

# 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 or 4    |       |
| Humanities (HU)* | 3         |       |
| ENGL 101 (AW)    | 3         |       |
|                  |           |       |
| <b>Total</b>     | <b>13</b> |       |

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

| Spring                          |           |       |
|---------------------------------|-----------|-------|
| Course                          | Credit    | Grade |
| BIOE 232                        | 3         |       |
| BIOE 371                        | 3         |       |
| Bio. Science Elec. I (BSCI 2xx) | 4         |       |
| MATH 246                        | 3         |       |
| Hist & Social Sciences (HS)*    | 3         |       |
| BIOE 221                        | 1         |       |
|                                 |           |       |
| <b>Total</b>                    | <b>17</b> |       |

| Year 3 | Fall                |           |       |
|--------|---------------------|-----------|-------|
|        | Course              | Credit    | Grade |
|        | BIOE 331            | 3         |       |
|        | BIOE 372            | 3         |       |
|        | BSCI 330            | 4         |       |
|        | BIOE Foundational I | 4         |       |
|        | BIOE Elective I     | 3         |       |
|        |                     |           |       |
|        | <b>Total</b>        | <b>14</b> |       |

| Spring                        |           |       |
|-------------------------------|-----------|-------|
| Course                        | Credit    | Grade |
| BIOE 340                      | 4         |       |
| BIOE 457                      | 4         |       |
| BIOE Foundational II          | 3         |       |
| BIOE Elective II              | 3         |       |
| Scholarship in Practice (SP)* | 3         |       |
|                               |           |       |
|                               |           |       |
| <b>Total</b>                  | <b>17</b> |       |

| Year 4       | Fall               |        |       |
|--------------|--------------------|--------|-------|
|              | Course             | Credit | Grade |
|              | BIOE 485           | 3      |       |
|              | BIOE Elective III  | 3      |       |
|              | Breadth Elective   | 3      |       |
|              | ENGL 393 (PW)      | 3      |       |
|              | Oral Communication | 3      |       |
|              |                    |        |       |
| <b>Total</b> | <b>15</b>          |        |       |

| Spring                       |           |       |
|------------------------------|-----------|-------|
| Course                       | Credit    | Grade |
| BIOE 486                     | 3         |       |
| BIOE Elective IV             | 3         |       |
| Bio. Science Elective II     | 3         |       |
| I-Series (IS)                | 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                                    |          |  |        |
|---|----------|--|--------|
| <b>Fundamental Studies</b>  |          |  |        |
| Academic Writing (AW)   | ENGL 101 |  | 3      |
| Professional Writing (PW)   | ENGL 393 |  | 3      |
| Oral Communication (OC)   |          |  | 3      |
| <b>Distributive Studies</b>                                       |          |  |        |
| History/Social Sciences (HS*)                                     |          |  | 3      |
| History/Social Sciences (HS*)                                     |          |  | 3      |
| Humanities (HU*)  |          |  | 3      |
| Humanities (HU*)  |          |  | 3      |
| Scholarship in Practice (SP*) out of major                        |          |  | 3      |
| <b>I-Series Courses</b>   |          |  |        |
| I-Series (IS*)  |          |  | 0/3    |
| I-Series (IS*)  |          |  | 0/3    |
| <b>Diversity</b>  |          |  |        |
| Understanding Plural Societies (UP*)                              |          |  | 0/3    |
| Understanding Plural Societies (UP*) OR Cultural Competency (CC*) |          |  | 0/3    |
| MAJOR REQUIREMENTS  |          |  |        |
| <b>Basic Sciences</b>   |          |  |        |
| 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  |
| PHYS 161 - General Physics I (NS)                                 |          |  | 3 or 4 |
| PHYS 260 and PHYS 261 - Gen Physics II & Lab (NL)                 |          |  | 3 & 1  |
| BSCI 330 - Cell Biology and Physiology                            |          |  | 4      |
| MATH 140 - Calculus I (MA/AR)                                     |          |  | 4      |
| MATH 141 - Calculus II  |          |  | 4      |
| MATH 241 - Calculus III   |          |  | 4      |
| MATH 246 - Differential Equations                                 |          |  | 3      |
| <b>Engineering Sciences</b>                                       |          |  |        |
| ENES 100 - Intro to Eng Design (SP)                               |          |  | 3      |
| ENES 102 - Mechanics I  |          |  | 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 221 - Intro to Bioengineering Major       |  | 1 |
| BIOE 232 – Biological Thermodynamics           |  | 3 |
| BIOE 241 - Biocomputation Methods              |  | 3 |
| BIOE 331 - Biofluids                           |  | 3 |
| BIOE 340 - Modeling Phys. & Lab                |  | 4 |
| BIOE 371 - Bioengineering Math & Stats         |  | 3 |
| BIOE 372 - Biostatistics                       |  | 3 |
| BIOE 457 - Biomedical Elect. & Instrumentation |  | 4 |
| BIOE Foundational I                            |  | 3 |
| BIOE Foundational II                           |  | 3 |
| BIOE Elective I                                |  | 3 |
| BIOE Elective II                               |  | 3 |
| BIOE Elective III                              |  | 3 |
| BIOE Elective IV                               |  | 3 |
| BIOE 485 - Capstone I                          |  | 3 |
| BIOE 486 - Capstone II                         |  | 3 |
| <b>Technical Requirements</b>                  |  |   |
| Biological Science Elective I (BSCI 2xx) **    |  | 4 |
| Biological Science Elective II**               |  | 3 |
| Breadth 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: _____ |