

Bioinformatics and Systems Biology Graduate Program

11-12 Projected Course Offerings

Please note: Departments may change the quarter in which their courses are offered. Refer to the schedule of classes for an active listing.

	Fall	Winter	Spring
CORE COURSES			
Bioinformatics I: Biological Data and Analysis (PHAR 201)	X		
Bioinformatics II: Introduction to Bioinformatics Algorithms (BENG 202/CSE 282)		X	
Bioinformatics III: Genomics, Proteomics, and Network Biology (BENG 203/CSE 283)			X
Bioinformatics IV: Statistical Methods in Bioinformatics (MATH 283)			X
BNFO 281: Bioinformatics and Systems Biology Seminar (1 unit)	X	X	
SOMI 226 or BIOM 219 (1 unit)			X
Elective 1: Biochemistry			
BENG 230A: Biochemistry	X		
CHEM 209: Macromolecular Recognition	X		
CHEM 213: Chemistry of Biological Macromolecules			X
CHEM 216: Enzyme Catalyzed Reactions (not offered this year)	x		
Elective 2: Molecular Genetics			
BICD 100: Genetics	X	X	X
BGGN 220: Graduate Molecular Biology	X		
BGGN 223: Graduate Genetics			X
Elective 3: Cell Biology			
BICD 110: Cell Biology	X	X	X
BICD 130: Embryos, Genes, and Development		X	
BGGN 222: Graduate Cell Biology		X	
BGGN 230/CHEM 221: Graduate Signal Transduction		X	
Elective 4: Algorithms			
CSE 101: Design and Analysis of Algorithms	X	X	X
CSE 200: Computability and Complexity			X
CSE 202: Algorithm Design and Analysis	X	X	
CSE 280A: Algorithms in Computational Biology		X	
MATH 261A: Probabilistic Combinatorics and Algorithms	X		
Elective 5: Machine Learning and Data Mining			
CSE 250A: Artificial Intelligence: Search and Reasoning	X		
CSE 250B: Artificial Intelligence: Learning		X	
CSE 254: Statistical Learning		X	
Elective 6: Bioinformatics and Systems Biology			
BENG 211: Systems Biology and Bioengineering I: Biological Components	X		
BENG 212: Systems Biology and Bioengineering II: Network Reconstruction		X	
BENG 227: Transport Phenomena/ Living Systems		X	
Elective 7: Mathematics and Statistics			
MATH 274: Numerical Methods for Physical Modeling	X		
MATH 280A: Probability Theory	X		
MATH 281A: Mathematical Statistics	X		
MATH 281B: Mathematical Statistics		X	
PHYS 210A: Equilibrium Statistical Mechanics			X
PHYS 210B: Equilibrium Statistical Mechanics	X		
Elective 8: Kinetic Modeling			
BENG 125: Modeling and Computation in Bioengineering			X
PHYS 239 (Special Topics): Quantitative Molecular Biology		X	
BENG 213: Systems Biology & Bioengineering III: Building and Simulating Large-Scale In Silico Models			X
CHEM 220: Regulatory Circuits in Cells (not offered this year)			x
Elective 9: Medical Informatics			
MED 263: Bioinformatics Applications to Human Disease		X	
MED 264: Principles of Biomedical Informatics			X
MED 265: Healthcare Systems: A Quantitative Perspective		X	
MED 266: Machine Learning in Biomedicine			X