Interdisciplinary Minor in Nanoscale Science and Engineering (Nanotechnology) IMNT

Required Courses (7 Credits)

_____ UN2600 Fund. of Nanoscale Sci. and Tech. (2)
_____ SS3820 Societal Implications of Nanotech. (3)
_____ Independent Study / Research / Co-op / Enterprise (3) *
* must be nano-related; program approval required

Elective Courses

Choose at least two courses from this list of courses not in your major. Additional courses may be freely chosen from this list to bring the total number of credits from this list to at least 8, giving a total of at least 16 credits for the minor. (Remember that it is also a university requirement that you take at least 6 credits at the 3000-level or higher not required by your major.)

_____ BA3780 Entrepreneurship (3)
_____ BE3500 Biomedical Materials (3)
_____ BE4700 Biosensors: Fabrication and Apps. (3)
_____ BL1900 Molecular Biology Seminar (1)
_____ BL2100 Principles of Biochemistry (3)
_____ BL2200 Genetics (3)
_____ BL4010 Biochemistry I (3)
_____ BL4020 Biochemistry II (3)
_____ BL4030 Molecular Biology (3)
_____ CH2400 Principles of Organic Chem. (4)
_____ CH3500 Physical Chem. For Env. & Life Sci. (2)
_____ CH3520 Physical Chem. II – Kinetics & Mol. Structure (3)
_____ CH4212 Instrumental Analysis (5)
_____ CH4310 Inorganic Chemistry I (3)
_____ CH4320 Inorganic Chemistry II (3)
_____ CH4560 Computational Chemistry (3)
_____ CH4610 Introduction to Polymer Science (3)

Credits Required = 16

Total Credits _______

Elective Courses (Continued)

_____ CM4610 Intro to Polymer Science (3)
_____ CM4710 Biochemical Processes (3)
_____ CM3974 Fuel Cell Fundamentals (1)
_____ EE4231 Physical Electronics (3)
_____ EE4240 Introduction to MEMS (4)
_____ EE4240D Introduction to MEMS (4)
_____ EE5470 Semiconductor Fabrication (3)
_____ EE5480 Advanced MEMS (4)
_____ EET3131 Instrumentation (3)
_____ ENT3974 Fuel Cell Fundamentals (1)
_____ FW3075 Plant Biotechnology (3)
_____ FW4089 Bioinformatics (3)
_____ MEEM4405 Intro to Finite Element Method (3)
_____ MEEM4640 Micromanufacturing Processes (3)
_____ MY3200 Materials Characterization I (4)
_____ MY3210 Materials Characterization II (4)
_____ MY3700 Electronic, Optical, and Magnetic Properties of Materials (4)
_____ MY4200 Intro to Scanning Electron Microscopy (2)
_____ MY4240 Introduction to MEMS (4)
_____ MY4240D Introduction to MEMS (4)
_____ MY4710 Photonic Materials & Devices (3)
_____ PH5530 Selected Topics in Nanotechnology (2)

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**Elective Courses (continued)**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>MY5470</td>
<td>Semiconductor Fabrication</td>
<td>3</td>
</tr>
<tr>
<td>MY5480</td>
<td>Advanced MEMS</td>
<td>4</td>
</tr>
<tr>
<td>MY5550</td>
<td>Solid Surfaces</td>
<td>3</td>
</tr>
<tr>
<td>MY5580</td>
<td>Intro to Scanning Probe Microscopy</td>
<td>2</td>
</tr>
<tr>
<td>MY6100</td>
<td>Computational Materials Science and Engng</td>
<td>3</td>
</tr>
<tr>
<td>PH2400</td>
<td>Univ. Physics IV: Waves &amp; Modern Physics</td>
<td>3</td>
</tr>
<tr>
<td>PH3410</td>
<td>Quantum Physics I</td>
<td>3</td>
</tr>
<tr>
<td>PH3411</td>
<td>Quantum Physics II</td>
<td>3</td>
</tr>
<tr>
<td>SS2800</td>
<td>Science, Technology &amp; Society</td>
<td>3</td>
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<tr>
<td>BA/SS3650</td>
<td>Intellectual Property Law, Technology, Society, and Innovation</td>
<td>3</td>
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</tbody>
</table>

Other appropriate electives (including those at the graduate level) may be chosen with written permission by the Nanotechnology Minor faculty advisor. Graduate-level courses may also require permission of the department or instructor.

**Students are encouraged, though not required, to take at least one course from this list related to instrumentation:**

<table>
<thead>
<tr>
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<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BE3600</td>
<td>Biomedical Instrumentation</td>
<td>4</td>
</tr>
<tr>
<td>CH4212</td>
<td>Instrumental Analysis</td>
<td>3</td>
</tr>
<tr>
<td>MY3200</td>
<td>Materials Characterization I</td>
<td>4</td>
</tr>
<tr>
<td>MY3210</td>
<td>Materials Characterization II</td>
<td>4</td>
</tr>
<tr>
<td>MY4200</td>
<td>Introduction to Scanning Electron Microscopy</td>
<td>2</td>
</tr>
<tr>
<td>MY5580</td>
<td>Introduction to Scanning Probe Microscopy</td>
<td>2</td>
</tr>
</tbody>
</table>

**Information and Guidelines**

- Minors require a minimum of 16 semester credit hours. Of these 16 credit hours no more than 6 credit hours may be 1000 or 2000 level courses. For minors exceeding 16 credits, the additional credits beyond 16 may be at any level. Each minor must include at least 6 credit hours of 3000 level or higher courses which are not required for a student’s Major degree program except as free electives.

- Undergraduate requirements and special provisions for each Minor are listed and defined by each academic unit offering the Minor. Minors offered in cross-disciplinary areas must originate in a designated department, school, or multidisciplinary program as recognized by the University.

- Students may not take a Minor with the same title as their Major or Major Concentration.

- A minimum cumulative grade point average of 2.0 is required for courses in the Minor.

- It is recommended that students consider Minors as early as possible in their program of study. Students desiring a Minor should indicate their intent by filing a "Change/Addition of Major/Minor" form with the Office of Student Records and Registration no later than the first semester of their junior year.

- Students desiring a Minor must also file the applicable ‘Minor Audit Form’ with the academic advisor of the department offering the minor two semesters prior to completion of their associated undergraduate degree. The academic advisor will approve and forward the form to Degree Services. Once this Minor Audit Form is on file with Degree Services, any change of intent to pursue the minor must be reported directly to the Degree Services Office, 487-2395. Failure to do so could delay the awarding of the undergraduate degree.

- Any changes to the requirements, e.g. course substitutions, must be indicated and submitted to the Degree Services Office on a "Petition to Alter Degree Requirements" form by the academic advisor in the department offering the minor.