Media, Game Studies, Interaction Design and Experimental Media, and Narrative threads. The threads with Computer Science courses are Media, Intelligence and People.

CM graduates have accepts jobs at companies including Apple, CCP, Electronic Arts, Google, LucasFilm Animation, PlayOn Sports, South Park Studios, Technicolor, Turner Broadcasting, and Universal Studios. Depending on their coursework within the BS program, students will also be qualified to enter graduate studies in computer science, digital arts, digital media studies, and human-computer interface.

INTERNATIONAL PLAN

The CM International Plan follows the Institute model to develop a global competence within the student's major program of study. It thus integrates international studies and experiences with work in all aspects of the computer as a medium, preparing graduates to plan, create, and critique new digital media forms within an international professional environment.

As in the basic CM program, students following the International Plan will take one LMC and one CoC thread (in addition to the basic humanities requirement). Students will also:

1. take three international courses, including one from each of the following categories: international relations, global economics, and a course on a specific country or region;
2. spend two terms abroad engaged in any combination of study abroad, research, or internship;
3. demonstrate language proficiency equivalent to two years of college-level language study (to be determined by testing); and
4. complete a CM capstone course that links international studies with the major.

RESEARCH OPTION

The CM Research Plan follows the Institute model to allow students to incorporate research experiences into the major program of study. Students will complete nine hours of credit research work on various aspects of the computer as a medium, working in such areas as computational principles, the representation and manipulation of digital media, software design, visual and interactive design, digital art, and media theory and history.

As in the basic CM program, students following the Research Plan will take one LMC and one CoC thread (in addition to the basic humanities requirement). Students will also:

1. complete nine hours of undergraduate research;
2. complete 1 hour of LCC 4701 Undergraduate Research Proposal Writing; and
3. complete 1 hour of LCC 4702, Undergraduate Thesis Writing.

BS/MS COMPUTATIONAL MEDIA AND DIGITAL MEDIA

Students who desire to pursue the BS/MS combination in CM and DM must apply to the School after completing at least seventy-five hours of work towards the CM degree. Applicants should have shown a cumulative grade-point average (GPA) of at least 3.5.

Students admitted to the program will take a total of twelve hours of graduate course work during their final undergraduate year. six hours of that work, in DM courses, will count toward the CM Advanced Studio and Capstone requirements and will count for both undergraduate and graduate credit. During the summer term after their fourth year, students will participate in an approved internship program. During their fifth year, students will take a total of 24 hours, including either LCC 6800 (Project) or LCC 7000 (Thesis), and with no more than three courses taken outside of the DM program.

BACHELOR OF SCIENCE IN COMPUTATIONAL MEDIA INTELLIGENCE-FILM, PERFORMANCE, & MEDIA STUDIES

REQUIREMENT	REQ HRS	COURSE(S)	NOTES
Wellness	2	HPS 1040 or APPH 1040 or APPH 1050	
Core A - Essential Skills	3	ENGL 1101	
	3	ENGL 1102	
	4	MATH 1501	
Core B - Institutional Options	3	CS 1301	c
Core C - Humanities	3	Any HUM	
	3	Any LCC HUM	
Core D - Science, Math, & Technology	8	Lab Science	
	4	MATH 1502	
Core E - Social Sciences	3	HIST 2111 or HIST 2112 or INTA 1200 or POL 1101 or PUBP 3000	
	3	PSYC 1101	
	6	Any SS	
Core F - Courses Related to Major	3	CS 1331	c
	3	CS 1332	c
	3	CS 2050	c
	3	CS 2340	c
	3	LCC 2700	c
	4	MATH 2605	
Major Requirement	4	CS 2110	c
	3	CS 4001	
Capstone Requirement	3	CS 4912	c
Intelligence Requirements	3	CS 3510	c
	3	CS 3600	c
	3	CS 3240 or CS 4510	c
	3	CS 3630 or CS 3790 or PSYC 3040	c
	6	CS 4495 or CS 4635 or CS 4641 or CS 4731	c
Film, Performance, & Media Studies Requirements	3	LCC 2400 or LCC 2500 or LCC 2600	c
	12	LCC 3206 or LCC 3252 or LCC 3254 or LCC 3256 or LCC 3257 or LCC 3258 or LCC 3259 or LCC 3314 or LCC 3352 or LCC 3362	c
	12	CM or Media Courses	a, c
Free Electives	3	Free Electives	
TOTAL:	122		

Pass Fail **is allowed for courses in core areas C, D, E and Free.**

NOTES

a = CM or LCC media courses include 2700-, 3700-, and 4700-level courses, as well as 3250-level courses, and LCC 2400, 2500, 3206, 3314, 3354, 3362, 3406, and 3853

c = C-minimum required

BACHELOR OF SCIENCE IN COMPUTATIONAL MEDIA INTELLIGENCE-GAME STUDIES

REQUIREMENT	REQ HRS	COURSE(S)	NOTES
Wellness	2	HPS 1040 or APPH 1040 or APPH 1050	
Core A - Essential Skills	3	ENGL 1101	
	3	ENGL 1102	
	4	MATH 1501	
Core B - Institutional Options	3	CS 1301	c
Core C - Humanities	3	Any HUM	
	3	Any LCC HUM	
Core D - Science, Math, & Technology	8	Lab Science	
	4	MATH 1502	
Core E - Social Sciences	3	HIST 2111 or HIST 2112 or INTA 1200 or POL 1101 or PUBP 3000	
	3	PSYC 1101	
	6	Any SS	
Core F - Courses Related to Major	3	CS 1331	c
	3	CS 1332	c
	3	CS 2050	c
	3	CS 2340	c
	3	LCC 2700	c
	4	MATH 2605	
Major Requirement	4	CS 2110	c
	3	CS 4001	
Capstone Requirement	3	CS 4912	c
Intelligence Requirements	3	CS 3510	c
	3	CS 3600	c
	3	CS 3240 or CS 4510	c
	3	CS 3630 or CS 3790 or PSYC 3040	c
	6	CS 4495 or CS 4635 or CS 4641 or CS 4731	c
Game Studies Requirements	9	LCC 4720 or LCC 4725 or LCC 4731 or LCC 4732	c
	18	CM or Media Courses	a, c
Free Electives	3	Free Electives	
TOTAL:	122		

Pass Fail **is allowed for courses in core areas C, D, E and Free.**

NOTES

a = CM or LCC media courses include 2700-, 3700-, and 4700-level courses, as well as 3250-level courses, and LCC 2400, 2500, 3206, 3314, 3354, 3362, 3406, and 3853

c = C-minimum required

About the School
Undergraduate
Undergraduate Information
BS Computational Media
Description
Degree Requirements
Intel-Film, Performance, & Media Studies
Intel-Game Studies
Intel-Interaction Design & Experimental Media
Intel-Narrative Studies
Media-Film, Performance, & Media Studies
Media-Game Studies
Media-Interaction Design & Experimental Media
Media-Narrative Studies
People-Film, Performance, & Media Studies
People-Game Studies
People-Interaction Design & Experimental Media
People-Narrative Studies
BS Science, Tech, & Culture
Description
Degree Requirements
BS STaC
Bmed & Culture Option
Gender Option
Media Option
Minors & Certificates
Graduate
Admissions
Certificates
Master's Degrees
Digital Media
H.C.I.
Doctoral Information
Digital Media
Ivan Allen College

BACHELOR OF SCIENCE IN COMPUTATIONAL MEDIA INTELLIGENCE-INTERACTION DESIGN & EXPERIMENTAL MEDIA

REQUIREMENT	REQ HRS	COURSE(S)	NOTES
Wellness	2	HPS 1040 or APPH 1040 or APPH 1050	
Core A - Essential Skills	3	ENGL 1101	
	3	ENGL 1102	
	4	MATH 1501	
Core B - Institutional Options	3	CS 1301	c
Core C - Humanities	3	Any HUM	
	3	Any LCC HUM	
Core D - Science, Math, & Technology	8	Lab Science	
	4	MATH 1502	
Core E - Social Sciences	3	HIST 2111 or HIST 2112 or INTA 1200 or POL 1101 or PUBP 3000	
	3	PSYC 1101	
	6	Any SS	
Core F - Courses Related to Major	3	CS 1331	c
	3	CS 1332	c
	3	CS 2050	c
	3	CS 2340	c
	3	LCC 2700	c
	4	MATH 2605	
Major Requirement	4	CS 2110	c
	3	CS 4001	
Capstone Requirement	3	CS 4912	c
Intelligence Requirements	3	CS 3510	c
	3	CS 3600	c
	3	CS 3240 or CS 4510	c
	3	CS 3630 or CS 3790 or PSYC 3040	c
	6	CS 4495 or CS 4635 or CS 4641 or CS 4731	c
Interaction Design & Experimental Media Requirements	3	LCC 2720	c
	3	LCC 3710 or LCC 4730	c
	9	LCC 2730 or LCC 3206 or LCC 3406 or LCC 3705 or LCC 3710 or LCC 4730	c
	12	CM or Media Courses	a, c
Free Electives	3	Free Electives	
TOTAL:	122		

Pass Fail **is allowed for courses in core areas C, D, E and Free.**

NOTES

a = CM or LCC media courses include 2700-, 3700-, and 4700-level courses, as well as 3250-level courses, and LCC 2400, 2500, 3206, 3314, 3354, 3362, 3406, and 3853

c = C-minimum required

BACHELOR OF SCIENCE IN COMPUTATIONAL MEDIA INTELLIGENCE-NARRATIVE STUDIES

REQUIREMENT	REQ HRS	COURSE(S)	NOTES
Wellness	2	HPS 1040 or APPH 1040 or APPH 1050	
Core A - Essential Skills	3	ENGL 1101	
	3	ENGL 1102	
	4	MATH 1501	
Core B - Institutional Options	3	CS 1301	c
Core C - Humanities	3	Any HUM	
	3	Any LCC HUM	
Core D - Science, Math, & Technology	8	Lab Science	
	4	MATH 1502	
Core E - Social Sciences	3	HIST 2111 or HIST 2112 or INTA 1200 or POL 1101 or PUBP 3000	
	3	PSYC 1101	
	6	Any SS	
Core F - Courses Related to Major	3	CS 1331	c
	3	CS 1332	c
	3	CS 2050	c
	3	CS 2340	c
	3	LCC 2700	c
	4	MATH 2605	
Major Requirement	4	CS 2110	c
	3	CS 4001	
Capstone Requirement	3	CS 4912	c
Intelligence Requirements	3	CS 3510	c
	3	CS 3600	c
	3	CS 3240 or CS 4510	c
	3	CS 3630 or CS 3790 or PSYC 3040	c
	6	CS 4495 or CS 4635 or CS 4641 or CS 4731	c
Narrative Studies Requirements	3	LCC 3202	c
	3	LCC 4720 or LCC 4732	c
	6	LCC 2730 or LCC 3206 or LCC 3710	c
	15	CM or LCC Literary Courses	a, c
Free Electives	3	Free Electives	
TOTAL:	122		

Pass Fail **is allowed for courses in core areas C, D, E and Free.**

NOTES

a = CM or LCC literary courses include 2700-, 3700-, and 4700-level courses, as well as 3200- and 3500-level courses and LCC 2823, 3823, and 3853

c = C-minimum required

SCHOOL OF LITERATURE, MEDIA, & COMMUNICATION

BACHELOR OF SCIENCE IN COMPUTATIONAL MEDIA MEDIA-FILM, PERFORMANCE, & MEDIA STUDIES

REQUIREMENT	REQ HRS	COURSE(S)	NOTES
Wellness	2	HPS 1040 or APPH 1040 or APPH 1050	
Core A - Essential Skills	3	ENGL 1101	
	3	ENGL 1102	
	4	MATH 1501	
Core B - Institutional Options	3	CS 1301	c
Core C - Humanities	3	Any HUM	
	3	Any LCC HUM	
Core D - Science, Math, & Technology	8	Lab Science	
	4	MATH 1502	
Core E - Social Sciences	3	HIST 2111 or HIST 2112 or INTA 1200 or POL 1101 or PUBP 3000	
	9	Any SS	
Core F - Courses Related to Major	3	CS 1331	c
	3	CS 1332	c
	3	CS 2050	c
	3	CS 2340	c
	3	LCC 2700	c
	4	MATH 2605	
Major Requirement	4	CS 2261	c
	3	CS 4001	
Capstone Requirement	3	CS 4912	c
Media Requirements	3	CS 3451	c
	6	CS 4455 or CS 4460 or CS 4464 or CS 4475 or CS 4480 or CS 4496 or CS 4590	c
Film, Performance, & Media Studies Requirements	3	LCC 2400 or LCC 2500 or LCC 2600	c
	12	LCC 3206 or LCC 3252 or LCC 3254 or LCC 3256 or LCC 3257 or LCC 3258 or LCC 3259 or LCC 3314 or LCC 3352 or LCC 3362	c
	12	CM or Media Courses	a, c
Free Electives	12	Free Electives	
TOTAL:	122		

Pass Fail **is allowed for courses in core areas C, D, E and Free.**

NOTES

a = CM or LCC media courses include 2700-, 3700-, and 4700-level courses, as well as 3250-level courses, and LCC 2400, 2500, 3206, 3314, 3354, 3362, 3406, and 3853.

c = C-minimum required

BACHELOR OF SCIENCE IN COMPUTATIONAL MEDIA MEDIA-GAME STUDIES

REQUIREMENT	REQ HRS	COURSE(S)	NOTES
Wellness	2	HPS 1040 or APPH 1040 or APPH 1050	
Core A - Essential Skills	3	ENGL 1101	
	3	ENGL 1102	
	4	MATH 1501	
Core B - Institutional Options	3	CS 1301	c
Core C - Humanities	3	Any HUM	
	3	Any LCC HUM	
Core D - Science, Math, & Technology	8	Lab Science	
	4	MATH 1502	
Core E - Social Sciences	3	HIST 2111 or HIST 2112 or INTA 1200 or POL 1101 or PUBP 3000	
	9	Any SS	
Core F - Courses Related to Major	3	CS 1331	c
	3	CS 1332	c
	3	CS 2050	c
	3	CS 2340	c
	3	LCC 2700	c
	4	MATH 2605	
Major Requirement	4	CS 2261	c
	3	CS 4001	
Capstone Requirement	3	CS 4912	c
Media Requirements	3	CS 3451	c
	6	CS 4455 or CS 4460 or CS 4464 or CS 4475 or CS 4480 or CS 4496 or CS 4590	c
Game Studies Requirements	9	LCC 4720 or LCC 4725 or LCC 4731 or LCC 4732	c
	18	CM or Media Courses	a, c
Free Electives	12	Free Electives	
TOTAL:	122		

Pass Fail **is allowed for courses in core areas C, D, E and Free.**

NOTES

a = CM or LCC media courses include 2700-, 3700-, and 4700-level courses, as well as 3250-level courses, and LCC 2400, 2500, 3206, 3314, 3354, 3362, 3406, and 3853.

c = C-minimum required

SCHOOL OF LITERATURE, MEDIA, & COMMUNICATION

About the School
Undergraduate
Undergraduate Information
BS Computational Media
Description
Degree Requirements
Intel-Film, Performance, & Media Studies
Intel-Game Studies
Intel-Interaction Design & Experimental Media
Intel-Narrative Studies
Media-Film, Performance, & Media Studies
Media-Game Studies
Media-Interaction Design & Experimental Media
Media-Narrative Studies
People-Film, Performance, & Media Studies
People-Game Studies
People-Interaction Design & Experimental Media
People-Narrative Studies
BS Science, Tech, & Culture
Description
Degree Requirements
BS STaC
Bmed & Culture Option
Gender Option
Media Option
Minors & Certificates
Graduate
Admissions
Certificates
Master's Degrees
Digital Media
H.C.I.
Doctoral Information
Digital Media
Ivan Allen College

BACHELOR OF SCIENCE IN COMPUTATIONAL MEDIA MEDIA-INTERACTION DESIGN & EXPERIMENTAL MEDIA

REQUIREMENT	REQ HRS	COURSE(S)	NOTES
Wellness	2	HPS 1040 or APPH 1040 or APPH 1050	
Core A - Essential Skills	3	ENGL 1101	
	3	ENGL 1102	
	4	MATH 1501	
Core B - Institutional Options	3	CS 1301	c
Core C - Humanities	3	Any HUM	
	3	Any LCC HUM	
Core D - Science, Math, & Technology	8	Lab Science	
	4	MATH 1502	
Core E - Social Sciences	3	HIST 2111 or HIST 2112 or INTA 1200 or POL 1101 or PUBP 3000	
	9	Any SS	
Core F - Courses Related to Major	3	CS 1331	c
	3	CS 1332	c
	3	CS 2050	c
	3	CS 2340	c
	3	LCC 2700	c
	4	MATH 2605	
Major Requirement	4	CS 2261	c
	3	CS 4001	
Capstone Requirement	3	CS 4912	c
Media Requirements	3	CS 3451	c
	6	CS 4455 or CS 4460 or CS 4464 or CS 4475 or CS 4480 or CS 4496 or CS 4590	c
Interaction Design & Experimental Media Requirements	3	LCC 2720	c
	3	LCC 3710 or LCC 4730	c
	9	LCC 2730 or LCC 3206 or LCC 3406 or LCC 3705 or LCC 3710 or LCC 4730	c
	12	CM or Media Courses	a, c
Free Electives	12	Free Electives	
TOTAL:	122		

Pass Fail **is allowed for courses in core areas C, D, E and Free.**

NOTES

a = CM or LCC media courses include 2700-, 3700-, and 4700-level courses, as well as 3250-level courses, and LCC 2400, 2500, 3206, 3314, 3354, 3362, 3406, and 3853.

c = C-minimum required

BACHELOR OF SCIENCE IN COMPUTATIONAL MEDIA MEDIA-NARRATIVE STUDIES

REQUIREMENT	REQ HRS	COURSE(S)	NOTES
Wellness	2	HPS 1040 or APPH 1040 or APPH 1050	
Core A - Essential Skills	3	ENGL 1101	
	3	ENGL 1102	
	4	MATH 1501	
Core B - Institutional Options	3	CS 1301	c
Core C - Humanities	3	Any HUM	
	3	Any LCC HUM	
Core D - Science, Math, & Technology	8	Lab Science	
	4	MATH 1502	
Core E - Social Sciences	3	HIST 2111 or HIST 2112 or INTA 1200 or POL 1101 or PUBP 3000	
	9	Any SS	
Core F - Courses Related to Major	3	CS 1331	c
	3	CS 1332	c
	3	CS 2050	c
	3	CS 2340	c
	3	LCC 2700	c
	4	MATH 2605	
Major Requirement	4	CS 2261	c
	3	CS 4001	
Capstone Requirement	3	CS 4912	c
Media Requirements	3	CS 3451	c
	6	CS 4455 or CS 4460 or CS 4464 or CS 4475 or CS 4480 or CS 4496 or CS 4590	c
Narrative Studies Requirements	3	LCC 3202	c
	3	LCC 4720 or LCC 4732	c
	6	LCC 2730 or LCC 3206 or LCC 3710	c
	15	CM or LCC Literary Courses	a, c
Free Electives	12	Free Electives	
TOTAL:	122		

Pass Fail **is allowed for courses in core areas C, D, E and Free.**

NOTES

a = CM or LCC literary courses include 2700-, 3700-, and 4700-level courses, as well as 3200- and 3500-level courses and LCC 2823, 3823, and 3853

c = C-minimum required

BACHELOR OF SCIENCE IN COMPUTATIONAL MEDIA PEOPLE-FILM, PERFORMANCE, & MEDIA STUDIES

REQUIREMENT	REQ HRS	COURSE(S)	NOTES
Wellness	2	HPS 1040 or APPH 1040 or APPH 1050	
Core A - Essential Skills	3	ENGL 1101	
	3	ENGL 1102	
	4	MATH 1501	
Core B - Institutional Options	3	CS 1301	c
Core C - Humanities	3	Any HUM	
	3	Any LCC HUM	
Core D - Science, Math, & Technology	8	Lab Science	
	4	MATH 1502	
Core E - Social Sciences	3	HIST 2111 or HIST 2112 or INTA 1200 or POL 1101 or PUBP 3000	
	3	PSYC 1101	
	6	Any SS	
Core F - Courses Related to Major	3	CS 1331	c
	3	CS 1332	c
	3	CS 2050	c
	3	CS 2340	c
	3	LCC 2700	c
	4	MATH 2605	
Major Requirement	4	CS 2261	c
	3	CS 4001	
Capstone Requirement	3	CS 4912	c
People Requirements	4	PSYC 2015	c
	3	PSYC 2210 or PSYC 2760 or PSYC 3040	c
	6	CS 3750 or CS 3790 or CS 4660	c
	3	CS 4460 or CS 4470 or CS 4605 or CS 4625	c
Film, Performance, & Media Studies Requirements	3	LCC 2400 or LCC 2500 or LCC 2600	c
	12	LCC 3206 or LCC 3252 or LCC 3254 or LCC 3256 or LCC 3257 or LCC 3258 or LCC 3259 or LCC 3314 or LCC 3352 or LCC 3362	c
	12	CM or Media Courses	a, c
Free Electives	5	Free Electives	
TOTAL:	122		

Pass Fail **is allowed for courses in core areas C, D, E and Free.**

NOTES

a = CM or LCC media courses include 2700-, 3700-, and 4700-level courses, as well as 3250-level courses, and LCC 2400, 2500, 3206, 3314, 3354, 3362, 3406, and 3853

c = C-minimum required

BACHELOR OF SCIENCE IN COMPUTATIONAL MEDIA PEOPLE-GAME STUDIES

REQUIREMENT	REQ HRS	COURSE(S)	NOTES
Wellness	2	HPS 1040 or APPH 1040 or APPH 1050	
Core A - Essential Skills	3	ENGL 1101	
	3	ENGL 1102	
	4	MATH 1501	
Core B - Institutional Options	3	CS 1301	c
Core C - Humanities	3	Any HUM	
	3	Any LCC HUM	
Core D - Science, Math, & Technology	8	Lab Science	
	4	MATH 1502	
Core E - Social Sciences	3	HIST 2111 or HIST 2112 or INTA 1200 or POL 1101 or PUBP 3000	
	3	PSYC 1101	
	6	Any SS	
Core F - Courses Related to Major	3	CS 1331	c
	3	CS 1332	c
	3	CS 2050	c
	3	CS 2340	c
	3	LCC 2700	c
	4	MATH 2605	
Major Requirement	4	CS 2261	c
	3	CS 4001	
Capstone Requirement	3	CS 4912	c
People Requirements	4	PSYC 2015	c
	3	PSYC 2210 or PSYC 2760 or PSYC 3040	c
	6	CS 3750 or CS 3790 or CS 4660	c
	3	CS 4460 or CS 4470 or CS 4605 or CS 4625	c
Game Studies Requirements	9	LCC 4720 or LCC 4725 or LCC 4731 or LCC 4732	c
	18	CM or Media Courses	a, c
Free Electives	5	Free Electives	
TOTAL:	122		

Pass Fail **is allowed for courses in core areas C, D, E and Free.**

NOTES

a = CM or LCC media courses include 2700-, 3700-, and 4700-level courses, as well as 3250-level courses, and LCC 2400, 2500, 3206, 3314, 3354, 3362, 3406, and 3853

c = C-minimum required

SCHOOL OF LITERATURE, MEDIA, & COMMUNICATION

BACHELOR OF SCIENCE IN COMPUTATIONAL MEDIA PEOPLE-INTERACTION DESIGN & EXPERIMENTAL MEDIA

REQUIREMENT	REQ HRS	COURSE(S)	NOTES
Wellness	2	HPS 1040 or APPH 1040 or APPH 1050	
Core A - Essential Skills	3	ENGL 1101	
	3	ENGL 1102	
	4	MATH 1501	
Core B - Institutional Options	3	CS 1301	c
Core C - Humanities	3	Any HUM	
	3	Any LCC HUM	
Core D - Science, Math, & Technology	8	Lab Science	
	4	MATH 1502	
Core E - Social Sciences	3	HIST 2111 or HIST 2112 or INTA 1200 or POL 1101 or PUBP 3000	
	3	PSYC 1101	
	6	Any SS	
Core F - Courses Related to Major	3	CS 1331	c
	3	CS 1332	c
	3	CS 2050	c
	3	CS 2340	c
	3	LCC 2700	c
	4	MATH 2605	
Major Requirement	4	CS 2261	c
	3	CS 4001	
Capstone Requirement	3	CS 4912	c
People Requirements	4	PSYC 2015	c
	3	PSYC 2210 or PSYC 2760 or PSYC 3040	c
	6	CS 3750 or CS 3790 or CS 4660	c
	3	CS 4460 or CS 4470 or CS 4605 or CS 4625	c
Interaction Design & Experimental Media Requirements	3	LCC 2720	c
	3	LCC 3710 or LCC 4730	c
	9	LCC 2730 or LCC 3206 or LCC 3406 or LCC 3705 or LCC 3710 or LCC 4730	c
	12	CM or Media Courses	a, c
Free Electives	5	Free Electives	
TOTAL:	122		

Pass Fail **is allowed for courses in core areas C, D, E and Free.**

NOTES

a = CM or LCC media courses include 2700-, 3700-, and 4700-level courses, as well as 3250-level courses, and LCC 2400, 2500, 3206, 3314, 3354, 3362, 3406, and 3853

c = C-minimum required

SCHOOL OF LITERATURE, MEDIA, & COMMUNICATION

About the School
Undergraduate
Undergraduate Information
BS Computational Media
Description
Degree Requirements
Intel-Film, Performance, & Media Studies
Intel-Game Studies
Intel-Interaction Design & Experimental Media
Intel-Narrative Studies
Media-Film, Performance, & Media Studies
Media-Game Studies
Media-Interaction Design & Experimental Media
Media-Narrative Studies
People-Film, Performance, & Media Studies
People-Game Studies
People-Interaction Design & Experimental Media
People-Narrative Studies
BS Science, Tech, & Culture
Description
Degree Requirements
BS STaC
Bmed & Culture Option
Gender Option
Media Option
Minors & Certificates
Graduate
Admissions
Certificates
Master's Degrees
Digital Media
H.C.I.
Doctoral Information
Digital Media
Ivan Allen College

BACHELOR OF SCIENCE IN COMPUTATIONAL MEDIA PEOPLE-NARRATIVE STUDIES

REQUIREMENT	REQ HRS	COURSE(S)	NOTES
Wellness	2	HPS 1040 or APPH 1040 or APPH 1050	
Core A - Essential Skills	3	ENGL 1101	
	3	ENGL 1102	
	4	MATH 1501	
Core B - Institutional Options	3	CS 1301	c
Core C - Humanities	3	Any HUM	
	3	Any LCC HUM	
Core D - Science, Math, & Technology	8	Lab Science	
	4	MATH 1502	
Core E - Social Sciences	3	HIST 2111 or HIST 2112 or INTA 1200 or POL 1101 or PUBP 3000	
	3	PSYC 1101	
	6	Any SS	
Core F - Courses Related to Major	3	CS 1331	c
	3	CS 1332	c
	3	CS 2050	c
	3	CS 2340	c
	3	LCC 2700	c
	4	MATH 2605	
Major Requirement	4	CS 2261	c
	3	CS 4001	
Capstone Requirement	3	CS 4912	c
People Requirements	4	PSYC 2015	c
	3	PSYC 2210 or PSYC 2760 or PSYC 3040	c
	6	CS 3750 or CS 3790 or CS 4660	c
	3	CS 4460 or CS 4470 or CS 4605 or CS 4625	c
Narrative Studies Requirements	3	LCC 3202	c
	3	LCC 4720 or LCC 4732	c
	6	LCC 2730 or LCC 3206 or LCC 3710	c
	15	CM or LCC Literary Courses	a, c
Free Electives	5	Free Electives	
TOTAL:	122		

Pass Fail **is allowed for courses in core areas C, D, E and Free.**

NOTES

a = CM or LCC literary courses include 2700-, 3700-, and 4700-level courses, as well as 3200- and 3500-level courses and LCC 2823, 3823, and 3853

c = C-minimum required

BACHELOR OF SCIENCE IN SCIENCE, TECHNOLOGY, AND CULTURE

Georgia Tech's Science, Technology and Culture (STAC) Program is unique in its emphasis on communication skills, cultural interpretation, and textual analysis. While other programs look at science, technology, and the humanities as separate entities, STAC examines the modes of communication and understanding common to them all. As a result, students master the kinds of analysis needed to understand and interpret all the texts--ranging from novels and films to scientific journals and web pages--that our society uses to communicate and to understand itself. STAC students pursue a course of study that is genuinely multidisciplinary and international, preparing them to be global citizens of a high-tech world.

INTERNATIONAL PLAN

The STAC International Plan follows the Institute model to develop a global competence connected to the student's major program of study. It thus integrates international studies and experiences with work in a broad range of cultural and media studies, preparing graduates to critique and create cultural texts within an international professional environment. All students who successfully complete this option will receive the "International Plan" designation on their transcripts.

While following the basic STAC program of instruction, requiring a total of 122 hours of coursework, students following the International Plan will modify their program as follows. They will:

- take three Social Science courses, one each from the following categories: international relations, global economics, and a course on a specific country or region;
- spend two terms abroad engaged in any combination of study abroad, research, or internship;
- complete twelve hours of language instruction (by dedicating six hours of humanities electives, 3 hours of free electives, and 3 hours of the STAC language requirement to language study); and
- complete a STAC capstone course that links international studies with the major.

While all of the STAC degree options provide students with 9 credit hours of free electives, different options provide students with different numbers of free LCC elective hours. Students should contact the STAC advisor to learn about options for particular degree tracks.

RESEARCH OPTION (ALL TRACKS)

This degree option offers STAC students on all degree tracks the opportunity for a substantial, in-depth research experience. Students who pursue this degree option will learn how to design and complete advanced, multi-semester research projects through a combination of independent research, group writing instruction, and one-to-one work with a faculty mentor. Students are strongly encouraged at the end of their experience to work with their faculty mentor to develop a journal publication or conference presentation on the research in addition to the actual thesis. All students who successfully complete the research thesis option will receive the "research option" designation on their transcripts.

To fulfill the requirements of the STAC Research Option, students must:

- Complete six hours of LCC 2699/4699: Undergraduate Research*
- Complete 1 hour of LCC 4701: Undergraduate Research Proposal Writing
- Complete 1 hour of LCC 4702: Undergraduate Research Thesis Writing; and
- Complete 3 hours of LCC 4102: Senior Thesis.

Students will meet these requirements without adding additional hours to their schedules by

- Dedicating six hours of undefined LCC elective and/or free elective hours to undergraduate research
- Dedicating two more hours of free elective credit to LCC 4701 and 4702
- Dedicating 3 hours of capstone coursework in the STAC major to LCC 4102: Senior Thesis.

* Students may substitute audit hours of 2698/4698 for equivalent hours of 2699/4699. If they elect this option, they must add corresponding hours of an elective, for-credit class.

While all four of the STAC degree options provide students with 9 credit hours of free electives, different options provide students with different numbers of free LCC elective hours. Students should contact the STAC advisor to learn about options for particular degree tracks.

BS/MS DEGREE PROGRAM

Students who wish to pursue the BS/MS combination in STAC and DM must apply to the School after completing at least seventy-five hours of work toward the STAC Media Studies degree. Applicants should have a 3.5 GPA.

Students admitted to the program will select the 4400 seminar option and also take a total of twelve hours of graduate coursework during their final undergraduate year. six hours of that work, in DM media courses, will replace the STAC free electives and will count for both undergraduate and graduate credit. During the summer term after their fourth year, students will participate in an approved internship program. During the fifth year, students will take a total of twenty-four hours, including either LCC 6800 (Project) or LCC 7000 (Thesis), and with no more than three courses taken outside the DM program.

BACHELOR OF SCIENCE IN SCIENCE, TECHNOLOGY, AND CULTURE 2013 - 2014 DEGREE REQUIREMENTS

REQUIREMENT	REQ HRS	COURSE(S)	NOTES
Wellness	2	HPS 1040 or APPH 1040 or APPH 1050	
Core A - Essential Skills	3	ENGL 1101	
	3	ENGL 1102	
	4	MATH 1501 or MATH 1712	
Core B - Institutional Options	3	CS 1301 or CS 1315	
Core C - Humanities	6	Any HUM	
Core D - Science, Math, & Technology	4	Lab Science	
	4	Lab Science	
	4	MATH 1502 or MATH 1711	
Core E - Social Sciences	3	HIST 2111 or HIST 2112 or INTA 1200 or POL 1101 or PUBP 3000	
	3	International Requirement	a
	6	Any SS	
Core F - Courses Related to Major	8	Science or Computing Electives	b
	3	Modern Language Elective	d
	3	PHIL 3105 or PHIL 3115 or PHIL 3127	
	3	LCC 2100	c
Major Requirements	3	LCC 4100 or LCC 4102	c
	6	LCC 3102 or LCC 3104 or LCC 3106 or LCC 3108 or LCC 3110 or LCC 3112 or LCC 3114 or LCC 3116 or LCC 3118	c
	9	LCC 3202 or LCC 3204 or LCC 3206 or LCC 3208 or LCC 3210 or LCC 3212 or LCC 3214 or LCC 3216 or LCC 3218 or LCC 3220 or LCC 3222 or LCC 3226 or LCC 3234 or LCC 3252 or LCC 3254 or LCC 3256 or LCC 3262 or LCC 3502 or LCC 3504 or LCC 3506 or LCC 3508 or LCC 3510 or LCC 3512 or LCC 3514 or LCC 3516 or LCC 3518 or LCC 4200 or LCC 4600	c
	9	LCC 3302 or LCC 3304 or LCC 3306 or LCC 3308 or LCC 3310 or LCC 3314 or LCC 3316 or LCC 3318 or LCC 3352 or LCC 3362	c
	9	LCC 3402 or LCC 3404 or LCC 3406 or LCC 3408 or LCC 3410 or LCC 3412 or LCC 4400 or LCC 4402 or LCC 4404 or LCC 4406	c
	6	Any LCC 2000-level or higher	c
Non-Major Cluster	9	Non-Major Cluster	e
Free Electives	9	Free Electives	
TOTAL:	122		

NOTES

a = Must be selected from the following list: ECON 2101 or ECON 4311 or ECON 4350 or ECON 4351 or ECON 4355 or ECON 4411 or ECON 4620 or HTS 1031 or HTS 2036 or HTS 2037 or HTS 2041 or HTS 2061 or HTS 2062 or HTS 3015 or HTS 3028 or HTS 3030 or HTS 3031 or HTS 3032 or HTS 3035 or HTS 3036 or HTS 3038 or HTS 3039 or HTS 3041 or HTS 3043 or HTS 3045 or HTS 3051 or HTS 3061 or HTS 3062 or HTS 3063 or HTS 3069 or HTS 3813 or

HTS 3823 or INTA 1110 or INTA 2030 or INTA 2040 or INTA 2100 or INTA 2210 or INTA 2220 or INTA 2230 or INTA 2803 or INTA 2813 or INTA 2823 or INTA 2833 or INTA 3010 or INTA 3020 or INTA 3031 or INTA 3101 or INTA 3102 or INTA 3104 or INTA 3120 or INTA 3121 or INTA 3130 or INTA 3131 or INTA 3203 or INTA 3220 or INTA 3221 or INTA 3230 or INTA 3231 or INTA 3240 or INTA 3241 or INTA 3301 or INTA 3303 or INTA 3304 or INTA 3321 or INTA 3330 or INTA 3331 or INTA 4007 or INTA 4011 or INTA 4040 or INTA 4050 or INTA 4060 or INTA 4101 or INTA 4121 or INTA 4230 or INTA 4240 or INTA 4241 or INTA 4330 or INTA 4331 or INTA 4332 or INTA 4333 or INTA 4340

b = Any BIOL, CHEM, CS, EAS, PHYS, or PSYC course.

c = C-minimum required.

d = Any Modern Language 2000-level or higher.

e = Nine credits required in either the same prefix or a coherent theme. Please consult with advisor on course selection.

SCHOOL OF LITERATURE, MEDIA, & COMMUNICATION

BACHELOR OF SCIENCE IN STAC - BIOMEDICINE AND CULTURE OPTION 2013 - 2014 DEGREE REQUIREMENTS

REQUIREMENT	REQ HRS	COURSE(S)	NOTES
Wellness	2	HPS 1040 or APPH 1040 or APPH 1050	
Core A - Essential Skills	3	ENGL 1101	
	3	ENGL 1102	
	4	MATH 1501 or MATH 1712	
Core B - Institutional Options	3	CS 1301 or CS 1315	
Core C - Humanities	6	Any HUM	
Core D - Science, Math, & Technology	4	Lab Science	
	4	Lab Science	
	4	MATH 1502 or MATH 1711	
Core E - Social Sciences	3	HIST 2111 or HIST 2112 or INTA 1200 or POL 1101 or PUBP 3000	
	3	International Requirement	a
	6	Any SS	
Core F - Courses Related to Major	8	Science or Computing Electives	b
	3	Modern Language Elective	d
	3	PHIL 3105 or PHIL 3115 or PHIL 3127	
	3	LCC 2100	c
Major Requirements	3	LCC 4100 or LCC 4102	c
	6	LCC 3102 or LCC 3104 or LCC 3106 or LCC 3108 or LCC 3110 or LCC 3112 or LCC 3114 or LCC 3116 or LCC 3118	c
	3	LCC 3219	c
	6	LCC 3206 or LCC 3208 or LCC 3210 or LCC 3212 or LCC 3214 or LCC 3234 or LCC 3252 or LCC 3256 or LCC 3262	c
	3	LCC 3318	c
	6	LCC 3302 or LCC 3304 or LCC 3306 or LCC 3308 or LCC 3310 or LCC 3314 or LCC 3316	c
	9	LCC 3402 or LCC 3404 or LCC 3406 or LCC 3408 or LCC 3410 or LCC 3412 or LCC 4400 or LCC 4402 or LCC 4404 or LCC 4406	c
	3	LCC 2300	c
	3	LCC Elective	c
Non-Major Cluster	9	Non-Major Cluster	e
Free Electives	9	Free Electives	
TOTAL:	122		

NOTES

a = Must be selected from the following list: ECON 2101 or ECON 4311 or ECON 4350 or ECON 4351 or ECON 4355 or ECON 4411 or ECON 4620 or HTS 1031 or HTS 2036 or HTS 2037 or HTS 2041 or HTS 2061 or HTS 2062 or HTS 3015 or HTS 3028 or HTS 3030 or HTS 3031 or HTS 3032 or HTS 3035 or HTS 3036 or HTS 3038 or HTS 3039 or HTS 3041 or HTS 3043 or HTS 3045 or HTS 3051 or HTS 3061 or HTS 3062 or HTS 3063 or HTS 3069 or HTS 3813 or HTS 3823 or INTA 1110 or INTA 2030 or INTA 2040 or INTA 2100 or INTA 2210 or INTA 2220 or INTA 2230 or INTA 2803 or INTA 2813 or INTA 2823 or INTA 2833 or INTA 3010 or INTA 3020 or INTA 3031 or INTA 3101 or INTA 3102 or INTA 3104 or INTA 3120 or INTA 3121 or INTA

3130 or INTA 3131 or INTA 3203 or INTA 3220 or INTA 3221 or INTA 3230 or INTA 3231 or INTA 3240 or INTA 3241 or INTA 3301 or INTA 3303 or INTA 3304 or INTA 3321 or INTA 3330 or INTA 3331 or INTA 4007 or INTA 4011 or INTA 4040 or INTA 4050 or INTA 4060 or INTA 4101 or INTA 4121 or INTA 4230 or INTA 4240 or INTA 4241 or INTA 4330 or INTA 4331 or INTA 4332 or INTA 4333 or INTA 4340

b = Any BIOL, CHEM, CS, EAS, PHYS, or PSYC course.

c = C-minimum required.

d = Any Modern Language 2000-level or higher.

e = Nine credits required in either the same prefix or a coherent theme. Please consult with advisor on course selection.

BACHELOR OF SCIENCE IN STAC - GENDER STUDIES OPTION 2013 - 2014 DEGREE REQUIREMENTS

REQUIREMENT	REQ HRS	COURSE(S)	NOTES
Wellness	2	HPS 1040 or APPH 1040 or APPH 1050	
Core A - Essential Skills	3	ENGL 1101	
	3	ENGL 1102	
	4	MATH 1501 or MATH 1712	
Core B - Institutional Options	3	CS 1301 or CS 1315	
Core C - Humanities	6	Any HUM	
Core D - Science, Math, & Technology	4	Lab Science	
	4	Lab Science	
	4	MATH 1502 or MATH 1711	
Core E - Social Sciences	3	HIST 2111 or HIST 2112 or INTA 1200 or POL 1101 or PUBP 3000	
	3	International Requirement	a
	6	Any SS	
Core F - Courses Related to Major	8	Science or Computing Electives	b
	3	Modern Language Elective	d
	3	PHIL 3105 or PHIL 3115 or PHIL 3127	
	3	LCC 2100	c
Major Requirements	3	LCC 4100 or LCC 4102	c
	6	LCC 3102 or LCC 3104 or LCC 3106 or LCC 3108 or LCC 3110 or LCC 3112 or LCC 3114 or LCC 3116 or LCC 3118	c
	3	LCC 3212 or LCC 3225	c
	6	LCC 3202 or LCC 3204 or LCC 3206 or LCC 3208 or LCC 3210 or LCC 3214 or LCC 3216 or LCC 3218 or LCC 3220 or LCC 3222 or LCC 3226 or LCC 3234 or LCC 3252 or LCC 3254 or LCC 3256 or LCC 3262 or LCC 3502 or LCC 3504 or LCC 3506 or LCC 3508 or LCC 3510 or LCC 3512 or LCC 3514 or LCC 3516 or LCC 3518 or LCC 4200 or LCC 4600	c
	3	LCC 3304	c
	6	LCC 3302 or LCC 3304 or LCC 3306 or LCC 3308 or LCC 3310 or LCC 3314 or LCC 3316 or LCC 3318 or LCC 3352 or LCC 3362	c
	9	LCC 3402 or LCC 3404 or LCC 3406 or LCC 3408 or LCC 3410 or LCC 3412 or LCC 4400 or LCC 4402 or LCC 4404 or LCC 4406	c
	3	LCC 2200	c
	3	Any LCC 2000-level or higher	c
Non-Major Cluster	9	Non-Major Cluster	e
Free Electives	9	Free Electives	
TOTAL:	122		

NOTES

a = Must be selected from the following list: ECON 2101 or ECON 4311 or ECON 4350 or ECON 4351 or ECON 4355 or ECON 4411 or ECON 4620 or HTS 1031 or HTS 2036 or HTS 2037 or

HTS 2041 or HTS 2061 or HTS 2062 or HTS 3015 or HTS 3028 or HTS 3030 or HTS 3031 or HTS 3032 or HTS 3035 or HTS 3036 or HTS 3038 or HTS 3039 or HTS 3041 or HTS 3043 or HTS 3045 or HTS 3051 or HTS 3061 or HTS 3062 or HTS 3063 or HTS 3069 or HTS 3813 or HTS 3823 or INTA 1110 or INTA 2030 or INTA 2040 or INTA 2100 or INTA 2210 or INTA 2220 or INTA 2230 or INTA 2803 or INTA 2813 or INTA 2823 or INTA 2833 or INTA 3010 or INTA 3020 or INTA 3031 or INTA 3101 or INTA 3102 or INTA 3104 or INTA 3120 or INTA 3121 or INTA 3130 or INTA 3131 or INTA 3203 or INTA 3220 or INTA 3221 or INTA 3230 or INTA 3231 or INTA 3240 or INTA 3241 or INTA 3301 or INTA 3303 or INTA 3304 or INTA 3321 or INTA 3330 or INTA 3331 or INTA 4007 or INTA 4011 or INTA 4040 or INTA 4050 or INTA 4060 or INTA 4101 or INTA 4121 or INTA 4230 or INTA 4240 or INTA 4241 or INTA 4330 or INTA 4331 or INTA 4332 or INTA 4333 or INTA 4340

b = Any BIOL, CHEM, CS, EAS, PHYS, or PSYC course.

c = C-minimum required.

d = Any Modern Language 2000-level or higher.

e = Nine credits required in either the same prefix or a coherent theme. Please consult with advisor on course selection.

BACHELOR OF SCIENCE IN STAC - MEDIA STUDIES OPTION 2013 - 2014 DEGREE REQUIREMENTS

REQUIREMENT	REQ HRS	COURSE(S)	NOTES
Wellness	2	HPS 1040 or APPH 1040 or APPH 1050	
Core A - Essential Skills	3	ENGL 1101	
	3	ENGL 1102	
	4	MATH 1501 or MATH 1712	
Core B - Institutional Options	3	CS 1301 or CS 1315	
Core C - Humanities	6	Any HUM	
Core D - Science, Math, & Technology	4	Lab Science	
	4	Lab Science	
	4	MATH 1502 or MATH 1711	
Core E - Social Sciences	3	HIST 2111 or HIST 2112 or INTA 1200 or POL 1101 or PUBP 3000	
	3	International Requirement	a
	6	Any SS	
Core F - Courses Related to Major	8	CS Electives	b
	3	Modern Language Elective	d
	3	PHIL 3105 or PHIL 3115 or PHIL 3127	
	3	LCC 2100	c
Major Requirements	3	LCC 4102 or LCC 4400 or LCC 4500	c
	6	LCC 3102 or LCC 3104 or LCC 3106 or LCC 3108 or LCC 3110 or LCC 3112 or LCC 3114 or LCC 3116 or LCC 3118	c
	9	LCC 2600 or LCC 3206 or LCC 3214 or LCC 3252 or LCC 3254 or LCC 3256 or LCC 3262	c
	3	LCC 3314	c
	3	LCC 3352	c
	3	LCC 3302 or LCC 3304 or LCC 3306 or LCC 3316 or LCC 3318	c
	9	LCC 3402 or LCC 3404 or LCC 3406 or LCC 4402 or LCC 4404	c
	3	LCC 2400 or LCC 2500	c
	6	LCC 3408 or LCC 3410 or LCC 3412 or LCC 4400 or LCC 4406	c
Non-Major Cluster	9	Non-Major Cluster	e
Free Electives	9	Free Electives	
TOTAL:	125		

NOTES

a = Must be selected from the following list: ECON 2101 or ECON 4311 or ECON 4350 or ECON 4351 or ECON 4355 or ECON 4411 or ECON 4620 or HTS 1031 or HTS 2036 or HTS 2037 or HTS 2041 or HTS 2061 or HTS 2062 or HTS 3015 or HTS 3028 or HTS 3030 or HTS 3031 or HTS 3032 or HTS 3035 or HTS 3036 or HTS 3038 or HTS 3039 or HTS 3041 or HTS 3043 or HTS 3045 or HTS 3051 or HTS 3061 or HTS 3062 or HTS 3063 or HTS 3069 or HTS 3813 or HTS 3823 or INTA 1110 or INTA 2030 or INTA 2040 or INTA 2100 or INTA 2210 or INTA 2220 or INTA 2230 or INTA 2803 or INTA 2813 or INTA 2823 or INTA 2833 or INTA 3010 or INTA 3020 or INTA 3031 or INTA 3101 or INTA 3102 or INTA 3104 or INTA 3120 or INTA 3121 or INTA

3130 or INTA 3131 or INTA 3203 or INTA 3220 or INTA 3221 or INTA 3230 or INTA 3231 or INTA 3240 or INTA 3241 or INTA 3301 or INTA 3303 or INTA 3304 or INTA 3321 or INTA 3330 or INTA 3331 or INTA 4007 or INTA 4011 or INTA 4040 or INTA 4050 or INTA 4060 or INTA 4101 or INTA 4121 or INTA 4230 or INTA 4240 or INTA 4241 or INTA 4330 or INTA 4331 or INTA 4332 or INTA 4333 or INTA 4340

b = Any CS course.

c = C-minimum required.

d = Any Modern Language 2000-level or higher.

e = Nine credits required in either the same prefix or a coherent theme. Please consult with advisor on course selection.

GRADUATE CERTIFICATE IN SCIENCE, TECHNOLOGY AND SOCIETY

The Science, Technology and Society Graduate Certificate is designed for students already enrolled in a graduate degree program at Georgia Tech. This certificate is for graduate students who would like to demonstrate additional competence in some aspect of STS or special competence in STS in their home discipline. The certificate is open to students in good standing in any graduate program at Georgia Tech.

The 12-credit certificate program helps students to:

- Understand the social, cultural, and epistemic dynamics of science and technology
- Explore these dynamics across world societies and cultures
- Develop sensitivity to issues of gender, race, and justice across areas of knowledge, including: engineering, medicine, environment, cognition, security, innovation, design
- Employ STS approaches as scholars or practitioners (e.g. engineers, scientists, or policy makers)

PROGRAM OF STUDY: 4 Courses Total

Core Course: 1 Required	
HTS 6743 / PUBP 6743 / LCC 6743	STS Core Seminar
HTS 6118	Science, Technology and the Economy
HTS 6121 / INTA 8803	Science, Technology, and Security
HTS 6123 / LCC 8803	Social and Cultural Studies of Biomedicine
HTS 6124	Science and Technology Beyond Borders
PUBP 6748 / LCC 6748	Social Justice, Critical Theory and Philosophy of Design
LCC 6749 / PUBP 6749	Feminist Theory and STS
Up to One Other Elective, Subject to Student Interest and STS Coordinator Approval **Many appropriate courses are offered across the Ivan Allen College and the Institute, for example:**	
CS 8893	Cognition and Culture

MASTER OF SCIENCE IN DIGITAL MEDIA

Georgia Tech's MS in Digital Media (DM) is a graduate program of humanities-based professional education for the digital age. MS DM students follow a studio-based curriculum that places digital design within technical, cultural, aesthetic, and historical contexts. The program rests on the assumption that digital media belongs to a conceptual continuum whose legacy and future must be addressed in order to understand the digital artifact in its own right.

Georgia Tech's MS DM program is helping to establish the standard for professional education in digital media design and to raise the level of professional practice. It is aimed at providing a principled-based education that will guide its graduates over the course of their careers in a rapidly changing technical environment.

Because of its technical and disciplinary diversity, the MS DM program can offer students both the practical skills and the theoretical foundation they need to assume leadership roles as designers and of digital media. Graduates of the program pursue careers in entertainment, art, education, and commerce with a variety of national and international organizations. Some also go on to PhD work in computer science or the humanities.

The MS DM program accepts roughly twenty-five full-time students each fall term. MS DM students come from a range of educational backgrounds and have diverse intellectual and creative objectives. Most have work experience in a professional field. The program welcomes a socially diverse and international student body.

BS/MS DEGREE PROGRAM

Students who wish to pursue the BS/MS combination in STAC and DM must apply to the School after completing at least seventy-five hours of work toward the STAC Media Studies degree. Applicants should have a 3.5 GPA.

Students admitted to the program will select the 4400 seminar option and also take a total of twelve hours of graduate coursework during their final undergraduate year. six hours of that work, in DM media courses, will replace the STAC free electives and will count for both undergraduate and graduate credit. During the summer term after their fourth year, students will participate in an approved internship program. During the fifth year, students will take a total of twenty-four hours, including either LCC 6800 (Project) or LCC 7000 (Thesis), and with no more than three courses taken outside the DM program.

MASTER OF SCIENCE IN HUMAN - COMPUTER INTERACTION

OVERVIEW

The interdisciplinary Master of Science in Human - Computer Interaction (HCI) degree program is a cooperative effort of the School of Interactive Computing; the School of Literature, Communication, and Culture; and the School of Psychology. The program provides students with the practical, interdisciplinary skills and theoretical understanding they will need to become leaders in the design, implementation, and evaluation of the computer interfaces of the future.

COURSE OF STUDY

The HCI master's degree is a four - semester program consisting of a total of thirty-six credit hours. Each student is required to complete a set of four core courses, a set of elective courses based on their academic background and interests, a set of area specialization courses based on the academic unit in which they reside, and a Master's project. The specific courses for each student will be determined by the HCI program coordinator in consultation with the academic unit. The area specialization courses are determined by the academic unit in which the student resides. The areas of specialization are: Computing; Digital Media (DM, through the School of Literature, Communication, and Culture); and Psychology.

Specializations	Fixed Core Credit Hours	Specialization Credit Hours	Elective Credit Hours	Project Credit Hours
Computing	11	9	12	4
Digital Media	11	10	9	6
Psychology	11	11	10	4

CORE COURSES (11 CREDIT HOURS)

CS/PSYC 6750, Human - Computer Interaction (must be taken during the first semester)
PSYC 6023 Psychology Research Methods for HCI (4 credit hours with lab)
PSYC 6031 Engineering Psychology Analysis Techniques (2 credit hours)
CS/LCC/PSYC6753 Human - Computer Interaction – Professional Preparation and Practice (one hour credit Fall of first year and one credit hour Fall of second year)

ELECTIVE COURSES (TWELVE CREDIT HOURS FOR COMPUTING SPECIALIZATION; TEN CREDIT HOURS FOR PSYCHOLOGY SPECIALIZATION; NINE CREDIT HOURS FOR DIGITAL MEDIA SPECIALIZATION)

All specialization courses may also be taken as part of the Elective courses. For the computing and psychology tracks, at least nine credit hours of the Elective must be taken outside your specialization. For the Digital Media specialization, at least six credit hours must be taken outside your specialization. **A maximum of three credit hours of Special Problems in HCI (CS/LCC/PSYC 8903) may count toward the Elective Courses**.

ARCHITECTURE

COA 8823 - ED Special Topics in Architecture and Behavior: Health Environment of the Future
COA 8823 Special Topics: Patient Room of the Future
COA 8843 - ED Special Topics in Design Computing: Design Games

COMPUTER SCIENCE

Software

CS 6300 - Software Development Process
CS 6452 - Prototyping Interactive Systems
CS 6456 - Principles of User Interface Software
CS 7470 - Ubiquitous Computing
CS 8803 - MAS Special Topics: Mobile Apps and Services
CS 8803 - Special Topics: Adaptive Personalized Information Environments Interaction (variable hours)

Design, Evaluation, and Cognitive Modeling

CS 6010 - Principles of Design
CS 6150 - Computing for Good
CS 6451 - Introduction to Human Centered Computing
CS 6455 - User Interface Design and Evaluation
CS 6460 - Educational Technology: Conceptual Foundations
CS 6465 Computational Journalism
CS 6470 - Design of Online Communities
CS 6795 - Introduction to Cognitive Science
CS 7450 - Information Visualization
CS 7460 - Collaborative Computing
CS 7610 - Modeling and Design
CS/PSYC 7790 - Cognitive Modeling
CS 8803 - DG Special Topics: Design Games
CS 8803 - HEF Special Topics: Healthcare Informatics
CS 8803 - HAR Special Topics: Handheld Augmented Reality Game Studio
CS 8803 - HRI Special Topics Human - Robot Interaction
CS 8803 - IBI Special Topics: Introduction to Bio Informatics
CS 8803 - VG Special Topics: Video Game Design
CS 8803 - SOC Social Computing
CS 8903 - Special Problems in Human - Computer Interaction (variable hours)

INTERNATIONAL AFFAIRS

INTA 8803 - Special Topics: Computers, Communications, and International Development

INDUSTRIAL DESIGN

ID 6100 Human Centered Design
ID 6101 Human Centered Design
ID 6200 Graduate Studio II
ID 8900 Healthcare Environment of the Future
ID 8900 Web Design Accessibility
ID 8900 Advanced Sketching
ID 8900 Interactive Product Design for Home Health & Well - Being
ID 8900 Service Design and Organizational Activation
ID 8900 Universal Design: Exploration & Investigation of Real World Applications

INDUSTRIAL AND SYSTEMS ENGINEERING

ISYE 6205 / AE 8803 - Cognitive Engineering
ISYE 6215 - Models in Human - Machine Systems
ISYE 6231 - Design of Human - Integrated Systems
ISYE 6413 - Design and Analysis of Experiments
ISYE 6414 - Regression Analysis
ISYE 6739 - Basic Statistical Methods
ISYE 6772 - Managing the Resources of Technological Firms
ISYE 7210 - Real - Time Interactive Simulations

LITERATURE - COMMUNICATION - AND CULTURE (DIGITAL MEDIA)

LCC 6215 - Issues in Media Studies
LCC 6310 - The Computer as an Expressive Medium

LCC 6311 - Visual Culture and Design
LCC 6312 - Design Technology and Representation
LCC 6313 - Principles of Interactive Design
LCC 6314 - Design of Networked Media
LCC 6315 - Project Production
LCC 6316 - Historical Approaches to Digital Media
LCC 6317 - Interactive Fiction
LCC 6318 - Experimental Media
LCC 6319 - Intellectual Property Policy and Law
LCC 6325 - Game Design and Analysis
LCC 6399 - Discovery and Invention in Digital Media
LCC 6650 - Project Studio
LCC 8000 - Proseminar in Media Theory
LCC 8001 - Pro - Seminar in Digital Media Studies
LCC 8903 - Special Problems in Human - Computer Interaction

MANAGEMENT OF TECHNOLOGY (MOT)

MGT 6056 - Electronic Commerce
MGT 6326 - Collaborative Product Development
MGT 6772 - (K - TSA) Managing Resources of the Technological Firm
MGT 8803 - Software Project Management

MUSIC

MUSI 6001 - Music Perception and Cognition
MUSI 6003 - Music Technology History and Repertoire
MUSI 6104 - Integrating Music in Multimedia
MUSI 6301 - Music Interface Design
MUSI 6303 - Network Music
MUSI 7100 - Music Technology Research Lab

PSYCHOLOGY

PSYC 6011 - Cognitive Psychology (3 credit hours)
PSYC 6012 - Social Psychology (3 credit hours)
PSYC 6014 - Sensation and Perception (3 credit hours)
PSYC 6022 - Psychological Statistics for HCI (4 credit hours including lab - Fall or Spring)
PSYC 6032 - Engineering Psychology Stressors (1 credit hour minicourse - Fall)
PSYC 6033 - Engineering Psychology Cognitive Ergonomics (1 credit hour minicourse - Spring)
PSYC 6034 - Engineering Psychology Displays (1 credit hour minicourse - Spring)
PSYC 6035 - Engineering Psychology Controls &Workspaces (1 credit hour minicourse - Spring)
PSYC 6041 - Topics in Cognitive Aging (3 credit hours)
PSYC 7104 - Psychomotor and Cognitive Skills
PSYC 8040 - Seminar in Engineering Psychology: Assistive Technologies
PSYC 8040 - Seminar in Engineering Psychology: The Psychology of HCI
PSYC 8903 - Special Problems in Human - Computer Interaction

PUBLIC POLICY

PUBP 6111 - Special Topics: The Internet and Public Policy
PUBP 6401 - Science, Technology, and Public Policy

COMPUTING SPECIALIZATION (NINE CREDIT HOURS)

Software (3 credit hours):

CS 6300 - Software Development Process
CS 6452 - Prototyping Interactive Systems
CS 6456 - Principles of User Interface Software
CS 7470 - Ubiquitous Computing
CS 8803 - MAS, Special Topics: Mobile Apps and Services

Design - Evaluation - and Cognitive Modeling (6 credit hours):

CS 6010 - Principles of Design
CS 6150 - Computing for Good
CS 6451 - Introduction to Human - Centered Computing
CS 6455 - User Interface Design and Evaluation
CS 6460 - Educational Technology: Conceptual Foundations
CS 6465 - Computational Journalism
CS 6470 - Design of Online Communities
CS 6470 - Mixed Reality Experience Design
CS 6795 - Introduction to Cognitive Science
CS 7450 - Information Visualization
CS 7460 - Collaborative Computing
CS/PSYC 7790 - Cognitive Modeling
CS 8803 - DG, Special Topics: Design Games
CS 8803 - HEF, Special Topics: Healthcare Informatics
CS 8803 - HAR, Special Topics: Handheld Augmented Reality Game Studio
CS 8803 - HRI, Special Topics Human - Robot Interaction
CS 8803 - IBI, Special Topics: Introduction to Bio Informatics
CS 8803 - VG, Special Topics: Video Game Design
CS 8803 - SOC, Social Computing
CS 8903 - Special Problems (variable hours)

A maximum of 3 hours of CS 8903 may count toward the Computing specialization. The master's degree requirements for students in the College of Computing supplement those of the Institute. Students must achieve a grade-point average of at least 3.0 to graduate - and no course grade below C will count toward graduation.

DIGITAL MEDIA (DM) SPECIALIZATION (TEN CREDIT HOURS)

Required (may be repeated)

LCC 6650 - Project Studio (enrollment by permission of instructor)

One of the following courses - preferably taken in the first year of study:

LCC 6310 - The Computer as an Expressive Medium
LCC 6313 - Principles of Interactive Design
LCC 6399 - Discovery and Invention in Digital Media
LCC 8903 - Special Problems in HCI

Students may fulfill the rest of the required credits hours with any other LCC 6000 or 8000 level course.

A maximum of 3 hours of LCC 8903 may count toward the Digital Media specialization.

PSYCHOLOGY SPECIALIZATION (11 CREDIT HOURS)

Required (8 credit hours):

PSYC 6022 - Psychological Statistics for HCI (4 credit hours including lab - Fall or Spring)
PSYC 6032 - Engineering Psychology Stressors (1 credit hour minicourse - Fall)
PSYC 6033 - Engineering Psychology Cognitive Ergonomics (1 credit hour minicourse - Spring)
PSYC 6034 - Engineering Psychology Displays (1 credit hour minicourse - Spring)
PSYC 6035 - Engineering Psychology Controls &Workspaces (1 credit hour minicourse - Spring)

3 credit hours from the following courses:

PSYC 6011 - Cognitive Psychology (3 credit hours)
PSYC 6012 - Social Psychology (3 credit hours)
PSYC 6014 - Sensation and Perception (3 credit hours)
PSYC 6041 - Topics in Cognitive Aging (3 credit hours)

PROJECT (4 CREDIT HOURS; 6 CREDIT HOURS FOR STUDENTS IN THE DM SPECIALIZATION)

Each student completes this requirement, under the supervision of a faculty member, normally during the last two semesters of their program. Students must submit a project proposal and final report and present their work to the three school faculty coordinators and other MS - HCI students late during the semester of graduation.

CS 6998 - MS, HCI Project (repeatable; variable semester hours), or
LCC 6998 - MS, HCI Project (repeatable; variable semester hours), or
PSYC 6998 - MS, HCI Project (repeatable; variable semester hours)

SEMINAR

The HCI MS professional preparation and practice course aims to prepare students for success in their studies and careers. It includes presentations by leading HCI practitioners concerning career choices and preparation and new developments, visits to corporate HCI labs in the Atlanta area, research presentations, skills tutorials, discussion of potential MS projects and "how to succeed" in graduate school and as a professional.

Students take this seminar in the fall semester of their first and second years of study.

CS 6753 - Human, Computer Interaction, Professional Preparation and Practice (may be repeated for credit once), or
LCC 6753 - Human, Computer Interaction, Professional Preparation and Practice (may be repeated for credit once), or
PSYC 6753 - Human, Computer Interaction, Professional Preparation and Practice (may be repeated for credit once)

DOCTOR OF PHILOSOPHY WITH A MAJOR IN DIGITAL MEDIA

The Digital Media PhD was inaugurated in fall 2004 and is one of the first of its kind worldwide. The program educates research-oriented theorists/practitioners who bring the traditions of the humanities and arts to the design of digital media. Graduates of the program are prepared to work in industry, public service, and universities, shaping the emerging digital genres and expanding our understanding and mastery of the representational power of the computer.

CURRICULUM AND COURSE OF STUDY

Required Courses: (36 hours)

- LCC 6310 - The Computer as an Expressive Medium (3 hours)
- LCC 6311 - Visual Culture and Design (3 hours)
- LCC 6312 - Design, Technology, and Representation (3 hours)
- LCC 6313 - Principles of Interactive Design (3 hours)
- LCC 6316 - Historical Approaches to New Media (3 hours)
- LCC 6650 - Project Studio (3 hours)
- LCC 6800 - Master's Project (6 hours)
- LCC 8000 Pro-Seminar in Media Theory (3 hours)
- LCC 8001 - Pro-Seminar I Pro-Seminar in Digital Media Studies (3 hours)
- LCC 9000 Doctoral Thesis (6 hours)

MINOR CONCENTRATION (9 HOURS)

Three related courses outside the School of Literature, Media, and Communication. These courses may be in other schools of the Ivan Allen College, or in colleges or in interdisciplinary fields of the Institute. Example of a minor concentration in Computer Science:

- CS 6750 - Human Computer Interactions
- CS 6460 - Foundations of Educational Technology
- CS 6470 - Online Communities

5 Elective Courses (15 hours)

- LCC 6213 - Educational Applications of New Media (3 hours)
- LCC 6215 - Issues in Media Studies (3 hours)
- LCC 6314 - Design of Networked Media (3 hours)
- LCC 6315 - Project Production (3 hours)
- LCC 6317 - Interactive Fiction (3 hours)
- LCC 6318 - Experimental Media (3 hours)
- LCC 6319 - Intellectual Property Policy and Law (3 hours)
- LCC 6320 - Globalization and New Media (3 hours)

- LCC 6321 - Architecture of Responsive Spaces (3 hours)
- LCC 6330 - Expressive Virtual Space (3 hours)
- LCC 6650 - Project Studio (repeatable) (3 hours)
- LCC 7999 - Preparation for Qualifying Examination (variable credit)
- LCC 8803 - Special Topics (variable credit)
- LCC 8813 - Advanced Issues in Interactive Narrative (New Course)
- LCC 8823 - Special Topics in Game Design and Analysis (New Course)
- LCC 8910 - Special Problems (variable credit)
- LCC 7999 - Preparation for Qualifying Examination (variable credit)
- LCC 8999 - Preparation of PhD Dissertation (variable credit)

Courses from other units may be substituted with approval of advisor.

PORTFOLIO REVIEW

- Demonstration of programming competency with grounding in foundational principles of software engineering (can be fulfilled with coursework)
- Digital media project design and implementation at level of outstanding Digital Media master's project

COMPREHENSIVE EXAMINATION

- Taken only after passing portfolio review
- Based on list of works drawn from the Comprehensive Exam List (see Appendix), with additions proposed as appropriate by candidates in consultation with their Advisory Committees
- Students must obtain approval of their list by the Graduate Faculty Committee by the end of the semester preceding the semester in which they will be examined.
- Examinations include a four-part written component, given over a two-week period, with a two-hour oral to be given within ten days of the last completed written segment.
- The four parts of the examination (based on the four-part Exam List) are:
    1. Media Theory and Related Theoretical Contexts
    2. Traditional Media Technologies and Forms
    3. Digital Media Technologies and Forms
    4. A specialty of the student's choosing

PHD THESIS AND DEFENSE

After passing the Comprehensive Exam, the student will submit a Thesis Topic Proposal. When the committee chair deems the student is ready, a public oral thesis defense will be scheduled.

FULL-TIME RESIDENCY

The program requires a minimum of two semesters in residence with full-time study.

Note: PhD students who choose to can participate in the established internship program of the MS program, which customarily takes place between the first and second year.

COLLEGE CREDIT FOR HIGH SCHOOL STUDY

Modern Languages will grant 6 to 8 hours of credit in any language taught by the School for high school study in that language, provided the student has two or more years of high school credit in the language in question and has completed six semester hours at the 2000, 3000, or 4000 level with an average grade of C or higher. To have the credit entered on their records, students must submit the Modern Languages Proficiency Credit (Advanced Standing) form by to the School of Modern Languages for its approval, and pay $100 for the credit. No grade is attached to this credit, but the credit can fulfill the humanities requirement for graduation.

Students submitting a score of four or five on the Advanced Placement (AP) Examination in French, German, or Spanish "Language Level III" or "Literature Level III" may receive six hours of credit for courses numbered 2001-2 in the respective language. For the Japanese AP exam, students who receive a score of three can earn three hours of credit for JAPN 2002; a score of four earns six hours of credit for JAPN 2002 and 3001; a score of five earns six hours of credit for JAPN 3001 and 3002. For the Chinese exam, students who receive a score of three can earn three hours of credit for CHIN 2002; a score of four earns six hours of credit for CHIN 2002 and 3003; a score of five earns six hours of credit for CHIN 3003 and 3004. Students who submit language scores of five or above for courses taken at the higher level from a certified high school International Baccalaureate program may also receive credit for courses numbered 2001-2 in French, German, or Spanish, for 3001-2 in Japanese, and for 3003-4 in Chinese. Official scores should be sent to the Registrar's office for processing.

The School will not grant credit for high school study in a foreign language to students who have taken 1000 level courses in that language or the equivalent at Georgia Tech, or at other college-level institutions for which they have received transfer credit.

GRADUATE COURSE OPTION

Under the Graduate Course Option, undergraduate students with a final grade-point average of 3.5 or higher may count six hours of their undergraduate credits toward a master's degree at Georgia Tech in the same field. This means that qualified IAML students could complete the Master of Science in International Affairs with thirty additional hours rather than 36 hours if they chose to further their study in International Affairs; likewise, qualifed GEML students could complete the MS in Economics with thirty additional hours in ECON courses.

HUMANITIES CREDITS

Each course is essentially a unit in itself, but beginning students are encouraged to pursue at least the elementary two-semester sequence (1001 and 1002) in order to achieve a minimum level of proficiency and to receive humanities credit for both courses. Humanities credit is awarded for Modern Languages 1001 classes upon successful completion of the corresponding 1002 classes. Humanities credit is awarded for SPAN 1101 only upon the successful completion of SPAN 1102. In some instances, students may complete a Modern Languages course at 1001 and then be placed at the second-semester level and complete the 2001 level course. Therefore, the sequence that will warrant HUM credit for Modern

Languages courses may be either the 1001-1002 or the 1001-2001 sequence. Students may not enroll in or receive advanced standing for 1000 level courses after the successful completion of any 2000, 3000 or 4000 level course; nor can credit be earned for 2000 level courses after successful completion of any 3000 or 4000 level course. Courses at the 3000 and 4000 level do not have to be taken in chronological order, provided prerequisites are fulfilled.

With minor exceptions, students can fulfill their humanities requirement for graduation by taking courses in the School of Modern Languages, including linguistics courses and courses taught as ML courses (courses in a language not yet included in the General Catalog). Students should consult the Catalog course descriptions and the section of this catalog titled "Humanities and Social Sciences Requirements," in order to determine which courses are classified as humanities in their respective colleges. With the approval of their major schools, students may take any course offered by the School of Modern Languages on a pass/fail basis.

STUDY ABROAD

The School of Modern Languages offers special summer immersion programs in China, Egypt, France, Germany, Japan, Korea, Mexico, and Spain. These intensive programs in Languages for Business and Technology (LBAT) consist of six to eight weeks of study abroad in which classroom lessons in business, culture, and technology are combined with field work, cultural events, excursions, and visits to area businesses — all conducted in the target language. The LBAT experience offers a unique opportunity for rapid growth in proficiency, to build a deeper appreciation for the cultures and lifestyle patterns of other peoples, and to make lifelong social and professional contacts. Students will earn nine to fifteen semester hours (depending on the language program and the options available) at the 3000 level. These credits count toward a certificate, a minor, or the joint majors with International Affairs or Economics. Program costs vary according to the country visited and the length of the program.

STUDY ABROAD AND INTERNSHIPS

In collaboration with the Colleges of Engineering and Computing, the School of Modern Languages has initiated a Study Abroad and International Internship program that incorporates intensive applied language acquisition and cultural study. Students who participate in this program can expect to become versed in a foreign culture, fluent in a second language on professional and social levels, and gain advanced practical experience in their field. This program will prepare students for leadership positions in the global workforce in business, industry, and government.

Modern Languages works with international companies and with the Georgia Tech Division of Professional Practice to establish internships and jobs abroad. Programs generally include one semester of study followed by a six month internship with a global company (some limitations as to language and field of study exist). The LBAT summer immersion course or equivalent is recommended, since students will need to take classes in the language spoken. HOPE scholarships and other financial aid apply. Additional language classes are available abroad. Students retain regular status at Georgia Tech by enrolling in FS 4000 during the semester of study and in INTN 3011, 3015, 3018, and in the Modern Language or Co-op International Internship (ITN 3011 or COOP 3011) during the internship. Students participating in this program are encouraged to contact their academic advisors, the International Division in the Division of Professional Practice, the Office of International Education, and Modern Languages advisors. See www.modlangs.gatech.edu for more information.

SUGGESTED PLACEMENT

Students who have never completed any course for high school or college credit in the language should begin in a 1001 course. Students with previous study in Chinese, French, German, Japanese, Russian, and Spanish should take the placement test found at www.modlangs.gatech.edu in order to determine their optimal beginning placement. Students interested in any of the other languages should consult with a language advisor for beginning placement. See www.modlangs.gatech.edu for more information.

BACHELOR OF SCIENCE IN APPLIED LANGUAGE AND INTERCULTURAL STUDIES

The School of Modern Languages offers a Bachelor of Science degree in Applied Language and Intercultural Studies, with separate language concentrations in Chinese, French, German, Japanese, Russian, and Spanish. The ALIS degree program delivers foreign language study in the many contexts in which other languages are spoken (including social and technical communication, cultural perspectives, industry, arts and literature, media and science) that will provide students with the competitive edge needed to meet 21st century language requirements of the global marketplace. Since this degree couples language and cultural development with studies in another discipline at Georgia Tech, graduates are expected to join the workforce in many different camps: international trade, management, operations and logistics, journalism, advertising and publicity, local and national government, not-for-profit entities, medicine, media, virtual world development, website design, among others. Students in this program take 33 credit hours of advanced language study in the areas of Societies and Cultures, Industry and Technology, Arts and Media, Intercultural Communication and Advanced Language Acquisition. In addition, students must complete a 15 credit hour concentration in an approved cluster or minor program. A total of 12 hours in the language or cluster areas must be completed abroad.

BACHELOR OF SCIENCE IN APPLIED LANGUAGE AND INTERCULTURAL STUDIES INTERNATIONAL PLAN

The degree requirements for the Applied Language and Intercultural Studies (Chinese, French, German, Japanese, Russian, and Spanish) - International Plan (ALIS - IP)are basically the same as for the ALIS degree, except that students are required to spend two terms abroad and then achieve Intermediate High (for Chinese, Japanese, and Russian: Intermediate Low) on the standardized ACTFL testing scale during an oral interview. The costs of the test will be paid for by the School of Modern Languages for each student. The terms abroad must total a minimum of twenty-six weeks; typically these consist of one semester of study plus a significant amount of time spent with a research or work project abroad. Only one summer semester abroad will count in this total. ALIS-IP majors are strongly encouraged to enroll in the Language for Business and Technology (LBAT) intensive summer programs offered by the School of Modern Languages.

In addition to gaining advanced global competence, the International Plan designation will set ALIS majors apart from other applicants with recruiters from top companies and governmental agencies. Other required courses include the following, which can easily be obtained within the regular required curriculum offerings of Modern Languages (these requirements can also be met with courses taken abroad, upon consultation with ALIS degree advisors):

1. One course focused on international relations historically and theoretically, including topics such as the role of state sovereignty and nationalism and non-state actors in the international system; international conflict, peace, security, intervention, and nation-building; international organizations, law, and ethics; and transnational problems of the environment, terrorism, health, and migration; among other issues.
2. One course that provides a historical and theoretical understanding of the global economy, including topics such as international trade, finance, investment, and production; regional economic integration (such as the EU); economic development and

modernization; and questions of natural resource sustainability.

3. <u>One course</u> that provides familiarity with an area of the world or a country that allows them to make systematic comparisons with their own society and culture. A culminating course, occurring either at the end of or after the international experience that integrates knowledge of the discipline and the international experience in a global context. (satisfied by the CHIN/FREN/GRMN/JAPN/RUSS/SPAN 4500 course)

BS IN APPLIED LANGUAGE AND INTERCULTURAL STUDIES - CHINESE 2013 - 2014 DEGREE REQUIREMENTS

REQUIREMENT	REQ HRS	COURSE(S)	NOTES
Wellness	2	HPS 1040 or APPH 1040 or APPH 1050	
Core A - Essential Skills	3	ENGL 1101	
	3	ENGL 1102	
	4	MATH 1501 or MATH 1712	
Core B - Institutional Options	3	CS 1301 or CS 1315 or CS 1371	
Core C - Humanities	6	Modern Languages	a
Core D - Science, Math, & Technology	4	Lab Science	
	4	Lab Science	
	4	MATH 1502 or MATH 1711	
Core E - Social Sciences	3	HIST 2111 or HIST 2112 or INTA 1200 or POL 1101 or PUBP 3000	
	9	Any SS	
Core F - Courses Related to Major	3	Tech Requirement	
	15	Approved Cluster	b
ALIS Major Requirements	3	CHIN 2699 or CHIN 2813 or CHIN 2XXX or CHIN 3021 or CHIN 3022 or CHIN 3691 or CHIN 3693 or CHIN 3813 or CHIN 3XXX or CHIN 4003 or CHIN 4004 or CHIN 4006 or CHIN 4XXX or CHIN 4699 or CHIN 4813 or CHIN 4901 or CHIN 4902	
	3	CHIN 2699 or CHIN 2813 or CHIN 2XXX or CHIN 3692 or CHIN 3693 or CHIN 3XXX or CHIN 4XXX	
	3	CHIN 2699 or CHIN 2813 or CHIN 2XXX or CHIN 3021 or CHIN 3022 or CHIN 3813 or CHIN 3XXX or CHIN 4003 or CHIN 4004 or CHIN 4XXX or CHIN 4699 or CHIN 4813 or CHIN 4901 or CHIN 4902	
	6	CHIN 2699 or CHIN 2813 or CHIN 2XXX or CHIN 3003 or CHIN 3004 or CHIN 3021 or CHIN 3022 or CHIN 3691 or CHIN 3692 or CHIN 3693 or CHIN 3813 or CHIN 3XXX or CHIN 4003 or CHIN 4004 or CHIN 4006 or CHIN 4XXX or CHIN 4699 or CHIN 4813 or CHIN 4901 or CHIN 4902	
	3	CHIN 4500	
	15	ML Electives	
Free Electives	26	Free Electives	
TOTAL:	122		

NOTES

a = CHIN 1001, 1002, 2001, or 2002; any excess credit apply to Free Electives.

b = Designed for coursework toward certificates, minors, additional degrees, or study-abroad programs. Please consult with advisor on course selection.

BS IN APPLIED LANGUAGE AND INTERCULTURAL STUDIES - FRENCH 2013 - 2014 DEGREE REQUIREMENTS

REQUIREMENT	REQ HRS	COURSE(S)	NOTES
Wellness	2	HPS 1040 or APPH 1040 or APPH 1050	
Core A - Essential Skills	3	ENGL 1101	
	3	ENGL 1102	
	4	MATH 1501 or MATH 1712	
Core B - Institutional Options	3	CS 1301 or CS 1315 or CS 1371	
Core C - Humanities	6	Modern Languages	a
Core D - Science, Math, & Technology	4	Lab Science	
	4	Lab Science	
	4	MATH 1502 or MATH 1711	
Core E - Social Sciences	3	HIST 2111 or HIST 2112 or INTA 1200 or POL 1101 or PUBP 3000	
	9	Any SS	
Core F - Courses Related to Major	3	Tech Requirement	
	15	Approved Cluster	b
ALIS Major Requirements	3	FREN 3011 or FREN 3061 or FREN 3062 or FREN 3691 or FREN 3692 or FREN 3693 or FREN 3694 or FREN 3813 or FREN 3XXX or FREN 4001 or FREN 4061 or FREN 4062 or FREN 4101 or FREN 4102 or FREN 4241 or FREN 4242 or FREN 4699 or FREN 4901 or FREN 4902 or FREN 4XXX	
	3	FREN 3011 or FREN 3061 or FREN 3062 or FREN 3691 or FREN 3692 or FREN 3693 or FREN 3694 or FREN 3813 or FREN 3XXX or FREN 4061 or FREN 4062 or FREN 4699 or FREN 4901 or FREN 4902 or FREN 4XXX	
	3	FREN 3011 or FREN 3813 or FREN 3XXX or FREN 4001 or FREN 4101 or FREN 4102 or FREN 4241 or FREN 4242 or FREN 4699 or FREN 4901 or FREN 4902 or FREN 4XXX	
	6	FREN 3030 or FREN 3121 or FREN 3813 or FREN 3XXX or FREN 4699 or FREN 4901 or FREN 4902 or FREN 4XXX	
	3	FREN 4500	
	15	ML Electives	
Free Electives	26	Free Electives	
TOTAL:	122		

NOTES

a = FREN 1001, 1002, 2001, or 2002

b = Designed for coursework toward certificates, minors, additional degrees, or study-abroad programs. Please consult with advisor on course selection.

BS IN APPLIED LANGUAGE AND INTERCULTURAL STUDIES - GERMAN 2013 - 2014 DEGREE REQUIREMENTS

REQUIREMENT	REQ HRS	COURSE(S)	NOTES
Wellness	2	HPS 1040 or APPH 1040 or APPH 1050	
Core A - Essential Skills	3	ENGL 1101	
	3	ENGL 1102	
	4	MATH 1501 or MATH 1712	
Core B - Institutional Options	3	CS 1301 or CS 1315 or CS 1371	
Core C - Humanities	6	Modern Languages	a
Core D - Science, Math, & Technology	4	Lab Science	
	4	Lab Science	
	4	MATH 1502 or MATH 1711	
Core E - Social Sciences	3	HIST 2111 or HIST 2112 or INTA 1200 or POL 1101 or PUBP 3000	
	9	Any SS	
Core F - Courses Related to Major	3	Tech Requirement	
	15	Approved Cluster	b
ALIS Major Requirements	3	GRMN 3010 or GRMN 3696 or GRMN 3697 or GRMN 3XXX or GRMN 3813 or GRMN 3901 or GRMN 4XXX or GRMN 4012 or GRMN 4023 or GRMN 4024 or GRMN 4025 or GRMN 4026 or GRMN 4065 or GRMN 4813 or GRMN 4699 or GRMN 4901 or GRMN 4902	
	3	GRMN 3XXX or GRMN 3071 or GRMN 3695 or GRMN 3813 or GRMN 3901 or GRMN 4XXX or GRMN 4061 or GRMN 4699 or GRMN 4813 or GRMN 4901 or GRMN 4902	
	3	GRMN 3010 or GRMN 3011 or GRMN 3XXX or GRMN 3695 or GRMN 3813 or GRMN 3901 or GRMN 4XXX or GRMN 4010 or GRMN 4023 or GRMN 4024 or GRMN 4025 or GRMN 4026 or GRMN 4699 or GRMN 4813 or GRMN 4901 or GRMN 4902	
	6	GRMN 3024 or GRMN 3697 or GRMN 3XXX or GRMN 3813 or GRMN 3901 or GRMN 4XXX or GRMN 4699 or GRMN 4813 or GRMN 4901 or GRMN 4902	
	3	GRMN 4500	
	15	ML Electives	
Free Electives	26	Free Electives	
TOTAL:	122		

NOTES

a = GRMN 1001, 1002, 2001, or 2002

b = Designed for coursework toward certificates, minors, additional degrees, or study-abroad programs. Please consult with advisor on course selection.

BS IN APPLIED LANGUAGE AND INTERCULTURAL STUDIES - JAPANESE 2013 - 2014 DEGREE REQUIREMENTS

REQUIREMENT	REQ HRS	COURSE(S)	NOTES
Wellness	2	HPS 1040 or APPH 1040 or APPH 1050	
Core A - Essential Skills	3	ENGL 1101	
	3	ENGL 1102	
	4	MATH 1501 or MATH 1712	
Core B - Institutional Options	3	CS 1301 or CS 1315 or CS 1371	
Core C - Humanities	6	Modern Languages	a
Core D - Science, Math, & Technology	4	Lab Science	
	4	Lab Science	
	4	MATH 1502 or MATH 1711	
Core E - Social Sciences	3	HIST 2111 or HIST 2112 or INTA 1200 or POL 1101 or PUBP 3000	
	9	Any SS	
Core F - Courses Related to Major	3	Tech Requirement	
	15	Approved Cluster	b
ALIS Major Requirements	3	JAPN 2813 or JAPN 2XXX or JAPN 3692 or JAPN 3693 or JAPN 3813 or JAPN 3XXX or JAPN 4123 or JAPN 4163 or JAPN 4743 or JAPN 4750 or JAPN 4XXX	
	3	JAPN 2813 or JAPN 2XXX or JAPN 3061 or JAPN 3062 or JAPN 3691 or JAPN 3813 or JAPN 3XXX or JAPN 4123 or JAPN 4XXX	
	3	JAPN 2813 or JAPN 2XXX or JAPN 3813 or JAPN 3XXX or JAPN 4123 or JAPN 4743 or JAPN 4XXX	
	6	JAPN 2813 or JAPN 2XXX or JAPN 3001 or JAPN 3061 or JAPN 3691 or JAPN 3692 or JAPN 3693 or JAPN 3813 or JAPN 3XXX or JAPN 4113 or JAPN 4163 or JAPN 4750 or JAPN 4XXX	
	3	JAPN 4500	
	15	ML Electives	
Free Electives	26	Free Electives	
TOTAL:	122		

NOTES

a = JAPN 1001, 1002, 2001, or 2002; any excess credit apply to Free Electives.

b = Designed for coursework toward certificates, minors, additional degrees, or study-abroad programs. Please consult with advisor on course selection.

BS IN APPLIED LANGUAGE AND INTERCULTURAL STUDIES - RUSSIAN 2013 - 2014 DEGREE REQUIREMENTS

REQUIREMENT	REQ HRS	COURSE(S)	NOTES
Wellness	2	HPS 1040 or APPH 1040 or APPH 1050	
Core A - Essential Skills	3	ENGL 1101	
	3	ENGL 1102	
	4	MATH 1501 or MATH 1712	
Core B - Institutional Options	3	CS 1301 or CS 1315 or CS 1371	
Core C - Humanities	6	Modern Languages	a
Core D - Science, Math, & Technology	4	Lab Science	
	4	Lab Science	
	4	MATH 1502 or MATH 1711	
Core E - Social Sciences	3	HIST 2111 or HIST 2112 or INTA 1200 or POL 1101 or PUBP 3000	
	9	Any SS	
Core F - Courses Related to Major	3	Tech Requirement	
	15	Approved Cluster	b
ALIS Major Requirements	3	RUSS 3695 or RUSS 4360	
	3	RUSS 3692 or RUSS 4340 or RUSS 4695	
	3	RUSS 3222 or RUSS 4360	
	6	RUSS 3001 or RUSS 3002 or RUSS 3691 or RUSS 3692 or RUSS 4340 or RUSS 4360 or RUSS 4695	
	3	RUSS 4500	
	15	ML Electives	d
Free Electives	26	Free Electives	
TOTAL:	122		

NOTES

a = RUSS 1001, 1002, 2001, or 2002; any excess credit apply to Free Electives.

b = Designed for coursework toward certificates, minors, additional degrees, or study-abroad programs. Please consult with advisor on course selection.

d =Any RUSS course 3000- or 4000-level.

SCHOOL OF MODERN LANGUAGES

About the School
Undergraduate
Undergraduate Information
BS Applied Language & Intercultural Studies
Description
Degree Requirements
Chinese
French
German
Japanese
Russian
Spanish
BS INTA & Modern Language
Description
Degree Requirements
Chinese
French
German
Japanese
Russian
Spanish
BS Global Economics & ML
Description
Degree Requirements
Chinese
French
German
Japanese
Russian
Spanish
Minor Programs
Certificate Programs
Ivan Allen College

BS IN APPLIED LANGUAGE AND INTERCULTURAL STUDIES - SPANISH 2013 - 2014 DEGREE REQUIREMENTS

REQUIREMENT	REQ HRS	COURSE(S)	NOTES
Wellness	2	HPS 1040 or APPH 1040 or APPH 1050	
Core A - Essential Skills	3	ENGL 1101	
	3	ENGL 1102	
	4	MATH 1501 or MATH 1712	
Core B - Institutional Options	3	CS 1301 or CS 1315 or CS 1371	
Core C - Humanities	6	Modern Languages	a
Core D - Science, Math, & Technology	4	Lab Science	
	4	Lab Science	
	4	MATH 1502 or MATH 1711	
Core E - Social Sciences	3	HIST 2111 or HIST 2112 or INTA 1200 or POL 1101 or PUBP 3000	
	9	Any SS	
Core F - Courses Related to Major	3	Tech Requirement	
	15	Approved Cluster	b
ALIS Major Requirements	3	SPAN 2690 or SPAN 3050 or SPAN 3101 or SPAN 3102 or SPAN 3122 or SPAN 3211 or SPAN 3235 or SPAN 3241 or SPAN 3242 or SPAN 3260 or SPAN 3690 or SPAN 3691 or SPAN 3692 or SPAN 3694 or SPAN 3XXX or SPAN 4101 or SPAN 4150 or SPAN 4160 or SPAN 4165 or SPAN 4235 or SPAN 4236 or SPAN 4242 or SPAN 4699 or SPAN 4813 or SPAN 4901 or SPAN 4902 or SPAN 4XXX	
	3	SPAN 3061 or SPAN 3062 or SPAN 3690 or SPAN 3691 or SPAN 3692 or SPAN 3693 or SPAN 3694 or SPAN 3XXX or SPAN 4061 or SPAN 4062 or SPAN 4699 or SPAN 4813 or SPAN 4901 or SPAN 4902 or SPAN 4XXX	
	3	SPAN 3050 or SPAN 3122 or SPAN 3211 or SPAN 3235 or SPAN 3241 or SPAN 3242 or SPAN 3XXX or SPAN 4101 or SPAN 4165 or SPAN 4235 or SPAN 4236 or SPAN 4242 or SPAN 4699 or SPAN 4813 or SPAN 4901 or SPAN 4902 or SPAN 4XXX	
	6	SPAN 3XXX or SPAN 4699 or SPAN 4813 or SPAN 4901 or SPAN 4902 or SPAN 4XXX	
	3	SPAN 4500	
	15	ML Electives	
Free Electives	26	Free Electives	
TOTAL:	122		

NOTES

a = SPAN 1101, SPAN 1102, SPAN 2001 or SPAN 2002

b = Designed for coursework toward certificates, minors, additional degrees, or study-abroad programs. Please consult with advisor on course selection.

BACHELOR OF SCIENCE IN INTERNATIONAL AFFAIRS AND MODERN LANGUAGE

In partnership with the Sam Nunn School of International Affairs, the School of Modern Languages offers a joint Bachelor of Science in International Affairs and Modern Language (IAML) with separate concentrations in Chinese, French, German, Japanese, Russian, and Spanish. Students in this program take the same required core courses as for the Bachelor of Science in International Affairs, but also receive intensive foreign language training and learn the fundamentals of dealing with foreign cultures and societies. IAML students learn how to formulate the policy decisions that must be made in an increasingly multlingual and multicultural global forum. Our graduates are prepared for advanced graduate and professional study and are ready for employment in a large arena of globally oriented businesses, government agencies, as well as social service and not-for-profit organizations.

BACHELOR OF SCIENCE IN INTERNATIONAL AFFAIRS AND MODERN LANGUAGE INTERNATIONAL PLAN

The degree requirements for the International Affairs and Modern Language (Chinese, French, German, Japanese, Russian, and Spanish) - International Plan (IAML - IP) are basically the same as for the IAML degree, except that students are required to spend two terms abroad and then achieve Intermediate High (for Chinese, Japanese, Russian: Intermediate Low) on the standardized ACTFL testing scale during an oral interview. The costs of the test will be paid for by the School of Modern Languages for each student. The terms abroad must total a minimum of twenty-six weeks; typically these consist of one semester of study plus a significant amount of time spent with a research or work project abroad. Only one summer semester abroad will count in this total. IAML-IP majors are strongly encouraged to enroll in the Language for Business and Technology (LBAT) intensive summer programs offered by the School of Modern Languages.

In addition to gaining advanced global competence, the International Plan designation will set IAML majors apart from other applicants with recruiters from top companies and governmental agencies. Other required courses include the following, which can easily be obtained within the regular required curriculum offerings of INTA and Modern Languages (these requirements can also be met with courses taken abroad, upon consultation with IAML degree advisors):

1. One course focused on international relations historically and theoretically, including topics such as the role of state sovereignty and nationalism and non-state actors in the international system; international conflict, peace, security, intervention, and nation-building; international organizations, law, and ethics; and transnational problems of the environment, terrorism, health, and migration; among other issues. (satisfied by INTA 1110)
2. One course that provides a historical and theoretical understanding of the global economy, including topics such as international trade, finance, investment, and production; regional economic integration (such as the EU); economic development and modernization; and questions of natural resource sustainability. (satisfied by INTA 3301)
3. One course that provides familiarity with an area of the world or a country that allows them to make systematic comparisons with their own society and culture. (satisfied by INTA 3203 or approved INTA elective or upper-division Modern Language courses)

4. A culminating course, occurring either at the end of or after the international experience that integrates knowledge of the discipline and the international experience in a global context. (satisfied by INTA 4500 and CHIN/FREN/GRMN/JAPN/RUSS/SPAN 4500)

REQUIREMENT	REQ HRS	COURSE(S)	NOTES
Wellness	2	HPS 1040 or APPH 1040 or APPH 1050	
Core A - Essential Skills	3	ENGL 1101	
	3	ENGL 1102	
	4	MATH 1501 or MATH 1712	
Core B - Institutional Options	3	CS 1315	
Core C - Humanities	6	Modern Languages	b,c
Core D - Science, Math, & Technology	4	Lab Science	
	4	Lab Science	
	4	MATH 1502 or MATH 1711	
Core E - Social Sciences	3	HIST 2111 or HIST 2112 or INTA 1200 or POL 1101 or PUBP 3000	
	3	ECON 2100 or ECON 2101 or ECON 2105 or ECON 2106	
	3	HTS 1031 or HTS 2036 or HTS 2037 or HTS 2041 or HTS 2061 or HTS 2062 or HTS 2823 or HTS 3028 or HTS 3029 or HTS 3030 or HTS 3033 or HTS 3035 or HTS 3036 or HTS 3038 or HTS 3039 or HTS 3041 or HTS 3043 or HTS 3045 or HTS 3061 or HTS 3062 or HTS 3063 or HTS 3069	
	3	INTA 1000/2000 level Social Science	a
Core F - Courses Related to Major	3	INTA 1110	c
	3	INTA 2010	c
	3	INTA 2040	c
	9	INTA 1000- or 2000-level Electives	c
Major Requirements	1	INTA 2001	
	3	INTA 3110	c
	3	INTA 3203	c
	3	INTA 3301	c
	3	INTA 4500	c
	12	INTA 3000- or 4000-level Electives	c
Capstone Requirement	3	CHIN 4500	c
Modern Language	15	Modern Languages	b, c
Non-INTA Requirements	3	AE 1770 or ARCH 4420 or BC 3630 or BMED 2400 or CEE 1770 or CHBE 2120 or CP 4510 or CS 1301 or CS 1315 or CS 1316 or CS 1331 or CS 1332 or CS 4235 or EAS 4430 or EAS 4610 or ECE 2030 or ID 3103 or ID 4103 or LCC 3402 or LCC 3404 or LCC 3410 or ME 1770 or ME 2016 or MGT 2200 or MGT 4051 or MGT 4052 or MGT 4058 or MGT 4661 or MUSI 4630 or PHYS 3266	
Free Electives	13	Free Electives	d
TOTAL:	122		

Non-credit requirement

With the goal of enhanced educational and career prospects and in accordance with the pedagogical objectives of the degree in International Affairs and Modern Languages, all IAML students are required to fulfill an International Experience as part of their graduation requirements. This requirement can be met through one of two ways:

- Complete a minimum 6-week overseas experience. If this is not a country whose primary language is in the student's language of study, the student must justify and receive prior approval.
- Complete a 15-week internship or similar experience of at least 10 hours per week at an international organization such as consulate, CNN International, etc. The internship must be approved in advance.

NOTES

a = Students must complete a Social Science course with INTA prefix. Consult approved Social Sciences here: http://www.catalog.gatech.edu/students/ugrad/core/coree.php

b = Students must complete 21 hours of CHIN electives from 2002, 3000- or 4000-level courses. Six hours are counted in Humanities, and 15 in Modern Languages Electives.

c = C-minimum required.

d = CHIN courses below 2002 may count toward the free elective courses.

SCHOOL OF MODERN LANGUAGES
About the School
Undergraduate
Undergraduate Information
BS Applied Language & Intercultural Studies
Description
Degree Requirements
Chinese
French
German
Japanese
Russian
Spanish
BS INTA & Modern Language
Description
Degree Requirements
Chinese
French
German
Japanese
Russian
Spanish
BS Global Economics & ML
Description
Degree Requirements
Chinese
French
German
Japanese
Russian
Spanish
Minor Programs
Certificate Programs
Ivan Allen College

REQUIREMENT	REQ HRS	COURSE(S)	NOTES
Wellness	2	HPS 1040 or APPH 1040 or APPH 1050	
Core A - Essential Skills	3	ENGL 1101	
	3	ENGL 1102	
	4	MATH 1501 or MATH 1712	
Core B - Institutional Options	3	CS 1315	
Core C - Humanities	6	Modern Languages	b,c
Core D - Science, Math, & Technology	4	Lab Science	
	4	Lab Science	
	4	MATH 1502 or MATH 1711	
Core E - Social Sciences	3	HIST 2111 or HIST 2112 or INTA 1200 or POL 1101 or PUBP 3000	
	3	ECON 2100 or ECON 2101 or ECON 2105 or ECON 2106	
	3	HTS 1031 or HTS 2036 or HTS 2037 or HTS 2041 or HTS 2061 or HTS 2062 or HTS 2823 or HTS 3028 or HTS 3029 or HTS 3030 or HTS 3033 or HTS 3035 or HTS 3036 or HTS 3038 or HTS 3039 or HTS 3041 or HTS 3043 or HTS 3045 or HTS 3061 or HTS 3062 or HTS 3063 or HTS 3069	
	3	INTA Social Science	a
Core F - Courses Related to Major	3	INTA 1110	c
	3	INTA 2010	c
	3	INTA 2040	c
	9	INTA 1000- or 2000-level Electives	c
Major Requirements	1	INTA 2001	
	3	INTA 3110	c
	3	INTA 3203	c
	3	INTA 3301	c
	3	INTA 4500	c
	12	INTA 3000- or 4000-level Electives	c
Modern Language	3	FREN 4500	c
	15	Modern Languages	b,c
Non-INTA Requirements	3	AE 1770 or ARCH 4420 or BC 3630 or BMED 2400 or CEE 1770 or CHBE 2120 or CP 4510 or CS 1301 or CS 1315 or CS 1316 or CS 1331 or CS 1332 or CS 4235 or EAS 4430 or EAS 4610 or ECE 2030 or ID 3103 or ID 4103 or LCC 3402 or LCC 3404 or LCC 3410 or ME 1770 or ME 2016 or MGT 2200 or MGT 4051 or MGT 4052 or MGT 4058 or MGT 4661 or MUSI 4630 or PHYS 3266	
Free Electives	13	Free Electives	d
TOTAL:	122		

Note: Non-credit requirement With the goal of enhanced educational and career prospects and in accordance with the pedagogical objectives of the degree in International Affairs and Modern

Languages, all IAML students are required to fulfill an International Experience as part of their graduation requirements. This requirement can be met through one of two ways:

1. Complete a minimum 6-week overseas experience. If this is not a country whose primary language is in the student's language of study, the student must justify and receive prior approval.
2. Complete a 15-week internship or similar experience of at least 10 hours per week at an international organization such as consulate, CNN International, etc. The internship must be approved in advance.

NOTES

a = Students must complete a Social Science course with INTA prefix. Consult approved Social Sciences here: http://www.catalog.gatech.edu/students/ugrad/core/coree.php

b = Students must complete 21 hours of FREN electives from 3000- or 4000-level courses. Six hours are counted in Humanities, and 15 in Modern Languages Electives.

c = C-minimum required.

d = FREN courses below 3000 may count toward the free elective courses.

REQUIREMENT	REQ HRS	COURSE(S)	NOTES
Wellness	2	HPS 1040 or APPH 1040 or APPH 1050	
Core A - Essential Skills	3	ENGL 1101	
	3	ENGL 1102	
	4	MATH 1501 or MATH 1712	
Core B - Institutional Options	3	CS 1315	
Core C - Humanities	6	Modern Languages	b,c
Core D - Science, Math, & Technology	4	Lab Science	
	4	Lab Science	
	4	MATH 1502 or MATH 1711	
Core E - Social Sciences	3	HIST 2111 or HIST 2112 or INTA 1200 or POL 1101 or PUBP 3000	
	3	ECON 2100 or ECON 2101 or ECON 2105 or ECON 2106	
	3	HTS 1031 or HTS 2036 or HTS 2037 or HTS 2041 or HTS 2061 or HTS 2062 or HTS 2823 or HTS 3028 or HTS 3029 or HTS 3030 or HTS 3033 or HTS 3035 or HTS 3036 or HTS 3038 or HTS 3039 or HTS 3041 or HTS 3043 or HTS 3045 or HTS 3061 or HTS 3062 or HTS 3063 or HTS 3069	
	3	INTA Social Science	a
Core F - Courses Related to Major	3	INTA 1110	c
	3	INTA 2010	c
	3	INTA 2040	c
	9	INTA 1000- or 2000-level Electives	c
Major Requirements	1	INTA 2001	
	3	INTA 3110	c
	3	INTA 3203	c
	3	INTA 3301	c
	3	INTA 4500	c
	12	INTA 3000- or 4000-level Electives	c
Modern Language	3	GRMN 4500	c
	15	Modern Languages	b,c
Non-INTA Requirements	3	AE 1770 or ARCH 4420 or BC 3630 or BMED 2400 or CEE 1770 or CHBE 2120 or CP 4510 or CS 1301 or CS 1315 or CS 1316 or CS 1331 or CS 1332 or CS 4235 or EAS 4430 or EAS 4610 or ECE 2030 or ID 3103 or ID 4103 or LCC 3402 or LCC 3404 or LCC 3410 or ME 1770 or ME 2016 or MGT 2200 or MGT 4051 or MGT 4052 or MGT 4058 or MGT 4661 or MUSI 4630 or PHYS 3266	
Free Electives	13	Free Electives	d
TOTAL:	122		

Note: Non-credit requirement With the goal of enhanced educational and career prospects and in accordance with the pedagogical objectives of the degree in International Affairs and Modern Languages, all IAML students are required to fulfill an International Experience as part of their

graduation requirements. This requirement can be met through one of two ways:

1. Complete a minimum 6-week overseas experience. If this is not a country whose primary language is in the student's language of study, the student must justify and receive prior approval.
2. Complete a 15-week internship or similar experience of at least 10 hours per week at an international organization such as consulate, CNN International, etc. The internship must be approved in advance.

NOTES

a = Students must complete a Social Science course with INTA prefix. Consult approved Social Sciences here: http://www.catalog.gatech.edu/students/ugrad/core/coree.php

b = Students must complete 21 hours of GRMN electives from 3000- or 4000-level courses. Six hours are counted in Humanities, and 15 in Modern Languages Electives.

c = C-minimum required.

d = GRMN courses below 3000 may count toward the free elective courses.

REQUIREMENT	REQ HRS	COURSE(S)	NOTES
Wellness	2	HPS 1040 or APPH 1040 or APPH 1050	
Core A - Essential Skills	3	ENGL 1101	
	3	ENGL 1102	
	4	MATH 1501 or MATH 1712	
Core B - Institutional Options	3	CS 1315	
Core C - Humanities	6	Modern Languages	b,c
Core D - Science, Math, & Technology	4	Lab Science	
	4	Lab Science	
	4	MATH 1502 or MATH 1711	
Core E - Social Sciences	3	HIST 2111 or HIST 2112 or INTA 1200 or POL 1101 or PUBP 3000	
	3	ECON 2100 or ECON 2101 or ECON 2105 or ECON 2106	
	3	HTS 1031 or HTS 2036 or HTS 2037 or HTS 2041 or HTS 2061 or HTS 2062 or HTS 2823 or HTS 3028 or HTS 3029 or HTS 3030 or HTS 3033 or HTS 3035 or HTS 3036 or HTS 3038 or HTS 3039 or HTS 3041 or HTS 3043 or HTS 3045 or HTS 3061 or HTS 3062 or HTS 3063 or HTS 3069	
	3	INTA Social Science	a
Core F - Courses Related to Major	3	INTA 1110	c
	3	INTA 2010	c
	3	INTA 2040	c
	9	INTA 1000- or 2000-level Electives	c
Major Requirements	1	INTA 2001	
	3	INTA 3110	c
	3	INTA 3203	c
	3	INTA 3301	c
	3	INTA 4500	c
	12	INTA 3000- or 4000-level Electives	c
Modern Language	3	JAPN 4500	c
	15	Modern Languages	b, c
Non-INTA Requirements	3	AE 1770 or ARCH 4420 or BC 3630 or BMED 2400 or CEE 1770 or CHBE 2120 or CP 4510 or CS 1301 or CS 1315 or CS 1316 or CS 1331 or CS 1332 or CS 4235 or EAS 4430 or EAS 4610 or ECE 2030 or ID 3103 or ID 4103 or LCC 3402 or LCC 3404 or LCC 3410 or ME 1770 or ME 2016 or MGT 2200 or MGT 4051 or MGT 4052 or MGT 4058 or MGT 4661 or MUSI 4630 or PHYS 3266	
Free Electives	13	Free Electives	d
TOTAL:	122		

Note: Non-credit requirement With the goal of enhanced educational and career prospects and in accordance with the pedagogical objectives of the degree in International Affairs and Modern Languages, all IAML students are required to fulfill an International Experience as part of their

graduation requirements. This requirement can be met through one of two ways:

1. Complete a minimum 6-week overseas experience. If this is not a country whose primary language is in the student's language of study, the student must justify and receive prior approval.
2. Complete a 15-week internship or similar experience of at least 10 hours per week at an international organization such as consulate, CNN International, etc. The internship must be approved in advance.

NOTES

a = Students must complete a Social Science course with INTA prefix. Consult approved Social Sciences here: http://www.catalog.gatech.edu/students/ugrad/core/coree.php

b = Students must complete 21 hours of JAPN electives from 2002, 3000- or 4000-level courses. Six hours are counted in Humanities, and 15 in Modern Languages Electives.

c = C-minimum required.

d = JAPN courses below 2002 may count toward the free elective courses.

SCHOOL OF MODERN LANGUAGES

About the School
Undergraduate
Undergraduate Information
BS Applied Language & Intercultural Studies
Description
Degree Requirements
Chinese
French
German
Japanese
Russian
Spanish
BS INTA & Modern Language
Description
Degree Requirements
Chinese
French
German
Japanese
Russian
Spanish
BS Global Economics & ML
Description
Degree Requirements
Chinese
French
German
Japanese
Russian
Spanish
Minor Programs
Certificate Programs
Ivan Allen College

REQUIREMENT	REQ HRS	COURSE(S)	NOTES
Wellness	2	HPS 1040 or APPH 1040 or APPH 1050	
Core A - Essential Skills	3	ENGL 1101	
	3	ENGL 1102	
	4	MATH 1501 or MATH 1712	
Core B - Institutional Options	3	CS 1315	
Core C - Humanities	6	Modern Languages	b,c
Core D - Science, Math, & Technology	4	Lab Science	
	4	Lab Science	
	4	MATH 1502 or MATH 1711	
Core E - Social Sciences	3	HIST 2111 or HIST 2112 or INTA 1200 or POL 1101 or PUBP 3000	
	3	ECON 2100 or ECON 2101 or ECON 2105 or ECON 2106	
	3	HTS 1031 or HTS 2036 or HTS 2037 or HTS 2041 or HTS 2061 or HTS 2062 or HTS 2823 or HTS 3028 or HTS 3029 or HTS 3030 or HTS 3033 or HTS 3035 or HTS 3036 or HTS 3038 or HTS 3039 or HTS 3041 or HTS 3043 or HTS 3045 or HTS 3061 or HTS 3062 or HTS 3063 or HTS 3069	
	3	INTA Social Science	a
Core F - Courses Related to Major	3	INTA 1110	c
	3	INTA 2010	c
	3	INTA 2040	c
	9	INTA 1000- or 2000-level Electives	c
Major Requirements	1	INTA 2001	
	3	INTA 3110	c
	3	INTA 3203	c
	3	INTA 3301	c
	3	INTA 4500	c
	12	INTA 3000- or 4000-level Electives	c
Modern Language	3	RUSS 4500	c
	15	Modern Languages	b, c
Non-INTA Requirements	3	AE 1770 or ARCH 4420 or BC 3630 or BMED 2400 or CEE 1770 or CHBE 2120 or CP 4510 or CS 1301 or CS 1315 or CS 1316 or CS 1331 or CS 1332 or CS 4235 or EAS 4430 or EAS 4610 or ECE 2030 or ID 3103 or ID 4103 or LCC 3402 or LCC 3404 or LCC 3410 or ME 1770 or ME 2016 or MGT 2200 or MGT 4051 or MGT 4052 or MGT 4058 or MGT 4661 or MUSI 4630 or PHYS 3266	
Free Electives	13	Free Electives	d
TOTAL:	122		

Note: Non-credit requirement With the goal of enhanced educational and career prospects and in accordance with the pedagogical objectives of the degree in International Affairs and Modern Languages, all IAML students are required to fulfill an International Experience as part of their

graduation requirements. This requirement can be met through one of two ways:

1. Complete a minimum 6-week overseas experience. If this is not a country whose primary language is in the student's language of study, the student must justify and receive prior approval.
2. Complete a 15-week internship or similar experience of at least 10 hours per week at an international organization such as consulate, CNN International, etc. The internship must be approved in advance.

NOTES

a = Students must complete a Social Science course with INTA prefix. Consult approved Social Sciences here: http://www.catalog.gatech.edu/students/ugrad/core/coree.php

b = Students must complete 21 hours of RUSS electives from 2002, 3000- or 4000-level courses. Six hours are counted in Humanities, and 15 in Modern Languages Electives.

c = C-minimum required.

d = RUSS courses below 2002 may count toward the free elective courses.

SCHOOL OF MODERN LANGUAGES

About the School
Undergraduate
Undergraduate Information
BS Applied Language & Intercultural Studies
Description
Degree Requirements
Chinese
French
German
Japanese
Russian
Spanish
BS INTA & Modern Language
Description
Degree Requirements
Chinese
French
German
Japanese
Russian
Spanish
BS Global Economics & ML
Description
Degree Requirements
Chinese
French
German
Japanese
Russian
Spanish
Minor Programs
Certificate Programs
Ivan Allen College

REQUIREMENT	REQ HRS	COURSE(S)	NOTES
Wellness	2	HPS 1040 or APPH 1040 or APPH 1050	
Core A - Essential Skills	3	ENGL 1101	
	3	ENGL 1102	
	4	MATH 1501 or MATH 1712	
Core B - Institutional Options	3	CS 1315	
Core C - Humanities	6	Modern Languages	b,c
Core D - Science, Math, & Technology	4	Lab Science	
	4	Lab Science	
	4	MATH 1502 or MATH 1711	
Core E - Social Sciences	3	HIST 2111 or HIST 2112 or INTA 1200 or POL 1101 or PUBP 3000	
	3	ECON 2100 or ECON 2101 or ECON 2105 or ECON 2106	
	3	HTS 1031 or HTS 2036 or HTS 2037 or HTS 2041 or HTS 2061 or HTS 2062 or HTS 2823 or HTS 3028 or HTS 3029 or HTS 3030 or HTS 3033 or HTS 3035 or HTS 3036 or HTS 3038 or HTS 3039 or HTS 3041 or HTS 3043 or HTS 3045 or HTS 3061 or HTS 3062 or HTS 3063 or HTS 3069	
	3	INTA 1000/2000 level Social Science	a
Core F - Courses Related to Major	3	INTA 1110	c
	3	INTA 2010	c
	3	INTA 2040	c
	9	INTA 1000- or 2000-level Electives	c
Major Requirements	1	INTA 2001	
	3	INTA 3110	c
	3	INTA 3203	c
	3	INTA 3301	c
	3	INTA 4500	c
	12	INTA 3000- or 4000-level Electives	c
Capstone Requirement	3	SPAN 4500	c
Modern Language	15	Modern Languages	b,c
Non-INTA Requirements	3	AE 1770 or ARCH 4420 or BC 3630 or BMED 2400 or CEE 1770 or CHBE 2120 or CP 4510 or CS 1301 or CS 1315 or CS 1316 or CS 1331 or CS 1332 or CS 4235 or EAS 4430 or EAS 4610 or ECE 2030 or ID 3103 or ID 4103 or LCC 3402 or LCC 3404 or LCC 3410 or ME 1770 or ME 2016 or MGT 2200 or MGT 4051 or MGT 4052 or MGT 4058 or MGT 4661 or MUSI 4630 or PHYS 3266	
Free Electives	13	Free Electives	d
TOTAL:	122		

Note: Non-credit requirement With the goal of enhanced educational and career prospects and in accordance with the pedagogical objectives of the degree in International Affairs and Modern Languages, all IAML students are required to fulfill an International Experience as part of their

graduation requirements. This requirement can be met through one of two ways:

1. Complete a minimum 6-week overseas experience. If this is not a country whose primary language is in the student's language of study, the student must justify and receive prior approval.
2. Complete a 15-week internship or similar experience of at least 10 hours per week at an international organization such as consulate, CNN International, etc. The internship must be approved in advance.

NOTES

a = Students must complete a Social Science course with INTA prefix. Consult approved Social Sciences here: http://www.catalog.gatech.edu/students/ugrad/core/coree.php

b = Students must complete 21 hours of SPAN electives from 3000- or 4000-level courses. Six hours are counted in Humanities, and 15 in Modern Languages Electives.

c = C-minimum required.

d = SPAN courses below 3000 may count toward the free elective courses.

BACHELOR OF SCIENCE IN GLOBAL ECONOMICS AND MODERN LANGUAGES

The School of Modern Languages and the School of Economics offer a joint Bachelor of Science degree in Global Economics and Modern Languages, with separate language concentrations in Chinese, French, German, Japanese, Russian, and Spanish. The degree will serve the requirements of industry and government agencies with graduates capable of understanding the global, economically interdependent, multilingual, and multicultural environments in which we exist, and who have in-depth knowledge of not just their own cultures, but also the capacity to function effectively in a second culture. Students in this program take the same required core courses as for the Bachelor of Science in Economics, but also receive intensive foreign language training and learn the fundamentals of dealing with foreign cultures and societies. Students must earn twenty-four credit hours of language electives in a single language (Chinese, French, German, Japanese, Russian, or Spanish) and beyond the level of the 2002 course (beyond 2001 for Chinese, Japanese, and Russian). Courses that count toward the major will be approved by advisors.

INTERNATIONAL PLAN

The degree requirements for the Global Economics and Modern Languages (Chinese, French, German, Japanese, Russian and Spanish)-International Plan are basically the same as for the GEML degree, except that students are required to spend two terms abroad and then achieve Intermediate High (for Chinese, Japanese, and Russian: Intermediate Low) on the standardized ACTFL testing scale during an oral interview. The costs of the test will be paid for by the School of Modern Languages for each student. The terms abroad may typically consist of one semester of study plus a significant amount of time spent with a research or work project abroad. Students may also opt for a second semester. GEML-IP majors are also strongly encouraged to enroll in the LBAT intensive summer programs offered by the School of Modern Languages.

In addition to gaining advanced global competence, the International Plan designation will set you apart from other applicants with recruiters from top companies and governmental agencies.

Other Required Courses include the following, and these can easily be obtained within the regular required curriculum offerings of ECON and Modern Languages. These requirements can also be met with courses taken abroad, upon consultation with ECON degree advisors.

- At least one course focused on international relations historically and theoretically, including topics such as the role of state sovereignty and nationalism and non-state actors in the international system; international conflict, peace, security, intervention, and nation-building; international organizations, law, and ethics; transnational problems of the environment, terrorism, health, and migration; among other issues (see INTA courses).
- At least one course that provides a historical and theoretical understanding of the global economy, including topics such as international trade, finance, investment, and production; regional economic integration (such as the EU); economic development and modernization; and questions of natural resource sustainability.

At least one course that provides familiarity with an area of the world or a country that allows them to make systematic comparisons with their own society and culture. This course could come from various disciplinary perspectives, including history, public policy, philosophy, international affairs, literature, economics, management, architecture, among others. Upper division Modern Language courses will count here.

- A culminating course, occurring either at the end of or after the international experience that integrates knowledge of the discipline and the international experience in a global context (CHIN/FREN/GRMN/JAPN/RUSS/SPAN 4500).

BS IN GLOBAL ECONOMICS AND MODERN LANGUAGES - CHINESE 2013 - 2014 DEGREE REQUIREMENTS

REQUIREMENT	REQ HRS	COURSE(S)	NOTES
Wellness	2	HPS 1040 or APPH 1040 or APPH 1050	
Core A - Essential Skills	3	ENGL 1101	
	3	ENGL 1102	
	4	MATH 1501 or MATH 1712	
Core B - Institutional Options	3	CS 1315	
Core C - Humanities	6	Modern Languages	c
Core D - Science, Math, & Technology	4	Lab Science	
	4	Lab Science	
	4	MATH 1502 or MATH 1711	
Core E - Social Sciences	3	HIST 2111 or HIST 2112 or INTA 1200 or POL 1101 or PUBP 3000	
	9	Any SS	
Core F - Courses Related to Major	3	ECON 2105	c
	3	ECON 2106	c
	3	Statistics Elective	e, c
	3	Engineering/Science/Math Elective	a
	6	Modern Languages	b, c
Major Requirements	3	ECON 3110	c
	3	ECON 3120	c
	3	ECON 3150	c
	3	ECON 3161	c
	3	ECON 4311 or ECON 4350	c
	3	ECON 4910	c
ECON Electives	6	ECON Electives	c
Non-Major Cluster	12	Cluster Electives	c, d
Modern Languages	3	CHIN 4500	c
	9	Modern Languages	b, c
Free Electives	11	Free Electives	g
TOTAL:	122		

Note: Non-credit requirement With the goal of enhanced educational and career prospects and in accordance with the pedagogical objectives of the degree in Global Economics and Modern Languages, all GEML students are required to fulfill an International Experience as part of their graduation requirements. This requirement can met through one of two ways:

1. Complete a minimum 6-week overseas experience. If this is not a country whose primary language is in the student's language of study, the student must justify and receive prior approval.
2. Complete a 15-week internship or similar experience of at least 10 hours per week at an international organization such as consulate, CNN International, etc. The internship must be approved in advance.

NOTES

a = Any 1000- or 2000-level course with the following prefixes: AE, APPH, BIOL, BMED, CEE,

CHBE, CHE, CHEM, EAS, ECE, ISYE, MATH, ME, MSE, NRE, PHYS, PTFE.

b = Students must complete 21 hours of Chinese electives at 2002 level or above. Six hours are counted in Humanities, six in Core Area F, and 9 in Modern Languages Requirements.

c = C-minimum required.

d = ECON and CHIN courses not allowed for cluster electives.

e = One course from MATH 3215, MATH 3770, ISYE 3770 or (MGT 2250 - minimum B)

f = Six hours of Econ Electives must be chosen from one of the following Specialization areas (Industrial Organization: ECON 4340 or ECON 4180 or ECON 4360) or (International Economics: ECON 4311 or ECON 4350 or ECON 4355 or ECON 4610) or (Environmental Economics: ECON 3300 or ECON 4421 or ECON 4440)

g = CHIN courses below 2002 may count toward the free elective courses.

BS IN GLOBAL ECONOMICS AND MODERN LANGUAGES - FRENCH 2013 - 2014 DEGREE REQUIREMENTS

REQUIREMENT	REQ HRS	COURSE(S)	NOTES
Wellness	2	HPS 1040 or APPH 1040 or APPH 1050	
Core A - Essential Skills	3	ENGL 1101	
	3	ENGL 1102	
	4	MATH 1501 or MATH 1712	
Core B - Institutional Options	3	CS 1315	
Core C - Humanities	6	Modern Languages	c
Core D - Science, Math, & Technology	4	Lab Science	
	4	Lab Science	
	4	MATH 1502 or MATH 1711	
Core E - Social Sciences	3	HIST 2111 or HIST 2112 or INTA 1200 or POL 1101 or PUBP 3000	
	9	Any SS	
Core F - Courses Related to Major	3	ECON 2105	c
	3	ECON 2106	c
	3	Statistics Elective	e, c
	3	Engineering/Science/Math Elective	a
	6	Modern Languages	b, c
Major Requirements	3	ECON 3110	c
	3	ECON 3120	c
	3	ECON 3150	c
	3	ECON 3161	c
	3	ECON 4311 or ECON 4350	c
	3	ECON 4910	c
ECON Electives	6	ECON Electives	c
Non-Major Cluster	12	Cluster Electives	c, d
Modern Languages	3	FREN 4500	c
	9	Modern Languages	b, c
Free Electives	11	Free Electives	g
TOTAL:	122		

Note: Non-credit requirement With the goal of enhanced educational and career prospects and in accordance with the pedagogical objectives of the degree in Global Economics and Modern Languages, all GEML students are required to fulfill an International Experience as part of their graduation requirements. This requirement can met through one of two ways:

1. Complete a minimum 6-week overseas experience. If this is not a country whose primary language is in the student's language of study, the student must justify and receive prior approval.
2. Complete a 15-week internship or similar experience of at least 10 hours per week at an international organization such as consulate, CNN International, etc. The internship must be approved in advance.

NOTES

a = Any 1000- or 2000-level course with the following prefixes: AE, APPH, BIOL, BMED, CEE,

CHBE, CHE, CHEM, EAS, ECE, ISYE, MATH, ME, MSE, NRE, PHYS, PTFE.

b = Students must complete 21 hours of French electives at 3000 level or above. Six hours are counted in Humanities, six in Core Area F, and 9 in Modern Languages Requirements.

c = C-minimum required.

d = ECON and FREN courses not allowed for cluster electives.

e = One course from MATH 3215, MATH 3770, ISYE 3770 or (MGT 2250 - minimum B)

f = Six hours of Econ Electives must be chosen from one of the following Specialization areas (Industrial Organization: ECON 4340 or ECON 4180 or ECON 4360) or (International Economics: ECON 4311 or ECON 4350 or ECON 4355 or ECON 4610) or (Environmental Economics: ECON 3300 or ECON 4421 or ECON 4440)

g = FREN courses below 3000 may count toward the free elective courses.

SCHOOL OF MODERN LANGUAGES
About the School
Undergraduate
Undergraduate Information
BS Applied Language & Intercultural Studies
Description
Degree Requirements
Chinese
French
German
Japanese
Russian
Spanish
BS INTA & Modern Language
Description
Degree Requirements
Chinese
French
German
Japanese
Russian
Spanish
BS Global Economics & ML
Description
Degree Requirements
Chinese
French
German
Japanese
Russian
Spanish
Minor Programs
Certificate Programs
Ivan Allen College

BS IN GLOBAL ECONOMICS AND MODERN LANGUAGES - GERMAN 2013 - 2014 DEGREE REQUIREMENTS

REQUIREMENT	REQ HRS	COURSE(S)	NOTES
Wellness	2	HPS 1040 or APPH 1040 or APPH 1050	
Core A - Essential Skills	3	ENGL 1101	
	3	ENGL 1102	
	4	MATH 1501 or MATH 1712	
Core B - Institutional Options	3	CS 1315	
Core C - Humanities	6	Modern Languages	c
Core D - Science, Math, & Technology	4	Lab Science	
	4	Lab Science	
	4	MATH 1502 or MATH 1711	
Core E - Social Sciences	3	HIST 2111 or HIST 2112 or INTA 1200 or POL 1101 or PUBP 3000	
	9	Any SS	
Core F - Courses Related to Major	3	ECON 2105	c
	3	ECON 2106	c
	3	Statistics Elective	e, c
	3	Engineering/Science/Math Elective	a
	6	Modern Languages	b, c
Major Requirements	3	ECON 3110	c
	3	ECON 3120	c
	3	ECON 3150	c
	3	ECON 3161	c
	3	ECON 4311 or ECON 4350	c
	3	ECON 4910	c
ECON Electives	6	ECON Electives	c
Non-Major Cluster	12	Cluster Electives	c, d
Modern Languages	3	GRMN 4500	c
	9	Modern Languages	b, c
Free Electives	11	Free Electives	g
TOTAL:	122		

Note: Non-credit requirement With the goal of enhanced educational and career prospects and in accordance with the pedagogical objectives of the degree in Global Economics and Modern Languages, all GEML students are required to fulfill an International Experience as part of their graduation requirements. This requirement can met through one of two ways:

1. Complete a minimum 6-week overseas experience. If this is not a country whose primary language is in the student's language of study, the student must justify and receive prior approval.
2. Complete a 15-week internship or similar experience of at least 10 hours per week at an international organization such as consulate, CNN International, etc. The internship must be approved in advance.

NOTES

a = Any 1000- or 2000-level course with the following prefixes: AE, APPH, BIOL, BMED, CEE,

CHBE, CHE, CHEM, EAS, ECE, ISYE, MATH, ME, MSE, NRE, PHYS, PTFE.

b = Students must complete 21 hours of German electives at 3000 level or above. Six hours are counted in Humanities, six in Core Area F, and 9 in Modern Languages Requirements.

c = C-minimum required.

d = ECON and GRMN courses not allowed for cluster electives.

e = One course from MATH 3215, MATH 3770, ISYE 3770 or (MGT 2250 - minimum B)

f = Six hours of Econ Electives must be chosen from one of the following Specialization areas (Industrial Organization: ECON 4340 or ECON 4180 or ECON 4360) or (International Economics: ECON 4311 or ECON 4350 or ECON 4355 or ECON 4610) or (Environmental Economics: ECON 3300 or ECON 4421 or ECON 4440)

g = GRMN courses below 3000 may count toward the free elective courses.

SCHOOL OF MODERN LANGUAGES

About the School
Undergraduate
Undergraduate Information
BS Applied Language & Intercultural Studies
Description
Degree Requirements
Chinese
French
German
Japanese
Russian
Spanish
BS INTA & Modern Language
Description
Degree Requirements
Chinese
French
German
Japanese
Russian
Spanish
BS Global Economics & ML
Description
Degree Requirements
Chinese
French
German
Japanese
Russian
Spanish
Minor Programs
Certificate Programs
Ivan Allen College

BS IN GLOBAL ECONOMICS AND MODERN LANGUAGES - JAPANESE 2013 - 2014 DEGREE REQUIREMENTS

REQUIREMENT	REQ HRS	COURSE(S)	NOTES
Wellness	2	HPS 1040 or APPH 1040 or APPH 1050	
Core A - Essential Skills	3	ENGL 1101	
	3	ENGL 1102	
	4	MATH 1501 or MATH 1712	
Core B - Institutional Options	3	CS 1315	
Core C - Humanities	6	Modern Languages	c
Core D - Science, Math, & Technology	4	Lab Science	
	4	Lab Science	
	4	MATH 1502 or MATH 1711	
Core E - Social Sciences	3	HIST 2111 or HIST 2112 or INTA 1200 or POL 1101 or PUBP 3000	
	9	Any SS	
Core F - Courses Related to Major	3	ECON 2105	c
	3	ECON 2106	c
	3	Statistics Elective	e, c
	3	Engineering/Science/Math Elective	a
	6	Modern Languages	b, c
Major Requirements	3	ECON 3110	c
	3	ECON 3120	c
	3	ECON 3150	c
	3	ECON 3161	c
	3	ECON 4311 or ECON 4350	c
	3	ECON 4910	c
ECON Electives	6	ECON Electives	c
Non-Major Cluster	12	Cluster Electives	c, d
Modern Languages	3	JAPN 4500	c
	9	Modern Languages	b, c
Free Electives	11	Free Electives	g
TOTAL:	122		

Note: Non-credit requirement With the goal of enhanced educational and career prospects and in accordance with the pedagogical objectives of the degree in Global Economics and Modern Languages, all GEML students are required to fulfill an International Experience as part of their graduation requirements. This requirement can met through one of two ways:

1. Complete a minimum 6-week overseas experience. If this is not a country whose primary language is in the student's language of study, the student must justify and receive prior approval.
2. Complete a 15-week internship or similar experience of at least 10 hours per week at an international organization such as consulate, CNN International, etc. The internship must be approved in advance.

NOTES

a = Any 1000- or 2000-level course with the following prefixes: AE, APPH, BIOL, BMED, CEE,

CHBE, CHE, CHEM, EAS, ECE, ISYE, MATH, ME, MSE, NRE, PHYS, PTFE.

b = Students must complete 21 hours of Japanese electives at 2002 level or above. Six hours are counted in Humanities, six in Core Area F, and 9 in Modern Languages Requirements.

c = C-minimum required.

d = ECON and JAPN courses not allowed for cluster electives.

e = One course from MATH 3215, MATH 3770, ISYE 3770 or (MGT 2250 - minimum B)

f = Six hours of Econ Electives must be chosen from one of the following Specialization areas (Industrial Organization: ECON 4340 or ECON 4180 or ECON 4360) or (International Economics: ECON 4311 or ECON 4350 or ECON 4355 or ECON 4610) or (Environmental Economics: ECON 3300 or ECON 4421 or ECON 4440)

g = JAPN courses below 2002 may count toward the free elective courses.

BS IN GLOBAL ECONOMICS AND MODERN LANGUAGES - RUSSIAN 2013 - 2014 DEGREE REQUIREMENTS

REQUIREMENT	REQ HRS	COURSE(S)	NOTES
Wellness	2	HPS 1040 or APPH 1040 or APPH 1050	
Core A - Essential Skills	3	ENGL 1101	
	3	ENGL 1102	
	4	MATH 1501 or MATH 1712	
Core B - Institutional Options	3	CS 1315	
Core C - Humanities	6	Modern Languages	c
Core D - Science, Math, & Technology	4	Lab Science	
	4	Lab Science	
	4	MATH 1502 or MATH 1711	
Core E - Social Sciences	3	HIST 2111 or HIST 2112 or INTA 1200 or POL 1101 or PUBP 3000	
	9	Any SS	
Core F - Courses Related to Major	3	ECON 2105	c
	3	ECON 2106	c
	3	Statistics Elective	e, c
	3	Engineering/Science/Math Elective	a
	6	Modern Languages	b, c
Major Requirements	3	ECON 3110	c
	3	ECON 3120	c
	3	ECON 3150	c
	3	ECON 3161	c
	3	ECON 4311 or ECON 4350	c
	3	ECON 4910	c
ECON Electives	6	ECON Electives	c
Non-Major Cluster	12	Cluster Electives	c, d
Modern Languages	3	RUSS 4500	c
	9	Modern Languages	b, c
Free Electives	11	Free Electives	g
TOTAL:	122		

Note: Non-credit requirement With the goal of enhanced educational and career prospects and in accordance with the pedagogical objectives of the degree in Global Economics and Modern Languages, all GEML students are required to fulfill an International Experience as part of their graduation requirements. This requirement can met through one of two ways:

1. Complete a minimum 6-week overseas experience. If this is not a country whose primary language is in the student's language of study, the student must justify and receive prior approval.
2. Complete a 15-week internship or similar experience of at least 10 hours per week at an international organization such as consulate, CNN International, etc. The internship must be approved in advance.

NOTES

a = Any 1000- or 2000-level course with the following prefixes: AE, APPH, BIOL, BMED, CEE,

CHBE, CHE, CHEM, EAS, ECE, ISYE, MATH, ME, MSE, NRE, PHYS, PTFE.

b = Students must complete 21 hours of Russian electives at 2002 level or above. Six hours are counted in Humanities, six in Core Area F, and 9 in Modern Languages Requirements.

c = C-minimum required.

d = ECON and RUSS courses not allowed for cluster electives.

e = One course from MATH 3215, MATH 3770, ISYE 3770 or (MGT 2250 - minimum B)

f = Six hours of Econ Electives must be chosen from one of the following Specialization areas (Industrial Organization: ECON 4340 or ECON 4180 or ECON 4360) or (International Economics: ECON 4311 or ECON 4350 or ECON 4355 or ECON 4610) or (Environmental Economics: ECON 3300 or ECON 4421 or ECON 4440)

g = RUSS courses below 2002 may count toward the free elective courses.

BS IN GLOBAL ECONOMICS AND MODERN LANGUAGES - SPANISH 2013 - 2014 DEGREE REQUIREMENTS

REQUIREMENT	REQ HRS	COURSE(S)	NOTES
Wellness	2	HPS 1040 or APPH 1040 or APPH 1050	
Core A - Essential Skills	3	ENGL 1101	
	3	ENGL 1102	
	4	MATH 1501 or MATH 1712	
Core B - Institutional Options	3	CS 1315	
Core C - Humanities	6	Modern Languages	b,c
Core D - Science, Math, & Technology	4	Lab Science	
	4	Lab Science	
	4	MATH 1502 or MATH 1711	
Core E - Social Sciences	3	HIST 2111 or HIST 2112 or INTA 1200 or POL 1101 or PUBP 3000	
	9	Any SS	
Core F - Courses Related to Major	3	ECON 2105	c
	3	ECON 2106	c
	3	Statistics Elective	e, c
	3	Engineering/Science/Math Elective	a
	6	Modern Languages	b, c
Major Requirements	3	ECON 3110	c
	3	ECON 3120	c
	3	ECON 3150	c
	3	ECON 3161	c
	3	ECON 4311 or ECON 4350	c
	3	ECON 4910	c
ECON Electives	6	ECON Electives	c
Non-Major Cluster	12	Cluster Electives	c, d
Modern Languages	3	SPAN 4500	c
	9	Modern Languages	b, c
Free Electives	11	Free Electives	g
TOTAL:	122		

Note: Non-credit requirement With the goal of enhanced educational and career prospects and in accordance with the pedagogical objectives of the degree in Global Economics and Modern Languages, all GEML students are required to fulfill an International Experience as part of their graduation requirements. This requirement can met through one of two ways:

1. Complete a minimum 6-week overseas experience. If this is not a country whose primary language is in the student's language of study, the student must justify and receive prior approval.
2. Complete a 15-week internship or similar experience of at least 10 hours per week at an international organization such as consulate, CNN International, etc. The internship must be approved in advance.

NOTES

a = Any 1000- or 2000-level course with the following prefixes: AE, APPH, BIOL, BMED, CEE,

CHBE, CHE, CHEM, EAS, ECE, ISYE, MATH, ME, MSE, NRE, PHYS, PTFE.

b = Students must complete 21 hours of Spanish electives at 3000 level or above. Six hours are counted in Humanities, six in Core Area F, and 9 in Modern Languages Requirements.

c = C-minimum required.

d = ECON and SPAN courses not allowed for cluster electives.

e = One course from MATH 3215, MATH 3770, ISYE 3770 or (MGT 2250 - minimum B)

f = Six hours of Econ Electives must be chosen from one of the following Specialization areas (Industrial Organization: ECON 4340 or ECON 4180 or ECON 4360) or (International Economics: ECON 4311 or ECON 4350 or ECON 4355 or ECON 4610) or (Environmental Economics: ECON 3300 or ECON 4421 or ECON 4440)

g = SPAN courses below 3000 may count toward the free elective courses.

CERTIFICATE PROGRAMS

The Linguistics Certificate consists of 12 credit hours.

Track A: General Linguistics, consists of LING 2100 plus 9 additional hours of LING/ML/PSYC courses. The courses that the School will accept towards Track A are as follows:

1. LING 2100 Introduction to Linguistics (required)
2. 9 hours chosen from:
    - LING 3813/4813 Special Topics (3 hrs. maximum; focus on the linguistic system(s) of selected languages; must be approved by Linguistics advisor)
    - SPAN 4170 Spanish Applied Linguistics
    - PSYC/LING 2760 Human Language Processing
    - PSYC 3011 Cognitive Psychology
    - PSYC 3790 Introduction to Cognitive Science
    - PSYC 4200 Advanced Topics in Cognitive Psychology
    - FREN 3030 French Phonetics
    - JAPN 4750 Japnaese Dsicourse and Grammar
    - JAPN 4780 Japnaese Applied Linguistics
    - SPAN4165 Bilingualism in the Spanish-Speaking World
    - SPAN 4170 Spanish Applied Linguistics

Track B: Language Processing, is a joint collaboration between the School of Modern Languages and the College of Computing. This certificate is designed with computer science majors in mind who have an interest in linguistics and natural language processing. The certificate consists of LING 2100 plus 9 hours of CS/LING/PSYC courses. The courses that the School will accept towards Track B are as follows:

1. LING 2100 Introduction to Linguistics (required)
2. 9 hours chosen from:
    - CS 3240 – Languages and Computation
    - CS 3600 – Introduction to Artificial Intelligence
    - CS/PSYC 3790 – Introduction to Cognitive Psychology
    - CS 3803 or 4803/LING 3813/4813 Special Topics (3 hrs. maximum; must be approved by Linguistics advisor)
    - CS 4641 – Machine Learning
    - CS 4650 – Natural Language
    - LING/PSYC 2760 Human Language Processing

For Track B students, other courses listed under the AI thread or in Linguistics may also count with prior approval from the linguistics advisor.

All courses counting towards a LING certificate must be taken on a letter grade basis and a grade of C or better must be received in each course.

Other information:

a. The School of Modern Languages may also accept one linguistics course on the 3000- or 4000-level taken at other accredited universities for either Track A or Track B. Students wanting to take such a course need to clear its acceptability with the LING advisor at Georgia Tech.
b. A 2000-level course may be accepted by the LING advisor if its contents are based upon examples from another language, given the possible difficulty involved in having enough command of the language to deal with more complex materials.
c. Students who wish to use a course taken abroad to obtain credit towards the LING certificate must submit a copy of the syllabus of the course and petition to obtain approved form the LING advisor prior to travelling abroad.
d. Some CS and ML courses may have language prerequisites.

BACHELOR OF SCIENCE IN PUBLIC POLICY

The Bachelor of Science in Public Policy (BS PP) is designed to provide an education that combines strong analytical skills with understanding of a range of substantive policy issues and the political, social, and cultural forces that shape public policies. The BS PP core courses provide students with the broad political, economic, and philosophical foundations of thought pertinent to public policy, a base of rigorous quantitative and qualitative analytical approaches, and a solid understanding of the political and social dynamics that structure policy debates and policy outcomes.

The curriculum moves from disciplinary foundations (in politics, economics, philosophy, and sociology) to methods of research and data analysis, and finally to a senior-year two-semester capstone "task force" in which students work with outside clients on actual policy problems. Students choose two clusters from concentrations in environment and energy policy, science and technology policy, social and urban policy, philosophy, and politics and policy, and can select electives in additional areas such as information and telecommunication policy, bioengineering and ethics, and regional development policy.

The program's emphasis on the development of problem-solving and analytical skills constitutes a strong comparative advantage for BS PP graduates.

BS/MS PUBLIC POLICY

The School of Public Policy offers a BS/MS program for students enrolled in the undergraduate program who demonstrate an interest in and ability for additional education beyond the BS degree.

Students in the BS/MS program will remain undergraduates until they meet requirements for the undergraduate degree, at which point they will receive their BS degree and be changed to graduate status. Students will be eligible to apply for the program after completion of 30 semester credit hours at Georgia Tech (i.e., at the end of their first year), and if they show appropriate progress in their degree program thereafter. Any student in good standing in the BS PP program is eligible to apply to the program. Admissions decisions will be based on GPA and judgments of the faculty who have served as advisors or instructors. Continuation in the program will require the student to maintain a GPA of 3.0 or higher in public policy courses. The program will not penalize students who opt out after the bachelor's degree. Students participating in this program will be eligible for the six semester credit-hour Graduate Course Option, which allows students completing both the bachelor's and master's in the same discipline to use up to 6 credit hours of graduate-level coursework in the major discipline for both degrees.

THE GRADUATE-LEVEL CREDITS REQUIRED IN THE BS/MS PROGRAM ARE USUALLY AS FOLLOWS:

- Core-22 hours
- Electives-12 hours
- Research paper- 3 hours

Total 37 hours

SPECIFIC REQUIREMENTS FOR THE PROGRAM INCLUDE:

- PUBP 6001 Introduction to Public Policy
  (1 semester hour, all other courses are 3 semester hours)
- PUBP 6010 Ethics, Epistemology, and Public Policy
- PUBP 6112 Research Design in Policy Science
  [NOTE: This course should be taken as an undergraduate instead of PUBP 3130 and will count for both programs]
- PUBP 6114 Applied Policy Methods and Data Analysis
- PUBP 6116 Microeconomics in Policy Analysis
- PUBP 6118 Public Finance and Policy
- PUBP 6210 Public Policy Analysis

STUDENTS MUST ALSO TAKE ONE OF THE FOLLOWING THREE COURSES:

- PUBP 6014 Organization Theory
- PUBP 6017 Public Management
- PUBP 6018 Policy Implementation

Students are required to develop, in consultation with their advisor, a six-hour concentration in an area or specialty relevant to public policy and management (e.g. environmental policy, science and technology policy, urban policy, economic development, information and communications policy, policy evaluation, public management).

Contact the BS PP program director for further information.

SCHOOL OF PUBLIC POLICY

About the School
Undergraduate
BS Public Policy
Description
Degree Requirements
Minors & Certificates
Law, Science, & Tech
Leadership Studies
Philosophy
Political Science
Public Policy
Women, Science, & Tech
Graduate
Admissions
Certificates
MS Public Policy
PhD Public Policy
Joint PhD Program With GSU
Dual Degrees
Public Policy / MCRP
Ivan Allen College

BACHELOR OF SCIENCE IN PUBLIC POLICY 2013 - 2014 DEGREE REQUIREMENTS

REQUIREMENT	REQ HRS	COURSE(S)	NOTES
Wellness	2	HPS 1040 or APPH 1040 or APPH 1050	
Core A - Essential Skills	3	ENGL 1101	
	3	ENGL 1102	
	4	MATH 1501 or MATH 1712	
Core B - Institutional Options	3	CS 1315	
Core C - Humanities	6	Any HUM	
Core D - Science, Math, & Technology	4	Lab Science	
	4	Lab Science	
	4	MATH 1502 or MATH 1711	
Core E - Social Sciences	3	POL 1101	
	9	Any SS	
Core F - Courses Related to Major	3	ECON 2106	
	3	PHIL 2025	
	3	PUBP 2010	c
	3	PUBP 2030	c
	6	Science, Computing, or Engineering Elective	a
Major Requirements	3	PUBP 3020	c
	3	PUBP 3030	c
	3	PUBP 3120	c
	3	PUBP 3130	c
	3	PUBP 4010	c
	3	PUBP 4020	c
	3	PUBP 2651 or PUBP 4651	c
Clusters	9	Cluster Electives	b
	9	Cluster Electives	b
Non-Major Cluster	3	Any POL, PHIL, or PUBP course	c
Free Electives	17	Free Electives	d
TOTAL:	122		

Pass-fail only allowed for Free Electives.

NOTES

a = Must be chosen from the following list: any AE, CEE, ECE, ISYE course, AE/CEE/ME 1770, ARCH 4420, BC 3630, BIOL 2335, BIOL 2344, BIOL 3332, BIOL 4755, CHEM 1313, CHEM 2211, CHEM 2311, CHEM 2312, CHEM 2380, CHEM 3380, COA/CS 6764, CP 4510, CS 1050, CS 1171, CS 1316, CS 1322, CS 1331, CS 1332, CS/ME 6754, EAS 2420, EAS 2600, EAS 2655, EAS 2750, EAS 4420, EAS 4430, EAS 4450, EAS 4602, EAS 4640, ECE 2030, ID 3103, ID 4103, LCC 2700, LCC 2730, LCC 3402, LCC 3404, LCC 3710, LCC 6111, LCC 6112, LCC 6113, LCC 6312, ME 2016, MGT 2200, MGT 2251, MGT 4051, MGT 4058, MGT 4661, MUSI 4630, PHYS 2030, PHYS 2213, PHYS 3123, PHYS 3141, PHYS 3266, PHYS 4142, PSYC 2020, PSYC 2270, PSYC 3011, PSYC 3020, PSYC 3031, PSYC 3040, PSYC 3790, PSYC 4010, PSYC 4031, PSYC 4050, PSYC 4090, PSYC 4100, PSYC 4270.

b = Student must complete two three-course clusters, selecting three courses from two of the following clusters:

Environmental and Energy Policy Cluster: PHIL 4176, PUBP 3315, PUBP 3600, PUBP 4338, PUBP 47XX, PUBP 6300, PUBP 6310, PUBP 6312, PUBP 6314, PUBP 6320, PUBP 6326,

PUBP 6330, PUBP 6760.

Science and Technology Policy Cluster: PHIL 3127, PUBP 3502, PUBP 4111, PUBP 4214, PUBP 4410, PUBP 4414, PUBP 4416, PUBP 4756, PUBP 6402, PUBP 6415, PUBP 6417, PUBP 6421, PUBP 6501, PUBP 6740, PUBP 6741, PUBP 6753, PUBP 6777.

Science and Technology Policy Cluster: PHIL 3127, PUBP 3502, PUBP 4111, PUBP 4214, PUBP 4410, PUBP 4414, PUBP 4416, PUBP 4756, PUBP 6402, PUBP 6415, PUBP 6417, PUBP 6421, PUBP 6501, PUBP 6740, PUBP 6741, PUBP 6753, PUBP 6777.

Social and Urban Policy Cluster: PUBP 3201, PUBP 3214, PUBP 4200, PUBP 4211, PUBP 4212, PUBP 4214, PUBP 6604, PUBP 6606.

Philosophy Cluster: PHIL 1101, PHIL 2050, PHIL 3102, PHIL 3103, PHIL 3105, PHIL 3109, PHIL 3113, PHIL 3115, PHIL 3127, PHIL 3790, PHIL 4110, PHIL 4112, PHIL 4174, PHIL 4176, PHIL 4752, PHIL 4790, PHIL 4791, PHIL 4792, PUBP 6010.

Philosophy Cluster: PHIL 1101, PHIL 2050, PHIL 3102, PHIL 3103, PHIL 3105, PHIL 3109, PHIL 3113, PHIL 3115, PHIL 3127, PHIL 3790, PHIL 4110, PHIL 4112, PHIL 4174, PHIL 4176, PHIL 4752, PHIL 4790, PHIL 4791, PHIL 4792, PUBP 6010.

Politics and Policy Cluster: POL 2101, PUBP 3000, PUBP 3016, PUBP 3214, PUBP 3315, PUBP 4120, PUBP 4226, PUBP 4514, PUB 4951, PUBP 4952.

c = C-minimum required
d = MATH 1111 and MATH 2804 not allowed.

PUBLIC POLICY - MINORS AND CERTIFICATES

Established in 1990
Location: 107 D. M. Smith Building
685 Cherry Street
Telephone: 404.894.6822
Fax: 404.385.0504
Website: www.prelaw.gatech.edu

There are many interfaces between the realm of public policy and nearly every program of study at Georgia Tech. Engineering, the sciences, management, architecture, computing, and the liberal arts are impacted by – and affect – the decisions made by governments. The minor and certificate in Public Policy allow Georgia Tech students to develop the multidisciplinary thinking skills that are needed fo strategic decision making in business and technical professions as well as law and public policy.

The minor consists of fifteen hours of coursework (at least twelve semester hours at the 3000 level or higher). The certificate program consists of twelve hours of coursework.

Students pursuing the minor should have their program of study approved in writing by the public policy minor supervisor before enrolling in a course they intend to count toward the minor. A student may seek prior permission from the School of Public Policy to allow 3 hours of upper-division coursework in public policy taught outside the School to count toward the completion of the minor. Contact the School for the current public policy minor supervisor.

1. No more than 6 semester hours of Special Topics courses may be included in a minor program. No more than 3 semester hours of pre-approved public policy internship credit may be applied to the public policy minor.
2. Courses required by name and number and/or used to satisfy Core Areas A through E in a student's major degree program may not be used in satisfying the course requirements for a minor. If a student is using a course to fulfill the social science requirement in the student's major, that course cannot be counted toward the Public Policy minor. However, courses used in a minor also may be used to fulfill other elective requirements (free electives, technical electives, etc.) in the student's major degree program.
3. A course may not be counted toward more than one minor.
4. All courses counting toward the minor must be completed in residence at Georgia Tech, be taken on a letter-grade basis, and be completed with an overall grade-point average of at least 2.00.

SCHOOL OF PUBLIC POLICY

About the School
Undergraduate
BS Public Policy
Description
Degree Requirements
Minors & Certificates
Law, Science, & Tech
Leadership Studies
Philosophy
Political Science
Public Policy
Women, Science, & Tech
Graduate
Admissions
Certificates
MS Public Policy
PhD Public Policy
Joint PhD Program With GSU
Dual Degrees
Public Policy / MCRP
Ivan Allen College

GRADUATE CERTIFICATE IN PUBLIC POLICY

The School of Public Policy offers a certificate in public policy to PhD students from other Schools around campus. The goal of the certificate program is to provide a basic but well-rounded introduction to public policy thinking to Georgia Tech graduate students. The program is designed to address the needs of scientists, engineers, management scholars and others who seek to be more aware of policy, regulatory, ethical, and societal implications of science, technology and innovation. The program will provide breadth and context for those entering employment in any sector. The courses in the program explore the processes through which policy is made.

Although this certificate is not available to policy students, the courses are open to all graduate students, creating an opportunity for students to gain value from divergent perspectives. Students who complete this certificate are eligible to participate in the School's PRIME international graduate student exchange program.

ELIGIBILITY

Graduate students from all programs may take the courses offered as part of this certificate. The certificate will be awarded by the School of Public Policy to any non-public policy graduate student who successfully complete the program requirements and earns a graduate degree from one of Georgia Tech's degree granting academic units. The requirements for the Graduate Certificate in Public Policy will typically satisfy the minor requirements for the Georgia Tech PhD degree.

Please contact Diana Hicks at dhicks@gatech.edu with any questions.

CERTIFICATE REQUIREMENTS

Students are required to earn at least a B in every course that counts toward the certificate. The credit requirements for the Certificate in Public Policy are 12 semester hours.

Required Course, choose one:

6012 - Fundamentals of Policy Processes
6201 - Public Policy Analysis

Electives

Three electives are required for the certificate. These electives can be chosen from the list below or from graduate-level special topics offered by the public policy faculty with the agreement of the certificate advisor. The electives are organized by broad area of interest to guide students in choosing electives that best suits their interests. Students are not required to choose all electives from the same grouping.

Analytical methods

- 6112 - Research Design in Policy Science
- 6114 - Applied Methods and Data Analysis

Economic development

- 6602 - Economic Development Analysis and Practice
- 6606 - Urban Development Policy
- 6415 - Technology, Regions, and Policy
- 6600 - Foundations of Local Economic Development Planning and Policy
- 6740 - Innovation, the State and Industrial Development
- 6741 - Geography of Innovation

Economics for public policy

- 6116 - Microeconomics for Policy Analysis
- 6118 - Public Finance Policy

Ethics and values

- 6010 - Ethics, Epistemology, and Public Policy
- 6326 - Environmental Values and Policy Goals

Environmental & energy policy

- 6310 - Environmental Issues
- 6312 - Economics of Environmental Policy
- 6314 - Policy Tools for Environmental Management
- 6326 - Environmental Values and Policy Goals
- 6327 - Sustainability & Environmental Policy
- 6701 - Energy Technology & Policy

Information technology

- 6111 - Internet and Public Policy
- 6501 - Information Policy and Management
- 6502 - Information and Communications Technology Policy

Public administration

- 6014 - Organization Theory
- 6017 - Public Management
- 6018 - Policy Implementation and Administration
- 6226 - Business and Government

Science and technology policy

- 6401 - Science, Technology and Public Policy
- 6402 - Research Policy and Management
- 6403 - Scientific Careers and Workplaces
- 6417 - Critical Perspectives on Science and Technology
- 6440 - Science, Technology and Regulation
- 6753 - Comparative Science and Technology Policy

- Special topics (PUBP 8803) in public policy. See Oscar catalog for offerings in upcoming semesters. Selection of other courses requires approval of the instructor and the certificate advisor.

GRADUATE CERTIFICATE IN SCIENCE, TECHNOLOGY AND SOCIETY

The Science, Technology and Society Graduate Certificate is designed for students already enrolled in a graduate degree program at Georgia Tech. This certificate is for graduate students who would like to demonstrate additional competence in some aspect of STS or special competence in STS in their home discipline. The certificate is open to students in good standing in any graduate program at Georgia Tech.

The 12-credit certificate program helps students to:

- Understand the social, cultural, and epistemic dynamics of science and technology
- Explore these dynamics across world societies and cultures
- Develop sensitivity to issues of gender, race, and justice across areas of knowledge, including: engineering, medicine, environment, cognition, security, innovation, design
- Employ STS approaches as scholars or practitioners (e.g. engineers, scientists, or policy makers)

PROGRAM OF STUDY: 4 Courses Total

Core Course: 1 Required	
HTS 6743 / PUBP 6743 / LCC 6743	STS Core Seminar
HTS 6118	Science, Technology and the Economy
HTS 6121 / INTA 8803	Science, Technology, and Security
HTS 6123 / LCC 8803	Social and Cultural Studies of Biomedicine
HTS 6124	Science and Technology Beyond Borders
PUBP 6748 / LCC 6748	Social Justice, Critical Theory and Philosophy of Design
LCC 6749 / PUBP 6749	Feminist Theory and STS
Up to One Other Elective, Subject to Student Interest and STS Coordinator Approval **Many appropriate courses are offered across the Ivan Allen College and the Institute, for example:**	
CS 8893	Cognition and Culture

MASTER OF SCIENCE IN PUBLIC POLICY

The Master of Science in Public Policy is designed for students with strong analytical backgrounds, such as those received in engineering, natural science, or an analytically oriented social science or humanities curriculum. Graduate studies in public policy focus on areas in which either the consequences of scientific and technological activity have significant public policy implications, or technical and scientific information is a significant input to the policy-making process. Current areas of specialization for the School include science and technology policy, environmental and energy policy, information and telecommunication policy, and regional economic development policy.

The MS in Public Policy requires forty-six credit hours of study, including either: a) 3 hours devoted to producing a professional policy research paper or team research project or b) nine hours for a thesis. In general, it is expected that students planning to enter employment upon completing the degree will choose the paper or project option, while students planning to continue their graduate work will choose the thesis option.

The program requires a twenty-five-credit-hour core curriculum consisting of five substantive elements: policy and organizational analysis; ethics, philosophy, and public policy; economics and public finance; methods of analysis, including quantitative analysis and research design; and a capstone course in public policy analysis. In addition, there is a required one-credit-hour introductory graduate seminar in public policy. Based on prior coursework or a test-out exam, students may request up to 6 credit hours of exemptions from core courses. In individual cases, students may be required to take pre-core preparatory courses to be ready for graduate studies in particular methodological or analytical areas.

CORE COURSES INCLUDE:

- PUBP 6001 Introduction to Public Policy
- PUBP 6010 Ethics, Epistemology, and Public Policy
- PUBP 6012 Fundamentals of Policy Processes
- PUBP 6112 Research Design in Policy Science
- PUBP 6114 Applied Policy Methods and Data Analysis
- PUBP 6116 Microeconomics for Policy Analysis
- PUBP 6118 Public Finance and Policy
- PUBP 6201 Public Policy Analysis

PLUS ONE OF THE FOLLOWING:

- PUBP 6014 Organization Theory
- PUBP 6017 Public Management
- PUBP 6018 Policy Implementation and Administration

Students must achieve a grade of B or higher in all core courses. In addition to elective courses in the School of Public Policy, students may develop their own programs of study by taking courses in other Georgia Tech schools, including those in the Ivan Allen College and the Colleges of Architecture, Management, Sciences, and Engineering. A summer internship, work experience, or co-op assignment between the first and second years offers students insight into a research or professional setting related to their career interests.

For the MSPP, students are encouraged to pursue one or more concentrations. A concentration consists of at least three 3-credit courses, of which at least one is the School of Public Policy. Students can pursue concentrations within groups already developed by the faculty (see above). Or, students can pursue an individualized concentration, with the written approval of the proposed concentration program of study by their advisor.

BS/MS PUBLIC POLICY

The School of Public Policy offers a BS/MS program for students enrolled in the undergraduate program who demonstrate an interest in and ability for additional education beyond the BS degree.

Students in the BS/MS program will remain undergraduates until they meet requirements for the undergraduate degree, at which point they will receive their BS degree and be changed to graduate status. Students will be eligible to apply for the program after completion of 30 semester credit hours at Georgia Tech (i.e., at the end of their first year), and if they show appropriate progress in their degree program thereafter. Any student in good standing in the BS PP program is eligible to apply to the program. Admissions decisions will be based on GPA and judgments of the faculty who have served as advisors or instructors. Continuation in the program will require the student to maintain a GPA of 3.0 or higher in public policy courses. The program will not penalize students who opt out after the bachelor's degree. Students participating in this program will be eligible for the six semester credit-hour Graduate Course Option, which allows students completing both the bachelor's and master's in the same discipline to use up to 6 credit hours of graduate-level coursework in the major discipline for both degrees.

THE GRADUATE-LEVEL CREDITS REQUIRED IN THE BS/MS PROGRAM ARE USUALLY AS FOLLOWS:

- Core-22 hours
- Electives-12 hours
- Research paper- 3 hours

Total 37 hours

SPECIFIC REQUIREMENTS FOR THE PROGRAM INCLUDE:

- PUBP 6001 Introduction to Public Policy
(1 semester hour, all other courses are 3 semester hours)
- PUBP 6010 Ethics, Epistemology, and Public Policy
- PUBP 6112 Research Design in Policy Science
[NOTE: This course should be taken as an undergraduate instead of PUBP 3130 and will count for both programs]
- PUBP 6114 Applied Policy Methods and Data Analysis
- PUBP 6116 Microeconomics in Policy Analysis
- PUBP 6118 Public Finance and Policy
- PUBP 6210 Public Policy Analysis

STUDENTS MUST ALSO TAKE ONE OF THE FOLLOWING THREE COURSES:

- PUBP 6014 Organization Theory
- PUBP 6017 Public Management
- PUBP 6018 Policy Implementation

Students are required to develop, in consultation with their advisor, a six-hour concentration in an area or specialty relevant to public policy and management (e.g. environmental policy, science and technology policy, urban policy, economic development, information and communications policy, policy evaluation, public management).

Contact the BS PP program director for further information.

DOCTOR OF PHILOSOPHY WITH A MAJOR IN PUBLIC POLICY

The PhD in Public Policy is a research-oriented program that prepares students for advanced professional work or for academic careers. Georgia Tech houses two PhD programs in Public Policy, including one offered jointly with Georgia State University. The programs stress intellectual and methodological rigor, building upon the theory and applications of political and organizational analysis, research design, quantitative analysis, and economics.

All students must have completed the equivalent of the core courses for the Master of Science in Public Policy (see description of the MS degree) before they begin the doctoral core curriculum. The doctoral core curriculum consists of six three-credit-hour courses (seven in the joint program). These courses are designed to provide students with a theoretical and methodological foundation for conducting public policy research. Core courses include:

PUBP 8200 Advanced Research Methods I

PUBP 8205 Advanced Research Methods II

PUBP 8211 Microeconomic Theory and Applications

PUBP 8500 Research Seminar in Public Policy

PUBP 8510 Logic of Policy Inquiry

PUBP 8520 Scope and Theory of Public Policy

Additionally, for the joint program, students must take PUBP 8813, Advanced Topics in Analysis and Evaluation. Details on the requirements of the joint program, including equivalent courses at Georgia State University, are available on the website.

This core is supplemented with in-depth study of a substantive area of public policy. The Georgia Tech program focuses on science and technology policy, environmental and energy policy, and urban and regional economic development policy. The joint program includes several additional majors, including health policy, policy and program evaluation, and public finance. Students may pursue concentrations with groups of courses already developed by the faculty or an individualized concentration with the written approval of the student's advisor and the Graduate Committee.

In the Georgia Tech program, the major area of concentration consists of four courses and has a capstone seminar at the PhD level that majors are required to complete. The minor concentration is a three-course area of study, preferably taken outside the School of Public Policy.

Other requirements for the PhD include completion of the one-year residency requirement; admission to candidacy for the degree through successful completion of qualifying exams and a dissertation proposal; and completion and successful defense of a doctoral dissertation (9 credit hours).

In summary, the credits required for the PhD are usually as follows:

Core 18 hours (twenty-one for the joint program)

Major twelve hours

Minor nine hours

Qualifiers 3 hours (written exam)

Colloquium 3 hours (oral exam: presentation of dissertation proposal)

Dissertation nine hours

Total 54 hours (57 for the joint program)

This total assumes that a student already has satisfied the core requirements of the master's degree (at most an additional twenty-five hours).

FINANCIAL AID

Most PhD students receive financial assistance, chiefly through sponsored research projects and teaching assistantships.

GT-GEORGIA STATE UNIVERSITY JOINT PHD WITH A MAJOR IN PUBLIC POLICY

The joint doctoral program in public policy combines the strengths of Georgia State University's Andrew Young School of Policy Studies and the Georgia Institute of Technology's School of Public Policy.

DUAL DEGREE MCRP/MASTER OF SCIENCE IN PUBLIC POLICY

The dual MS degree program in Public Policy and City and Regional Planning prepares students for policy analysis and planning work at the national, state, and local levels. Graduates work in public, private, and non-profit settings building on the complementary perspectives and skills of the two professions.

In addition to providing interdisciplinary professional training, the dual degree also provides the opportunity to step toward Ph.D. programs in either Public Policy or Planning with an emphasis on Urban, Environmental, or Economic Development Policy.

All students must complete a minimum combined requirement of 75 credit hours for the dual degree program. Students receive both degrees

REQUIRED CORE COURSES FOR MSPP/MCRP DUAL DEGREE

CORE COURSES FOR THE MS IN PUBLIC POLICY (19 HRS):

PUBP 6001: Introduction to Public Policy (1 hr)
PUBP 6010: Ethics, Epistemology, and Public Policy (3 hrs)
PUBP 6012: Fundamentals of Policy Processes (3 hrs)
PUBP 6112: Research Design in Policy Science (3hrs)
PUBP 6118: Public Finance and Policy (3 hrs)
PUBP 6201: Public Policy Analysis Capstone (3 hrs)

Students must also take one of the following three classes:
PUBP 6014: Organization Theory (3 hrs)
PUBP 6017: Public Management (3hrs)
PUBP 6018: Policy Implementation and Administration (3 hrs)

CORE COURSES FOR MCRP (17 HRS):

CP 6002: Introduction to Fields of Study in Planning (2 hrs)
CP 6012: History and Theory of Planning (4 hrs)
CP 6016: Growth Management Law and Implementation (3 hrs)
CP 6024: Quantitative and Computer Methods in Planning (4 hrs)
CP 6052: Applied Planning Studio (4 hrs)

CORE COURSE OPTIONS FOR DUAL DEGREE STUDENTS (6-7 HRS):

PUBP 6114: Applied Policy Methods and Data Analysis (3 hrs) or CP6025: Advanced Planning Methods (4 hrs)
and
PUBP 6116: Microeconomics in Policy Analysis (3hrs) or CP 6031: Economic Analysis in Planning (3 hrs)

CONCENTRATION/SPECIALIZATION (TWELVE CREDIT HOURS)

Students also select one concentration from among MSPP program offerings, each of which involves at least twelve credit hours. Either the Public Policy concentration or the City and Regional Planning specialization must be in the area of Economic Development; Urban and Regional Policy; or Environmental Policy, Planning and Management.

COLLEGE OF SCIENCES

General Information
- About The College
- Accreditation
- Faculty

Degrees Offered
Minors & Certificates
Schools
- Applied Physiology
- Biology
- Chemistry & Biochemistry
- Earth & Atmospheric Sciences
- Mathematics
- Physics
- Psychology

COLLEGE OF SCIENCES ACCREDITATION STATEMENT

The American Chemical Society has certified the curriculum leading to the Bachelor of Science in Chemistry.

The Human Factors and Ergonomics Society has accredited the curriculum leading to the PhD in Engineering Psychology.

The Master of Science in Prosthetics and Orthotics (MSPO) program is accredited by the Commission on Accreditation of Allied Health Education Programs (CAAHEP) upon the recommendation of the National Commission on Orthotic and Prosthetic Education (NCOPE). Accreditation for the MSPO program is effective 2010 to 2015.

COLLEGE OF SCIENCES

General Information
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- Mathematics
- Physics
- Psychology

COLLEGE OF SCIENCES

SCHOOL OF APPLIED PHYSIOLOGY

Master's Degrees

Master of Science in Prosthetics and Orthotics

Doctoral Degrees

Doctor of Philosophy with a Major in Applied Physiology

SCHOOL OF BIOLOGY

Bachelor's Degrees

Bachelor of Science in Biology

Additional Options:

- Business Option
- International Plan
- Research Option

Master's Degrees

Master of Science in Biology

Master of Science in Bioinformatics

Master of Science in Computational Science and Engineering

Doctoral Degrees

Doctor of Philosophy with a Major in Biology

Doctor of Philosophy with a Major in Bioinformatics

Doctor of Philosophy with a Major in Computational Science and Engineering

SCHOOL OF CHEMISTRY & BIOCHEMISTRY

Bachelor's Degrees

Bachelor of Science in Biochemistry

Additional Options:

- Business Option
- International Plan
- Research Option

Bachelor of Science in Chemistry

Additional Options:

- Biochemistry Option
- Business Option
- International Plan
- Materials Option
- Polymer Option
- Research Option

Master's Degrees

Master of Science in Chemistry

Master of Science in Computational Science and Engineering

Master of Science in Paper Science and Engineering

Doctoral Degrees

Doctor of Philosophy with a Major in Bioinformatics

Doctor of Philosophy with a Major in Chemistry

Doctor of Philosophy with a Major in Computational Science and Engineering

Doctor of Philosophy with a Major in Paper Science and Engineering

SCHOOL OF EARTH & ATMOSPHERIC SCIENCES

Bachelor's Degrees

Bachelor of Science in Earth and Atmospheric Sciences

Additional Options:

- Business Option
- International Plan
- Research Option

BS/MS E.A.S.

Master's Degrees

BS/MS E.A.S.

Master of Science in Earth and Atmospheric Sciences

Doctoral Degrees

Doctor of Philosophy with a Major in Earth and Atmospheric Sciencess

SCHOOL OF MATHEMATICS

Bachelor's Degrees

Bachelor of Science in Applied Mathematics

Additional Options:

- Business Option
- Business - Research Option
- Research Option

Bachelor of Science in Discrete Mathematics

Additional Options:

- Business Option
- Business - Research Option
- Research Option

Master's Degrees

Master of Science in Computational Science and Engineering

Master of Science in Mathematics

Master of Science in Quantitative and Computational Finance

Master of Science in Statistics

Doctoral Degrees

Doctor of Philosophy with a Major in Algorithms, Combinatorics, and Optimization

Doctor of Philosophy with a Major in Bioinformatics

Doctor of Philosophy with a Major in Computational Science and Engineering

Doctor of Philosophy with a Major in Mathematics

SCHOOL OF PHYSICS

Bachelor's Degrees

Bachelor of Science in Applied Physics

Additional Options:

- Business Option

Bachelor of Science in Physics

Additional Options:

- Business Option
- Research Option

Master's Degrees

Master of Science in Physics

Doctoral Degrees

Doctor of Philosophy with a Major in Physics

SCHOOL OF PSYCHOLOGY

Bachelor's Degrees

Bachelor of Science in Psychology

Additional Options:

- Business Option
- International Plan
- Research Option

Master's Degrees

Master of Science in Human-Computer Interaction

Master of Science in Psychology

Doctoral Degrees

Doctor of Philosophy with a Major in Psychology - Cognitive Aging

Doctor of Philosophy with a Major in Psychology - Cognitive and Brain Sciences

Doctor of Philosophy with a Major in Psychology - Engineering Psychology

Doctor of Philosophy with a Major in Psychology - Industrial/Organizational Psychology

Doctor of Philosophy with a Major in Psychology - Quantitative Psychology

MINORS AND CERTIFICATES

The College of Sciences currently offers minors in biology, earth and atmospheric sciences, and mathematics, along with a number of certificate programs that provide similar opportunities for students to develop their expertise or acquire skills or information in specific areas in addition to their major area. Students who satisfactorily complete a certificate program will receive a certificate of recognition from the department that offers the program. Certificate programs available in the College of Sciences are as follows: (Certificate programs offered by the other colleges at Georgia Tech are also available to students in the College of Sciences.)

CERTIFICATE PROGRAMS IN THE COLLEGE OF SCIENCES

Applied Physiology

Applied Physiology

Biology

Environmental Biology

Microbiology

Molecular Biology/Genetics

Chemistry and Biochemistry

Biochemistry/Organic Chemistry

Chemical Analysis

Physical/Inorganic Chemistry

Earth and Atmospheric Sciences

Geochemistry

Solid Earth Geophysics

Physics

Astrophysics

Applied Optics

Atomic, Molecular, and Chemical Physics

Computer-based Instrumentation

Psychology

Biopsychology

Cognitive Psychology

Engineering Psychology

Experimental Psychology v

Industrial/Organizational Psychology

Social/Personality Psychology

SCHOOL OF APPLIED PHYSIOLOGY - ACCREDITATION

The Master of Science Degree Program in Prosthetics and Orthotics is accredited by the Commission on Accreditation of Allied Health Education Programs (www.caahep.org) upon the recommendation of the National Commission of Orthotic and Prosthetic Education (NCOPE).

Commission on Accreditation of Allied Health Education Programs
35 East Wicker Drive, Suite 1970
Chicago, IL 60601-2208
312-553-9355

CERTIFICATE PROGRAM IN APPLIED PHYSIOLOGY

The School of Applied Physiology offers a certificate program in applied phyisology. It is designed for students from any major who wish to broaden or supplement their educational experiences and career opportunities in areas related to allied health (physical therapy, occupational therapy, rehabilitation), health sciences, and human physiology. The certificate curriculum is based in anatomy, physiology, and human movement sciences, but it allows students the flexibility to elect courses in specific areas of interest.

THE HEALTH SCIENCES REQUIREMENT

All Georgia Tech students must satisfactorily complete the health and wellness requirement for graduation. The requirement can be satisfied by completing one of two course options in the School of Applied Physiology: APPH 1040 Scientific Foundations of Health or APPH 1050 Science of Physical Activity and Health. APPH 1040 is a two hour lecture based course. APPH 1050 is a lecture and physical activity course that meets once per week for 1.5 hours of lecture and once per week at the Campus Recreations Center for 1.5 hours of structured physical activity (Note: A $35 course fee is required to take APPH 1050). The school may grant credit to transfer students for comparable courses completed at other institutions. For more information, contact the School of Applied Physiology's administrative office.

Students who have completed their health and wellness requirement are also encouraged to consider additional elective courses in the School of Applied Physiology's Health Sciences Certificate program. In addition, other Applied Physiology (APPH) courses may be used as free electives or technical electives, if approved by the major school. Individual schools may allow up to 3 hours of courses to be counted toward the degree requirements. Students should check the curricula of their individual schools to determine the number of hours they may apply toward the degree.

REQUESTING AN OVERLOAD FOR HPS 1040

Overload requests for APPH 1040 or 1050 should be made via the online registration system. Please go to www.registrar.gatech.edu/registration/ for information on how to request a permit/overload. Please note, no overloads are given during early registration. Overload requests will be reviewed the week before classes begin. Permits will be given at that time based upon classroom space and class status, with juniors and seniors having priority.

SCHOOL OF APPLIED PHYSIOLOGY
About the School
Accreditation
Undergraduate
Certificate
Health Science Requirement
Graduate
Admissions
MS Prosthetics And Orthotics
PhD Applied Physiology
College of Sciences

MASTER OF SCIENCE IN PROSTHETICS AND ORTHOTICS

The School of Applied Physiology offers a graduate program of study leading to a Master of Science Degree in Prosthetics and Orthotics (MSPO). Similar to a medical education model, the Georgia Tech MSPO program is founded upon organized problem solving and investigative processes within an interdisciplinary clinical environment. The curriculum includes traditional lecture and laboratory courses in basic sciences, medicine, engineering, and prosthetics and orthotics. These courses are supplemented by unique off campus clinical rotations in which students participate in local hospitals, medical clinics, and prosthetics and orthotics patient care facilities under the guidance of a credentialed preceptor. These applied learning experiences occur in parallel to hands-on patient physical examination, treatment planning, and orthosis/prosthesis device design and fabrication. Students perform these tasks both off-site in affiliated medical and orthotic/prosthetic facilities as well as on-campus in Georgia Tech's clinical and fabrication facilities, including on campus research laboratories.

The MSPO education program curriculum consists of 48 credit hours over four semesters and covers three themes:

1. Applied physiology and engineering
2. Clinical medicine and prosthetics/orthotics
3. Applied science and research

Seventy percent of the class hours involve clinical applications, twenty percent involves didactic classes, and five percent of the curriculum focuses on research, i.e., research seminars and a non-thesis research project. Students entering the program should have an academic background that includes prerequisite classes in human anatomy (dissection), human physiology, psychology, chemistry, calculus and calculus-based physics.

DOCTOR OF PHILOSOPHY WITH A MAJOR IN APPLIED PHYSIOLOGY

The School of Applied Physiology offers a multidisciplinary and integrative PhD program focused on the study of human movement and mobility, with research concentrations in biomechanics, neuromechanics, motor control and behavior, muscle cellular and systems physiology, and exercise physiology. Applied physiology refers to the study of normal and abnormal regulation and integration of mechanisms across all levels of biological organization (molecules to cells to organs to organ systems). The course of graduate study focuses on original, independent research culminating in the doctoral dissertation. All students are required to complete a faculty-approved set of required courses (15 hours), courses in an approved minor concentration (9 hours), six hours in a specialized focus area and twelve hours of dissertation research for a total of 42 hours.

BACHELOR OF SCIENCE IN BIOLOGY

The undergraduate curriculum for the Bachelor of Science in Biology degree is designed to prepare students for employment in academia, government, or industry; for graduate studies in the biological sciences or science teaching; or for admission to medical, dental, or veterinary schools. The theme of the curriculum is systems biology, employing a systems approach in solving biological problems. All students participate in research through undergraduate research courses. The School also offers the International Plan, Business Option, a minor in biology, and several certificates.

INTERNATIONAL PLAN

Georgia Tech has recently introduced an International Plan through the Office of International Education (www.oie.gatech.edu/). Successful completion of this plan earns students an international designation on their Georgia Tech degree. The primary purpose of the plan is to offer a challenging and coherent academic program for students to develop global competence within the context of a Biology degree. The requirements include: language proficiency equivalent to two years of college coursework (twelve hrs), one course in international relations (three hrs), global economy (three hrs), focused study of a region (three hrs), an integrative course synthesizing the international experience (three hrs), and two semesters (minimum of 26 weeks) in residence abroad. Georgia Tech biology courses are taught in Australia/New Zealand (www.oie.gatech.edu/sa/programs/) and Spain (www.oie.gatech.edu/sa/programs/) as part of the Study Abroad program. In addition, many biology courses are available through Georgia Tech partner universities abroad (www.oie.gatech.edu/sa/programs/). Some of these universities teach biology courses in English, such as Hong Kong University, Tokyo Technological University, University of Victoria (New Zealand), National University of Singapore, University of Strathclyde (Scotland), and Bilkent University (Turkey).

RESEARCH OPTION

This plan enables students to do nine credit hours of supervised research with a Biology faculty member over multiple semesters. With faculty guidance, students write a brief proposal, perform independent, original research, and write a thesis about their work. The thesis is evaluated by two Biology Faculty members. The first six credit hours of the research option are taken as BIOL 2699/4699 (research for credit) or BIOL 2698/4698 (research for pay). Students then take either BIOL 4690 (Independent Research Project; three hours) or BIOL 4910 (Honors Research Thesis; three hours) in their final semester and two, one credit-hour writing courses, LCC 4701 and 4702. These writing courses can be counted as Biology electives. Note that LCC 4701 should be taken in the semester prior to enrolling in BIOL 4910/4690. The student's research is presented in BIOL 4450 Senior Seminar.

Completing this program gives students a "Research Option in Biology" designation on their transcripts.

SCHOOL OF BIOLOGY

About the School
Undergraduate
BS Biology
Description
Degree Requirements
BS Biology
Business Option
Certificates
Minors
Graduate
Admissions
Graduate Programs
Master's Degrees
Biology
Bioinformatics
Computational Science & Eng
Doctoral Degrees
Biology
Bioinformatics
Computational Science & Eng
College of Sciences

BACHELOR OF SCIENCE IN BIOLOGY 2013 - 2014 DEGREE REQUIREMENTS

REQUIREMENT	REQ HRS	COURSE(S)	NOTES
Wellness	2	HPS 1040 or APPH 1040 or APPH 1050	
Core A - Essential Skills	3	ENGL 1101	
	3	ENGL 1102	
	4	MATH 1501	
Core B - Institutional Options	3	CS 1301 or CS 1315 or CS 1371	
Core C - Humanities	6	Any HUM	
Core D - Science, Math, & Technology	4	CHEM 1211K	
	4	CHEM 1212K	
	4	MATH 1502	
Core E - Social Sciences	3	HIST 2111 or HIST 2112 or INTA 1200 or POL 1101 or PUBP 3000	
	9	Any SS	
Core F - Courses Related to Major	4	BIOL 1510	
	3	CHEM 2311	
	3	CHEM 2312	
	4	PHYS 2211	
	4	PHYS 2212	
Major Requirements	4	BIOL 1520	
	3	BIOL 2335	
	3	BIOL 3450	
	3	BIOL 2344	
	2	Biology Lab Requirement	a
	3	BIOL 3600	
	1	BIOL 4450	
	3	BIOL 4590 or BIOL 4690 or BIOL 4910	
Non-Biology Courses	2	CHEM 2380	
	3	BIOL 2400 or BIOL 4150 or BIOL 4401 or BIOL 4422 or BIOL 4755 or MATH 3215 or MATH 3770	
Biology Electives	21	BIOL 3000-level or higher	b, d
Free Electives	11	Free Electives	
TOTAL:	122		

NOTES

a = Students must complete two of following three lab options: BIOL 2336 or 2338, BIOL 2345 or 2355, BIOL 3351

b = Students may take up to nine hours of other Science course work, EXCEPT for the following: APPH 3300, 3901-3904, 4699, BMED 4699, 4900-4903, CHEM 4601, 4699, 4901-4903, EAS 4651, 4699, 4900, MATH 2699, 4080, 4090, 4699, 4999, PHYS 4601, 4602, 4699, PSYC 4600, 4601, 4699, 4900-4910.

c = C-minimum required

d = Limit six hours of BIOL 4699.

SCHOOL OF BIOLOGY

About the School
Undergraduate
BS Biology
Description
Degree Requirements
BS Biology
Business Option
Certificates
Minors
Graduate
Admissions
Graduate Programs
Master's Degrees
Biology
Bioinformatics
Computational Science & Eng
Doctoral Degrees
Biology
Bioinformatics
Computational Science & Eng
College of Sciences

BACHELOR OF SCIENCE IN BIOLOGY - BUSINESS OPTION 2013 - 2014 DEGREE REQUIREMENTS

REQUIREMENT	REQ HRS	COURSE(S)	NOTES
Wellness	2	HPS 1040	
Core A - Essential Skills	3	ENGL 1101	
	3	ENGL 1102	
	4	MATH 1501	
Core B - Institutional Options	3	CS 1301 or CS 1315 or CS 1371	
Core C - Humanities	6	Any HUM	
Core D - Science, Math, & Technology	4	CHEM 1211K	
	4	CHEM 1212K	
	4	MATH 1502	
Core E - Social Sciences	3	HIST 2111 or HIST 2112 or INTA 1200 or POL 1101 or PUBP 3000	
	3	ECON 2106	
	6	Any SS	
Core F - Courses Related to Major	4	BIOL 1510	
	3	CHEM 2311	
	3	CHEM 2312	
	4	PHYS 2211	
	4	PHYS 2212	
Major Requirements	4	BIOL 1520	
	3	BIOL 2335	
	3	BIOL 3450	
	3	BIOL 2344	
	2	Biology Lab Requirement	a
	3	BIOL 3600	
	1	BIOL 4450	
	3	BIOL 4590 or BIOL 4690 or BIOL 4910	
Non-Biology Courses	2	CHEM 2380	
	3	BIOL 2400 or BIOL 4150 or BIOL 4401 or BIOL 4422 or BIOL 4755 or MATH 3215 or MATH 3770	
Biology Electives	15	BIOL 3000-level or higher	b, d
Business Option	3	ACCT 2101 or MGT 3000	
	3	MGT 3101 or MGT 3150 or PSYC 2220	
	6	MGT 3062 or MGT 3078 or MGT 3300 or MGT 3660 or MGT 4015 or MGT 4026 or MGT 4028 or MGT 4030 or MGT 4190 or MGT 4191 or MGT 4192 or MGT 4193 or MGT 4194 or MGT 4303 or MGT 4304 or MGT 4307 or MGT 4335 or MGT 4610 or MGT 4670	
Free Electives	5	Free Electives	
TOTAL:	122		

NOTES

a = Students must complete two of following three lab options: BIOL 2336 or 2338, BIOL 2345 or 2355, BIOL 3351

b = Students may take up to nine hours of other Science course work, EXCEPT for the following: APPH 3300, 3901-3904, 4699, BMED 4699, 4900-4903, CHEM 4601, 4699, 4901-4903, EAS

4651, 4699, 4900, MATH 2699, 4080, 4090, 4699, 4999, PHYS 4601, 4602, 4699, PSYC 4600, 4601, 4699, 4900-4910.

c = C-minimum required

d = Limit six hours of BIOL 4699.

CERTIFICATE PROGRAMS

Each certificate requires twelve credit-hours of coursework, including at least nine credits at the 3000+ level. Courses required by name and number for a student's major program of study may not count towards a certificate. Students may not double-count courses towards more than one certificate or minor. Non-Biology majors will be required to include at least nine credits of BIOL coursework within their certificate. Students should choose twelve credits from the lists below for each of the six new certificates:

1. Biomedical Science
    - APPH/BIOL 3751 Human Anatomy and Physiology
    - BIOL 4015 Cancer Bio/Tech
    - BIOL 4105 Macromolecular Modeling
    - BIOL 4150 Genomics
    - BIOL 4340 Medical Microbiology
    - BIOL 4401 Experimental Design and Statistical Methods
    - BIOL 4464 Developmental Biology
    - BIOL 4570 Immunology and Immunochemistry
    - BIOL 4650 Bioethics
    - BIOL 4668 Eukaryotic Molecular Genetics
    - BIOL 4752 Introduction to Neuroscience
    - BIOL 4802 Special Topics: Current Trends in Biomedical Entrepreneurship/Entrepreneurship in the Life Sciences
    - BIOL 4802 Special Topics: Evolutionary Developmental Biology
    - BIOL 4802 Special Topics: Drug Discovery
    - BIOL 4803 Special Topics: Human Genetics
    - BIOL 4803 Special Topics: Virology
    - BIOL 4803 Special Topics: Endocrinology
    - BMED 3100 Systems Physiology
    - BMED 3110 Quant Engr Physio Lab I
    - BMED 4400 Neuroengineering
    - BMED 4500 Cell and Tissue Engineering Lab
    - BMED 4570 Diagnostic Imaging Physics
    - BMED/CHEM/CHBE 4765 Drug design, development and delivery
    - LCC 2300 Intro Biomedicine & Culture
    - PSYC 3020 Biopsychology
2. Biomolecular Technology
    - BIOL 3380 Microbiology
    - BIOL 3381 Microbiology Lab
    - BIOL 4105 Macromolecular Modeling

- BIOL 4150 Genomics
- BIOL 4225 Molecular Evolution
- BIOL 4440 Plant Physiology
- BIOL 4746 Signaling Molecules
- BIOL 4478 Biophysics
- BIOL 4608 Prokaryotic Molecular Genetics
- BIOL 4668 Eukaryotic Molecular Genetics
- BIOL 4802 Special Topics: Drug Discovery
- BIOL 4803 Special Topics: Protein Biology
- BIOL 4803 Special Topics: Regulatory RNAs
- BIOL 4803 Special Topics: Environmental Microbial Genomics
- BMED/CHEM/CHBE 4765 Drug design, development and delivery
- CHEM 4511 Biochemistry I
- CHEM 4512 Biochemistry II
- CHEM 4521 Biophysical Chemistry
- CHEM 4803 Special Topics: Macromolecular Structure
- CHBE 4760 Biocatalysis

3. Computational & Quantitative Biology
    - BIOL 2400 Mathematical Models in Biology
    - BIOL 4105 Macromolecular Modeling
    - BIOL 4150 Genomics
    - BIOL 4225 Molecular Evolution
    - BIOL 4401 Experimental Design and Statistical Methods
    - BIOL 4422 Theoretical Ecology
    - BIOL/MATH 4755 Mathematical Biology
    - BIOL 4803 Special Topics: Computational Systems Biology
    - BMED 4477 Bio Networks & Genomics
    - CS 4400 Introduction to Database Systems
    - CS 4710 Intro to Computing Concepts in Bioinformatics
    - MATH 3012 Applied Combinatorics
    - MATH 3215 Probability & Statistics
    - MATH 4022 Introduction to Graph Theory
    - CEE/ISYE/MATH 3770 Statistics & Applications
4. Environmental Science
    - BIOL 2100 Biogeography of New Zealand
    - BIOL 3100 Ecology and Evolution of Australia
    - BIOL 3300 Tropical Ecology
    - BIOL 3380 Introductory Microbiology
    - BIOL 3381 Introductory Microbiology Lab
    - BIOL 4101 Sensory Ecology
    - BIOL 4221 Biological Oceanography
    - BIOL 4410 Microbial Ecology

- BIOL 4417 Marine Ecology
- BIOL 4418 Microbial Physiology
- BIOL 4422 Theoretical Ecology
- BIOL 4440 Plant Physiology
- BIOL 4446 Animal Physiology
- BIOL 4471 Behavior Biology
- BIOL 4620 Aquatic Chemical Ecology
- BIOL 4802 Special Topics: Community Ecology
- BIOL 4803 Special Topics: Population Biology
- BIOL 4803 Special Topics: Urban Ecology
- BIOL 4803 Special Topics: Population & Evolutionary Ecology
- CEE 2300 Environmental Engineering Principles
- CEE 3340 Environmental Engineering Laboratory
- CEE 4300 Environmental Engineering Systems
- CEE 4620 Environmental Impact Assessment
- CHEM/EAS 4740 Atmospheric Chemistry
- EAS 1600 Intro Environmental Science
- EAS 1601 Habitable Planet
- EAS 2420 Environmental Measures
- EAS 2600 Earth Processes
- EAS 2602 Earth Through Time
- EAS 4110 Resources, Energy & the Environment
- EAS 4300 Oceanography
- EAS 4350 Paleoclimate & Paleoceanography
- EAS 4410 Climate & Global Change
- EAS 4602 Biogeochemical Cycles

5. Marine Science
    - BIOL 4221 Biological Oceanography
    - BIOL 4410 Microbial Ecology
    - BIOL 4417 Marine Ecology
    - BIOL 4446 Animal Physiology
    - BIOL 4620 Aquatic Chemical Ecology
    - CEE 3040 Fluid Mechanics
    - CEE 4225 Coastal Engineering
    - EAS 3620 Geochemistry
    - EAS 4300 Oceanography
    - EAS 4350 Paleoclimatology and Paleoceanography
    - EAS 4602 Biogeochemical cycles
    - NS 2323 Navigation
6. Integrative Biology
    - twelve2 credits chosen from courses represented in four of the other certificates (e.g., three credits from each of 4 other certificates = 12 credits total).

FOR NON-BIOLOGY MAJORS:

Additional courses that can count towards any of the above certificates are: BIOL 1510/1511, BIOL 1520/1521, BIOL 2335/2337, BIOL 2344/2345, BIOL 3340 (as long as these courses are not required for their major program of study, and only up to three credits of courses at the 1xxx-2xxx level can count). At least nine credits of BIOL coursework are required for each certificate.

GRADUATE PROGRAMS

The School of Biology provides advanced training and research opportunities in various aspects of systems biology, ranging from molecular biology to ecology. Some current research areas include genomic sequence analysis, mechanisms of gene expression and DNA replication, evolutionary mechanisms, sphingolipids and metabolomics, signal transduction in plant and animal cells, environmental microbiology, bioremediation, sensory mechanisms in small animals, biological oceanography, ecosystem toxicology, and theoretical ecology.

MASTER OF SCIENCE IN BIOLOGY

The requirements for the MS degree are a research thesis and 30 semester hours of coursework, which includes twelve credit hours in a major field. Twelve of the semester hours must be in formal graduate-level courses. The thesis must be defended in an oral examination. A non-thesis master's degree is available for students unable to carry out a thesis project; information on its requirements is available from the graduate coordinator in the School of Biology.

MASTER OF SCIENCE IN BIOINFORMATICS

This is a three-semester-focused professional master's degree program combining 37 semester hours of courses in computer science, advanced molecular biology and biochemistry, statistics, and bioinformatics. A full-time summer internship in a corporate or academic bioinformatics group is an essential part of the curriculum. With input and assistance from corporate partners, the program is geared to training and placing graduates into lucrative jobs in the high-demand specialty field of bioinformatics. More information is available from the graduate coordinator of the MS Bioinformatics program.

MASTER OF SCIENCE IN COMPUTATIONAL SCIENCE AND ENGINEERING

The School of Civil and Environmental Engineering (CEE) participates in the Computational Science and Engineering (CSE) Program. CSE is an interdisciplinary program addressing the body of knowledge, skills, and practices associated with the study of computer-based models of natural phenomena and engineered systems. Students will be required to obtain a breadth of knowledge across a set of core areas in the CSE discipline, depth of knowledge in a specific computational specialization (e.g., numerical computing), and knowledge to apply computational techniques in a domain of application. Students will be expected to integrate principles from mathematics, computer science, and engineering to be able to create significant computational artifacts (e.g., software).

The CSE Master of Science degree program is an interdisciplinary program offered by the College of Computing, the College of Engineering, and the College of Sciences. Interested applicants with a Civil and/or Environmental Engineering background apply for admission in the CSE program through CEE. Once admitted, students follow the CSE program's degree requirements and curriculum.

Students must complete four of the five courses making up the core curriculum: CSE/Math 6643 (Numerical Linear Algebra), CSE 6140 (Computational Science and Engineering Algorithms), CSE 6730 (Modeling and Simulation: Fundamentals & Implementation), CSE/ISYE 6740 (Computational Data Analysis), and CSE 6220 (High Performance Computing). A specialization (CEE) minor is required consisting of twelve hours of coursework relevant to the CSE discipline that includes one applications area; this must include at least six hours of courses that do not carry the CS/CSE course designation. Finally, students must either complete 6 additional hours of approved coursework (course option) or an MS thesis (thesis option) that is defended to the student's thesis committee who is responsible for overseeing the student's research. six hours of thesis credit are required in the thesis option. A program of study must be approved by the CSE Program Director and CEE's Associate Chair for Graduate Programs.

DOCTOR OF PHILOSOPHY WITH A MAJOR IN BIOLOGY

Each PhD student must acquire a thorough knowledge of a selected area of specialization, a broad knowledge of the field, and competence in the basic sciences. The main emphasis is on the successful completion of an original and independent research project. Credit hour requirements total 40, including 12 research credit hours and 9 credit hours in an approved minor. Admission to candidacy requires passing a written comprehensive examination and an oral exam based on a written research proposal. Each PhD student must write a comprehensive dissertation based on the student's scholarly research.

Additional information on the graduate program is available from the graduate coordinator in the School of Biology.

DOCTOR OF PHILOSOPHY WITH A MAJOR IN BIOINFORMATICS

PARTICIPATING SCHOOLS

College of Computing
School of Biology
School of Biomedical Engineering
School of Chemistry and Biochemistry
School of Industrial and Systems Engineering
School of Mathematics

OBJECTIVE OF THE PROGRAM

The mission of the Georgia Tech Bioinformatics PhD program is to educate and prepare graduate students to reach the forefront of leadership in the field of bioinformatics and computational biology and to integrate research and education on the use of information technologies in biology and medicine. Thus, the program leading to a PhD in Bioinformatics is an interdisciplinary program spanning a variety of academic departments at Georgia Tech.

Bioinformatics is a multidisciplinary field in which physical sciences, life sciences, computer science, and engineering are merged to solve both fundamental and applied problems in biology and medicine. The outcomes of bioinformatics and computational biology particularly include:

- new and global perspectives into the organization and function of biological systems (fundamental biology);
- new and novel targets for drug discovery and development; and
- genetic/proteomic profiling for pharmaco-genomics or personalized medicine.

Thus, bioinformatics is emerging as a strategic discipline at the frontier of biology, biochemistry, biomedicine, bioengineering, computer science, and mathematics, impacting fundamental science, medicine, biotechnology, and society.

With its broad mission statement, this program at Georgia Tech has the following strengths and focus areas:

1. Development of software tools, algorithms, and databases for gene identification, protein structural prediction, clustering analysis, and data mining
2. Application of bioinformatics to disease diagnosis, classification, prognosis, and treatment
3. Application of bioinformatics to fundamental biology and systems biology

There is an increasing demand for scientists with advanced training in bioinformatics. Professionals in this area should have a thorough knowledge of molecular biology, mathematics, and statistics, as well as computer science and engineering.

For more information visit www.biology.gatech.edu/graduate-programs/bioinformatics/new/bioinformatics_phd.php.

DOCTOR OF PHILOSOPHY WITH A MAJOR IN COMPUTATIONAL SCIENCE AND ENGINEERING

The School of Civil and Environmental Engineering (CEE) participates in the Computational Science and Engineering (CSE) Program.Â CSE is an interdisciplinary program addressing the body of knowledge, skills, and practices associated with the study of computer-based models of natural phenomena and engineered systems. Students will be required to obtain a breadth of knowledge across a set of core areas, depth of knowledge in a specific computational specialization (e.g., numerical computing), and knowledge to apply computational techniques in a domain of application. Students will be expected to integrate principles from mathematics, computing, science, and engineering to be able to create significant computational artifacts (e.g., software), and to complete independent research that advances the state-of-the-art in the CSE discipline.

The CSE Ph.D. degree program is an interdisciplinary program offered by the College of Computing, the College of Engineering, and the College of Sciences. Interested applicants with a civil and/or environmental engineering background apply for admission in the CSE program through CEE. Once admitted, students follow the CSE program's degree requirements and curriculum.

Required coursework includes CSE 6001 (Introduction to Computational Science and Engineering), CSE core courses (12 hours), a computation specialization (nine hours), and an application specialization (nine hours). To complete the core course requirement, students must complete four of the five courses making up the core curriculum: CSE/Math 6643 (Numerical Linear Algebra), CSE 6140 (Computational Science and Engineering Algorithms), CSE 6730 (Modeling and Simulation: Fundamentals & Implementation), CSE/ISYE 6740 (Computational Data Analysis), and CSE 6220 (High Performance Computing). The computational specialization includes at least nine hours of courses that increase the student's depth of understanding of computational methods in a specific area, as approved by the student's academic advisor. These courses must go beyond "using computers" to deepen understanding of computational methods, preferably in the context of some application domain. The application specialization includes at least nine hours of courses that increase depth of understanding in an application field; these need not be computation-focused courses. At least nine hours of Ph.D. courses must be courses that do not carry the CS/CSE course designation. These hours may be taken in CEE. Hours taken as part of the computation and/or application specialization can be used to fulfill this requirement.

A qualifying examination must be attempted by the end of the second year of enrollment in the CSE doctoral program (normally taken after the student completes CSE core coursework). A qualifying examination committee shall be appointed by the CSE program coordinator for each student and is responsible for making an overall recommendation concerning the outcome of the qualifying examination.

Students are required to complete a doctoral thesis reporting the results of independent research that advances the state-of-the-art in the computational science and engineering discipline. The thesis must be successfully defended to the student's thesis committee.

BACHELOR OF SCIENCE IN BIOCHEMISTRY

The Bachelor of Science in Biochemistry degree program consists of a combination of requirements and electives that ensure a strong foundation in the chemical and biological sciences while providing the flexibility to tailor the curriculum to satisfy specific interests or career goals. This program may be of interest to students who plan careers in research, teaching, or in a life/health science profession (medicine, pharmacy, dentistry). The judicious use of free electives also enables the student to achieve considerable knowledge of other disciplines at Georgia Tech, such as chemical and biomolecular engineering, bioinformatics (computing), biomedical engineering, and biology. The biochemistry curriculum enables majors who are interested in medical, dental, or law school to meet admission requirements of these schools.

INTERNATIONAL PLAN

The BS in Chemistry (International Plan) and BS in biochemistry (International Plan) are offered to undergraduate students seeking to understand their majors in a global perspective. Students in this program must demonstrate proficiency in a foreign language; complete coursework in a country/regional elective, international relations, and global economics; and participate study or research abroad experience (usually in the junior year). While abroad, students are required to complete in a supervised research experience with a faculty member in chemistry and biochemistry at the host institution. Upon successful completion of degree requirements for the International Plan, a "International Plan" designator is indicated on the diploma. If interested in participating in the International Plan as part of the BS in Chemistry or BS in Biochemistry, students should visit: www.internationalplan.gatech.edu.

BACHELOR OF SCIENCE IN BIOCHEMISTRY RESEARCH OPTION

The BS in Chemistry (Research Option) and BS in Biochemistry (Research Option) are offered for students who wish to participate in a research problem under the supervision of one of the forty-six members of faculty and adjunct faculty in the School. Participants in the Research Option learn how to attack a research problem from experiment design and execution to interpretation of results. There is an expectation that undergraduates who contribute to completed studies will be co-authors on submissions to high-quality scholarly journals. Research projects are available in the traditional areas of chemistry (analytical, biological, inorganic, organic, physical, and polymer chemistry) as well as highly interdisciplinary research areas, such as nanochemistry, polymer and materials chemistry, environmental chemistry and sensors, medicinal chemistry, molecular biophysics, and computational chemistry.

To participate in the Research Option in the School of Chemistry and Biochemistry, students should obtain a research project with a faculty member in the department and apply online via www.undergradresearch.gatech.edu. Successful completion of the Research Option requires participation by the student in 9 credit hours of supervised research (CHEM

4698/4699 or CHEM 2698/2699) with a chemistry or biochemistry faculty over three or more semesters, completion of the 1-hour LCC 4701: Undergraduate Research Proposal Writing course, approval of this proposal on their project by a committee of two or more faculty, completion of the 1-hour LCC 4702: Undergraduate Research Thesis Writing course, and submission of an approved thesis. Typically students complete the LCC 4701 course during the first of second semester of research and take the LCC 4702 course during the term in which they complete their thesis.

Successful completion of the Research Option is noted on the student's transcript. Students completing this degree may pursue graduate studies in the chemical or biological sciences or research careers in industrial or governmental laboratories.

SCHOOL OF CHEMISTRY & BIOCHEMISTRY

BACHELOR OF SCIENCE IN BIOCHEMISTRY 2013 - 2014 DEGREE REQUIREMENTS

REQUIREMENT	REQ HRS	COURSE(S)	NOTES
Wellness	2	HPS 1040 or APPH 1040 or APPH 1050	
Core A - Essential Skills	3	ENGL 1101	
	3	ENGL 1102	
	4	MATH 1501	
Core B - Institutional Options	3	CS 1301 or CS 1315 or CS 1371	
Core C - Humanities	6	Any HUM	
Core D - Science, Math, & Technology	4	BIOL 1510	
	4	PHYS 2211	
	4	MATH 1502	
Core E - Social Sciences	3	HIST 2111 or HIST 2112 or INTA 1200 or POL 1101 or PUBP 3000	
	9	Any SS	
Core F - Courses Related to Major	4	CHEM 1211K	
	4	CHEM 1212K	
	2	CHEM 2380	
	4	MATH 2401	
	4	PHYS 2212	
Major Requirements	3	CHEM 2211	
	3	CHEM 2311	
	3	CHEM 2312	
	5	CHEM 3211	
	2	CHEM 3371	
	3	CHEM 3411	
	3	CHEM 4511	
	3	CHEM 4512	
	3	CHEM 4521	
	3	CHEM 4581	
	3	CHEM 4582	
	2	CHEM 4601	
Biology Electives	6	BIOL 2344 or BIOL 3450 or BIOL 4668	
	3	BIOL 3380 or BIOL 3450 or BIOL 4015 or BIOL 4340 or BIOL 4401 or BIOL 4418 or BIOL 4440 or BIOL 4464 or BIOL 4570 or BIOL 4608 or CHEM 4765	
Free Electives	14	Free Electives	
TOTAL:	122		

BACHELOR OF SCIENCE IN BIOCHEMISTRY - BUSINESS OPTION 2013 - 2014 DEGREE REQUIREMENTS

REQUIREMENT	REQ HRS	COURSE(S)	NOTES
Wellness	2	HPS 1040 or APPH 1040 or APPH 1050	
Core A - Essential Skills	3	ENGL 1101	
	3	ENGL 1102	
	4	MATH 1501	
Core B - Institutional Options	3	CS 1301 or CS 1315 or CS 1371	
Core C - Humanities	6	Any HUM	
Core D - Science, Math, & Technology	4	BIOL 1510	
	4	PHYS 2211	
	4	MATH 1502	
Core E - Social Sciences	3	HIST 2111 or HIST 2112 or INTA 1200 or POL 1101 or PUBP 3000	
	3	ECON 2106	
	6	Any SS	
Core F - Courses Related to Major	4	CHEM 1211K	
	4	CHEM 1212K	
	2	CHEM 2380	
	4	MATH 2401	
	4	PHYS 2212	
Major Requirements	3	CHEM 2211	
	3	CHEM 2311	
	3	CHEM 2312	
	5	CHEM 3211	
	2	CHEM 3371	
	3	CHEM 3411	
	3	CHEM 4511	
	3	CHEM 4512	
	3	CHEM 4521	
	3	CHEM 4581	
	3	CHEM 4582	
	2	CHEM 4601	
Biology Electives	6	BIOL 2344 or BIOL 3450 or BIOL 4668	
	3	BIOL 3380 or BIOL 3450 or BIOL 4015 or BIOL 4340 or BIOL 4401 or BIOL 4418 or BIOL 4440 or BIOL 4464 or BIOL 4570 or BIOL 4608 or CHEM 4765	
Business Option	3	ACCT 2101 or MGT 3000	
	3	MGT 3101 or MGT 3150 or PSYC 2220	
	6	MGT 3062 or MGT 3078 or MGT 3300 or MGT 3660 or MGT 4015 or MGT 4026 or MGT 4028 or MGT 4030 or MGT 4190 or MGT 4191 or MGT 4192 or MGT 4193 or MGT 4194 or MGT 4303 or MGT 4304 or MGT 4307 or MGT 4335 or MGT 4610 or MGT 4670	
Free Electives	2	Free Electives	
TOTAL:	122		

BACHELOR OF SCIENCE IN CHEMISTRY

The School of Chemistry and Biochemistry has a vibrant program of study leading to a Bachelor of Science in Chemistry with certification by the American Chemical Society (ACS). The flexibility of the curriculum allows students to study fundamental areas of chemistry while tailoring their degree with technical and free electives to produce a well-rounded experience in preparation for a variety of career opportunities. Students may pursue tailored tracks towards the BS in Chemistry, including those allowing specialization in: biochemistry, business, polymers, and materials options. There are also tremendous opportunities to gain valuable research experience in state-of-the-art laboratories. In addition to coursework requirements, students in the program often participate in a variety of experiential programs, including: undergraduate research, Cooperative work, study abroad, summer internship, and undergraduate teaching assistance.

Faculty in the school are committed to undergraduate education and several have won awards for excellence in teaching. With a faculty to student ratio of approximately 1:6, the School prides itself on the close contact that it maintains with its undergraduate students. The high quality of the curriculum and faculty is part of the reason chemistry graduates receive job offers at the highest salary levels for BS chemists. Graduates of the BS in Chemistry pursue careers such diverse field as forensics, nanoscience, biotechnology, pharmaceuticals in industry or governmental organizations; or they may continue their education in the chemical or biological sciences, or in medicine, pharmacy, dentistry, and law. Chemistry, especially with the biochemistry option (or the stand-alone BS in Biochemistry degree) is a superb preparation for medical school. All Chemistry degrees are certified by the ACS.

BACHELOR OF SCIENCE IN CHEMISTRY - INTERNATIONAL PLAN

The BS in Chemistry (International Plan) and BS in biochemistry (International Plan) are offered to undergraduate students seeking to understand their majors in a global perspective. Students in this program must demonstrate proficiency in a foreign language; complete coursework in a country/regional elective, international relations, and global economics; and participate study or research abroad experience (usually in the junior year). While abroad, students are required to complete in a supervised research experience with a faculty member in chemistry and biochemistry at the host institution. Upon successful completion of degree requirements for the International Plan, a "International Plan" designator is indicated on the diploma. If interested in participating in the International Plan as part of the BS in Chemistry or BS in Biochemistry, students should visit: www.internationalplan.gatech.edu.

RESEARCH OPTION

The BS in Chemistry (Research Option) and BS in Biochemistry (Research Option) are offered for students who wish to participate in a research problem under the supervision of one of the forty-six members of faculty and adjunct faculty in the School. Participants in the Research Option learn how to attack a research problem from experiment design and execution to interpretation of results. There is an expectation that undergraduates who contribute to completed studies will be co-authors on submissions to high-quality scholarly journals. Research projects are available in the traditional areas of chemistry (analytical, biological, inorganic, organic, physical, and polymer chemistry) as well as highly interdisciplinary research areas, such as nanochemistry, polymer and materials chemistry, environmental chemistry and sensors, medicinal chemistry, molecular biophysics, and computational chemistry.

To participate in the Research Option in the School of Chemistry and Biochemistry, students should obtain a research project with a faculty member in the department and apply online via http://undergradresearch.gatech.edu/research-option. Successful completion of the Research Option requires participation by the student in 9 credit hours of supervised research (CHEM 4698/4699 or CHEM 2698/2699) with a chemistry or biochemistry faculty over three or more semesters, completion of the 1-hour LCC 4701: Undergraduate Research Proposal Writing course, approval of this proposal on their project by a committee of two or more faculty, completion of the 1-hour LCC 4702: Undergraduate Research Thesis Writing course, and submission of an approved thesis. Typically students complete the LCC 4701 course during the first of second semester of research and take the LCC 4702 course during the term in which they complete their thesis.

Successful completion of the Research Option is noted on the student's transcript. Students completing this degree may pursue graduate studies in the chemical or biological sciences or research careers in industrial or governmental laboratories. This degree is certified by the American Chemical Society (ACS).

SCHOOL OF CHEMISTRY & BIOCHEMISTRY

General Information
About The School
Undergraduate
BS Biochemistry
Description
Degree Requirements
BS Biochemistry
Business Option
BS Chemistry
Description
Degree Requirements
BS Chemistry
Biochemistry Option
Business Option
Materials Option
Polymer Option
Minors
Graduate
Admissions
Financial Aid
Master's Degrees
Chemistry
Computational Science & Eng
Paper Science & Engineering
Doctoral Degrees
Bioinformatics
Chemistry
Computational Science & Eng
Paper Science & Engineering
Certificate
College of Sciences

BACHELOR OF SCIENCE IN CHEMISTRY 2013 - 2014 DEGREE REQUIREMENTS

REQUIREMENT	REQ HRS	COURSE(S)	NOTES
Wellness	2	HPS 1040 or APPH 1040 or APPH 1050	
Core A - Essential Skills	3	ENGL 1101	
	3	ENGL 1102	
	4	MATH 1501	
Core B - Institutional Options	3	CS 1301 or CS 1315 or CS 1371	
Core C - Humanities	6	Any HUM	
Core D - Science, Math, & Technology	4	BIOL 1510	
	4	PHYS 2211	
	4	MATH 1502	
Core E - Social Sciences	3	HIST 2111 or HIST 2112 or INTA 1200 or POL 1101 or PUBP 3000	
	9	Any SS	
Core F - Courses Related to Major	4	CHEM 1211K	
	4	CHEM 1212K	
	2	CHEM 2380	
	4	MATH 2401	
	4	PHYS 2212	
Major Requirements	3	CHEM 2211	
	3	CHEM 2311	
	3	CHEM 2312	
	3	CHEM 3111	
	5	CHEM 3211	
	3	CHEM 3380	
	3	CHEM 3411	
	3	CHEM 3412	
	2	CHEM 3481	
Additional Major Requirements	3	CHEM 4695 or CHEM 4699	
	3	CHEM 3511 or CHEM 4511 or CHEM 4512	
	6	CHEM 4000- or 6000-level	a
	6	3000-level Technical Electives	b
Free Electives	13	Free Electives	
TOTAL:	122		

NOTES

a = CHEM 4681 and 4699 not allowed.

b = Courses must be 3000-level or higher, and from the Colleges of Computing, Engineering, or Sciences. - Limit 3hrs of CHEM 4699.

c = C-minimum required

SCHOOL OF CHEMISTRY & BIOCHEMISTRY

BACHELOR OF SCIENCE IN CHEMISTRY - BIOCHEMISTRY OPTION 2013 - 2014 DEGREE REQUIREMENTS

REQUIREMENT	REQ HRS	COURSE(S)	NOTES
Wellness	2	HPS 1040 or APPH 1040 or APPH 1050	
Core A - Essential Skills	3	ENGL 1101	
	3	ENGL 1102	
	4	MATH 1501	
Core B - Institutional Options	3	CS 1301 or CS 1315 or CS 1371	
Core C - Humanities	6	Any HUM	
Core D - Science, Math, & Technology	4	BIOL 1510	
	4	PHYS 2211	
	4	MATH 1502	
Core E - Social Sciences	3	HIST 2111 or HIST 2112 or INTA 1200 or POL 1101 or PUBP 3000	
	9	Any SS	
Core F - Courses Related to Major	4	CHEM 1211K	
	4	CHEM 1212K	
	2	CHEM 2380	
	4	MATH 2401	
	4	PHYS 2212	
Major Requirements	3	CHEM 2211	
	3	CHEM 2311	
	3	CHEM 2312	
	3	CHEM 3111	
	5	CHEM 3211	
	3	CHEM 3380	
	3	CHEM 3411	
	3	CHEM 3412	
	2	CHEM 3481	
Biochemistry Option	3	CHEM 4511	
	3	CHEM 4512	
	3	CHEM 4581	
	2	CHEM 4601	
	3	Biochemistry Lab Elective	a
	3	CHEM 4521 or CHEM 4582 or CHEM 4765 or BIOL 3380 or BIOL 3450 or BIOL 4340 or BIOL 4418 or BIOL 4401 or BIOL 4440 or BIOL 4464 or BIOL 4478 or BIOL 4570 or BIOL 4608 or BIOL 4668	
Free Electives	14	Free Electives	
TOTAL:	122		

NOTES

a = BIOL 3450 + 3451, OR BIOL 3380 + 3381, OR CHEM 4582. If four credits are totaled, extra counts toward Free Electives.

SCHOOL OF CHEMISTRY & BIOCHEMISTRY

General Information
About The School
Undergraduate
BS Biochemistry
Description
Degree Requirements
BS Biochemistry
Business Option
BS Chemistry
Description
Degree Requirements
BS Chemistry
Biochemistry Option
Business Option
Materials Option
Polymer Option
Minors
Graduate
Admissions
Financial Aid
Master's Degrees
Chemistry
Computational Science & Eng
Paper Science & Engineering
Doctoral Degrees
Bioinformatics
Chemistry
Computational Science & Eng
Paper Science & Engineering
Certificate
College of Sciences

BACHELOR OF SCIENCE IN CHEMISTRY - BUSINESS OPTION 2013 - 2014 DEGREE REQUIREMENTS

REQUIREMENT	REQ HRS	COURSE(S)	NOTES
Wellness	2	HPS 1040 or APPH 1040 or APPH 1050	
Core A - Essential Skills	3	ENGL 1101	
	3	ENGL 1102	
	4	MATH 1501	
Core B - Institutional Options	3	CS 1301 or CS 1315 or CS 1371	
Core C - Humanities	6	Any HUM	
Core D - Science, Math, & Technology	4	BIOL 1510	
	4	PHYS 2211	
	4	MATH 1502	
Core E - Social Sciences	3	HIST 2111 or HIST 2112 or INTA 1200 or POL 1101 or PUBP 3000	
	3	ECON 2106	
	6	Any SS	
Core F - Courses Related to Major	4	CHEM 1211K	
	4	CHEM 1212K	
	2	CHEM 2380	
	4	MATH 2401	
	4	PHYS 2212	
Major Requirements	3	CHEM 2211	
	3	CHEM 2311	
	3	CHEM 2312	
	3	CHEM 3111	
	5	CHEM 3211	
	3	CHEM 3380	
	3	CHEM 3411	
	3	CHEM 3412	
	2	CHEM 3481	
Additional Major Required	3	CHEM 3511 or CHEM 4511 or CHEM 4512	
	4	CHEM 4684	
	3	CHEM 4000- or 6000-level	a
Business Option	3	ACCT 2101 or MGT 3000	
	3	MGT 3101 or MGT 3150 or PSYC 2220	
	6	MGT 3062 or MGT 3078 or MGT 3300 or MGT 3660 or MGT 4015 or MGT 4026 or MGT 4028 or MGT 4030 or MGT 4190 or MGT 4191 or MGT 4192 or MGT 4193 or MGT 4194 or MGT 4303 or MGT 4304 or MGT 4307 or MGT 4335 or MGT 4610 or MGT 4670	
Free Electives	9	Free Electives	
TOTAL:	122		

NOTES

a = CHEM 4681 and 4699 not allowed.

BACHELOR OF SCIENCE IN CHEMISTRY - MATERIALS OPTION 2013 - 2014 DEGREE REQUIREMENTS

REQUIREMENT	REQ HRS	COURSE(S)	NOTES
Wellness	2	HPS 1040 or APPH 1040 or APPH 1050	
Core A - Essential Skills	3	ENGL 1101	
	3	ENGL 1102	
	4	MATH 1501	
Core B - Institutional Options	3	CS 1301 or CS 1315 or CS 1371	
Core C - Humanities	6	Any HUM	
Core D - Science, Math, & Technology	4	BIOL 1510	
	4	PHYS 2211	
	4	MATH 1502	
Core E - Social Sciences	3	HIST 2111 or HIST 2112 or INTA 1200 or POL 1101 or PUBP 3000	
	9	Any SS	
Core F - Courses Related to Major	4	CHEM 1211K	
	4	CHEM 1212K	
	2	CHEM 2380	
	4	MATH 2401	
	4	PHYS 2212	
Major Requirements	3	CHEM 2211	
	3	CHEM 2311	
	3	CHEM 2312	
	3	CHEM 3111	
	5	CHEM 3211	
	3	CHEM 3380	
	3	CHEM 3411	
	3	CHEM 3412	
	2	CHEM 3481	
Materials Option	3	CHEM 3511 or CHEM 4511 or CHEM 4512	
	4	CHEM 4684	
	3	MSE 2001	
	9	MSE 2020 or MSE 3000 or MSE 3002 or MSE 3003 or MSE 3012 or MSE 3015 or MSE 3021 or MSE 4002 or MSE 4010 or MSE 4020 or MSE 4022 or MSE 4325 or MSE 4751	a
Free Electives	12	Free Electives	
TOTAL:	122		

NOTES

a = Six of the nine credits must be 3000-level or higher. Special Topics also allowed with departmental approval.

SCHOOL OF CHEMISTRY & BIOCHEMISTRY

General Information
About The School
Undergraduate
BS Biochemistry
Description
Degree Requirements
BS Biochemistry
Business Option
BS Chemistry
Description
Degree Requirements
BS Chemistry
Biochemistry Option
Business Option
Materials Option
Polymer Option
Minors
Graduate
Admissions
Financial Aid
Master's Degrees
Chemistry
Computational Science & Eng
Paper Science & Engineering
Doctoral Degrees
Bioinformatics
Chemistry
Computational Science & Eng
Paper Science & Engineering
Certificate
College of Sciences

BACHELOR OF SCIENCE IN CHEMISTRY - POLYMER OPTION 2013 - 2014 DEGREE REQUIREMENTS

REQUIREMENT	REQ HRS	COURSE(S)	NOTES
Wellness	2	HPS 1040 or APPH 1040 or APPH 1050	
Core A - Essential Skills	3	ENGL 1101	
	3	ENGL 1102	
	4	MATH 1501	
Core B - Institutional Options	3	CS 1301 or CS 1315 or CS 1371	
Core C - Humanities	6	Any HUM	
Core D - Science, Math, & Technology	4	BIOL 1510	
	4	PHYS 2211	
	4	MATH 1502	
Core E - Social Sciences	3	HIST 2111 or HIST 2112 or INTA 1200 or POL 1101 or PUBP 3000	
	9	Any SS	
Core F - Courses Related to Major	4	CHEM 1211K	
	4	CHEM 1212K	
	2	CHEM 2380	
	4	MATH 2401	
	4	PHYS 2212	
Major Requirements	3	CHEM 2211	
	3	CHEM 2311	
	3	CHEM 2312	
	3	CHEM 3111	
	5	CHEM 3211	
	3	CHEM 3380	
	3	CHEM 3411	
	3	CHEM 3412	
	2	CHEM 3481	
Polymer Option	3	CHEM 3511 or CHEM 4511 or CHEM 4512	
	4	CHEM 4684	
	3	CHEM 4775	
	3	CHEM 4776	
	3	CHEM 3482 or CHEM 4311 or CHEM 4341 or CHEM 4401 or CHEM 4452 or CHEM 4511 or CHEM 4512 or CHEM 4521 or CHEM 4581 or CHEM 4601	
	3	3000-level Technical Electives	a
Free Electives	12	Free Electives	
TOTAL:	122		

NOTES

a = Must be a 3000-level course from CHE, MSE, or PTFE.

FINANCIAL AID

Financial support is available for graduate study in the School of Chemistry and Biochemistry. The usual form of financial aid for first-year students is the teaching assistantship. Most students beyond the first year are appointed as research assistants. Both teaching and research assistants receive full tuition waivers. Additional information on the graduate program is available by writing:

graduate coordinator
School of Chemistry and Biochemistry
Georgia Institute of Technology
Atlanta, Georgia 30332-0400

or by visiting www.chemistry.gatech.edu.

MASTER OF SCIENCE IN CHEMISTRY

Two different programs of study leading to a master's degree are offered by the School of Chemistry and Biochemistry. The formal requirements for the MS degree (thesis option) are twenty-four credit hours of approved coursework beyond the bachelor's degree, along with an approved master's thesis. The formal requirement for the MS degree (non-thesis option) is thirty credit hours of approved coursework beyond the bachelor's degree. The MS degree (non-thesis option) is a terminal degree in this department. Current research includes multidisciplinary initiatives in biomolecular structure, molecular biophysics, computational and theoretical chemistry, materials chemistry, nanochemistry, bio-organic chemistry, photochemistry and photobiology, polymer chemistry, sensors, and environmental chemistry.

MASTER OF SCIENCE IN COMPUTATIONAL SCIENCE AND ENGINEERING

The School of Civil and Environmental Engineering (CEE) participates in the Computational Science and Engineering (CSE) Program. CSE is an interdisciplinary program addressing the body of knowledge, skills, and practices associated with the study of computer-based models of natural phenomena and engineered systems. Students will be required to obtain a breadth of knowledge across a set of core areas in the CSE discipline, depth of knowledge in a specific computational specialization (e.g., numerical computing), and knowledge to apply computational techniques in a domain of application. Students will be expected to integrate principles from mathematics, computer science, and engineering to be able to create significant computational artifacts (e.g., software).

The CSE Master of Science degree program is an interdisciplinary program offered by the College of Computing, the College of Engineering, and the College of Sciences. Interested applicants with a Civil and/or Environmental Engineering background apply for admission in the CSE program through CEE. Once admitted, students follow the CSE program's degree requirements and curriculum.

Students must complete four of the five courses making up the core curriculum: CSE/Math 6643 (Numerical Linear Algebra), CSE 6140 (Computational Science and Engineering Algorithms), CSE 6730 (Modeling and Simulation: Fundamentals & Implementation), CSE/ISYE 6740 (Computational Data Analysis), and CSE 6220 (High Performance Computing). A specialization (CEE) minor is required consisting of twelve hours of coursework relevant to the CSE discipline that includes one applications area; this must include at least six hours of courses that do not carry the CS/CSE course designation. Finally, students must either complete 6 additional hours of approved coursework (course option) or an MS thesis (thesis option) that is defended to the student's thesis committee who is responsible for overseeing the student's research. six hours of thesis credit are required in the thesis option. A program of study must be approved by the CSE Program Director and CEE's Associate Chair for Graduate Programs.

MASTER OF SCIENCE IN PAPER, SCIENCE, AND ENGINEERING

The Institute of Paper Science and Technology supports the master's and PhD degree programs offered by the Georgia Institute of Technology. The Paper Science and Engineering (PSE) graduate degree provides students with a multidisciplinary graduate education in the science and engineering involved in the production of paper, tissue, and other products from natural fiber, and related industries. The processing and consolidation of natural fiber into a paper web involve complex chemical and mechanical processes. The advantages of a multidisciplinary approach in research and education supporting this field have long been recognized. The Georgia Tech PSE program integrates the former Institute of Paper Science and Technology's multidisciplinary graduate program with other science and engineering programs available at Georgia Tech.

The MS and PhD degrees in PSE are unique multidisciplinary degrees covering basic engineering and science disciplines involved in the production and consolidation of wood fiber products. Students are enrolled in the participating Georgia Tech school (referred to as the "home school") and, upon completion of degree requirements, the home school recommends the award of its MS or PhD degree with an emphasis in Paper Science and Engineering. Degrees are being offered by the Schools of Chemical and Biomolecular Engineering, Chemistry and Biochemistry, Mechanical Engineering, and Materials Science and Engineering.

The paper industry continues to evolve through considerable consolidation and reorganization, and the need for innovation in the science and engineering of pulp and paper technology from plant biology to chemical treatment and processes involved in paper production is greater than ever. The PSE program provides research results and equips students with a unique set of skills to lead in this effort.

For more information, visit www.ipst.gatech.edu/degree_progs/index.html.

DOCTOR OF PHILOSOPHY WITH A MAJOR IN BIOINFORMATICS

PARTICIPATING SCHOOLS

College of Computing
School of Biology
School of Biomedical Engineering
School of Chemistry and Biochemistry
School of Industrial and Systems Engineering
School of Mathematics

OBJECTIVE OF THE PROGRAM

The mission of the Georgia Tech Bioinformatics PhD program is to educate and prepare graduate students to reach the forefront of leadership in the field of bioinformatics and computational biology and to integrate research and education on the use of information technologies in biology and medicine. Thus, the program leading to a PhD in Bioinformatics is an interdisciplinary program spanning a variety of academic departments at Georgia Tech.

Bioinformatics is a multidisciplinary field in which physical sciences, life sciences, computer science, and engineering are merged to solve both fundamental and applied problems in biology and medicine. The outcomes of bioinformatics and computational biology particularly include:

- new and global perspectives into the organization and function of biological systems (fundamental biology);
- new and novel targets for drug discovery and development; and
- genetic/proteomic profiling for pharmaco-genomics or personalized medicine.

Thus, bioinformatics is emerging as a strategic discipline at the frontier of biology, biochemistry, biomedicine, bioengineering, computer science, and mathematics, impacting fundamental science, medicine, biotechnology, and society.

With its broad mission statement, this program at Georgia Tech has the following strengths and focus areas:

1. Development of software tools, algorithms, and databases for gene identification, protein structural prediction, clustering analysis, and data mining
2. Application of bioinformatics to disease diagnosis, classification, prognosis, and treatment
3. Application of bioinformatics to fundamental biology and systems biology

There is an increasing demand for scientists with advanced training in bioinformatics. Professionals in this area should have a thorough knowledge of molecular biology, mathematics, and statistics, as well as computer science and engineering.

For more information visit www.biology.gatech.edu/graduate-programs/bioinformatics/new/bioinformatics_phd.php.

DOCTOR OF PHILOSOPHY WITH A MAJOR IN CHEMISTRY

The goal of the doctoral program is to provide proficient knowledge in a specialized area of chemistry, with particular emphasis being placed on original, independent, and scholarly research. Students working toward a PhD must complete fifteen credit hours of courses and a series of seminar courses. Students should complete all course requirements in the first year of graduate study and present a seminar in the second year. The PhD candidacy examination consists of a series of examinations in the major area based on a reading assignment from the recent literature and an original research proposal to be completed by the end of the second year. Independent research for the PhD is demonstrated by completion of published work.

DOCTOR OF PHILOSOPHY WITH A MAJOR IN COMPUTATIONAL SCIENCE AND ENGINEERING

The School of Civil and Environmental Engineering (CEE) participates in the Computational Science and Engineering (CSE) Program. CSE is an interdisciplinary program addressing the body of knowledge, skills, and practices associated with the study of computer-based models of natural phenomena and engineered systems. Students will be required to obtain a breadth of knowledge across a set of core areas, depth of knowledge in a specific computational specialization (e.g., numerical computing), and knowledge to apply computational techniques in a domain of application. Students will be expected to integrate principles from mathematics, computing, science, and engineering to be able to create significant computational artifacts (e.g., software), and to complete independent research that advances the state-of-the-art in the CSE discipline.

The CSE Ph.D. degree program is an interdisciplinary program offered by the College of Computing, the College of Engineering, and the College of Sciences. Interested applicants with a civil and/or environmental engineering background apply for admission in the CSE program through CEE. Once admitted, students follow the CSE program's degree requirements and curriculum.

Required coursework includes CSE 6001 (Introduction to Computational Science and Engineering), CSE core courses (12 hours), a computation specialization (nine hours), and an application specialization (nine hours). To complete the core course requirement, students must complete four of the five courses making up the core curriculum: CSE/Math 6643 (Numerical Linear Algebra), CSE 6140 (Computational Science and Engineering Algorithms), CSE 6730 (Modeling and Simulation: Fundamentals & Implementation), CSE/ISYE 6740 (Computational Data Analysis), and CSE 6220 (High Performance Computing). The computational specialization includes at least nine hours of courses that increase the student's depth of understanding of computational methods in a specific area, as approved by the student's academic advisor. These courses must go beyond "using computers" to deepen understanding of computational methods, preferably in the context of some application domain. The application specialization includes at least nine hours of courses that increase depth of understanding in an application field; these need not be computation-focused courses. At least nine hours of Ph.D. courses must be courses that do not carry the CS/CSE course designation. These hours may be taken in CEE. Hours taken as part of the computation and/or application specialization can be used to fulfill this requirement.

A qualifying examination must be attempted by the end of the second year of enrollment in the CSE doctoral program (normally taken after the student completes CSE core coursework). A qualifying examination committee shall be appointed by the CSE program coordinator for each student and is responsible for making an overall recommendation concerning the outcome of the qualifying examination.

Students are required to complete a doctoral thesis reporting the results of independent research that advances the state-of-the-art in the computational science and engineering discipline. The thesis must be successfully defended to the student's thesis committee.

DOCTOR OF PHILOSOPHY WITH A MAJOR IN PAPER SCIENCE AND ENGINEERING

The Institute of Paper Science and Technology supports the Master's and PhD degree programs offered by the Georgia Institute of Technology. The Paper Science and Engineering (PSE) graduate degree provides students with a multidisciplinary graduate education in the science and engineering involved in the production of paper, tissue, and other products from natural fiber and related industries. The processing and consolidation of natural fiber into a paper web involve complex chemical and mechanical processes. The advantages of a multidisciplinary approach in research and education supporting this field have long been recognized. The Georgia Tech PSE program integrates the former Institute of Paper Science and Technology's multidisciplinary graduate program with other science and engineering programs available at Georgia Tech.

The MS and PhD degrees in PSE are unique multidisciplinary degrees covering basic engineering and science disciplines involved in the production and consolidation of wood fiber products. Students are enrolled in the participating Georgia Tech school (referred to as the "home school") and, upon completion of degree requirements, the home school recommends the award of its MS or PhD degree with an emphasis in Paper Science and Engineering. Degrees are being offered by the Schools of Chemical and Biomolecular Engineering, Chemistry and Biochemistry, Mechanical Engineering, and Materials Science and Engineering.

The paper industry continues to evolve through considerable consolidation and reorganization, and the need for innovation in the science and engineering of pulp and paper technology from plant biology to chemical treatment and processes involved in paper production is greater than ever. The PSE's graduate degree programs provide research results and equips students with a unique set of skills to lead in this effort.

For more information, visit www.ipst.gatech.edu/degree_progs/index.html.

CERTIFICATE PROGRAM IN REMOTE SENSING

Students completing the master's or doctoral degree requirements of the School may earn a Remote Sensing Certificate. Additional details can be found in this catalog at http://www.catalog.gatech.edu/colleges/cos/eas/grad/certificates.php.

SCHOOL OF EARTH & ATMOSPHERIC SCIENCE

About the School
Undergraduate
BS Earth & Atmospheric Sci
Description
Degree Requirements
BS EAS
Business Option
Minors
Certificates
Graduate
Admissions
Graduate Handbook
Masters Degrees
Doctoral Degrees
Certificates
College of Sciences

BACHELOR OF SCIENCE IN EARTH AND ATMOSPHERIC SCIENCES

The EAS degree is comparable to traditional degrees in meteorology and environmental sciences, but the program has several unique attributes. EAS courses provide "hands-on" experiences in collection and interpretation of environmental data and in predictive modeling. The integrated approach of the program gives a broad environmental background while still allowing students to specialize in meteorology, earth science, education, or a business option. The program prepares students for graduate study or immediate employment in fields such as meteorology, air quality, environmental chemistry, exploration geophysics, geological engineering, geological hazards, impact assessment, and environmental policy. Electives (30 hours), both within the School and in other units of Georgia Tech, allow students considerable flexibility in tailoring their degree programs according to individual career goals. The School provides incentives and encouragement for undergraduate students to participate in ongoing research with the faculty.

INTERNATIONAL PLAN

The EAS with International Plan (EAS-IP) is designed to give a student a solid, global competence within the context of an Earth and Atmospheric Science degree.

The major course requirements are the same for both EAS and EAS-IP. Where they differ is that for the EAS-IP degree, a student:

1. Spends 26 weeks abroad engaged in any combination of study abroad, research, or internship.
2. Takes their Social Science/Humanities electives in targeted areas:
   a. International relations
   b. Global economics
   c. A course about a particular country or region
3. Complete the equivalent to two years of college-level language study. * See Georgia IP requirements for the different options: www.internationalplan.gatech.edu/
4. Complete a capstone course that combines their global experience with their EAS degree.

RESEARCH OPTION

The BS in Earth and Atmospheric Sciences with Research Option allows students to emphasize their interest in research. To complete the Research Option in the School of Earth and Atmospheric Sciences students must:

1. Complete at least nine units of undergraduate research
   a. Courses should span at least two, preferably three terms (note there is also a two semester sequence of proposal and thesis writing courses - see below)
   b. Research may be for either pay (EAS 4698) or credit (EAS 4699)
   c. At least six of the nine required hours should be on the same topic

2. Complete a research proposal outlining their research topic and project for the thesis while taking LCC 4701 Undergraduate Research Proposal Writing
3. Write an undergraduate thesis/report of research on their findings while taking LCC 4702 Undergraduate Research Thesis Writing.

To submit your intent form to Undergraduate Research Opportunities Program (UROP), please go to the web form at http://undergradresearch.gatech.edu/ This form must be completed and can also be reached from the main UROP webpage.

For further information, consult the EAS Undergraduate Coordinator.

BS/MS EARTH AND ATMOSPHERIC SCIENCES

EAS offers a BS/MS Program. EAS majors may apply to the BS/MS program after completing at least thirty semester credit hours at Georgia Tech with a GPA of at least 3.5.

Students admitted to the program must maintain a cumulative GPA of at least 3.0.

As part of the program, students may use up to 6 credit hours of graduate-level coursework in the major discipline for both degrees.

To apply, complete the BS/MS application form, a biographical statement, and two letters of recommendation.

BACHELOR OF SCIENCE IN EARTH AND ATMOSPHERIC SCIENCES 2013 - 2014 DEGREE REQUIREMENTS

REQUIREMENT	REQ HRS	COURSE(S)	NOTES
Wellness	2	HPS 1040 or APPH 1040 or APPH 1050	
Core A - Essential Skills	3	ENGL 1101	
	3	ENGL 1102	
	4	MATH 1501	c
Core B - Institutional Options	3	CS 1371	c
Core C - Humanities	6	Any HUM	
Core D - Science, Math, & Technology	4	CHEM 1211K	c
	4	CHEM 1212K	c
	4	MATH 1502	c
Core E - Social Sciences	3	HIST 2111 or HIST 2112 or INTA 1200 or POL 1101 or PUBP 3000	
	9	Any SS	
Core F - Courses Related to Major	4	MATH 2401	c
	4	MATH 2403	c
	4	PHYS 2211	c
	4	PHYS 2212	c
EAS Core	4	EAS 1600	
	4	EAS 2600	
	3	EAS 2655	
	3	EAS 3603	
	4	EAS 3620 or (EAS 4641 and EAS 4740)	
	3	EAS 3610, or EAS 3620, or EAS 4655, or (EAS 4641 and EAS 4740)	
	6	EAS 4420 or EAS 4480 or EAS 4610	
	4	BIOL 1510 or BIOL 1520	c
EAS Technical Electives	15	CEE 4210 or CEE 4300 or CEE 4330 or EAS 1601 or EAS 2420 or EAS 2551 or EAS 2750 or EAS 3000-level or higher	a
Free Electives	15	Free Electives	d
TOTAL:	122		

Pass/fail allowed only for Humanities, Social Sciences, and Free Electives.

NOTES

a = limit six hours total of EAS 4699 and EAS 4651 - three in EAS Core, three in Technical Electives.

c = C-minimum required

d = GT 1000 recommended

BACHELOR OF SCIENCE IN EAS - BUSINESS OPTION 2013 - 2014 DEGREE REQUIREMENTS

REQUIREMENT	REQ HRS	COURSE(S)	NOTES
Wellness	2	HPS 1040 or APPH 1040 or APPH 1050	
Core A - Essential Skills	3	ENGL 1101	
	3	ENGL 1102	
	4	MATH 1501	c
Core B - Institutional Options	3	CS 1371	c
Core C - Humanities	6	Any HUM	
Core D - Science, Math, & Technology	4	CHEM 1211K	c
	4	CHEM 1212K	c
	4	MATH 1502	c
Core E - Social Sciences	3	HIST 2111 or HIST 2112 or INTA 1200 or POL 1101 or PUBP 3000	
	3	ECON 2106	
	6	Any SS	
Core F - Courses Related to Major	4	MATH 2401	c
	4	MATH 2403	c
	4	PHYS 2211	c
	4	PHYS 2212	c
EAS Core	4	EAS 1600	
	4	EAS 2600	
	3	EAS 2655	
	3	EAS 3603	
	4	EAS 3620, or (EAS 4641 and EAS 4740)	
	3	EAS 3610, or EAS 3620, or EAS 4655, or (EAS 4641 and EAS 4740)	
	6	EAS 4420 or EAS 4480 or EAS 4610	
	4	BIOL 1510 or BIOL 1520	c
EAS Technical Electives	9	CEE 4210 or CEE 4300 or CEE 4330 or EAS 1601 or EAS 2420 or EAS 2551 or EAS 2750 or EAS 3000-level or higher	a
Business Option	3	ACCT 2101 or MGT 3000	
	3	MGT 3101 or MGT 3150 or PSYC 2220	
	6	MGT 3062 or MGT 3078 or MGT 3300 or MGT 3660 or MGT 4015 or MGT 4026 or MGT 4028 or MGT 4030 or MGT 4190 or MGT 4191 or MGT 4192 or MGT 4193 or MGT 4194 or MGT 4303 or MGT 4304 or MGT 4307 or MGT 4335 or MGT 4610 or MGT 4670	
Free Electives	9	Free Electives	d
TOTAL:	122		

Pass/fail allowed only for Humanities, Social Sciences, and Free Electives.

NOTES

a = limit six hours total of EAS 4699 and EAS 4651 - three in EAS Core, three in Technical Electives.

c = C-minimum required

d = GT 1000 recommended

CERTIFICATE PROGRAMS

The School of Earth and Atmospheric Sciences offers programs of study for non-School majors leading to certificates in two areas of emphasis: geochemistry and solid earth geophysics. Each course must be completed with a *C* or better.

Additional information regarding undergraduate programs, the minor, and the certificate programs is available by contacting the EAS Undergraduate Coordinator

MASTER OF SCIENCE IN EARTH AND ATMOSPHERIC SCIENCES

Students can choose a program of study leading to either the designated master's degree (with thesis) or the undesignated master's degree (without thesis). General requirements for both degrees are found in this catalog under "Information for Graduate Students." In either program of study, students can specialize in atmospheric chemistry, aerosols, and clouds; dynamics of weather and climate; geochemistry; geophysics; oceanography; paleoclimate; planetary science; and remote sensing. With approval of the School's faculty, multidisciplinary programs of study are also permitted. Students entering the master's degree program need an academic background that includes a minimum of one year of university-level courses in calculus, chemistry, and physics. Students who lack this academic background are required to complete appropriate remedial courses, for which they will not receive graduate credit.

Students can satisfy the requirements for the designated master's degree by completing a faculty-approved set of courses and a master's thesis in earth and atmospheric sciences. With approval of the School chair, students can satisfy the requirements for the undesignated master's degree by completing a faculty-approved set of courses and a 3 hour Special Problems course. This course must take the form of a research project supervised by the student's advisor and culminating in a written final report.

BS/MS EARTH AND ATMOSPHERIC SCIENCES

EAS offers a BS/MS Program. EAS majors may apply to the BS/MS program after completing at least thirty semester credit hours at Georgia Tech with a GPA of at least 3.5.

Students admitted to the program must maintain a cumulative GPA of at least 3.0.

As part of the program, students may use up to 6 credit hours of graduate-level coursework in the major discipline for both degrees.

To apply, complete the BS/MS application form, a biographical statement, and two letters of recommendation.

SCHOOL OF EARTH & ATMOSPHERIC SCIENCE

About the School
Undergraduate
BS Earth & Atmospheric Sci
Description
Degree Requirements
BS EAS
Business Option
Minors
Certificates
Graduate
Admissions
Graduate Handbook
Masters Degrees
Doctoral Degrees
Certificates
College of Sciences

DOCTOR OF PHILOSOPHY WITH A MAJOR IN EARTH AND ATMOSPHERIC SCIENCES

In the doctoral program at the School of Earth and Atmospheric Sciences, students are engaged primarily in original, independent research that culminates in the doctoral dissertation. In this School, students can specialize in atmospheric chemistry, aerosols, and clouds; dynamics of weather and climate; geochemistry; geophysics; oceanography; paleoclimate; planetary science; and remote sensing . With approval of the School's faculty, multidisciplinary programs of study are also permitted. In each area of specialization, doctoral students are required to complete a faculty-approved set of core courses and a comprehensive examination. Students are also required to complete nine semester hours of coursework in an academic minor.

CERTIFICATES

CERTIFICATE PROGRAM IN GEOHYDROLOGY

Students completing the master's or doctoral degree requirements of the School may be awarded a Multidisciplinary Geohydrology Certificate if their program of study satisfies the requirements of the Multidisciplinary Geohydrology program. Additional details can be found in this catalog under Multidisciplinary Certificate Programs in Engineering.

CERTIFICATE PROGRAM IN REMOTE SENSING

Remote sensing refers to a means of investigating the properties of a target using measurements made at some distance from the target. Applications range from astronomy and environmental applications to medical radiography and automotive collision avoidance radars, as well as security-enhancing sensors. In the last three decades, sensing of the Earth and its atmosphere has increased very substantially because of climate change and global pollution concerns and because of the need for measurements to support the increasingly sophisticated weather and earthquake forecasting and oil and gas surveying capabilities.

Students completing the master's or doctoral degree requirements of the Schools listed below may be awarded a Remote Sensing Certificate. The primary administration of the certificate is through Dr. Irina Sokolik of the School of Earth and Atmospheric Sciences. Departmental contacts are listed below:

Aerospace Engineering: Dr. Robert Braun
Electrical and Computer Engineering: Dr. Manos Tentzeris
Earth and Atmospheric Sciences: Dr. Irina Sokolik
Civil and Environmental Engineering: Dr. Michael Bergin
Chemistry and Biochemistry: Dr. Thomas Orlando
City Planning: Dr. Steven French

The courses that would be used to satisfy the requirements of this certificate have been divided into two areas: First, a group of core courses that cover both fundamentals and applications of remote sensing; second, elective courses that cover a range of courses that cover fundamental physics, data analysis methods, and application areas. A total of twelve credit hours are required to obtain the certificate, including at least two core courses. Nine of the hours must be at the 6000 level or above.

Area 1: Core Courses

CP 6531: Introduction to Remote Sensing - Introduces students to the collection and use of satellite imagery and other remote sensing data

EAS 4430: Remote Sensing and Data Analysis - Introduction to passive environmental remote sensing of the atmosphere and the Earth. Laboratory examples of data and image analysis for remote sensing applications

EAS 4460: Satellite and Radar Meteorology - Interpretation of satellite and radar data for meteorological forecasting based on understanding radiative transfer and the resulting strengths and limitations of the imagery

EAS 6145: Remote Sensing of the Atmosphere and Oceans - Provides foundation for understanding the physical principles of remote sensing and its applications to the study of atmospheric gases, clouds, and ocean surfaces

Area 2: Electives

AE 6353: Orbital Mechanics - historical background and equations of motion, two-body orbital mechanics, orbit determination and prediction, orbital maneuvers, Earth remote sensing and reconnaissance orbits, lunar and interplanetary trajectories and orbital rendezvous. AE 6353 is a pre-requisite for AE 6354.

AE 6354: Advanced Orbital Mechanics - Advanced concepts in orbital mechanics including orbital perturbations, rendezvous, N-body effects, non-spherical gravitational harmonics, and low-thrust maneuvers

CEE 6222: Hydrometeorology - Estimation of hydrologic variables from on-site and remote sensors, operational hydrologic models, parameter estimation, and operational forecasting

CEE 6462: Signals and Inverse Problems in Civil Engineering - Addresses civil engineering signals and systems, discrete time and frequency domain operations, nonlinear and nonstationary systems, inverse problems, matrix-based and other solutions, tomography, and civil engineering examples

CEE 6483: Geotechnical Image and Spatial Analysis - Presentation of techniques for spatial and image processing and analysis of subsurface data at micro and macro scales

CP 6521: Advanced Geographic Information Systems - Provides students with advanced spatial analysis techniques including network analysis, three-dimensional surface modeling, and GIS applications

EAS 4510: Exploration Geophysics - Introduces methods of exploration geophysics, including refraction and reflection seismology, resistivity, gravity, magnetics, and ground penetrating radar, including laboratory work and introduction to operation of field equipment

EAS 4520: Seismic Methods in Exploration Geophysics - A study of seismic reflection exploration methods and theory, with examples taken from oil industry exploration and production and near-surface environmental imaging

EAS 6134: Inverse Methods and Time Series Analysis in EAS - Theory of remotely-sensed data acquisition, time series analysis, and discrete inverse theory, with applications in the Earth and atmospheric sciences

EAS 8803: Special Topics - May be taught as Atmospheric Radiative Transfer. This course provides a foundation for understanding the theoretical and computer modeling principles of radiative transfer in planetary atmospheres

EAS 8803: Special Topics - May be taught as Optical Techniques in Atmospheric Sensing. Discusses light propagation and scattering, and instrumentation used to make remote measurements in the atmosphere, including a description of infrared atmospheric spectra

ECE 6272: Fundamentals of Radar Signal Processing - Signal modeling, including radar cross section, multipath, and clutter, properties of the ambiguity function and coded waveforms, and algorithms for Doppler processing, detection, and radar imaging

ECE 6780: Medical Image Processing - A study of methods for enhancing, analyzing, interpreting, and visualizing information from two- and three-dimensional data obtained from a variety of medical imaging modalities

ECE 7370: Antennas and Wave Propagation in Matter - Basic methods for characterizing the electromagnetic properties of common materials (geophysical, biological, etc.) and techniques for analyzing antennas and wave propagation in these materials

Courses in development:

AE/EAS 4XXX: Designing a UAV for Remote Sensing Applications - This course is currently being planned and EAS recently received a NASA grant to provide education in this subject area.

EAS 6XXX: Earth Science/Geological Applications of Remote Sensing - A new faculty memberin EAS geodetic remote sensing will be creating this course. It probably will include Global Positioning System (GPS) applications

Other new courses on remote sensing may qualify as electives for this certificate with approval by the Remote Sensing Certificate, Dr. Irina Sokolik.

UNDERGRADUATE PROGRAMS

The School of Mathematics offers programs leading to two undergraduate degrees: the Bachelor of Science in Applied Mathematics and the Bachelor of Science in Discrete Mathematics. Both programs emphasize the study of core mathematics as well as its applications. They provide excellent preparation for employment, as well as graduate study in mathematics and related fields.

BACHELOR OF SCIENCE IN APPLIED MATHEMATICS

Reflecting the scientific environment at Georgia Tech, the bachelor's program in applied mathematics trains students in the traditional core mathematics curriculum, as well as in its applications. The undergraduate program is sufficiently flexible to accommodate the wide variety of interests of undergraduate majors, and yet, by its scientific breadth, it prepares students for the extensive employment opportunities that exist for applied mathematicians. Students are encouraged to develop an expertise in another field related to mathematics. This can be accomplished by developing a program of study involving technical electives and an appropriate concentration within mathematics. Some of the more popular fields include physics, computer science, electrical engineering, industrial engineering, operations research, and economics. The School of Mathematics has excellent computing facilities that are utilized in an increasing number of courses throughout the undergraduate curriculum.

In addition to the institutional requirement of maintaining at least a 2.0 grade-point average for the entire academic program, the School of Mathematics requires a grade of C or higher in MATH 4107, 4317, 4318, and 4320. Students may count no more than two hours of coursework in physical education toward graduation. Only free electives and MATH 4999 in the degree program may be taken on a pass/fail basis, and no more than nine hours are allowed under this option.

BACHELOR OF SCIENCE IN APPLIED MATHEMATICS BUSINESS AND RESEARCH OPTIONS

A student may elect to complete both the Business Option and the Research Option.

Completion of the Business and Research Options is noted by the designations "Business Option" and "Research Option" on the student's transcript.

BACHELOR OF SCIENCE IN APPLIED MATHEMATICS RESEARCH OPTION

For the BS in Applied Mathematics - Research Option, a student conducts supervised research with a faculty advisor over two or three semesters and completes nine hours of either MATH 2698/4698 (research for pay) or MATH 2699/4699 (research for credit). In addition, students take two one-hour writing courses: 1) LCC 4701: Undergraduate Research Proposal Writing in which a short proposal on their research project is developed (typically taken during the first or second semester of research), and 2) LCC 4702: Undergraduate Research Thesis Writing (taken during the thesis-writing semester); prepare a research report (research paper, project report/thesis), and make an oral presentation of the project. Six hours of MATH 4699 may be used as mathematics electives for the BS in Applied Mathematics.

Completion of this Research Option is noted by the designation "Research Option in Mathematics" on the student's transcript.

For more information, visit: http://www.undergradresearch.gatech.edu/research-option/.

BACHELOR OF SCIENCE IN APPLIED MATHEMATICS 2013 - 2014 DEGREE REQUIREMENTS

REQUIREMENT	REQ HRS	COURSE(S)	NOTES
Wellness	2	HPS 1040 or APPH 1040 or APPH 1050	
Core A - Essential Skills	3	ENGL 1101	
	3	ENGL 1102	
	4	MATH 1501	
Core B - Institutional Options	3	CS 1301	
Core C - Humanities	6	Any HUM	
Core D - Science, Math, & Technology	4	Lab Science	
	4	PHYS 2211	a
	4	MATH 1502	
Core E - Social Sciences	3	HIST 2111 or HIST 2112 or INTA 1200 or POL 1101 or PUBP 3000	
	9	Any SS	
Core F - Courses Related to Major	3	CS 1331	
	4	PHYS 2212	
	4	MATH 2401	
	4	MATH 2403	
	3	MATH 2406	
Upper-Level MATH	3	MATH 3012	
	3	MATH 3215	
	3	MATH 4107	c
	3	MATH 4317	c
	3	MATH 4318	c
	3	MATH 4320	c
	3	MATH 4640	
MATH Electives	15	MATH 3000-level or higher	b
Engineering or Science Electives	6	3000-level or higher BIOL, CHEM, EAS, PHYS, PSYC, ECON, CS, AE, BMED, CEE, CHBE, ECE, ISYE, MSE, ME, PTFE	d
	3	PHYS 3000-level or higher	
Free Electives	14	Free Electives	e
TOTAL:	122		

Pass-fail only allowed for Free Electives.

NOTES

a = If PHYS 2231 is taken, extra hour goes toward Free Electives

b = MATH 3770 and 4801 are not allowed.

c = C-minimum

d = CEE and ISYE 3770 are not allowed.

e = MATH 1113, 3770, CEE 3770, and ISYE 3770 are restricted from counting towards Free Electives. Limit two hours of HPS coursework.

BACHELOR OF SCIENCE IN APPLIED MATHEMATICS - BUSINESS OPTION 2013 - 2014 DEGREE REQUIREMENTS

REQUIREMENT	REQ HRS	COURSE(S)	NOTES
Wellness	2	HPS 1040 or APPH 1040 or APPH 1050	
Core A - Essential Skills	3	ENGL 1101	
	3	ENGL 1102	
	4	MATH 1501	
Core B - Institutional Options	3	CS 1301	
Core C - Humanities	6	Any HUM	
Core D - Science, Math, & Technology	4	Lab Science	
	4	PHYS 2211	a
	4	MATH 1502	
Core E - Social Sciences	3	HIST 2111 or HIST 2112 or INTA 1200 or POL 1101 or PUBP 3000	
	3	ECON 2106	
	6	Any SS	
Core F - Courses Related to Major	3	CS 1331	
	4	PHYS 2212	
	4	MATH 2401	
	4	MATH 2403	
	3	MATH 2406	
Upper-Level MATH	3	MATH 3012	
	3	MATH 3215	
	3	MATH 4107	c
	3	MATH 4317	c
	3	MATH 4318	c
	3	MATH 4320	c
	3	MATH 4640	
MATH Electives	15	MATH 3000-level or higher	b
Engineering or Science Electives	3	PHYS 3000-level or higher	
Business Option	3	ACCT 2101 or MGT 3000	
	3	PSYC 2220 or MGT 3101 or MGT 3150	
	6	MGT 3062 or MGT 3078 or MGT 3300 or MGT 3660 or MGT 4015 or MGT 4026 or MGT 4028 or MGT 4030 or MGT 4190 or MGT 4191 or MGT 4192 or MGT 4193 or MGT 4194 or MGT 4303 or MGT 4304 or MGT 4307 or MGT 4335 or MGT 4610 or MGT 4670	
Free Electives	8	Free Electives	e
TOTAL:	122		

Pass-fail only allowed for Free Electives.

NOTES

a = If PHYS 2231 is taken, extra hour goes toward Free Electives
b = MATH 3770 and 4801 are not allowed.
c = C-minimum
d = CEE and ISYE 3770 are not allowed.

e = MATH 1113, 3770, CEE 3770, and ISYE 3770 are restricted from counting towards Free Electives. Limit two hours of HPS coursework.

BACHELOR OF SCIENCE IN DISCRETE MATHEMATICS

Certain areas of mathematics have become increasingly important over the past thirty years due to the introduction of computing into nearly every aspect of science, technology, and business. These are the branches of mathematics that are devoted to the study of discrete as opposed to continuous structures. Methods of discrete mathematics are used whenever objects are to be counted, when the relationships between finite sets are examined, and when processes involving a finite number of steps are studied. These methods become essential when, for example, computer algorithms are analyzed, transportation networks or communications systems are designed, or when optimal schedules are sought.

Many problems associated with the transmission and storage of information, the design of complicated circuits, or the identification of organic chemicals require the tools of discrete mathematics. Several fields of application, most notably operations research and computer science, not only use the techniques of discrete mathematics, but have also contributed significantly to the development of the subject. For this reason, the curriculum for the bachelor's degree program in discrete mathematics combines basic work in mathematics and science and advanced studies in discrete mathematics with substantial training in these areas of application.

After completion of the program's core requirements in the first two years, students take fifteen hours of mathematics, ten hours of computer science, and six hours of industrial and systems engineering. The program requires nine hours of approved technical electives. The list of approved technical electives includes mathematics, computing, electrical engineering, and operations research. Four hours for the senior research project and twelve hours of free electives complete the program.

In addition to the Institute requirement of a grade-point average of at least 2.0, the School of Mathematics requires a grade of C or higher in MATH 4022, 4107, and 4317. Students may count no more than two hours of coursework in physical education toward graduation. Only free electives and MATH 4999 in the degree program may be taken on a pass/fail basis, and no more than nine hours are allowed under this option.

BACHELOR OF SCIENCE IN DISCRETE MATHEMATICS BUSINESS AND RESEARCH OPTIONS

A student may elect to complete both the Business Option and the Research Option.

Completion of the Business and Research Options is noted by "Business Option" and "Research Option" designations on the student's transcript.

BACHELOR OF SCIENCE IN DISCRETE MATHEMATICS - RESEARCH OPTION

For the BS in Discrete Mathematics - Research Option, a student conducts supervised research with a faculty advisor over two to three semesters and completes nine hours of either MATH 2698/4698 (research for pay) or MATH 2699/4699 (research for credit). In addition, students take: two one-hour writing courses: 1) LCC 4701: Undergraduate

Research Proposal Writing in which a short proposal on their research project is developed (typically taken during the first or second semester of research), and 2) LCC 4702: Undergraduate Research Thesis Writing (taken during the thesis-writing semester), prepare a research report (research paper, project report/thesis); and make an oral presentation of the project. Four hours of MATH 4699 may be used in place of MATH 4080 and 4090 (Senior Project I and II) for the BS in Discrete Mathematics.

Completion of this Research Option is noted by the designation "Research Option in Mathematics" on the student's transcript.

For more information, visit: http://www.undergradresearch.gatech.edu/research-option/.

BACHELOR OF SCIENCE IN DISCRETE MATHEMATICS 2013 - 2014 DEGREE REQUIREMENTS

REQUIREMENT	REQ HRS	COURSE(S)	NOTES
Wellness	2	HPS 1040 or APPH 1040 or APPH 1050	
Core A - Essential Skills	3	ENGL 1101	
	3	ENGL 1102	
	4	MATH 1501	
Core B - Institutional Options	3	CS 1301	
Core C - Humanities	6	Any HUM	
Core D - Science, Math, & Technology	4	Lab Science	
	4	PHYS 2211	a
	4	MATH 1502	
Core E - Social Sciences	3	HIST 2111 or HIST 2112 or INTA 1200 or POL 1101 or PUBP 3000	
	9	Any SS	
Core F - Courses Related to Major	3	CS 1331	
	4	PHYS 2212	b
	4	MATH 2401	
	3	MATH 2406	
	4	MATH 2602	
Upper-Level MATH	3	MATH 3012	
	3	MATH 3215	
	3	MATH 4022	c
	2	MATH 4080	
	2	MATH 4090	
	3	MATH 4107	c
	3	MATH 4317	c
Additional CS Coursework	3	CS 2050 or CS 2051	
	3	CS 2110 or CS 2335	d
	3	CS 3510	
	3	CS 4510	
Industrial Engineering Requirements	3	ISYE 3232	
	3	ISYE 3133 or MATH 4580	
Technical Electives	9	MATH 2403 or MATH 4012 or MATH 4032 or MATH 4108 or MATH 4150 or MATH 4221 or MATH 4222 or MATH 4255 or MATH 4261 or MATH 4262 or MATH 4280 or MATH 4318 or MATH 4320 or MATH 4431 or MATH 4432 or MATH 4640 or MATH 4641 or MATH 4777 or MATH 4782 or CS 2200 or CS 3220 or CS 3240 or CS 3251 or CS 3451 or CS 4540 or ECE 2025 or ECE 2030 or ECE 2031 or ECE 3055 or ECE 3075 or ECE 3085 or ECE 4270 or ISYE 3044 or ISYE 3103 or ISYE 3104 or ISYE 4833	
Free Electives	13	Free Electives	e
TOTAL:	122		

Pass-fail only allowed for Free Electives.

NOTES

a = If PHYS 2231 is taken, extra hour goes toward Free Electives.

b = If PHYS 2232 is taken, extra hour goes toward Free Electives.

c = C-minimum

d = If CS 2110 is taken, extra hour goes to Free Electives.

e = MATH 1113, 3770, CEE 3770, and ISYE 3770 are restricted from counting towards Free Electives. Limit two hours of HPS coursework.

BACHELOR OF SCIENCE IN DISCRETE MATHEMATICS - BUSINESS OPTION 2013 - 2014 DEGREE REQUIREMENTS

REQUIREMENT	REQ HRS	COURSE(S)	NOTES
Wellness	2	HPS 1040 or APPH 1040 or APPH 1050	
Core A - Essential Skills	3	ENGL 1101	
	3	ENGL 1102	
	4	MATH 1501	
Core B - Institutional Options	3	CS 1301	
Core C - Humanities	6	Any HUM	
Core D - Science, Math, & Technology	4	Lab Science	
	4	PHYS 2211	a
	4	MATH 1502	
Core E - Social Sciences	3	HIST 2111 or HIST 2112 or INTA 1200 or POL 1101 or PUBP 3000	
	3	ECON 2106	
	6	Any SS	
Core F - Courses Related to Major	3	CS 1331	
	4	PHYS 2212	b
	4	MATH 2401	
	3	MATH 2406	
	4	MATH 2602	
Upper-Level MATH	3	MATH 3012	
	3	MATH 3215	
	3	MATH 4022	c
	2	MATH 4080	
	2	MATH 4090	
	3	MATH 4107	c
	3	MATH 4317	c
Additional CS Coursework	3	CS 2050 or CS 2051	
	3	CS 2110 or CS 2335	d
	3	CS 3510	
	3	CS 4510	
Industrial Engineering Requirements	3	ISYE 3232	
	3	ISYE 3133 or MATH 4580	
Technical Electives	3	MATH 2403 or MATH 4012 or MATH 4032 or MATH 4108 or MATH 4150 or MATH 4221 or MATH 4222 or MATH 4255 or MATH 4261 or MATH 4262 or MATH 4280 or MATH 4318 or MATH 4320 or MATH 4431 or MATH 4432 or MATH 4640 or MATH 4641 or MATH 4777 or MATH 4782 or CS 2200 or CS 3220 or CS 3240 or CS 3251 or CS 3451 or CS 4540 or ECE 2025 or ECE 2030 or ECE 2031 or ECE 3055 or ECE 3075 or ECE 3085 or ECE 4270 or ISYE 3044 or ISYE 3103 or ISYE 3104 or ISYE 4833	
Business Option	3	ACCT 2101 or MGT 3000	
	3	PSYC 2220 or MGT 3101 or MGT 3150	
	6	MGT 3062 or MGT 3078 or MGT 3300 or MGT 3660 or MGT 4015 or MGT 4026 or MGT 4028 or MGT 4030 or MGT 4190 or MGT 4191 or MGT 4192 or MGT 4193 or MGT 4194 or MGT 4303 or	

		MGT 4304 or MGT 4307 or MGT 4335 or MGT 4610 or MGT 4670	
Free Electives	7	Free Electives	e
TOTAL:	122		

Pass-fail only allowed for Free Electives.

NOTES

a = If PHYS 2231 is taken, extra hour goes toward Free Electives.

b = If PHYS 2232 is taken, extra hour goes toward Free Electives.

c = C-minimum

d = If CS 2110 is taken, extra hour goes to Free Electives.

e = MATH 1113, 3770, CEE 3770, and ISYE 3770 are restricted from counting towards Free Electives. Limit two hours of HPS coursework.

MASTER OF SCIENCE IN COMPUTATIONAL SCIENCE AND ENGINEERING

The School of Civil and Environmental Engineering (CEE) participates in the Computational Science and Engineering (CSE) Program. CSE is an interdisciplinary program addressing the body of knowledge, skills, and practices associated with the study of computer-based models of natural phenomena and engineered systems. Students will be required to obtain a breadth of knowledge across a set of core areas in the CSE discipline, depth of knowledge in a specific computational specialization (e.g., numerical computing), and knowledge to apply computational techniques in a domain of application. Students will be expected to integrate principles from mathematics, computer science, and engineering to be able to create significant computational artifacts (e.g., software).

The CSE Master of Science degree program is an interdisciplinary program offered by the College of Computing, the College of Engineering, and the College of Sciences. Interested applicants with a Civil and/or Environmental Engineering background apply for admission in the CSE program through CEE. Once admitted, students follow the CSE program's degree requirements and curriculum.

Students must complete four of the five courses making up the core curriculum: CSE/Math 6643 (Numerical Linear Algebra), CSE 6140 (Computational Science and Engineering Algorithms), CSE 6730 (Modeling and Simulation: Fundamentals & Implementation), CSE/ISYE 6740 (Computational Data Analysis), and CSE 6220 (High Performance Computing). A specialization (CEE) minor is required consisting of twelve hours of coursework relevant to the CSE discipline that includes one applications area; this must include at least six hours of courses that do not carry the CS/CSE course designation. Finally, students must either complete 6 additional hours of approved coursework (course option) or an MS thesis (thesis option) that is defended to the student's thesis committee who is responsible for overseeing the student's research. six hours of thesis credit are required in the thesis option. A program of study must be approved by the CSE Program Director and CEE's Associate Chair for Graduate Programs.

MASTER OF SCIENCE IN MATHEMATICS

The School of Mathematics provides opportunities for study in a wide range of mathematical disciplines. First-year graduate sequences include algebra, analysis, differential equations, geometry, numerical analysis, probability, quantitative finance, statistics, and topology in addition to courses in methods of applied mathematics.

A program of study leading to a master's degree in mathematics consists of 30 credit hours and must include at least twelve hours at the 6000 level or above in mathematics, with courses in at least three different fields of Mathematics, as follows.

1. At least two classes from a concentration in Analysis.
    1. Analysis: MATH 6321, 6337, 6338, 6580, 7334, 7337, 7338. One of these two classes must be MATH 6337 or 6338
2. At least one class in two of the following areas.
    1. Discrete Mathematics and Algebra: MATH 6014, 6121, 6122, 7016, 7018
    2. Geometry and Topology: MATH 6441, 6442, 6455, 6456, 6457, 6458
    3. Differential Equations: MATH 6307, 6308, 6341, 6342
    4. Probability and Mathematical Statistics: MATH 6241, 6242, 7244, 7245, 6262, 6263, 6266, 6267
    5. Numerical Analysis: MATH 6640, 6643, 6644, 6645, 6646

Classes taken to satisfy criteria (1) and (2) must be passed with a grade of *B* or better.

The remaining 18 hours required may be taken under either a thesis or a non-thesis option. Under the thesis option, the program must include a thesis (up to nine thesis hours) and additional hours of coursework at the 4000 level or higher. Under the non-thesis option, the program must include a total of 18 hours of coursework at the 6000 level or higher in Mathematics, with a grade of *B* or better, and the remaining twelve hours are free electives. Under either of these options, MATH 6701 and 6702, as well as all courses required by number for the Bachelor of Science in Applied Mathematics or Discrete Mathematics (MATH 3012, 3215, 4107, 4317, 4318, 4320, and 4640), do not carry degree credit for graduate mathematics majors, and may not be used to fulfill these degree requirements.

Students must maintain an overall grade-point average of at least 2.7 and receive a grade of *C* or better in each mathematics course in the program of study.

SCHOOL OF MATHEMATICS

General Information
About The School
Undergraduate
General Information
BS Applied Mathematics
Description
Degree Requirements
BS Applied Mathematics
Business Option
BS Discrete Mathematics
Description
Degree Requirements
BS Discrete Mathematics
Business Option
Minors
Graduate
Admissions
Master's Degrees
Computational Science & Eng
Mathematics
Q.C.F.
Statistics
Doctoral Degrees
Algorithms Combinatorics Opt
Bioinformatics
Computational Science & Eng
Mathematics
College of Sciences

MASTER OF SCIENCE IN QUANTITATIVE AND COMPUTATIONAL FINANCE

The Master of Science degree program in Quantitative and Computational Finance (MS QCF) is a multidisciplinary program under the provost of the Georgia Institute of Technology, with home units in the College of Business, the School of Mathematics, and the School of Industrial and Systems Engineering.

The main objective of the MS QCF degree program is to provide students with the practical skills and theoretical understanding they need to be leaders in the formulation, implementation, and evaluation of the models used by the financial sector to structure transactions, manage risk, and construct investment strategies.

The MS QCF program is well structured both to cover the fundamentals needed to understand and model a wide variety of problems in finance and to allow specialization to build expertise in specific approaches, techniques, and problem areas. For the fundamentals, the MS QCF program emphasizes both foundational concepts within finance and also the principles and techniques needed for the formulation, implementation, and testing of financial models. The program is not just centered on one type of problem; students develop expertise for a range of career paths that use quantitative and computational reasoning. For their area of specialization, students are encouraged to develop expertise that draws on the strengths present in the many related quantitative, computational, and mathematical areas present at Georgia Tech.

The prerequisites of the MS QCF program include:

- interest in the problems of finance, and a high level of mathematical ability that has been demonstrated within past performance on appropriate coursework and standardized testing;
- mathematical background - a working knowledge of calculus (differential and integral calculus of one variable, multivariate calculus, fundamentals of linear algebra and linear systems of equations, and differential equations) and undergraduate calculus-based probability and statistics;
- basic programming background - basic knowledge of a programming language, such as MatLab programming, Python, Java, Visual Basic, C, C++, or Fortran; and
- Institute and academic unit requirements for admission to graduate study.

MS IN QUANTITATIVE AND COMPUTATIONAL FINANCE CURRICULUM REQUIREMENTS

REQUIRED CORE COURSES (18 SEMESTER HOURS)

MGT 6078 Finance and Investments
MGT 6081 Derivative Securities
MATH 6635 Numerical Methods in Finance
ISYE/MATH 6759 Stochastic Processes in Finance I
ISYE/MATH 6767 Design and Implementation of Systems to Support Computational Finance
ISYE/MATH/MGT 6769 Fixed Income Securities

NINE SEMESTER HOURS FROM THE FOLLOWING:

ISYE 6673 Financial Optimization Models
MATH 6235 Stochastic Processes in Finance II

MGT 6090 Management of Financial Institutions
ISYE/MATH 6783 Statistical Techniques of Financial Data Analysis
ISYE/MATH/MGT 6785 The Practice of Quantitative and Computational Finance
MGT 7061 Empirical Finance

NINE SEMESTER HOURS OF FREE ELECTIVES AT THE 6000 LEVEL OR HIGHER

TOTAL SEMESTER HOURS: 36

For the nine semester hours of free electives at the 6000 level or higher, students choose at least three additional electives from the electives categories or from other courses. Students are encouraged to choose electives to develop expertise within a specific area such as statistical data analysis, economic analysis, finance, risk management/optimization, or model implementation. It is strongly recommended that students who do not have previous coursework in economics take ECON 6100 Economic Analysis for Managers (or its equivalent).

MASTER OF SCIENCE IN STATISTICS

The School of Mathematics offers the degree of Master of Science in Statistics (MS S) in cooperation with the School of Industrial and Systems Engineering. It is available for applicants having the BS in mathematics; students with engineering backgrounds should enter the same program through the School of Industrial and Systems Engineering. Prerequisites include work in probability, statistics, linear algebra, calculus, and optimization. The program requires 30 semester hours of coursework. There is no thesis option.

DOCTOR OF PHILOSOPHY WITH A MAJOR IN ALGORITHMS, COMBINATORICS, AND OPTIMIZATION

One of the most rapidly growing areas of research in applied mathematics, computer science, and operations research has been dealing with discrete structures. This has been most evident in the fields of combinatorics, discrete optimization, and the analysis of algorithms. Increasingly, work in each of these subjects has come to depend on knowledge of all of them. Indeed, many of the most significant advances have resulted from the efforts of researchers in more than one, if not all three, of these areas.

In response to these developments, Georgia Tech has introduced a doctoral degree program in Algorithms, Combinatorics, and Optimization (ACO). This multidisciplinary program is sponsored jointly by the School of Mathematics, the School of Industrial and Systems Engineering, and the College of Computing. Faculty for the program are drawn from these three sponsoring units, as well as from the School of Electrical and Computer Engineering and the College of Business.

The ACO program is arranged to bring together the study of discrete structures and the design and analysis of algorithms in areas such as graph theory, integer programming, combinatorial optimization, and polyhedral theory. It is intended for students possessing a strong background in one or more of the fields represented by the three sponsoring units. Each student in the program has a single home department chosen from the School of Mathematics, the School of Industrial and Systems Engineering, and the College of Computing. Courses for the program are drawn from all three of these units, and include study in such areas as combinatorial methods, algebraic structures, probability, the analysis of algorithms, computational complexity, linear programming, discrete optimization, and convex analysis.

DOCTOR OF PHILOSOPHY WITH A MAJOR IN BIOINFORMATICS

PARTICIPATING SCHOOLS

College of Computing
School of Biology
School of Biomedical Engineering
School of Chemistry and Biochemistry
School of Industrial and Systems Engineering
School of Mathematics

OBJECTIVE OF THE PROGRAM

The mission of the Georgia Tech Bioinformatics PhD program is to educate and prepare graduate students to reach the forefront of leadership in the field of bioinformatics and computational biology and to integrate research and education on the use of information technologies in biology and medicine. Thus, the program leading to a PhD in Bioinformatics is an interdisciplinary program spanning a variety of academic departments at Georgia Tech.

Bioinformatics is a multidisciplinary field in which physical sciences, life sciences, computer science, and engineering are merged to solve both fundamental and applied problems in biology and medicine. The outcomes of bioinformatics and computational biology particularly include:

- new and global perspectives into the organization and function of biological systems (fundamental biology);
- new and novel targets for drug discovery and development; and
- genetic/proteomic profiling for pharmaco-genomics or personalized medicine.

Thus, bioinformatics is emerging as a strategic discipline at the frontier of biology, biochemistry, biomedicine, bioengineering, computer science, and mathematics, impacting fundamental science, medicine, biotechnology, and society.

With its broad mission statement, this program at Georgia Tech has the following strengths and focus areas:

1. Development of software tools, algorithms, and databases for gene identification, protein structural prediction, clustering analysis, and data mining
2. Application of bioinformatics to disease diagnosis, classification, prognosis, and treatment
3. Application of bioinformatics to fundamental biology and systems biology

There is an increasing demand for scientists with advanced training in bioinformatics. Professionals in this area should have a thorough knowledge of molecular biology, mathematics, and statistics, as well as computer science and engineering.

For more information visit www.biology.gatech.edu/graduate-programs/bioinformatics/new/bioinformatics_phd.php.

DOCTOR OF PHILOSOPHY WITH A MAJOR IN COMPUTATIONAL SCIENCE AND ENGINEERING

The School of Civil and Environmental Engineering (CEE) participates in the Computational Science and Engineering (CSE) Program.Â CSE is an interdisciplinary program addressing the body of knowledge, skills, and practices associated with the study of computer-based models of natural phenomena and engineered systems. Students will be required to obtain a breadth of knowledge across a set of core areas, depth of knowledge in a specific computational specialization (e.g., numerical computing), and knowledge to apply computational techniques in a domain of application. Students will be expected to integrate principles from mathematics, computing, science, and engineering to be able to create significant computational artifacts (e.g., software), and to complete independent research that advances the state-of-the-art in the CSE discipline.

The CSE Ph.D. degree program is an interdisciplinary program offered by the College of Computing, the College of Engineering, and the College of Sciences. Interested applicants with a civil and/or environmental engineering background apply for admission in the CSE program through CEE. Once admitted, students follow the CSE program's degree requirements and curriculum.

Required coursework includes CSE 6001 (Introduction to Computational Science and Engineering), CSE core courses (12 hours), a computation specialization (nine hours), and an application specialization (nine hours). To complete the core course requirement, students must complete four of the five courses making up the core curriculum: CSE/Math 6643 (Numerical Linear Algebra), CSE 6140 (Computational Science and Engineering Algorithms), CSE 6730 (Modeling and Simulation: Fundamentals & Implementation), CSE/ISYE 6740 (Computational Data Analysis), and CSE 6220 (High Performance Computing). The computational specialization includes at least nine hours of courses that increase the student's depth of understanding of computational methods in a specific area, as approved by the student's academic advisor. These courses must go beyond "using computers" to deepen understanding of computational methods, preferably in the context of some application domain. The application specialization includes at least nine hours of courses that increase depth of understanding in an application field; these need not be computation-focused courses. At least nine hours of Ph.D. courses must be courses that do not carry the CS/CSE course designation. These hours may be taken in CEE. Hours taken as part of the computation and/or application specialization can be used to fulfill this requirement.

A qualifying examination must be attempted by the end of the second year of enrollment in the CSE doctoral program (normally taken after the student completes CSE core coursework). A qualifying examination committee shall be appointed by the CSE program coordinator for each student and is responsible for making an overall recommendation concerning the outcome of the qualifying examination.

Students are required to complete a doctoral thesis reporting the results of independent research that advances the state-of-the-art in the computational science and engineering discipline. The thesis must be successfully defended to the student's thesis committee.

DOCTOR OF PHILOSOPHY WITH A MAJOR IN MATHEMATICS

The doctoral program in Mathematics requires fifty-one hours of coursework, with grades of C or better, and a GPA of 3.0 or above, beyond the undergraduate degree. At least thirty-six hours, chosen to the satisfaction of the student's research advisor must be taken at the 6000 level in mathematics, and a further nine hours must be taken outside the School of Mathematics at the 4000 level or higher in the student's minor field of study. The program must also include six additional hours at the 6000 level. Work on a master's thesis (thesis hours) may not be counted toward any of the fifty-one hours specified above, but coursework for the master's degree may be counted. At least six hours of the minor should be completed within three years of the student's admission to the doctoral program.

Prior to admission to candidacy for the doctoral degree, each student must pass the comprehensive examination, which consists of a written examination in real analysis and algebra and an oral examination in the student's proposed area of specialization. Doctoral students must also satisfy the Institute's requirements with respect to the dissertation and final oral examination.

BACHELOR OF SCIENCE IN PHYSICS

The School of Physics offers two undergraduate degrees, the Bachelor of Science in Physics and the Bachelor of Science in Applied Physics. The basis of the Bachelor of Science in Physics degree is the traditional preparation of a student for graduate study in physics.

Each of the baccalaureate programs contains the following: a) courses needed to meet general institutional degree requirements; b) a core of technical courses intended to give a strong background in mathematics and the physical principles of mechanics, electricity and magnetism, thermodynamics, and the quantum theory that governs physical phenomena at the microscopic level of molecules, atoms, and nuclei; c) technical electives that enable the student to explore areas of his or her choice in greater depth; d) courses involving undergraduate research, and e) free electives, about fifteen percent of the total hours, which may be employed to schedule additional technical or nontechnical courses.

The considerable flexibility inherent in the physics curricula is advantageous to students who wish to work out individual programs of study. At the same time, this flexibility suggests the need for consultation with advisors so students can make the best use of elective hours and avoid scheduling difficulties that may arise in later semesters. Students may utilize their elective freedom in the physics curricula to specialize in particular areas of physics, to prepare for careers in interdisciplinary areas of science, to compose a preprofessional program, or to gain a background in other technical or nontechnical disciplines. Students should contact their academic advisor for assistance in planning programs of study with emphasis directed toward a particular objective. Since some students who earn a degree in physics have transferred from other disciplines, the School has planned its degree programs to enable most students to transfer into physics with little or no loss of credit.

A total of 120 credit hours (exclusive of wellness) and a grade-point average of at least 2.0 in physics courses numbered 3000 and higher are requisites for the bachelor's degree in physics.

RESEARCH OPTION IN PHYSICS

The Research Option is intended for students who seek a concentrated research experience, culminating in an undergraduate thesis, integrated into their undergraduate studies in Physics. The purpose of this program is to prepare students who plan to go on to graduate research after their BS degree. This option includes three or four semesters of focused research in the student’s junior and senior years. Students who complete this option receive a designation on their transcript. For an undergraduate to fulfill the Research Option in the School of Physics, the student must fulfill the following requirements:

1. Complete 9 credit hours of Undergraduate research PHYS 4698 or PHYS 4699. At least three credits must be PHYS 4699.
2. Complete two 1-hour writing courses: LCC 4701: Undergraduate Research Proposal Writing (typically taken during the first or second semester of research) and LCC 4702: Undergraduate Research Thesis Writing (taken during the term in which the thesis is completed).
3. Write and submit an undergraduate research thesis to the School of Physics based on

the student's research that is approved by the student's research advisor.

Course requirements are detailed in brochures available from the School of Physics. For specific questions, students should contact the Associate Chair for Undergraduate Studies in the School of Physics.

BACHELOR OF SCIENCE IN PHYSICS 2013 - 2014 DEGREE REQUIREMENTS

REQUIREMENT	REQ HRS	COURSE(S)	NOTES
Wellness	2	HPS 1040 or APPH 1040 or APPH 1050	
Core A - Essential Skills	3	ENGL 1101	
	3	ENGL 1102	
	4	MATH 1501	
Core B - Institutional Options	3	CS 1301	
Core C - Humanities	6	Any HUM	
Core D - Science, Math, & Technology	4	CHEM 1310	
	4	PHYS 2211	a
	4	MATH 1502	
Core E - Social Sciences	3	HIST 2111 or HIST 2112 or INTA 1200 or POL 1101 or PUBP 3000	
	9	Any SS	
Core F - Courses Related to Major	4	MATH 2401	
	4	MATH 2403	
	4	PHYS 2212	
	3	PHYS 2213	
	3	PHYS 3201	
Upper-Level Physics	3	PHYS 3122	
	3	PHYS 3123	
	3	PHYS 3141	
	3	PHYS 3143	
	3	PHYS 4142	
	3	PHYS 4143	
	3	PHYS 4321	
	1	PHYS 4601	
	1	PHYS 4602	
Physics or Technical Electives	17	Any PHYS or Technical Electives	b, d, e, f
Free Electives	19	Free Electives	
TOTAL:	122		

Student must have 2.0 in all PHYS classes 3000-level or higher

NOTES

a = If PHYS 2231 is taken, extra hour goes toward Free Electives

b = PHYS ** or BIOL 4478, CHEM 3411, 3412, 3511, EAS 2750, 4300, 4430, ECE 4501, MATH 3215, 4320, 4347, 4348, 4581

d = Minimum of one class in PHYS 3211, 4224, 3226, 4322

e = Maximum of six hours below 3000-level

f = Maximum of nine hours PHYS 2699 or 4699

BACHELOR OF SCIENCE IN PHYSICS - ASTROPHYSICS 2013 - 2014 DEGREE REQUIREMENTS

REQUIREMENT	REQ HRS	COURSE(S)	NOTES
Wellness	2	HPS 1040 or APPH 1040 or APPH 1050	
Core A - Essential Skills	3	ENGL 1101	
	3	ENGL 1102	
	4	MATH 1501	
Core B - Institutional Options	3	CS 1301	
Core C - Humanities	6	Any HUM	
Core D - Science, Math, & Technology	4	CHEM 1310	
	4	PHYS 2211	a
	4	MATH 1502	
Core E - Social Sciences	3	HIST 2111 or HIST 2112 or INTA 1200 or POL 1101 or PUBP 3000	
	9	Any SS	
Core F - Courses Related to Major	4	MATH 2401	
	4	MATH 2403	
	4	PHYS 2212	
	3	PHYS 2213	
	3	PHYS 3201	
Upper-Level Physics	3	PHYS 3122	
	3	PHYS 3123	
	3	PHYS 3141	
	3	PHYS 3143	
	3	PHYS 4142	
	3	PHYS 4143	
	3	PHYS 4321	
	1	PHYS 4601	
	1	PHYS 4602	
Astrophysics Concentration	3	PHYS 2021 or PHYS 2022	
	3	PHYS 3021	
	6	PHYS 4147 or PHYS 4247 or PHYS 4347 or PHYS 4263	
	5	Physics Electives	b, d
Free Electives	19	Free Electives	
TOTAL:	122		

Student must have 2.0 in all PHYS classes 3000-level or higher

NOTES

a = If PHYS 2231 is taken, extra hour goes toward Free Electives

b = PHYS ** or BIOL 4478, CHEM 3411, 3412, 3511, EAS 2750, 4300, 4430, ECE 4501, MATH 3215, 4320, 4347, 4348, 4581

d = Minimum of one class in PHYS 3211, 4224, 3226, 4322

SCHOOL OF PHYSICS

About the School
Undergraduate
BS Physics
Description
Degree Requirements
BS Physics
BS Physics - Astrophysics
Business Option
BS Applied Physics
Description
Degree Requirements
BS Applied Physics
Business Option
Certificates
Graduate
Admissions
Master's Degrees
Physics
Doctoral Degrees
College of Sciences

BACHELOR OF SCIENCE IN PHYSICS - BUSINESS OPTION 2013 - 2014 DEGREE REQUIREMENTS

REQUIREMENT	REQ HRS	COURSE(S)	NOTES
Wellness	2	HPS 1040 or APPH 1040 or APPH 1050	
Core A - Essential Skills	3	ENGL 1101	
	3	ENGL 1102	
	4	MATH 1501	
Core B - Institutional Options	3	CS 1301	
Core C - Humanities	6	Any HUM	
Core D - Science, Math, & Technology	4	CHEM 1310	
	4	PHYS 2211	a
	4	MATH 1502	
Core E - Social Sciences	3	HIST 2111 or HIST 2112 or INTA 1200 or POL 1101 or PUBP 3000	
	3	ECON 2106	
	6	Any SS	
Core F - Courses Related to Major	4	MATH 2401	
	4	MATH 2403	
	4	PHYS 2212	
	3	PHYS 2213	
	3	PHYS 3201	
Upper-Level Physics	3	PHYS 3122	
	3	PHYS 3123	
	3	PHYS 3141	
	3	PHYS 3143	
	3	PHYS 4142	
	3	PHYS 4143	
	3	PHYS 4321	
	1	PHYS 4601	
	1	PHYS 4602	
Physics or Technical Electives	17	Any PHYS or Technical Electives	b, d, e, f
Business Option	3	ACCT 2101 or MGT 3000	
	3	MGT 3101 or MGT 3150 or PSYC 2220	
	6	MGT 3062 or MGT 3078 or MGT 3300 or MGT 3660 or MGT 4015 or MGT 4026 or MGT 4028 or MGT 4030 or MGT 4190 or MGT 4191 or MGT 4192 or MGT 4193 or MGT 4194 or MGT 4303 or MGT 4304 or MGT 4307 or MGT 4335 or MGT 4610 or MGT 4670	
Free Electives	7	Free Electives	
TOTAL:	122		

NOTES

a = If PHYS 2231 is taken, extra hour goes toward Free Electives

b = PHYS ** or BIOL 4478, CHEM 3411, 3412, 3511, EAS 2750, 4300, 4430, ECE 4501, MATH 3215, 4320, 4347, 4348, 4581

d = Minimum of one class in PHYS 3211, 4224, 3226, 4322

e = Maximum of six hours below 3000-level
f = Maximum of nine hours PHYS 2699 or 4699

BACHELOR OF SCIENCE IN APPLIED PHYSICS

The School of Physics offers two undergraduate degrees, the Bachelor of Science in Physics and the Bachelor of Science in Applied Physics.

The degree program in applied physics may be better suited for entry into industry or government upon graduation, preparation for further professional training (medicine, law, dentistry, or business), or preparation for graduate study in some other discipline. The applied physics program differs from the traditional one in that a few courses intended primarily as preparation for graduate study in physics are replaced by courses oriented toward the applications of physics.

Each of the baccalaureate programs contains the following: a) courses needed to meet general institutional degree requirements; b) a core of technical courses intended to give a strong background in mathematics and the physical principles of mechanics, electricity and magnetism, thermodynamics, and the quantum theory that governs physical phenomena at the microscopic level of molecules, atoms, and nuclei; c) technical electives that enable the student to explore areas of his or her choice in greater depth; d) courses involving undergraduate research, and e) free electives, about fifteen percent of the total hours, which may be employed to schedule additional technical or nontechnical courses.

The considerable flexibility inherent in the physics curricula is advantageous to students who wish to work out individual programs of study. At the same time, this flexibility suggests the need for consultation with advisors so students can make the best use of elective hours and avoid scheduling difficulties that may arise in later semesters. Students may utilize their elective freedom in the physics curricula to specialize in particular areas of physics, to prepare for careers in interdisciplinary areas of science, to compose a preprofessional program, or to gain a background in other technical or nontechnical disciplines. Students should contact their academic advisor for assistance in planning programs of study with emphasis directed toward a particular objective.

Since some students who earn a degree in physics have transferred from other disciplines, the School has planned its degree programs to enable most students to transfer into physics with little or no loss of credit.

A total of 120 credit hours (exclusive of wellness) and a grade-point average of at least 2.0 in physics courses numbered 3000 and higher are requisites for the bachelor's degree in physics.

BACHELOR OF SCIENCE IN APPLIED PHYSICS 2013 - 2014 DEGREE REQUIREMENTS

REQUIREMENT	REQ HRS	COURSE(S)	NOTES
Wellness	2	HPS 1040 or APPH 1040 or APPH 1050	
Core A - Essential Skills	3	ENGL 1101	
	3	ENGL 1102	
	4	MATH 1501	
Core B - Institutional Options	3	CS 1301 and CS 1371	
Core C - Humanities	6	Any HUM	
Core D - Science, Math, & Technology	4	CHEM 1310	
	4	PHYS 2211	a
	4	MATH 1502	
Core E - Social Sciences	3	HIST 2111 or HIST 2112 or INTA 1200 or POL 1101 or PUBP 3000	
	9	Any SS	
Core F - Courses Related to Major	4	MATH 2401	
	4	MATH 2403	
	4	PHYS 2212	
	3	PHYS 2213	
	3	PHYS 3201	
Upper-Level Physics	3	PHYS 3122	
	3	PHYS 3123	
	3	PHYS 3141	
	3	PHYS 3143	
	5	PHYS 3211	
	4	PHYS 3266	
	5	PHYS 4206	
	3	PHYS 4321	
	1	PHYS 4601	
	1	PHYS 4602	
Physics or Technical Electives	14	Any PHYS or Technical Electives	b, d, e, f
Free Electives	14	Free Electives	
TOTAL:	122		

Student must have 2.0 in all PHYS classes 3000-level or higher Pass-fail only allowed for Free Electives, Humanities, and Social Sciences.

NOTES

a = If PHYS 2231 is taken, extra hour goes toward Free Electives

b = Any PHYS or BIOL 4478, CHEM 3411, 3412, 3511, EAS 2750, 4300, 4430, ECE 4501, MATH 3215, 4320, 4347, 4348, 4581

d = Minimum of one class in PHYS 3211, 4224, 3226, 4322

e = Maximum of six hours below 3000-level

f = Maximum of nine hours PHYS 2699 or 4699

SCHOOL OF PHYSICS
About the School
Undergraduate
BS Physics
Description
Degree Requirements
BS Physics
BS Physics - Astrophysics
Business Option
BS Applied Physics
Description
Degree Requirements
BS Applied Physics
Business Option
Certificates
Graduate
Admissions
Master's Degrees
Physics
Doctoral Degrees
College of Sciences

BACHELOR OF SCIENCE IN APPLIED PHYSICS - BUSINESS OPTION 2013 - 2014 DEGREE REQUIREMENTS

REQUIREMENT	REQ HRS	COURSE(S)	NOTES
Wellness	2	HPS 1040 or APPH 1040 or APPH 1050	
Core A - Essential Skills	3	ENGL 1101	
	3	ENGL 1102	
	4	MATH 1501	
Core B - Institutional Options	3	CS 1301 and CS 1371	
Core C - Humanities	6	Any HUM	
Core D - Science, Math, & Technology	4	CHEM 1310	
	4	PHYS 2211	a
	4	MATH 1502	
Core E - Social Sciences	3	HIST 2111 or HIST 2112 or INTA 1200 or POL 1101 or PUBP 3000	
	3	ECON 2106	
	6	Any SS	
Core F - Courses Related to Major	4	MATH 2401	
	4	MATH 2403	
	4	PHYS 2212	
	3	PHYS 2213	
	3	PHYS 3201	
Upper-Level Physics	3	PHYS 3122	
	3	PHYS 3123	
	3	PHYS 3141	
	3	PHYS 3143	
	5	PHYS 3211	
	4	PHYS 3266	
	5	PHYS 4206	
	3	PHYS 4321	
	1	PHYS 4601	
	1	PHYS 4602	
Physics or Technical Electives	14	Any PHYS or Technical Electives	b, d, e, f
Business Option	3	ACCT 2101 or MGT 3000	
	3	MGT 3101 or MGT 3150 or PSYC 2220	
	6	MGT 3062 or MGT 3078 or MGT 3300 or MGT 3660 or MGT 4015 or MGT 4026 or MGT 4028 or MGT 4030 or MGT 4190 or MGT 4191 or MGT 4192 or MGT 4193 or MGT 4194 or MGT 4303 or MGT 4304 or MGT 4307 or MGT 4335 or MGT 4610 or MGT 4670	
Free Electives	2	Free Electives	
TOTAL:	122		

Student must have 2.0 in all PHYS classes 3000-level or higher Pass-fail only allowed for Free Electives, Humanities, and Social Sciences.

NOTES

a = If PHYS 2231 is taken, extra hour goes toward Free Electives

b = Any PHYS or BIOL 4478, CHEM 3411, 3412, 3511, EAS 2750, 4300, 4430, ECE 4501, MATH 3215, 4320, 4347, 4348, 4581

d = Minimum of one class in PHYS 3211, 4224, 3226, 4322

e = Maximum of six hours below 3000-level

f = Maximum of nine hours PHYS 2699 or 4699

CERTIFICATE IN ASTROPHYSICS

For the Astrophysics Certificate, the following lists the required and optional courses.

REQUIRED:

- Phys 2021 [3] The Solar System OR
- Phys 2022 [3] Stars, Galaxies, and the Universe
- Phys 3021 [3] Stellar Astrophysics

OPTIONAL AT LEAST TWO MUST BE TAKEN :

- Phys 4261 [3] Atomic Physics
- Phys 4801 [3-6] Special Topic – if approved by the Chair
- Phys 4699 [3] Special Problems – if approved by the Chair

COURSES OFFERED AT GEORGIA STATE

- Astro 3500 [4] Fundamentals of Astronomy and Astrophysics
- Astro 4000 [3] Fundamentals of Astrophysics

MASTER OF SCIENCE IN PHYSICS

The Master of Science in Physics degree requires 30 hours of physics course credit. These hours must include six hours of 8000 level Special Problems or Master's Practicum research (with a physics faculty member) and the following six graduate physics courses:

- PHYS 6101 Classical Mechanics I (3)
- PHYS 6103 Electromagnetism I (3)
- PHYS 6104 Electromagnetism II (3)
- PHYS 6105 Quantum Mechanics I (3)
- PHYS 6106 Quantum Mechanics II (3)
- PHYS 6107 Statistical Mechanics (3)

The remaining 6 credit hours may be earned from either: a) physics lecture courses at the 4000 level or higher; or b) graduate courses at the 6000 level or higher from a school other than physics.

DOCTOR OF PHILOSOPHY WITH A MAJOR IN PHYSICS

The PhD degree in physics requires:

1. admission to candidacy;
2. a program of study in core and advanced physics courses;
3. a minor course of study; and
4. successful defense of the PhD thesis.

Students are admitted to candidacy when they have

1. passed the Comprehensive Exam:
2. selected a Thesis Reading Committee; and
3. submitted a thesis proposal to the graduate coordinator.

To ensure adequate preparation for the Comprehensive Exam, the School strongly recommends that the first year of graduate study be devoted to coursework as follows:

First Semester

- PHYS 6101 Classical Mechanics I (3)
- PHYS 6103 Electromagnetism I (3)
- PHYS 6105 Quantum Mechanics I (3)
- PHYS 6124 Mathematical Methods of Physics I (3)

Second Semester

- PHYS 6107 Statistical Mechanics I (3)
- PHYS 6104 Electromagnetism II (3)
- PHYS 6106 Quantum Mechanics II (3)
- PHYS 8901 Special Problems (3)

The School requires every doctoral student to take two lecture-type graduate physics courses not including those previously listed. In some cases, these may be used to satisfy the Institute requirement that every doctoral student earn 9 credit hours in a minor course of study in a scientific subfield different from the subfield of his or her PhD thesis research. Alternatively, these credit hours are earned in a school other than physics. Finally, each student must prepare a written dissertation that summarizes the PhD research and present a public, oral defense of the dissertation to a Thesis Exam Committee.

BACHELOR OF SCIENCE IN PSYCHOLOGY

The curriculum is technically oriented and stresses quantitative and experimental approaches to the study of behavior. The undergraduate curriculum is based on a strong emphasis in the sciences and mathematics and provides an excellent preparation for graduate school in psychology, medical school, law school, and other professional and academic graduate programs. In addition, many students with the BS degree in psychology choose to enter a variety of fields, including computer software design, human resources, marketing, human factors, system design, personnel selection and training, and management.

INTERNATIONAL PLAN

Psychology's International Plan follows the Institute model to develop a global competence within the student's major program of study. It thus integrates the student's international studies and experiences with the School's quantitative and experimental approaches to the study of behavior.

In addition to the requirements for the BS in Psychology, students must complete the following:

1. take three international courses, including one from each of the following categories: international relations, global economics, and a course on a specific country or region;
2. spend two consecutive terms abroad engaged in fulfilling psychology electives (must be approved by the School of Psychology prior to enrolling in courses), free electives, humanities, and/or social science electives;
3. demonstrate language proficiency equivalent to two years of college-level language study (to be determined by testing); and,
4. incorporate the international experience within the capstone course or the senior thesis.

RESEARCH OPTION

The curriculum is technically oriented and stresses quantitative and experimental approaches to the study of behavior. The undergraduate curriculum is based on a strong emphasis in the sciences and mathematics and provides an excellent preparation for graduate school in psychology, medical school, law school, and other professional and academic graduate programs. The Research Plan in the School of Psychology provides additional research experience for those students seeking to continue their education in graduate school.

BACHELOR OF SCIENCE IN PSYCHOLOGY 2013 - 2014 DEGREE REQUIREMENTS

REQUIREMENT	REQ HRS	COURSE(S)	NOTES
Wellness	2	HPS 1040 or APPH 1040 or APPH 1050	
Core A - Essential Skills	3	ENGL 1101	
	3	ENGL 1102	
	4	MATH 1501	
Core B - Institutional Options	3	CS 1301 or CS 1315 or CS 1371	
Core C - Humanities	6	Any HUM	
Core D - Science, Math, & Technology	8	CHEM or PHYS	a
	4	MATH 1502	
Core E - Social Sciences	3	HIST 2111 or HIST 2112 or INTA 1200 or POL 1101 or PUBP 3000	
	3	PSYC 1101	c
	4	PSYC 2015	c
	2	Any SS	
Core F - Courses Related to Major	4	BIOL 1510 or BIOL 1511	
	4	BIOL 1520 or BIOL 1521	
	3	PSYC 2210	c
	3	PSYC 2103	c
	4	PSYC 2020	c
Major Requirements	4	PSYC 3011	c
	3	PSYC 3020	c
	4	PSYC 3031	c
	4	PSYC 3041	c
	4	PSYC 4031 or PSYC 4601	c
PSYC Electives	3	PSYC 4000-level Electives	b, c, d
	9	PSYC Electives	b, c, d, e
Free Electives	28	Free Electives	
TOTAL:	122		

Pass-fail only allowed for Free Electives.

NOTES

a = CHEM 1211K or CHEM 1212K or CHEM 1310 or CHEM 1311/1312 or PHYS 2211 or PHYS 2212 or PHYS 2231 or PHYS 2232.

b = PSYC Electives must be chosen from this list: PSYC 2220, PSYC 2230, PSYC 2240, PSYC 2250, PSYC 2270, PSYC 2280, PSYC 2300, PSYC 2400, PSYC 2699, PSYC 2760, PSYC 2801, PSYC 2802, PSYC 2803, PSYC 2901, PSYC 2902, PSYC 2903, PSYC 3060, PSYC 3750, PSYC 3790, PSYC 4010, PSYC 4031, PSYC 4050, PSYC 4090, PSYC 4100, PSYC 4200, PSYC 4260, PSYC 4270, PSYC 4310, PSYC 4320, PSYC 4600, PSYC 4699, PSYC 4770, PSYC 4801-4804, or PSYC 4900-4910.

c = C-minimum required.

d = Maximum of three credit hours of PSYC 2699 or PSYC 4699

e = Maximum of three credit hours of PSYC 2901-2903 Special Problems

SCHOOL OF PSYCHOLOGY

About the School
Undergraduate
Undergraduate Handbook
BS Psychology
Description
Degree Requirements
BS Psychology
Business Option
Certificates
Minors
Graduate
Admissions
Graduate Information
Master's Degrees
Psychology
Human-Comp Interaction
Doctoral Degrees
Cognitive Aging
Cognition and Brain Science
Engineering Psychology
Industrial / Org Psyc
Quantitative Psychology
College of Sciences

BACHELOR OF SCIENCE IN PSYCHOLOGY - BUSINESS OPTION 2013 - 2014 DEGREE REQUIREMENTS

REQUIREMENT	REQ HRS	COURSE(S)	NOTES
Wellness	2	HPS 1040 or APPH 1040 or APPH 1050	
Core A - Essential Skills	3	ENGL 1101	
	3	ENGL 1102	
	4	MATH 1501	
Core B - Institutional Options	3	CS 1301 or CS 1315 or CS 1371	
Core C - Humanities	6	Any HUM	
Core D - Science, Math, & Technology	8	CHEM or PHYS	a
	4	MATH 1502	
Core E - Social Sciences	3	HIST 2111 or HIST 2112 or INTA 1200 or POL 1101 or PUBP 3000	
	3	PSYC 1101	c
	4	PSYC 2015	c
	2	ECON 2106	f
Core F - Courses Related to Major	4	BIOL 1510 or BIOL 1511	
	4	BIOL 1520 or BIOL 1521	
	3	PSYC 2210	c
	3	PSYC 2103	c
	4	PSYC 2020	c
Major Requirements	4	PSYC 3011	c
	3	PSYC 3020	c
	4	PSYC 3031	c
	4	PSYC 3041	c
	4	PSYC 4031 or PSYC 4601	c
PYSC Electives	3	PSYC 4000-level Electives	b, c, d
	9	PSYC Electives	b, c, d,e
Business Option	3	ACCT 2101 or MGT 3000	
	3	MGT 3101 or MGT 3150 or PSYC 2220	
	6	MGT 3062 or MGT 3078 or MGT 3300 or MGT 3660 or MGT 4015 or MGT 4026 or MGT 4028 or MGT 4030 or MGT 4190 or MGT 4191 or MGT 4192 or MGT 4193 or MGT 4194 or MGT 4303 or MGT 4304 or MGT 4307 or MGT 4335 or MGT 4610 or MGT 4670	
Free Electives	16	Free Electives	
TOTAL:	122		

Pass-fail only allowed for Free Electives.

NOTES

a = CHEM 1211K or CHEM 1212K or CHEM 1310 or CHEM 1311/1312 or PHYS 2211 or PHYS 2212 or PHYS 2231 or PHYS 2232.

b = PSYC Electives must be chosen from this list: PSYC 2220, PSYC 2230, PSYC 2240, PSYC 2250, PSYC 2270, PSYC 2280, PSYC 2300, PSYC 2400, PSYC 2699, PSYC 2760, PSYC 2801, PSYC 2802, PSYC 2803, PSYC 3060, PSYC 3750, PSYC 3790, PSYC 4010, PSYC 4031, PSYC 4050, PSYC 4090, PSYC 4100, PSYC 4200, PSYC 4260, PSYC 4270, PSYC 4310, PSYC 4320, PSYC 4600, PSYC 4699, PSYC 4770, PSYC 4801-4804, or PSYC 4900-4910.

c = C-minimum required.
d = Maximum of three-credits in PSYC 2699 or PSYC 4699.
e = Maximum of three credits of PSYC 2901-2903 Special Problems
f = Extra 1 hour credit from Econ 2106 applied to Free Electives.

CERTIFICATES

The School of Psychology offers a number of certificate programs that provide similar opportunities for students to develop their expertise or acquire skills or information in specific areas in addition to their major area.

CERTIFICATES IN PSYCHOLOGY

- Certificate in Biopsychology
- Certificate in Cognitive Psychology
- Certificate in Engineering Psychology
- Certificate in Experimental Psychology
- Certificate in Industrial/Organizational Psychology
- Certificate in Social/Personality Psychology

GRADUATE INFORMATION

Doctoral candidates take a core curriculum in general psychology and quantitative methods. Doctoral candidates will complete all requirements for the master's degree, which includes writing a research thesis.

The doctoral program provides the student with an opportunity for advanced study in cognitive aging, cognition and brain science, engineering, industrial-organizational, or quantitative psychology. Each of these curricula consists of additional courses and programs of individual study and research beyond the core curriculum, which contribute to a strong background in general experimental psychology and the student's area of specialization. The doctoral program will ordinarily require at least four years for students who enter immediately after obtaining a bachelor's degree.

Admission to graduate study in psychology with full graduate standing in the School of Psychology requires the equivalent of an undergraduate major in psychology or a related field with courses in general and experimental psychology, as well as psychological statistics. All applicants should submit scores from the Graduate Record Examination.

The psychology faculty will consider admissions applications from competent students who have majored in subjects other than psychology.

MASTER OF SCIENCE IN PSYCHOLOGY

The School of Psychology does not accept students seeking a terminal master's degree. The master's degree coursework prepares the student for continuation of graduate work toward a PhD. Most students require two to three calendar years to complete the master's degree.

SCHOOL OF PSYCHOLOGY

About the School
Undergraduate
Undergraduate Handbook
BS Psychology
Description
Degree Requirements
BS Psychology
Business Option
Certificates
Minors
Graduate
Admissions
Graduate Information
Master's Degrees
Psychology
Human-Comp Interaction
Doctoral Degrees
Cognitive Aging
Cognition and Brain Science
Engineering Psychology
Industrial / Org Psyc
Quantitative Psychology
College of Sciences

MASTER OF SCIENCE IN HUMAN - COMPUTER INTERACTION

OVERVIEW

The interdisciplinary Master of Science in Human - Computer Interaction (HCI) degree program is a cooperative effort of the School of Interactive Computing; the School of Literature, Communication, and Culture; and the School of Psychology. The program provides students with the practical, interdisciplinary skills and theoretical understanding they will need to become leaders in the design, implementation, and evaluation of the computer interfaces of the future.

COURSE OF STUDY

The HCI master's degree is a four - semester program consisting of a total of thirty-six credit hours. Each student is required to complete a set of four core courses, a set of elective courses based on their academic background and interests, a set of area specialization courses based on the academic unit in which they reside, and a Master's project. The specific courses for each student will be determined by the HCI program coordinator in consultation with the academic unit. The area specialization courses are determined by the academic unit in which the student resides. The areas of specialization are: Computing; Digital Media (DM, through the School of Literature, Communication, and Culture); and Psychology.

Specializations	Fixed Core Credit Hours	Specialization Credit Hours	Elective Credit Hours	Project Credit Hours
Computing	11	9	12	4
Digital Media	11	10	9	6
Psychology	11	11	10	4

CORE COURSES (11 CREDIT HOURS)

CS/PSYC 6750, Human - Computer Interaction (must be taken during the first semester)
PSYC 6023 Psychology Research Methods for HCI (4 credit hours with lab)
PSYC 6031 Engineering Psychology Analysis Techniques (2 credit hours)
CS/LCC/PSYC6753 Human - Computer Interaction – Professional Preparation and Practice (one hour credit Fall of first year and one credit hour Fall of second year)

ELECTIVE COURSES (TWELVE CREDIT HOURS FOR COMPUTING SPECIALIZATION; TEN CREDIT HOURS FOR PSYCHOLOGY SPECIALIZATION; NINE CREDIT HOURS FOR DIGITAL MEDIA SPECIALIZATION)

All specialization courses may also be taken as part of the Elective courses. For the computing and psychology tracks, at least nine credit hours of the Elective must be taken outside your specialization. For the Digital Media specialization, at least six credit hours must be taken outside your specialization. **A maximum of three credit hours of Special Problems in HCI (CS/LCC/PSYC 8903) may count toward the Elective Courses**.

ARCHITECTURE

COA 8823 - ED Special Topics in Architecture and Behavior: Health Environment of the Future
COA 8823 Special Topics: Patient Room of the Future
COA 8843 - ED Special Topics in Design Computing: Design Games

COMPUTER SCIENCE

Software

CS 6300 - Software Development Process
CS 6452 - Prototyping Interactive Systems
CS 6456 - Principles of User Interface Software
CS 7470 - Ubiquitous Computing
CS 8803 - MAS Special Topics: Mobile Apps and Services
CS 8803 - Special Topics: Adaptive Personalized Information Environments Interaction (variable hours)

Design, Evaluation, and Cognitive Modeling

CS 6010 - Principles of Design
CS 6150 - Computing for Good
CS 6451 - Introduction to Human Centered Computing
CS 6455 - User Interface Design and Evaluation
CS 6460 - Educational Technology: Conceptual Foundations
CS 6465 Computational Journalism
CS 6470 - Design of Online Communities
CS 6795 - Introduction to Cognitive Science
CS 7450 - Information Visualization
CS 7460 - Collaborative Computing
CS 7610 - Modeling and Design
CS/PSYC 7790 - Cognitive Modeling
CS 8803 - DG Special Topics: Design Games
CS 8803 - HEF Special Topics: Healthcare Informatics
CS 8803 - HAR Special Topics: Handheld Augmented Reality Game Studio
CS 8803 - HRI Special Topics Human - Robot Interaction
CS 8803 - IBI Special Topics: Introduction to Bio Informatics
CS 8803 - VG Special Topics: Video Game Design
CS 8803 - SOC Social Computing
CS 8903 - Special Problems in Human - Computer Interaction (variable hours)

INTERNATIONAL AFFAIRS

INTA 8803 - Special Topics: Computers, Communications, and International Development

INDUSTRIAL DESIGN

ID 6100 Human Centered Design
ID 6101 Human Centered Design
ID 6200 Graduate Studio II
ID 8900 Healthcare Environment of the Future
ID 8900 Web Design Accessibility
ID 8900 Advanced Sketching
ID 8900 Interactive Product Design for Home Health & Well - Being
ID 8900 Service Design and Organizational Activation
ID 8900 Universal Design: Exploration & Investigation of Real World Applications

INDUSTRIAL AND SYSTEMS ENGINEERING

ISYE 6205 / AE 8803 - Cognitive Engineering
ISYE 6215 - Models in Human - Machine Systems
ISYE 6231 - Design of Human - Integrated Systems
ISYE 6413 - Design and Analysis of Experiments
ISYE 6414 - Regression Analysis
ISYE 6739 - Basic Statistical Methods
ISYE 6772 - Managing the Resources of Technological Firms
ISYE 7210 - Real - Time Interactive Simulations

LITERATURE - COMMUNICATION - AND CULTURE (DIGITAL MEDIA)

LCC 6215 - Issues in Media Studies
LCC 6310 - The Computer as an Expressive Medium

LCC 6311 - Visual Culture and Design
LCC 6312 - Design Technology and Representation
LCC 6313 - Principles of Interactive Design
LCC 6314 - Design of Networked Media
LCC 6315 - Project Production
LCC 6316 - Historical Approaches to Digital Media
LCC 6317 - Interactive Fiction
LCC 6318 - Experimental Media
LCC 6319 - Intellectual Property Policy and Law
LCC 6325 - Game Design and Analysis
LCC 6399 - Discovery and Invention in Digital Media
LCC 6650 - Project Studio
LCC 8000 - Proseminar in Media Theory
LCC 8001 - Pro - Seminar in Digital Media Studies
LCC 8903 - Special Problems in Human - Computer Interaction

MANAGEMENT OF TECHNOLOGY (MOT)

MGT 6056 - Electronic Commerce
MGT 6326 - Collaborative Product Development
MGT 6772 - (K - TSA) Managing Resources of the Technological Firm
MGT 8803 - Software Project Management

MUSIC

MUSI 6001 - Music Perception and Cognition
MUSI 6003 - Music Technology History and Repertoire
MUSI 6104 - Integrating Music in Multimedia
MUSI 6301 - Music Interface Design
MUSI 6303 - Network Music
MUSI 7100 - Music Technology Research Lab

PSYCHOLOGY

PSYC 6011 - Cognitive Psychology (3 credit hours)
PSYC 6012 - Social Psychology (3 credit hours)
PSYC 6014 - Sensation and Perception (3 credit hours)
PSYC 6022 - Psychological Statistics for HCI (4 credit hours including lab - Fall or Spring)
PSYC 6032 - Engineering Psychology Stressors (1 credit hour minicourse - Fall)
PSYC 6033 - Engineering Psychology Cognitive Ergonomics (1 credit hour minicourse - Spring)
PSYC 6034 - Engineering Psychology Displays (1 credit hour minicourse - Spring)
PSYC 6035 - Engineering Psychology Controls &Workspaces (1 credit hour minicourse - Spring)
PSYC 6041 - Topics in Cognitive Aging (3 credit hours)
PSYC 7104 - Psychomotor and Cognitive Skills
PSYC 8040 - Seminar in Engineering Psychology: Assistive Technologies
PSYC 8040 - Seminar in Engineering Psychology: The Psychology of HCI
PSYC 8903 - Special Problems in Human - Computer Interaction

PUBLIC POLICY

PUBP 6111 - Special Topics: The Internet and Public Policy
PUBP 6401 - Science, Technology, and Public Policy

COMPUTING SPECIALIZATION (NINE CREDIT HOURS)

Software (3 credit hours):

CS 6300 - Software Development Process
CS 6452 - Prototyping Interactive Systems
CS 6456 - Principles of User Interface Software
CS 7470 - Ubiquitous Computing
CS 8803 - MAS, Special Topics: Mobile Apps and Services

Design - Evaluation - and Cognitive Modeling (6 credit hours):

CS 6010 - Principles of Design
CS 6150 - Computing for Good
CS 6451 - Introduction to Human - Centered Computing
CS 6455 - User Interface Design and Evaluation
CS 6460 - Educational Technology: Conceptual Foundations
CS 6465 - Computational Journalism
CS 6470 - Design of Online Communities
CS 6470 - Mixed Reality Experience Design
CS 6795 - Introduction to Cognitive Science
CS 7450 - Information Visualization
CS 7460 - Collaborative Computing
CS/PSYC 7790 - Cognitive Modeling
CS 8803 - DG, Special Topics: Design Games
CS 8803 - HEF, Special Topics: Healthcare Informatics
CS 8803 - HAR, Special Topics: Handheld Augmented Reality Game Studio
CS 8803 - HRI, Special Topics Human - Robot Interaction
CS 8803 - IBI, Special Topics: Introduction to Bio Informatics
CS 8803 - VG, Special Topics: Video Game Design
CS 8803 - SOC, Social Computing
CS 8903 - Special Problems (variable hours)

A maximum of 3 hours of CS 8903 may count toward the Computing specialization. The master's degree requirements for students in the College of Computing supplement those of the Institute. Students must achieve a grade-point average of at least 3.0 to graduate - and no course grade below C will count toward graduation.

DIGITAL MEDIA (DM) SPECIALIZATION (TEN CREDIT HOURS)

Required (may be repeated)

LCC 6650 - Project Studio (enrollment by permission of instructor)

One of the following courses - preferably taken in the first year of study:

LCC 6310 - The Computer as an Expressive Medium
LCC 6313 - Principles of Interactive Design
LCC 6399 - Discovery and Invention in Digital Media
LCC 8903 - Special Problems in HCI

Students may fulfill the rest of the required credits hours with any other LCC 6000 or 8000 level course.

A maximum of 3 hours of LCC 8903 may count toward the Digital Media specialization.

PSYCHOLOGY SPECIALIZATION (11 CREDIT HOURS)

Required (8 credit hours):

PSYC 6022 - Psychological Statistics for HCI (4 credit hours including lab - Fall or Spring)
PSYC 6032 - Engineering Psychology Stressors (1 credit hour minicourse - Fall)
PSYC 6033 - Engineering Psychology Cognitive Ergonomics (1 credit hour minicourse - Spring)
PSYC 6034 - Engineering Psychology Displays (1 credit hour minicourse - Spring)
PSYC 6035 - Engineering Psychology Controls &Workspaces (1 credit hour minicourse - Spring)

3 credit hours from the following courses:

PSYC 6011 - Cognitive Psychology (3 credit hours)
PSYC 6012 - Social Psychology (3 credit hours)
PSYC 6014 - Sensation and Perception (3 credit hours)
PSYC 6041 - Topics in Cognitive Aging (3 credit hours)

PROJECT (4 CREDIT HOURS; 6 CREDIT HOURS FOR STUDENTS IN THE DM SPECIALIZATION)

Each student completes this requirement, under the supervision of a faculty member, normally during the last two semesters of their program. Students must submit a project proposal and final report and present their work to the three school faculty coordinators and other MS - HCI students late during the semester of graduation.

CS 6998 - MS, HCI Project (repeatable; variable semester hours), or
LCC 6998 - MS, HCI Project (repeatable; variable semester hours), or
PSYC 6998 - MS, HCI Project (repeatable; variable semester hours)

SEMINAR

The HCI MS professional preparation and practice course aims to prepare students for success in their studies and careers. It includes presentations by leading HCI practitioners concerning career choices and preparation and new developments, visits to corporate HCI labs in the Atlanta area, research presentations, skills tutorials, discussion of potential MS projects and "how to succeed" in graduate school and as a professional.

Students take this seminar in the fall semester of their first and second years of study.

CS 6753 - Human, Computer Interaction, Professional Preparation and Practice (may be repeated for credit once), or
LCC 6753 - Human, Computer Interaction, Professional Preparation and Practice (may be repeated for credit once), or
PSYC 6753 - Human, Computer Interaction, Professional Preparation and Practice (may be repeated for credit once)

DOCTOR OF PHILOSOPHY WITH A MAJOR IN PSYCHOLOGY
COGNITIVE AGING

The Cognitive Aging specialty area in the Psychology PhD program emphasizes training students about cognition in adulthood. Students gain an understanding of the biological, psychological, and social aspects of aging as they relate to cognitive development over the adult life span. Areas of interest of the faculty include age differences and age changes in basic cognitive mechanisms (such as working memory, episodic memory, attention, speed of processing, and language), higher-order cognition (including adult intellectual development), and practical and contextual aspects of cognition (such as knowledge acquisition, skill development, everyday problem solving, metacognition, emotion regulation, and social cognition). The program is closely connected to faculty with interests in human factors and aging (in the Engineering Psychology program), cognitive neuroscience of aging (in the Cognitive and Brain Sciences program), and aging issues in work and careers (in the Industrial/Organizational Psychology program).

DOCTOR OF PHILOSOPHY WITH A MAJOR IN PSYCHOLOGY
COGNITION AND BRAIN SCIENCE

The Cognitive and Brain Science specialty area for the Psychology PhD program trains students to develop a thorough understanding of diverse aspects of cognition. Students learn about theories of cognitive phenomena and about the neurobiological bases of cognition and behavior. Students study the major methods used to measure various components of cognition. These components include attention, sensation and perception, working memory, episodic memory, cognitive control, language, metacognition, spatial cognition, and problem solving. Faculty research interests include these areas of cognition as they exist in humans, as well as aspects of comparative psychology (animal behavior and cognition). Some faculty members' research interests include human cognitive neuroscience, measuring brain activity during cognition with electrophysiological or imaging techniques in persons with or without neurological dysfunction. The program is closely connected to faculty with interests in the Cognitive Aging program, including an emphasis on understanding effects of aging on cognitive mechanisms and how aging influences neural functioning and cognition

DOCTOR OF PHILOSOPHY WITH A MAJOR IN PSYCHOLOGY ENGINEERING PSYCHOLOGY

The Engineering Psychology PhD program focuses on understanding the capabilities and limitations of human performance from the perspective of perception, cognition, and movement control and applying this knowledge to the design of systems and environments that accommodate those capabilities and limitations.

DOCTOR OF PHILOSOPHY WITH A MAJOR IN PSYCHOLOGY INDUSTRIAL/ORGANIZATIONAL PSYC

The Industrial/Organizational Psychology (I/O) PhD program concentrates on research related to the psychology of work and the workplace. Students develop specialized I/O knowledge, skills, and experiences through an individually tailored program of seminars, elective courses, participation in laboratory- and field-based research projects, and training in local organizations.

DOCTOR OF PHILOSOPHY WITH A MAJOR IN PSYCHOLOGY
QUANTITATIVE PSYCHOLOGY

The Quantitative Psychology Program emphasizes the interface between quantitative methods and psychological issues. Graduates will be trained as quantitative specialists, with a substantial background in psychology. The exact focus of the student's studies depends on the current interests of the faculty and the student. Current faculty interests and course offerings include psychometric methods, item response theory, structural equation modeling, multivariate statistics, factor analysis, and multilevel modeling, as well as many other topics in psychological methods and statistics.

DUAL BS IN COMPUTER ENGINEERING
GEORGIA TECH & KOREA ADVANCED INSTITUTE OF SCIENCE & TECH

Students may pursue the BSEE degree from the Korea Advanced Institute of Science and Technology (KAIST) as they earn the BSEE or BSCmpE from Georgia Tech. KAIST offers one of the top engineering programs in Korea and the Far East. All lectures at KAIST are given in English to better serve a growing number of students from overseas. While earning their dual degrees, students spend two years each at both Georgia Tech and KAIST.

DUAL BS IN ELECTRICAL ENGINEERING GEORGIA TECH & KOREA ADVANCED INSTITUTE OF SCIENCE & TECH

Students may pursue the BSEE degree from the Korea Advanced Institute of Science and Technology (KAIST) as they earn the BSEE or BSCmpE from Georgia Tech. KAIST offers one of the top engineering programs in Korea and the Far East. All lectures at KAIST are given in English to better serve a growing number of students from overseas. While earning their dual degrees, students spend two years each at both Georgia Tech and KAIST.

MASTER OF SCIENCE IN URBAN DESIGN

The Master of Science in Urban Design (MSUD) degree is oriented to those who wish to expand upon their previous professional education and professional experience, as architects, landscape architects, city planners, or civil engineers, and to enter urban design practices either in private firms or public agencies. The MSUD Program is housed in the School of Architecture and is run jointly by the School of Architecture and the Georgia Tech School of City and Regional Planning. It offers an intensive and richly interdisciplinary experience, with required courses in urban design, architecture and city planning, with additional opportunities in civil and environmental engineering, real estate development, heritage preservation, and other fields. Students in the MSUD Program are in daily contact with architecture and planning students and faculty throughout the College of Architecture.

MSUD: QUALIFICATIONS NEEDED TO APPLY

Applicants to the MSUD Program are limited to those with prior accredited professional degrees in architecture (M.ARCH or B.ARCH), landscape architecture (BLA or MLA), City and Regional Planning (MCRP or equivalent), or Civil Engineering (BCE or equivalent). Professional degrees from other countries are acceptable with proper documentation with the understanding that the MSUD cannot serve, in itself, as a professional degree in the US. It is preferable that applicants have a year or more of professional experience.
Applicants must demonstrate their ability for graduate study in urban design by submitting the following in their application package:

1. A design portfolio, including academic and professional work, demonstrating experience and ability to engage professional level urban design problems. The portfolio must be submitted in digital form.
2. Graduate Record Examination (GRE) scores, taken within the past five years, and professional degree grade point records and averages to demonstrate overall ability to engage graduate studies. In general, minimums are 60th percentile or higher for the GRE sections and 3.0 GPA or higher. GRE scores are required for all international applicants, regardless of the language of their first degree.
3. Tests of English as a Foreign Language (TOEFL) scores, with a minimum scores of 600 (paper), 250 (computer) or 100 (Internet) are required for students whose first language is not English.

The MSUD Program only admits students for the fall semester, unless the student plans to participate in one of the COA urban design-oriented international summer programs prior to the first semester in the MSUD Program.

MSUD DEGREE REQUIREMENTS

The course of study for the Master of Science in Urban Design (MSUD) includes a set of required core courses, totaling 30 credit hours, and professional electives, totaling 9 credit hours. The total minimum credit hour requirement for the MSUD degree is thiry-nine hours.

REQUIRED COURSES

The 30 credit hours of required core courses are organized into two groups. All of these courses are currently taught in the COA. These include:

Four Seminar and Lecture Courses, totaling twelve credit hours:
    - COA 6151: History of Urban Form (3-0-3)
    - ARCH 6151: Theories of Urban Design (3-0-3)
    - CP 6016: Growth Management Law (3-0-3)
    - CP 6611: Principles of Real Estate Finance and Development (3-0-3)
- Three Laboratory, Studio or Special Problems Courses, totaling 18 credit hours:
    - COA 6011: Urban Design Fundamentals (1-15-6 credits
    - COA 7011: Urban Design Studio I (1-15-6 credits)
    - And one of the following:
        - COA 7012: Urban Design Studio II (1-15-6)
        - COA 8881: Special Problems - Urban Design (0-18-6)
        - ARCH 7045: Urban Design Workshop (0-18-6)

ELECTIVE COURSES

The 9 credits of elective courses are organized into six subject areas, reflecting important areas of urban design practice. Students will be advised to take these electives, either in concentrated areas or in distributed subjects, based on their prior professional degrees, professional experience and career interests. These elective areas are as follows:

- **Urban Design History, Theory and Practice** electives provide depth in several aspects of urban design history, theory and practice. These are especially appropriate for students with strong technical backgrounds, who wish to engage broader aspects of urban design practice.
- **Sustainable Development** electives provide an introduction, as well as policy and technical depth, to issues of sustainable urbanism from a variety of perspectives, ranging from building to city to regional and scales.
- **Transportation Planning** electives are courses in the existing Transportation Dual Degree Program between City and Regional Planning and Civil and Environmental Engineering. Students also may enroll, with permission, in other transportation planning and design courses in the Georgia Tech School of Civil and Environmental Engineering.
- **Real Estate and Economic Development** electives provide additional depth in real estate development and economic development. Students may also cross enroll, with permission, in the Georgia State University Robinson College of Business. In addition, students may select to complete the Real Estate Certificate Program at Georgia State University.
- **Digital Media** electives respond to the rapidly growing need in urban design practice to bridge among GIS, CAD, 3-D Modeling and Animation. The strengths in the COA GIS Center and the Digital Buildings Laboratory provide substantial opportunities in this area, and these opportunities are expanding rapidly.
- **Heritage Preservation** electives address an area of urban design practice that has not had significant academic attention. These electives are based on opportunities for students to cross enroll, with permission, at GSU for courses in the Heritage Preservation Program in the College of Arts and Sciences. In addition, students may select to complete the Historic Preservation Certificate Program at Georgia State University.

For additional information and links see: www.arch.gatech.edu/urban-design/msud

SCHOOL OF CITY AND REGIONAL PLANNING
About the School
Accreditation
Certificates
Graduate
Admissions
MCRP
MS GIST
Dual Degrees
General Information
Planning Law
Public Policy
Civil Engineering
Architecture
PhD City Planning
College of Architecture

MASTER OF SCIENCE IN URBAN DESIGN

The Master of Science in Urban Design (MSUD) degree is oriented to those who wish to expand upon their previous professional education and professional experience, as architects, landscape architects, city planners, or civil engineers, and to enter urban design practices either in private firms or public agencies. The MSUD Program is housed in the School of Architecture and is run jointly by the School of Architecture and the Georgia Tech School of City and Regional Planning. It offers an intensive and richly interdisciplinary experience, with required courses in urban design, architecture and city planning, with additional opportunities in civil and environmental engineering, real estate development, heritage preservation, and other fields. Students in the MSUD Program are in daily contact with architecture and planning students and faculty throughout the College of Architecture.

MSUD: QUALIFICATIONS NEEDED TO APPLY

Applicants to the MSUD Program are limited to those with prior accredited professional degrees in architecture (M.ARCH or B.ARCH), landscape architecture (BLA or MLA), City and Regional Planning (MCRP or equivalent), or Civil Engineering (BCE or equivalent). Professional degrees from other countries are acceptable with proper documentation with the understanding that the MSUD cannot serve, in itself, as a professional degree in the US. It is preferable that applicants have a year or more of professional experience.
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The MSUD Program only admits students for the fall semester, unless the student plans to participate in one of the COA urban design-oriented international summer programs prior to the first semester in the MSUD Program.

MSUD DEGREE REQUIREMENTS

The course of study for the Master of Science in Urban Design (MSUD) includes a set of required core courses, totaling 30 credit hours, and professional electives, totaling 9 credit hours. The total minimum credit hour requirement for the MSUD degree is thiry-nine hours.

REQUIRED COURSES

The 30 credit hours of required core courses are organized into two groups. All of these courses are currently taught in the COA. These include:

Four Seminar and Lecture Courses, totaling twelve credit hours:
  - COA 6151: History of Urban Form (3-0-3)
  - ARCH 6151: Theories of Urban Design (3-0-3)
  - CP 6016: Growth Management Law (3-0-3)
  - CP 6611: Principles of Real Estate Finance and Development (3-0-3)
- Three Laboratory, Studio or Special Problems Courses, totaling 18 credit hours:
  - COA 6011: Urban Design Fundamentals (1-15-6 credits
  - COA 7011: Urban Design Studio I (1-15-6 credits)
  - And one of the following:
    - COA 7012: Urban Design Studio II (1-15-6)
    - COA 8881: Special Problems - Urban Design (0-18-6)
    - ARCH 7045: Urban Design Workshop (0-18-6)

ELECTIVE COURSES

The 9 credits of elective courses are organized into six subject areas, reflecting important areas of urban design practice. Students will be advised to take these electives, either in concentrated areas or in distributed subjects, based on their prior professional degrees, professional experience and career interests. These elective areas are as follows:

- **Urban Design History, Theory and Practice** electives provide depth in several aspects of urban design history, theory and practice. These are especially appropriate for students with strong technical backgrounds, who wish to engage broader aspects of urban design practice.
- **Sustainable Development** electives provide an introduction, as well as policy and technical depth, to issues of sustainable urbanism from a variety of perspectives, ranging from building to city to regional and scales.
- **Transportation Planning** electives are courses in the existing Transportation Dual Degree Program between City and Regional Planning and Civil and Environmental Engineering. Students also may enroll, with permission, in other transportation planning and design courses in the Georgia Tech School of Civil and Environmental Engineering.
- **Real Estate and Economic Development** electives provide additional depth in real estate development and economic development. Students may also cross enroll, with permission, in the Georgia State University Robinson College of Business. In addition, students may select to complete the Real Estate Certificate Program at Georgia State University.
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For additional information and links see: www.arch.gatech.edu/urban-design/msud

BACHELOR OF SCIENCE IN BUSINESS ADMINISTRATION - INTERNATIONAL PLAN

The International Plan degree option is available to all College of Business undergraduate students. This option has been specifically designed to increase the international competence of our students through foreign language instruction, selected international courses, overseas residential experience, and a capstone, culminating course. This international competence is characterized by a graduate's ability to communicate in a second world language, discuss substantively the major international socioeconomic processes, assimilate into foreign lifestyles and work environments, and communicate with confidence the specifics of management and business in a global context. Given the ever-increasing pace of globalization of business, this option should help students prepare for the business world of the future. All College of Business students should seek advising through the College of Business Undergraduate Programs Office.

COLLEGE OF COMPUTING

General Information
About The College
Accreditation
Research Centers
Faculty
BS Computer Science
Schools / Divisions
Computer Science
Interactive Computing
Computational Science & Eng
Degrees Offered
Minors
Certificates

COOPERATIVE PROGRAMS

The College of Computing participates in the undergraduate and graduate Cooperative Programs.
See links below for further Information.

BACHELOR OF SCIENCE IN COMPUTER SCIENCE INTERNATIONAL PLAN

COLLEGE OF COMPUTING

The College of Computing has an approved BS CS International Plan that accommodates the unique requirements of this option discussed in the International Plan section of the catalog.

However, due to the flexible nature of the Threads curriculum, the International Plan designation may not be available with all of the Thread combinations. Efforts will be made to work with interested students to accommodate their individual circumstances with regard to the International Plan designator for the Bachelor of Science in Computer Science.

BACHELOR OF SCIENCE IN COMPUTER SCIENCE - RESEARCH OPTION

To complete the Research Option in the College of Computing, students must:

- Complete at least nine units of undergraduate research
  - Over at least two, preferably three terms
  - Research may be for either pay or credit
- Write an undergraduate thesis/report of research on their findings
- Take
  - LCC 4701: Undergraduate Research Proposal Writing (taken during the first or second semester of research)
  - LCC 4702: Undergraduate Research Thesis Writing (taken during the thesis writing semester).

RESEARCH CLASSES

The following classes count toward fulfillment of the Research Option:

Research for Credit:

CS 2699-Undergraduate Research (freshman and sophomore)

CS 4699-Undergraduate Research (junior and senior)

CS 4980-Research Capstone Project

Research for Pay (Audit only):

CS 2698-Research Assistantship (freshman and sophomore)

CS 4698-Research Assistantship (junior and senior)

To get credit toward completion of the Research Option for research for pay, students must be registered for the appropriate audit-only, research for pay class (CS 2698 or 4698). If work on research for pay begins after the close of registration and the student has not signed up for the appropriate class, unfortunately it is not possible to get credit toward the Research Option for work that term.

A research project will also fulfill the capstone design requirement if the student registers for CS 4980 Capstone Project for one of the research terms. This is typically done the last semester of research, while taking LCC 4702.

Completion of the Research Option is noted on the student's transcript. For more information, see: www.urop.gatech.edu.

MASTER OF SCIENCE IN ENTERPRISE TRANSFORMATION (MSENTR)

The Georgia Tech College of Engineering, along with the Tennenbaum Institute, College of Business, and College of Computing, is offering a degree program for experienced professionals interested in the multidisciplinary field of Enterprise Transformation. The MSENTR program addresses the enterprise as a system and considers the individual, organizational, social and technological phenomena associated with designing, managing, and transforming large enterprises.

This degree program is intended for fast-rising managers who currently are or who anticipate taking on key transformation responsibilities due to major market and technology opportunities as well as competitive threats and crises. The program is designed for individuals with a background in engineering, science, economics, or other analytical fields, and 10-15 years of work experience. All participants must be supported by their employers. Courses are taught using a complementary case- and lecture-based approach.

For information, visit http://www.ti.gatech.edu/enterprise/index.php or contact us by email (transform@ti.gatech.edu), phone (404-385-6013), or write to:

MSENTR Program
Georgia Institute of Technology
Tennenbaum Institute
760 Spring Street, NW
Suite 118
Atlanta, GA 30332-0210

MASTER OF SCIENCE IN ENTERPRISE TRANSFORMATION 2013 - 2014 DEGREE REQUIREMENTS

PROFESSIONAL MASTER'S PROGRAM

Georgia Tech Distance Learning and Professional Education, the College of Engineering, and the Georgia Tech Research Institute jointly offer a degree program for experienced professionals interested in building and expanding their systems engineering expertise.

Developed for individuals with five or more years of work experience, the program is designed to enhance the skills and knowledge that engineers need in a competitive, global environment. The Professional Master's in Applied Systems Engineering (PMASE) is a multidisciplinary program in which students will develop a core understanding of complex systems and learn how to apply concepts and techniques to solve real-world challenges. Courses are taught in a unique blended format, combining distance learning technologies and face-to-face classroom instruction.

For information, visit www.pmase.gatech.edu, call 404.407.6335, or write to:

Professional Master's Program
Georgia Institute of Technology
Georgia Tech Global Learning Center
84 5th Street, NW
Atlanta, Georgia 30308-1031

ROTC PROGRAMS: ARMY, NAVY, AND AIR FORCE

please make a selection from the menu on the left.

DOCTOR OF PHILOSOPHY WITH A MAJOR IN PSYCHOLOGY
ENGINEERING PSYCHOLOGY

Cognitive aging
Cognition and Brain Science
Engineering Psychology
Industrial/Organizational Psychology
Quantitative Psychology

CONTACT US:

Required Fields

VIII. WITHDRAWAL FROM SCHOOL AND READMISSION

B. READMISSION

1. Any student who is not enrolled for two or more consecutive terms must apply for readmission. This application, with all the pertinent supporting information (except possibly another college transcript: see 2 below), must be submitted to the registrar before the deadline for the term for which readmission is requested, as listed below:

   Fall-July 1
   Spring-December 1
   Summer-April 1
   Applications received after these deadlines will not be accepted.
2. Students who have attended other colleges should plan their readmission so as to allow ample time for official transcripts from those colleges to be sent to Georgia Tech. If official transcripts have not been received prior to the last day of registration, the student seeking readmission will not be allowed to complete registration.
3. Any student in good standing who is not enrolled for a single term will be allowed to re-enroll without applying for readmission to the Institute. There will be no distinction between the terms of the regular academic year and the summer term.
4. A student who is on academic warning or academic probation who is not enrolled for a single term will have an automatic hold placed on registration that must be cleared by the student's major school. For example, a student is placed on academic probation at the close of fall term and fails to enroll by the close of registration for the spring term. An automatic registration hold will be set, which must be cleared by the major school before the student can register for any future term.
5. A student who has been dropped once for unsatisfactory scholarship will ordinarily not be readmitted. A student who seeks an exception to this rule must have been out of the Institute for at least one term and have had a conference with the major school concerning the readmission. The readmission application deadline for a student who has been dropped is two months prior to the published readmission deadline for the term.
6. A student who is dropped a second time for unsatisfactory scholarship will not be readmitted to the Institute.
7. A student who is on expulsion, defined as permanent separation from the Institute, is not eligible for readmission.
8. Students are readmitted under the current catalog that is in effect at the time of readmission. If a student wishes to follow the degree requirements from a catalog in effect prior to the term of readmission, he/she must make a request to the Major School. There is no guarantee that such a request will be granted and readmitted students should be prepared to follow the current degree requirements as outlined in the current catalog. Programs that have been deactivated or terminated are not available for readmission. Students who were enrolled in a program that has since been deactivated are eligible for readmission to the Institute; however, they must select an active program at the time of readmission. Once a decision is made to no longer admit students to a major due to an impending deactivation or termination, readmission is also not allowed.
9. Any student, except a part-time graduate student, who withdraws during a term and wishes to return the following term must complete a Petition to the Faculty for

consideration. This petition must be submitted to the registrar before the deadline for the term for which readmission is requested.

10. Students may be eligible for academic renewal. See below for more information.

    a. University System of Georgia undergraduate students who have been readmitted or reinstated after a period of absence of five (5) calendar years or longer are eligible for academic renewal. Academic renewal for the student signals the initiation of a new grade-point average to be used for determining academic standing. This provision allows University System of Georgia degree-seeking students who earlier experienced academic difficulty to make a fresh start and have one final opportunity to earn an associate or bachelor's degree (BR Minutes, June, 1995, p. 7). The complete policy is available online at: www.usg.edu/academic_affairs_handbook/section2/handbook/2.5_grading_system/

    b. The application for academic renewal shall be considered as a petition to the undergraduate curriculum committee.

VI. SCHOLASTIC REGULATIONS

C. ACADEMIC STANDING

1. The assignment of academic standing is based on both the student's most recent term and overall grade-point average.
2. The minimum satisfactory academic average is 1.70 for freshmen and joint-enrolled high school students; 1.80 for sophomores; 1.95 for juniors; 2.00 for seniors and special undergraduates; 2.70 for master's and special graduate students; and 3.00 for doctoral students.
3. Students not on academic probation are in good academic standing.
4. Academic warning
   a. Academic warning is a subcategory of good academic standing, differing only in the maximum allowable schedule load.
   b. A student who has an overall academic average below the minimum satisfactory scholarship requirement, or whose academic average for work taken during any term is below this requirement, shall be placed on academic warning.
5. Academic probation
   a. A student on academic warning whose academic average is below the minimum satisfactory scholarship requirement for any term shall be placed on academic probation.
   b. An undergraduate student in good academic standing whose academic average for any term is below 1.00, based on at least six credit hours, shall be placed on academic probation.
   c. A student also may be placed on academic probation through other actions, as described in the following section.
6. Dismissal for unsatisfactory scholarship
   a. The Institute may drop from the rolls at any time a student whose record in scholarship is unsatisfactory.
   b. A graduate student whose academic average for any term is 2.00 or below may be placed on academic probation or dropped, regardless of the student's previous record.
   c. A student on academic probation whose scholastic average for the term of probation is below the minimum satisfactory scholarship requirement and whose overall academic average is below the minimum satisfactory scholarship requirement shall be dropped from the rolls for unsatisfactory scholarship.
   d. An undergraduate student on academic warning whose academic average for any term is below 1.00, based on at least six credit hours, shall be dropped from the rolls for unsatisfactory scholarship.
   e. The record of a student on academic probation whose term average is unsatisfactory, but whose overall academic record is satisfactory, may be reviewed by the Undergraduate Curriculum Committee or the Graduate Committee, as appropriate. The student may be dropped or may be continued on academic probation.
7. Academic review
   A student who normally would be dropped from the rolls for academic deficiencies, but appears from the record not to have completed the term, may be placed on academic

review. This is a temporary standing that makes the student ineligible for registration. If no acceptable explanation is given within a reasonable time, the standing is changed to drop.

8. The academic standing regulations given previously for graduate students do not preclude a school from having more rigorous requirements.

Top

Request For Grade Substitution

Georgia Institute of Technology
Office of the Registrar, Atlanta, Ga 30332-0315
Contact Us: comments@registrar.gatech.edu or 404-894-4150

STUDENT INFORMATION

Student Name ______________________________
Last First M

Student GTID ______________________________ ______________
Major School

Student Email ______________________________

COURSE INFORMATION

Course ______________________________
Ex. SUBJ 1101 A3

Term /year course was originally taken ______________________________
Ex. Fall 2005

Term / year course was repeated ______________________________
Ex. Spring 2006

Student Signature ______________________________ ____ / ____ / ______
Date

STUDENT'S ACADEMIC ADVISOR

Print Name ______________________________

Academic Advisor's Signature (Major School) ______________________________ ____ / ____ / ______
Date

*** NCAA Student Athletes must also obtain their Athletic Association Academic Advisor's signature.**

Print Name ______________________________

Academic Advisor's Signature (Athletic Assoc) ______________________________ ____ / ____ / ______
Date

DEAN OF STUDENT & REGISTRAR SIGNATURES

Dean of Students Signature ______________________________ ____ / ____ / ______
Date

Registrar's Office Signature ______________________________ ____ / ____ / ______
Date

View Information regarding the Grade Substitution Policy at www.catalog.gatech.edu/rules/5c.php

Please note: If you are registered for classes for any term (including Summer term) it is considered a term in residence.

VII. DEFICIENCIES

B. REMOVAL OF DEFICIENCIES

1. If a grade of *I* (incomplete) is assigned in a course, the incomplete must be removed and the grade change reported by the end of the student's next term in residence or, if the student has not been enrolled, by the end of the term one calendar year from the date the incomplete was assigned. Failing to remove the I in the allotted time will result in the I being changed to the grade of *F* . To remove the incomplete, the student should consult with the instructor as soon as possible after the term is over and complete whatever remaining work is outlined by the instructor. Repeating the course for credit does not remove the grade of *I* .
2. A student who has a failure in a required course must schedule that course the next time it is offered while the student is in residence. When a course in which a "D" grade was earned is repeated and a grade of "F" is earned, the student must file a Petition to the Faculty to be allowed to use the "D" grade to meet graduation requirements.
3. A degree candidate who has otherwise completed all requirements for graduation and who has an incomplete in laboratory work taken during his or her final term in residence may remove the incomplete at the convenience of the department of instruction concerned.

II. ACADEMIC CALENDAR

A. STANDARD CALENDAR

The standard academic calendar of the Georgia Institute of Technology consists of fall and spring semesters and an accelerated summer session. Each semester normally includes approximately fifteen weeks of instruction plus one week of final examinations; the normal summer session includes approximately eleven weeks of instruction plus one week of final examinations. An "academic year" consists of the fall and spring semesters. "Term" may refer to either a semester or a summer session. The Office of the Registrar publishes the official calendar for each academic term. Due to variations in the yearly calendar and the need to balance the dates of campus events, particularly in the fall semester, the registrar uses discretion, as appropriate, to set academic calendar dates such as fall recess, last day to withdraw from individual courses without penalty, and progress report grade due date. See Catalog regulation V. Grades and Scholastic Average for more information.

RULES & REGULATIONS

II. ACADEMIC CALENDAR

B. OTHER ACADEMIC TERMS

In addition to the standard academic calendar, certain programs may be offered on other schedules. All such offerings are subject to the approval of the Institute Undergraduate Curriculum Committee, Institute Graduate Committee, and/or the registrar, as appropriate. With approval, such programs may operate under different academic rules, such as credit-hour limits or withdrawal dates, than those specified for standard academic terms.

II. ACADEMIC CALENDAR

C. CURRICULUM YEAR

1. Requirements for degrees and minors shall be specified for each curriculum year, which is comprised of a summer term plus the immediately following fall and spring semesters. This designation shall be independent of any schedule for publication of such requirements in printed or electronic form.
2. All changes in degree and minor requirements shall become effective at the beginning of the next curriculum year following final approval by the Institute Undergraduate Curriculum Committee, Institute Graduate Committee, Academic Senate, and/or University System, as appropriate.
3. The Registrar's Office shall maintain an archival record of all degree and minor requirements associated with each curriculum year.

A. Applicability
B. Overview
C. Steps
D. Remedies
21. Exceptions
22. Expectations

III. RESPONSIBILITY FOR NOTICES AND CHANGE OF ADDRESS

A. NOTICES

All students will have an e-mail account through the Georgia Institute of Technology that will be their official point of contact, and they are expected to check this account each school day. Students are also expected to be aware of notices that appear on the Student Access System as well as general notices that appear in the Technique. It is the student's responsibility to check the Student Access System during the drop/add period of registration and during the term to verify the accuracy of his/her schedule and for notices. Schedules should be verified at least once during the first five weeks of the term and once after mid-term.

A. Applicability
B. Overview
C. Steps
D. Remedies

21. Exceptions
22. Expectations

III. RESPONSIBILITY FOR NOTICES AND CHANGE OF ADDRESS

B. CHANGE OF ADDRESS

Students are responsible for reporting all changes within one week on the Student Access System.

III. RESPONSIBILITY FOR NOTICES AND CHANGE OF ADDRESS

C. UNCLAIMED MAIL

Students are responsible for returning to the front window of the Post Office all mail in their Post Office boxes that is unclaimed after three days.

IV. ATTENDANCE

A. GENERAL

1. Each term, a course listing is published showing the time period for each class.
2. If an instructor should be late in meeting the class, the students shall wait twenty minutes after the published starting time. If the instructor has not arrived by that time, the students may leave unless specifically notified to await the instructor's arrival.

IV. ATTENDANCE

B. CLASS ATTENDANCE

1. There are no formal institutional regulations regarding class attendance at the Georgia Institute of Technology. The resources of the Institute are provided for the intellectual growth and development of the students who attend. A schedule of courses is provided for the students and faculty to facilitate an orderly arrangement of the program of instruction. The fact that classes are scheduled is evidence that attendance is important; students should, therefore, maintain regular attendance if they are to attain maximum success in the pursuit of their studies.
2. All students are responsible for obtaining an understanding of each instructor's policy regarding absences; all students are expected to attend announced quizzes, laboratory periods, and final examinations. Although it is recognized that occasionally it may be necessary for students to be absent from scheduled classes or laboratories for personal reasons, including major religious observances, students are responsible for all material covered in their absences, and they are responsible for the academic consequences of their absences. Students should discuss planned absences with their instructors as soon as possible after the beginning of an academic term. Work missed may be made up at the discretion of the instructors.
3. Students who are absent because of participation in approved Institute activities (such as field trips and athletic events) will be permitted to make up the work missed during their absences. Approval of such activities will be granted by the Student Academic and Financial Affairs Committee of the Academic Senate, and statements of the approved absence may be obtained from the Office of the Registrar.

RULES & REGULATIONS

V. GRADES AND SCHOLASTIC AVERAGE

A. GRADES

1. The letter grades for completed courses used in the calculation of scholastic average are the following:

   A-excellent (four quality points)
   B-good (three quality points)
   C-satisfactory (two quality points)
   D-passing (one quality point)
   F-failure, must be repeated if in a required course (no quality points)

2. The following grades will be used in the cases indicated and will not be included in the calculation of scholastic average:

   S-satisfactory performance in a course
   U-unsatisfactory performance in a course
   V-assigned when the course has been audited; not credit given; and implies no academic achievement on the part of the student

3. The following grades will be used in the cases indicated and will not be included in the calculation of scholastic average:

   I-incomplete. Assigned when a student was doing satisfactory work, but for nonacademic reasons beyond his/her control and deemed acceptable by the instructor, was unable to meet the full requirements of the course. If the student's performance was so poor as to preclude his/her passing, the instructor shall assign the grade of *F* . Refer to section VII. B for regulations regarding removal of the *I* grade.

   W- withdrawal without penalty. Withdrawals from individual courses without penalty will not be permitted after 50 percent of the term has been completed, as specified by the official calendar, except in cases of hardship as determined by the Institute Undergraduate Curriculum Committee or Graduate Committee, as appropriate. Withdrawal from school will not be permitted after 60 percent of the term except in cases of hardship as determined by the Institute Undergraduate Curriculum Committee or Graduate Committee, as appropriate. With the exception of part-time graduate students, students who withdraw from school and receive all grades of *W* will not ordinarily be permitted to re-enroll the next succeeding term. Refer to section VIII .B for regulations regarding readmission. See Catalog regulation II. Academic Calendar, A. Standard Calendar for more information.

   NR- not reported. Assigned when an instructor fails to submit grades by the published deadline, through no fault of the student.

4. Final grades are reported to the registrar at the end of each term.
5. Progress report grades will be submitted to the Registrar on all classes numbered 1000 and 2000 each term. These grades will be used for the advisement of students, not for the calculation of any GPA at Georgia Tech. Progress report grades will be *S* or *U* (a grade of *U* indicates that based on work completed to that point the student's standing is in the D or lower range). They will be submitted after 40 percent of the term has

been completed, as specified by the official calendar, and be available to students no later than the following Monday.

6. If a final course grade is believed to be in error, the student should contact the professor as soon as possible. In general, no change of grade will be made after the end of the student's next term in residence.

V. GRADES AND SCHOLASTIC AVERAGE

B. ACADEMIC AVERAGE

The academic average (or grade-point average) is calculated as the ratio of the total number of quality points earned to the total number of credit hours in which a final letter grade has been assigned. grade-point averages are truncated after two decimal places.

V. GRADES AND SCHOLASTIC AVERAGE

C. GRADE SUBSTITUTION

Effective with the entering Fall 2005 first-time freshman class.

1. First-time freshman students who receive a grade of *D* or *F* in a course within their first two terms in residence (first three terms for those who begin in the Freshman Summer Session) are eligible to repeat the course and have the original grade excluded from the computation of the academic average. Grade substitution may be used only once per course, with a maximum of two courses total.
2. The course must be repeated at Georgia Tech within the student's first four terms in residence (first five terms for those who begin in the Freshman Summer Session). The application for grade substitution must be filed with the Registrar's Office no later than the deadline for withdrawing from a course during the student's next term in residence after the course is repeated.
3. The original course and grade will continue to appear on the student's transcript, with a notation that the course was repeated and that the original grade is not included in computation of the academic average. Credit for the course will be counted only once.
4. If the revised academic average results in a change in academic standing for any term, then the revised standing will be reflected on the student's transcript. If standing is changed from "Dismissal" to a higher standing, it will be recorded as "standing from Dismissal" and the dismissal will continue to be counted with respect to regulations and policies related to Withdrawal and Readmission.
5. A course is not eligible for grade substitution if the student was found responsible for any academic misconduct in that course regardless of how many times it is repeated.
6. The grade substitution policy (including, but not limited to, course eligibility, number of courses, time limits, and deadlines) is not subject to exceptions and may not be petitioned to the Undergraduate Curriculum Committee.

DOWNLOAD FORM

VI. SCHOLASTIC REGULATIONS

A. CLASSIFICATION OF STUDENTS

1. Undergraduate students, with the exception of non-degree-seeking students, shall be classified at the end of each term by the Office of the Registrar on the basis of the total number of semester credit hours for which they have credit in accordance with the following schedule:

Freshman	0-29 credit hours
Sophomore	30-59 credit hours
Junior	60-89 credit hours
Senior	90 + credit hours

2. Graduate and special students who have completed all requirements for a particular classification as defined by their major department may request reclassification through their major department.
3. Students scheduled for at least twelve credit hours in a semester are classified as full-time students; those scheduled for six-eleven hours are classified as part-time students; and those scheduled for one-five hours are classified as less-than-part-time students.

RULES & REGULATIONS

VI. SCHOLASTIC REGULATIONS

B. ELIGIBILITY FOR CLASS RINGS

A student may purchase a class ring any time after receiving credit for seventy semester credit hours.

VI. SCHOLASTIC REGULATIONS

D. MAXIMUM SCHEDULE LOAD

1. The maximum number of credit hours for which an undergraduate student may register in fall or spring semester, based on his or her academic standing, is as follows:

Good	21 semester hours
Warning	16 semester hours
Probation	14 semester hours

2. The maximum number of credit hours for which an undergraduate student may register in a normal summer term, based on his or her academic standing, is as follows:

Good	16 semester hours
Warning	14 semester hours
Probation	12 semester hours

3. A graduate student may register for a maximum of twenty-one semester hours in fall or spring semester and a maximum of sixteen semester hours during the normal summer term.
4. Requests for schedule overloads must be recommended by the student's major school and approved by the Institute Undergraduate Curriculum Committee or Graduate Committee, as appropriate.
5. During Phase I registration, the Institute reserves the right to limit undergraduate students to 18 credits maximum for Fall and Spring terms and graduate students to less than 21 hours depending upon the needs of the program or School.

VI. SCHOLASTIC REGULATIONS

E. ACADEMIC HONORS

The Institute encourages excellence in scholarship and gives official recognition to undergraduate students whose work is superior in any given term.

1. Dean's List-includes all degree-seeking undergraduates who, during the preceding term, made an academic average of 3.00 or higher, completed a schedule of at least twelve hours of coursework on a letter-grade basis, and are not on academic warning or probation or subject to any disciplinary action. (All grades must be reported.)
2. Faculty honors-includes all degree-seeking undergraduates who during the preceding term made an academic average of 4.00, completed a schedule of at least twelve hours of coursework on a letter-grade basis with no *W* grades, and are not on academic warning or probation or subject to any disciplinary action. (All grades must be reported.)

VI. SCHOLASTIC REGULATIONS

F. CHANGE OF MAJOR

1. Undergraduate students, by filing the required form, will be permitted one unrestricted transfer between majors (including undecided) until they have accumulated credit for sixty hours. After sixty hours or upon subsequent request for transfer, the transfer will be permitted at the discretion of the school that the student is seeking to enter. Students who transfer from another institution to pursue a degree at Georgia Tech will be permitted to change their major only at the discretion of the school that the student is seeking to enter. Transfer students are not eligible for the one unrestricted change of major. (Note: Certain majors, because of high enrollment, have been granted a waiver of the one unrestricted transfer regulation. Students should consult with the individual school concerning its current transfer policy.)

   Schools with Change-of-Major restrictions:
   Industrial and Systems Engineering
   Mechanical Engineering
2. Graduate students, by filing the required form, may transfer with the concurrence of the schools involved and the graduate dean.
3. Students who change their majors must complete the degree requirements in the Catalog that was effective for the term in which the change of major became official, or any subsequent Catalog.

VI. SCHOLASTIC REGULATIONS

G. EXCEPTIONS

Exceptions to these scholastic regulations may be made by the Undergraduate Curriculum Committee or the Graduate Committee, as appropriate, whenever a consideration of the student's complete record indicates that the application of a specific regulation will result in injustice.

VI. SCHOLASTIC REGULATIONS

H. COURSE REQUIREMENTS

1. Each course shall have a syllabus and course policies provided to students before the last day to withdraw from the course without penalty (the last day of Add/Drop Period). Each syllabus should include an outline of the course objectives, required materials, criteria used in determining the course grade, and any other requirements for successful completion of the course. Each syllabus should outline acceptable student conduct as it relates to the Georgia Tech Honor Code and Student-Faculty Expectations Agreement. Students shall be informed of any changes made to the syllabus and course policies with reasonable time to adjust to these changes.
2. In all courses students shall receive a graded performance evaluation returned prior to the last day to withdraw from classes (Drop Day). This is to allow students to evaluate whether to change the grade mode for the course or withdraw from it.
3. Progress Report grades of "S" or "U" will be submitted to the Registrar on all classes numbered 1000 and 2000 each semester prior to midterm – typically on the sixth week of Fall and Spring semesters and the fifth week of the Summer semester. A Progress Report grade of "U" indicates a performance level of "D" or lower. These are not permanent grades and never appear on a transcript but are issued to help students assess where they are in their class work and obtain academic help from the faculty and the many academic support services available on campus.
4. Students shall not be penalized if they cannot attend instructional, lab, or examination sessions that are not institutionally scheduled in accordance with the standard protocols.
5. Students shall have the opportunity to review graded material in a timely fashion and with reasonable access to grading instruments and/or grading criteria for individual assignments, projects, or exams.

VII. DEFICIENCIES

A. GENERAL

1. A student who has received a grade of *I* , *F*, or *U* in a course has a deficiency in the course.
2. A student whose final grade is *F* or *U* has a failure in that course. The student must repeat and pass the course in class before credit will be allowed. (See section B.4 below.)

VIII. WITHDRAWAL FROM SCHOOL AND READMISSION

A. WITHDRAWAL

1. Withdrawal from school will not be permitted after 60 percent of the term except in cases of hardship as determined by the Institute Undergraduate Curriculum Committee or Graduate Committee, as appropriate. With the exception of part-time graduate students, students who withdraw from school and receive all grades of *W* will not ordinarily be permitted to re-enroll the next succeeding term. A student may withdraw from school via the Student Access System by the posted deadline in the official School Calendar published in the OSCAR. All holds on the student's record must be cleared prior to withdrawal.
2. Students who cease attendance without withdrawing via the Student Access System will receive grades of F, U, or I for the courses in which they were registered that term.
3. Permission and/or formal resignation are not required when a student has completed an official school term and does not register for the succeeding term.
4. See section V.A.3 for further information on withdrawal.

VIII. WITHDRAWAL FROM SCHOOL AND READMISSION

C. TRANSFER CREDIT

1. Coursework pursued at another institution after dismissal from Georgia Tech for unsatisfactory scholarship may be considered as evidence for readmission.
2. If readmitted, a student will not necessarily be given transfer credit for work taken at another institution after dismissal from Georgia Tech.
3. With the exception of courses from which a student withdrew and received a grade of *W* or *V*, in no case will transfer credit be allowed for courses completed at another institution that have previously been taken at Georgia Tech.

RULES & REGULATIONS

VIII. WITHDRAWAL FROM SCHOOL AND READMISSION

D. STUDY ABROAD

Any student in good standing choosing to participate in an approved study abroad program for two or more terms must complete a student Information Update form with the study abroad coordinator prior to departure. This form will enable the student to re-enroll for the term of "planned re-entry" without submitting a formal readmission application. It will be the student's responsibility to inform the study abroad coordinator of any change in the planned re-entry date.

RULES & REGULATIONS

IX. SCHEDULING

A. GENERAL

1. All previously scheduled coursework takes precedence over newly scheduled material. Therefore, all work that is incomplete from a previous term should be completed, or arrangements to complete it should be made prior to placing emphasis on new coursework.
2. Students must follow the approved curriculum of the academic school in which they are registered. Students who do not follow the approved curriculum may be denied registration privileges.
3. Each student is strongly advised each term to schedule all prerequisite courses. Students who do not have the stated prerequisites for a course but believe they have the required knowledge to fulfill prerequisite requirements should contact the department of instruction.
4. The completion of incomplete work from a previous term and the scheduling of out-of-sequence courses are the responsibility of the student, and they will be consequently held accountable. The number of scheduled hours allowed for a term may be adjusted to take into consideration the amount of incomplete work remaining regardless of the student's academic standing.
5. Students may not repeat courses on a letter-grade basis in which the grade of *B* or higher has been earned previously.
6. Subject to approval by a faculty advisor, a course may be taken more than once for academic credit. All grades and hours will count in determining the scholastic average, but the course will be counted only once for credit toward a degree.
7. See section X for Institute rules for courses taken on a pass/fail basis.

IX. SCHEDULING

B. ACADEMIC LOAD

1. Maximum credit hour loads are given in section VI. D. Any hours above these limits must have prior approval of the Undergraduate Curriculum Committee or the Graduate Committee, as appropriate.
2. Graduate students must maintain a minimum of 3 credit hours each term of enrollment. Exceptions to this regulation may be made during the student's graduation term.

IX. SCHEDULING

C. AUDITING OF COURSES

1. Auditing of courses will be permitted to regularly enrolled students who have obtained the approval of their advisor and the departments concerned. Such courses count at full value in computing the student's load.
2. The grade for auditing is *V* (visitor), and this grade will have no effect on the student's grade-point average.
3. No academic credit is granted for audit participation in a course.
4. Students are not permitted to change to or from an auditing status except through the regular procedures for schedule change or withdrawal. Any student who does not meet the instructor's requirements for a successful audit will be withdrawn with a grade of *W* assigned at the end of the term.

RULES & REGULATIONS

IX. SCHEDULING

D. ATTENDING CLASSES

1. Students may attend only those particular classes for which they are registered and paid.

IX. SCHEDULING

E. UNDERGRADUATE STUDENTS TAKING GRADUATE COURSES

Seniors with a grade-point average of at least 2.7 may schedule graduate courses. In order to do so, the student must obtain permission from the school or department offering the course.

A. Credit toward the master's degree for up to twelve hours of courses taken as an undergraduate may be received under the following conditions.
   1. The student was in residence at Georgia Tech for at least two semesters before registering for the course(s).
   2. The student did not apply credit for the course toward the baccalaureate degree. (See Graduate Course Option for special exceptions in certain schools.)

IX. SCHEDULING

F. GRADUATE STUDENTS TAKING UNDERGRADUATE COURSES

Graduate students who wish to take a 1000 or 2000 level course must obtain a permit from the department teaching the course. The student must have the department of instruction enter a permit on their account, and then come to the Registrar's Office in room 104 of the Tech Tower to have the course added to their schedule. Institute policy allows graduate students to take a 1000 or 2000 level course on a pass/fail or audit basis only.

X. PASS/FAIL SYSTEM

A. GENERAL

1. At the option of the student's major school, credit toward a bachelor's degree may be allowed for courses taken under the pass/fail system and completed with a grade of pass.
2. The major school must approve all pass/fail courses included in the final program of study, and students should become aware of school requirements.
3. In graduate programs, thesis research hours will be evaluated on a pass/fail basis.
4. Pass/fail enrollment in any course may be restricted by the school or department offering the course.
5. Students who are permitted to register under the pass/fail system will be so designated on the official class rolls; the grades recorded will be S for satisfactory or *U* for unsatisfactory. These grades will not be included in the calculation of the grade-point average and cannot be changed to a grade that will count in the average.
6. Withdrawals from courses taken on a pass/fail basis will follow the same rules that govern withdrawals from courses included in the scholastic average.
7. The deadline to change the grade mode from letter grade to pass/fail (and vice-versa) is the same day as the last day to withdraw from a course without penalty.

Grade mode changes are allowed online during registration. After phase II registration closes, the following form is required to be completed and submitted to the Office of the Registrar.

Download Form

RULES & REGULATIONS

X. PASS/FAIL SYSTEM

B. CREDIT HOURS PERMITTED

1. The maximum number of pass/fail hours permitted in an undergraduate program of study depends upon the number of semester credit hours that will be completed at Georgia Tech, as follows:

   Hours included in program of study Hours allowed on pass/fail basis

   45 to 70 credit hours 3 credit hours
   71 to 90 credit hours 6 credit hours
   91 or more credit hours 9 credit hours
2. For a second undergraduate degree, these limitations apply to the credit hours included in the program of study for that second degree.
3. A master's degree program of study may include up to three semester credit hours on a pass/fail basis.

XI. CROSS ENROLLMENT AND CONCURRENT REGISTRATION

A. GENERAL

1. Students who are enrolled at Georgia Tech may not receive credit for courses completed at another institution during the same academic term, unless prior permission has been obtained for cross enrollment or concurrent registration, as described in this section.
2. With the approval of the student's major school, a student may schedule courses at any one of the colleges or universities comprising the Atlanta Regional Consortium for Higher Education (ARCHE), if such courses are not available in a particular term at Georgia Tech. A list of participating institutions is available from the Office of the Registrar.
3. Cross enrollment also is permitted among institutions participating in the Georgia Tech Regional Engineering Program (GTREP) and selected institutions in the Regents' Engineering Transfer Program (RETP).
4. All cross enrollment registration activities are performed at the student's home institution.
5. For institutions not participating in cross enrollment, a student must apply in advance for permission to be concurrently registered at both Georgia Tech and the other institution, except during the Summer.

XI. CROSS ENROLLMENT AND CONCURRENT REGISTRATION

B. ELIGIBILITY

1. Cross enrollment and concurrent registration are available only to degree-seeking juniors, seniors, and graduating students, except during the Summer term, when concurrent registration is available to all degree-seeking students. Ordinarily students will not be allowed to participate during their first term at Georgia Tech, nor will students be allowed to cross enroll for more than two courses per term. Special rules apply to students participating in the GTREP and RETP programs. International Plan students may cross enroll or register concurrently for a language course(s) NOT offered at Georgia Tech as early as the second semester of their first year of enrollment. Special permission to do this will be granted to accepted IP students ONLY. Forms and procedures are available from the Registrar's Office. Any student seeking an exception to these eligibility requirements should contact the Office of the Registrar.
2. To participate in cross enrollment or concurrent registration, a student must be in good standing during the term when the application is processed.
3. During the term of cross enrollment or concurrent registration, the student must be carrying three or more credit hours at Georgia Tech and be in good standing. The total academic load carried at all institutions combined may not exceed the number of hours for which the student would be allowed to register at Georgia Tech.
4. Cross enrollment and concurrent registration courses must be completed with a *C* or better in order to receive credit for the course. Credits earned under cross enrollment will be handled as transfer credit, but will count as resident credit toward a degree. Credits earned under concurrent registration will be handled as regular transfer credit. Grades received in cross enrollment or concurrent registration courses will not be included in the calculation of the grade-point average. No credit will be awarded until an official transcript from the participating institution is received by the Georgia Tech Registrar's Office.

XII. EXAMINATIONS

A. GENERAL

1. All examinations for advanced standing, and special examinations must be authorized by the registrar before being scheduled.
2. If the instructor considers it necessary during an examination, students may be required to present their student identification card to the instructor or an authorized representative.

RULES & REGULATIONS

XII. EXAMINATIONS

B. EXAMINATIONS FOR ADVANCED STANDING

1. Students who offer satisfactory evidence that they are qualified to do so may receive credit for a course by examination. Such an examination is called an examination for advanced standing.
2. Examinations for advanced standing require the recommendation of the department of instruction in which the course is offered, payment of the appropriate fee to the Bursar's office, and authorization by the Office of the Registrar.
3. Examinations for advanced standing will ordinarily be offered during the week of final examinations.
4. A student will not be allowed to take an examination for advanced standing in a given course more than twice.
5. Students will not be allowed to take an examination for advanced standing in a course for which the prerequisite(s) has not been met, except with the consent of the school offering the course.
6. An examination for advanced standing will be reported with an S or U grade. Neither grade will be included in the calculation of the scholastic average.
7. Advanced standing is not allowed for laboratory or studio classes, except with the consent of the school offering the course.
8. Students may not use more than 9 credits of advanced standing to meet degree requirements.
9. Students may submit the Advanced Standing application and fee to obtain 6 to 8 hours of proficiency credit for foreign language at the 1001-1002 level upon completion of two classes in the same language at the 2000-level or higher with a minimum grade of C.

XII. EXAMINATIONS

C. *DEAD WEEK (WEEK PRECEDING FINAL EXAMINATIONS)*

The following applies to Dead Week during standard terms including the long summer session.

1. Two separate paradigms exist for Dead Week classification purposes: courses that give a traditional final examination, and courses that do not give a final examination. (See XII.D.1)
2. Courses with a traditional final examination given during finals' week are allowed to have homework, projects that do not require the use of material covered during Dead Week, and some aspects of major projects as described below. Major projects, defined as projects with more than one component (*e.g.*, report, presentation, computer program, or piece of hardware), shall be assigned in the syllabus and fully outlined by the last day a student can withdraw from classes with a "W." Additionally, major projects should have components due prior to Dead Week.
3. In courses with a traditional final examination, tests, quizzes, lab reports, and lab practicums are not allowed during Dead Week. The only exception is four credit hour courses, with a three-hour lecture component and a lab. In such courses, there may be a lab report and/or practicum due during Dead Week and a traditional final examination during finals' week, provided the lab report is assigned prior to Dead Week.
4. In courses without a traditional final examination, homework, lab reports assigned prior to Dead Week, and an alternative assessment (*e.g.*, presentation and /or papers or lab practicum) in place of the final examination are the only items that may be due during Dead Week.
5. For all courses, homework may be given on new material covered during Dead Week if the assignment is indicated on the syllabus at the beginning of the semester.
6. No final examination will be given earlier than final examination week under any circumstances (includes class votes).
7. All quizzes and tests should be graded and reported to students on or before the last day of class of Dead Week.
8. Student concerns may be discussed with the faculty member and/or reported to the chief academic officer of the department of instruction, or the Assistant Vice Provost for Academic Affairs. (See Student Academic Grievance Policy in the *General Catalog*.).

XII. EXAMINATIONS

D. REGULATIONS COVERING FINAL EXAMINATIONS

1. In regularly scheduled lecture courses of the Institute, a final examination shall be administered at the time specified in the official final examination schedule as distributed by the Office of the Registrar. In courses such as seminars, senior design, capstone, writing courses, and laboratories final examinations may be waived and may be replaced with appropriate assessment. The decision to give a final examination in these courses shall be made by the instructor of record. An announcement of policy shall be made to the class at its first meeting and included in the class syllabus.
2. No assessment other than final examinations or their replacement may be due during the final examination period.
3. Requests to change a class examination time within the final examination week must be submitted to the chief academic officer of the department of instruction for approval no later than one week before the beginning of final examinations. Any such request must have the unanimous approval of the class as shown by secret ballot, as well as approval by the instructor of the class.
4. A change in the period for a final examination for an individual student will not be permitted ordinarily; however, such may be allowed for hardship cases at the discretion of the instructor. The request for a change must be justified in writing by the student and shall be submitted to the instructor prior to final examination week and may be rescheduled to an appropriate time.
5. In the event a student has two examinations scheduled for the same period, the course having the lower number shall be considered in conflict and the student shall notify the instructor no later than two weeks before the Monday of the week of final examinations. In such case, the final examination in that course shall be given during the conflict examination period or, by agreement of the instructor and the student, at a mutually satisfactory time. If the student notifies the instructor after the above deadline but before the Monday of the week of final examinations, the student shall, at the discretion of the instructor: (1) receive a course grade of Incomplete, with an opportunity to take a makeup final examination the following term (and have the course grade changed as warranted by the results of the test), or (2) be given the final examination during the conflict period or at an alternative time during the week of final examinations. A student who fails to notify the instructor of the conflict before the Monday of the week of final examinations shall, at the discretion of the instructor: (1) receive a score of zero on the final examination, or (2) be given the final examination during the conflict period or at an alternative time during the week of final examinations.
6. In the event a student is scheduled for three examinations in one day, the examination scheduled for the middle period shall be considered in conflict and the student shall notify the instructor no later than two weeks before the Monday of the week of final examinations. In such case, the final examination in that course shall be given during the conflict examination period or, by agreement of the instructor and the student, at a mutually satisfactory time. If the student notifies the instructor after the above deadline but before the Monday of the week of final examinations, the student shall, at the discretion of the instructor: (1) receive a course grade of Incomplete, with an opportunity to take a makeup final examination the following term (and have the course grade changed as warranted by the results of the test), or (2) be given the final examination during the conflict period or at an alternative time during the week of final examinations, or (3) be given the final examination at the time schedule for the course.

A student who fails to notify the instructor of the conflict before the Monday of the week of final examinations shall, at the discretion of the instructor: (1) receive a score of zero on the final examination, or (2) be given the final examination during the conflict period or at an alternative time during the week of final examinations, or (3) be given the final examination at the time scheduled for the course.

XIII. UNDERGRADUATE DEGREES

A. GENERAL

1. To be considered for admission to candidacy for a degree, a student must have passed the Regents' Test and must make a formal petition for the degree during the term preceding the final term in residence. A petition for degree will not be accepted until the Regents' Test has been passed.
   Effective Spring 2010, the Regents' exam is no longer required at Georgia Tech. To be considered for admission to candidacy for a degree, a student must make a formal petition for the degree during the term preceding the final term in residence.
2. Students desiring to withdraw their name from the rolls of degree candidates must formally withdraw the petition for degree before the end of the seventh week of the semester (or fourth week of the summer term). This privilege will be extended to a degree candidate only once.
3. A degree program may include a maximum of 4 hours of basic ROTC and a maximum of six hours of advanced ROTC.
4. The diploma of a candidate for a degree shall bear the date of the commencement at which the degree is awarded.
5. All requirements for the degree must be completed and certified by the registrar no later than 48 hours after final grades for the term are due. If a candidate for a degree is not certified by the appropriate deadline, the candidate will be graduated at the next scheduled commencement. The diploma will bear the date of the commencement at which the degree is awarded. It is the responsibility of the student to reactivate the degree petition for the appropriate term.

XIII. UNDERGRADUATE DEGREES

B. RESIDENCY RULE

No student may be considered a candidate for a degree unless the final thirty-six credit hours required for the degree are earned in residence at Georgia Tech and approved by the major school.

XIII. UNDERGRADUATE DEGREES

C. TEN-YEAR RULE

Work that was completed more than ten years prior to commencement must be validated by special examinations before it can be counted toward a degree.

XIII. UNDERGRADUATE DEGREES

D. REQUIREMENTS FOR A DEGREE

1. To be a candidate for a degree, undergraduate students must have passed or be enrolled in all courses required for the degree, must have a scholastic average for their entire academic program of at least 2.00, and must have done creditable work in their departmental courses so as to merit the recommendation for the degree by the chair and faculty of their school.
2. Students, with the approval of their school or specialization, may satisfy the requirements for an undergraduate degree by meeting all of the requirements associated with any one curriculum year in effect during the period of their enrollment in the Institute or during their last two years (prior to their enrollment at Georgia Tech) in the program at one of the RETP schools. A curriculum year is in effect for a student only if the student's date of matriculation is prior to the ending date of the spring term concluding that curriculum year.
3. Constitution and history examinations
   a. The Georgia law as amended March 4, 1953, requires that before graduation all students pass examinations or pass comparable courses in United States and Georgia history as well as the United States and Georgia constitutions.
   b. For courses that may satisfy the constitution and history requirements, refer to the Information for Undergraduate Students/Academic Regulations section of this catalog.
4. Regents' Testing Program. All students completing requirements for baccalaureate degrees are required by the University System of Georgia to pass an examination designed to measure proficiency in reading and English composition. This examination is known as the Regents' Test. It must be passed before a petition for graduation will be accepted. Students should obtain further information from the registrar.

   Effective Spring 2010, the Regents' exam is no longer required at Georgia Tech. To be considered for admission to candidacy for a degree, a student must make a formal petition for the degree during the term preceding the final term in residence.
5. Wellness Requirement
   a. Unless medically exempted, all students are required to satisfy the wellness requirement as specified in the Information for Undergraduate Students/Academic Regulations section of this catalog prior to graduation.
   b. The Health Information Record on file with the director of Health Services will be used to determine any medical exemptions from the wellness courses. All certificates of disability from personal physicians must be endorsed by Student Health Services before they will be accepted by the School of Applied Physiology.

XIII. UNDERGRADUATE DEGREES

E. GRADUATION WITH ACADEMIC DISTINCTION

1. For graduation with highest honor, the minimum scholastic average shall be 3.55. For graduation with high honor, the minimum scholastic average shall be 3.35. For graduation with honor, the minimum scholastic average shall be 3.15.
2. A student must have earned at least sixty semester credit hours (excluding remedial coursework) at Georgia Tech to graduate with highest honor, with high honor, or with honor.
3. In order to qualify for graduation with honors, all grades or grade corrections affecting the honors designation must be received and certified by the registrar no later than noon on Wednesday following the commencement.

XIII. UNDERGRADUATE DEGREES

F. SECOND UNDERGRADUATE DEGREE

1. A student enrolled for a second undergraduate degree shall be classified as an undergraduate student, except that a graduate student wishing to pursue a second undergraduate degree will remain classified as a graduate student. A graduate student, with approval of the major school, may work toward a second undergraduate degree while pursuing a graduate program.
2. To be a candidate for a second undergraduate degree, a student must have the recommendation of the chair of the school concerned and the approval of the Undergraduate Curriculum Committee.
3. To obtain a second undergraduate degree, a student must complete all major required courses for the degree and earn credit for a total of at least thirty-six credit hours in excess of the requirement for any previous degrees earned.
4. All regulations in section XIII apply to students completing second undergraduate degrees.

XIII. UNDERGRADUATE DEGREES

G. MINORS

1. A student may complete a minor in another academic field while completing the requirements of his or her major degree program.
2. With the approval of the major school, the student should consult an advisor in the minor field, who can inform the student of the requirements for the minor.
3. A Change/Addition of an Undergraduate Academic Minor(s) form must be completed, signed by the Minor Advisor/Coordinator and the Major Advisor, and submitted to Registrar's Office. Students are encouraged to submit the completed form when they decide to pursue the minor but no later than the deadline for submitting the on-line application for graduation in the term preceding anticipated graduation.
4. Students who change or add a minor must complete the requirements in the Catalog that was effective for the term in which the change or addition of a minor became official, or any subsequent Catalog.
5. Readmitted students who wish to pursue a minor must indicate their choice on the application for readmission. Requirements for the minor are those in effect at the time the student is readmitted as stated in the current Catalog. The readmitted student may only select minors offered at the time of readmission.
6. Some courses in a minor may have prerequisites that are not included in the minor description. Some minors may have additional requirements that students must meet before being admitted to that minor.
7. When a student petitions for a degree, he or she should complete the petition for a minor and have it approved by the minor advisor. The petition for a minor must accompany the petition for the major degree when reviewed for approval by the major school.
8. The minor will be conferred at the same time the degree is conferred.
9. Minors may not be conferred retroactively upon students who have graduated.
10. The minor will not be printed on the diploma, but both the degree and minor will be recorded on the student's transcript.
11. A student who has applied for a minor but does not complete it is not required to take any action to withdraw from the minor. If a minor is not completed, it is not recorded.

RULES & REGULATIONS

XIV. GRADUATE DEGREES

A complete description of Institute requirements for the master's and doctoral degrees is given in this catalog in the section titled "Information for Graduate Students." Students desiring to withdraw their name from the rolls of degree candidates must formally withdraw the petition for degree before the deadline specified in section XIII.A.2.

RULES & REGULATIONS

XV. STUDENT MOTOR VEHICLES

Students desiring to operate motor vehicles on campus are subject to all rules set forth by the Georgia Tech motor vehicle regulations.

XVI. MEDICAL REGULATIONS

A Medical Entrance Form and proof of required immunizations and tuberculosis screening must be on file with Student Health Services. Failure to provide this information may result in a health hold and delay of registration. All international students (F-1 and J-1 visas) are required to have health insurance coverage. Students may elect to purchase the health insurance made available by the health insurance provider contracted by Georgia Tech or may have their own comparable medical insurance.

XVII. EXTRACURRICULAR ACTIVITIES

A. PARTICIPATION

1. In order to be eligible for participation in extracurricular activities, a student must satisfy the following requirements:
   a. be enrolled in a degree program
   b. maintain a schedule with at least 6 credit hours on a credit basis or be a student in the Division of Professional Practice on work term
   c. all student organization officers must be enrolled in Georgia Tech classes with at least six credit hours on a credit basis or be a student in the Division of Professional Practice on work term in Atlanta
2. Changes in academic standing that affect eligibility become effective when determined by the Institute at the end of each term (normally the Tuesday following final examination week), except that a student whose academic standing changes from good to probation shall remain eligible through the day preceding the first day of instruction of the following academic term.
3. Any student placed on academic drop/dismissal, review, suspension, or expulsion is immediately ineligible for participation.
4. Changes in disciplinary standing that affect eligibility become effective immediately.
5. Participation also requires satisfaction of any additional requirements established by the Student Activities Committee of the Academic Senate.

XVII. EXTRACURRICULAR ACTIVITIES

B. SCHEDULING OF EVENTS

1. All student organizations must make written application to, and receive permission from, the Division of Student Affairs to hold a social function.
2. In each term, the weekend before final examinations is closed to student-sponsored extracurricular events.

XVII. EXTRACURRICULAR ACTIVITIES

C. STUDENT ORGANIZATIONS

1. All student organizations must adhere to the Conduct Code and Disciplinary Procedures for Student Organizations.
2. Every organization must renew its charter every year or when changing officers by submitting an Officer Update Form and by signing the Alcohol Policy Acknowledgement Form.
3. Requirements and standards for chartering a student organization are established by the Student Activities Committee of the Academic Senate and are available from the Division of Student Affairs.

XVII. EXTRACURRICULAR ACTIVITIES

D. FRATERNITY AND SORORITY REGULATIONS

1. To be eligible for initiation, a student must be a full-time student not on academic or disciplinary probation.
2. The initiation of any individual must be registered with and approved by the Division of Student Affairs prior to the initiation.
3. The individual must meet all Georgia Tech Interfraternity Council (I.F.C.) or Panhellenic requirements concerning initiation.
4. All fraternities and sororities are subject to the rules established by the Georgia Tech I.F.C./Panhellenic/National Pan-Hellenic and all Georgia Tech policies, rules, and regulations.

RULES & REGULATIONS

XVII. EXTRACURRICULAR ACTIVITIES

E. INTERCOLLEGIATE ATHLETICS REGULATIONS

1. To be eligible for intercollegiate athletic competition, a student must satisfy the following requirements:
   a. be eligible to participate in extracurricular activities, as defined in section XVII .A;
   b. be carrying a full-time workload as defined in section VI.A.3;
   c. be making satisfactory progress toward a degree; and
   d. meet any further requirements of the NCAA or other governing organization; see the athletic director for details.
2. No student may be excused from regularly scheduled classes for athletic practice.
3. No student may participate in more than two sports in intercollegiate competition in any school year, except by permission of the Division of Student Affairs. Being manager or assistant manager is counted as participation within the meaning of this rule.

XVIII ACADEMIC HONOR CODE

ARTICLE I: HONOR AGREEMENT

Having read the Georgia Institute of Technology Academic Honor code, I understand and accept my responsibility as a member of the Georgia Tech community to uphold the Honor Code at all times. In addition, I understand my options for reporting honor violations as detailed in the code.

XVIII ACADEMIC HONOR CODE

ARTICLE II: HONOR CODE

Section 1. Statement of Purpose

The members of the Georgia Tech community believe the fundamental objective of the Institute is to provide the students with a high-quality education while developing in them a sense of ethics and social responsibility. We believe that trust is an integral part of the learning process and that self-discipline is necessary in this pursuit. We also believe that any instance of dishonesty hurts the entire community. It is with this in mind that we have set forth a student Honor Code at Georgia Tech.

Section 2. Objectives

An Honor Code at Georgia Tech aims to cultivate a community based on trust, academic integrity, and honor. It specifically aims to accomplish the following:

- Ensure that students, faculty and administrators understand that the responsibility for upholding academic honesty at Georgia Tech lies with them.
- Prevent any students from gaining an unfair advantage over other students through academic misconduct.
- Ensure that students understand that academic dishonesty is a violation of the profound trust of the entire academic community.
- Clarify what constitutes academic misconduct among students at Georgia Tech and what is expected of them by the Institute, the faculty, and their peers.
- Cultivate an environment at Georgia Tech where academic dishonesty is not tolerated among the students.
- Secure a centralized system of education and awareness of the Honor Code.

Section 3. Student Responsibilities

Students are expected to act according to the highest ethical standards. The immediate objective of an Honor Code is to prevent any students from gaining an unfair advantage over other students through academic misconduct. Academic misconduct is any act that does or could improperly distort student grades or other student academic records. Such acts include but need not be limited to the following:

- Possessing, using, or exchanging improperly acquired written or verbal information in the preparation of any essay, laboratory report, examination, or other assignment included in an academic course;
- Substitution for, or unauthorized collaboration with, a student in the commission of academic requirements;
- Submission of material that is wholly or substantially identical to that created or published by another person or persons, without adequate credit notations indicating authorship (plagiarism);
- False claims of performance or work that has been submitted by the claimant;
- Alteration or insertion of any academic grade or rating so as to obtain unearned academic credit;
- Deliberate falsification of a written or verbal statement of fact to a member of the faculty so as to obtain unearned academic credit;
- Forgery, alteration, or misuse of any Institute document relating to the academic status of the

student.

While these acts constitute assured instances of academic misconduct, other acts of academic misconduct may be defined by the professor.

Students must sign the Honor Agreement affirming their commitment to uphold the Honor Code before becoming a part of the Georgia Tech community. The Honor Agreement may reappear on exams and other assignments to remind students of their responsibilities under the Georgia Institute of Technology Academic Honor Code.

Section 4. Faculty Responsibilities

Faculty members are expected to create an environment where honesty flourishes. In creating this environment, faculty members are expected to do the following:

- Make known to their class as specifically as possible what constitutes appropriate academic conduct as well as what comprises academic misconduct. This includes but is not limited to the use of previously submitted work, collaborative work on homework, etc.
- Provide copies of old exams or lists of sample questions to the Georgia Tech library for students to review.
- Avoid the re-use of exams.
- Include a paragraph containing information about the Georgia Tech Academic Honor Code on the syllabus for each class they teach.
- Report instances of academic dishonesty to the Office of the Dean of Students.

In addition to the expectations listed previously, faculty have the authority to superimpose their own interpretations on some aspects of academic conduct including, but not limited to, the following:

- Old exams for use during open-book exams;
- Contents of formula sheets allowed on exams;
- Use of calculators on exams;
- Collaboration on out-of-class assignments;
- Use of previously submitted out-of-class assignments.

Top

XVIII ACADEMIC HONOR CODE

ARTICLE III: HONOR SYSTEM

Section 1. Governing Bodies

The Georgia Institute of Technology Academic Honor Code recognizes the present bodies given the power to enforce the academic regulations of the Institute. The Honor Code recognizes the Office of the Dean of Students to be the principal administrator to enforce Institute disciplinary measures as presently specified in Article XIX Section B, of the Rules and Regulations section of the current Georgia Institute of Technology General Catalog.

The Honor Code also recognizes the Student Honor Committee as the body given jurisdiction to hear all cases of alleged academic misconduct as currently specified in XIX Section B.

Section 2. Reporting Honor Code Violations

In order for an Honor Code to function, members of the Georgia Tech community must not tolerate violations of it by anyone. Community members are at their discretion to use any of three options to report suspected Honor Code violations:

1. A student may simply desire to confront the fellow student with the perceived infraction. While this option is most likely to enact widespread change in attitude and behavior among students (because violators would understand that they are violating the trust of their peers and not some abstract body of people), it is still expected that an alleged violator be taken before the Student Honor Committee if he or she persists in academic misconduct.
2. A student may choose to approach the professor of the class in which the alleged infraction occurred and seek his or her input on how to proceed. A result of a conference of this type would be the professor's awareness that the alleged violator needs closer monitoring to ascertain reasonable certainty of guilt before being brought before the Student Honor Committee.
3. A student may choose to seek the advice of an honor advisor (see Article III., Section 3). Meetings with honor advisors shall address issues of policy and procedure only. Specifics of an individual case are not to be discussed. After a consultation with an honor advisor, a student may choose to submit a formal accusation of academic misconduct to the Office of the Dean of Students.

Section 3. Student Honor Advisory Council

Students composing the Student Honor Advisory Council are to become well versed in all aspects of the Georgia Institute of Technology Academic Honor Code and the procedures for reporting an honor violation as well as those procedures for the trying of cases of suspected academic misconduct before the Student Honor Committee. The Council is to act as an information resource to all members of the Georgia Tech community on issues related to the Honor Code.

Membership

1. Members are to be selected by the vice president of Student Affairs or a designated person to carry out these duties.
2. Members must be full-time students at Georgia Tech and must be in good academic standing.
3. Once a member of the council, the student shall serve until he or she graduates, unless he or she resigns or is impeached.
4. Impeachment procedures are to be specified in the rules and/or bylaws of the Student

Honor Advisory Council.

5. Membership shall be composed of no less than fifteen (15) students at any given time.

Duties and Responsibilities

1. To serve in an advisory capacity to any student(s) wishing to report an honor violation or any student(s) being accused of committing an honor violation.
2. To continually educate and maintain awareness among the Georgia Tech community regarding the Honor Code.
3. To limit discussion with students to issues of policy and procedure.

Top

XVIII ACADEMIC HONOR CODE

ARTICLE IV. AMENDING THE HONOR CODE

Amendments to the Georgia Tech Academic Honor Code may be proposed by a two-thirds (2/3) vote of both the Undergraduate Student Council and the Graduate Student Senate, or by a petition of ten percent (10%) of the total population (undergraduate and graduate) directed to both the undergraduate student body president and the graduate student body president.

Amendments become part of this Honor Code upon ratification by two-thirds (2/3) of the votes cast in a special election open to the undergraduate and graduate students, provided that the proposed amendments have been published in the Technique at least one week prior to the vote by the student body and further provided that the amendments are approved by the Academic Senate.

Appendices or amendments of appendices which pertain to either the undergraduate student body or to the graduate student body may be proposed by a two-thirds (2/3) vote of the respective legislative body or a petition of at least ten percent of the respective student body directed to the respective student body president. These shall become part of this Honor Code upon ratification by two-thirds (2/3) of the votes in a special election of the respective student body, provided that the proposed appendices or amendments of appendices have been published in the Technique at least one week prior to the election, and further provided that the appendices or amendments of appendices are approved by the Academic Senate.

Appendix A: Graduate Addendum to the Academic Honor Code

I. Preamble

The Honor Code recognizes that graduate students are involved in research and scholarly activities that occur outside the classroom. Integrity and academic honesty are as fundamental to research and scholarly activity as they are to classroom activity. Therefore, this Appendix to the Honor Code is adopted to pertain to the academic activities of graduate students that occur outside of the classroom.

II. Scholarly Misconduct

Scholarly misconduct refers to misconduct that occurs in research and scholarly activities outside the classroom. It can include plagiarism, among other things. The consequences of scholarly misconduct are governed by Institute policy. The following definitions are taken from the Institute Policy on Scholarly Misconduct:

- "Misconduct" or "scholarly misconduct" is the fabrication of data, plagiarism, or other practice that seriously deviates from those that are commonly accepted within the academic or research community for proposing, conducting, or reporting research or scholarly activity. It does not include honest error or honest differences in interpretation or judgments of data.
- "Plagiarism" is the act of appropriating the literary composition of another, or parts of passages of his or her writings, or language or ideas of the same, and passing them off as the product of one's own mind. It involves the deliberate use of any outside source without proper acknowledgment. Plagiarism is scholarly misconduct whether it occurs in any work, published or unpublished, or in any application for funding.

Allegations involving scholarly misconduct fall under the Institute's Policy on Scholarly Misconduct. This document details the procedures involved with reporting allegations and with the handling of cases. All graduate students are encouraged to become familiar with this policy, which is available from the Office of the Provost.

Top

XIX. STUDENT CODE OF CONDUCT

The most current Student Code of Conduct can be found on the Office of Student Integrity website as listed in the References. In the event of any conflict, the Code found on the website will govern.

A. GENERAL

1. **Purpose**
   The Student Code of Conduct educates all members of the Georgia Tech Community about the Institute's expectations and Students' rights and creates a standard by which Students are expected to conduct themselves for the purpose of establishing an environment conducive to academic excellence.

2. **Definitions**
   When used in this Code:
   a. The term "*Accused*" means a Student, Group, or Organization who is alleged to be in violation of the Student Code of Conduct.
   b. The term "*Administrative Conference*" refers to the meeting between the Accused and the Student Conduct Administrator that occurs during an investigation. An Administrative Resolution may be offered during this conference.
   c. The term "*Administrative Resolution*" refers to a decision by a Student Conduct Administrator that will result in the Accused either being found responsible or not responsible.
   d. The term "*Advisor*" refers to an individual who assists the Complainant(s), Accused or Student Conduct Panel with the Student Conduct process. Attorneys at law are not allowed to serve as Advisors to Complainant(s) or Accused unless he/she is subject to criminal prosecution or the parent/legal guardian is the attorney.
   e. The term "*Appellate Officer*" means the person authorized by the Institute to consider an appeal of a disciplinary decision rendered by a Student Conduct Administrator, a Student Conduct Panel or the Dean of Students.
   f. The term "*Business Day*" means any day in which the Institute is open for its full hours of operation, in accordance with the Institute's official calendars. All campuses will follow their respective calendars. When an authorized Institute Official closes the Institute, it will not be considered an official Business Day.
   g. The term "*Chairperson*" means a member of a Student Conduct Panel who is

identified by the Institute to oversee the proceedings during a hearing.

h. The term "*Complainant*" means any person who submits a complaint to OSI alleging that a Student or Organization violated the Student Code of Conduct, or anyone who has been affected by the alleged misconduct.
i. The term "*Community*" includes any Student, Faculty member, Institute Official or any other person employed by the Institute. A person's status in a particular situation shall be determined by the Dean of Students.
j. The term "*Faculty Member*" means any person hired by the Institute to conduct classroom, teaching or research activities or who is otherwise considered by the Institute to be a member of its Faculty, except as otherwise provided in Section D.5.c.
k. The term "*Group*" means a number of persons who are associated with each other, but who have not complied with Institute requirements for registration as an Organization.
l. The term "*Group or Organization Activity*" means any activity on or off Institute Premises that is directly initiated for or supervised by a Group or Organization including any individual activity occurring in buildings, facilities, grounds, utilities, or resources (including computer resources) owned, leased, operated, controlled or supervised by an Institute Organization.
m. The term "*Hazing*" means an act which endangers the mental or physical health or safety of a student, or which destroys or removes public or private property, for the purpose of initiation, admission into, affiliation with, or as a condition for continued membership in a group or organization.
n. The term "*Information*" means any Witness testimony, documents, statements, or tangible material presented to a Student Conduct Administrator or Student Conduct Panel.
o. The terms "*Institute*" and "*Georgia Tech*" each refer to the Georgia Institute of Technology and all of its undergraduate, graduate, and professional schools, divisions, and programs.
p. The term "*Institute Official*" is defined as Faculty, administration, or staff personnel including Students serving as Institute employees.
q. The term "*Institute Premises*" includes all land buildings, facilities, grounds, utilities, resources and other property (including computer resources) in the possession of, or owned, operated, leased, controlled or supervised by the Institute (including adjacent streets and sidewalks).
r. The term "*may*" is used in the permissive sense.
s. The terms "*the Office of Student Integrity*" or "OSI" means the office designated by the Institute to oversee the Student Code of Conduct.
t. The term "*Organization*" means a number of persons who have complied with or are in process of complying with the requirements for chartering.
u. The term "*Policy*" or "*Policies*" means any written rule or regulation of the Institute.
v. The phrase "*found responsible by a Preponderance of the Evidence*" means it is more likely than not that the Accused is responsible for a violation of the Student Code of Conduct.
w. The terms "*Sanction*" and "*Supplementary Requirements*" means the conditions imposed upon an Accused found responsible for a violation of the Student Code of Conduct.
x. The term "*Student*" means any person who is taking or auditing classes of the Institute, either full time or part time; is participating in academic programs; or is pursuing undergraduate, graduate or professional studies. A Student is also any person who matriculates in any Institute program, has been accepted for enrollment or is eligible to reenroll without applying for readmission.

y. The term "*Student Conduct Administrator*" means an Institute Official authorized on a case-by-case basis by the Director of Student Integrity to impose Sanctions upon any Student(s) found to have violated the Student Code of Conduct.
z. The term "*Student Conduct Panel*" means a set of persons authorized by the Institute to determine whether the Accused has violated the Student Code of Conduct. In academic cases, the Panel makes a decision to be implemented by OSI. In non-academic cases, the Panel recommends a decision and Sanctions, if applicable, to the Dean of Students.
aa. The term "*Weapon*" means any object or substance designed, intended, or used to inflict or threaten bodily injury.
ab. The terms "*will*" and "*shall*" are used in the imperative sense.
ac. The term "*Witness*" is defined as a person providing Information during the Conduct process.

3. **Authority**
   a. This Code is not written with the specificity of a criminal statute and should not be confused with criminal law. Institute conduct proceedings are not restricted by the rules of evidence governing criminal and civil proceedings. Students may be held accountable both to civil authorities and the Institute for acts that constitute violations of law and the Code. Proceedings under this Code may be carried out prior to, simultaneously with, or following civil or criminal proceedings. Students who reside in Institute housing will be held accountable under housing policies and procedures in addition to this Code.
   b. OSI shall develop operating procedures for the administration of the Student Code of Conduct process and for the conduct of Student Conduct Panel hearings that are not inconsistent with provisions of the Student Code of Conduct.
   c. Interpretation of the Student Code of Conduct is held by the Dean of Students.

4. **Jurisdiction**
   a. The Institute reserves the right to take necessary and appropriate action to protect the safety and well being of the Community. Academic misconduct relevant to any Institute activity will be addressed regardless of where it may have occurred. Non-academic misconduct will be addressed whenever such acts:
      a. occur on Institute Premises; or
      b. occur at Institute sponsored activities; or
      c. occur at Group or Organization Activities; or
      d. occur off Institute Premises when conduct adversely affects the Institute and/or the pursuit of its objectives.

   b. Each Student shall be responsible for his/her conduct from the time of application for admission through the actual awarding of a degree. This includes conduct that may occur before classes begin or after classes end, as well as during the academic year and during periods between terms of actual enrollment. The Code shall apply to a Student's conduct even if the Student withdraws from school while a disciplinary matter is pending. The Code applies to Institute programs in remote and overseas locations.
   c. The Institute shall retain jurisdiction over all Students irrespective of when the Student is subject to tenets of an agreement with other schools.

5. **Inappropriate Classroom Behavior**
   The primary responsibility for managing the classroom environment rests with the instructor. Students who engage in any acts that result in disruption of a class may be

directed by the instructor to leave the class for the remainder of the class period. Longer suspensions from a class can be administered only by the Dean of Students in accordance with this Code.

6. **Student Organizational Discipline**

   Student Groups and Organizations are accountable to this Code. A Student Group or Organization and its officers may be held collectively and individually responsible when violations of this Code by those associated with the Group or Organization have received the consent or encouragement of the Group or Organization, or of the Group's or Organization's leaders or officers. Prohibited academic and non-academic misconduct is 5 outlined in this Code. The process for non-Greek organizations is defined within this code in Section D. Greek organization processes are defined by the appropriate governing board constitution and bylaws. This subsection shall expire upon the adoption of a separate Code of Conduct governing Student Organizations.

XIX. STUDENT CODE OF CONDUCT

B. PROHIBITED ACADEMIC CONDUCT

Any Student, Student Organization or Group accused of committing or attempting to commit one or more of the following acts of academic misconduct is subject to conduct procedures in accordance with Section D.

1. Unauthorized Access: Possessing, using, or exchanging improperly acquired written or verbal information in the preparation of a problem set, laboratory report, essay, examination, or other academic assignment.
2. Unauthorized Collaboration: Unauthorized interaction with another Student or Students in the fulfillment of academic requirements.
3. Plagiarism: Submission of material that is wholly or substantially identical to that created or published by another person or persons, without adequate credit notations indicating the authorship.
4. False Claims of Performance: False claims for work that has been submitted by a Student.
5. Grade Alteration: Alteration of any academic grade or rating so as to obtain unearned academic credit.
6. Deliberate Falsification: Deliberate falsification of a written or verbal statement of fact to a Faculty member and/or Institute Official, so as to obtain unearned academic credit.
7. Forgery: Forgery, alteration, or misuse of any Institute document relating to the academic status of the Student.
8. Distortion: Any act that distorts or could distort grades or other academic records.
9. Intellectual Property: The unauthorized use of an instructor's intellectual property, including marketing and selling, is prohibited (such properties may include power point presentations, lecture notes (any media), examination questions, study guides, etc.).

XIX. STUDENT CODE OF CONDUCT

C. PROHIBITED NON-ACADEMIC CONDUCT

Any Student, Student Organization or Group accused of committing or attempting to commit one or more of the following acts of non-academic misconduct is subject to conduct procedures in accordance with Section D.

1. Alcohol violations including, but not limited to:
   a. Underage use or possession of alcohol.
   b. Possession or consumption of alcohol in an unauthorized area.
   c. Use or possession of fake identification.
   d. Distribution of alcohol to underage person(s).
   e. Behavior, while under the influence of alcohol, that endangers any person.
   f. Disorderly conduct associated with the use of alcoholic beverages.
2. Illegal drugs and other substance violations including, but not limited to:
   a. Use or possession of illegal drugs (without valid medical or dental prescription).
   b. Behavior, while under the influence of illegal drugs, that endangers any person.
   c. Manufacturing, furnishing, selling, or distributing of any narcotic or dangerous drug controlled by law.
   d. Disorderly conduct associated with the use of illegal drugs.
3. Unjustifiably pushing, striking, or otherwise intentionally causing reasonable apprehension of such harm to any person.
4. Disorderly conduct including, but not limited to:
   a. Boisterousness, rowdiness, obscene, or indecent conduct or appearance.
   b. Obstruction or disruption of teaching, research, administration, or other Institute activities, including its public service functions or other authorized activities.
   c. Breach of the peace.
5. Behavior that endangers any person(s), including self.
6. Unauthorized use of Institute facilities or premises including:
   a. Unauthorized entry into any Institute Premises or remaining without permission in any building after normal closing hours.
   b. Possessing, using, making, or causing to be made any key or other means of access to any Institute Premises without proper authorization.
7. Furnishing false information to any Institute Official.
8. Forgery, alteration, replication, or misuse of any document, record, or identification upon which the Institute relies, regardless of the medium.
9. Hazing" is conduct, whether on or off Institute property, which exceeds the normal expectations of the organizational purpose or mission and which a)endangers the mental or physical health or safety of a student as a condition of affiliation with a group or organization and/or b)which is sufficiently severe or pervasive enough to interfere with academic responsibilities.
10. Safety violations, including, but not limited to:
   a. Intentionally initiating or causing to be initiated any false reporting, warning or threat of fire, explosion or other emergency.

   b. Tampering with safety devices or other emergency, safety, or fire fighting equipment.
   c. Setting or attempting to set an unauthorized fire.
   d. Unauthorized possession of fireworks, firearms, and/or ammunition.
   e. Unauthorized possession of Weapons and/or dangerous materials or chemicals.
   f. Unauthorized sale, possession, furnishing, or use of any bomb or explosive or incendiary device.

11. Theft and/or unauthorized possession or use of property or services belonging to the Institute, another person, or any other entity.
12. Malicious or unauthorized damage to or destruction of Institute property or property belonging to another.
13. Illegal gambling, including online gambling.
14. Failure to return or submit property or records of the Institute within the time prescribed by the Institute.
15. Acting with any other person to perform an unlawful act or to violate an Institute regulation or Policy.
16. Failure to comply with instructions or a directive of any properly identified Institute Official while that person is acting in the performance of his/her duties.
17. Abuse of the Student Code of Conduct Procedures including, but not limited to:
    a. Failure to cooperate with the investigation, resolution, and procedures of the Student Code of Conduct.
    b. Falsification, distortion, or misrepresentation of Information before a Student Conduct Administrator or Student Conduct Panel.
    c. Disruption or interference with the orderly conduct of an Administrative Conference and/or a Student Conduct Panel proceeding.
    d. Attempting to influence the impartiality of a Student Conduct Administrator and/or a member of a Student Conduct Panel at any point in the Student Conduct process.
    e. Failure to comply with the Sanction and/or Supplementary Requirements imposed under the Student Code of Conduct.
    f. Influencing or attempting to influence another person to commit an abuse of the Student Conduct process.

18. Violation of the Georgia Institute of Technology Computer and Network Usage and Security Policy.
19. Harassing another person including, but not limited to:
    a. Placing another person in reasonable fear of his/her personal safety through words or actions directed at that person, or substantially interfering with the working, learning, or living environment of the person.
    b. Unwelcome sexual advances, requests for sexual favors, and other written, verbal or physical conduct of a sexual nature.

20. Sexual misconduct including, but not limited to:
    a. Non-consensual sexual contact including, but not limited to, intentional and/or forcible touching.
    b. Non-consensual sexual intercourse including, but not limited to, anal, oral or vaginal penetration, however slight.
    c. Sexually related offenses including, but not limited to, obscene, indecent behavior and/or exposure.

21. Violation of any Georgia Institute of Technology policy, rule, or regulation.
22. Violation of any Board of Regents policy and/or federal, state, or local law.

XIX. STUDENT CODE OF CONDUCT

D. STUDENT CODE OF CONDUCT PROCEDURES

1. **Case Referrals**
   Any person may file a complaint against a Student for violations of the Student Code of Conduct. The complaint shall be prepared in writing and directed to OSI or, in academic cases, the instructor of record may hold a Faculty Conference (see Section D.5.c.). The procedures for filing a complaint can be found on the OSI website as listed in the References. This complaint should be submitted as soon as possible after the event takes place or when it is reasonably discovered, no later than thirty (30) Business Days following the discovery of the incident. In extraordinary circumstances, OSI may waive this timeline.

2. **Communication**
   All communication (requests for meetings, notifications, notice of hearings, etc.) will be provided via the official Institute e-mail address, as defined by the Office of Information Technology. If the Accused is not currently enrolled, the notification will be sent via US Postal Service to the last known address on file with the Registrar.

3. **Rights of the Accused**
   Throughout the Conduct process, the Accused is granted the following rights:
   a. to seek information from a Student Conduct Administrator about the Investigation and Resolution Process;
   b. to be informed of the charge(s) and alleged misconduct upon which the charge is based;
   c. to be informed of the Information upon which a charge is based and afforded an opportunity to offer a relevant response;
   d. to be accompanied by an Advisor of his/her choice;
   e. to remain silent with no inference of responsibility drawn;
   f. to call and question relevant Witnesses;
   g. to present Information in his/her behalf;
   h. to be considered not responsible until proven responsible by a Preponderance of the Evidence;
   i. to appeal the decision;
   j. to waive any of the above rights.

4. **Investigation and Resolution Process**
   The Institute's Conduct process utilizes an investigatory model, not an adversarial model, in resolving allegations of misconduct with the primary goal of uncovering the truth. The standard of proof shall be a Preponderance of the Evidence. An investigation begins when a complaint is forwarded and the case is opened by OSI. During the investigation, a Student should continue to attend class and required Institute functions unless otherwise instructed by the Dean of Students. The investigation and resolution process are as follows:
   a. After OSI receives a complaint, the Student Conduct Administrator will review the information to decide what process, if any, to initiate. The Student Conduct Administrator may:
      a. initiate conduct proceedings by sending the Student a notice;
      b. resolve the situation through an informal resolution process including but

not limited to mediation or a meeting between the Accused and a Student Conduct Administrator or a third party; or

c. determine that the facts of the complaint or report, even if true, would not constitute a violation of policy If the Student Conduct Administrator initiates a process, the Accused is formally notified and is requested to contact a Student Conduct Administrator within five (5) Business Days of the notification to schedule an Administrative Conference. The Accused may submit a list of desired Witnesses to the Student Conduct Administrator no later than 48 hours prior to the Administrative Conference. Should the Accused fail to contact the Student Conduct Administrator within the required time frame, or fail to attend the Administrative Conference, the Student Conduct Administrator may determine the resolution of the case in the Student's absence, or may refer the case to a Student Conduct Panel.

b. At the Administrative Conference, the Accused is presented with the alleged violation of the Student Code of Conduct, supporting Information, and an explanation of his/her rights. The Student will be allowed to designate a preference for a decision to be rendered either by the Student Conduct Administrator or by a Student Conduct Panel. Ordinarily, the Student's preference will be honored. However, OSI reserves the right to determine the process to be used based on the circumstances, including but not limited to:
   a. imminent graduation of the Student
   b. end of semester
   c. extraordinary circumstances

   A decision of OSI not to honor the Student's preference shall require the consent of the Dean of Students. The Student may convey the reasons for his/her preference in verbal or written form to the Dean of Students. If the Student's preference is not honored, the rationale for such will be provided to the Student in writing.

c. If the case is adjudicated by the Student Conduct Administrator, the Student Conduct Administrator offers the Accused the opportunity to provide his/her statement regarding the alleged misconduct, supporting Information, and Witnesses. The Accused may bring an Advisor, however if the Advisor disrupts the investigation and resolution process, he/she may be asked to leave. The Student Conduct Administrator continues the investigation as necessary by meeting with the Complainant(s), and Witnesses and gathering additional Information. The investigation will be completed in an expeditious fashion. If the Student Conduct Administrator determines that a Witness (including faculty or staff) may have relevant Information, s/he will make a good faith effort to contact such Witnesses to obtain a statement from them. The investigation will be completed in an expeditious fashion. Upon conclusion of the investigation, the Student Conduct Administrator will render a decision, which will be communicated to the Student via the Student's Institute email address.

d. If the case is to be adjudicated by a Student Conduct Panel, the case shall be referred to the Student Conduct Panel and follow the procedures outlined in Section D.5.b.

5. Forms of Case Resolution

a. **Administrative Resolution**

   a. The Student Conduct Administrator renders a decision of 1) Not Responsible, which closes the case or 2) Responsible for one or more violations with an appropriate Sanction, and, as warranted, one or more from among the Supplementary Requirements. The Accused, after being notified of the Student Conduct Administrator's decision, may submit an appeal to the Dean of Students according to appeal procedures described in Section G.

b. **Student Conduct Panel**

The Student Conduct Panel is convened for High level cases only and only when either the Student Conduct Administrator or the Accused elects this form of resolution.

a. **Decisions and Sanctions for Academic Cases**
The Student Conduct Panel, after convening a hearing, renders a decision of 1) Not Responsible, which closes the case or 2) Responsible for one or more violations of the Student Code of Conduct with an appropriate Sanction and, as warranted, one or more from among the Supplementary Requirements. The Accused, after being notified of the decision, may submit an appeal to the Dean of Students, according to appeal procedures described in Section G.

b. **Decisions and Sanctions for Non-academic Cases**
The Student Conduct Panel, after convening a hearing, recommends a disciplinary decision to the Director of Student Integrity. The Director of Student Integrity, after reviewing the case, renders a decision of 1) Not Responsible, which closes the case, or 2) Responsible for one or more violations of the Student Code 12 of Conduct with an appropriate Sanction and, as warranted, one or more from among the Supplementary Requirements. The Accused, after being notified of the decision and Sanction, may appeal to the Dean of Students, according to appeal procedures described in Section G.

c. **Scheduling of Student Conduct Panel Hearing**
After the case is forwarded to a Student Conduct Panel, the Complainant(s) and the Accused will be notified of available dates and times for a hearing. The Accused may indicate preferences from among the available dates and times, which will be considered by OSI if received within three (3) Business Days. This official notice will be provided at least five (5) Business Days prior to the hearing and will include the time, date, and location of the hearing. In addition, the notice will specify the Complainant(s), Witnesses(s), and nature of the alleged misconduct. Accused may waive the notification timeline in order to expedite the hearing process. Upon request, the Accused may meet with a Student Conduct Administrator to review Information and hearing procedures.

d. **Hearing Participants and Attendees**

- Student Conduct Panel hearings shall ordinarily be closed except for the Accused, the Complainant(s), Advisor(s), and Witnesses. Exceptions may be made at the discretion of the Chairperson. Witnesses are allowed at the discretion of the Chairperson. The Chairperson may exclude any person, including the Accused, who disrupts a hearing.
- An Accused who fails to appear after proper notice will be deemed to have responded "Not Responsible" to the charges against him/her and to have exercised the right to remain silent without prejudice. At the discretion of the Chairperson the hearing may be conducted in the absence of the Accused and all the Information regarding the alleged misconduct shall be presented and considered.

- The Complainant(s) and Accused have the right to be accompanied by an Advisor. The Complainant(s) and/or Accused should select an Advisor who can attend the hearing at the scheduled date and time. Delays are not usually granted due to scheduling conflicts of an Advisor.
- Subject to the Chairperson's control of the hearing, the Complainant(s), Accused and their Advisors, shall be allowed to attend the Student Conduct Panel hearing, but shall not be allowed to attend Panel deliberations.
- In Student Conduct Panel hearings involving more than one Accused, OSI may permit the Student Conduct Panel hearings concerning each Student to be conducted either separately or jointly.
- A maximum of two (2) character Witnesses will be allowed in a hearing.

e. **Hearing Procedures**

- The Chairperson shall exercise control over the proceedings to achieve orderly completion of the hearing.
- Advisors are restricted to private communications with their advisee(s). Any communication by the Advisor that is audible to the Student Conduct Panel may be viewed by the Chairperson as disrupting the hearing.
- All questions by the Complainant(s) and Accused must be directed to the Chairperson, rather than to the Witness directly. Questions of whether potential Information will be received shall be resolved at the discretion of the Chairperson.
- In addition to the investigatory packet provided by OSI, the Student Conduct Panel, at the discretion of the Chairperson, may accept additional pertinent Information and testimony (including impact statements). Any letters of recommendation submitted by the Accused will be admitted for consideration at the discretion of the Chairperson and, if admitted, will be viewed only during Panel deliberations.
- All procedural questions arising during the hearing are subject to the final decision of the Chairperson.
- The Student Conduct Panel's standard of proof shall be a Preponderance of the Evidence.
- The Student Conduct Panel in consultation with OSI, may reasonably accommodate concerns for the personal safety, well-being, and/or fears of confrontation of the Complainant(s), Accused, and/or Witnesses during the hearing.
- The Student Conduct Panel shall make a recording and/or summary transcription of the proceeding, which will serve as the official record of the hearing. No other recording will be permitted. The Accused or the Complainant may request a copy of the Institute's recording upon payment of the cost to reproduce the recording, or may listen to the original recording in a location designated by OSI at no charge. The record shall be the property of the Institute.

c. **Faculty Conference (optional academic case resolution)**

A faculty conference is an optional way in which an alleged act of academic misconduct can be resolved.

a. **Initiation of Complaint**
The Faculty Conference is initiated by the instructor of record, who requests the meeting with the Accused to discuss the alleged misconduct. Should the Accused not choose to participate in a Faculty Conference, the instructor should forward the case to OSI for investigation.

b. **Participants**
The Faculty Conference involves the instructor of record and the Accused. The Faculty Conference may also involve Witnesses and a representative from OSI if requested by either the instructor or the Accused.

c. **Process**
During the Faculty Conference, the instructor of record explains the alleged misconduct, supporting Information, and the Rights of the Accused. The Accused has the opportunity to provide 1) his/her response to alleged misconduct, 2) supporting Information, and 3) Witnesses.

d. **Conclusion**

- If the instructor finds the Accused not responsible, the case is closed.
- If the instructor finds the Accused responsible, but the Accused does not admit responsibility, the instructor forwards the case to OSI for investigation.
- If the instructor finds the Accused responsible, and the Accused acknowledges responsibility, the instructor proposes a Faculty Resolution including 1) a Sanction of Disciplinary Warning, or Disciplinary Probation, 2) a grade penalty, and 3) an educational component.
- If the Accused agrees to the Faculty Resolution, the instructor forwards the Faculty Resolution to OSI for consideration. OSI will determine whether the Accused has prior disciplinary history, in which case the case will be investigated by OSI, in accordance with D.4.
- If the Accused does not agree to the Faculty Resolution, the instructor forwards the case to OSI.

e. **Implementation**

- The Accused is formally notified of the proposed Faculty Resolution by OSI, according to the communication guidelines in Section D.2.
- The Faculty resolution goes into effect upon delivery unless the Accused requests within five (5) Business Days that the case be forwarded to OSI for investigation.

d. **Alternative Dispute Resolution**

At the sole discretion of the Dean of Students cases may be assigned for Alternative Dispute Resolution (ADR). If the ADR is not agreed to by both parties, the remaining forums will adjudicate the case. Results of the ADR proceedings do not result in formal disciplinary records.

XIX. STUDENT CODE OF CONDUCT

E. SANCTIONS

Sanctions are imposed only when the Accused is found responsible for one or more violations of the Student Code of Conduct. Sanctions are determined by the severity of the case and the disciplinary history of the Accused. An Accused who is found responsible must be given one of the five Sanctions below, which are listed in ascending order of severity. In addition the Accused may be subject to one or more Supplementary Requirements.

1. Sanction Descriptions

a. **Disciplinary Warning**
A Disciplinary Warning means that the Student has been found responsible for violating the Institute's Code of Conduct. Any further disciplinary violation may result in disciplinary action up to and including Expulsion. Disciplinary Warning is officially recorded in the Student's disciplinary file.

b. **Disciplinary Probation**
Disciplinary Probation means that the student has been found responsible for violating the Institute's Code of Conduct. Disciplinary Probation is for a specified period of time. Any further disciplinary violation may result in disciplinary action up to and including Expulsion. Disciplinary Probation is officially recorded in the Student's disciplinary file.

c. **Suspension Held in Abeyance**
Suspension Held in Abeyance means that the Student has been found responsible for violating the Institute's Code of Conduct. Suspension Held in Abeyance is for a specified period of time. During the time of Suspension Held in Abeyance, involvement at the Institute is restricted to 1) academic activities and 2) non-academic activities specifically approved by the Office of Student Integrity. A Student who is found responsible for violating the Student Code of Conduct while under Suspension Held in Abeyance will be given immediate Suspension or Expulsion. Suspension Held in Abeyance is officially recorded in the Student's disciplinary file.

d. **Suspension**
Suspension means that the Student has been found responsible for violating the Institute's Code of Conduct. Suspension is exclusion for a specified period of time from the Institute Premises, and other privileges or activities as determined by the Office of Student Integrity. A suspended student shall immediately leave campus and cannot re-enter campus without prior approval from the Office of Student Integrity. The Dean of Students will determine when the Accused has met the requirements for readmission. Any further disciplinary violation may result in disciplinary action up to and including Expulsion. Suspension is officially recorded in the Student's disciplinary file.

e. **Expulsion**
Expulsion means that the Student has been found responsible for violating the Institute's Code of Conduct. Expulsion is permanent separation and termination of the Accused's status as a Georgia Tech student, and exclusion from Institute Premises, privileges, and activities. Expulsion is officially recorded in the Student's disciplinary file.

2. **Supplementary Requirements**
    a. Restitution
    Payment to the Institute or to an affected party for damages resulting from a violation of the Student Code of Conduct.
    b. Fine
    A monetary penalty paid to the Institute.
    c. Grade Change
    Change of grade for the course and/or coursework in which the academic misconduct occurred.
    d. Programmatic Requirements
    Required completion of designated educational programs (i.e. alcohol, Community issues, anger management, assessments, etc.).
    e. Restrictions
    Exclusion from participation in specified services and activities.
    f. Revocation of Admission and/or Degree
    Admission to or a degree awarded from the Institute may be revoked for fraud, misrepresentation, or other violation of Institute standards in obtaining the degree, or for other serious violations committed by a Student prior to graduation.
    g. Withholding Degree
    The Institute may withhold awarding a degree otherwise earned until the completion of the process set forth in this Student Code of Conduct, including the completion of all Sanctions and Supplementary Requirements, if any.
    h. Other Requirements
    Other Requirements may be imposed.

Top

RULES & REGULATIONS

XIX. STUDENT CODE OF CONDUCT

F. INTERIM SUSPENSION

In certain circumstances the Dean of Students may impose an Institute suspension prior to the investigation and resolution process.

1. The Dean of Students will determine if interim suspension is warranted. Interim suspension may be imposed only:
   a. To ensure the Student's physical or emotional safety and well-being; or
   b. To ensure the safety and well-being of members of the Institute Community or to preserve Institute property; or
   c. If the Student poses a definite threat of disruption of or interference with the normal operations of the Institute; or
   d. If the Student is charged with a felony.
2. During the interim suspension the Student may be denied access to classes, campus facilities, and all other Institute activities or privileges.
3. The Student shall be notified in writing of this action and the reasons for the Suspension, in accordance with Section F.1. The notice should include the time, date, and place of a subsequent meeting with the Dean of Students in order for the student to show cause why he/she should not be interim suspended.
4. Cases of interim suspension shall be given priority and will be expedited through the Conduct process.

XIX. STUDENT CODE OF CONDUCT

G. APPEAL PROCEDURES

1. **Reasons for Appeal**

   The appeal process is not intended to grant a new hearing at a higher level. An appeal shall be limited to a review of the record of the initial hearing, supporting documents, and the Accused's written appeal. The Accused must explicitly state why he or she believes an appeal is warranted. Appeals will only be considered for the following reasons:

   a. To determine whether the original hearing was conducted fairly and in conformity with prescribed procedures;
   b. To determine whether there was sufficient evidence to support the decision;
   c. To determine whether the Sanctions and Supplementary Requirements imposed were appropriate for the violation for which the Student was found responsible; and/or
   d. To determine whether new Information, not available at the time of the hearing, is relevant to the final decision.

2. **Process**

   The appeal must be written by the accused, addressed to the appropriate Appellate Officer and delivered to the Office of Student Integrity within five (5) Business Days of the delivery of the decision. Appeal decisions will normally be rendered within ten (10) Business Days either in person, or in accordance with the communication guidelines in Section D.2. At the discretion of the Appellate Officer, a designee may be selected to determine the outcome of the appeal. For all decisions made by the Office Student Integrity, the Appellate Officer shall be the Dean of Students.

   For all academic cases where the sanction includes Suspension or Expulsion, once an appeal decision has been made by the Dean of Students, the Appellate Officer shall be the Institute President. The Senior Vice Provost of Academic Affairs will review the case and make a recommendation to the Institute President. The Institute President's decision will be the final decision of the Institute.

   For all non-academic cases where the sanction includes Suspension or Expulsion, once an appeal decision has been made by the Dean of Students, the Appellate Officer shall be the Institute President. The Vice President for Student Affairs will review the case and make a recommendation to the Institute President. The Institute President's decision will be the final decision of the Institute.

3. **Appeal Decisions**

   Decisions of the Appellate Officer go into effect immediately. The Appellate Officer is authorized to take one of the following actions:

   a. dismiss the appeal for failure to state valid reasons, in accordance with Section G.1.
   b. find no error and uphold the original decision;
   c. uphold the original decision, but modify Sanctions and Supplementary Requirements;
   d. remand the case to a Student Conduct Administrator or Student Conduct Panel; or

e. reverse the original decision.

4. **Board of Regents**

The Board of Regents of the University System of Georgia (the "Board") is the final appellate authority for all cases of Suspension or Expulsion that have been reviewed by the Institute President. Should the Accused be dissatisfied with the decision of an the Institute President, he/she may apply to the Board for a review of the decision. The application for review shall be submitted in writing to the executive secretary of the Board within the period specified by the Board of Regents.

XIX. STUDENT CODE OF CONDUCT

H. RECORD KEEPING AND RELEASE OF INFORMATION

1. **Maintenance of Disciplinary Files**
   Disciplinary records of Students found responsible of any charges against them will be retained for five (5) years after graduation or date of last attendance. Disciplinary records containing records of Suspension and Expulsion will be permanently retained. A case referral results in the creation of a disciplinary file in the name of the Accused. This file shall be voided if the student is found not responsible for the charges.

2. **Release of Information**
   Student disciplinary records shall be governed by the Family Educational Rights of Privacy Act 20 U.S.C. § 1232g.
   a. Academic or non-academic misconduct resulting in expulsion is released to third parties indefinitely.
   b. Academic misconduct that resulted in suspension is released to third parties for five years after sanction completion.
   c. Any non-academic misconduct that resulted in suspension where a potential threat to the campus community exists (including but not limited to illegal drug distribution, endangering or harming any person, or jeopardizing the safety of any person) is released to third parties for five years after sanction completion. In instances of suspension where no threat to the community is identified, the suspension is reported until the sanction is complete.
   d. Any academic or non-academic misconduct that did not result in suspension or expulsion is not released to third parties.
   e. The Institute requires a specific written request from the student to release the entire disciplinary record to third parties.

   Office of Student Integrity, Office of the Dean of Students, Georgia Institute of Technology, Last Updated, November 27, 2012.

3. **Parental Notification**
   Parents of Students under the age of 21 may be notified when a Student is found responsible for violating the Georgia Tech Student Policy on Alcohol and other Drugs when any of the following occur:
   a. A Student endangers himself/herself or others while under the influence of alcohol or other substances. Specific instances include driving under the influence, fighting, alcohol poisoning, and hospitalization.
   b. When the Dean of Students determines that any future violation of Institute Policy will most likely result in Suspension from Georgia Tech.
   c. When a Student Conduct Administrator determines that any future violation of Institute Policy will likely result in removal from housing.

4. **Transcript Encumbrances**
   In pending cases that could result in Suspension or Expulsion, the Dean of Students will normally place a temporary encumbrance (hold) on a Student's records. The Dean of Students will also place a hold on a Student's records if the Student fails to respond to an official request to meet or if the Student fails to complete assigned Sanctions.

XIX. STUDENT CODE OF CONDUCT

I. REFERENCES

Academic Honor Code: www.honor.gatech.edu
Board of Regents: www.usg.edu
Computer Use and Network Policy: www.security.gatech.edu
Department of Housing: www.housing.gatech.edu
Faculty Senate: www.Facultysenate.gatech.edu
Office of the Dean of Students: www.deanofstudents.gatech.edu/
Office of Student Integrity: www.deanofstudents.gatech.edu/osi/

The following policies can be found on the OSI Website:
Student Policy on Alcohol and Illegal Drugs
Student Policy on Sexual Harassment and Misconduct

XX. STUDENT ACADEMIC GRIEVANCE PROCEDURES

The procedures set forth here are intended to provide students at the Georgia Institute of Technology a means for setting forth grievances relating to academic matters, intellectual diversity, and grade disputes when the student believes that an instructor has acted unfairly or improperly in assignment of grades. It is not the intention of these procedures to provide a forum for questioning the judgment or grading policies of faculty. Student concerns may be discussed with the faculty member and/or reported to the school or unit head, the academic deans, of the Assistant Vice Provost for Academic Affairs.

A. APPLICABILITY OF THE GRIEVANCE PROCEDURES

1. Subject Matter:
   These procedures apply to the review of grievances concerning academic matters and grade disputes. Grade appeals must be initiated by the grievant within their next enrolled term following the term of the course in question, and best efforts should be applied to resolve the appeal within that term.
2. Grievant:
   These procedures shall be the appellate procedures for students at the Georgia Institute of Technology. Students who have pursued a formal grievance procedure or who have pursued informally the resolution of a grievance in their own school, college, or unit and have had that appeal dismissed, may submit the grievance for review under these procedures.

XX. STUDENT ACADEMIC GRIEVANCE PROCEDURES

B. OVERVIEW OF GRIEVANCE PROCESS

1. Informal resolution attempted at the school, department, or unit level.
2. Formal resolution sought at the school, department, or unit level.
3. Formal resolution sought at the Institute level: appeal reviewed and, if so determined, heard by the Student Grievance and Appeal Committee.

XX. STUDENT ACADEMIC GRIEVANCE PROCEDURES

C. STEPS IN THE GRIEVANCE PROCESS (TO BE FOLLOWED IN THE ORDER PRESENTED)

1. The student shall attempt to resolve the grievance with the individual faculty member, the department, or the unit involved.
2. If the grievance is not resolved in step C.1. and the student elects to continue the grievance process, the student may request a formal hearing setting forth in writing the complaint and the remedy sought at the school, college, or unit level. Upon receipt of such appeal, the unit director will acknowledge the appeal in writing within seven calendar days and will expeditiously proceed to constitute an ad hoc appeal committee. The unit director will serve as a nonvoting member of the committee. In addition, the following four committee members will be selected:
   1. One tenured faculty member from within the unit, selected by the unit director.
   2. One member of the academic faculty, selected by the student. The student may elect not to select a faculty member; in that case, the committee will consist of three members.
   3. One member from outside the unit, selected by the Student Grievance and Appeal Committee in consultation with the unit director.
   4. One member of the academic faculty selected by the faculty member whose action is in question.

   The committee will proceed with due haste to examine the merits of the complaint and to render a decision within thirty days. During the proceedings, the student may present any and all evidence that the student deems necessary to support the complaint, except that the committee must agree that the evidence is in some way relevant. Such evidence may consist of documentation and/or testimony, within reason. Both complainant and respondent may be accompanied by advisors; the role of advisor must, however, be restricted to advice. Complainant and respondent must make their own cases before the committee.

   Following a hearing and a written decision at the school, college, or unit level, the grievance is presumed to be resolved unless the grievant appeals.
3. The grievant may appeal the decision that has been rendered by the school, college, or unit to the Student Grievance and Appeal Committee.
   a. If the Committee, or subset thereof appointed by the chairperson, rules that the procedures are not applicable or that based on the facts stated by the grievant viewed in the light most favorable to the grievant, there is no basis for relief, then the appeal is denied.
   b. If the Committee rules that the Institute procedural rules are applicable and that a hearing of the appeal is warranted, the Committee shall initiate a hearing process.
   c. If a student wishes to have a grievance outcome reviewed by the Student Grievance and Appeal Committee with a view to a formal hearing, the student shall observe the following requirements:
      a. The appeal must be in writing. It must state the basis for the grievance and the facts that support it, including a summary of the steps that have already been taken to resolve the grievance, reasons why the student finds the resolutions unfair or unsatisfactory, and a statement of the

desired remedy.

b. The written appeal must be presented to the chairperson of the Student Grievance and Appeal Committee within thirty days after the student has received notice of a decision from a school, college, or unit.
c. The decision as to whether a formal hearing is warranted shall be made available, in writing, to the parties concerned within thirty days after the Committee has received notice of the appeal.
d. The Committee may alter a deadline specified in these procedures on written petition of either party showing a meritorious reason for delay; if the Committee itself needs to extend a deadline, it may do so on its own authority for periods up to fourteen calendar days; for longer delays, the Committee must request an extension from the Executive Board of the Institute.
e. The determination of the Committee as to whether a hearing is warranted is final.
f. The Committee shall develop and, with the approval of the Academic Senate, establish and publish its own rules of procedures for the conduct of formal hearings.
g. After receiving testimony and the relevant documents, the Committee shall make a decision within thirty days on the basis of the received material.
h. The Committee's decision shall contain finding of fact, the decision arrived at, reasons for the decision, and the criteria or policy applied in reaching the decision.

XX. STUDENT ACADEMIC GRIEVANCE PROCEDURES

D. REMEDIES

1. **General**
   If the Committee finds, after a formal hearing, that a faculty member, a departmental committee, or an administrator of a unit has not acted fairly or properly, it will recommend a remedy. It will seek to find a remedy that can be implemented by those whose cooperation is needed. In the matter of a grade dispute, this must include the faculty member involved in the dispute.
2. **Enforcement**
   a. If any party does not comply with the decision of the Committee, the Committee shall, upon request of any party, seek full compliance through the administrative offices of the Institute through the chief academic officer (CAO).
   b. The merits of the dispute shall not be subject to review in the process of enforcement. There shall be strong presumption in favor of the remedy selected by the Committee.
3. **Report of a Final Decision**
   After a final decision has been made in a case, the Committee shall prepare a report setting forth its findings and recommendations for action and present the report to the CAO. A copy of the report shall be presented to the parties concerned and to those persons involved in implementing the Committee's recommendations. All such communications shall be effected in person or by certified mail with a return receipt requested; such receipt will become part of the Institute records of the case.

   Grade Changes: In decisions that would result in the changing of a posted grade, the CAO will instruct the unit director to ask the involved faculty member to effect the prescribed grade change or, if cooperation is not forthcoming, to effect the grade change directly by action of the unit director. Such action shall not be construed as restrictive of the recourses of the faculty member through the usual appeal procedure of the Institute.

   Care will be given that no incomplete or inaccurate information pertaining to the grievance is placed in any file; and that all evidence obtained at any stage of the process and all deliberations and proceedings be kept confidential. At the conclusion of each case, the Student Grievance and Appeal Committee shall transmit original or true copies of the documents related to the case to the appropriate Office of the Vice President of Student Affairs, who shall keep such records securely as Institute records for a period of time specified by Institute statutes.
4. **Final Appeal**
   Appeal of the decision of the Committee to the CAO shall be permitted only for the purposes of procedural review. Such appeals shall be submitted in writing, with copies to the Committee. The CAO will review the findings of the Committee and, upon judgment that the Committee has failed to follow these procedures or has failed to follow the procedures approved by the Academic Senate for the operation of the Student Grievance and Appeal Committee (XX1.C.3.c.c6), return the case to the Committee for reconsideration, along with description of the received error in procedure and a recommendation for its correction.

XXI. EXCEPTIONS

Where appeals are not otherwise specified, exceptions to these regulations may be made by the appropriate faculty committee upon petition by the student and recommendation of the student's school or department. Blanket exceptions that have the effect of amending these regulations shall be referred to the Academic Senate for approval.

XXII. STUDENT-FACULTY EXPECTATIONS

A. PREAMBLE

The Georgia Institute of Technology believes that it is important to continually strive for an atmosphere of mutual respect, acknowledgement, and responsibility between faculty members and the student body. Therefore, the Georgia Tech community strives here to enumerate the specific expectations of each side. However, this document is not intended to be either comprehensive or limiting in regards to the Institute's statutes. In the end, simple respect for knowledge, hard work, and cordial interactions will help build the environment we seek. Therefore, we remain committed to the ideals of Georgia Tech, agree to abide by these principles in our time here, and will encourage each other to uphold these responsibilities.

B. STUDENT EXPECTATIONS

We hold that all students have the right to expect:

1. a positive, respectful, and engaged academic environment inside and outside the classroom;
2. to attend classes at regularly scheduled times without undue variations and without penalty if the student cannot attend instructional, lab, or examination hours not institutionally scheduled;
3. to receive a syllabus which should include an outline of the course objectives, evaluation criteria, and any other requirements for successful completion of each course during the first week of class meetings and to be clearly informed of any changes made to the syllabus during the semester with reasonable time to adjust to these changes;
4. to consult with faculty outside of usual classroom times through regularly scheduled office hours or a mutually convenient appointment;
5. to have reasonable access to Institute facilities and equipment in order to complete course assignments and/or objectives;
6. to have reasonable time to learn course material prior to the administration of an examination;
7. to receive a clear explanation of the faculty's definition and interpretation of academic misconduct within the course that extends over and beyond those clearly defined in the Georgia Tech Honor Code;
8. to have reasonable access to grading instruments and/or grading criteria for individual assignments, projects, or exams and to review graded material in a timely fashion;
9. to consult with each course's faculty regarding the petition process for graded coursework;
10. Faculty to adhere to formal Institute policies, rules and regulations, such as the Week Preceding Final Examinations Policy and the confidentiality policies of FERPA.

C. FACULTY EXPECTATIONS

We hold that all faculty members have the right to expect:

1. a positive, respectful, and engaged academic environment inside and outside the classroom;
2. students to appear regularly for class meetings in a timely fashion;
3. to select qualified Teaching Assistants in accordance with departmental protocols as

well as the right to delegate grading, studio and laboratory instruction, tutoring, and other academic activities to these individuals;

4. students to appear at office hours or a mutually convenient appointment for official matters of academic concern;
5. full attendance at examination, midterms, presentations, studios, and laboratories, with the exception of formal pre-approved excused absences or emergency situations;
6. students to be prepared for class, appearing with appropriate materials and having completed assigned readings and homework;
7. full engagement within the classroom, including meaningful focus during lectures, appropriate and relevant questions, and class participation;
8. to cancel class due to emergency situations and to cover missed material during subsequent class meeting times at the discretion of the instructor;
9. students to act with integrity and to adhere to the principles of the Georgia Tech Student Honor Code;
10. . students to adhere to the formal Institute policies, such as the Student Code of Conduct.

THE DEVICES THREAD

The Devices thread is concerned with embedded computational artifacts that interact with people or the physical world. In this thread, one learns how to create and evaluate devices that operate under physical constraints such as size, power, and bandwidth. Examples include PDAs, cell phones, robots, jet engines, and intelligent appliances.

READ ABOUT OTHER THREADS TO CREATE A BS IN CS

- Computing and Modeling - Simulation
- Computing and Theory
- Computing and Information Internetworks
- Computing and Intelligence
- Computing and Media
- Computing and People
- Computing and Systems and Architecture

THE INFORMATION INTERNETWORKS THREAD

The Information Internetworks thread is where computing meets the data enterprise and all that this implies. The thread prepares students for all levels of information management by helping them to capture, represent, organize, transform, communicate, and present data so that it becomes information.

READ ABOUT OTHER THREADS TO CREATE A BS IN CS

- Computing and Modeling - Simulation
- Computing and Devices
- Computing and Theory
- Computing and Intelligence
- Computing and Media
- Computing and People
- Computing and Systems and Architecture

THE INTELLIGENCE THREAD

The Intelligence thread is where computing models intelligence. This thread is concerned with computational models of intelligence from top to bottom. To this end, we emphasize designing and implementing artifacts that exhibit various levels of intelligence as well as understanding and modeling natural cognitive agents such as humans, ants, or bees. Students acquire the technical knowledge and skills necessary for expressing, specifying, understanding, creating, and exploiting computational models that represent cognitive processes. It prepares students for fields as diverse as artificial intelligence, machine learning, perception, and cognitive science, as well as for fields that benefit from applications of techniques from those fields.

READ ABOUT OTHER THREADS TO CREATE A BS IN CS

- Computing and Modeling - Simulation
- Computing and Devices
- Computing and Theory
- Computing and Information Internetworks
- Computing and Media
- Computing and People
- Computing and Systems and Architecture

THE MEDIA THREAD

The Media thread is where computing meets design. This thread prepares students by helping them to understand the technical and computational capabilities of systems in order to exploit their abilities to provide creative outlets.

READ ABOUT OTHER THREADS TO CREATE A BS IN CS

- Computing and Modeling - Simulation
- Computing and Devices
- Computing and Theory
- Computing and Information Internetworks
- Computing and Intelligence
- Computing and People
- Computing and Systems and Architecture

THE MODELING AND SIMULATION THREAD

The Modeling - Simulation thread is intended for students interested in developing a deep understanding and appreciation of how natural and human-generated systems such as weather, biological processes, supply chains, or computers can be represented by mathematical models and computer software. Such models are widely used today to better understand and predict the behavior of such systems. Because these models are often described and represented by mathematical expressions, and the models themselves often deal with physical phenomena, a background in mathematics and the sciences is required. Combining this background with a deep knowledge in computer science will yield the basic tools necessary to transform abstract conceptual models to computer programs that execute efficiently on digital machines. The required coursework in this thread includes topics in continuous and discrete mathematics, the sciences, and computing. Elective courses enable students to further develop and apply their knowledge and skills to a specific discipline where Modeling - Simulation plays an important role.

READ ABOUT OTHER THREADS TO CREATE A BS IN CS

- Computing and Devices
- Computing and Theory
- Computing and Information Internetworks
- Computing and Intelligence
- Computing and Media
- Computing and People
- Computing and Systems and Architecture

THE PEOPLE THREAD

The People thread is where computing meets users. This thread prepares students by helping them to understand the theoretical and computational foundations for designing, building, and evaluating systems that treat the human as a central component.

READ ABOUT OTHER THREADS TO CREATE A BS IN CS

- Computing and Modeling - Simulation
- Computing and Devices
- Computing and Theory
- Computing and Information Internetworks
- Computing and Intelligence
- Computing and Media
- Computing and Systems and Architecture

THE SYSTEMS AND ARCHITECTURE THREAD

The Systems and Architecture thread is where many of the practical skills of computing are learned. Like Theory, Systems and Architecture lies at the center of computing. It prepares students to create and evaluate computer architectures, systems, and languages across a variety of paradigms and approaches.

READ ABOUT OTHER THREADS TO CREATE A BS IN CS

- Computing and Modeling - Simulation
- Computing and Devices
- Computing and Theory
- Computing and Information Internetworks
- Computing and Intelligence
- Computing and Media
- Computing and People

THE THEORY THREAD

The Theory thread is where computing meets itself. Theory teaches students the theoretical and mathematical foundations underlying a wide range of computational disciplines. Early preparation includes discrete mathematics, algorithms, and complexity. Knowledge goals are for students to mature in development and analysis of abstract models for applications ranging from theoretical computer science to computational physics, biology, mathematics, economics, and optimization.

READ ABOUT OTHER THREADS TO CREATE A BS IN CS

- Computing and Modeling - Simulation
- Computing and Devices
- Computing and Information Internetworks
- Computing and Intelligence
- Computing and Media
- Computing and People
- Computing and Systems and Architecture

BACHELOR OF SCIENCE IN COMPUTER SCIENCE THREAD: MODELING - SIMULATION & DEVICES

REQUIREMENT	REQ HRS	COURSE(S)	NOTES
Wellness	2	HPS 1040 or APPH 1040 or APPH 1050	
Core A - Essential Skills	3	ENGL 1101	
	3	ENGL 1102	
	4	MATH 1501	
Core B - Institutional Options	3	CS 1301	c
Core C - Humanities	6	Any HUM	
Core D - Science, Math, & Technology	4	PHYS 2211	a
	4	Lab Science	a
	4	MATH 1502	
Core E - Social Sciences	3	HIST 2111 or HIST 2112 or INTA 1200 or POL 1101 or PUBP 3000	
	9	Any SS	
Core F - Courses Related to Major	4	Lab Science	a
	1	CS 1100	
	3	CS 1331	c
	3	CS 1332	c
	3	CS 2050 or CS 2051	c
	4	MATH 2605	
Major Requirements	3	CS 2340	c
	3	CS 4001 or CS 4002	c
	3	CS 4980 or CS 4911	c
Concentration	1	CS 1171	c
	4	CS 2110	c
	4	CS 2200	c
	3	CS 3251	c
	3	CS 3510 or CS 3511	c
	2	ECE 2031	c
	4	MATH 2403	c
	4	CS 3651 or ECE 4185	c
	3	CS 3630 or CS 4261 or CS 4605	c
	6	CS 4641 or CX 4140 or CX 4220 or CX 4230 or CX 4640	c
Other Required Courses	3	LCC 3403	
	3	MATH 3012	
	3	MATH 3215 or MATH 3770 or CEE 3770 or ISYE 3770 or (ISYE 2027 and ISYE 2028)	
Free Electives	11	Free Electives	
TOTAL:	126		

Pass-fail only allowed for Free Electives (max six hours), CS 1100, and CS 1171 (if required)

NOTES

a = Two of three lab sciences MUST be a sequence.

c = C-minimum required

BACHELOR OF SCIENCE IN COMPUTER SCIENCE THREAD: DEVICES & THEORY

REQUIREMENT	REQ HRS	COURSE(S)	NOTES
Wellness	2	HPS 1040 or APPH 1040 or APPH 1050	
Core A - Essential Skills	3	ENGL 1101	
	3	ENGL 1102	
	4	MATH 1501	
Core B - Institutional Options	3	CS 1301	c
Core C - Humanities	6	Any HUM	
Core D - Science, Math, & Technology	4	PHYS 2211	a
	4	Lab Science	a
	4	MATH 1502	
Core E - Social Sciences	3	HIST 2111 or HIST 2112 or INTA 1200 or POL 1101 or PUBP 3000	
	9	Any SS	
Core F - Courses Related to Major	4	Lab Science	a
	1	CS 1100	
	3	CS 1331	c
	3	CS 1332	c
	3	CS 2050 or CS 2051	c
	4	MATH 2605	
Major Requirements	3	CS 2340	c
	3	CS 4001 or CS 4002	c
	3	CS 4980 or CS 4911	c
Concentration	4	CS 2110	c
	4	CS 2200	c
	3	CS 3251	c
	3	CS 3510 or CS 3511	c
	3	CS 4510	c
	3	CS 4540	c
	2	ECE 2031	c
	3	MATH 2406	c
	4	CS 3651 or ECE 4185	c
	3	CS 3630 or CS 4261 or CS 4605	c
	3	MATH 4022 or MATH 4032 or MATH 4150	c
Other Required Courses	3	LCC 3403	
	3	MATH 3012	
	3	MATH 3215 or MATH 3770 or CEE 3770 or ISYE 3770 or (ISYE 2027 and ISYE 2028)	
Free Electives	10	Free Electives	
TOTAL:	126		

Pass-fail only allowed for Free Electives (max six hours), CS 1100, and CS 1171 (if required)

NOTES

a = Two of three lab sciences MUST be a sequence.
c = C-minimum required

BACHELOR OF SCIENCE IN COMPUTER SCIENCE THREAD: DEVICES & INFORMATION INTERNETWORKS

REQUIREMENT	REQ HRS	COURSE(S)	NOTES
Wellness	2	HPS 1040 or APPH 1040 or APPH 1050	
Core A - Essential Skills	3	ENGL 1101	
	3	ENGL 1102	
	4	MATH 1501	
Core B - Institutional Options	3	CS 1301	c
Core C - Humanities	6	Any HUM	
Core D - Science, Math, & Technology	4	PHYS 2211	a
	4	Lab Science	a
	4	MATH 1502	
Core E - Social Sciences	3	HIST 2111 or HIST 2112 or INTA 1200 or POL 1101 or PUBP 3000	
	9	Any SS	
Core F - Courses Related to Major	4	Lab Science	a
	1	CS 1100	
	3	CS 1331	c
	3	CS 1332	c
	3	CS 2050 or CS 2051	c
	4	MATH 2605	
Major Requirements	3	CS 2340	c
	3	CS 4001 or CS 4002	c
	3	CS 4980 or CS 4911	c
Concentration	4	CS 2110	c
	4	CS 2200	c
	3	CS 3251	c
	3	CS 3510 or CS 3511	c
	2	ECE 2031	c
	4	CS 3651 or ECE 4185	c
	3	CS 3630 or CS 4261 or CS 4605	c, d
	3	CS 4235 or CS 4400	c
	3	CS 4237 or CS 4251 or CS 4255 or CS 4261 or CS 4270 or CS 4365 or CS 4420 or CS 4440 or CS 4460	c, d
	3	CS 3220 or CS 3240 or CS 3600 or CS 3630 or CS 3651 or CS 4210 or CS 4220 or CS 4235 or CS 4237 or CS 4251 or CS 4255 or CS 4270 or CS 4365 or CS 4400 or CS 4420 or CS 4440 or CS 4460 or CS 4470 or CS 4495 or CS 4605 or CS 4616 or CS 4632 or CS 4641 or CS 4649 or CS 4685 or ECE 4185	c
Other Required Courses	3	LCC 3403	
	3	MATH 3012	
	3	MATH 3215 or MATH 3770 or CEE 3770 or ISYE 3770 or (ISYE 2027 and ISYE 2028)	
Free Electives	13	Free Electives	
TOTAL:	126		

Pass-fail only allowed for Free Electives (max six hours), CS 1100, and CS 1171 (if required)

NOTES

a = Two of three lab sciences MUST be a sequence.

c = C-minimum required

d = If CS 4261 is successfully completed, an additional 3cr Thread Elective is required. Thread Electives must be chosen from the following list: CS 3220, CS 3240, CS 3600, CS 3630, CS 3651, CS 4210, CS 4220, CS 4235, CS 4237, CS 4251, CS 4255, CS 4270, CS 4365, CS 4400, CS 4420, CS 4440, CS 4460, CS 4470, CS 4495, CS 4605, CS 4616, CS 4632, CS 4641, CS 4649, CS 4685, or ECE 4185

BACHELOR OF SCIENCE IN COMPUTER SCIENCE THREAD: DEVICES & INTELLIGENCE

REQUIREMENT	REQ HRS	COURSE(S)	NOTES
Wellness	2	HPS 1040 or APPH 1040 or APPH 1050	
Core A - Essential Skills	3	ENGL 1101	
	3	ENGL 1102	
	4	MATH 1501	
Core B - Institutional Options	3	CS 1301	c
Core C - Humanities	6	Any HUM	
Core D - Science, Math, & Technology	4	PHYS 2211	a
	4	Lab Science	a
	4	MATH 1502	
Core E - Social Sciences	3	HIST 2111 or HIST 2112 or INTA 1200 or POL 1101 or PUBP 3000	
	3	PSYC 1101	
	6	Any SS	
Core F - Courses Related to Major	4	Lab Science	a
	1	CS 1100	
	3	CS 1331	c
	3	CS 1332	c
	3	CS 2050 or CS 2051	c
	4	MATH 2605	
Major Requirements	3	CS 2340	c
	3	CS 4001 or CS 4002	c
	3	CS 4980 or CS 4911	c
Concentration	4	CS 2110	c
	4	CS 2200	c
	3	CS 3251	c
	3	CS 3510 or CS 3511	c
	3	CS 3600	c
	2	ECE 2031	c
	4	CS 3651 or ECE 4185	c
	3	CS 3630 or CS 4261 or CS 4605	c, d
	3	CS 3240 or CS 4510	c
	3	CS 3630 or CS 3790 or PSYC 3040	c, d
	6	CS 4495 or CS 4635 or CS 4641 or CS 4731	c
Other Required Courses	3	LCC 3403	
	3	MATH 3012	
	3	MATH 3215 or MATH 3770 or CEE 3770 or ISYE 3770 or (ISYE 2027 and ISYE 2028)	
Free Electives	7	Free Electives	d
TOTAL:	126		

Pass-fail only allowed for Free Electives (max six hours), CS 1100, and CS 1171 (if required)

NOTES

a = Two of three lab sciences MUST be a sequence.
c = C-minimum required

d = If CS 3630 is successfully completed, both requirements are fulfilled, and three credits are added to Free Electives.

BACHELOR OF SCIENCE IN COMPUTER SCIENCE THREAD: DEVICES & MEDIA

REQUIREMENT	REQ HRS	COURSE(S)	NOTES
Wellness	2	HPS 1040 or APPH 1040 or APPH 1050	
Core A - Essential Skills	3	ENGL 1101	
	3	ENGL 1102	
	4	MATH 1501	
Core B - Institutional Options	3	CS 1301 or CS 1315	c
Core C - Humanities	6	Any HUM	
Core D - Science, Math, & Technology	4	PHYS 2211	a
	4	Lab Science	a
	4	MATH 1502	
Core E - Social Sciences	3	HIST 2111 or HIST 2112 or INTA 1200 or POL 1101 or PUBP 3000	
	9	Any SS	
Core F - Courses Related to Major	4	Lab Science	a
	1	CS 1100	
	3	CS 1331	c
	3	CS 1332	c
	3	CS 2050 or CS 2051	c
	4	MATH 2605	
Major Requirements	3	CS 2340	c
	3	CS 4001 or CS 4002	c
	3	CS 4980 or CS 4911	c
Concentration	4	CS 2110	c
	4	CS 2200	c
	3	CS 3251	c
	3	CS 3451	c
	2	ECE 2031	c
	4	CS 3651 or ECE 4185	c
	3	CS 3630 or CS 4261 or CS 4605	c
	3	CS 3240 or CS 3510	c
	6	CS 4455 or CS 4460 or CS 4464 or CS 4475 or CS 4480 or CS 4496 or CS 4590	c
Other Required Courses	3	LCC 3403	
	3	MATH 3012	
	3	MATH 3215 or MATH 3770 or CEE 3770 or ISYE 3770 or (ISYE 2027 and ISYE 2028)	
Free Electives	13	Free Electives	
TOTAL:	126		

Pass-fail only allowed for Free Electives (max six hours), CS 1100, and CS 1171 (if required)

NOTES

a = Two of three lab sciences MUST be a sequence.

c = C-minimum required

BACHELOR OF SCIENCE IN COMPUTER SCIENCE THREAD: DEVICES & PEOPLE

REQUIREMENT	REQ HRS	COURSE(S)	NOTES
Wellness	2	HPS 1040 or APPH 1040 or APPH 1050	
Core A - Essential Skills	3	ENGL 1101	
	3	ENGL 1102	
	4	MATH 1501	
Core B - Institutional Options	3	CS 1301	c
Core C - Humanities	6	Any HUM	
Core D - Science, Math, & Technology	4	PHYS 2211	a
	4	Lab Science	a
	4	MATH 1502	
Core E - Social Sciences	3	HIST 2111 or HIST 2112 or INTA 1200 or POL 1101 or PUBP 3000	
	3	PSYC 1101	
	6	Any SS	
Core F - Courses Related to Major	4	Lab Science	a
	1	CS 1100	
	3	CS 1331	c
	3	CS 1332	c
	3	CS 2050 or CS 2051	c
	4	MATH 2605	
Major Requirements	3	CS 2340	c
	3	CS 4001 or CS 4002	c
	3	CS 4980 or CS 4911	c
Concentration	4	CS 2110	c
	4	CS 2200	c
	3	CS 3251	c
	2	ECE 2031	c
	4	PSYC 2015	c
	4	CS 3651 or ECE 4185	c
	3	CS 3630 or CS 4261 or CS 4605	c, d
	3	CS 3240 or CS 3510 or CS 3511	c
	3	PSYC 2210 or PSYC 2760 or PSYC 3040	c
	6	CS 3750 or CS 3790 or CS 4660	c
	3	CS 4460 or CS 4470 or CS 4605 or CS 4625	c, d
Other Required Courses	3	LCC 3403	
	3	MATH 3012	
	3	MATH 3215 or MATH 3770 or CEE 3770 or ISYE 3770 or (ISYE 2027 and ISYE 2028)	
Free Electives	6	Free Electives	d
TOTAL:	126		

Pass-fail only allowed for Free Electives (max six hours), CS 1100, and CS 1171 (if required)

NOTES

a = Two of three lab sciences MUST be a sequence.
c = C-minimum required

d = If CS 4605 is successfully completed, both requirements are fulfilled, and three credits are added to Free Electives.

BACHELOR OF SCIENCE IN COMPUTER SCIENCE THREAD: DEVICES & SYSTEMS AND ARCHITECTURE

REQUIREMENT	REQ HRS	COURSE(S)	NOTES
Wellness	2	HPS 1040 or APPH 1040 or APPH 1050	
Core A - Essential Skills	3	ENGL 1101	
	3	ENGL 1102	
	4	MATH 1501	
Core B - Institutional Options	3	CS 1301	c
Core C - Humanities	6	Any HUM	
Core D - Science, Math, & Technology	4	PHYS 2211	a
	4	Lab Science	a
	4	MATH 1502	
Core E - Social Sciences	3	HIST 2111 or HIST 2112 or INTA 1200 or POL 1101 or PUBP 3000	
	9	Any SS	
Core F - Courses Related to Major	4	Lab Science	a
	1	CS 1100	
	3	CS 1331	c
	3	CS 1332	c
	3	CS 2050 or CS 2051	c
	4	MATH 2605	
Major Requirements	3	CS 2340	c
	3	CS 4001 or CS 4002	c
	3	CS 4980 or CS 4911	c
Concentration	4	CS 2110	c
	4	CS 2200	c
	3	CS 3210	c
	3	CS 3240	c
	3	CS 3251	c
	3	CS 3510 or CS 3511	c
	2	ECE 2031	c
	4	CS 3651 or ECE 4185	c
	3	CS 3630 or CS 4261 or CS 4605	c
	3	CS 3220 or CS 4290	c
Other Required Courses	3	LCC 3403	
	3	MATH 3012	
	3	MATH 3215 or MATH 3770 or CEE 3770 or ISYE 3770 or (ISYE 2027 and ISYE 2028)	
Free Electives	13	Free Electives	
TOTAL:	126		

Pass-fail only allowed for Free Electives (max six hours), CS 1100, and CS 1171 (if required)

NOTES

a = Two of three lab sciences MUST be a sequence.

c = C-minimum required

BACHELOR OF SCIENCE IN COMPUTER SCIENCE THREAD: MODELING - SIMULATION & INFORMATION INTERNETWORKS

REQUIREMENT	REQ HRS	COURSE(S)	NOTES
Wellness	2	HPS 1040 or APPH 1040 or APPH 1050	
Core A - Essential Skills	3	ENGL 1101	
	3	ENGL 1102	
	4	MATH 1501	
Core B - Institutional Options	3	CS 1301	c
Core C - Humanities	6	Any HUM	
Core D - Science, Math, & Technology	4	PHYS 2211	a
	4	Lab Science	a
	4	MATH 1502	
Core E - Social Sciences	3	HIST 2111 or HIST 2112 or INTA 1200 or POL 1101 or PUBP 3000	
	9	Any SS	
Core F - Courses Related to Major	4	Lab Science	a
	1	CS 1100	
	3	CS 1331	c
	3	CS 1332	c
	3	CS 2050 or CS 2051	c
	4	MATH 2605	
Major Requirements	3	CS 2340	c
	3	CS 4001 or CS 4002	c
	3	CS 4980 or CS 4911	c
Concentration	1	CS 1171	c
	4	CS 2110	c
	4	CS 2200	c
	3	CS 3510 or CS 3511	c
	4	MATH 2403	c
	6	CS 3251 or CS 4235 or CS 4400	c
	3	CS 4237 or CS 4251 or CS 4255 or CS 4261 or CS 4270 or CS 4365 or CS 4420 or CS 4440 or CS 4460	c
	6	CS 4641 or CX 4140 or CX 4220 or CX 4230 or CX 4640	c
Other Required Courses	3	LCC 3403	
	3	MATH 3012	
	3	MATH 3215 or MATH 3770 or CEE 3770 or ISYE 3770 or (ISYE 2027 and ISYE 2028)	
Free Electives	14	Free Electives	
TOTAL:	126		

Pass-fail only allowed for Free Electives (max six hours), CS 1100, and CS 1171 (if required)

NOTES

a = Two of three lab sciences MUST be a sequence.

c = C-minimum required

BACHELOR OF SCIENCE IN COMPUTER SCIENCE THREAD: DEVICES & INFORMATION INTERNETWORKS

REQUIREMENT	REQ HRS	COURSE(S)	NOTES
Wellness	2	HPS 1040 or APPH 1040 or APPH 1050	
Core A - Essential Skills	3	ENGL 1101	
	3	ENGL 1102	
	4	MATH 1501	
Core B - Institutional Options	3	CS 1301	c
Core C - Humanities	6	Any HUM	
Core D - Science, Math, & Technology	4	PHYS 2211	a
	4	Lab Science	a
	4	MATH 1502	
Core E - Social Sciences	3	HIST 2111 or HIST 2112 or INTA 1200 or POL 1101 or PUBP 3000	
	9	Any SS	
Core F - Courses Related to Major	4	Lab Science	a
	1	CS 1100	
	3	CS 1331	c
	3	CS 1332	c
	3	CS 2050 or CS 2051	c
	4	MATH 2605	
Major Requirements	3	CS 2340	c
	3	CS 4001 or CS 4002	c
	3	CS 4980 or CS 4911	c
Concentration	4	CS 2110	c
	4	CS 2200	c
	3	CS 3251	c
	3	CS 3510 or CS 3511	c
	2	ECE 2031	c
	4	CS 3651 or ECE 4185	c
	3	CS 3630 or CS 4261 or CS 4605	c, d
	3	CS 4235 or CS 4400	c
	3	CS 4237 or CS 4251 or CS 4255 or CS 4261 or CS 4270 or CS 4365 or CS 4420 or CS 4440 or CS 4460	c, d
	3	CS 3220 or CS 3240 or CS 3600 or CS 3630 or CS 3651 or CS 4210 or CS 4220 or CS 4235 or CS 4237 or CS 4251 or CS 4255 or CS 4270 or CS 4365 or CS 4400 or CS 4420 or CS 4440 or CS 4460 or CS 4470 or CS 4495 or CS 4605 or CS 4616 or CS 4632 or CS 4641 or CS 4649 or CS 4685 or ECE 4185	c
Other Required Courses	3	LCC 3403	
	3	MATH 3012	
	3	MATH 3215 or MATH 3770 or CEE 3770 or ISYE 3770 or (ISYE 2027 and ISYE 2028)	
Free Electives	13	Free Electives	
TOTAL:	126		

Pass-fail only allowed for Free Electives (max six hours), CS 1100, and CS 1171 (if required)

NOTES

a = Two of three lab sciences MUST be a sequence.

c = C-minimum required

d = If CS 4261 is successfully completed, an additional 3cr Thread Elective is required. Thread Electives must be chosen from the following list: CS 3220, CS 3240, CS 3600, CS 3630, CS 3651, CS 4210, CS 4220, CS 4235, CS 4237, CS 4251, CS 4255, CS 4270, CS 4365, CS 4400, CS 4420, CS 4440, CS 4460, CS 4470, CS 4495, CS 4605, CS 4616, CS 4632, CS 4641, CS 4649, CS 4685, or ECE 4185

BACHELOR OF SCIENCE IN COMPUTER SCIENCE THREAD: THEORY & INFORMATION INTERNETWORKS

REQUIREMENT	REQ HRS	COURSE(S)	NOTES
Wellness	2	HPS 1040 or APPH 1040 or APPH 1050	
Core A - Essential Skills	3	ENGL 1101	
	3	ENGL 1102	
	4	MATH 1501	
Core B - Institutional Options	3	CS 1301	c
Core C - Humanities	6	Any HUM	
Core D - Science, Math, & Technology	4	PHYS 2211	a
	4	Lab Science	a
	4	MATH 1502	
Core E - Social Sciences	3	HIST 2111 or HIST 2112 or INTA 1200 or POL 1101 or PUBP 3000	
	9	Any SS	
Core F - Courses Related to Major	4	Lab Science	a
	1	CS 1100	
	3	CS 1331	c
	3	CS 1332	c
	3	CS 2050 or CS 2051	c
	4	MATH 2605	
Major Requirements	3	CS 2340	c
	3	CS 4001	c
	3	CS 4980 or CS 4911	c
Concentration	4	CS 2110	c
	4	CS 2200	c
	3	CS 3510 or CS 3511	c
	3	CS 4510	c
	3	CS 4540	c
	3	MATH 2406	c
	6	CS 3251 or CS 4235 or CS 4400	c
	3	CS 4237 or CS 4251 or CS 4255 or CS 4261 or CS 4270 or CS 4365 or CS 4420 or CS 4440 or CS 4460	c
	3	MATH 4022 or MATH 4032 or MATH 4150	c
Other Required Courses	3	LCC 3403	
	3	MATH 3012	
	3	MATH 3215 or MATH 3770 or CEE 3770 or ISYE 3770 or (ISYE 2027 and ISYE 2028)	
Free Electives	13	Free Electives	
TOTAL:	126		

Pass-fail only allowed for Free Electives (max six hours), CS 1100, and CS 1171 (if required)

NOTES

a = Two of three lab sciences MUST be a sequence.
c = C-minimum required

BACHELOR OF SCIENCE IN COMPUTER SCIENCE THREAD: INFORMATION INTERNETWORKS & INTELLIGENCE

REQUIREMENT	REQ HRS	COURSE(S)	NOTES
Wellness	2	HPS 1040 or APPH 1040 or APPH 1050	
Core A - Essential Skills	3	ENGL 1101	
	3	ENGL 1102	
	4	MATH 1501	
Core B - Institutional Options	3	CS 1301	c
Core C - Humanities	6	Any HUM	
Core D - Science, Math, & Technology	4	PHYS 2211	a
	4	Lab Science	a
	4	MATH 1502	
Core E - Social Sciences	3	HIST 2111 or HIST 2112 or INTA 1200 or POL 1101 or PUBP 3000	
	3	PSYC 1101	
	6	Any SS	
Core F - Courses Related to Major	4	Lab Science	a
	1	CS 1100	
	3	CS 1331	c
	3	CS 1332	c
	3	CS 2050 or CS 2051	c
	4	MATH 2605	
Major Requirements	3	CS 2340	c
	3	CS 4001 or CS 4002	c
	3	CS 4980 or CS 4911	c
Concentration	4	CS 2110	c
	4	CS 2200	c
	3	CS 3510 or CS 3511	c
	3	CS 3600	c
	6	CS 3251 or CS 4235 or CS 4400	c
	3	CS 4237 or CS 4251 or CS 4255 or CS 4261 or CS 4270 or CS 4365 or CS 4420 or CS 4440 or CS 4460	c
	3	CS 3240 or CS 4510	c
	6	CS 4495 or CS 4635 or CS 4641 or CS 4731	c
	3	CS 3630 or CS 3790 or PSYC 3040	c
Other Required Courses	3	LCC 3403	
	3	MATH 3012	
	3	MATH 3215 or MATH 3770 or CEE 3770 or ISYE 3770 or (ISYE 2027 and ISYE 2028)	
Free Electives	10	Free Electives	
TOTAL:	126		

Pass-fail only allowed for Free Electives (max six hours), CS 1100, and CS 1171 (if required)

NOTES

a = Two of three lab sciences MUST be a sequence.

c = C-minimum required

BACHELOR OF SCIENCE IN COMPUTER SCIENCE THREAD: INFORMATION INTERNETWORKS & MEDIA

REQUIREMENT	REQ HRS	COURSE(S)	NOTES
Wellness	2	HPS 1040 or APPH 1040 or APPH 1050	
Core A - Essential Skills	3	ENGL 1101	
	3	ENGL 1102	
	4	MATH 1501	
Core B - Institutional Options	3	CS 1301 or CS 1315	c
Core C - Humanities	6	Any HUM	
Core D - Science, Math, & Technology	4	PHYS 2211	a
	4	Lab Science	a
	4	MATH 1502	
Core E - Social Sciences	3	HIST 2111 or HIST 2112 or INTA 1200 or POL 1101 or PUBP 3000	
	9	Any SS	
Core F - Courses Related to Major	4	Lab Science	a
	1	CS 1100	
	3	CS 1331	c
	3	CS 1332	c
	3	CS 2050 or CS 2051	c
	4	MATH 2605	
Major Requirements	3	CS 2340	c
	3	CS 4001 or CS 4002	c
	3	CS 4980 or CS 4911	c
Concentration	4	CS 2110	c
	4	CS 2200	c
	3	CS 3451	c
	3	CS 3510 or CS 3511	c
	6	CS 3251 or CS 4235 or CS 4400	c
	3	CS 4237 or CS 4251 or CS 4255 or CS 4261 or CS 4270 or CS 4365 or CS 4420 or CS 4440 or CS 4460	c, d
	6	CS 4455 or CS 4460 or CS 4464 or CS 4475 or CS 4480 or CS 4496 or CS 4590	c, d
Other Required Courses	3	LCC 3403	
	3	MATH 3012	
	3	MATH 3215 or MATH 3770 or CEE 3770 or ISYE 3770 or (ISYE 2027 and ISYE 2028)	
Free Electives	16	Free Electives	
TOTAL:	126		

Pass-fail only allowed for Free Electives (max six hours), CS 1100, and CS 1171 (if required)

NOTES

a = Two of three lab sciences MUST be a sequence.

c = C-minimum required

d = If CS 4460 is successfully completed, it counts towards both requirements, and an additional 3cr Thread Elective is required. Thread Electives can be chosen from the following courses: CS

Research Option College of Computing	3240, 3251, 4235, 4237, 4251, 4255, 4261, 4270, 4365, 4400, 4420, 4440, 4455, 4464, 4470, 4475, 4480, 4496, 4550, 4590, 4770, or CX 4236

BACHELOR OF SCIENCE IN COMPUTER SCIENCE THREAD: INFORMATION INTERNETWORKS & PEOPLE

REQUIREMENT	REQ HRS	COURSE(S)	NOTES
Wellness	2	HPS 1040 or APPH 1040 or APPH 1050	
Core A - Essential Skills	3	ENGL 1101	
	3	ENGL 1102	
	4	MATH 1501	
Core B - Institutional Options	3	CS 1301	c
Core C - Humanities	6	Any HUM	
Core D - Science, Math, & Technology	4	PHYS 2211	a
	4	Lab Science	a
	4	MATH 1502	
Core E - Social Sciences	3	HIST 2111 or HIST 2112 or INTA 1200 or POL 1101 or PUBP 3000	
	3	PSYC 1101	
	6	Any SS	
Core F - Courses Related to Major	4	Lab Science	a
	1	CS 1100	
	3	CS 1331	c
	3	CS 1332	c
	3	CS 2050 or CS 2051	c
	4	MATH 2605	
Major Requirements	3	CS 2340	c
	3	CS 4001 or CS 4002	c
	3	CS 4980 or CS 4911	c
Concentration	4	CS 2110	c
	4	CS 2200	c
	3	CS 3510 or CS 3511	c
	4	PSYC 2015	c
	6	CS 3251 or CS 4235 or CS 4400	c, d
	3	CS 4237 or CS 4251 or CS 4255 or CS 4261 or CS 4270 or CS 4365 or CS 4420 or CS 4440 or CS 4460	c
	6	CS 3750 or CS 3790 or CS 4660	c
	3	PSYC 2210 or PSYC 2760 or PSYC 3040	c
	3	CS 4460 or CS 4470 or CS 4605 or CS 4625	c, d
Other Required Courses	3	LCC 3403	
	3	MATH 3012	
	3	MATH 3215 or MATH 3770 or CEE 3770 or ISYE 3770 or (ISYE 2027 and ISYE 2028)	
Free Electives	9	Free Electives	d
TOTAL:	126		

Pass-fail only allowed for Free Electives (max six hours), CS 1100, and CS 1171 (if required)

NOTES

a = Two of three lab sciences MUST be a sequence.

c = C-minimum required

d = If CS 4460 is successfully completed, both requirements are fulfilled, and an additional 3cr of Free Electives are required.

BACHELOR OF SCIENCE IN COMPUTER SCIENCE THREAD: INFORMATION INTERNETWORKS & SYSTEMS AND ARCHITECTURE

REQUIREMENT	REQ HRS	COURSE(S)	NOTES
Wellness	2	HPS 1040 or APPH 1040 or APPH 1050	
Core A - Essential Skills	3	ENGL 1101	
	3	ENGL 1102	
	4	MATH 1501	
Core B - Institutional Options	3	CS 1301	c
Core C - Humanities	6	Any HUM	
Core D - Science, Math, & Technology	4	PHYS 2211	a
	4	Lab Science	a
	4	MATH 1502	
Core E - Social Sciences	3	HIST 2111 or HIST 2112 or INTA 1200 or POL 1101 or PUBP 3000	
	9	Any SS	
Core F - Courses Related to Major	4	Lab Science	a
	1	CS 1100	
	3	CS 1331	c
	3	CS 1332	c
	3	CS 2050 or CS 2051	c
	4	MATH 2605	
Major Requirements	3	CS 2340	c
	3	CS 4001 or CS 4002	c
	3	CS 4980 or CS 4911	c
Concentration	4	CS 2110	c
	4	CS 2200	c
	3	CS 3210	c
	3	CS 3240	c
	3	CS 3510 or CS 3511	c
	6	CS 3251 or CS 4235 or CS 4400	c, d
	3	CS 4237 or CS 4251 or CS 4255 or CS 4261 or CS 4270 or CS 4365 or CS 4420 or CS 4440 or CS 4460	c
	3	CS 3220 or CS 4290	c
	3	CS 3251 or CS 3300 or CS 4240	c, d
Other Required Courses	3	LCC 3403	
	3	MATH 3012	
	3	MATH 3215 or MATH 3770 or CEE 3770 or ISYE 3770 or (ISYE 2027 and ISYE 2028)	
Free Electives	13	Free Electives	
TOTAL:	126		

Pass-fail only allowed for Free Electives (max six hours), CS 1100, and CS 1171 (if required)

NOTES

a = Two of three lab sciences MUST be a sequence.
c = C-minimum required
d = If CS 3251 is successfully completed, both requirements are fulfilled, and an additional 3cr

Thread Elective is required. Thread Electives must be chosen from the following list: CS 3220, CS 3300, CS 4210, CS 4220, CS 4233, CS 4235, CS 4237, CS 4240, CS 4251, CS 4255, CS 4261, CS 4270, CS 4290, CS 4365, CS 4392, CS 4400, CS 4420, CS 4440, CS 4460, CS 4560, CS 4675, CS 4685, CS 6241, or CS 6246

BACHELOR OF SCIENCE IN COMPUTER SCIENCE THREAD: MODELING - SIMULATION & INTELLIGENCE

REQUIREMENT	REQ HRS	COURSE(S)	NOTES
Wellness	2	HPS 1040 or APPH 1040 or APPH 1050	
Core A - Essential Skills	3	ENGL 1101	
	3	ENGL 1102	
	4	MATH 1501	
Core B - Institutional Options	3	CS 1301	c
Core C - Humanities	6	Any HUM	
Core D - Science, Math, & Technology	4	PHYS 2211	a
	4	Lab Science	a
	4	MATH 1502	
Core E - Social Sciences	3	HIST 2111 or HIST 2112 or INTA 1200 or POL 1101 or PUBP 3000	
	3	PSYC 1101	
	6	Any SS	
Core F - Courses Related to Major	4	Lab Science	a
	1	CS 1100	
	3	CS 1331	c
	3	CS 1332	c
	3	CS 2050 or CS 2051	c
	4	MATH 2605	
Major Requirements	3	CS 2340	c
	3	CS 4001 or CS 4002	c
	3	CS 4980 or CS 4911	c
Concentration	1	CS 1171	c
	4	CS 2110	c
	4	CS 2200	c
	3	CS 3510 or CS 3511	c
	3	CS 3600	c
	4	MATH 2403	c
	3	CS 3240 or CS 4510	c
	3	CS 3630 or CS 3790 or PSYC 3040	c
	6	CS 4495 or CS 4635 or CS 4641 or CS 4731	c, d
	6	CS 4641 or CX 4140 or CX 4220 or CX 4230 or CX 4640	c, d
Other Required Courses	3	LCC 3403	
	3	MATH 3012	
	3	MATH 3215 or MATH 3770 or CEE 3770 or ISYE 3770 or (ISYE 2027 and ISYE 2028)	
Free Electives	8	Free Electives	d
TOTAL:	126		

Pass-fail only allowed for Free Electives (max six hours), CS 1100, and CS 1171 (if required)

NOTES

a = Two of three lab sciences MUST be a sequence.

c = C-minimum required

d = If CS 4641 is successfully completed, it counts towards both requirements, and an additional 3cr Free Elective is required.

BACHELOR OF SCIENCE IN COMPUTER SCIENCE THREAD: DEVICES & INTELLIGENCE

REQUIREMENT	REQ HRS	COURSE(S)	NOTES
Wellness	2	HPS 1040 or APPH 1040 or APPH 1050	
Core A - Essential Skills	3	ENGL 1101	
	3	ENGL 1102	
	4	MATH 1501	
Core B - Institutional Options	3	CS 1301	c
Core C - Humanities	6	Any HUM	
Core D - Science, Math, & Technology	4	PHYS 2211	a
	4	Lab Science	a
	4	MATH 1502	
Core E - Social Sciences	3	HIST 2111 or HIST 2112 or INTA 1200 or POL 1101 or PUBP 3000	
	3	PSYC 1101	
	6	Any SS	
Core F - Courses Related to Major	4	Lab Science	a
	1	CS 1100	
	3	CS 1331	c
	3	CS 1332	c
	3	CS 2050 or CS 2051	c
	4	MATH 2605	
Major Requirements	3	CS 2340	c
	3	CS 4001 or CS 4002	c
	3	CS 4980 or CS 4911	c
Concentration	4	CS 2110	c
	4	CS 2200	c
	3	CS 3251	c
	3	CS 3510 or CS 3511	c
	3	CS 3600	c
	2	ECE 2031	c
	4	CS 3651 or ECE 4185	c
	3	CS 3630 or CS 4261 or CS 4605	c, d
	3	CS 3240 or CS 4510	c
	3	CS 3630 or CS 3790 or PSYC 3040	c, d
	6	CS 4495 or CS 4635 or CS 4641 or CS 4731	c
Other Required Courses	3	LCC 3403	
	3	MATH 3012	
	3	MATH 3215 or MATH 3770 or CEE 3770 or ISYE 3770 or (ISYE 2027 and ISYE 2028)	
Free Electives	7	Free Electives	d
TOTAL:	126		

Pass-fail only allowed for Free Electives (max six hours), CS 1100, and CS 1171 (if required)

NOTES

a = Two of three lab sciences MUST be a sequence.
c = C-minimum required

d = If CS 3630 is successfully completed, both requirements are fulfilled, and three credits are added to Free Electives.

BACHELOR OF SCIENCE IN COMPUTER SCIENCE THREAD: THEORY & INTELLIGENCE

REQUIREMENT	REQ HRS	COURSE(S)	NOTES
Wellness	2	HPS 1040 or APPH 1040 or APPH 1050	
Core A - Essential Skills	3	ENGL 1101	
	3	ENGL 1102	
	4	MATH 1501	
Core B - Institutional Options	3	CS 1301	c
Core C - Humanities	6	Any HUM	
Core D - Science, Math, & Technology	4	PHYS 2211	a
	4	Lab Science	a
	4	MATH 1502	
Core E - Social Sciences	3	HIST 2111 or HIST 2112 or INTA 1200 or POL 1101 or PUBP 3000	
	3	PSYC 1101	
	6	Any SS	
Core F - Courses Related to Major	4	Lab Science	a
	1	CS 1100	
	3	CS 1331	c
	3	CS 1332	c
	3	CS 2050 or CS 2051	c
	4	MATH 2605	
Major Requirements	3	CS 2340	c
	3	CS 4001 or CS 4002	c
	3	CS 4980 or CS 4911	c
Concentration	4	CS 2110	c
	3	CS 3510 or CS 3511	c
	3	CS 3600	c
	3	CS 4510	c
	3	CS 4540	c
	3	MATH 2406	c
	3	MATH 4022 or MATH 4032 or MATH 4150	c
	3	CS 3630 or CS 3790 or PSYC 3040	c
	6	CS 4495 or CS 4635 or CS 4641 or CS 4731	c
Other Required Courses	3	LCC 3403	
	3	MATH 3012	
	3	MATH 3215 or MATH 3770 or CEE 3770 or ISYE 3770 or (ISYE 2027 and ISYE 2028)	
Free Electives	14	Free Electives	
TOTAL:	126		

Pass-fail only allowed for Free Electives (max six hours), CS 1100, and CS 1171 (if required)

NOTES

a = Two of three lab sciences MUST be a sequence.

c = C-minimum required

BACHELOR OF SCIENCE IN COMPUTER SCIENCE THREAD: INFORMATION INTERNETWORKS & INTELLIGENCE

REQUIREMENT	REQ HRS	COURSE(S)	NOTES
Wellness	2	HPS 1040 or APPH 1040 or APPH 1050	
Core A - Essential Skills	3	ENGL 1101	
	3	ENGL 1102	
	4	MATH 1501	
Core B - Institutional Options	3	CS 1301	c
Core C - Humanities	6	Any HUM	
Core D - Science, Math, & Technology	4	PHYS 2211	a
	4	Lab Science	a
	4	MATH 1502	
Core E - Social Sciences	3	HIST 2111 or HIST 2112 or INTA 1200 or POL 1101 or PUBP 3000	
	3	PSYC 1101	
	6	Any SS	
Core F - Courses Related to Major	4	Lab Science	a
	1	CS 1100	
	3	CS 1331	c
	3	CS 1332	c
	3	CS 2050 or CS 2051	c
	4	MATH 2605	
Major Requirements	3	CS 2340	c
	3	CS 4001 or CS 4002	c
	3	CS 4980 or CS 4911	c
Concentration	4	CS 2110	c
	4	CS 2200	c
	3	CS 3510 or CS 3511	c
	3	CS 3600	c
	6	CS 3251 or CS 4235 or CS 4400	c
	3	CS 4237 or CS 4251 or CS 4255 or CS 4261 or CS 4270 or CS 4365 or CS 4420 or CS 4440 or CS 4460	c
	3	CS 3240 or CS 4510	c
	6	CS 4495 or CS 4635 or CS 4641 or CS 4731	c
	3	CS 3630 or CS 3790 or PSYC 3040	c
Other Required Courses	3	LCC 3403	
	3	MATH 3012	
	3	MATH 3215 or MATH 3770 or CEE 3770 or ISYE 3770 or (ISYE 2027 and ISYE 2028)	
Free Electives	10	Free Electives	
TOTAL:	126		

Pass-fail only allowed for Free Electives (max six hours), CS 1100, and CS 1171 (if required)

NOTES

a = Two of three lab sciences MUST be a sequence.
c = C-minimum required

BACHELOR OF SCIENCE IN COMPUTER SCIENCE THREAD: INTELLIGENCE & MEDIA

REQUIREMENT	REQ HRS	COURSE(S)	NOTES
Wellness	2	HPS 1040 or APPH 1040 or APPH 1050	
Core A - Essential Skills	3	ENGL 1101	
	3	ENGL 1102	
	4	MATH 1501	
Core B - Institutional Options	3	CS 1301 or CS 1315	c
Core C - Humanities	6	Any HUM	
Core D - Science, Math, & Technology	4	PHYS 2211	a
	4	Lab Science	a
	4	MATH 1502	
Core E - Social Sciences	3	HIST 2111 or HIST 2112 or INTA 1200 or POL 1101 or PUBP 3000	
	3	PSYC 1101	
	6	Any SS	
Core F - Courses Related to Major	4	Lab Science	a
	1	CS 1100	
	3	CS 1331	c
	3	CS 1332	c
	3	CS 2050 or CS 2051	c
	4	MATH 2605	
Major Requirements	3	CS 2340	c
	3	CS 4001 or CS 4002	c
	3	CS 4980 or CS 4911	c
Concentration	4	CS 2110	c
	3	CS 3451	c
	3	CS 3510 or CS 3511	c
	3	CS 3600	c
	3	CS 3240 or CS 4510	c
	3	CS 3630 or CS 3790 or PSYC 3040	c
	6	CS 4495 or CS 4635 or CS 4641 or CS 4731	c
	6	CS 4455 or CS 4460 or CS 4464 or CS 4475 or CS 4480 or CS 4496 or CS 4590	c
Other Required Courses	3	LCC 3403	
	3	MATH 3012	
	3	MATH 3215 or MATH 3770 or CEE 3770 or ISYE 3770 or (ISYE 2027 and ISYE 2028)	
Free Electives	14	Free Electives	
TOTAL:	126		

Pass-fail only allowed for Free Electives (max six hours), CS 1100, and CS 1171 (if required)

NOTES

a = Two of three lab sciences MUST be a sequence.
c = C-minimum required

BACHELOR OF SCIENCE IN COMPUTER SCIENCE THREAD: INTELLIGENCE & PEOPLE

REQUIREMENT	REQ HRS	COURSE(S)	NOTES
Wellness	2	HPS 1040 or APPH 1040 or APPH 1050	
Core A - Essential Skills	3	ENGL 1101	
	3	ENGL 1102	
	4	MATH 1501	
Core B - Institutional Options	3	CS 1301	c
Core C - Humanities	6	Any HUM	
Core D - Science, Math, & Technology	4	PHYS 2211	a
	4	Lab Science	a
	4	MATH 1502	
Core E - Social Sciences	3	HIST 2111 or HIST 2112 or INTA 1200 or POL 1101 or PUBP 3000	
	3	PSYC 1101	
	6	Any SS	
Core F - Courses Related to Major	4	Lab Science	a
	1	CS 1100	
	3	CS 1331	c
	3	CS 1332	c
	3	CS 2050 or CS 2051	c
	4	MATH 2605	
Major Requirements	3	CS 2340	c
	3	CS 4001 or CS 4002	c
	3	CS 4980 or CS 4911	c
Concentration	4	CS 2110	c
	3	CS 3510 or CS 3511	c
	3	CS 3600	c
	4	PSYC 2015	c
	3	CS 3240 or CS 4510	c
	3	CS 3630 or CS 3790 or PSYC 3040	c, d, e
	6	CS 4495 or CS 4635 or CS 4641 or CS 4731	c
	6	CS 3750 or CS 3790 or CS 4660	c, d
	3	PSYC 2210 or PSYC 2760 or PSYC 3040	c, e
	3	CS 4460 or CS 4470 or CS 4605 or CS 4625	c
Other Required Courses	3	LCC 3403	
	3	MATH 3012	
	3	MATH 3215 or MATH 3770 or CEE 3770 or ISYE 3770 or (ISYE 2027 and ISYE 2028)	
Free Electives	7	Free Electives	
TOTAL:	126		

Pass-fail only allowed for Free Electives (max six hours), CS 1100, and CS 1171 (if required)

NOTES

a = Two of three lab sciences MUST be a sequence.
c = C-minimum required
d = If CS 3790 is successfully completed, Embodied Intelligence is completed, one course from

Human-Centered Technology is considered fulfilled, and three credits are added to Free Electives.

e = If PSYC 3040 is successfully completed, both requirements are fulfilled, and three credits are added to Free Electives.

BACHELOR OF SCIENCE IN COMPUTER SCIENCE THREAD: INTELLIGENCE & SYSTEMS AND ARCHITECTURE

REQUIREMENT	REQ HRS	COURSE(S)	NOTES
Wellness	2	HPS 1040 or APPH 1040 or APPH 1050	
Core A - Essential Skills	3	ENGL 1101	
	3	ENGL 1102	
	4	MATH 1501	
Core B - Institutional Options	3	CS 1301	c
Core C - Humanities	6	Any HUM	
Core D - Science, Math, & Technology	4	PHYS 2211	a
	4	Lab Science	a
	4	MATH 1502	
Core E - Social Sciences	3	HIST 2111 or HIST 2112 or INTA 1200 or POL 1101 or PUBP 3000	
	3	PSYC 1101	
	6	Any SS	
Core F - Courses Related to Major	4	Lab Science	a
	1	CS 1100	
	3	CS 1331	c
	3	CS 1332	c
	3	CS 2050 or CS 2051	c
	4	MATH 2605	
Major Requirements	3	CS 2340	c
	3	CS 4001 or CS 4002	c
	3	CS 4980 or CS 4911	c
Concentration	4	CS 2110	c
	4	CS 2200	c
	3	CS 3210	c
	3	CS 3240	c
	3	CS 3510 or CS 3511	c
	3	CS 3600	c
	3	CS 3630 or CS 3790 or PSYC 3040	c
	6	CS 4495 or CS 4635 or CS 4641 or CS 4731	c
	3	CS 3220 or CS 4290	c
	3	CS 3251 or CS 3300 or CS 4240	c
Other Required Courses	3	LCC 3403	
	3	MATH 3012	
	3	MATH 3215 or MATH 3770 or CEE 3770 or ISYE 3770 or (ISYE 2027 and ISYE 2028)	
Free Electives	10	Free Electives	
TOTAL:	126		

Pass-fail only allowed for Free Electives (max six hours), CS 1100, and CS 1171 (if required)

NOTES

a = Two of three lab sciences MUST be a sequence.

c = C-minimum required

BACHELOR OF SCIENCE IN COMPUTER SCIENCE THREAD: MODELING - SIMULATION & MEDIA

REQUIREMENT	REQ HRS	COURSE(S)	NOTES
Wellness	2	HPS 1040 or APPH 1040 or APPH 1050	
Core A - Essential Skills	3	ENGL 1101	
	3	ENGL 1102	
	4	MATH 1501	
Core B - Institutional Options	3	CS 1301	c
Core C - Humanities	6	Any HUM	
Core D - Science, Math, & Technology	4	PHYS 2211	a
	4	Lab Science	a
	4	MATH 1502	
Core E - Social Sciences	3	HIST 2111 or HIST 2112 or INTA 1200 or POL 1101 or PUBP 3000	
	9	Any SS	
Core F - Courses Related to Major	4	Lab Science	a
	1	CS 1100	
	3	CS 1331	c
	3	CS 1332	c
	3	CS 2050 or CS 2051	c
	4	MATH 2605	
Major Requirements	3	CS 2340	c
	3	CS 4001 or CS 4002	c
	3	CS 4980 or CS 4911	c
Concentration	1	CS 1171	c
	4	CS 2110	c
	4	CS 2200	c
	3	CS 3451	c
	3	CS 3510 or CS 3511	c
	4	MATH 2403	c
	6	CS 4455 or CS 4460 or CS 4464 or CS 4475 or CS 4480 or CS 4496 or CS 4590	c
	6	CS 4641 or CX 4140 or CX 4220 or CX 4230 or CX 4640	c
Other Required Courses	3	LCC 3403	
	3	MATH 3012	
	3	MATH 3215 or MATH 3770 or CEE 3770 or ISYE 3770 or (ISYE 2027 and ISYE 2028)	
Free Electives	14	Free Electives	
TOTAL:	126		

Pass-fail only allowed for Free Electives (max six hours), CS 1100, and CS 1171 (if required)

NOTES

a = Two of three lab sciences MUST be a sequence.
c = C-minimum required

BACHELOR OF SCIENCE IN COMPUTER SCIENCE THREAD: DEVICES & MEDIA

REQUIREMENT	REQ HRS	COURSE(S)	NOTES
Wellness	2	HPS 1040 or APPH 1040 or APPH 1050	
Core A - Essential Skills	3	ENGL 1101	
	3	ENGL 1102	
	4	MATH 1501	
Core B - Institutional Options	3	CS 1301 or CS 1315	c
Core C - Humanities	6	Any HUM	
Core D - Science, Math, & Technology	4	PHYS 2211	a
	4	Lab Science	a
	4	MATH 1502	
Core E - Social Sciences	3	HIST 2111 or HIST 2112 or INTA 1200 or POL 1101 or PUBP 3000	
	9	Any SS	
Core F - Courses Related to Major	4	Lab Science	a
	1	CS 1100	
	3	CS 1331	c
	3	CS 1332	c
	3	CS 2050 or CS 2051	c
	4	MATH 2605	
Major Requirements	3	CS 2340	c
	3	CS 4001 or CS 4002	c
	3	CS 4980 or CS 4911	c
Concentration	4	CS 2110	c
	4	CS 2200	c
	3	CS 3251	c
	3	CS 3451	c
	2	ECE 2031	c
	4	CS 3651 or ECE 4185	c
	3	CS 3630 or CS 4261 or CS 4605	c
	3	CS 3240 or CS 3510	c
	6	CS 4455 or CS 4460 or CS 4464 or CS 4475 or CS 4480 or CS 4496 or CS 4590	c
Other Required Courses	3	LCC 3403	
	3	MATH 3012	
	3	MATH 3215 or MATH 3770 or CEE 3770 or ISYE 3770 or (ISYE 2027 and ISYE 2028)	
Free Electives	13	Free Electives	
TOTAL:	126		

Pass-fail only allowed for Free Electives (max six hours), CS 1100, and CS 1171 (if required)

NOTES

a = Two of three lab sciences MUST be a sequence.

c = C-minimum required

BACHELOR OF SCIENCE IN COMPUTER SCIENCE THREAD: THEORY & MEDIA

REQUIREMENT	REQ HRS	COURSE(S)	NOTES
Wellness	2	HPS 1040 or APPH 1040 or APPH 1050	
Core A - Essential Skills	3	ENGL 1101	
	3	ENGL 1102	
	4	MATH 1501	
Core B - Institutional Options	3	CS 1301 or CS 1315	c
Core C - Humanities	6	Any HUM	
Core D - Science, Math, & Technology	4	PHYS 2211	a
	4	Lab Science	a
	4	MATH 1502	
Core E - Social Sciences	3	HIST 2111 or HIST 2112 or INTA 1200 or POL 1101 or PUBP 3000	
	9	Any SS	
Core F - Courses Related to Major	4	Lab Science	a
	1	CS 1100	
	3	CS 1331	c
	3	CS 1332	c
	3	CS 2050 or CS 2051	c
	4	MATH 2605	
Major Requirements	3	CS 2340	c
	3	CS 4001 or CS 4002	c
	3	CS 4980 or CS 4911	c
Concentration	4	CS 2110	c
	3	CS 3451	c
	3	CS 3510 or CS 3511	c
	3	CS 4510	c
	3	CS 4540	c
	3	MATH 2406	c
	6	CS 4455 or CS 4460 or CS 4464 or CS 4475 or CS 4480 or CS 4496 or CS 4590	c
	3	MATH 4022 or MATH 4032 or MATH 4150	c
Other Required Courses	3	LCC 3403	
	3	MATH 3012	
	3	MATH 3215 or MATH 3770 or CEE 3770 or ISYE 3770 or (ISYE 2027 and ISYE 2028)	
Free Electives	17	Free Electives	
TOTAL:	126		

Pass-fail only allowed for Free Electives (max six hours), CS 1100, and CS 1171 (if required)

NOTES

a = Two of three lab sciences MUST be a sequence.
c = C-minimum required

BACHELOR OF SCIENCE IN COMPUTER SCIENCE THREAD: INFORMATION INTERNETWORKS & MEDIA

REQUIREMENT	REQ HRS	COURSE(S)	NOTES
Wellness	2	HPS 1040 or APPH 1040 or APPH 1050	
Core A - Essential Skills	3	ENGL 1101	
	3	ENGL 1102	
	4	MATH 1501	
Core B - Institutional Options	3	CS 1301 or CS 1315	c
Core C - Humanities	6	Any HUM	
Core D - Science, Math, & Technology	4	PHYS 2211	a
	4	Lab Science	a
	4	MATH 1502	
Core E - Social Sciences	3	HIST 2111 or HIST 2112 or INTA 1200 or POL 1101 or PUBP 3000	
	9	Any SS	
Core F - Courses Related to Major	4	Lab Science	a
	1	CS 1100	
	3	CS 1331	c
	3	CS 1332	c
	3	CS 2050 or CS 2051	c
	4	MATH 2605	
Major Requirements	3	CS 2340	c
	3	CS 4001 or CS 4002	c
	3	CS 4980 or CS 4911	c
Concentration	4	CS 2110	c
	4	CS 2200	c
	3	CS 3451	c
	3	CS 3510 or CS 3511	c
	6	CS 3251 or CS 4235 or CS 4400	c
	3	CS 4237 or CS 4251 or CS 4255 or CS 4261 or CS 4270 or CS 4365 or CS 4420 or CS 4440 or CS 4460	c, d
	6	CS 4455 or CS 4460 or CS 4464 or CS 4475 or CS 4480 or CS 4496 or CS 4590	c, d
Other Required Courses	3	LCC 3403	
	3	MATH 3012	
	3	MATH 3215 or MATH 3770 or CEE 3770 or ISYE 3770 or (ISYE 2027 and ISYE 2028)	
Free Electives	16	Free Electives	
TOTAL:	126		

Pass-fail only allowed for Free Electives (max six hours), CS 1100, and CS 1171 (if required)

NOTES

a = Two of three lab sciences MUST be a sequence.

c = C-minimum required

d = If CS 4460 is successfully completed, it counts towards both requirements, and an additional 3cr Thread Elective is required. Thread Electives can be chosen from the following courses: CS

Research Option College of Computing	3240, 3251, 4235, 4237, 4251, 4255, 4261, 4270, 4365, 4400, 4420, 4440, 4455, 4464, 4470, 4475, 4480, 4496, 4550, 4590, 4770, or CX 4236

BACHELOR OF SCIENCE IN COMPUTER SCIENCE THREAD: INTELLIGENCE & MEDIA

REQUIREMENT	REQ HRS	COURSE(S)	NOTES
Wellness	2	HPS 1040 or APPH 1040 or APPH 1050	
Core A - Essential Skills	3	ENGL 1101	
	3	ENGL 1102	
	4	MATH 1501	
Core B - Institutional Options	3	CS 1301 or CS 1315	c
Core C - Humanities	6	Any HUM	
Core D - Science, Math, & Technology	4	PHYS 2211	a
	4	Lab Science	a
	4	MATH 1502	
Core E - Social Sciences	3	HIST 2111 or HIST 2112 or INTA 1200 or POL 1101 or PUBP 3000	
	3	PSYC 1101	
	6	Any SS	
Core F - Courses Related to Major	4	Lab Science	a
	1	CS 1100	
	3	CS 1331	c
	3	CS 1332	c
	3	CS 2050 or CS 2051	c
	4	MATH 2605	
Major Requirements	3	CS 2340	c
	3	CS 4001 or CS 4002	c
	3	CS 4980 or CS 4911	c
Concentration	4	CS 2110	c
	3	CS 3451	c
	3	CS 3510 or CS 3511	c
	3	CS 3600	c
	3	CS 3240 or CS 4510	c
	3	CS 3630 or CS 3790 or PSYC 3040	c
	6	CS 4495 or CS 4635 or CS 4641 or CS 4731	c
	6	CS 4455 or CS 4460 or CS 4464 or CS 4475 or CS 4480 or CS 4496 or CS 4590	c
Other Required Courses	3	LCC 3403	
	3	MATH 3012	
	3	MATH 3215 or MATH 3770 or CEE 3770 or ISYE 3770 or (ISYE 2027 and ISYE 2028)	
Free Electives	14	Free Electives	
TOTAL:	126		

Pass-fail only allowed for Free Electives (max six hours), CS 1100, and CS 1171 (if required)

NOTES

a = Two of three lab sciences MUST be a sequence.

c = C-minimum required

BACHELOR OF SCIENCE IN COMPUTER SCIENCE THREAD: MEDIA & PEOPLE

REQUIREMENT	REQ HRS	COURSE(S)	NOTES
Wellness	2	HPS 1040 or APPH 1040 or APPH 1050	
Core A - Essential Skills	3	ENGL 1101	
	3	ENGL 1102	
	4	MATH 1501	
Core B - Institutional Options	3	CS 1301 or CS 1315	c
Core C - Humanities	6	Any HUM	
Core D - Science, Math, & Technology	4	PHYS 2211	a
	4	Lab Science	a
	4	MATH 1502	
Core E - Social Sciences	3	HIST 2111 or HIST 2112 or INTA 1200 or POL 1101 or PUBP 3000	
	3	PSYC 1101	
	6	Any SS	
Core F - Courses Related to Major	4	Lab Science	a
	1	CS 1100	
	3	CS 1331	c
	3	CS 1332	c
	3	CS 2050 or CS 2051	c
	4	MATH 2605	
Major Requirements	3	CS 2340	c
	3	CS 4001 or CS 4002	c
	3	CS 4980 or CS 4911	c
Concentration	4	CS 2110 or CS 2261	c
	3	CS 3451	c
	4	PSYC 2015	c
	6	CS 4455 or CS 4460 or CS 4464 or CS 4475 or CS 4480 or CS 4496 or CS 4590	c, d
	6	CS 3750 or CS 3790 or CS 4660	c
	3	PSYC 2210 or PSYC 2760 or PSYC 3040	c
	3	CS 4460 or CS 4470 or CS 4605 or CS 4625	c, d
Other Required Courses	3	LCC 3403	
	3	MATH 3012	
	3	MATH 3215 or MATH 3770 or CEE 3770 or ISYE 3770 or (ISYE 2027 and ISYE 2028)	
Free Electives	16	Free Electives	
TOTAL:	126		

Pass-fail only allowed for Free Electives (max six hours), CS 1100, and CS 1171 (if required)

NOTES

a = Two of three lab sciences MUST be a sequence.

c = C-minimum required

d = If CS 4460 is successfully completed, one of the Media Technologies is fulfilled, User Support Technology is fulfilled, and an additional 3cr Thread Elective is required. Thread Electives can be chosen from the following courses: CS 3240, 3510, 3750, 3790, 4455, 4464, 4470, 4472, 4475, 4480, 4496, 4550, 4590, 4605, 4625, 4660, 4665, 4670, 4690, 4770, 4793, CX 4236, PSYC 2020, 2210, 2760, 3012, 3040, 4090, 4260.

BACHELOR OF SCIENCE IN COMPUTER SCIENCE THREAD: MEDIA & SYSTEMS AND ARCHITECTURE

REQUIREMENT	REQ HRS	COURSE(S)	NOTES
Wellness	2	HPS 1040 or APPH 1040 or APPH 1050	
Core A - Essential Skills	3	ENGL 1101	
	3	ENGL 1102	
	4	MATH 1501	
Core B - Institutional Options	3	CS 1301 or CS 1315	c
Core C - Humanities	6	Any HUM	
Core D - Science, Math, & Technology	4	PHYS 2211	a
	4	Lab Science	a
	4	MATH 1502	
Core E - Social Sciences	3	HIST 2111 or HIST 2112 or INTA 1200 or POL 1101 or PUBP 3000	
	9	Any SS	
Core F - Courses Related to Major	4	Lab Science	a
	1	CS 1100	
	3	CS 1331	c
	3	CS 1332	c
	3	CS 2050 or CS 2051	c
	4	MATH 2605	
Major Requirements	3	CS 2340	c
	3	CS 4001 or CS 4002	c
	3	CS 4980 or CS 4911	c
Concentration	4	CS 2110	c
	4	CS 2200	c
	3	CS 3210	c
	3	CS 3240	c
	3	CS 3451	c
	3	CS 3510 or CS 3511	c
	6	CS 4455 or CS 4460 or CS 4464 or CS 4475 or CS 4480 or CS 4496 or CS 4590	c
	3	CS 3220 or CS 4290	c
	3	CS 3251 or CS 3300 or CS 4240	c
Other Required Courses	3	LCC 3403	
	3	MATH 3012	
	3	MATH 3215 or MATH 3770 or CEE 3770 or ISYE 3770 or (ISYE 2027 and ISYE 2028)	
Free Electives	13	Free Electives	
TOTAL:	126		

Pass-fail only allowed for Free Electives (max six hours), CS 1100, and CS 1171 (if required)

NOTES

a = Two of three lab sciences MUST be a sequence.
c = C-minimum required

BACHELOR OF SCIENCE IN COMPUTER SCIENCE THREAD: MODELING - SIMULATION & DEVICES

REQUIREMENT	REQ HRS	COURSE(S)	NOTES
Wellness	2	HPS 1040 or APPH 1040 or APPH 1050	
Core A - Essential Skills	3	ENGL 1101	
	3	ENGL 1102	
	4	MATH 1501	
Core B - Institutional Options	3	CS 1301	c
Core C - Humanities	6	Any HUM	
Core D - Science, Math, & Technology	4	PHYS 2211	a
	4	Lab Science	a
	4	MATH 1502	
Core E - Social Sciences	3	HIST 2111 or HIST 2112 or INTA 1200 or POL 1101 or PUBP 3000	
	9	Any SS	
Core F - Courses Related to Major	4	Lab Science	a
	1	CS 1100	
	3	CS 1331	c
	3	CS 1332	c
	3	CS 2050 or CS 2051	c
	4	MATH 2605	
Major Requirements	3	CS 2340	c
	3	CS 4001 or CS 4002	c
	3	CS 4980 or CS 4911	c
Concentration	1	CS 1171	c
	4	CS 2110	c
	4	CS 2200	c
	3	CS 3251	c
	3	CS 3510 or CS 3511	c
	2	ECE 2031	c
	4	MATH 2403	c
	4	CS 3651 or ECE 4185	c
	3	CS 3630 or CS 4261 or CS 4605	c
	6	CS 4641 or CX 4140 or CX 4220 or CX 4230 or CX 4640	c
Other Required Courses	3	LCC 3403	
	3	MATH 3012	
	3	MATH 3215 or MATH 3770 or CEE 3770 or ISYE 3770 or (ISYE 2027 and ISYE 2028)	
Free Electives	11	Free Electives	
TOTAL:	126		

Pass-fail only allowed for Free Electives (max six hours), CS 1100, and CS 1171 (if required)

NOTES

a = Two of three lab sciences MUST be a sequence.
c = C-minimum required

BACHELOR OF SCIENCE IN COMPUTER SCIENCE THREAD: MODELING - SIMULATION & THEORY

REQUIREMENT	REQ HRS	COURSE(S)	NOTES
Wellness	2	HPS 1040 or APPH 1040 or APPH 1050	
Core A - Essential Skills	3	ENGL 1101	
	3	ENGL 1102	
	4	MATH 1501	
Core B - Institutional Options	3	CS 1301	c
Core C - Humanities	6	Any HUM	
Core D - Science, Math, & Technology	4	PHYS 2211	a
	4	Lab Science	a
	4	MATH 1502	
Core E - Social Sciences	3	HIST 2111 or HIST 2112 or INTA 1200 or POL 1101 or PUBP 3000	
	9	Any SS	
Core F - Courses Related to Major	4	Lab Science	a
	1	CS 1100	
	3	CS 1331	c
	3	CS 1332	c
	3	CS 2050 or CS 2051	c
	4	MATH 2605	
Major Requirements	3	CS 2340	c
	3	CS 4001 or CS 4002	c
	3	CS 4980 or CS 4911	c
Concentration	1	CS 1171	c
	4	CS 2110	c
	4	CS 2200	c
	3	CS 3510 or CS 3511	c
	3	CS 4510	c
	3	CS 4540	c
	4	MATH 2403	c
	3	MATH 2406	c
	6	CS 4641 or CX 4140 or CX 4220 or CX 4230 or CX 4640	c
	3	MATH 4022 or MATH 4032 or MATH 4150	c
Other Required Courses	3	LCC 3403	
	3	MATH 3012	
	3	MATH 3215 or MATH 3770 or CEE 3770 or ISYE 3770 or (ISYE 2027 and ISYE 2028)	
Free Electives	11	Free Electives	
TOTAL:	126		

Pass-fail only allowed for Free Electives (max six hours), CS 1100, and CS 1171 (if required)

NOTES

a = Two of three lab sciences MUST be a sequence.

c = C-minimum required

BACHELOR OF SCIENCE IN COMPUTER SCIENCE THREAD: MODELING - SIMULATION & INFORMATION INTERNETWORKS

REQUIREMENT	REQ HRS	COURSE(S)	NOTES
Wellness	2	HPS 1040 or APPH 1040 or APPH 1050	
Core A - Essential Skills	3	ENGL 1101	
	3	ENGL 1102	
	4	MATH 1501	
Core B - Institutional Options	3	CS 1301	c
Core C - Humanities	6	Any HUM	
Core D - Science, Math, & Technology	4	PHYS 2211	a
	4	Lab Science	a
	4	MATH 1502	
Core E - Social Sciences	3	HIST 2111 or HIST 2112 or INTA 1200 or POL 1101 or PUBP 3000	
	9	Any SS	
Core F - Courses Related to Major	4	Lab Science	a
	1	CS 1100	
	3	CS 1331	c
	3	CS 1332	c
	3	CS 2050 or CS 2051	c
	4	MATH 2605	
Major Requirements	3	CS 2340	c
	3	CS 4001 or CS 4002	c
	3	CS 4980 or CS 4911	c
Concentration	1	CS 1171	c
	4	CS 2110	c
	4	CS 2200	c
	3	CS 3510 or CS 3511	c
	4	MATH 2403	c
	6	CS 3251 or CS 4235 or CS 4400	c
	3	CS 4237 or CS 4251 or CS 4255 or CS 4261 or CS 4270 or CS 4365 or CS 4420 or CS 4440 or CS 4460	c
	6	CS 4641 or CX 4140 or CX 4220 or CX 4230 or CX 4640	c
Other Required Courses	3	LCC 3403	
	3	MATH 3012	
	3	MATH 3215 or MATH 3770 or CEE 3770 or ISYE 3770 or (ISYE 2027 and ISYE 2028)	
Free Electives	14	Free Electives	
TOTAL:	126		

Pass-fail only allowed for Free Electives (max six hours), CS 1100, and CS 1171 (if required)

NOTES

a = Two of three lab sciences MUST be a sequence.
c = C-minimum required

BACHELOR OF SCIENCE IN COMPUTER SCIENCE THREAD: MODELING - SIMULATION & INTELLIGENCE

REQUIREMENT	REQ HRS	COURSE(S)	NOTES
Wellness	2	HPS 1040 or APPH 1040 or APPH 1050	
Core A - Essential Skills	3	ENGL 1101	
	3	ENGL 1102	
	4	MATH 1501	
Core B - Institutional Options	3	CS 1301	c
Core C - Humanities	6	Any HUM	
Core D - Science, Math, & Technology	4	PHYS 2211	a
	4	Lab Science	a
	4	MATH 1502	
Core E - Social Sciences	3	HIST 2111 or HIST 2112 or INTA 1200 or POL 1101 or PUBP 3000	
	3	PSYC 1101	
	6	Any SS	
Core F - Courses Related to Major	4	Lab Science	a
	1	CS 1100	
	3	CS 1331	c
	3	CS 1332	c
	3	CS 2050 or CS 2051	c
	4	MATH 2605	
Major Requirements	3	CS 2340	c
	3	CS 4001 or CS 4002	c
	3	CS 4980 or CS 4911	c
Concentration	1	CS 1171	c
	4	CS 2110	c
	4	CS 2200	c
	3	CS 3510 or CS 3511	c
	3	CS 3600	c
	4	MATH 2403	c
	3	CS 3240 or CS 4510	c
	3	CS 3630 or CS 3790 or PSYC 3040	c
	6	CS 4495 or CS 4635 or CS 4641 or CS 4731	c, d
	6	CS 4641 or CX 4140 or CX 4220 or CX 4230 or CX 4640	c, d
Other Required Courses	3	LCC 3403	
	3	MATH 3012	
	3	MATH 3215 or MATH 3770 or CEE 3770 or ISYE 3770 or (ISYE 2027 and ISYE 2028)	
Free Electives	8	Free Electives	d
TOTAL:	126		

Pass-fail only allowed for Free Electives (max six hours), CS 1100, and CS 1171 (if required)

NOTES

a = Two of three lab sciences MUST be a sequence.

c = C-minimum required

d = If CS 4641 is successfully completed, it counts towards both requirements, and an additional 3cr Free Elective is required.

BACHELOR OF SCIENCE IN COMPUTER SCIENCE THREAD: MODELING - SIMULATION & MEDIA

REQUIREMENT	REQ HRS	COURSE(S)	NOTES
Wellness	2	HPS 1040 or APPH 1040 or APPH 1050	
Core A - Essential Skills	3	ENGL 1101	
	3	ENGL 1102	
	4	MATH 1501	
Core B - Institutional Options	3	CS 1301	c
Core C - Humanities	6	Any HUM	
Core D - Science, Math, & Technology	4	PHYS 2211	a
	4	Lab Science	a
	4	MATH 1502	
Core E - Social Sciences	3	HIST 2111 or HIST 2112 or INTA 1200 or POL 1101 or PUBP 3000	
	9	Any SS	
Core F - Courses Related to Major	4	Lab Science	a
	1	CS 1100	
	3	CS 1331	c
	3	CS 1332	c
	3	CS 2050 or CS 2051	c
	4	MATH 2605	
Major Requirements	3	CS 2340	c
	3	CS 4001 or CS 4002	c
	3	CS 4980 or CS 4911	c
Concentration	1	CS 1171	c
	4	CS 2110	c
	4	CS 2200	c
	3	CS 3451	c
	3	CS 3510 or CS 3511	c
	4	MATH 2403	c
	6	CS 4455 or CS 4460 or CS 4464 or CS 4475 or CS 4480 or CS 4496 or CS 4590	c
	6	CS 4641 or CX 4140 or CX 4220 or CX 4230 or CX 4640	c
Other Required Courses	3	LCC 3403	
	3	MATH 3012	
	3	MATH 3215 or MATH 3770 or CEE 3770 or ISYE 3770 or (ISYE 2027 and ISYE 2028)	
Free Electives	14	Free Electives	
TOTAL:	126		

Pass-fail only allowed for Free Electives (max six hours), CS 1100, and CS 1171 (if required)

NOTES

a = Two of three lab sciences MUST be a sequence.

c = C-minimum required

BACHELOR OF SCIENCE IN COMPUTER SCIENCE THREAD: MODELING - SIMULATION & PEOPLE

REQUIREMENT	REQ HRS	COURSE(S)	NOTES
Wellness	2	HPS 1040 or APPH 1040 or APPH 1050	
Core A - Essential Skills	3	ENGL 1101	
	3	ENGL 1102	
	4	MATH 1501	
Core B - Institutional Options	3	CS 1301	c
Core C - Humanities	6	Any HUM	
Core D - Science, Math, & Technology	4	PHYS 2211	a
	4	Lab Science	a
	4	MATH 1502	
Core E - Social Sciences	3	HIST 2111 or HIST 2112 or INTA 1200 or POL 1101 or PUBP 3000	
	3	PSYC 1101	
	6	Any SS	
Core F - Courses Related to Major	4	Lab Science	a
	1	CS 1100	
	3	CS 1331	c
	3	CS 1332	c
	3	CS 2050 or CS 2051	c
	4	MATH 2605	
Major Requirements	3	CS 2340	c
	3	CS 4001 or CS 4002	c
	3	CS 4980 or CS 4911	c
Concentration	1	CS 1171	c
	4	CS 2110	c
	4	CS 2200	c
	3	CS 3510 or CS 3511	c
	4	MATH 2403	c
	4	PSYC 2015	c
	6	CS 4641 or CX 4140 or CX 4220 or CX 4230 or CX 4640	c
	6	CS 3750 or CS 3790 or CS 4660	c
	3	PSYC 2210 or PSYC 2760 or PSYC 3040	c
	3	CS 4460 or CS 4470 or CS 4605 or CS 4625	c
Other Required Courses	3	LCC 3403	
	3	MATH 3012	
	3	MATH 3215 or MATH 3770 or CEE 3770 or ISYE 3770 or (ISYE 2027 and ISYE 2028)	
Free Electives	7	Free Electives	
TOTAL:	126		

Pass-fail only allowed for Free Electives (max six hours), CS 1100, and CS 1171 (if required)

NOTES

a = Two of three lab sciences MUST be a sequence.

c = C-minimum required

BACHELOR OF SCIENCE IN COMPUTER SCIENCE THREAD: MODELING - SIMULATION & SYSTEMS AND ARCHITECTURE

REQUIREMENT	REQ HRS	COURSE(S)	NOTES
Wellness	2	HPS 1040 or APPH 1040 or APPH 1050	
Core A - Essential Skills	3	ENGL 1101	
	3	ENGL 1102	
	4	MATH 1501	
Core B - Institutional Options	3	CS 1301	c
Core C - Humanities	6	Any HUM	
Core D - Science, Math, & Technology	4	PHYS 2211	a
	4	Lab Science	a
	4	MATH 1502	
Core E - Social Sciences	3	HIST 2111 or HIST 2112 or INTA 1200 or POL 1101 or PUBP 3000	
	9	Any SS	
Core F - Courses Related to Major	4	Lab Science	a
	1	CS 1100	
	3	CS 1331	c
	3	CS 1332	c
	3	CS 2050 or CS 2051	c
	4	MATH 2605	
Major Requirements	3	CS 2340	c
	3	CS 4001 or CS 4002	c
	3	CS 4980 or CS 4911	c
Concentration	1	CS 1171	c
	4	CS 2110	c
	4	CS 2200	c
	3	CS 3210	c
	3	CS 3240	c
	3	CS 3510 or CS 3511	c
	4	MATH 2403	c
	6	CS 4641 or CX 4140 or CX 4220 or CX 4230 or CX 4640	c
	3	CS 3220 or CS 4290	c
	3	CS 3251 or CS 3300 or CS 4240	c
Other Required Courses	3	LCC 3403	
	3	MATH 3012	
	3	MATH 3215 or MATH 3770 or CEE 3770 or ISYE 3770 or (ISYE 2027 and ISYE 2028)	
Free Electives	11	Free Electives	
TOTAL:	126		

Pass-fail only allowed for Free Electives (max six hours), CS 1100, and CS 1171 (if required)

NOTES

a = Two of three lab sciences MUST be a sequence.
c = C-minimum required

BACHELOR OF SCIENCE IN COMPUTER SCIENCE THREAD: MODELING - SIMULATION & PEOPLE

REQUIREMENT	REQ HRS	COURSE(S)	NOTES
Wellness	2	HPS 1040 or APPH 1040 or APPH 1050	
Core A - Essential Skills	3	ENGL 1101	
	3	ENGL 1102	
	4	MATH 1501	
Core B - Institutional Options	3	CS 1301	c
Core C - Humanities	6	Any HUM	
Core D - Science, Math, & Technology	4	PHYS 2211	a
	4	Lab Science	a
	4	MATH 1502	
Core E - Social Sciences	3	HIST 2111 or HIST 2112 or INTA 1200 or POL 1101 or PUBP 3000	
	3	PSYC 1101	
	6	Any SS	
Core F - Courses Related to Major	4	Lab Science	a
	1	CS 1100	
	3	CS 1331	c
	3	CS 1332	c
	3	CS 2050 or CS 2051	c
	4	MATH 2605	
Major Requirements	3	CS 2340	c
	3	CS 4001 or CS 4002	c
	3	CS 4980 or CS 4911	c
Concentration	1	CS 1171	c
	4	CS 2110	c
	4	CS 2200	c
	3	CS 3510 or CS 3511	c
	4	MATH 2403	c
	4	PSYC 2015	c
	6	CS 4641 or CX 4140 or CX 4220 or CX 4230 or CX 4640	c
	6	CS 3750 or CS 3790 or CS 4660	c
	3	PSYC 2210 or PSYC 2760 or PSYC 3040	c
	3	CS 4460 or CS 4470 or CS 4605 or CS 4625	c
Other Required Courses	3	LCC 3403	
	3	MATH 3012	
	3	MATH 3215 or MATH 3770 or CEE 3770 or ISYE 3770 or (ISYE 2027 and ISYE 2028)	
Free Electives	7	Free Electives	
TOTAL:	126		

Pass-fail only allowed for Free Electives (max six hours), CS 1100, and CS 1171 (if required)

NOTES

a = Two of three lab sciences MUST be a sequence.
c = C-minimum required

BACHELOR OF SCIENCE IN COMPUTER SCIENCE THREAD: DEVICES & PEOPLE

REQUIREMENT	REQ HRS	COURSE(S)	NOTES
Wellness	2	HPS 1040 or APPH 1040 or APPH 1050	
Core A - Essential Skills	3	ENGL 1101	
	3	ENGL 1102	
	4	MATH 1501	
Core B - Institutional Options	3	CS 1301	c
Core C - Humanities	6	Any HUM	
Core D - Science, Math, & Technology	4	PHYS 2211	a
	4	Lab Science	a
	4	MATH 1502	
Core E - Social Sciences	3	HIST 2111 or HIST 2112 or INTA 1200 or POL 1101 or PUBP 3000	
	3	PSYC 1101	
	6	Any SS	
Core F - Courses Related to Major	4	Lab Science	a
	1	CS 1100	
	3	CS 1331	c
	3	CS 1332	c
	3	CS 2050 or CS 2051	c
	4	MATH 2605	
Major Requirements	3	CS 2340	c
	3	CS 4001 or CS 4002	c
	3	CS 4980 or CS 4911	c
Concentration	4	CS 2110	c
	4	CS 2200	c
	3	CS 3251	c
	2	ECE 2031	c
	4	PSYC 2015	c
	4	CS 3651 or ECE 4185	c
	3	CS 3630 or CS 4261 or CS 4605	c, d
	3	CS 3240 or CS 3510 or CS 3511	c
	3	PSYC 2210 or PSYC 2760 or PSYC 3040	c
	6	CS 3750 or CS 3790 or CS 4660	c
	3	CS 4460 or CS 4470 or CS 4605 or CS 4625	c, d
Other Required Courses	3	LCC 3403	
	3	MATH 3012	
	3	MATH 3215 or MATH 3770 or CEE 3770 or ISYE 3770 or (ISYE 2027 and ISYE 2028)	
Free Electives	6	Free Electives	d
TOTAL:	126		

Pass-fail only allowed for Free Electives (max six hours), CS 1100, and CS 1171 (if required)

NOTES

a = Two of three lab sciences MUST be a sequence.
c = C-minimum required

d = If CS 4605 is successfully completed, both requirements are fulfilled, and three credits are added to Free Electives.

BACHELOR OF SCIENCE IN COMPUTER SCIENCE THREAD: THEORY & PEOPLE

REQUIREMENT	REQ HRS	COURSE(S)	NOTES
Wellness	2	HPS 1040 or APPH 1040 or APPH 1050	
Core A - Essential Skills	3	ENGL 1101	
	3	ENGL 1102	
	4	MATH 1501	
Core B - Institutional Options	3	CS 1301	c
Core C - Humanities	6	Any HUM	
Core D - Science, Math, & Technology	4	PHYS 2211	a
	4	Lab Science	a
	4	MATH 1502	
Core E - Social Sciences	3	HIST 2111 or HIST 2112 or INTA 1200 or POL 1101 or PUBP 3000	
	3	PSYC 1101	
	6	Any SS	
Core F - Courses Related to Major	4	Lab Science	a
	1	CS 1100	
	3	CS 1331	c
	3	CS 1332	c
	3	CS 2050 or CS 2051	c
	4	MATH 2605	
Major Requirements	3	CS 2340	c
	3	CS 4001 or CS 4002	c
	3	CS 4980 or CS 4911	c
Concentration	4	CS 2110	c
	3	CS 3510 or CS 3511	c
	3	CS 4510	c
	3	CS 4540	c
	3	MATH 2406	c
	4	PSYC 2015	c
	6	CS 3750 or CS 3790 or CS 4660	c
	3	PSYC 2210 or PSYC 2760 or PSYC 3040	c
	3	MATH 4022 or MATH 4032 or MATH 4150	c
	3	CS 4460 or CS 4470 or CS 4605 or CS 4625	c
Other Required Courses	3	LCC 3403	
	3	MATH 3012	
	3	MATH 3215 or MATH 3770 or CEE 3770 or ISYE 3770 or (ISYE 2027 and ISYE 2028)	
Free Electives	10	Free Electives	
TOTAL:	126		

Pass-fail only allowed for Free Electives (max six hours), CS 1100, and CS 1171 (if required)

NOTES

a = Two of three lab sciences MUST be a sequence.

c = C-minimum required

BACHELOR OF SCIENCE IN COMPUTER SCIENCE THREAD: INFORMATION INTERNETWORKS & PEOPLE

REQUIREMENT	REQ HRS	COURSE(S)	NOTES
Wellness	2	HPS 1040 or APPH 1040 or APPH 1050	
Core A - Essential Skills	3	ENGL 1101	
	3	ENGL 1102	
	4	MATH 1501	
Core B - Institutional Options	3	CS 1301	c
Core C - Humanities	6	Any HUM	
Core D - Science, Math, & Technology	4	PHYS 2211	a
	4	Lab Science	a
	4	MATH 1502	
Core E - Social Sciences	3	HIST 2111 or HIST 2112 or INTA 1200 or POL 1101 or PUBP 3000	
	3	PSYC 1101	
	6	Any SS	
Core F - Courses Related to Major	4	Lab Science	a
	1	CS 1100	
	3	CS 1331	c
	3	CS 1332	c
	3	CS 2050 or CS 2051	c
	4	MATH 2605	
Major Requirements	3	CS 2340	c
	3	CS 4001 or CS 4002	c
	3	CS 4980 or CS 4911	c
Concentration	4	CS 2110	c
	4	CS 2200	c
	3	CS 3510 or CS 3511	c
	4	PSYC 2015	c
	6	CS 3251 or CS 4235 or CS 4400	c, d
	3	CS 4237 or CS 4251 or CS 4255 or CS 4261 or CS 4270 or CS 4365 or CS 4420 or CS 4440 or CS 4460	c
	6	CS 3750 or CS 3790 or CS 4660	c
	3	PSYC 2210 or PSYC 2760 or PSYC 3040	c
	3	CS 4460 or CS 4470 or CS 4605 or CS 4625	c, d
Other Required Courses	3	LCC 3403	
	3	MATH 3012	
	3	MATH 3215 or MATH 3770 or CEE 3770 or ISYE 3770 or (ISYE 2027 and ISYE 2028)	
Free Electives	9	Free Electives	d
TOTAL:	126		

Pass-fail only allowed for Free Electives (max six hours), CS 1100, and CS 1171 (if required)

NOTES

a = Two of three lab sciences MUST be a sequence.
c = C-minimum required

d = If CS 4460 is successfully completed, both requirements are fulfilled, and an additional 3cr of Free Electives are required.

BACHELOR OF SCIENCE IN COMPUTER SCIENCE THREAD: INTELLIGENCE & PEOPLE

REQUIREMENT	REQ HRS	COURSE(S)	NOTES
Wellness	2	HPS 1040 or APPH 1040 or APPH 1050	
Core A - Essential Skills	3	ENGL 1101	
	3	ENGL 1102	
	4	MATH 1501	
Core B - Institutional Options	3	CS 1301	c
Core C - Humanities	6	Any HUM	
Core D - Science, Math, & Technology	4	PHYS 2211	a
	4	Lab Science	a
	4	MATH 1502	
Core E - Social Sciences	3	HIST 2111 or HIST 2112 or INTA 1200 or POL 1101 or PUBP 3000	
	3	PSYC 1101	
	6	Any SS	
Core F - Courses Related to Major	4	Lab Science	a
	1	CS 1100	
	3	CS 1331	c
	3	CS 1332	c
	3	CS 2050 or CS 2051	c
	4	MATH 2605	
Major Requirements	3	CS 2340	c
	3	CS 4001 or CS 4002	c
	3	CS 4980 or CS 4911	c
Concentration	4	CS 2110	c
	3	CS 3510 or CS 3511	c
	3	CS 3600	c
	4	PSYC 2015	c
	3	CS 3240 or CS 4510	c
	3	CS 3630 or CS 3790 or PSYC 3040	c, d, e
	6	CS 4495 or CS 4635 or CS 4641 or CS 4731	c
	6	CS 3750 or CS 3790 or CS 4660	c, d
	3	PSYC 2210 or PSYC 2760 or PSYC 3040	c, e
	3	CS 4460 or CS 4470 or CS 4605 or CS 4625	c
Other Required Courses	3	LCC 3403	
	3	MATH 3012	
	3	MATH 3215 or MATH 3770 or CEE 3770 or ISYE 3770 or (ISYE 2027 and ISYE 2028)	
Free Electives	7	Free Electives	
TOTAL:	126		

Pass-fail only allowed for Free Electives (max six hours), CS 1100, and CS 1171 (if required)

NOTES

a = Two of three lab sciences MUST be a sequence.
c = C-minimum required
d = If CS 3790 is successfully completed, Embodied Intelligence is completed, one course from

Human-Centered Technology is considered fulfilled, and three credits are added to Free Electives.

e = If PSYC 3040 is successfully completed, both requirements are fulfilled, and three credits are added to Free Electives.

BACHELOR OF SCIENCE IN COMPUTER SCIENCE THREAD: MEDIA & PEOPLE

REQUIREMENT	REQ HRS	COURSE(S)	NOTES
Wellness	2	HPS 1040 or APPH 1040 or APPH 1050	
Core A - Essential Skills	3	ENGL 1101	
	3	ENGL 1102	
	4	MATH 1501	
Core B - Institutional Options	3	CS 1301 or CS 1315	c
Core C - Humanities	6	Any HUM	
Core D - Science, Math, & Technology	4	PHYS 2211	a
	4	Lab Science	a
	4	MATH 1502	
Core E - Social Sciences	3	HIST 2111 or HIST 2112 or INTA 1200 or POL 1101 or PUBP 3000	
	3	PSYC 1101	
	6	Any SS	
Core F - Courses Related to Major	4	Lab Science	a
	1	CS 1100	
	3	CS 1331	c
	3	CS 1332	c
	3	CS 2050 or CS 2051	c
	4	MATH 2605	
Major Requirements	3	CS 2340	c
	3	CS 4001 or CS 4002	c
	3	CS 4980 or CS 4911	c
Concentration	4	CS 2110 or CS 2261	c
	3	CS 3451	c
	4	PSYC 2015	c
	6	CS 4455 or CS 4460 or CS 4464 or CS 4475 or CS 4480 or CS 4496 or CS 4590	c, d
	6	CS 3750 or CS 3790 or CS 4660	c
	3	PSYC 2210 or PSYC 2760 or PSYC 3040	c
	3	CS 4460 or CS 4470 or CS 4605 or CS 4625	c, d
Other Required Courses	3	LCC 3403	
	3	MATH 3012	
	3	MATH 3215 or MATH 3770 or CEE 3770 or ISYE 3770 or (ISYE 2027 and ISYE 2028)	
Free Electives	16	Free Electives	
TOTAL:	126		

Pass-fail only allowed for Free Electives (max six hours), CS 1100, and CS 1171 (if required)

NOTES

a = Two of three lab sciences MUST be a sequence.

c = C-minimum required

d = If CS 4460 is successfully completed, one of the Media Technologies is fulfilled, User Support Technology is fulfilled, and an additional 3cr Thread Elective is required. Thread Electives can be chosen from the following courses: CS 3240, 3510, 3750, 3790, 4455, 4464, 4470, 4472, 4475, 4480, 4496, 4550, 4590, 4605, 4625, 4660, 4665, 4670, 4690, 4770, 4793, CX 4236, PSYC 2020, 2210, 2760, 3012, 3040, 4090, 4260.

BACHELOR OF SCIENCE IN COMPUTER SCIENCE THREAD: PEOPLE & SYSTEMS AND ARCHITECTURE

REQUIREMENT	REQ HRS	COURSE(S)	NOTES
Wellness	2	HPS 1040 or APPH 1040 or APPH 1050	
Core A - Essential Skills	3	ENGL 1101	
	3	ENGL 1102	
	4	MATH 1501	
Core B - Institutional Options	3	CS 1301	c
Core C - Humanities	6	Any HUM	
Core D - Science, Math, & Technology	4	PHYS 2211	a
	4	Lab Science	a
	4	MATH 1502	
Core E - Social Sciences	3	HIST 2111 or HIST 2112 or INTA 1200 or POL 1101 or PUBP 3000	
	3	PSYC 1101	
	6	Any SS	
Core F - Courses Related to Major	4	Lab Science	a
	1	CS 1100	
	3	CS 1331	c
	3	CS 1332	c
	3	CS 2050 or CS 2051	c
	4	MATH 2605	
Major Requirements	3	CS 2340	c
	3	CS 4001 or CS 4002	c
	3	CS 4980 or CS 4911	c
Concentration	4	CS 2110	c
	4	CS 2200	c
	3	CS 3210	c
	3	CS 3240	c
	3	CS 3510 or CS 3511	c
	4	PSYC 2015	c
	6	CS 3750 or CS 3790 or CS 4660	c
	3	PSYC 2210 or PSYC 2760 or PSYC 3040	c
	3	CS 3220 or CS 4290	c
	3	CS 3251 or CS 3300 or CS 4240	c
	3	CS 4460 or CS 4470 or CS 4605 or CS 4625	c
Other Required Courses	3	LCC 3403	
	3	MATH 3012	
	3	MATH 3215 or MATH 3770 or CEE 3770 or ISYE 3770 or (ISYE 2027 and ISYE 2028)	
Free Electives	6	Free Electives	
TOTAL:	126		

Pass-fail only allowed for Free Electives (max six hours), CS 1100, and CS 1171 (if required)

NOTES

a = Two of three lab sciences MUST be a sequence.
c = C-minimum required

BACHELOR OF SCIENCE IN COMPUTER SCIENCE THREAD: MODELING - SIMULATION & SYSTEMS AND ARCHITECTURE

REQUIREMENT	REQ HRS	COURSE(S)	NOTES
Wellness	2	HPS 1040 or APPH 1040 or APPH 1050	
Core A - Essential Skills	3	ENGL 1101	
	3	ENGL 1102	
	4	MATH 1501	
Core B - Institutional Options	3	CS 1301	c
Core C - Humanities	6	Any HUM	
Core D - Science, Math, & Technology	4	PHYS 2211	a
	4	Lab Science	a
	4	MATH 1502	
Core E - Social Sciences	3	HIST 2111 or HIST 2112 or INTA 1200 or POL 1101 or PUBP 3000	
	9	Any SS	
Core F - Courses Related to Major	4	Lab Science	a
	1	CS 1100	
	3	CS 1331	c
	3	CS 1332	c
	3	CS 2050 or CS 2051	c
	4	MATH 2605	
Major Requirements	3	CS 2340	c
	3	CS 4001 or CS 4002	c
	3	CS 4980 or CS 4911	c
Concentration	1	CS 1171	c
	4	CS 2110	c
	4	CS 2200	c
	3	CS 3210	c
	3	CS 3240	c
	3	CS 3510 or CS 3511	c
	4	MATH 2403	c
	6	CS 4641 or CX 4140 or CX 4220 or CX 4230 or CX 4640	c
	3	CS 3220 or CS 4290	c
	3	CS 3251 or CS 3300 or CS 4240	c
Other Required Courses	3	LCC 3403	
	3	MATH 3012	
	3	MATH 3215 or MATH 3770 or CEE 3770 or ISYE 3770 or (ISYE 2027 and ISYE 2028)	
Free Electives	11	Free Electives	
TOTAL:	126		

Pass-fail only allowed for Free Electives (max six hours), CS 1100, and CS 1171 (if required)

NOTES

a = Two of three lab sciences MUST be a sequence.
c = C-minimum required

BACHELOR OF SCIENCE IN COMPUTER SCIENCE THREAD: DEVICES & SYSTEMS AND ARCHITECTURE

REQUIREMENT	REQ HRS	COURSE(S)	NOTES
Wellness	2	HPS 1040 or APPH 1040 or APPH 1050	
Core A - Essential Skills	3	ENGL 1101	
	3	ENGL 1102	
	4	MATH 1501	
Core B - Institutional Options	3	CS 1301	c
Core C - Humanities	6	Any HUM	
Core D - Science, Math, & Technology	4	PHYS 2211	a
	4	Lab Science	a
	4	MATH 1502	
Core E - Social Sciences	3	HIST 2111 or HIST 2112 or INTA 1200 or POL 1101 or PUBP 3000	
	9	Any SS	
Core F - Courses Related to Major	4	Lab Science	a
	1	CS 1100	
	3	CS 1331	c
	3	CS 1332	c
	3	CS 2050 or CS 2051	c
	4	MATH 2605	
Major Requirements	3	CS 2340	c
	3	CS 4001 or CS 4002	c
	3	CS 4980 or CS 4911	c
Concentration	4	CS 2110	c
	4	CS 2200	c
	3	CS 3210	c
	3	CS 3240	c
	3	CS 3251	c
	3	CS 3510 or CS 3511	c
	2	ECE 2031	c
	4	CS 3651 or ECE 4185	c
	3	CS 3630 or CS 4261 or CS 4605	c
	3	CS 3220 or CS 4290	c
Other Required Courses	3	LCC 3403	
	3	MATH 3012	
	3	MATH 3215 or MATH 3770 or CEE 3770 or ISYE 3770 or (ISYE 2027 and ISYE 2028)	
Free Electives	13	Free Electives	
TOTAL:	126		

Pass-fail only allowed for Free Electives (max six hours), CS 1100, and CS 1171 (if required)

NOTES

a = Two of three lab sciences MUST be a sequence.
c = C-minimum required

BACHELOR OF SCIENCE IN COMPUTER SCIENCE THREAD: THEORY & SYSTEMS AND ARCHITECTURE

REQUIREMENT	REQ HRS	COURSE(S)	NOTES
Wellness	2	HPS 1040 or APPH 1040 or APPH 1050	
Core A - Essential Skills	3	ENGL 1101	
	3	ENGL 1102	
	4	MATH 1501	
Core B - Institutional Options	3	CS 1301	c
Core C - Humanities	6	Any HUM	
Core D - Science, Math, & Technology	4	PHYS 2211	a
	4	Lab Science	a
	4	MATH 1502	
Core E - Social Sciences	3	HIST 2111 or HIST 2112 or INTA 1200 or POL 1101 or PUBP 3000	
	9	Any SS	
Core F - Courses Related to Major	4	Lab Science	a
	1	CS 1100	
	3	CS 1331	c
	3	CS 1332	c
	3	CS 2050 or CS 2051	c
	4	MATH 2605	
Major Requirements	3	CS 2340	c
	3	CS 4001 or CS 4002	c
	3	CS 4980 or CS 4911	c
Concentration	4	CS 2110	c
	4	CS 2200	c
	3	CS 3210	c
	3	CS 3240	c
	3	CS 3510 or CS 3511	c
	3	CS 4510	c
	3	CS 4540	c
	3	MATH 2406	c
	3	CS 3220 or CS 4290	c
	3	CS 3251 or CS 3300 or CS 4240	c
	3	MATH 4022 or MATH 4032 or MATH 4150	c
Other Required Courses	3	LCC 3403	
	3	MATH 3012	
	3	MATH 3215 or MATH 3770 or CEE 3770 or ISYE 3770 or (ISYE 2027 and ISYE 2028)	
Free Electives	10	Free Electives	
TOTAL:	126		

Pass-fail only allowed for Free Electives (max six hours), CS 1100, and CS 1171 (if required)

NOTES

a = Two of three lab sciences MUST be a sequence.

c = C-minimum required

BACHELOR OF SCIENCE IN COMPUTER SCIENCE THREAD: INFORMATION INTERNETWORKS & SYSTEMS AND ARCHITECTURE

REQUIREMENT	REQ HRS	COURSE(S)	NOTES
Wellness	2	HPS 1040 or APPH 1040 or APPH 1050	
Core A - Essential Skills	3	ENGL 1101	
	3	ENGL 1102	
	4	MATH 1501	
Core B - Institutional Options	3	CS 1301	c
Core C - Humanities	6	Any HUM	
Core D - Science, Math, & Technology	4	PHYS 2211	a
	4	Lab Science	a
	4	MATH 1502	
Core E - Social Sciences	3	HIST 2111 or HIST 2112 or INTA 1200 or POL 1101 or PUBP 3000	
	9	Any SS	
Core F - Courses Related to Major	4	Lab Science	a
	1	CS 1100	
	3	CS 1331	c
	3	CS 1332	c
	3	CS 2050 or CS 2051	c
	4	MATH 2605	
Major Requirements	3	CS 2340	c
	3	CS 4001 or CS 4002	c
	3	CS 4980 or CS 4911	c
Concentration	4	CS 2110	c
	4	CS 2200	c
	3	CS 3210	c
	3	CS 3240	c
	3	CS 3510 or CS 3511	c
	6	CS 3251 or CS 4235 or CS 4400	c, d
	3	CS 4237 or CS 4251 or CS 4255 or CS 4261 or CS 4270 or CS 4365 or CS 4420 or CS 4440 or CS 4460	c
	3	CS 3220 or CS 4290	c
	3	CS 3251 or CS 3300 or CS 4240	c, d
Other Required Courses	3	LCC 3403	
	3	MATH 3012	
	3	MATH 3215 or MATH 3770 or CEE 3770 or ISYE 3770 or (ISYE 2027 and ISYE 2028)	
Free Electives	13	Free Electives	
TOTAL:	126		

Pass-fail only allowed for Free Electives (max six hours), CS 1100, and CS 1171 (if required)

NOTES

a = Two of three lab sciences MUST be a sequence.
c = C-minimum required
d = If CS 3251 is successfully completed, both requirements are fulfilled, and an additional 3cr

Thread Elective is required. Thread Electives must be chosen from the following list: CS 3220, CS 3300, CS 4210, CS 4220, CS 4233, CS 4235, CS 4237, CS 4240, CS 4251, CS 4255, CS 4261, CS 4270, CS 4290, CS 4365, CS 4392, CS 4400, CS 4420, CS 4440, CS 4460, CS 4560, CS 4675, CS 4685, CS 6241, or CS 6246

BACHELOR OF SCIENCE IN COMPUTER SCIENCE THREAD: INTELLIGENCE & SYSTEMS AND ARCHITECTURE

REQUIREMENT	REQ HRS	COURSE(S)	NOTES
Wellness	2	HPS 1040 or APPH 1040 or APPH 1050	
Core A - Essential Skills	3	ENGL 1101	
	3	ENGL 1102	
	4	MATH 1501	
Core B - Institutional Options	3	CS 1301	c
Core C - Humanities	6	Any HUM	
Core D - Science, Math, & Technology	4	PHYS 2211	a
	4	Lab Science	a
	4	MATH 1502	
Core E - Social Sciences	3	HIST 2111 or HIST 2112 or INTA 1200 or POL 1101 or PUBP 3000	
	3	PSYC 1101	
	6	Any SS	
Core F - Courses Related to Major	4	Lab Science	a
	1	CS 1100	
	3	CS 1331	c
	3	CS 1332	c
	3	CS 2050 or CS 2051	c
	4	MATH 2605	
Major Requirements	3	CS 2340	c
	3	CS 4001 or CS 4002	c
	3	CS 4980 or CS 4911	c
Concentration	4	CS 2110	c
	4	CS 2200	c
	3	CS 3210	c
	3	CS 3240	c
	3	CS 3510 or CS 3511	c
	3	CS 3600	c
	3	CS 3630 or CS 3790 or PSYC 3040	c
	6	CS 4495 or CS 4635 or CS 4641 or CS 4731	c
	3	CS 3220 or CS 4290	c
	3	CS 3251 or CS 3300 or CS 4240	c
Other Required Courses	3	LCC 3403	
	3	MATH 3012	
	3	MATH 3215 or MATH 3770 or CEE 3770 or ISYE 3770 or (ISYE 2027 and ISYE 2028)	
Free Electives	10	Free Electives	
TOTAL:	126		

Pass-fail only allowed for Free Electives (max six hours), CS 1100, and CS 1171 (if required)

NOTES

a = Two of three lab sciences MUST be a sequence.

c = C-minimum required

BACHELOR OF SCIENCE IN COMPUTER SCIENCE THREAD: MEDIA & SYSTEMS AND ARCHITECTURE

REQUIREMENT	REQ HRS	COURSE(S)	NOTES
Wellness	2	HPS 1040 or APPH 1040 or APPH 1050	
Core A - Essential Skills	3	ENGL 1101	
	3	ENGL 1102	
	4	MATH 1501	
Core B - Institutional Options	3	CS 1301 or CS 1315	c
Core C - Humanities	6	Any HUM	
Core D - Science, Math, & Technology	4	PHYS 2211	a
	4	Lab Science	a
	4	MATH 1502	
Core E - Social Sciences	3	HIST 2111 or HIST 2112 or INTA 1200 or POL 1101 or PUBP 3000	
	9	Any SS	
Core F - Courses Related to Major	4	Lab Science	a
	1	CS 1100	
	3	CS 1331	c
	3	CS 1332	c
	3	CS 2050 or CS 2051	c
	4	MATH 2605	
Major Requirements	3	CS 2340	c
	3	CS 4001 or CS 4002	c
	3	CS 4980 or CS 4911	c
Concentration	4	CS 2110	c
	4	CS 2200	c
	3	CS 3210	c
	3	CS 3240	c
	3	CS 3451	c
	3	CS 3510 or CS 3511	c
	6	CS 4455 or CS 4460 or CS 4464 or CS 4475 or CS 4480 or CS 4496 or CS 4590	c
	3	CS 3220 or CS 4290	c
	3	CS 3251 or CS 3300 or CS 4240	c
Other Required Courses	3	LCC 3403	
	3	MATH 3012	
	3	MATH 3215 or MATH 3770 or CEE 3770 or ISYE 3770 or (ISYE 2027 and ISYE 2028)	
Free Electives	13	Free Electives	
TOTAL:	126		

Pass-fail only allowed for Free Electives (max six hours), CS 1100, and CS 1171 (if required)

NOTES

a = Two of three lab sciences MUST be a sequence.
c = C-minimum required

BACHELOR OF SCIENCE IN COMPUTER SCIENCE THREAD: PEOPLE & SYSTEMS AND ARCHITECTURE

REQUIREMENT	REQ HRS	COURSE(S)	NOTES
Wellness	2	HPS 1040 or APPH 1040 or APPH 1050	
Core A - Essential Skills	3	ENGL 1101	
	3	ENGL 1102	
	4	MATH 1501	
Core B - Institutional Options	3	CS 1301	c
Core C - Humanities	6	Any HUM	
Core D - Science, Math, & Technology	4	PHYS 2211	a
	4	Lab Science	a
	4	MATH 1502	
Core E - Social Sciences	3	HIST 2111 or HIST 2112 or INTA 1200 or POL 1101 or PUBP 3000	
	3	PSYC 1101	
	6	Any SS	
Core F - Courses Related to Major	4	Lab Science	a
	1	CS 1100	
	3	CS 1331	c
	3	CS 1332	c
	3	CS 2050 or CS 2051	c
	4	MATH 2605	
Major Requirements	3	CS 2340	c
	3	CS 4001 or CS 4002	c
	3	CS 4980 or CS 4911	c
Concentration	4	CS 2110	c
	4	CS 2200	c
	3	CS 3210	c
	3	CS 3240	c
	3	CS 3510 or CS 3511	c
	4	PSYC 2015	c
	6	CS 3750 or CS 3790 or CS 4660	c
	3	PSYC 2210 or PSYC 2760 or PSYC 3040	c
	3	CS 3220 or CS 4290	c
	3	CS 3251 or CS 3300 or CS 4240	c
	3	CS 4460 or CS 4470 or CS 4605 or CS 4625	c
Other Required Courses	3	LCC 3403	
	3	MATH 3012	
	3	MATH 3215 or MATH 3770 or CEE 3770 or ISYE 3770 or (ISYE 2027 and ISYE 2028)	
Free Electives	6	Free Electives	
TOTAL:	126		

Pass-fail only allowed for Free Electives (max six hours), CS 1100, and CS 1171 (if required)

NOTES

a = Two of three lab sciences MUST be a sequence.

c = C-minimum required

BACHELOR OF SCIENCE IN COMPUTER SCIENCE THREAD: MODELING - SIMULATION & THEORY

REQUIREMENT	REQ HRS	COURSE(S)	NOTES
Wellness	2	HPS 1040 or APPH 1040 or APPH 1050	
Core A - Essential Skills	3	ENGL 1101	
	3	ENGL 1102	
	4	MATH 1501	
Core B - Institutional Options	3	CS 1301	c
Core C - Humanities	6	Any HUM	
Core D - Science, Math, & Technology	4	PHYS 2211	a
	4	Lab Science	a
	4	MATH 1502	
Core E - Social Sciences	3	HIST 2111 or HIST 2112 or INTA 1200 or POL 1101 or PUBP 3000	
	9	Any SS	
Core F - Courses Related to Major	4	Lab Science	a
	1	CS 1100	
	3	CS 1331	c
	3	CS 1332	c
	3	CS 2050 or CS 2051	c
	4	MATH 2605	
Major Requirements	3	CS 2340	c
	3	CS 4001 or CS 4002	c
	3	CS 4980 or CS 4911	c
Concentration	1	CS 1171	c
	4	CS 2110	c
	4	CS 2200	c
	3	CS 3510 or CS 3511	c
	3	CS 4510	c
	3	CS 4540	c
	4	MATH 2403	c
	3	MATH 2406	c
	6	CS 4641 or CX 4140 or CX 4220 or CX 4230 or CX 4640	c
	3	MATH 4022 or MATH 4032 or MATH 4150	c
Other Required Courses	3	LCC 3403	
	3	MATH 3012	
	3	MATH 3215 or MATH 3770 or CEE 3770 or ISYE 3770 or (ISYE 2027 and ISYE 2028)	
Free Electives	11	Free Electives	
TOTAL:	126		

Pass-fail only allowed for Free Electives (max six hours), CS 1100, and CS 1171 (if required)

NOTES

a = Two of three lab sciences MUST be a sequence.
c = C-minimum required

BACHELOR OF SCIENCE IN COMPUTER SCIENCE THREAD: DEVICES & THEORY

REQUIREMENT	REQ HRS	COURSE(S)	NOTES
Wellness	2	HPS 1040 or APPH 1040 or APPH 1050	
Core A - Essential Skills	3	ENGL 1101	
	3	ENGL 1102	
	4	MATH 1501	
Core B - Institutional Options	3	CS 1301	c
Core C - Humanities	6	Any HUM	
Core D - Science, Math, & Technology	4	PHYS 2211	a
	4	Lab Science	a
	4	MATH 1502	
Core E - Social Sciences	3	HIST 2111 or HIST 2112 or INTA 1200 or POL 1101 or PUBP 3000	
	9	Any SS	
Core F - Courses Related to Major	4	Lab Science	a
	1	CS 1100	
	3	CS 1331	c
	3	CS 1332	c
	3	CS 2050 or CS 2051	c
	4	MATH 2605	
Major Requirements	3	CS 2340	c
	3	CS 4001 or CS 4002	c
	3	CS 4980 or CS 4911	c
Concentration	4	CS 2110	c
	4	CS 2200	c
	3	CS 3251	c
	3	CS 3510 or CS 3511	c
	3	CS 4510	c
	3	CS 4540	c
	2	ECE 2031	c
	3	MATH 2406	c
	4	CS 3651 or ECE 4185	c
	3	CS 3630 or CS 4261 or CS 4605	c
	3	MATH 4022 or MATH 4032 or MATH 4150	c
Other Required Courses	3	LCC 3403	
	3	MATH 3012	
	3	MATH 3215 or MATH 3770 or CEE 3770 or ISYE 3770 or (ISYE 2027 and ISYE 2028)	
Free Electives	10	Free Electives	
TOTAL:	126		

Pass-fail only allowed for Free Electives (max six hours), CS 1100, and CS 1171 (if required)

NOTES

a = Two of three lab sciences MUST be a sequence.

c = C-minimum required

BACHELOR OF SCIENCE IN COMPUTER SCIENCE THREAD: THEORY & INFORMATION INTERNETWORKS

REQUIREMENT	REQ HRS	COURSE(S)	NOTES
Wellness	2	HPS 1040 or APPH 1040 or APPH 1050	
Core A - Essential Skills	3	ENGL 1101	
	3	ENGL 1102	
	4	MATH 1501	
Core B - Institutional Options	3	CS 1301	c
Core C - Humanities	6	Any HUM	
Core D - Science, Math, & Technology	4	PHYS 2211	a
	4	Lab Science	a
	4	MATH 1502	
Core E - Social Sciences	3	HIST 2111 or HIST 2112 or INTA 1200 or POL 1101 or PUBP 3000	
	9	Any SS	
Core F - Courses Related to Major	4	Lab Science	a
	1	CS 1100	
	3	CS 1331	c
	3	CS 1332	c
	3	CS 2050 or CS 2051	c
	4	MATH 2605	
Major Requirements	3	CS 2340	c
	3	CS 4001	c
	3	CS 4980 or CS 4911	c
Concentration	4	CS 2110	c
	4	CS 2200	c
	3	CS 3510 or CS 3511	c
	3	CS 4510	c
	3	CS 4540	c
	3	MATH 2406	c
	6	CS 3251 or CS 4235 or CS 4400	c
	3	CS 4237 or CS 4251 or CS 4255 or CS 4261 or CS 4270 or CS 4365 or CS 4420 or CS 4440 or CS 4460	c
	3	MATH 4022 or MATH 4032 or MATH 4150	c
Other Required Courses	3	LCC 3403	
	3	MATH 3012	
	3	MATH 3215 or MATH 3770 or CEE 3770 or ISYE 3770 or (ISYE 2027 and ISYE 2028)	
Free Electives	13	Free Electives	
TOTAL:	126		

Pass-fail only allowed for Free Electives (max six hours), CS 1100, and CS 1171 (if required)

NOTES

a = Two of three lab sciences MUST be a sequence.
c = C-minimum required

BACHELOR OF SCIENCE IN COMPUTER SCIENCE THREAD: THEORY & INTELLIGENCE

REQUIREMENT	REQ HRS	COURSE(S)	NOTES
Wellness	2	HPS 1040 or APPH 1040 or APPH 1050	
Core A - Essential Skills	3	ENGL 1101	
	3	ENGL 1102	
	4	MATH 1501	
Core B - Institutional Options	3	CS 1301	c
Core C - Humanities	6	Any HUM	
Core D - Science, Math, & Technology	4	PHYS 2211	a
	4	Lab Science	a
	4	MATH 1502	
Core E - Social Sciences	3	HIST 2111 or HIST 2112 or INTA 1200 or POL 1101 or PUBP 3000	
	3	PSYC 1101	
	6	Any SS	
Core F - Courses Related to Major	4	Lab Science	a
	1	CS 1100	
	3	CS 1331	c
	3	CS 1332	c
	3	CS 2050 or CS 2051	c
	4	MATH 2605	
Major Requirements	3	CS 2340	c
	3	CS 4001 or CS 4002	c
	3	CS 4980 or CS 4911	c
Concentration	4	CS 2110	c
	3	CS 3510 or CS 3511	c
	3	CS 3600	c
	3	CS 4510	c
	3	CS 4540	c
	3	MATH 2406	c
	3	MATH 4022 or MATH 4032 or MATH 4150	c
	3	CS 3630 or CS 3790 or PSYC 3040	c
	6	CS 4495 or CS 4635 or CS 4641 or CS 4731	c
Other Required Courses	3	LCC 3403	
	3	MATH 3012	
	3	MATH 3215 or MATH 3770 or CEE 3770 or ISYE 3770 or (ISYE 2027 and ISYE 2028)	
Free Electives	14	Free Electives	
TOTAL:	126		

Pass-fail only allowed for Free Electives (max six hours), CS 1100, and CS 1171 (if required)

NOTES

a = Two of three lab sciences MUST be a sequence.
c = C-minimum required

BACHELOR OF SCIENCE IN COMPUTER SCIENCE THREAD: THEORY & MEDIA

REQUIREMENT	REQ HRS	COURSE(S)	NOTES
Wellness	2	HPS 1040 or APPH 1040 or APPH 1050	
Core A - Essential Skills	3	ENGL 1101	
	3	ENGL 1102	
	4	MATH 1501	
Core B - Institutional Options	3	CS 1301 or CS 1315	c
Core C - Humanities	6	Any HUM	
Core D - Science, Math, & Technology	4	PHYS 2211	a
	4	Lab Science	a
	4	MATH 1502	
Core E - Social Sciences	3	HIST 2111 or HIST 2112 or INTA 1200 or POL 1101 or PUBP 3000	
	9	Any SS	
Core F - Courses Related to Major	4	Lab Science	a
	1	CS 1100	
	3	CS 1331	c
	3	CS 1332	c
	3	CS 2050 or CS 2051	c
	4	MATH 2605	
Major Requirements	3	CS 2340	c
	3	CS 4001 or CS 4002	c
	3	CS 4980 or CS 4911	c
Concentration	4	CS 2110	c
	3	CS 3451	c
	3	CS 3510 or CS 3511	c
	3	CS 4510	c
	3	CS 4540	c
	3	MATH 2406	c
	6	CS 4455 or CS 4460 or CS 4464 or CS 4475 or CS 4480 or CS 4496 or CS 4590	c
	3	MATH 4022 or MATH 4032 or MATH 4150	c
Other Required Courses	3	LCC 3403	
	3	MATH 3012	
	3	MATH 3215 or MATH 3770 or CEE 3770 or ISYE 3770 or (ISYE 2027 and ISYE 2028)	
Free Electives	17	Free Electives	
TOTAL:	126		

Pass-fail only allowed for Free Electives (max six hours), CS 1100, and CS 1171 (if required)

NOTES

a = Two of three lab sciences MUST be a sequence.
c = C-minimum required

BACHELOR OF SCIENCE IN COMPUTER SCIENCE THREAD: THEORY & PEOPLE

REQUIREMENT	REQ HRS	COURSE(S)	NOTES
Wellness	2	HPS 1040 or APPH 1040 or APPH 1050	
Core A - Essential Skills	3	ENGL 1101	
	3	ENGL 1102	
	4	MATH 1501	
Core B - Institutional Options	3	CS 1301	c
Core C - Humanities	6	Any HUM	
Core D - Science, Math, & Technology	4	PHYS 2211	a
	4	Lab Science	a
	4	MATH 1502	
Core E - Social Sciences	3	HIST 2111 or HIST 2112 or INTA 1200 or POL 1101 or PUBP 3000	
	3	PSYC 1101	
	6	Any SS	
Core F - Courses Related to Major	4	Lab Science	a
	1	CS 1100	
	3	CS 1331	c
	3	CS 1332	c
	3	CS 2050 or CS 2051	c
	4	MATH 2605	
Major Requirements	3	CS 2340	c
	3	CS 4001 or CS 4002	c
	3	CS 4980 or CS 4911	c
Concentration	4	CS 2110	c
	3	CS 3510 or CS 3511	c
	3	CS 4510	c
	3	CS 4540	c
	3	MATH 2406	c
	4	PSYC 2015	c
	6	CS 3750 or CS 3790 or CS 4660	c
	3	PSYC 2210 or PSYC 2760 or PSYC 3040	c
	3	MATH 4022 or MATH 4032 or MATH 4150	c
	3	CS 4460 or CS 4470 or CS 4605 or CS 4625	c
Other Required Courses	3	LCC 3403	
	3	MATH 3012	
	3	MATH 3215 or MATH 3770 or CEE 3770 or ISYE 3770 or (ISYE 2027 and ISYE 2028)	
Free Electives	10	Free Electives	
TOTAL:	126		

Pass-fail only allowed for Free Electives (max six hours), CS 1100, and CS 1171 (if required)

NOTES

a = Two of three lab sciences MUST be a sequence.
c = C-minimum required

BACHELOR OF SCIENCE IN COMPUTER SCIENCE THREAD: THEORY & SYSTEMS AND ARCHITECTURE

REQUIREMENT	REQ HRS	COURSE(S)	NOTES
Wellness	2	HPS 1040 or APPH 1040 or APPH 1050	
Core A - Essential Skills	3	ENGL 1101	
	3	ENGL 1102	
	4	MATH 1501	
Core B - Institutional Options	3	CS 1301	c
Core C - Humanities	6	Any HUM	
Core D - Science, Math, & Technology	4	PHYS 2211	a
	4	Lab Science	a
	4	MATH 1502	
Core E - Social Sciences	3	HIST 2111 or HIST 2112 or INTA 1200 or POL 1101 or PUBP 3000	
	9	Any SS	
Core F - Courses Related to Major	4	Lab Science	a
	1	CS 1100	
	3	CS 1331	c
	3	CS 1332	c
	3	CS 2050 or CS 2051	c
	4	MATH 2605	
Major Requirements	3	CS 2340	c
	3	CS 4001 or CS 4002	c
	3	CS 4980 or CS 4911	c
Concentration	4	CS 2110	c
	4	CS 2200	c
	3	CS 3210	c
	3	CS 3240	c
	3	CS 3510 or CS 3511	c
	3	CS 4510	c
	3	CS 4540	c
	3	MATH 2406	c
	3	CS 3220 or CS 4290	c
	3	CS 3251 or CS 3300 or CS 4240	c
	3	MATH 4022 or MATH 4032 or MATH 4150	c
Other Required Courses	3	LCC 3403	
	3	MATH 3012	
	3	MATH 3215 or MATH 3770 or CEE 3770 or ISYE 3770 or (ISYE 2027 and ISYE 2028)	
Free Electives	10	Free Electives	
TOTAL:	126		

Pass-fail only allowed for Free Electives (max six hours), CS 1100, and CS 1171 (if required)

NOTES

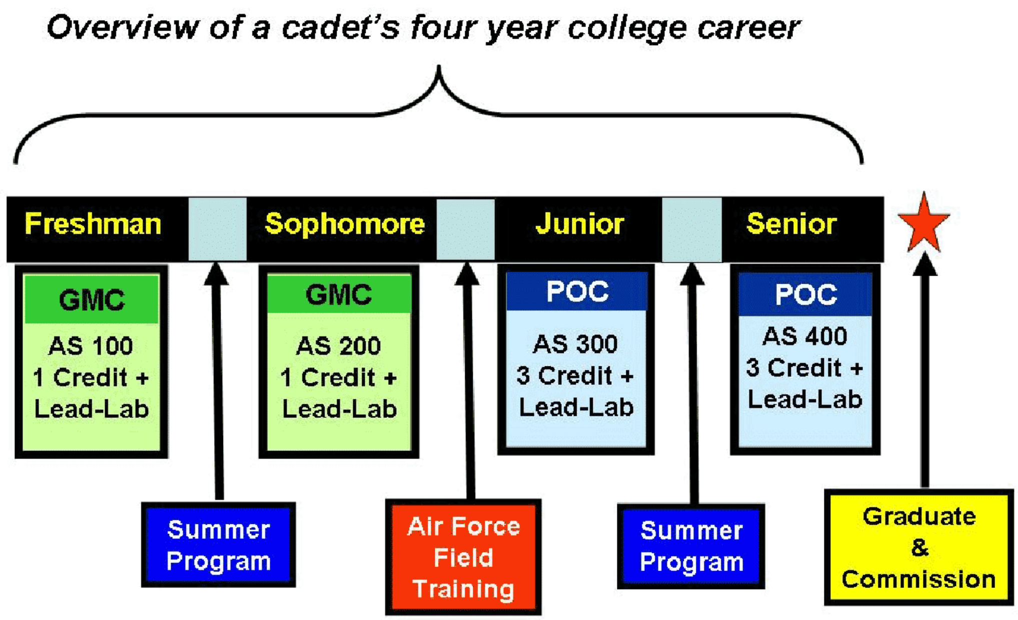
a = Two of three lab sciences MUST be a sequence.

c = C-minimum required

COOPERATIVE PROGRAMS

The College of Computing participates in the undergraduate and graduate Cooperative Programs.
See links below for further Information.

PROGRAM OVERVIEW



Students entering the program enroll in Air Force ROTC courses in the same manner in which they register for other undergraduate courses. A formal application is not required. Students enrolled in the General Military Course (GMC) incur no military obligation unless they are on an Air Force ROTC scholarship. Those students desiring to become commissioned officers in the Air Force must compete for entry into the Professional Officer course (POC), which is normally the last two years of college. In the summer between the sophomore and junior years, cadets attend a four- or six-week field training session conducted at an Air Force base.

FIELD TRAINING

Field Training is, in most cases, a cadet's first exposure to a working Air Force environment. The program is designed to develop military leadership and discipline, and to provide Air Force officer orientation and motivation. At the same time, the Air Force evaluates each cadet's potential as an officer. Field training includes Air Force professional development orientation, marksmanship training, junior officer training, physical fitness, and survival training.

GENERAL MILITARY COURSE (GMC)

Courses are offered during fall and spring semesters with two credit hours awarded for each freshman and sophomore course, and 3 credit hours for each junior and senior course. Four hours of basic ROTC courses may be applied as elective credits toward degree requirements at the school. Classes normally meet two hours a week. A one-hour leadership laboratory and participation in physical conditioning training are also required.

Students in the GMC do not incur military obligation unless they have received an ROTC scholarship.

AS 1000 LEVEL CLASS SCHEDULE FOR FRESHMAN YEAR:

A survey course designed to introduce students to United States Air Force and Air Force Reserve Officer Training Corps
Fall
AS 1110 Foundations of the Air Force I - 1 hour
AS 1111 Leadership Lab - 1 hour
Spring
AS 1120 Foundations of the Air Force II - 1 hour
AS 1121 Leadership Lab - 1 hour

AS 2000 LEVEL CLASS SCHEDULE FOR SOPHOMORE YEAR:

This course provides the students with a level of understanding for the general element and employment of air and space power.
Fall
AS 2210 Evolution of the United States Air and Space Power I - 1 hour
AS 2211 Leadership Lab - 1 hour
Spring
AS 2220 Evolution of the United States Air and Space Power I - 1 hour
AS 2221 Leadership Lab - 1 hour

LEADERSHIP LABORATORY

Leadership Laboratory is a separate course requiring two hours per week throughout the cadet's enrollment in Air Force ROTC. It involves a study of Air Force customs and courtesies, drill and ceremony, professional development opportunities in the Air Force, and the life and work of an Air Force junior officer. Students develop their leadership potential in a practical, supervised laboratory that may include field trips to Air Force installations and presentations by Air Force personnel. Physical Training (PT) is a key part of officer development. Cadets are expected to PT twice per week.

PROFESSIONAL OFFICER COURSE (POC)

Courses are offered during fall and spring semesters with 3 credit hours for each junior and senior course. Classes normally meet 3 hours a week. A one-hour leadership laboratory and participation in physical conditioning training are also required.

AS 3000 LEVEL CLASS SCHEDULE FOR JUNIOR YEAR:

A study of leadership, management fundamentals, professional knowledge, and communication skills required of an Air Force junior officer
Fall
AS 3310 Leadership Studies I - 3 hours

AS 3311 Leadership Lab - 1 hour

Spring

AS 3320 Leadership Studies II - 3 hours

AS 3321 Leadership Lab - 1 hour

AS 4000 LEVEL CLASS SCHEDULE FOR SENIOR YEAR:

Examines the national security process, Air Force structure, and doctrine with emphasis on developing top-level management skills required of an Air Force junior officer.

Fall

AS 4410 National Security Affairs - 3 hours

AS 4411 Leadership Lab - 1 hour

Spring

AS 4420 Preparation for Active Duty - 3 hours

AS 4421 Leadership Lab - 1 hour

AIR FORCE ROTC SCHOLARSHIP PROGRAM

Air Force ROTC can help students with the high cost of getting a degree. As an Air Force ROTC cadet, students are entitled to many benefits.

- 1. Up to $15,000 per academic year to cover tuition, lab, and incidental fees; $750 for textbooks; and $250-$400 a month tax-free allowance
- Free Air Force uniforms and textbooks
- Management training and opportunities to apply leadership principles
- At most schools, academic credit for Air Force ROTC classes
- Travel on military aircraft on a space-available basis for students on Air Force ROTC scholarships or in the Professional Officer course

IN-COLLEGE SCHOLARSHIP PROGRAM (ICSP):

The Air Force ROTC In-College Scholarship Program (ICSP) is a highly competitive scholarship program aimed primarily at college freshmen and sophomores in ANY MAJOR. Detachment commanders nominate and rank/order cadets in their program using the 'whole-person' concept. All ICSP scholarships activate the following fall term.

HISTORICALLY BLACK COLLEGES AND UNIVERSITIES (HBCU):

Scholarships are available for any Clark Atlanta, Morehouse, or Spelman student. The objective of the HBCU scholarship program is to encourage outstanding HBCU students to enroll in the Air Force ROTC program. To compete for the scholarship, students must: be full-time, be physically and medically qualified, have at least a 2.5 GPA, and meet all other eligibility criteria. Depending on the situation, HBCU scholarships can be activated in the same term.

FOREIGN LANGUAGE EXPRESS SCHOLARSHIP:

Foreign Language Express scholarships provide preapproved scholarships to individuals in certain areas of study for which the United States Air Force projects a critical need in a few years. Scholarships in these areas are guaranteed if students meet all minimum requirements. Air Force ROTC provides an outstanding opportunity for students to receive a three-, or two-year scholarship. Depending on the situation, Foreign Language scholarships can be activated in the same term. In order to receive an Express Scholarship students must be in one of the areas of study: Arabic, Chinese, Persian-Iranian/Persian-Afghan, Hindi, Indonesian, Japanese, Pashtu, Russian, Turkish, Urdu/Punjabi, Azerbaijani, Bengali, Cambodian, Hausa, Kazakh, Kurdish, Malay, Serbo-Croatian, Swahili, Thai, Uighur, Uzbek, or Vietnamese.

NURSING SCHOLARSHIPS:

Air Force ROTC offers a variety of scholarships for nursing students that cover most tuition, books, and lab fees. The goal of the Nursing scholarships is to allow nursing students to complete their degree debt-free, while acquiring valuable resource knowledge about the Air Force and become part of the Air Force's medical staff. Air Force nurses may enter in any number of different nursing fields including clinical nurse, operating room nurse, flight nurse, or nurse anesthetist. Depending on the situation, Nursing scholarships can be activated in the same term.

PRE-HEALTH PROFESSIONS AND ARMED FORCES HEALTH PROFESSIONS PROGRAM:

A Pre-Health Professions Program designation is offered to encourage students to earn commissions through Air Force ROTC and continue their education in medical or osteopathic school. You must apply before the end of the sophomore year. The Armed Forces Health Professions Scholarship Program provides up to four years of medical school and it covers tuition and fees, textbooks. It also pays the student a taxable monthly allowance of $938. Students accepted to the graduate-level health professions school, will be granted the scholarship and transferred into the Air Force Medical Corps. Armed Forces Health Professions scholarship participants incur an additional active-duty service commitment.

AIR FORCE ROTC CROSS REGISTRATION

Cross Registration is available to students from ARCHE participating schools. As a cross-town cadets students will participate in Air Force ROTC activities at Georgia Tech every Tuesday and Thursday. Scholarship opportunities are available to students from schools with Air Force Education Service Agreements. Stipends and other incentives are available to all students. Students graduating with a degree from their home institution will receive a commission in the United States Air Force. Contact the Detachment 165 Unit Admissions Officer at 404.894.4175 for more information. For more information on the cross registration process and ARCHE participating schools, visit www.atlantahighered.org

THE BASIC COURSE CURRICULUM

The Basic Course consists of a four-semester block of instruction taken during the freshman and sophomore years. Successful completion of all four semesters satisfies the military science requirements for progression to the Advanced Course. These courses provide a foundation in basic military subjects such as customs and traditions, history, leadership, and map reading. They round out a student's academic life, provide a challenge, foster confidence, and facilitate personal growth and development.

Courses are offered during fall and spring semesters with 3 credit hours awarded for each freshman and sophomore course and four credit hours for each junior and senior course. Four hours of basic ROTC courses may be applied as elective credits toward degree requirements at the school. Courses normally meet two hours a week. A one-hour leadership laboratory and participation in physical conditioning training are also required for contracted cadets.

Students in the Basic Course do not incur military obligation unless they have received an ROTC scholarship. Scholarship cadets are required to participate in a field training exercise twice per school year. They are issued uniforms and may participate in other ROTC-related events and training, such as Airborne School, Air Assault School, and Northern Warfare Training.

THE BASIC COURSE CONSISTS OF THE FOLLOWING:

First Year

Course	Title	Hours
MSL 1001	Leadership and Personal Development	3
MSL 1002	Introduction to Tactical Leadership	3

Second Year

Course	Title	Hours
MSL 2001	Innovative Team Leadership	3
MSL 2022	Foundation of Tactical Leadership	3

THE ADVANCED COURSE CURRICULUM

The Advanced Course is designed to fully develop a cadet's leadership and management potential, physical stamina, and self-confidence, as well as those Army values required of an Army officer. The objective is to produce the highest caliber junior officers fully capable of discharging a wide spectrum of command and management responsibilities in the modern Army and in the business world.

The Advanced Course consists of four semesters of instruction normally taken during the junior and senior years. Successful completion of the four courses fulfills the military science academic requirements for award of an officer's commission. Each student must also participate in a regular physical conditioning program and successfully pass the Army Physical Fitness Test. All Advanced Course students must participate in field training exercises twice a school year. twelve credit hours are earned, six of which may be applied as elective credits toward any degree at the Institute. Advanced Course students receive a subsistence allowance up to $500 a month. Service veterans and service academy cadets may qualify for direct entry into the Advanced Course. Certain Advanced Course students are eligible to participate in the Simultaneous Membership Program with the Army Reserve or Army National Guard. Students in this program affiliate with an Army unit as officer trainees.

Students enrolled in the Advanced Course are also required to complete a five-week Advanced Camp at Fort Lewis, Washington, to become eligible for commissioning. Attendance at Advanced Camp normally occurs during the summer between the junior and senior years. Students may also participate in additional voluntary training, such as Airborne School or Cadet Troop Leader Training. In addition to completing the military science academic requirements of both the Basic and Advanced Courses, the student must complete at least one undergraduate course from each of five designated fields of study:

- Written Communications: Select any course offered by the Institute in English composition or creative writing.
- Human Behavior: Select any course offered by the Institute in psychology, sociology, anthropology, or ethics.
- Military History/National Security Studies: Select INTA 3520, INTA 3510, or another similar course approved by the Professor of Military Science.
- Computer Literacy: Select any course offered by the College of Computing except CS 1000 (Information and Society).
- Mathematics Reasoning: Select any course offered by the School of Mathematics.

Students who successfully complete the Army ROTC curriculum and earn a bachelor's degree can be commissioned as second lieutenants. Subsequent military service may be on active duty or with the Army Reserve or Army National Guard. The following courses constitute the Advanced Course:

Third Year

Course	Title	Hours
MSL 3001	Adaptive Tactical Leadership	4
MSL 3002	Leadership in Changing Environments	4

FOURTH YEAR

Course	Title	Hours
MSL 4001	Developing Adaptive Leaders	4
MSL 4002	Leadership in a Complex World	4
MSL 4901	Special Problems (restricted)	4

ADDITIONAL TRAINING OFFERED

Leadership Training Course (LTC)

Those academically qualified students who are unable to fulfill the requirements of the Basic Course during their freshman and sophomore years may qualify for admission to the Advanced Course by successfully completing the Leadership Training Course (LTC). This option is primarily designed to meet the needs of transfer students, those completing the sophomore year, and others, including graduate students, who have four semesters remaining at the Institute. This option provides a two-year program in lieu of the standard four-year curriculum. The LTC option consists of a four-week training period conducted at Fort Knox, Kentucky, during the summer months. During each summer, various cycles will be available to meet student needs. Students choosing this option are required to submit a formal application and pass a physical examination.

Students selected to attend the LTC training program will receive approximately $800 in addition to travel expenses to and from the LTC. Uniforms, housing, medical care, and meals are furnished by the government during the training. Interested students should contact the Military Science Department.

Cadet Professional Development Training (CPDT) program.

The CPDT program supplements campus training with practical leader development experiences and some additional skill identifier awarding courses. Cadets train in Army schools and with Active and Reserve units. CPDT consists of two subprograms, Cadet Troop Leader Training (CTLT) and Cadet Practical Field Training (CPFT).

Basic Airborne School (BAC)

The Basic Airborne Course is a three-week training program conducted by the Airborne Department, USAIC, Fort Benning, Georgia that trains students in the use of the parachute as a means of combat deployment. Successful completion qualifies cadets to wear the Parachutist Badge.

Air Assault School (AAS)

Located at Ft. Campbell, Kentucky, the AAS is a 10 day course of instruction that trains cadets on Combat Assault Operations involving associated equipment and U.S. Army rotary-wing aircraft. Successful completion qualifies cadets to wear the Air Assault Badge. This eleven day course is very demanding both physically and mentally, involving obstacle courses and several long ruck marches. You will learn the basics of aircraft familiarization and recognition, slingload operations, and rappelling.

Mountain Warfare School (MWS)

This is a two-week program conducted at the Ethan Allen Firing Range in Jericho, Vermont. The course teaches cadets the skills needed to operate in a mountainous environment during the summer and fall. Mountain Warfare introduces you to the techniques and tactics required to operate in a mountainous environment under hostile conditions. The emphasis is on field exercises where you learn mountain-related skills.

Cadet Troop Leadership Training (CTLT)

Cadet Troop Leadership Training (CTLT) offers the MS III cadet the opportunity to perform the duties of a Second Lieutenant for up to one month with an active duty unit. MS III graduates of the ROTC Advanced Camp may attend CTLT for 3 to 4 weeks immediately following attendance at the Leadership Development and Assessment Course (LDAC) in the summer following their MS III year. Actual duties performed will vary by branch and unit but will generally be those duties expected of a Second Lieutenant in that unit. Many cadets will serve as either platoon leaders or assistant platoon leaders.

SCHOLARSHIP PROGRAMS

Each year, the Army offers a variety of full scholarship programs to those young men and women who have demonstrated outstanding academic scholarship and leadership potential. Four-, three-, and two-year scholarships are available to qualified students. Scholarships are competitive and awarded based on the student's merit. The Professor of Military Science receives an allocation of scholarships each year. Scholarships provide full tuition/fees or room/board to both resident and out-of-state students, $1,200 allowance for textbooks and supplies, and a $300 to $500-a-month tax-free stipend. Scholarship students serve either on active duty, in the Army reserves, or Army National Guard.

OPTIONS

Students who wish to obtain a commission as an officer but do not want to serve on active duty may request a Guaranteed Reserve Forces Duty (GRFD) scholarship. Reserve Forces Duty scholarships are available, but are limited in number. Affiliation with an Army Reserve or Army National Guard unit is required to participate in either the scholarship or nonscholarship program. In this program, students are guaranteed in writing that they will not be placed on active duty and can fulfill their entire commitment in the Army Reserve or Army National Guard.

STUDENT ADVISORY SERVICES

Faculty members are available throughout the academic year and during each summer orientation session in the Department of Military Science for academic counseling, schedule planning, and career guidance. Students and their parents are encouraged to seek advice on the overall Army ROTC program, scholarship opportunities, and officer career development. Appointments may be made in person, by calling 404.894.4760/9938, or by e-mail via the ROTC home page, www.armyrotc.gatech.edu. Students should also check the homepage for the latest updates on course requirements and other important information.

ACADEMIC MENTORSHIP PROGRAM

The Academic Mentorship program aims to sustain an atmosphere where all cadets recognize the importance of academic success for commissioning, obtaining their degrees, and other future endeavors. Every cadet should have the resources and encouragement to succeed in the classroom through an established mentorship support system. An aggressive attitude toward meeting the academic standard is highly encouraged. Academic Mentorship also offers a Study Hall program which offers additional mentorship opportunities by offering students hands on academic instruction and tutelage.

CURRICULUM

REQUIRED NAVAL SCIENCE CLASSES:

NS 1321 - Introduction to Naval Science

NS 1323 - Naval Maritime History

NS 2321 - Naval Leadership and Management

NS 2323 - Navigation *Navy only*

NS 3323 - Evolution of Warfare *Marine only*

NS 3324 - Marine Weapons and Tactics *Marine only*

NS 3325 - Naval Weapon Systems *Navy only*

NS 3326 - Naval Engineering Systems *Navy only*

NS 4320 - Naval Operations and Seamanship *Navy only*

NS 4322 - Naval Leadership and Ethics

NS 4323 - Amphibious Warfare *Marine only*

All students must attend weekly Drill Periods in addition to above courses.

In addition to the required naval science courses, all Navy Option Scholarship students must take calculus (MATH 1501-2 or MATH 1511-2), physics (PHYS 2111-2 or 2231-3 series), one term of INTA (contact NROTC unit for required class), and one term of a cultures studies class (contact NROTC unit for required class).

Marine Option students must only take the previously listed international affairs and cultural studies courses or their equivalent as approved by the professor of naval science.

Any additional requirements are based on whether or not the student is in a technical or nontechnical major, a Navy Option or Marine Option student, and a scholarship or nonscholarship recipient. Each student must obtain from the NROTC Department a complete description of program requirements since the above statement is only a general outline. Students may apply a maximum of 4 hours in basic ROTC courses and six hours in advanced ROTC courses toward meeting the free elective requirements for any degree.

SCHOLARSHIP STUDENTS

Four-year and three-year scholarship students are selected through nationwide competition. Selection criteria include SAT or ACT scores, high school academic performance, and extracurricular activities. The selection process is administered by the chief of Naval Education and Training; however, the NROTC unit will provide guidance and information to applicants. An online application is available at https://www.nrotc.navy.mil.

The NROTC scholarship pays for tuition (and applicable fees) and textbooks. The Navy also provides uniforms and a $250-$400 per month subsistence allowance. The Naval Science Department conducts an orientation program (INFORM) for all new NROTC scholarship students during the week prior to the start of the fall semester. Scholarship students must complete the naval science curriculum and also participate in summer assignments from four to six weeks during the summers between academic years.

COLLEGE PROGRAM STUDENTS

Non-scholarship students may seek a naval commission through the NROTC College Program. Interested students may apply at the NROTC unit in the O'Keefe building on campus. The process includes a review of previous academic performance and interviews with staff personnel. Students accepted into the College Program must complete the naval science curriculum and take a summer assignment between the junior and senior years.

The Navy provides naval science texts. Students who enter advanced standing in the junior year receive a subsistence allowance of $350-$400 per month. College program students are eligible to compete for scholarships ranging from one to three years. Selection criteria are based on academic performance at Georgia Tech and military performance as a College Program student. For information, contact the Naval Science Department at 404.894.4771.

TWO-YEAR SCHOLARSHIP PROGRAM

Sophomores may apply and compete nationally for two-year NROTC scholarships. Those selected attend six weeks of training in Newport, Rhode Island, during the summer between the sophomore and junior years. Upon successful completion, the student joins the NROTC program on an equal footing with other students in the junior year naval science classes. Interested students should contact the Naval Science Department.