The Graduate Certificate in Nanomedicine is designed for scientists, engineers, and physicians to develop competency and practical skills in the application of nanotechnology to problems in medicine. This program is appropriate for those working in or seeking careers in biotechnology, pharmaceutical, biomedical, or clinical fields. Program participants receive advanced training in the fundamental and applied aspects of nanomedicine, as well as nanomedicine commercialization from bench to bedside. The curriculum includes a variety of activities for scientific and professional development, including lectures, case studies, journal readings, term projects, and close interactions with distinguished faculty and experts drawn from academia, hospitals, industry, and government.

The certificate consists of five nanomedicine (NNMD) courses, totaling 12 semester-hour credits. This is a part-time, 12-credit graduate program that can be completed in as little as two semesters.

Program Requirements
Complete all requirements listed below unless otherwise indicated.

**Core Requirements**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
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<tbody>
<tr>
<td>NNMD 5270</td>
<td>Introduction to Nanomedicine</td>
<td>3</td>
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<tr>
<td>NNMD 5272</td>
<td>Nanomedicine Seminar 1</td>
<td>1</td>
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<tr>
<td>NNMD 5274</td>
<td>Nanomedicine Seminar 2</td>
<td>1</td>
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<tr>
<td>NNMD 5470</td>
<td>Nano/Biomedical Commercialization: Concept to Market</td>
<td>3</td>
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**Electives**

<table>
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<tbody>
<tr>
<td></td>
<td>Complete NNMD 5370 or choose 4SH of electives from the list.</td>
<td>4</td>
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</table>

Research Techniques
- NNMD 5370 Nanomedicine Research Techniques

Or choose 4 semester hours of electives.
- BIOE 6100 Medical Physiology
- BIOL 5307 Biological Electron Microscopy
- BIOL 6381 Ethics in Biological Research
- BIOT 5145 Basic Biotechnology Lab Skills
- BIOT 5225 Managing and Leading a Biotechnology Company
- BIOT 5227 Launching your Science: Biotechnology Entrepreneurship
- BIOT 5700 Molecular Interactions of Proteins in Biopharmaceutical Formulations
- BIOT 7245 Biotechnology Applications Laboratory
- CHEM 7247 Advances in Nanomaterials
- CHME 7350 Transport Phenomena
- PHSC 6210 Drug Design, Evaluation, and Development
- PHSC 6212 Research Skills and Ethics
- PHSC 6216 Human Physiology and Pathophysiology
- PHSC 6290 Biophysical Methods in Drug Discovery

**Program Credit/GPA Requirements**
12 total semester hours required
Minimum 3.000 GPA required