**Materials Science Concentration**

The Materials Science concentration provides additional coursework in chemistry, physics, and math for students interested in a deeper understanding of how the materials we interact with daily are made, why they have the properties they have, and what advances are currently being made in the field.

Students may declare this concentration in combination with any major. As with all concentrations, students will need three units towards the concentration that are not counted towards the major.

Required courses:

* Chem 111/117 (or competency): General Chemistry I
* Chem 112/118: General Chemistry II
* Chem 260: Descriptive Inorganic Chemistry (alternate spring terms)
* Phys 201: Newtonian Mechanics
* Phys 202: Electricity and Magnetism
* Phys 203: Modern Physics
* A departmental Materials course: Phys 250 or Phys 450

Two additional required courses, one must be from outside student’s major:

* Chem 221: Organic Chemistry I
* Chem 222: Organic Chemistry II
* Chem 331: Physical Chemistry I or
* Chem 350: Instrumental Analysis (Chem 331 or 341 is a required pre-req or Permission of instructor)
* Phys 315: Experimental Analysis
* Phys 350: Electromagnetic Theory
* Phys 370: Thermal Physics
* Phys 390 : Quantum Mechanics
* Phys 457: Physics of Materials (highly recommended, offered once every 4 years)
* A 400 level materials research experience in either chemistry or physics
* Materials or engineering company internship (Chem 416 or Phys 416) with the approval of the concentration coordinator.
* Chem 399 or 499: Special Topics or Phys 499: Special Topics, with approval of the concentration coordinator.

Students are encouraged to consult frequently with the concentration coordinator or their assigned advisor, as some courses are offered on an alternate year basis.

FAQ

**What do BS Chem majors add to their major courses to complete the concentration?**  
Phys 201, 202, 203, and one additional Phys course

**What do BS Physics majors take for the concentration?**  
Chem 111/112 or 113, 260, and one additional Chem course