One-year Bioengineering MS Course Plan

All concentrations must enroll in **BIOE 7390 - Seminar** for one semester

Fall Semester

Biomechanics

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

Biomedical Devices and Bioimaging

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

Cell and 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
BIOE 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 5115 - Dynamical Systems in Biological Engineering
BIOE 5250 - Design, Manufacture, and Evaluation of Medical Devices
BIOE 5430 - Principles and Applications of Tissue Engineering
BIOE 5440 - The Cell as a Machine
BIOE 7890/BIOE 7990 - Project or Thesis ★

BIOE 5115 - Dynamical Systems in Biological Engineering
BIOE 5440 - The Cell as a Machine
BIOE 5710 or 5880 - Experimental Systems and Synthetic Bioengineering/Computational Methods in Systems Bioengineering
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