

# Bioengineering Four Year Academic Plan

Name: \_\_\_\_\_

UID: \_\_\_\_\_

Year 1	Fall		
Gateway requirements include: ENGL 101, CHEM 135, MATH 141, PHYS 161 and an approved Distributive Studies course. (Directly admitted freshman must pass and complete these courses and ENES 100 by 45 UM credits.)	Course	Credit	Grade
	ENES 102	3	
	CHEM 135	3	
	CHEM 136	1	
	MATH 140 (AR)	4	
	BIOE 120	3	
	BIOE 121	1	
	<b>Total</b>	<b>15</b>	

Spring		
Course	Credit	Grade
ENES100 (SP)	3	
MATH 141	4	
PHYS 161 (NS)	3	
Humanities (HU)*	3	
ENGL 101 (AW)	3	
<b>Total</b>	<b>16</b>	

Year 2	Fall		
	Course	Credit	Grade
	CHEM 231	3	
	CHEM 232	1	
	PHYS 260 and PHYS 261 (NL)	3 & 1	
	ENES 220	3	
	MATH 241	4	
	<b>Total</b>	<b>15</b>	

Spring		
Course	Credit	Grade
BIOE 232	3	
BIOE 241	3	
BSCI 330	4	
MATH 246	3	
BIOE 371	3	
<b>Total</b>	<b>16</b>	

Year 3	Fall		
	Course	Credit	Grade
	BIOE 331	3	
	BIOE 340	4	
	BIOE 404	3	
	BIOE 457	4	
	Humanities (HU)*	3	
	<b>Total</b>	<b>14</b>	

Spring		
Course	Credit	Grade
BIOE 332	3	
BIOE 420	3	
BIOE 453	3	
Biological Science Elec.	3	
Oral Communication (OC)	3	
<b>Total</b>	<b>15</b>	

Year 4	Fall		
	Course	Credit	Grade
	BIOE 485	3	
	Eng. Science Elective	3	
	ENGL 393 (PW)	3	
	Hist & Social Sciences (HS)*	3	
	Scholarship in Practice (SP)*	3	
<b>Total</b>	<b>15</b>		

Spring		
Course	Credit	Grade
BIOE 486	3	
Unrestricted Elective	3	
Biological Science Elec.	3	
Eng. Science Elective	3	
Hist & Social Sciences (HS)*	3	
<b>Total</b>	<b>15</b>	

\*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.

NAME: \_\_\_\_\_

# BIOENGINEERING

UID: \_\_\_\_\_    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*) non 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 for Eng			3
CHEM 136 - Chemistry Lab for Eng			1
CHEM 231 and 232 - Organic Chemistry I & Lab			3 & 1
PHYS 161 - General Physics I (NS)			3
PHYS 260 and PHYS 261 - Gen Physics II & Lab (NL)			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
ENES 102 - Mechanics I			3
ENES 220 - Mechanics II			3

\* May satisfy more than one requirement. See [www.gened.umd.edu](http://www.gened.umd.edu)

\*\* See Bioengineering Advisor for appropriate electives: [www.bioe.umd.edu](http://www.bioe.umd.edu)

## MAJOR REQUIREMENTS

BIOE 120 - Biology for Engineers			3
BIOE 121 - Biology for Eng Lab			1
BIOE 232 - Biological Thermodynamics			3
BIOE 241 - Biocomputation Methods			3
BIOE 331 - Biofluids			3
BIOE 332 - Transport Process Design			3
BIOE 340 - Modeling Phys. & Lab			4
BIOE 371 - Bioengineering Math & Stats			3
BIOE 404 - Biomechanics			3
BIOE 420 - Bioimaging			3
BIOE 453 - Biomaterials			3
BIOE 457 - Biomedical Elect. & Instrumentation			4
BIOE 485 - Capstone I			3
BIOE 486 - Capstone II			3

### Technical Requirements

BSCI 330 - Cell Biology & Physiology			4
BSCI 222 OR 223 OR other Biological Science Elective**			3-4
Biological Science Elective **			3
Bio/ENGR Science Elective **			3
ENGR Science Elective **			3
ENGR Science Elective **			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 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

### For Degree Clearance Only

Degree: B.S. BIOE	Advisor: _____
Date: _____	GPA/Credits: _____