BS Engineering Sciences

all engineering sciences students take the core classes, and then pick one “track” to complete

Core classes

- PHYS 151 & 152
- CHEM 141
- MATH 111, 112, 211, 212
- PHYS 212: Computational modeling for scientists & engineers
- PHYS 220: Math methods for scientists & engineers
- PHYS 222: Fundamentals of engineering design

Engineering physics track

Phys 253: Modern Physics
Phys 234: Digital electronics
Phys 361: Classical mechanics
Phys 365: Electricity & magnetism
Phys 421: Thermo & stat physics
Phys 461: Quantum mechanics
Phys 444W: Advanced lab

1 elective from:
- Math 315 (numerical analysis)
- Math 345 (math modeling)
- Math 351 (partial dif. eq.)
- Math 361 (prob and stats)
- Phys 432 (optics)
- Phys 525 (solid state physics)
- Phys 564 (polymer physics)
- Phys 5xx (continuum mechanics)
- Phys 495 or 499 (research†)

Materials science track

Organic chemistry 1 & 2

Either P-Chem 1 & 2
or Phys 253, 421, & 444

2 electives from:
- Chem 301 (biochem)
- Phys 461 (quantum)
- Chem 571 (biomolecular chemistry)
- Chem 572 (adv. biophysical chem)
- Phys 525 (solid state)
- Phys 564 (polymer physics)
- Phys 571 (soft condensed matter)
- Phys 552 (biomacromolecules)

1 elective may be Phys or Chem 495 or 499 (research†)

Geoscience track

ENVS 131: Intro Environmental Studies
ENVS 331: Earth Systems Science
CS 170: Intro to Computer Science I
PHYS 421: Thermo & Stat Physics

5 electives, including at least one course with a lab (marked with *), from:
- 230* (Fund. Geo.) / GEOL OX 141*
- 235 (Env. Geo.)
- 229* (Meteorology) / GEOL OX 115*
- 250 (Cartography)
- GEOL OX 250* (Mineral Resources)
- 325 (Energy & Climate Change)
- 328 (Intro Atmos Chem)
- 330 (Climatology)
- 346* (Geo. Origins of Landscapes)
- 348* (Sust. Water Res.)
- 328 (Intro. to Atmos. Chem.)
- PHYS 5xx (continuum mechanics)

†must be 4 research credits as a single course in a single semester