

BME UNDERGRADUATE CURRICULUM
Systems & Synthetic Biology

FRESHMAN	units		units		units
Fall		Winter		Spring	
MAT 21A Calculus	4	MAT 21B Calculus	4	MAT 21C Calculus	4
CHE 2A General Chemistry	5	CHE 2B General Chemistry	5	CHE 2C General Chemistry	5
BIM 1 Intro to BME	2	BIS 2A Intro to Biology	5	PHY 9A Classical Physics	5
Lower Division Composition	4	GE elective		GE elective	
SOPHOMORE					
Fall		Winter		Spring	
MAT 21D Vector Analysis	4	MAT 22A or 27A Linear Algebra	3/4	MAT 22B or 27B Differential Equations	3/4
CHE 8A or CHE 118A Organic Chemistry	2/4	CHE 8B or 118B Organic Chemistry	4	BIM 20 Fundamentals of Bioengineering	4
PHY 9B Classical Physics	5	PHY 9C Classical Physics	5	BIM 20L Graphics Design for BME	2
ENG 6 Eng. Problem Solving	4	GE elective		ENG 17/17V Circuits I	4
JUNIOR					
Fall		Winter		Spring	
BIM 105 Probability & Data Science for BME	4	BIM 106 Biotransport Phenomena	4	BIM 108 Biomedical Signals & Control	4
BIM 116/NPB 101 Physiology	5	BIM 107 Mfg Processes for BME	2	BIM 109 Biomaterials	4
SE: BIM 161A ** Biomolecular Engineering or ECS 32A Intro to Programming	4	ENG 100 Electronic Circuits & Systems or EEC 100 Circuits II	3/5	EE: BIM 154 Computational Genomics	4
Upper Division Composition Course=4 units, Exam=0 units	4/0	EE: BIM 152 Molecular Control of Biosystems or BIM 151 Comp Tools in BioE & BioM	4	GE elective	
SENIOR					
Fall		Winter		Spring	
BIM 110A Senior Design	3	BIM 110B Senior Design	3	BIM 110C Senior Design	3
BIM 111 Biomedical Instrumentation Lab	6	ENG 105 Thermodynamics	4	EE: BIM 143 Synthetic Biology	4
SE: BIM 161A ** Biomolecular Engineering or ECS 32A or ECS 32B	4	EE: ECS 124 Theory & Practice of Bioinformatics	4	EE: BIM 140 Protein Engineering	4
GE elective		GE elective GE elective		ENG 190 Professional Responsibilities of Engineers	3

**BIM 161A Biomolecular Engineering (odd years),

Other courses: SE - BIS 101, 102, 103, NPB 167 Computational Neuroscience (offered irregularly)

EE - BIM Skills Modules – 174 Microcontrollers Lab, 177 Rapid Prototyping,

BIM 189C Cell Culture Lab.

June 2024