CANCER NANOTECHNOLOGY GRADUATE CONCENTRATION

for the graduate concentration in Cancer Nanotechnology

department head: Mark Anastasio (mfi@illinois.edu)
director of graduate studies: Gregory Underhill (bodony@illinois.edu)
overview of grad college admissions & requirements: https://grad.illinois.edu/admissions/apply
department website: https://bioengineering.illinois.edu/program website: https://bioengineering.illinois.edu/academics/graduate/phd/concentrations.html
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 Cancer Nanotechnology 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/)
Bioengineering, PhD (http://catalog.illinois.edu/graduate/engineering/bioengineering-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/)
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-and-applied-mechanics-ms/)
Theoretical & Applied Mechanics, PhD (http://catalog.illinois.edu/graduate/engineering/theoretical-and-applied-mechanics-phd/)

Other Graduate Programs in the Department of Bioengineering
degrees:

Bioengineering, MEng (http://catalog.illinois.edu/graduate/engineering/bioengineering-meng/)
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, MS (http://catalog.illinois.edu/graduate/engineering/bioengineering-ms/)
optional concentrations:

Biomechanics (http://catalog.illinois.edu/graduate/engineering/concentration/biomechanics/)
Cancer Nanotechnology (p. 1)

Bioengineering, PhD (http://catalog.illinois.edu/graduate/engineering/bioengineering-phd/)
optional concentrations:

Biomechanics (http://catalog.illinois.edu/graduate/engineering/concentration/biomechanics/)
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Computational Science and Engineering (http://catalog.illinois.edu/graduate/engineering/concentration/computational-science-engineering/)

concentrations:

Information listed in this catalog is current as of 02/2021
Cancer Nanotechnology Graduate Concentration

Biomechanics (http://catalog.illinois.edu/graduate/engineering/concentration/biomechanics/)

available for:

Bioengineering, MS (http://catalog.illinois.edu/graduate/engineering/bioengineering-ms/)
Bioengineering, PhD (http://catalog.illinois.edu/graduate/engineering/bioengineering-phd/)
Bioinformatics: Bioengineering, MS (http://catalog.illinois.edu/graduate/engineering/bioinformatics-bioinformatics/)
Biomedical Engineering, MS (http://catalog.illinois.edu/graduate/engineering/biomedical-engineering-ms/)
Biomedical Engineering, PhD (http://catalog.illinois.edu/graduate/engineering/biomedical-engineering-phd/)
Biophysics, MS (http://catalog.illinois.edu/graduate/engineering/biophysics-ms/)
Biophysics, PhD (http://catalog.illinois.edu/graduate/engineering/biophysics-phd/)
Biotechnology, MS (http://catalog.illinois.edu/graduate/engineering/biotechnology-ms/)
Biotechnology, PhD (http://catalog.illinois.edu/graduate/engineering/biotechnology-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 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/)

The Cancer Nanotechnology Concentration requires students to earn a B or better in each concentration course. Students must complete 12 credit hours, including at least one core Cancer course and one core Nanotechnology course. Participants may take a second core Cancer course and/or a second core Nanotechnology course as an elective. Fulfillment of these requirements will be monitored by the graduate coordinator in Bioengineering.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
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<tbody>
<tr>
<td>BIOE 498</td>
<td>Special Topics (Section RB, Cancer Science and Technology)</td>
<td></td>
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<tr>
<td>MCB 400</td>
<td>Cancer Cell Biology</td>
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<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
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<tbody>
<tr>
<td>ABE 446</td>
<td>Biological Nanoengineering</td>
<td></td>
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<tr>
<td>BIOE 416</td>
<td>Biosensors</td>
<td></td>
</tr>
<tr>
<td>ECE/ME 485</td>
<td>MEMS Devices &amp; Systems</td>
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**Elective Courses**

<table>
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<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
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<tbody>
<tr>
<td>FSHN 480</td>
<td>Basic Toxicology</td>
<td></td>
</tr>
<tr>
<td>ME 483</td>
<td>Mechanobiology</td>
<td></td>
</tr>
<tr>
<td>ME 487</td>
<td>MEMS-NEMS Theory &amp; Fabrication</td>
<td></td>
</tr>
<tr>
<td>ME 586</td>
<td>Mechanics of MEMS</td>
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Total hours required for the concentration: 12

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<tr>
<th>Requirement</th>
<th>Description</th>
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<tr>
<td>Courses taken toward this concentration will count toward the student’s graduate degree.</td>
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<tr>
<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>
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<tr>
<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>
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