Academic Advising Session for
Undeclared Engineering Students

• Welcome and Introductions
• Overview of Engineering Disciplines
• Student Panel
• Discussion of Class Schedules and Registration
# Georgia Tech Engineering Majors

<table>
<thead>
<tr>
<th>Major</th>
<th>Fall 2015 Enrollment</th>
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<tbody>
<tr>
<td>Aerospace Engineering</td>
<td>892</td>
</tr>
<tr>
<td>Biomedical Engineering</td>
<td>1261</td>
</tr>
<tr>
<td>Chemical and Biomolecular Engineering</td>
<td>991</td>
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<tr>
<td>Civil Engineering</td>
<td>473</td>
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<tr>
<td>Computer Engineering</td>
<td>589</td>
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<tr>
<td>Electrical Engineering</td>
<td>903</td>
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<tr>
<td>Environmental Engineering</td>
<td>191</td>
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<tr>
<td>Industrial Engineering</td>
<td>1431</td>
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<tr>
<td>Materials Science and Engineering</td>
<td>343</td>
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<tr>
<td>Mechanical Engineering</td>
<td>2123</td>
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<tr>
<td>Nuclear and Radiological Engineering</td>
<td>119</td>
</tr>
<tr>
<td>Undecided Engineering</td>
<td>102</td>
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<td>Total</td>
<td>9418</td>
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Engineering Curriculum Overview

- Mathematics
- Science
- Humanities & Social Sciences
- Computer Science
- Required Major Courses
- Technical and Free Electives
- Capstone Design Project
## Common Course Requirements in GT Engineering Curricula

<table>
<thead>
<tr>
<th>SUBJECT</th>
<th>COURSE NAME</th>
<th>COURSE NUMBER</th>
<th>Hrs</th>
</tr>
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<tbody>
<tr>
<td>Mathematics</td>
<td>Intro to Differential Calculus</td>
<td>Math 1550 (Summer Freshmen)</td>
<td>3</td>
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<tr>
<td></td>
<td>Differential Calculus</td>
<td>Math 1551 (Fall Freshmen)</td>
<td>2</td>
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<tr>
<td></td>
<td>Integral Calculus</td>
<td>Math 1552</td>
<td>4</td>
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<tr>
<td></td>
<td>Intro to Linear Algebra</td>
<td>Math 1553</td>
<td>2</td>
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<tr>
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<td>Multivariable Calculus</td>
<td>Math 2551</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Differential Equations</td>
<td>Math 2552 *</td>
<td>4</td>
</tr>
<tr>
<td>Science</td>
<td>Introductory Physics I</td>
<td>Phys 2211</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Introductory Physics II</td>
<td>Phys 2212</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Chemistry</td>
<td>Chem 1310 or 1211K**</td>
<td>4</td>
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<tr>
<td>Computer Science</td>
<td>Computing for Engineers</td>
<td>CS 1371***</td>
<td>3</td>
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<tr>
<td>English</td>
<td>English Composition I</td>
<td>Engl 1101</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>English Composition II</td>
<td>Engl 1102</td>
<td>3</td>
</tr>
<tr>
<td>Humanities Electives</td>
<td></td>
<td></td>
<td>6</td>
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<tr>
<td>US Hist/Gov Requirement</td>
<td>One of the following:</td>
<td>Hist 2111, 2112, Pol 1101, PubP 3000, or IntA 1200</td>
<td>3</td>
</tr>
<tr>
<td>Economics Requirement</td>
<td>One of the following:</td>
<td>Econ, 2100, 2101, 2105, or 2106</td>
<td>3</td>
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<tr>
<td>Social Science Electives</td>
<td></td>
<td></td>
<td>6</td>
</tr>
<tr>
<td>Wellness</td>
<td>Health or Fitness Concepts</td>
<td>APPH 1040 or 1050</td>
<td>2</td>
</tr>
</tbody>
</table>

* IE Majors take Math 2602, Linear and Discrete Math  
** Depends on Major  
*** IE Majors take CS 1301
Aerospace Engineers

- Analyze, design, and build aircraft, rotocraft, spacecraft, satellites, missiles, and rockets;
- Improve the performance of vehicles moving through gases or liquids;
- Are typically specialists in fields such as aerodynamics, structures, propulsion, navigation, design, and flight testing.

Representative Employers: Boeing, Lockheed Martin, NASA, Pratt & Whitney, GE, Sikorsky, Bell, Rolls Royce, Siemens, airlines.

http://www.ae.gatech.edu/
Biomedical Engineers

- Integrate the engineering sciences with the biomedical sciences and clinical practice;
- Apply advanced technologies to the complex problems associated with the prevention, diagnosis and treatment of disease;
- Work in a variety of companies including medical devices, biotechnology, pharmaceutical, consulting, and government agencies.

Representative Employers: Medtronic, St. Jude Medical, Johnson & Johnson

• http://www.bme.gatech.edu
Chemical and Biomolecular Engineers

- Discover and manufacture better plastics, fuels, and drugs;
- Protect the environment by inventing cleaner technologies;
- Work to create substitutes for the earth’s shrinking natural resources.

Representative Employers:  Dow Chemical,  Eli Lilly,  Kodak

http://www.chbe.gatech.edu/
Civil Engineers

- Design and construct functional, cost-effective, and sustainable structures and complex systems;
- Improve quality of life through the design, construction, and management of critical infrastructure systems;
- Design and construct infrastructure systems that can resist earthquakes, tsunamis, hurricanes, and floods.


http://www.cee.gatech.edu/
Environmental Engineers

- Construct climate and watershed models to predict and prevent natural disasters;
- Engineer solutions to reduce global warming and improve human health conditions;
- Make sustainable environmental decisions based on the cause and effect between the interfaces of the natural and built world.

Representative Employers: CH2M HILL, Parsons Brinkerhoff, Environmental Protection Agency, Georgia Power

http://www.cee.gatech.edu/
Computer Engineers

- Develop high speed computing platforms for use in computer-generated imagery, gaming, and oil/gas exploration;
- Design embedded systems for applications including security, entertainment, medicine, and hybrid vehicles;
- Build robots that assist disabled people or navigate harsh terrains;

Representative Employers: Intel, NVIDIA, Cisco Systems, Hewlett Packard

http://www.ece.gatech.edu/
Electrical Engineers

- Develop environmentally friendly technologies such as solar power and solid state (LED) lighting;
- Design sensors that measure glucose in the bloodstream or detect pollutants in our water supply and atmosphere;
- Make electronic gadgets like iPods and cell phones smaller, faster, and less expensive.

Representative Employers:
Texas Instruments, Georgia Power, General Electric, Lockheed Martin

http://www.ece.gatech.edu/
Industrial Engineers

- Integrate systems that include people, materials, information, equipment, and energy;
- Design, develop, implement, control, and improve the performance of complex systems;
- Work in areas such as supply chain, economic decision analysis, statistical analysis, operations research, and health systems.

Representative Employers: Coca Cola, General Motors, UPS

http://www.isye.gatech.edu/
Materials Science Engineers

- Produce engineering materials of all types;
- Develop materials for product areas such as nanotechnology, energy production, biotechnology, aviation, and microelectronics;
- Specify and test materials for all engineering applications.

Representative Employers: Bell South, Hewlett-Packard, Ford

http://www.mse.gatech.edu/
Mechanical Engineers

- Work across disciplines to create new products for the betterment of humanity;
- Innovate, create, and design mechanical, energy, and biomedical devices and systems;
- Are involved in manufacturing the products they design and also work in finance, law, and medicine.

Representative Employers: BMW, General Dynamics, United Technologies

http://www.me.gatech.edu/
Nuclear & Radiological Engineers

- Design nuclear plants that generate electricity with no carbon footprint;
- Manage the disposal of nuclear waste;
- Use radiation to diagnose and treat diseases such as cancer.

Representative Employers: NASA, Nuclear Regulatory Commission, Siemens

http://www.nre.gatech.edu/
Selecting a major

- COE 1000
- Academic Advisors
- Web Sites
- Faculty
- Engineering Students
- Alumni
- Career Services

College of Engineering

- [www.coe.gatech.edu](http://www.coe.gatech.edu)
- [www.ae.gatech.edu](http://www.ae.gatech.edu)
- [www.bme.gatech.edu](http://www.bme.gatech.edu)
- [www.chbe.gatech.edu](http://www.chbe.gatech.edu)
- [www.cee.gatech.edu](http://www.cee.gatech.edu)
- [www.ece.gatech.edu](http://www.ece.gatech.edu)
- [www.isye.gatech.edu](http://www.isye.gatech.edu)
- [www.mse.gatech.edu](http://www.mse.gatech.edu)
- [www.me.gatech.edu](http://www.me.gatech.edu)

[www.careercornerstone.org](http://www.careercornerstone.org)
[www.discoverengineering.org](http://www.discoverengineering.org)
[www.nae.edu](http://www.nae.edu)
Important Contacts

Academic Advisor for Undecided Engineering Students are in the School of Mechanical Engineering

Lenna Applebee - Last names A – G
lenna.applebee@me.gatech.edu

Kristi Mehaffey - Last names H – P
kristi.mehaffey@me.gatech.edu

Kendra Denmark - Last names Q – Z
kendra.Denmark@me.gatech.edu
http://www.me.gatech.edu/undergraduate/academic_advisors

Use GradesFirst to schedule an appointment with your UEC advisor

All advisors are in MRDC room 3112 (building 135 on the campus map)
Important Contacts

Center for Academic Success  
http://www.successprograms.gatech.edu

Policies, Procedures, and Degree Requirements  
http://www.registrar.gatech.edu

Advisors in Other Departments  
http://www.advising.gatech.edu
COE 1000 – Freshman Engineering Seminar

• Overview of GT Engineering Majors
• Meets once a week
• One hour credit
• Pass/Fail
Program Enrichment Opportunities

- Coop/Internships
- Study Abroad/International Plan
- Undergraduate Research/Research Option
- Certificates, Minors, 5 Year BS/MS Program
Coop/Internships

- Professional experience and increased marketability
- Connect academic work to real world
- Explore career goals and options
- Earn as you learn!
Undergraduate Research/Research Option

- Learn skills that cannot be taught in the classroom
- Establish a professional relationship with a faculty member
- Gain experience
- Feel the thrill of discovery
Study Abroad/International Plan

- Learn to function successfully in cross-cultural settings
- Acquire or improve foreign language skills
- Enjoy the adventure of discovering new places
Certificates, Minors, Five-Year BS/MS Program

- **Certificates**
  - Minimum of 12 hours coursework in area of specialization

- **Minors**
  - Minimum of 15 hours coursework in area of specialization

- **5 Year BS/MS Program**
  - Earn a Bachelor’s and a Master’s Degree in the same field in just one year beyond the BS degree
Initiative for Undergraduate Student Entrepreneurship

create-x.gatech.edu

siva@gatech.edu
CREATE-X Signature Programs

- **Startup Lab**: Learn Entrepreneurship, Freshmen/Sophomores, 3-credit class
- **Idea to Prototype**: Build product, Sophomores/Juniors, 3-6 research credits
- **Startup Summer**: Launch Startup, Juniors/Seniors, $20K funding
## GT Global Engineering Leadership Track in Leadership Studies Minor - Courses

<table>
<thead>
<tr>
<th>Course Areas</th>
<th>Courses</th>
</tr>
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<tbody>
<tr>
<td>1 Foundations Course</td>
<td>Foundations of Leadership (PUBP 4140)</td>
</tr>
<tr>
<td>2 Breadth Course</td>
<td>Global Engineering Leadership &amp; Management (CEE 4803)</td>
</tr>
<tr>
<td>3 Global Engineering</td>
<td>Environmental Technology in Devel. Countries (CEE 4803)</td>
</tr>
<tr>
<td>4 Grand Challenge Courses</td>
<td>Megaprojects &amp; Construction Mgmt. (CEE 4803)</td>
</tr>
<tr>
<td>5</td>
<td>Int’l Disaster Reconnaissance Studies (CEE 4803)</td>
</tr>
<tr>
<td>6</td>
<td>Sustainable Transportation Abroad (CEE 4803)</td>
</tr>
<tr>
<td>7</td>
<td>Sustainable Cities (CEE 4803)</td>
</tr>
<tr>
<td>8</td>
<td><em>(Select 3 grand challenge courses)</em></td>
</tr>
<tr>
<td>4 Capstone Experience</td>
<td>Global Engineering Internship (INTN 3011)</td>
</tr>
<tr>
<td>5 Seminar</td>
<td>Hyatt Distinguished Speaker Series</td>
</tr>
</tbody>
</table>

* Total of 15 hours of semester credits + internship
* Up to 6 academic course credits used in minor may be used to fulfill **free electives** or **technical electives**
Engineering Offers

• A wide diversity of career paths
• Highest starting salaries of any discipline with a Bachelor’s Degree
• The chance to work with a variety of people
• An environment of lifelong learning and discovery
• The opportunity to help shape the future