

Biomedical Engineering – Program Map: Bioinformatics Track

Track Requisites

ENGR:2730	Computers in Engineering	All	P: ENGR:1300
ECE:3330	Intro to Software Design	F	P: ENGR:2730
BME:5320	Bioinformatics Techniques	F (odd)	P: ENGR:2730 or CS:2110 or CS:5110, BIOL:1411
BME:5330	Computational Genomics	Sp (even)	P: ENGR:1300, (BIOS:4120 or STAT:3510); or consent of instructor

Track Electives

Engineering Topics

ISE:4172	Big Data Analytics	F	P: STAT:2020
ECE:5450	Machine Learning	F	P: ECE:2400
ECE:4480	Knowledge Discovery	F	
ECE:5330	Graph Algorithms & Combinatorial Optimization	Sp	P: ECE:3330
BME:4310	Computational Biochemistry	F (even)	P: MATH:1560 or MATH:1860, CHEM:1120

Suggested Electives

ANTH:2320	Origins of Human Infectious Disease	F	
BIOL:2512	Fundamental Genetics	All	P: BIOL:1411, BIOL:1412 or PSY:2701, CHEM:1120; C: CHEM:2210
BIOL:3314	Genomics	Sp	P: BIOL:2512 or BIOC:3210
BIOL:4213	Bioinformatics	F	P: BIOL:2512 or BIOC:3120
CS:3330	Algorithms	All	P: CS:2210 and CS:2230 (min C-), MATH:1850 or MATH:1550 or MATH:1860 or MATH:1560
CS:4740	Large Data Analysis	Sp	P: (CS:1210 or ENGR:2730) and (MATH:2700 or MATH:2550) and (STAT:2010 or STAT:2020)
CS:5350	Design and Analysis of Algorithms	Sp	P: CS:3330 or CS:5340
CS:5430	Machine Learning	Sp	P: MATH:1850 and MATH:2700 and STAT:2020 and (CS:2230 or CS:2110)
ECE:5800	Fundamentals of Software Engineering	F/Sp	P: CS:2820 or ECE:3330
ECE:5820	Software Engineering Languages & Tools	F	P: CS:2820 or ECE:3330

Pre-Medicine

BIOL:1412	Diversity of Form & Function	All	P: BIOL:1411, CHEM:1110
CHEM:2210	Organic Chemistry I	All	P: CHEM:1120
CHEM:2220	Organic Chemistry II	All	P: CHEM:2210
CHEM:2410	Organic Chemistry Lab	All	P: CHEM:1110, CHEM:1120, CHEM:2210
BIOC:3110	Biochemistry	All	See MyUI for requirements
BIOL:2512	Fundamental Genetics	All	P: BIOL:1411, BIOL:1412 or PSY:2701, CHEM:1120; C: CHEM:2210

Note: At least two electives must be from the list of Engineering Topics
Please check MyUI for the most up to date course offerings and pre/corequisites.
Last updated (10/25/19)

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Semester 1	Chem. I & Lab CHEM:1110	Math I MATH:1550		Eng. Prob. Solving ENGR:1100	Rhetoric RHET:1030	Engr Success First Year ENGR:1000	
Semester 2	Chem. II & Lab CHEM:1120	Math II MATH:1560	Math III MATH:2550	Eng. Computing ENGR:1300	Physics I / Lab PHYS:1611	BME Forum BME:1010	
Semester 3	Foundations of Biology BIOL:1411		Math IV MATH:2560	Statics ENGR:2110	Elec. Circuits ENGR:2120	Thermo ENGR:2130	BME Seminar BME:2010
Semester 4	Human Physiol. HHP:3500	Systems, Instrum, & Data Acquisition / Lab BME:2200	Bioimaging & Bioinformatics / Lab BME:2210	CIE ENGR:2730	Biostatistics BIOS:4120 or STAT:3510	BME Seminar BME:2010	
Semester 5	Cell Biology for Engr / Lab BME:2400	Intro to Software Design ECE:3330	Bioinformatics Techniques BME:5320 <small>(Fall – odd years)</small>	Track Elective #1	GEC Elective #1	Leadership & Resourcefulness BME:3010	
Semester 6	Computational Genomics BME:5330 <small>(Spring – even years)</small>	Track Elective #2	Track Elective #3	GEC Elective #2	GEC Elective #3	BME Design Seminar BME:4010	
Semester 7	BME Design I BME:4910	Biomaterials & Biomechanics / Lab BME:2500	Track Elective #4	Track Elective #5	GEC Elective #4		
Semester 8	BME Design II BME:4920	Track Elective #6	Track Elective #7	Physics II / Lab PHYS:1612	GEC Elective #5		

Math & Science Courses
 Biomedical Core Courses
 Track Elective Courses
 Seminar
 Engineering Core Courses
 Track Requisite Courses
 General Education Courses