CORNELL UNIVERSITY
College of Engineering
www.engineering.cornell.edu

Cornell is a highly selective and preeminent Ivy League university with the heart of a Land Grant Institution. Cornell University’s College of Engineering is a rich tapestry distinguished by its breadth in programs and excellence in achievement. The College of Engineering offers an unusual blend of engineering and science characterized by traditional and non-traditional departments, centers, and a broad selection of undergraduate majors and graduate fields. The innovative Cornell graduate field system is uniquely structured to transcend departments, fostering multidisciplinary faculty research interaction and a rich environment for graduate education. In addition to world leadership in research and PhD graduate education, the college has a project based Masters of Engineering (MEng) program that is distinguished by its breadth, quality, and diversity of students.

Students and faculty with interests and capabilities that extend beyond the traditional engineering focus are attracted by the breadth and excellence of the college’s programs, the richness of Cornell’s research-intensive environment, and the allure of an idyllic setting. The Cornell community is one that reflects many different cultures, cherishes academic freedom, and values diversity of perspective and opinion. The result is open discourse fueling academic creativity. These endeavors are generously supported, both financially and through individual and collective efforts, by alumni, industrial partners, and philanthropic foundations.

The strong fundamental and theoretical basis of the engineering educational program is complemented by extensive experiential learning opportunities. Undergraduate and graduate students participate in design, research, and field study opportunities, and work collaboratively on project teams. Societal outreach is encouraged and flourishes in the college. Students and alums have made a national impact through their formation and leadership of organizations such as Engineers for a Sustainable World.

This rich university setting, programmatic breadth, extraordinary population, interdisciplinary strength, experiential learning environment, and strong community all contribute to a unique academic atmosphere. We invite you to take a brief glimpse of Cornell University and the College of Engineering by watching the college video. For additional information about the college’s priorities and goals, you can read the College of Engineering Strategic Plan.

Departments and Schools
www.engineering.cornell.edu/programs/departments-schools

- School of Applied and Engineering Physics
- Department of Biological and Environmental Engineering
- Department of Biomedical Engineering
- School of Chemical and Biomolecular Engineering
- School of Civil and Environmental Engineering
- Department of Computer Science
- Department of Earth and Atmospheric Sciences
- School of Electrical and Computer Engineering
- Department of Materials Science and Engineering
- School of Mechanical and Aerospace Engineering
- School of Operations Research & Information Engineering
- Department of Theoretical and Applied Mechanics

Undergraduate Majors (BS) - *ABET Accredited
www.engineering.cornell.edu/programs/undergraduate-education/majors

- Biological Engineering *
- Chemical Engineering *
- Civil Engineering *
- Computer Science
- Electrical and Computer Engineering*
- Engineering Physics
- Environmental Engineering
- Independent Major
- Information Science, Systems and Technology
- Materials Science and Engineering*
- Mechanical Engineering*
- Operations Research and Engineering
- Science of Earth Systems
Updated 4/11/08

**Graduate Programs (MEng and MS/PhD)**
[www.engineering.cornell.edu/programs/graduate-education](http://www.engineering.cornell.edu/programs/graduate-education)

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<thead>
<tr>
<th>Aerospace Engineering</th>
<th>Engineering Mechanics (MEng only)</th>
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<tbody>
<tr>
<td>Biological and Environmental Engineering</td>
<td>Engineering Physics (MEng Only)</td>
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<tr>
<td>Applied Mathematics (MS/PhD only)</td>
<td>Geological Sciences</td>
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<td>Applied Physics (MS/PhD only)</td>
<td>Information Science (PhD only)</td>
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<td>Applied Statistics (MPS only)</td>
<td>Materials Science and Engineering</td>
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<tr>
<td>Biomedical Engineering</td>
<td>Mechanical Engineering</td>
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<tr>
<td>Biophysics (MS/PhD only)</td>
<td>Operations Research (MS/PhD only)</td>
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<tr>
<td>Chemical Engineering</td>
<td>Operations Research and Information Engineering (MEng only)</td>
</tr>
<tr>
<td>Civil and Environmental Engineering</td>
<td>Statistics (MS/PhD only)</td>
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<tr>
<td>Computer Science</td>
<td>Systems Engineering (MEng only)</td>
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<td>Electrical Engineering</td>
<td>Theoretical and Applied Mechanics (MS/PhD only)</td>
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<td>Engineering Management (MEng only)</td>
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**U.S. News and World Report Rankings**
[U.S. News Ranking Web Page](http://www.usnews.com)

**Best Undergraduate Engineering Programs** (Schools offering doctorates -Released August 2007, 2008 Edition) – College of Engineering #7

<table>
<thead>
<tr>
<th>Undergraduate Engineering Specialties (Released August 2007, 2008 Edition) –</th>
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<tbody>
<tr>
<td>Aerospace/Aeronautical/Astronomical - #10</td>
<td>Engineering Physics - #1</td>
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<td>Agricultural - #3</td>
<td>Environmental - #11</td>
</tr>
<tr>
<td>Chemical - #13</td>
<td>Industrial/Manufacturing - #11</td>
</tr>
<tr>
<td>Civil - #9</td>
<td>Materials - #6</td>
</tr>
<tr>
<td>Computer Engineering - #8</td>
<td>Mechanical - #8</td>
</tr>
<tr>
<td>Electrical - #8</td>
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**Best Engineering Graduate Schools** (Released March 2008, 2009 Edition) – College of Engineering #9

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>Aerospace/Aeronautical/Astronautical - #8</td>
<td>Computer Science - #6 (Programming #5, Theory #4, AI #12, Systems #15)</td>
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<tr>
<td>Biomedical Engineering - #25</td>
<td>Earth Sciences* - #15</td>
</tr>
<tr>
<td>Chemical Engineering - #15</td>
<td>Environmental Engineering - #13</td>
</tr>
<tr>
<td>Civil Engineering - #10</td>
<td>Industrial Engineering - #9</td>
</tr>
<tr>
<td>Computer Engineering - #10</td>
<td>Materials Science and Engineering - #10</td>
</tr>
<tr>
<td>Electrical Engineering - #9</td>
<td>Mechanical Engineering - #9</td>
</tr>
</tbody>
</table>

*Not ranked in March 2007. Ranking is from March 2006.*

**Small Times Nanotechnology Rankings**
[Small Times Ranking Web Page](http://www.smalltimes.com)  [Small Times Survey Description Web Page](http://www.smalltimes.com)

Best Cornell Nanotechnology Programs (Released May 2007)

<table>
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<tr>
<th>Peer Rankings</th>
<th>Rankings Based on Self Reported Data</th>
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<tr>
<td>Nano Research #4</td>
<td>Commercialization #5</td>
</tr>
<tr>
<td>Micro Research #5</td>
<td>Facilities #6</td>
</tr>
<tr>
<td>Micro Commercialization #6</td>
<td>Research #4</td>
</tr>
<tr>
<td>Nano Commercialization #6</td>
<td>Education #10</td>
</tr>
<tr>
<td></td>
<td>Industrial Outreach #10 (2006 ranking-Not ranked in 2007)</td>
</tr>
</tbody>
</table>
Strategic Areas of Research Focus and Preeminent Excellence

The College of Engineering has identified six strategic areas of significant research focus for the next decade. Our goal is to be the nation’s premier research university in the first three areas and a world leader in the second three.

Systems Biology and Biomedical Engineering
With quantitative and predictive methods of engineering producing a greater understanding, design, and control of biological systems, Cornell is poised to make important contributions at the interface of engineering and life sciences with novel technologies and analytical approaches relevant to medical application, nanobiotechnology, bioprocess development, drug delivery, genomics and proteomics, environmental remediation, instrumentation, metabolic engineering, and biomechanics.

Nanomaterials, Nanoscience, and Nanodevices
Engineering at very small length scales has the potential to produce important technologies utilizing materials with new and fundamentally different properties. It is now possible to fabricate structures on the molecular level using microelectronics techniques (top-down processes) or grow them using new molecular fabrication techniques (bottom-up processes). Research is active or forthcoming in microfluidics, microchemical systems, microelectromechanical systems, nanomaterials and actuation, and fabrication of materials at the molecular level.

Energy, Environment, and Sustainable Development
Over the next 50 years the earth’s population is expected to increase by two-thirds to 10 billion people with concurrent energy demand predicted to rise from 15 terawatts to 50 terawatts. With such dependence on oil, national gas, and electricity generated by coal, this growth will no doubt affect the environment and require an enormous change in the way people live. Alternative energy sources may become viable with appropriate research and development. As in other areas, progress is often based on multidisciplinary efforts (in combustion, biomaterials, and bioremediation, for example) and will benefit from interactions with other initiatives and colleges at Cornell.

Information, Computation, and Communication
Computer simulations can predict the behavior of exceedingly complex systems and have begun to play a role in engineering research equal to that of physical experiments. While rapid and reliable simulations are common in many areas of engineering research, there is a need to continue developing novel methods and algorithms in other areas such as the modeling of multi-scale phenomena. Fatigue fracture, for example, can be simulated at the component, grain, and atomistic levels, but coupling these simulations effectively requires new insights.

Advanced Materials
Materials with unprecedented properties are being tailored atom by atom at Cornell, which has been a pioneer in materials research. Fundamental advances in the characterization of materials are enabling new understanding of structure-property relationships. Some anticipated themes include further emphasis on computationally designed materials; increased functionality by convergence and integration of biological, organic, electronic and structural materials; creation of self-assembly methods allowing materials to build themselves; and tailoring of interfaces to produce nanocomposites.

Complex Systems and Networks
Such critical services as water, power, transportation, information, financial analysis, and emergency response are delivered by complex, automated systems that integrate actuation, sensing, and digital communication and control into physical devices to meet complicated design requirements. Cornell has a broad-based foundation in the study of such complex systems, including expertise in communication, information technologies, electric power, transportation, manufacturing, intelligent systems, and systems biology.
Research Expenditures (Fiscal Year 2006-07)
Total Externally Funded Research Expenditures - $ 108M

By External Funding Source
Federal/National $78.6M
State $ 5.1M
Industry $ 8.2M
Private/Non-profit $ 7.5M
Individual $ 8.4M
Other $ .2M

Affiliated Centers, Facilities, Laboratories, Institutes, and Programs

www.engineering.cornell.edu/research/research-centers
- Alliance for Nanomedical Technologies (ANMT)
- Center for Applied Mathematics (CAM)
- Center for Biochemical Optoelectronic Microsystems
- Center for Life Science Enterprise
- Center for Nanoscale Systems (CNS)
- Center for Pulsed-Power-Driven High Energy Density Plasmas
- Center for Radiophysics Space Research (CRSR)
- Center for Technology, Enterprise and Commercialization
- Cornell Center for the Environment (CfE)
- Cornell Center for Materials Research (CCMR)
- Cornell Electron Storage Ring (CESR)
- Cornell Fuel Cell Institute (CFCI)
- Cornell High Energy Synchrotron Source (CHESS)
- Cornell NanoScale Science and Technology Facility (CNF)
- Cornell Waste Management Institute (CWMI)
- Cornell Theory Center (CTC)
- Cornell University Program of Computer Graphics
- Developmental Resource for Biophysical Imaging Opto-electronics
- Institute for Biotechnology and Life Science Technology
- Institute for Comparative and Environmental Toxicology (ICET)
- Institute for Disease and Disaster Preparedness
- Institute for Resource Information Systems (IRIS)
- Institute for the Study of the Continents (INSTOC)
- Kavli Institute at Cornell for Nanoscale Science
- Intelligent Information Systems Institute (IISI)
- Laboratory for Elementary-Particle Physics (LEPP)
- Laboratory of Atomic and Solid State Physics (LASSP)
- Laboratory of Plasma Studies (LPS)
- Multidisciplinary Center for Earthquake Engineering Research
- Nanobiotechnology Center (NBTC)
- National Astronomy and Ionosphere Center (NAIC)
- National Science Digital Library
- New York State Water Resources Institute
- Northeast Regional Climate Center
- Polymer Outreach Program
- Program for Biogeochemistry and Environmental Biocomplexity
- Science and Engineering News at Cornell University
- Transportation Infrastructure Research Consortium

Faculty (Fall 2007 - Headcount - Includes Full and Part Time Tenured and Tenure Track Faculty)
www.engineering.cornell.edu/faculty
Total Faculty 243
Full Professors 145
Associate Professors 50
Assistant Professors 48
Underrepresented Minority Faculty (Does not include Asians) 5.4%
Women Faculty 11.6%
National Academy of Engineering Members 21
Enrollment (Fall 2007)

www.engineering.cornell.edu/student-services/registrar/enrollment-statistics

* 95 Biological and Environmental Engineering freshmen and sophomores registered in the College of Agriculture and Life Sciences are not included in the undergraduate enrollment statistics on the web but are included in the enrollment statistics below.

Total Undergraduate Student Enrollment 2,926
Percentage of Underrepresented Minority Undergraduate Students 7.1%
Percentage of Women Undergraduate Students 28.3%
Percentage of International Undergraduate Students 12.3%
(For a more detailed look at international students at Cornell visit: www.isso.cornell.edu/about/stats.php)

Total Graduate Student Enrollment 1,378
MEng 529
MS 17
MS/PhD 832
Percentage of Underrepresented Minority Graduate Students 4.4%
Percentage of Women Graduate Students 26.3%
Percentage of International Graduate Students 46.8%


Total Bachelors Degrees Granted 714

Total Masters Degrees Granted 579
Number of MEng Degrees Granted 450
Number of MS Degrees Granted 129

Total Doctoral Degrees Granted 128

Career Services

www.engineering.cornell.edu/student-services/engineering-coop-career-services

<table>
<thead>
<tr>
<th></th>
<th>FULLTIME</th>
<th>SUMMER</th>
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</thead>
<tbody>
<tr>
<td>Interview on Campus</td>
<td>4,213</td>
<td>1,061</td>
</tr>
<tr>
<td>Interview Schedules</td>
<td>486</td>
<td>124</td>
</tr>
<tr>
<td>Employer Visits</td>
<td>196</td>
<td>65</td>
</tr>
<tr>
<td>Students Registered with Career Services</td>
<td>1,289</td>
<td>1,985</td>
</tr>
</tbody>
</table>

Post Graduate Pursuits (Academic Year 2006-07)
Employment 51%
Graduate School 44%
Seeking Employment 3%
Other 2%

Our Post-Graduate Survey (2005-06 Survey currently on-line – 2006-07 Survey to be posted) provides an in-depth look at the career paths reported by recent graduates.

Cooperative Education Program (Academic Year 2006-07)
Co-op Interviews on Campus 709
Employers Who Hired Co-op Students (at 54 sites) 47
Students Who Participated in Co-op 101
Updated 4/11/08

Student Project Teams
www.engineering.cornell.edu/student-services/learning/student-project-teams/teams
Advanced Interactive Discovery Environment (AIDE)  CUSat (Nanosat-4)
AquaClara  DARPA Urban Challenge
Autonomous Underwater Vehicle (CUAUV)  Engineers for a Sustainable World (ESW)
Baja SAE  Formula SAE (FSAE)
Concrete Canoe  Phoenix Society
Cornell Automotive X Prize  Programming Contest
Control-Moment Gyrosopes (CMG)  Snake Arm
Cornell Minesweeper  Solar Decathlon

Student Organizations
www.sao.cornell.edu/SO/
Alpha Epsilon  Engineering Peer Advisors
Alpha Sigma Mu  Engineering Student Council
American Association of Petroleum Geologists  Engineers for a Sustainable World
American Indian Science and Engineering Society  Eta Kappa Nu
American Institute of Aeronautics and Astronautics  Graduate Society of Applied & Engineering Physics
American Institute of Chemical Engineers  Students
American Society of Civil Engineers  Information Science Student Association
American Society of Mechanical Engineers  Institute of Biological Engineering
Association of Computer Science Undergraduates  Institute of Electrical and Electronics Engineer
Biological and Environmental Engineering Society  Institute for Operations Research and the Management Sciences
Biomedical Engineering Society  Mu Sigma Tau
Chi Epsilon  National Society of Black Engineers
Cornell Applied and Engineering Physics Society  Pi Tau Sigma
Cornell Chapter of the American Meteorological Society  Society of Automotive Engineers
Cornell Materials Society  Society of Hispanic Professional Engineers
Cornell Science and Technology Magazine  Society of Women Engineers
Encourage Young Engineering Students  Tau Beta Pi
Engineering Ambassadors Association
Engineering Graduate Student Association

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