

# BIOP BIOPHYSICS ELECTIVE (ABPE)

Code	Title	Course Units
AMCS 5681	Mathematical Modeling in Physiology and Cell Biology	1
AMCS 5840	The Mathematics of Medical Imaging and Measurement	1
BBCB 5540	Macromolecular Crystallography: Methods and Applications	1
BBCB 5850	Wistar Institute Cancer Biology Course: Signaling Pathways in Cancer	1
BBCB 6220	Physical Principles of Mechano-Enzymes	1
BE 3010	Bioengineering Signals and Systems	1
BE 3060	Cellular Engineering	1
BE 4700	Medical Devices	1
BE 4800	Introduction to Biomedical Imaging	1
BE 4830	Physics of Medical/Molecular Imaging	1
BE 5120	Bioengineering III: Biomaterials	1
BE 5180	Optical Microscopy	1
BE 5210	Brain-Computer Interfaces	1
BE 5300	Theoretical and Computational Neuroscience	1
BE 5550	Nanoscale Systems Biology	1
BE 5590	Multiscale Modeling of Chemical and Biological Systems	1
BE 5660	Networked Neuroscience	1
BE 5760	The Cell as a Machine	1
BE 5840	The Mathematics of Medical Imaging and Measurement	1
BE 6500	Advanced Biomedical Imaging Applications	1
BIOL 3008	Immunology in Action	1
BIOL 3710	Microbial Diversity and Pathogenesis	1
BIOL 4004	Immunobiology	1
BIOL 4010	Advanced Cell Biology	1
BIOL 4016	Molecular Mechanisms of Infectious Disease Biology	1
BIOL 4024	Cell Motility and the Cytoskeleton	1
BIOL 4026	Chromosomes and the Cell Cycle	1
BIOL 4110	Neural Systems and Behavior	1
BIOL 4210	Molecular Genetics	1
BIOL 4234	Epigenetics	1
BIOL 4235	The RNA World: A functional and computational analysis	1
BIOL 4266	Molecular Genetics of Neurological Disease	1
BIOL 4310	Molecular Physiology	1
BIOL 4318	Systems Biology: Integrative physiology and biomechanics of the muscular system	1
BIOL 4536	Introduction to Computational Biology & Biological Modeling	1
BIOL 4710	Topics in Prokaryotic Biology: From Molecules to Microbiomes	1
BIOL 4825	Biochemistry and Molecular Genetics Superlab	1
BIOL 5010	Advanced Cell Biology	1
BIOL 5016	Molecular Mechanisms of Infectious Disease Biology	1
BIOL 5022	Cell Signaling	1
BIOL 5024	Cell Motility and the Cytoskeleton	1
BIOL 5026	Chromosomes and the Cell Cycle	1
BIOL 5110	Neural Systems and Behavior	1
BIOL 5234	Epigenetics	1
BIOL 5240	Genetic Analysis	1
BIOL 5310	Molecular Physiology	1
BIOL 5318	Systems Biology: Integrative physiology and biomechanics of the muscular system	1
BIOL 5535	Introduction to Computational Biology & Biological Modeling	1
BIOL 5568	Mathematical Modeling in Physiology and Cell Biology	1
BIOL 5720	Topics in Prokaryotic Biology: From Molecules to Microbiomes	1
BIOL 5825	Biochemistry and Molecular Genetics Superlab	1
CAMB 4800	Advanced Cell Biology	1
CAMB 4830	Epigenetics	1
CAMB 4850	The RNA World: A functional and computational analysis	1
CAMB 4860	Chromosomes and the Cell Cycle	1
CBE 5550	Nanoscale Systems Biology	1
CBE 5590	Multiscale Modeling of Chemical and Biological Systems	1
CBE 5640	Drug Delivery Systems: Targeted Therapeutics and Translational Nanomedicine	1
CHEM 5250	Molecular Spectroscopy	0.5
CHEM 5570	Mechanisms of Biological Catalysis	1
CIS 4360	Introduction to Computational Biology & Biological Modeling	1
ESE 5660	Networked Neuroscience	1
MATH 5840	The Mathematics of Medical Imaging and Measurement	1
MEAM 5550	Nanoscale Systems Biology	1
NGG 5210	Brain-Computer Interfaces	1
NGG 5940	Theoretical and Computational Neuroscience	1
NRSC 4110	Neural Systems and Behavior	1
NRSC 4266	Molecular Genetics of Neurological Disease	1
NRSC 5585	Theoretical and Computational Neuroscience	1
PHRM 5640	Drug Delivery Systems: Targeted Therapeutics and Translational Nanomedicine	1
PHYS 3358	Data Analysis for the Natural Sciences I: Fundamentals	1
PHYS 3359	Data Analysis for the Natural Sciences II: Machine Learning	1

2 *BIOP Biophysics Elective (ABPE)*

PHYS 4421	Modern Optics	1
PHYS 5580	Biological Physics	1
PHYS 5585	Theoretical and Computational Neuroscience	1
PSYC 3220	Neural Systems and Behavior	1
PSYC 5390	Theoretical and Computational Neuroscience	1
SCMP 5590	Multiscale Modeling of Chemical and Biological Systems	1
STAT 4300	Probability	1