

Requirements for a Concentration in Nanotechnology

The concentration in Nanotechnology can be earned by any student within the College of Engineering by fulfilling the following requirements:

1. A sequence of four courses (16 cr) consisting of:

- a. CAS PY 313 – Elementary Modern Physics – 4 cr
- b. ENG EC 481 - Fundamentals of Nanomaterials and Nanotechnology - 4 cr
- c. Two technical elective courses chosen from the list below:

ENG BE/ME 523 – Mechanics of Biomaterials – 4 cr
ENG BE 537 – Biomedical/Biochemical Microsystems - 4 cr
ENG EC 560 – Introduction to Photonics – 4 cr
ENG EC 574 – Physics of Semiconductor Materials – 4 cr
ENG EC/MS 577 – Electrical, Optical and Magnetic Properties of Materials – 4 cr
ENG EC 578 – Fabrication Technology for Integrated Circuits – 4 cr
ENG ME 526 – Simulation of Physical Processes – 4 cr
ENG ME/MS 532 - Atomic Structure and Dislocations in Materials– 4 cr
ENG ME/MS 555 - MEMS: Fabrication and Materials– 4 cr
GRS PY 543 – Introduction to Solid State Physics – 4 cr

These 700-level courses can be taken by more advanced students with permission of instructor:

ENG ME/MS 718 - Advanced Topics in Nanotechnology (by permission of instructor only) – 4 cr
ENG ME/MS 778 – Micromachined Transducers (by permission of instructor only) – 4 cr

- 2. Experiential Project Requirement: Completion of a well-defined experiential component in the nanotechnology area. A senior design project, laboratory research, or industrial internship can satisfy this requirement. The project must be approved by the Concentration Coordinator and the appropriate approval form must be submitted to the Undergraduate Records Office. After completion of the proposed project, a written summary of the project must also be submitted for approval (see Project Approval form for more information).
- 3. As an introduction to the concentration, one of the (*proposed*) EK 131/132 nanotechnology modules is recommended but not required.
- 4. Students must have a declared major on record in order to declare the concentration in Nanotechnology.
- 5. Students must declare the intent to complete the Concentration in Nanotechnology no later than October 1st of the first semester of the senior year.