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
e-mail: 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/bioinformatics/bioengineering-bioinformatics/ms/)
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/)

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

Information listed in this catalog is current as of 07/2021
Cancer Nanotechnology Graduate Concentration

Biomechanics available for:

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

Opportunity also exists for specializing in energy and sustainability engineering via the Energy and Sustainability Engineering (EaSE) Graduate Certificate Option.

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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<th>Code</th>
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<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>
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<tr>
<td>ECE/ME 485</td>
<td>MEMS Devices &amp; Systems</td>
<td></td>
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</table>

Elective Courses

- FSHN 480 Basic Toxicology
- ME 483 Mechanobiology
- ME 487 MEMS-NEMS Theory & Fabrication
- ME 586 Mechanics of MEMS

Total hours required for the concentration: 12

<table>
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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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