Mechanical Cluster

**Required:** BE 420 or BE 436

**Engineering Elective: (4 credits):**
- ME 302 Engineering Mechanics II
- ME 305 Mechanics of Materials
- ME 306 Introduction to Materials Science
- ME 419 Heat Transfer

**Biomedical Elective: (12 credits):**
- BE 420 or BE 436 (whichever was not taken in junior year)
- BE 523 Mechanics of Biomaterials (*design elective*)
- BE 506 Physical Chemistry of Cell Structure and Machinery
  Prereq: BE 505
- ENG BE 513 Biological and Environmental Acoustics
- ENG BE 521 Continuum Mechanics for Biomedical Engineers/Continuum Mechanics
- ENG BE 524 Skeletal Tissue Mechanics
  Prereq: (ENG EK 301 & ENG ME 302 & ENG ME 305 & ENG ME 308 & CAS MA 242)
- ENG BE 533 Biorheology
  Prereq: (ENG BE 420 & ENG EK 424)
- ENG BE 535 Cell Mechanics
  Prereq: (ENG BE 209 & ENG EK 424 & ENG ME 305) or ENG BE 436
- ENG BE 564 Biophysics of Large Molecules
  Coreq: (ENG EK 424)

**Professional Electives (8 credits):**
(In addition to courses from the Biomedical Electives listed above)
- ENG EK 156 Design and Manufacturing (*two credits of design*)
- ENG ME 311 Engineering Design I (*two credits of design*)
- ENG ME 312 Engineering Design II (*two credits of design*)

One course from BME list and another from CAS physics (e.g., PY 313) or CAS mathematics (e.g., MA 411, MA 412, or MA 555).