

First Year (46 credits)			Second Year (51 credits)			Third Year (47 credits)			Fourth Year (48 credits)		
Fall	Winter	Spring	Fall	Winter	Spring	Pro School Fall	Winter	Spring	Fall	Winter	Spring
*Differential Calculus (MTH 251) (4FWS)	*Integral Calculus (MTH 252) (4FWS)	*Vector Calculus (MTH 254) (4FWS)	Perspective (3FWS)	*Applied Diff Equations (MTH 256) (4FWS)	*Matrix & Power series methods (MTH 306) (4FWS)	General Biochemistry BB 450 (4FWS)	General Biochemistry BB 451 (3WS)	Biomedical Eng Principles BIOE 340 (3S)	Biochemistry/lab BB 493 (3F)	Biochemistry/lab BB 494 (3W)	Engineering Selector ² (3)
*General chemistry CH 231 (4FW)	General chemistry CH 232 (4WS)	General chemistry CH 233 (4S)	*Organic Chemistry CH 331 (4FW)	*Organic Chemistry CH 332 (4WS)	*Statics ENGR 211 (3FWS)	Transport I CHE 331 (4F)	Transport II CHE 332 (3W)	Transport III CHE 333 (3S)	Boreadors BIOE 457 (3F)	Bioengineering Laboratory BIOE 415 (3)	BIOE selection ³ (3)
CH Lab 261 (1F)	CH Lab 262 (1W)	CH Lab 263 (1S)									
BIOE Operation CBEE 101 (3F)	*ENGR Problem Solving CBEE 102 (3W)	*General Physics PH 211 (4FWS)	*General Physics PH 212 (4FWS)	*General Physics PH 213 (4WS)	*Electrical ENGR Fundamentals ENGR 201 (3FWS)	Thermodynamics CHE 311 (3F)	Social Justice, Ethics in ENGR BIOE 420 (3W)	Biomaterials & Bionterfaces BIOE 351 (3)	Bioengineering Process Design BIOE 490 (4)	Bioengineering Product Design BIOE 491 (4)	Bioengineering product design II BIOE 492 (4)
Lifetime fitness HHS 231 (2) and HHS 24X or PAC(1) (3FWS)	*English Composition WR 121 (3FWS)	*Speech Communication COMM 111/114 (3FWS)	*Material Balances OBEE 211 (3F)	*Energy Balances CBEE 212 (3W)	Process Analysis CBEE 213 (4S)	Professionalism & engr ethics CBEE 320 (3F)	Engineering Selection (3)	Perspectives (3)	Process Eng Laboratory CBEE 414a (3F)	BIOE Selector ³ (3W)	Synthesis (3)
			Anatomy & Physiology BI 231 (3F)	Biology selection ¹ (2 or 4)	Anatomy & Physiology BI 233 (3S)	Perspectives (3)	Tech Writing WR 327 (3FWS)	DDP+ (3)	Engineering selection ² (3F)	Perspectives (3)	Synthesis (3)
15	15	16	17	17	17	17	15	15	16	16	16

BIOENGINEERING

Numbers in parenthesis are credit hours per class. Blue-highlighted courses are pre-engineering core

Revised / Updated—9/06/2016

* Required for admission into the Bioengineering Professional Program. We'll accept the combination of MTH 253 and MTH 341 as equivalent to MTH 306. CBEE 211 and CBEE 212 are enforced prerequisites for CHE 311 and CHE 331.

^ Satisfies the WIC requirement

BIOE-DPD must be taken with A/F grading. Only Perspective, Synthesis, HHS 231/24*, PAC and FREE can be taken with S/U grading.

Biology courses from which students may select (one course only)
Anatomy and Physiology Laboratory (BI 241, Fall) 2 credits or **Introductory Microbiology (MB 230, FWS) 4 credits**

Engineering courses from which students may select (at least 9 credits).

Cell Engineering (BIOE 459) 3 credits

Chemical Engineering Lab II (CBEE 416) 3 credits

Fundamentals of environmental engineering (ENVE 322) 4 credits

Water and wastewater characterization (ENVE 421) 4 credits

Environmental engineering design (ENVE 422) 4 credits

Air pollution control (ENVE 425) 3 credits

Fate/transport of organic chemicals in environmental systems (ENVE 431) 3 credits

Bioseparations (BIOE 462) 3 credits

Bioenergy Systems (BEE 499 or 475) 3 credits

Surface Analysis (BIOE 4XX) 3 credits (number can vary)

Bioproduct Engineering (BEE 480) 3 credits

Transport Phenomena Laboratory (CHE 334) 2 credits

Upper division BIOE courses from which students may select (at least 6 credits). Note that courses used to satisfy this requirement CANNOT be used to satisfy the engineering science selection above.

Bioconjugation or Surface Analysis (BIOE 499) (number can vary)

Cell Engineering (BIOE 459) 3 credits

Biological Networks (CS 446) 3 credits

See next page/reverse for **BIOE-DPD approved courses (must be taken with A/F grading)**