Elective courses for MS/PhD programs in Medical Biophysics

Physics Department

PHYS 8170: Molecular Biophysics
PHYS 8180: Cellular Biophysics
PHYS 8190: Computational Biophysics
PHYS 8510: Methods of Spectroscopy
PHYS 8750: Thermodynamics and Kinetics of Biomolecules
PHYS XXX Single molecule Biophysics
PHYS XXX Experimental Biophysical Methods

Biology Department

BIOL 8010 - Concepts in Molecular, Cellular and Developmental Biology
BIOL 8260 - Epigenetics in Eukaryotes
BIOL 8420 - Understanding Cellular Processes
BIOL 8430 - Understanding Genetics and Evolutionary Biology
BIOL 8500 - Plant Tissue and Cell Culture
BIOL 8600 - Plant Anatomy and Cell Biology

Genetics and Biochemistry

BCHM 6360 - Molecular Biology: Genes to Proteins
BCHM (GEN) 6400 - Bioinformatics
BCHM 6430 - Molecular Basis of Disease
BCHM (GEN) 8100 - Principles of Molecular Biology
BCHM 6310 – Physical Approach to Biochemistry
BCHM 6320 – Biochemistry of Metabolism

Chemistry

CH 8150 - Mass Spectrometry
CH 8300 - Fundamentals of Physical Chemistry
CH 8380 - Computational Chemistry
CH 8400 - Techniques of Experimental Chemistry
CH 8600 - Chemical Biology

Mathematics

MATH 6030 - Introduction to Statistical Theory
MATH 8050 - Data Analysis
MATH 8260 - Partial Differential Equations
MATH 8270 - Dynamical System Neural Networks
MATH 8600 - Introduction to Scientific Computing
MATH 8840 - Statistics for Experimenters

Computer science

CPSC 8300 - Systems Modeling
CPSC 8450 - Bioinformatics Algorithms
CPSC 8650 - Data Mining
CPSC 8700 - Software Design
CPSC 8770 - Fundamentals of Biometric Systems

Bioengineering

BIOE 6310 - Medical Imaging
BIOE 8240 - Cellular and Molecular Analysis in Tissue Engineering
BIOE 8410 - Drug Delivery
BIOE 8480 - Cellular Interactions with Biomaterials
BIOE 8500 - Microscopy
BIOE 8750 - Innovations in Biomaterials and Tissue Engineering
BIOE 6340 - Cardiovascular Biomechanics
BIOE-6710 - Biophotonics

Material sciences

MSE 8150 - Colloidal and Surface Science
MSE 8220 - Scanning Electron Microscopy
MSE 8230 - Transmission Electron Microscopy
MSE 8280 - Phase Transformations in Materials Science
MSE 8660 - Fiber Formation
MSE 8900 - Multiscale Modeling

Chemical and Biomolecular Engineering

CHE 8340 - Polymer Thermodynamics
CHE 8450 – Multiscale Modeling
CHE 8450 – Systems Biology
CHE 8450 - Statistical Mechanics
CHE 8450 - Systems Biology and Pharmacology
CHE 6250 – Biomolecular Engineering
CHE8450 – Modern Biomolecular Engineering

Plant and Environmental Sciences

ENT8700 Insect Physiology and Molecular Biology

PRISMA Health

Various seminars and lectures.