

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 Linear Algebra	3	MAT 22B Differential Equations	3
CHE 8A Organic Chemistry	2	CHE 8B Organic Chemistry	4	BIM 20 Fundamentals of Bioengineering	4
PHY 9B Classical Physics	5	PHY 9C Classical Physics	5	BIM 089C/20L* CAD for BME	2
ENG 6 MATLAB	4	GE elective		ENG 17 Circuits I	4
JUNIOR					
Fall		Winter		Spring	
BIM 105 Probability and Stats for BME	4	BIM 106 Biotransport	4	BIM 108 Biomedical Signals and Control	4
BIM 116 Physiology for BME	5	ENG 100 Circuits II	3	BIM 109 Biomaterials	4
SE: BIM 161A ** Biomolecular Engineering or BIM 102 Cellular Dynamics or ECS 32A	4	EE: BIM 152 Molecular Control of Biosystems	4	EE: BIM 143 Biomolecular Systems Eng: Synthetic Biology	4
Upper Division Composition Course=4 units, Exam=0 units	4/0	GE elective GE elective		EE: BIM 143L Synthetic Biology Lab	2
SENIOR					
Fall		Winter		Spring	
BIM 110L Senior Design Lab	2	BIM 110A Senior Design	3	BIM 110B Senior Design	3
BIM 111 Biomedical Instrumentation Lab	6	EE: BIM 189C Computational tools in Bioengineering & Biomedicine	4	ENG 105 Thermodynamics	4
SE: BIM 161A ** Biomolecular Engineering or BIM 102 Cellular Dynamics or ECS 32A or ECS 32B	4	ENG 190 Professional Responsibility Engineers	3	EE: BIM 189C/154 Computational Genomics	4
EE: ECS 124 Bioinformatics	4	GE elective GE elective		EE: BIM 140 Protein Engineering	4

***BIM 089C/BIM 20L must be taken concurrently with BIM 20**

**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, 189C/175 Metalworking, 176 Microfluidics,
189C Neuroengineering, 189C Rapid Prototyping.