BIOENGINEERING, MS

for the degree of Master of Science in Bioengineering

department head: Mark Anastasio (mfi@illinois.edu)
director of graduate studies: Gregory Underhill (bodony@illinois.edu)
overview of admissions & requirements: https://bioengineering.illinois.edu/admissions/graduate/
overview of grad college admissions & requirements: https://grad.illinois.edu/admissions/apply
department website: https://bioengineering.illinois.edu/academics/graduate/ms/
department faculty: https://bioengineering.illinois.edu/directory/
college website: https://grainger.illinois.edu/
contact: Krista Smith (kristasm@illinois.edu)
address: 1240 Everitt Laboratory, 1406 W Green St, Urbana, IL 61801
phone: (217) 333-1867
email: bioe-gradprograms@illinois.edu
(bioengineering@illinois.edu)

The Department of Bioengineering offers both an MS with thesis and an MS non-thesis program. Students in the MS with thesis program are required to have a research advisor and applicants are encouraged to contact department faculty (https://bioengineering.illinois.edu/directory) in their areas of interest to inquire about possible research and funding opportunities.

Opportunity exists for specializing in i) biomechanics via the Biomechanics (http://catalog.illinois.edu/graduate/engineering/concentration/biomechanics) optional graduate concentration and ii) cancer nanotechnology via the Cancer Nanotechnology (http://catalog.illinois.edu/graduate/engineering/concentration/cancer-nanotechnology) optional graduate concentration.

Admission Requirements
Applicants should have an undergraduate degree in a natural science, computer science, or engineering. A minimum grade point average of 3.00 (A = 4.00) for the last two years of undergraduate study is required. Applicants should show evidence of strong quantitative skills and of serious interest in the life sciences. All applicants must submit results from the Graduate Record Examination (GRE) (http://www.ets.org) general test.

All applicants whose native language is not English are required to submit TOEFL (http://www.toefl.org) or International English Language Testing System (IELTS) (http://www.ielts.org) scores as evidence of English proficiency. Minimum admission requirements (https://grad.illinois.edu/admissions/instructions/04c) are set by the Graduate College.

Financial Aid
Qualified students may qualify for financial aid in the form of fellowships, teaching and research assistantships, and waivers of tuition and service fees.

All applicants, regardless of U.S. citizenship, whose native language is not English and who wish to be considered for teaching assistantships must demonstrate spoken English language proficiency (http://grad.illinois.edu/admissions/taengprof.htm) by achieving a minimum score of 24 on the speaking subsection of the TOEFL iBT or 8 on the speaking subsection of the IELTS. For students who are unable to take the iBT or IELTS, a minimum score of 4CP is required on the EPI test (http://cte.illinois.edu/testing/oral_eng/epi_overview.html), offered on campus. All new teaching assistants are required to participate in the Graduate Academy for College Teaching (https://citl.illinois.edu/citl-101/teaching-learning/grad-academy-for-college-teaching) conducted prior to the start of the semester.

Department Research
Bioengineering faculty perform research in the areas of Bio-Imaging at Multi-Scale, Molecular, Cellular and Tissue Engineering, Bio-Micro and Nanotechnology, Computational and Systems Bioengineering, and Synthetic Bioengineering. In addition to Bioengineering faculty, the Department of Bioengineering has more than 50 affiliate faculty (http://bioengineering.illinois.edu/directory).

Other Graduate Programs in the Department of Bioengineering

degrees:

Bioengineering, MEng (http://catalog.illinois.edu/graduate/engineering/bioengineering-meng)
optional concentrations:
Bioinstrumentation (http://catalog.illinois.edu/graduate/engineering/bioengineering-meng/bioinstrumentation)
Computational Genomics (http://catalog.illinois.edu/graduate/engineering/bioengineering-meng/computational-genomics)
General Bioengineering (http://catalog.illinois.edu/graduate/engineering/bioengineering-meng/general-bioengineering)

Bioengineering, PhD (http://catalog.illinois.edu/graduate/engineering/bioengineering-phd)
optional concentrations:
Biomechanics (http://catalog.illinois.edu/graduate/engineering/concentration/biomechanics)
Cancer Nanotechnology (http://catalog.illinois.edu/graduate/engineering/concentration/cancer-nanotechnology)
Computational Science and Engineering (http://catalog.illinois.edu/graduate/engineering/concentration/computational-science-engineering)

concentrations:

Information listed in this catalog is current as of 03/2020
Bioengineering, MS

The Bioengineering Graduate Program provides the Master of Science in Bioengineering (MS), and the Doctor of Philosophy (PhD) in Bioengineering. The Bioengineering Graduate Program provides students with educational and research experiences that integrate the sciences of biology and medicine with the practices and principles of engineering. For the MS and PhD programs, areas of focus include Bioimaging, Cell & Tissue Engineering, Micro and Molecular Technologies, and Computational Biology.

Opportunity also exists for specializing in energy and sustainability engineering via the

Energy and Sustainability Engineering (EaSE) Graduate Certificate Option (http://ease.illinois.edu)

for the degree of Master of Science in Bioengineering

For additional details and requirements for all degrees, please refer to the department’s Graduate Studies Web site (http://bioengineering.illinois.edu) and the Graduate College Handbook (http://grad.illinois.edu/gradhandbook).

Bioengineering, MS

Thesis Option

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
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<tbody>
<tr>
<td>BIOE 599</td>
<td>Thesis Research (min-max applied toward degree)</td>
<td>4</td>
</tr>
<tr>
<td>BIOE 500</td>
<td>Graduate Seminar (BIOE 500 must be taken at least twice. A maximum of 2 hours may be applied toward the degree.)</td>
<td>2</td>
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<tr>
<td>BIOE 501</td>
<td>Seminar Discussion</td>
<td>1</td>
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<tr>
<td>BIOE 502</td>
<td>Bioengineering Professionalism</td>
<td>2</td>
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<tr>
<td>BIOE 504</td>
<td>Analytical Methods in Bioeng</td>
<td>4</td>
</tr>
<tr>
<td>BIOE 505</td>
<td>Computational Bioengineering</td>
<td>4</td>
</tr>
<tr>
<td>BIOE 506</td>
<td>Molecular Biotechniques</td>
<td>4</td>
</tr>
<tr>
<td>BIOE 507</td>
<td>Advanced Bioinstrumentation</td>
<td>4</td>
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<td></td>
<td><strong>Total Hours</strong></td>
<td><strong>32</strong></td>
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<tr>
<td></td>
<td><strong>Other Requirements and Conditions</strong></td>
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</tr>
<tr>
<td>Requirement</td>
<td>Description</td>
<td>Minimum GPA: 3.0</td>
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Non-Thesis Option

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
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<tbody>
<tr>
<td>BIOE 500</td>
<td>Graduate Seminar (BIOE 500 must be taken at least twice. A maximum of 2 hours may be applied toward the degree.)</td>
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<tr>
<td>BIOE 501</td>
<td>Seminar Discussion</td>
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</tr>
<tr>
<td>BIOE 502</td>
<td>Bioengineering Professionalism</td>
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<tr>
<td>BIOE 504</td>
<td>Analytical Methods in Bioeng</td>
<td>4</td>
</tr>
<tr>
<td>BIOE 505</td>
<td>Computational Bioengineering</td>
<td>4</td>
</tr>
<tr>
<td>BIOE 506</td>
<td>Molecular Biotechniques</td>
<td>4</td>
</tr>
<tr>
<td>BIOE 507</td>
<td>Advanced Bioinstrumentation</td>
<td>4</td>
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<tr>
<td></td>
<td><strong>Total Hours</strong></td>
<td><strong>40</strong></td>
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</table>

The Department of Bioengineering offers studies leading to the Master of Engineering in Bioengineering (MEng), the Master of Science in Bioengineering (MS), and the Doctor of Philosophy (PhD) in Bioengineering. The Bioengineering Graduate Program provides

Biomechanics (http://catalog.illinois.edu/graduate/engineering/concentration/bioinformatics)
available for:

Bioinformatics: Bioengineering, MS (http://catalog.illinois.edu/graduate/engineering/concentration/bioengineering/bioinformatics)

Electrical & Computer Engineering, MS (http://catalog.illinois.edu/graduate/engineering/electrical-computer-engineering-ms)

Electrical & Computer Engineering, PhD (http://catalog.illinois.edu/graduate/engineering/electrical-computer-engineering-phd)

Materials Engineering, MEng (http://catalog.illinois.edu/graduate/engineering/materials-engineering-meng)

Materials Science & Engineering, MS (http://catalog.illinois.edu/graduate/engineering/materials-science-engineering-ms)

Materials Science & Engineering, PhD (http://catalog.illinois.edu/graduate/engineering/materials-science-engineering-phd)

Mechanical Engineering, MS (http://catalog.illinois.edu/graduate/engineering/mechanical-engineering-ms)

Mechanical Engineering, MEng (http://catalog.illinois.edu/graduate/engineering/mechanical-engineering-meng)

Mechanical Engineering, PhD (http://catalog.illinois.edu/graduate/engineering/mechanical-engineering-phd)

Theoretical & Applied Mechanics, MS (http://catalog.illinois.edu/graduate/engineering/theoretical-applied-mechanics-ms)

Theoretical & Applied Mechanics, PhD (http://catalog.illinois.edu/graduate/engineering/theoretical-applied-mechanics-phd)

Cancer Nanotechnology (http://catalog.illinois.edu/graduate/engineering/concentration/cancer-nanotechnology)
available for:

Bioinformatics: Bioengineering, MS (http://catalog.illinois.edu/graduate/engineering/concentration/bioinformatics)

Electrical & Computer Engineering, MS (http://catalog.illinois.edu/graduate/engineering/electrical-computer-engineering-ms)

Electrical & Computer Engineering, PhD (http://catalog.illinois.edu/graduate/engineering/electrical-computer-engineering-phd)

Materials Engineering, MEng (http://catalog.illinois.edu/graduate/engineering/materials-engineering-meng)

Materials Science & Engineering, MS (http://catalog.illinois.edu/graduate/engineering/materials-science-engineering-ms)

Materials Science & Engineering, PhD (http://catalog.illinois.edu/graduate/engineering/materials-science-engineering-phd)

Mechanical Engineering, MS (http://catalog.illinois.edu/graduate/engineering/mechanical-engineering-ms)

Mechanical Engineering, MEng (http://catalog.illinois.edu/graduate/engineering/mechanical-engineering-meng)

Mechanical Engineering, PhD (http://catalog.illinois.edu/graduate/engineering/mechanical-engineering-phd)

Theoretical & Applied Mechanics, MS (http://catalog.illinois.edu/graduate/engineering/theoretical-applied-mechanics-ms)

Theoretical & Applied Mechanics, PhD (http://catalog.illinois.edu/graduate/engineering/theoretical-applied-mechanics-phd)

Bioinformatics: Bioengineering, MS (http://catalog.illinois.edu/graduate/engineering/concentration/bioinformatics)

Electrical & Computer Engineering, MS (http://catalog.illinois.edu/graduate/engineering/electrical-computer-engineering-ms)

Electrical & Computer Engineering, PhD (http://catalog.illinois.edu/graduate/engineering/electrical-computer-engineering-phd)

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Materials Science & Engineering, MS (http://catalog.illinois.edu/graduate/engineering/materials-science-engineering-ms)

Materials Science & Engineering, PhD (http://catalog.illinois.edu/graduate/engineering/materials-science-engineering-phd)

Mechanical Engineering, MS (http://catalog.illinois.edu/graduate/engineering/mechanical-engineering-ms)

Mechanical Engineering, MEng (http://catalog.illinois.edu/graduate/engineering/mechanical-engineering-meng)

Mechanical Engineering, PhD (http://catalog.illinois.edu/graduate/engineering/mechanical-engineering-phd)

Theoretical & Applied Mechanics, MS (http://catalog.illinois.edu/graduate/engineering/theoretical-applied-mechanics-ms)

Theoretical & Applied Mechanics, PhD (http://catalog.illinois.edu/graduate/engineering/theoretical-applied-mechanics-phd)

For additional details and requirements for all degrees, please refer to the department’s Graduate Studies Web site (http://bioengineering.illinois.edu) and the Graduate College Handbook (http://grad.illinois.edu/gradhandbook).
### Other Requirements and Conditions

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<td>Minimum GPA:</td>
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