Welcome

Engineering the Future at UMass Dartmouth

The College aims to produce the best prepared workforce necessary to meet the challenges of the 21st century – energy, the environment, health care and security – and to enhance economic prosperity and quality of life.

Imagine the Possibilities

Potential Careers

- Device- and system-level design
- Manufacturing
- Marketing and sales
- Research and development
- Technology management
- Hardware and software design
- Entrepreneurship
- Education
- Medicine and Law
Enrichment Opportunities

- Student Prof. Orgs.
- BS-MS programs
- UG Research
- COOP – Internships
- Honors program
- Study Abroad
- Service learning

Employment Growth

- Double digit growth is expected in the following areas between 2010-2020*

  - Software Developers is projected to grow 30 percent
  - Biomedical Engineers is projected to grow by 62 percent
  - Civil Engineers is expected to grow 19 percent
  - Computer Hardware Engineers is expected to increase 12 percent
  - Electrical and Electronics Engineers is expected to grow 13 percent
  - Environmental Engineers is expected to grow 22 percent
  - Mechanical Engineers is expected to grow 12 percent

* from the Bureau of Labor Statistics
Science and engineering workforce projections, 2010-2020

New jobs  Job openings, new + replacements

<table>
<thead>
<tr>
<th>Field</th>
<th>2010-2020</th>
<th>2010-2020</th>
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<tbody>
<tr>
<td>15-1000 Computer Occupations</td>
<td>550,000</td>
<td>100,000</td>
</tr>
<tr>
<td>17-2000 Engineers</td>
<td>650,000</td>
<td>150,000</td>
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<tr>
<td>15-1000 Life Scientists</td>
<td>750,000</td>
<td>200,000</td>
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<tr>
<td>15-2000 Physical Scientists</td>
<td>850,000</td>
<td>250,000</td>
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<tr>
<td>15-1000 Social Scientists</td>
<td>950,000</td>
<td>300,000</td>
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Industry | Median Salary | Top 10% |
---------|---------------|---------|
Biomedical Engineering | $84,670 | $134,150 |
Civil and Environmental Engineering | $77,990 | $119,620 |
Chemical Engineering | $92,390 | $146,650 |
Electrical and Computer Engineering | $85,920 | $131,660 |
Geological and Mining Engineering and Sciences | $84,300 | $136,800 |
Materials Science and Engineering | $84,550 | $127,850 |
Mechanical Engineering | $79,320 | $119,950 |
College of Engineering

- 6 Departments
- 2 PhDs
  - Engineering and Applied Science
  - Electrical Engineering
- 6 Masters Programs
- 7 Bachelors Programs

College of Engineering

- Bioengineering - 5
- Civil and Environmental Engineering - 7
- Computer and Information Science – 7 + 2
- Electrical and Computer Engineering - 14
- Mechanical Engineering - 11
- Physics – 8 + 2
College of Engineering

- ~ 1200 students (Grad/Undergrad)
- 56 Full-time faculty
- 50+ PhDs
- $3-5 Million in annual external research
- Agencies
  - National Science Foundation
  - Office of Naval Research
  - DARPA
  - NIH…

Course Requirements

Bachelor of Science Degrees
120 – 131 credit hours

Consisting of approximately:
- 25% liberal arts requirements
- 25% math and science pre req's
- 25% required departmental engineering foundation courses
- 25% specialization courses

Completion in 4 years requires at least 15 credit hours per semester.

Students may use summer semesters to accelerate their progress.
Academic Readiness

• Accuplacer
• Calculus Ready, PreCalculus Ready, Algebra Ready

Freshman Year

• Freshman Summer Institute – Aug 4th – Aug 9th
• Impulse – Integrated Math Physics Undergraduate Lab Science Engineering
  • Fall Semester – Math and Engineering
  • Spring Semester – Math, Engineering and Physics
• EGR 111 – Introduction to Engineering – Common Freshman level course
**IMPULSE Program**

Integrated Math, Physics, Undergraduate Laboratory Science & Engineering

- Active Collaborative Learning
- Studio-style learning
- Cross-disciplinary assignments
- Teamwork, cooperation & accountability
- Technology-supported learning studios
- Communication skills development
- Science & Engineering Center with tutors
- Students need to be Calculus-ready

![IMPULSE Program](image)

**Freshman Summer Institute**

1-week voluntary residential program for COE students intending to enroll

- 2013 Dates: August 4-9

**Activities**

- Engineering Math
- Workshops on Teamwork, Leadership, Study Skills, Time Management, Test Anxiety
- Week-long, hands-on Design Project
- Career Speakers
- Poster presentation

- Get to know each other & campus
FERPA

• “Family Education Rights Privacy Act”
• Protects students who are 18 years of age or older from unauthorized release of academic and disciplinary information
• Parents will not be able to obtain information from the University on their child’s progress w/o prior written consent of the student

Advising

Every student will have a faculty advisor in their home department. The Associate Dean serves as the faculty advisor to all Engineering Undeclared students. Same advisor for 4 years (once in the department)

When to see an advisor:
- Every Semester for course planning/registration purposes
- For clarification of catalog information
- To discuss career objectives
- When struggling in a class
- When concerned about GPA requirements
- When concerned about registration requirements
- When a referral is needed