**Required Courses (8 Credits)**

- _____ UN2600 Fund. of Nanoscale Sci. and Tech. (2)
- _____ SS3820 Ethical, Legal and Societal Implications
  - Nanotechnology (3)
- _____ Independent Study / Research / Co-op / Enterprise (3) *

List approved courses:

- ____________________________________________
- ____________________________________________

* 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.)

- _____ MGT3800 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)
- _____ CH2420 Organic Chemistry II (3)
- _____ CH3500 OR CH3501 Physical Chem. For Env. & Life Sci. (2)
- _____ CH3520 Physical Chem. II – Kinetics & Mol. Structure (3)
- _____ CH4310 Inorganic Chemistry I (3)
- _____ CH4320 Inorganic Chemistry II (3)
- _____ CH 4560 Computational Chemistry (3)

**Elective Courses (Continued)**

- _____ CH/CM4610 Intro to Polymer Science (3) OR
- _____ MY4600
- _____ 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)
- _____ MEEM5130 Nanotechnology (3)
- _____ MY3700 Electronic, Optical, and Magnetic Properties of Materials (4) OR
- _____ MY3701 Introduction to Semiconductor Materials Science & Engineering (2)
- _____ 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)
- _____ MY5470 Semiconductor Fabrication (3)
- _____ MY5480 Advanced MEMS (4)
- _____ MY5550 Solid Surfaces (3)
- _____ MY6100 Computational Materials Science and Engg (3)
- _____ PH2400 Univ. Physics IV: Waves & Modern Physics (3)
- _____ PH3410 Quantum Physics I (3)
- _____ PH3411 Quantum Physics II (3)
- _____ SS2800 OR SS3801 Science, Technology & Society (3)
- _____ BA/SS3650 Intellectual Property Law, Technology, Society, and Innovation (3)
Students are encouraged, though not required, to take at least one course from this list of electives related to instrumentation:

- BE3600 Biomedical Instrumentation (4)
- BL4035 Bioimaging (2)
- BL4042 Scanning Electron Microscopy of Biological Specimens (2)
- BL4062 Transmission Electron Microscopy of Biological Specimens (2)
- CH4212 Instrumental Analysis (5)
- ENT/MY4310 Practical Scanning Probe Microscopy (1)
- MY3200 Materials Characterization I (4)
- MY3210 Materials Characterization II (4)
- MY4201 Practical Scanning Electron Microscopy (1)
- MY5200 Advanced Scanning Electron Microscopy (3)
- MY5580 Atomic Force Microscopy (2)

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.

Courses listed in this minor have the following prerequisites (shown in parenthesis). Concurrency is illustrated by the letter C:

- MEEM4405 (MEEM3502 and (MA2320 or MA2321 or MA2330) and (MA3520 or MA3521 or MA3530 or MA3560)), PH3410 (PH2400 and (MA3520 or MA3521 or MA3530 or MA3560), CM3974 (CH1100 or CH110), CH4212 (CH2212 and CH3510 or CH3511), ENC3974 (CH1100 or CH110), CH5250 (CH1120 and PH2200 or CH3510 or CH3520 or CH3530 and CH3540), CH4610 (CH120, EE4231, EE5310, MY3200 (MY2110), MY3210 (MY2000), MY4201 (MY4200 or CH120), MY4200 (CH120), MIE3131 (EE2211 or EET2211), MY3700 (PH2200 or PH2260) and (MA3510 or MA3510) or (MA3520 or MA3521) or (MA3530 or CH3521), MY3200 (MY3200), BL2100 (BL1040 or BL1020) and (CH110 or CH110), MEEM4640 (MEEM3502), CM3110 (CM3110), CH4110 (CH3520), CH4560 (CH3520), EE5480 (EE4240 or CH4240), SS5650 (UN3002), BL4030 (BL1020 or BL1040) and (BL1020 or CH4710), BL4020 (BL4010), BL2020 (BL1020 or BL1040) and (BL1020 or CH4710), MY5480 (EE4240 or MY4240), PH3411 (PH3410), BL1040 (BL1020 or BL1040) and (BL1020 or CH4710), MEEM4640 (MEEM3502), CM4710 (CM3110), CH4110 (CH3520), CH4560 (CH3520), CM4610 (CH120), SS820 (UN2002), BE3600 (EE3010 and BL2020 or BL2020), PH2400 (PH2200 or BL2020), CH4420 (CH4310), BE3500 (BL1040 or BE2400) and MY2100 and (MEEM2150 C or EN2120 or MEEM2150), MY4600 (MY2100)

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.

Student Signature     Date

Academic Advisor    Date

Academic Year 2011-12