One-year Bioengineering MS Course Plan

All concentrations must enroll in BIOE 7990 - Seminar for one semester

**Fall Semester**

- Biomechanics & Mechanobiology
  - BIOE 6000 - Principles of Bioengineering
  - BIOE 6100 - Medical Physiology
  - BIOE 5115 - Dynamical Systems in Biological Engineering
  - BIOE 5640 or 5630 or 5660 - Computational Biomechanics/Physiological Fluid Mechanics/Integrative Mechanobiology

- Biomedical Devices & Bioimaging
  - BIOE 6000 - Principles of Bioengineering
  - BIOE 6100 - Medical Physiology
  - BIOE 5648 or 5235 - Biomedical Optics/Biomedical Imaging
  - BIOE 5810 - Design of Biomedical Instrumentation

- Molecular, Cell, & Tissue Engineering
  - BIOE 6000 - Principles of Bioengineering
  - BIOE 6100 - Medical Physiology
  - BIOE 5410 or 5411 - Molecular Bioengineering/Applied Molecular Bioengineering
  - BIOE 5420 - Cellular Engineering

- Systems, Synthetic, & Computational Bioengineering
  - BIOE 6000 - Principles of Bioengineering
  - BIOE 6100 - Medical Physiology
  - BIOE 5640 - Computational Biomechanics
  - BIOE 5710 - Experimental Systems and Synthetic Bioengineering

**Spring Semester**

- BIOE 5440 - The Cell as a Machine
- BIOE 5630 or 5640 - Physiological Fluid Mechanics/Computational Biomechanics
- ME 5665 - Musculoskeletal Biomechanics
- BIOE 7890/BIOE 7990 - Project or Thesis ★

- BIOE 5115 - Dynamical Systems in Biological Engineering
- BIOE 5235 or 5648 - Biomedical Imaging/Biomedical Optics
- BIOE 5250 - Design, Manufacture, and Evaluation of Medical Devices
- BIOE 5820 - Biomaterials
- BIOE 7890/BIOE 7990 - Project or Thesis ★

★ BIOE 7990 - Thesis is a two semester course, requiring a Summer Semester to complete

**Online Course Selection**

*The following courses are offered both in-person and asynchronously online, and are subject to change based on semester*

- BIOE 6000 - Principles of Bioengineering
- BIOE 6100 - Medical Physiology
- BIOE 5115 - Dynamical Systems in Biological Engineering
- BIOE 5250 - Design, Manufacture, and Evaluation of Medical Devices
- BIOE 5410 - Molecular Bioengineering
- BIOE 5420 - Cellular Engineering
- BIOE 5430 - Principles and Applications of Tissue Engineering

Northeastern University
College of Engineering
Bioengineering