BIOMECHANICS GRADUATE CONCENTRATION

For the graduate concentration in Biomechanics

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- **director of graduate studies:** Gregory Underhill (bodony@illinois.edu)
- **overview of grad college admissions & requirements:** [https://grad.illinois.edu/admissions/apply](https://grad.illinois.edu/admissions/apply)
- **department website:** [https://bioengineering.illinois.edu/](https://bioengineering.illinois.edu/)
- **program website:** [https://bioengineering.illinois.edu/academics/graduate/phd/concentrations.html](https://bioengineering.illinois.edu/academics/graduate/phd/concentrations.html)
- **department faculty:** [https://bioengineering.illinois.edu/directory/](https://bioengineering.illinois.edu/directory/)
- **college website:** [https://grainger.illinois.edu/](https://grainger.illinois.edu/)
- **contact:** Krista Smith (kristasm@illinois.edu)
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- **email:** bioe-gradprograms@illinois.edu (bioengineering@illinois.edu)

The Biomechanics Concentration prepares students for collaborative research across the disciplines of engineering, biology, and the sciences. Students must be enrolled in a graduate degree program:

- Bioengineering, MS [http://catalog.illinois.edu/graduate/engineering/bioengineering-ms/](http://catalog.illinois.edu/graduate/engineering/bioengineering-ms/)
- Bioengineering, PhD [http://catalog.illinois.edu/graduate/engineering/bioengineering-phd/](http://catalog.illinois.edu/graduate/engineering/bioengineering-phd/)
- Bioinformatics: Bioengineering, MS [http://catalog.illinois.edu/graduate/engineering/bioinformatics/](http://catalog.illinois.edu/graduate/engineering/bioinformatics/)
- Electrical & Computer Engineering, MS [http://catalog.illinois.edu/graduate/engineering/electrical-computer-engineering-ms/](http://catalog.illinois.edu/graduate/engineering/electrical-computer-engineering-ms/)
- Materials Engineering, MEng [http://catalog.illinois.edu/graduate/engineering/materials-engineering-meng/](http://catalog.illinois.edu/graduate/engineering/materials-engineering-meng/)
- Mechanical Engineering, MS [http://catalog.illinois.edu/graduate/engineering/mechanical-engineering-ms/](http://catalog.illinois.edu/graduate/engineering/mechanical-engineering-ms/)
- Mechanical Engineering, MEng [http://catalog.illinois.edu/graduate/engineering/mechanical-engineering-meng/](http://catalog.illinois.edu/graduate/engineering/mechanical-engineering-meng/)
- Theoretical & Applied Mechanics, MS [http://catalog.illinois.edu/graduate/engineering/theoretical-applied-mechanics-ms/](http://catalog.illinois.edu/graduate/engineering/theoretical-applied-mechanics-ms/)

**Other Graduate Programs in the Department of Bioengineering**

- **degrees:**
  - Bioengineering, MEng [http://catalog.illinois.edu/graduate/engineering/bioengineering-meng/](http://catalog.illinois.edu/graduate/engineering/bioengineering-meng/)
  - Bioinformatics: Bioengineering, MS [http://catalog.illinois.edu/graduate/engineering/bioinformatics/](http://catalog.illinois.edu/graduate/engineering/bioinformatics/)
  - General Bioengineering [http://catalog.illinois.edu/graduate/engineering/bioengineering-meng/general-bioengineering/](http://catalog.illinois.edu/graduate/engineering/bioengineering-meng/general-bioengineering/)
  - Bioengineering, PhD [http://catalog.illinois.edu/graduate/engineering/bioengineering-phd/](http://catalog.illinois.edu/graduate/engineering/bioengineering-phd/)

- **optional concentrations:**
  - Biomechanics
  - Cancer Nanotechnology [http://catalog.illinois.edu/graduate/engineering/concentration/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/](http://catalog.illinois.edu/graduate/engineering/concentration/computational-science-engineering/)

Information listed in this catalog is current as of 11/2021
Cancer Nanotechnology available for:

- Bioengineering, MS
- Bioengineering, PhD
- Biomedical Engineering, MS
- Biomedical Engineering, PhD
- Bioinformatics: Bioengineering, MS
- Electrical & Computer Engineering, MS
- Electrical & Computer Engineering, PhD
- Materials Engineering, MEng
- Materials Science & Engineering, MS
- Materials Science & Engineering, PhD
- Mechanical Engineering, MEng
- Mechanical Engineering, Mechanical Engineering, PhD
- Materials Science & Engineering, MS
- Mechanical Science & Engineering, PhD
- Theoretical & Applied Mechanics, MS
- Theoretical & Applied Mechanics, PhD

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 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 Bio-imaging, 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.

For the Biomechanics Graduate Concentration

The Biomechanics Concentration requires students to earn a B or better in each concentration course and complete at least 12 hours. Fulfillment of these requirements will be monitored jointly by the graduate coordinators in Bioengineering and in Mechanical Science and Engineering.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>ABE 446</td>
<td>Biological Nanoengineering</td>
<td></td>
</tr>
<tr>
<td>BIOE 482</td>
<td>Musculoskel Tissue Mechanics</td>
<td></td>
</tr>
<tr>
<td>ME 483</td>
<td>Mechanobiology</td>
<td></td>
</tr>
</tbody>
</table>

Alternate courses may be applicable to the Biomechanics Concentration pending joint approval by the Bioengineering and Mechanical Science and Engineering Graduate Programs.

Total hours required for the concentration: 12

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Description</th>
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<tbody>
<tr>
<td>Courses taken toward this concentration will count toward the student’s graduate degree.</td>
<td>Students must notify their department of their plan to pursue this concentration.</td>
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<tr>
<td>When choosing courses, students must work directly with their department to ensure that all degree requirements will be met.</td>
<td>Note that students who intend to complete both a Biomechanics Concentration and a Cancer Nanotechnology Concentration may only overlap one course between the two concentrations.</td>
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</tbody>
</table>

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