

Breadth category:	School:	Department:	Course number:	Course name:	Credits:	Prerequisites:	Breadth category questions?
Quantitative (Q) vs. Biosciences (B)	ArtSci (A), Engineering (E), Medicine (M)						
Q	A	BIOL	404	Fitting Models to Data: Maximum Likelihood Methods and Model Selection	3		
Q	A	BIOL	415	Quantitative Biology Laboratory	3		
Q	A	BIOL	421	Design and Analysis of Biological Experiments	3		
Q	A	BIOL	452	Ecology and Evolution of Infectious Diseases	3		
Q	A	BIOL	473	Introduction to Neurobiology	3		
Q	A	BIOL	478	Computational Neuroscience	3		
Q	A	MATH	419	Applied Probability and Stochastic Processes for Biology	3		
Q	A	MATH	497	Stochastic Models: Time Series and Markov Chains	3	MATH 491	
Q	A	MATH	598	Stochastic Models: Diffusive Phenomena and Stochastic Differential Equations	3		
Q	A	PHYS	420	Introduction to Biological Physics	3		
Q	A	PHYS	430	Experimental Methods in Biophysics	3		
Q	A	PHYS	431	Physics of Imaging	3		
Q	A	PHYS	460	Advanced Topics in NMR Imaging	3		
Q	E	CSDS	440	Machine Learning	3	CSDS 491	
Q	E	CSDS	442	Causal Learning from Data	3	CSDS 440	
Q	E	CSDS	458	Introduction to Bioinformatics	3		
Q	E	CSDS	459	Bioinformatics for Systems Biology	3	CSDS 458	
Q	E	CSDS	491	Artificial Intelligence: Probabilistic Graphical Models	3		
Q	E	EBME	410	Medical Imaging Fundamentals	3		
Q	E	EBME	432	Quantitative Analysis of Physiological Systems	3		
Q	E	EBME	433	Advanced Topics for Physiological Systems Analysis	3		
Q	E	EBME	434	Methodologies for Modeling Physiological Systems	3		
Q	E	EBME	461	Biomedical Image Processing and Analysis	3		
Q	E	EBME	401D	Biomedical Instrumentation and Signal Processing	3		
Q	E	EMAC	402	Polymer Foundation Course II: Physical Chemistry	3		
Q	E	EMAC	403	Polymer Foundation Course III: Physics	3		
Q	E	EMAC	453	Foundations of Scattering	3	EMAC 402, EMAC 403	
Q	E	EMAE	414	Nanobiomechanics in Biology	3		
Q	E	EMAE	415	Introduction to Musculo-skeletal Biomechanics	3		
Q	E	EMAE	466	Mechanics of Biological Fluids	3		
Q	M	PQHS	431	Statistical Methods I	3		
Q	M	PQHS	432	Statistical Methods II	3	PQHS 431	
Q	M	SYBB	402	Introduction to Scientific Computing	1		
Q	M	SYBB	412	Survey of Bioinformatics: Programming for Bioinformatics	3	SYBB 411A	
Q	M	SYBB	411A	Survey of Bioinformatics: Technologies in Bioinformatics	1		
Q	M	SYBB	411B	Survey of Bioinformatics: Data Integration in Bioinformatics	1		
Q	M	SYBB	411C	Survey of Bioinformatics: Translational Bioinformatics	1		
B	A	BIOL	414	Taming the Tree of Life: Phylogenetic Comparative Methods	3		
B	A	BIOL	416	Fundamental Immunology	3		
B	A	BIOL	422	Sensory Biology	3		
B	A	BIOL	424	Introduction to Stem Cell Biology	3		
B	A	BIOL	426	Genetics	3		
B	A	BIOL	427	Functional Genomics	3		
B	A	BIOL	428	Plant Genomics and Proteomics	3		
B	A	BIOL	429	Genome Dynamics	3		

Breadth category:	School:	Department:	Course number:	Course name:	Credits:	Prerequisites:	Breadth category questions?
Quantitative (Q) vs. Biosciences (B)	ArtSci (A), Engineering (E), Medicine (M)						
B	A	BIOL	443	Microbiology	3		
B	A	BIOL	451	Principles of Ecology	3		
B	A	BIOL	462	Principles of Developmental Biology	3		
B	A	BIOL	468	Topics in Evolutionary Biology	3		
B	A	BIOL	471	Foundations of Advanced Ecology	3	BIOL 451	
B	A	BIOL	472	Foundations of Advanced Evolution	3		
B	A	CHEM	428	Introductory Biochemistry I	3		
B	A	CHEM	429	Biochemistry II: Living Systems	3		
B	E	EBME	406	Polymers in Medicine	3		
B?	E	EBME	407	Neural Interfacing	3		E-mail Dustin Tyler
B	E	EBME	411	Underpinnings of the Extracellular Matrix	3		
B	E	EBME	416	Biomaterials for Drug Delivery	3		
Q	E	EBME	421	Bioelectric Phenomena	3		
B	E	EBME	426	Nanomedicine	3	EBME 416	
B? Bolu	E	EBME	427	Movement Biomechanics and Rehabilitation	3		
B	E	EBME	451	Molecular and Cellular Physiology	3		
? Andrew	E	EBME	465	Biomedical Optical Imaging	3		
B	E	EBME	474	Biotransport Processes	3		
B?	E	ECHE	486	Protein Engineering	3		maybe quantitative?
B	E	EMAC	401	Polymer Foundation Course I: Organic Chemistry	3		
B	M	BIOC	407	Introduction to Biochemistry: From Molecules To Medical Science	4	undergrad organic chemistry	
B	M	BIOC	408	Molecular Biology	4		
B	M	BIOC	412	Proteins and Enzymes	3		
B	M	BIOC	420	Current Topics in Cancer	3	IBMS 453, IBMS 455	
B	M	BIOC	432	Current Topics in Vision Research	3		
B	M	BIOC	434	Structural Biology	3		
B	M	BIOC	450	Molecular Basis of Cancer	3	BIOC 407, BIOC 408 (co-req)	
B	M	BIOC	452	Nutritional Biochemistry and Metabolism	3		
B	M	BIOC	454	Biochemistry and Biology of RNA	3		
B	M	BIOC	501	Biochemical and Cellular Techniques for Biotechnology	3		
B	M	BIOC	599	RNA Structure and Function	3		
B	M	IBMS	453	Cell Biology I	3		
B	M	IBMS	455	Molecular Biology I	3		
B	M	NEUR	401	Biological Mechanisms of Brain Disorders	3		
B	M	NEUR	402	Principles of Neural Science	3		
B	M	PHOL	410	Basic Oxygen & Physiological Function	3		
B	M	PHOL	412	Membrane Transport Processes	3		
B	M	PHOL	456	Conversations on Protein Structure and Function	2		
B	M	PHOL	466	Cell Signaling	3		
Q	M	PHOL	475	Protein Biophysics	3		
B	M	PHOL	480	Physiology of Organ Systems	4		
B	M	PHOL	481	Medical Physiology I	6		
B	M	PHOL	482	Medical Physiology II	6		
B	M	PHOL	483	Translational Physiology I	3		
B	M	PHOL	484	Translational Physiology II	3	PHOL 482 (co-req)	

Breadth category:	School:	Department:	Course number:	Course name:	Credits:	Prerequisites:	Breadth category questions?
Quantitative (Q) vs. Biosciences (B)	ArtSci (A), Engineering (E), Medicine (M)						
B	M	PHOL	485	Comparative & Evolutionary Physiology	4		
B	M	PHOL	401A	Physiology and Biophysics of Molecules and Cells	2		
B	M	PHOL	401B	Physiology and Biophysics of Molecules and Cells	2		
B	M	PHOL	401C	Human Physiology: A Molecular Understanding of Organ System Function	2	PHOL 401A, PHOL 401B	
B	M	PHOL	402A,B	Physiological Basis for Disease	3		
Q	E	ECIV	461	Environmental Engineering Biotechnology	3		
Q	E	ECHE	340	Biochemical Engineering	3		
Q	E	EBME	350	Quantitative Molecular, Cellular and Tissue Bioengineering	3		