

Chemical and Biomolecular Engineering Four Year Academic Plan

Name: _____

UID: _____

Year 1	Fall			Spring		
Gateway requirements include: ENGL 101, CHEM 135, MATH 141, PHYS 161 and an approved Distributive Studies course. (Directly admitted freshman must successfully complete these courses and ENES 100 by 45 UM credits.)	<i>Course</i>	<i>Credit</i>	<i>Grade</i>	<i>Course</i>	<i>Credit</i>	<i>Grade</i>
	ENES100 (SP)	3		CHBE 101	3	
	MATH 140 (AR)	4		MATH 141	4	
	CHEM 135	3		PHYS 161 (NS)	3	
	CHEM 136	1		ENGL 101 (AW)	3	
	Humanities (HU)*	3		BIOE 120	3	
	Total	14		Total	16	

Year 2	Fall			Spring		
	<i>Course</i>	<i>Credit</i>	<i>Grade</i>	<i>Course</i>	<i>Credit</i>	<i>Grade</i>
	MATH 241	4		MATH 246	3	
	CHEM 231	3		PHYS 270 and PHYS 271	3 & 1	
	CHEM 232	1		CHEM 241	3	
	PHYS 260 and PHYS 261 (NL)	3 & 1		CHEM 242	1	
	CHBE 250	3		ORAL COMM (OC)	3	
	CHBE 301	3		CHBE 302	3	
	Total	18		Total	17	

Year 3	Fall			Spring		
	<i>Course</i>	<i>Credit</i>	<i>Grade</i>	<i>Course</i>	<i>Credit</i>	<i>Grade</i>
	CHBE 410	3		BCHM 461** or 463	3	
	CHBE 422	3		ENMA 300, 425, or BIOE 453	3	
	CHBE 440	3		CHBE 424	3	
	CHEM 272	2		CHBE 426	3	
	ENGL 393 (PW)	3		CHBE 333	1	
	Scholarship in Practice (SP)*	3		Humanities (HU)*	3	
	Total	17		Total	16	

Year 4	Fall			Spring		
	<i>Course</i>	<i>Credit</i>	<i>Grade</i>	<i>Course</i>	<i>Credit</i>	<i>Grade</i>
	CHBE 437	3		CHBE 446	3	
	CHBE 442	3		Tech Elective (see advisor)**	3	
	CHBE 444	3		Tech Elective (see advisor)**	3	
	Tech Elective (see advisor)**	3		Hist & Social Sciences (HS)*	3	
	Hist & Social Sciences (HS)*	3				
	Total	15		Total	12	

*All students must complete two Distributive Studies courses that are approved for I-series courses. The Understanding Plural Societies (UP) and Cultural Competence (CC) courses may also fulfill Distributive Studies categories.

** Students selecting BCHM 461 must complete BCHM 462 as their approved outside technical elective.

NAME: _____

CHEMICAL and BIOMOLECULAR ENGRUID: _____ A.A. A.S. Post-Bac

GENERAL EDUCATION REQUIREMENTS			
Fundamental Studies			
Academic Writing (AW)	ENGL 101		3
Professional Writing (PW)	ENGL 393		3
Oral Communication (OC)			3
Distributive Studies			
History/Social Sciences (HS*)			3
History/Social Sciences (HS*)			3
Humanities (HU*)			3
Humanities (HU*)			3
Scholarship in Practice (SP*) out of major			3
I-Series Courses			
I-Series (IS*)			0/3
I-Series (IS*)			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 131 & 134 -Fund & Prin			3/3&1
CHEM 136 - Chemistry Lab for Eng			1
CHEM 231 and 232 - Organic Chemistry I & Lab			3 & 1
CHEM 241 and 242 - Organic Chemistry II & Lab			3 & 1
PHYS 161 - General Physics I (NS)			3
PHYS 260 and 261 - Gen Physics II & Lab (NL)			3 & 1
PHYS 270 and 271 - Gen Physics III & Lab			3 & 1
MATH 140 - Calculus I (MA/AR)			4
MATH 141 - Calculus II			4
MATH 241 - Calculus III			4
MATH 246 - Differential Equations			3
Engineering Sciences			
ENES 100 - Intro to Eng Design (SP)			3

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

** For technical elective guidelines, see:

www.chbe.umd.edu/undergraduate/electives

For Degree Clearance Only	
Degree: B.S. CHBE	Advisor: _____
Date: _____	GPA/Credits: _____

MAJOR REQUIREMENTS		
BIOE 120 - Biology for Engineers		3
CHBE 101 - Intro to Chem & Biom. Eng		3
CHBE 250 - Comp Methods Chem & Bio		3
CHBE 301 - Chem & Biomolec Thermo		3
CHBE 302 - Chem & Biomolec Thermo II		3
CHBE 333 - Comm Skills for Eng		1
CHBE 410 - Statistics & Experimental Design		3
CHBE 422 - Chem & Biomolec Trans.		3
CHBE 424 - Chem & Biomolec Trans. II		3
CHBE 426 - Chem & Biomolec Sep. Processes		3
CHBE 437 - Chem & Biomolec Eng Lab		3
CHBE 440 - Chem Kinetics & Reactor		3
CHBE 442 - Chem Eng Systems Analysis		3
CHBE 444 - Process Eng Econ & Design I		3
CHBE 446 - Process Eng Econ & Design II		3
ENMA 300 or ENMA425 or BIOE453		3
CHBE 4XX - Elective **		3
CHBE 4XX - Elective **		3
CHBE 4XX - Elective **		3
Technical Requirements		
BCHM 461 & BCHM 462 or BCHM463		6 or 3
CHEM 272 - Gen Bioanalytical Chem Lab		2

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 of the final 30 credits must be upper level major coursework
- A minimum 2.00 cumulative UM GPA and satisfactory completion of all degree requirements are required for graduation
- Students matriculating after Fall 2012 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