BIOENGINEERING

http://bioengineering.illinois.edu

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Major: Bioengineering
Degrees Offered: M.S., Ph.D.

Major: Bioinstrumentation
Degrees Offered: M.Eng.

Graduate Concentrations: Bioengineering, Biomechanics, Cancer Nanotechnology

Medical Scholars Program: Doctor of Philosophy (Ph.D.) in Bioengineering and Doctor of Medicine (M.D.) through the Medical Scholars Program (https://www.med.illinois.edu/mdphd)

Graduate Degree Programs

The Department of Bioengineering offers studies leading to the Master of Engineering in Bioinstrumentation (M.Eng.), the Master of Science in Bioengineering (M.S.), and the Doctor of Philosophy (Ph.D.) 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 M.S. and Ph.D. programs, areas of focus include Bio-imaging, Cell & Tissue Engineering, Micro and Molecular Technologies, and Computational Biology. Opportunity also exists for specializing in (1) computational science and engineering and (2) energy and sustainability engineering via the Computational Science and Engineering (CSE) Option (http://cse.illinois.edu/education-programs/graduate-program) and the Energy and Sustainability Engineering (EaSE) Option (http://ease.illinois.edu). The Medical Scholars Program (https://www.med.illinois.edu/mdphd) permits highly qualified students to integrate the study of medicine with study for a graduate degree in a second discipline, including Bioengineering.

Admission

For the M.S. and Ph.D. programs, applicants should have an undergraduate or graduate degree, respectively, 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 must submit a minimum TOEFL (http://www.toefl.org) score of 97 (iBT), 243 (CBT), or 590 (PBT); or minimum International English Language Testing System (IELTS) (http://www.ielts.org) academic exam scores of 6.5 overall and 6.0 in all subsections. Applicants may be exempt from the TOEFL if certain criteria (http://grad.illinois.edu/admissions/instructions/04c) are met. For those taking the TOEFL or IELTS, full admission status (http://grad.illinois.edu/admissions/instructions/04c) is granted for scores of 103 (TOEFL iBT) or greater, 253 (TOEFL CBT), 610 (TOEFL PBT), or 6.5 (IELTS). Limited status (http://grad.illinois.edu/admissions/instructions/04c) is granted for lesser scores and requires enrollment in English as a Second Language (ESL) courses (http://linguistics.illinois.edu/students/esl/guidelines) based on an ESL Placement Test (EPT) taken upon arrival to campus.

Please see the admission requirements for the M.Eng. in Bioinstrumentation under the "Masters" tab.

Degree Requirements

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).

Medical Scholars Program

The Medical Scholars Program permits highly qualified students to integrate the study of medicine with study for a graduate degree in a second discipline, including Bioengineering. Students may apply to the Medical Scholars Program prior to beginning graduate school or while in the graduate program. Applicants to the Medical Scholars Program must meet the admissions standards for and be accepted into both Bioengineering and the College of Medicine. Students in the dual degree program must meet the specific requirements for both the medical and graduate degrees. On average, students take eight years to complete both degrees. An application to the Medical Scholars Program will also serve as the application to the Bioengineering graduate program. Further information on this program is available by contacting the Medical Scholars Program, 125 Medical Sciences Building, (217) 333-8146, mspo@illinois.edu or at www.med.illinois.edu/msp (http://www.med.illinois.edu/msp).

Faculty Research Interests

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

Financial Aid

For the M.S. and Ph.D. programs, qualified students may apply 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 (http://cte.illinois.edu/programs/ta_train.html) conducted prior to the start of the semester.

Information listed in this catalog is current as of 04/2016
Please see the financial aid eligibility for the M.Eng. in Bioinstrumentation under the "Masters" tab.

- Master of Science in Bioengineering (http://catalog.illinois.edu/graduate/graduate-majors/bio-engin/ms-bioengineering)
- Master of Science in Bioinformatics, Bioengineering Concentration (http://catalog.illinois.edu/graduate/graduate-majors/bio-engin/ms-bioinfo-conc-bioeng)
- Master of Engineering in Bioinstrumentation (http://catalog.illinois.edu/graduate/graduate-majors/bio-engin/meng-bioinstrumentation)

**Doctor of Philosophy**

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<th>Course Code</th>
<th>Title</th>
<th>Min-Max Hours</th>
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<tbody>
<tr>
<td>BIOE 599</td>
<td>Thesis Research (min-max applied toward degree)</td>
<td>52</td>
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<tr>
<th>Course Code</th>
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<tbody>
<tr>
<td></td>
<td>Elective courses</td>
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<td></td>
<td>Total Hours</td>
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| 12          | 64                                                      |

**Other Requirements and Conditions**

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<tr>
<th>Requirement</th>
<th>Details</th>
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<tbody>
<tr>
<td>Minimum program GPA</td>
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<tr>
<td>A Masters degree is required for admission to the Ph.D. program.</td>
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<tr>
<td>Qualifying exam</td>
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<tr>
<td>Preliminary exam</td>
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<td>Final exam and dissertation defense</td>
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<td>Dissertation deposit</td>
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footnote: 1 For additional details and requirements for all degrees, please refer to the department's Graduate Studies Web site (http://bioengineering.illinois.edu/graduate-programs/current-graduate-students) and the Graduate College Handbook (http://grad.illinois.edu/gradhandbook).

footnote: 2 Qualifying Examination information (http://bioengineering.illinois.edu/graduate-programs/current-graduate-students/qualifying-exam)

- Graduate Concentration in Biomechanics (http://catalog.illinois.edu/graduate/graduate-majors/bio-engin/conc-biomechanics)
- Master of Science in Bioinformatics, Bioengineering Concentration (http://catalog.illinois.edu/graduate/graduate-majors/bio-engin/ms-bioinfo-conc-bioeng)
- Graduate Concentration in Cancer Nanotechnology (http://catalog.illinois.edu/graduate/graduate-majors/bio-engin/grad-conc-cancer-nanotechnology)