

BIOCOMPUTATIONAL ENGINEERING

NAME:

A.A., A.S., Post-Bac

UID:

GENERAL EDUCATION REQUIREMENTS			
Fundamental Studies			
Academic Writing (AW)	ENGL 101		3
Professional Writing (PW) @USG	ENGL 393		3
Oral Communication (OC)			3
Mathmatics (MA)	MATH 140		4
Analytic Reasoning (AR)	MATH 140		0
Distributive Studies			
History/Social Sciences (HS*)			3
History/Social Sciences (HS*)			3
Humanities (HU*)			3
Humanities (HU*)			3
Natural Sciences No Lab (NS)	PHYS 161		3
Natural Sciences w/Lab (NL)	PHYS 260/261		4
Scholarship in Practice (SP*) in major	ENES 100		3
Scholarship in Practice (SP*) out of major			3
Big Question Courses			
Big Question (SCIS*)			0/3
Big Question (SCIS*)			0/3
Diversity			
Understanding Plural Societies (UP*)			0/3
Understanding Plural Societies (UP*) OR Cultural Competency (CC*)			0/3
MAJOR REQUIREMENTS			
Basic Sciences			
CHEM 135- Chem Engr or CHEM 131+134 - Gen Chem+Princ			3/3&1
CHEM136 - Chemistry Lab for Engr			1
PHYS 161 - General Physics I (NS)			0
PHYS 260 and PHYS 261 - Gen Physics II & Lab (NL)			0
MATH 140 - Calculus I (MA/AR)			0
MATH 141 - Calculus II			4
MATH 241 - Calculus III			4
Engineering Sciences			
ENES 100 - Intro to Eng Design (SP)			0
BIOE 120 - Biology for Engr or BSCI170 - Prin of Mol & Cell Bio			3
BIOE 241 - Biocomputational Methods or equivalent			3

Major Requirements @ USG		
ENBC 301 - Intro to Biocomputational Engineering		1
ENBC 311 - Python for Data Analysis		3
ENBC 312 - Object Oriented Programming in C++		3
ENBC 321 - Machine Learning for Data Analysis		3
ENBC 322 - Algorithms		3
ENBC 331 - Applied Linear Systems and Diff Eqs		3
ENBC 332 - Statistics, Data Analysis, and Data Vis		3
ENBC 341 - Biomolecular Engineering Thermo		3
ENBC 342 - Comp Fluid Dynamics and Mass Transfer		3
ENBC 351 - Quantitative Mol and Cell Biology		3
ENBC 352 - Molecular Techniques Laboratory		2
ENBC 353 - Synthetic Biology		3
ENBC 425 - Imaging and Image Processing		3
ENBC 431 - Finite Element Analysis		3
ENBC 441 - Computational Systems Biology		3
ENBC 491 - Senior Capstone Design in BCE		3
Required Technical Electives (12 credits) ** @ USG		
ENBC Technical Elective I		3
ENBC Technical Elective II		3
ENBC Technical Elective III		3
ENBC Technical Elective IV		3

Requirements for Graduation:
- Final 30 credits must be earned at UMD 15 of the final 30 credits must be earned at the 300-400 level 12 upper level major credits must be earned at UMD - A minimum 2.00 cumulative UM GPA, and satisfactory completion of requirements, is required for graduation all degree - Students matriculating in Fall 2012 or after must have a 2.0 minimum GPA for all degree requirements, minor requirements, and undergraduate certificate requirements (Major courses are defined as: departmental courses, basic sciences, engineering sciences, specified degree tracks, technical requirements/ technical electives and ENGL 393) - A minimum of 120 credits is required to earn the degree

* May satisfy more than one requirement. See www.gened.umd.edu

**See Biocomputational Engineering Advisor for electives: biocomp.umd.edu

BIOCOMPUTATIONAL ENGINEERING GRADUATION PLAN

Name:

UID:

Current Engineering Students: <https://eng.umd.edu/services/academic-policies>

Prospective Engineering Students: <https://lep.umd.edu/>

Year 1	Fall		
	Course	Credit	Grade
	MATH140	4	
	CHEM135	3	
	CHEM136	1	
	ENGL101	3	
	General Ed Requirement I	3	
	General Ed Requirement II	3	
	Total	17	

Spring		
Course	Credit	Grade
ENES100	3	
BIOE120	3	
MATH141	4	
PHYS161	3	
General Ed Requirement III	3	
Total	16	

Year 2	Fall		
	Course	Credit	Grade
	MATH241	4	
	BIOE241	3	
	General Ed Requirement IV	3	
	General Ed Requirement V	3	
	Total	13	

Spring		
Course	Credit	Grade
PHYS260	3	
PHYS261	1	
General Ed Requirement VI	3	
General Ed Requirement VII	3	
General Ed Requirement VIII	3	
Total	13	

Year 3	Fall @USG		
	Course	Credit	Grade
	ENBC301	1	
	ENBC311	3	
	ENBC331	3	
	ENBC332	3	
	ENBC341	3	
	ENBC322	3	
	Total	16	

Spring @USG		
Course	Credit	Grade
ENBC312	3	
ENBC351	3	
ENBC342	3	
ENBC352	2	
ENBC321	3	
Total	14	

Year 4	Fall @USG		
	Course	Credit	Grade
	ENBC353	3	
	ENBC431	3	
	ENBC425	3	
	ENGL393	3	
	Total	12	

Spring @ USG		
Course	Credit	Grade
Elective	3	
ENBC441	3	
ENBC491	3	
Elective	3	
Total	12	