BIOENGINEERING BS
Bioengineering Concentration in Prehealth (BMPH)
2015 – 2016

CONTACT INFORMATION
• Honors College Advisor: Kathleen Alligood (alligood@gmu.edu)
• Department Chair: Joseph Pancrazio (jpancraz@gmu.edu)
• Undergraduate Advisor: Anya Sailey (asailey@gmu.edu)

Once students begin attending Mason and declare a major they should see both their Honors College and their major department advisor for advising. Students must confirm their major requirements with their department advisor and with PatriotWeb’s Degree Evaluation.

Note for students in the Volgenau School: Be aware of termination and repeat policies as outlined in the catalog. Students who get a warning that they will be terminated from the Volgenau School for GPA have one semester to either (1) meet the department’s requirements, or (2) change major; otherwise, they will have the “Terminated from Volgenau” designation placed on their transcript.

ADVISING SHEET
- Honors College Requirement
- Department Requirement

<table>
<thead>
<tr>
<th>1st Year – 1st Semester (Fall)</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>◆ HNRS 110: Research Methods (Grade C or better required)</td>
<td>4</td>
</tr>
<tr>
<td>◆ MATH 113: Analytic Geometry and Calculus I (a placement exam is required)</td>
<td>4</td>
</tr>
<tr>
<td>◆ CS 112: Introduction To Computer Programming (passing placement exam at the MATH 113 level is required)</td>
<td>4</td>
</tr>
<tr>
<td>◆ BIOL 213 or BIOL 213H: Cell Structure and Function</td>
<td>4</td>
</tr>
<tr>
<td>Semester Total</td>
<td>16</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>1st Year – 2nd Semester (Spring)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>◆ HNRS 122: Reading the Arts</td>
<td>3</td>
</tr>
<tr>
<td>◆ CS 222: Computer Programming for Engineers, or CS 211 or CS 211H: Object-Oriented Programming</td>
<td>3</td>
</tr>
<tr>
<td>◆ BENG 101: Intro to Bioengineering</td>
<td>3</td>
</tr>
<tr>
<td>◆ MATH 114: Analytic Geometry and Calculus II (prerequisite: &quot;C&quot; or better in MATH 113) or MATH 116: Analytic Geometry and Calculus II Honors</td>
<td>4</td>
</tr>
<tr>
<td>◆ ENGR 107: Introduction to Engineering (Grade C or better required)</td>
<td>2</td>
</tr>
<tr>
<td>Semester Total</td>
<td>15</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>2nd Year – 1st Semester (Fall)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>◆ HNRS 131: Contemporary Society in Multiple Perspectives</td>
<td>3</td>
</tr>
<tr>
<td>◆ CHEM 211: General Chemistry I or CHEM 211H</td>
<td>4</td>
</tr>
<tr>
<td>◆ MATH 203: Linear Algebra (Prerequisite MATH 114 or MATH 116)</td>
<td>3</td>
</tr>
<tr>
<td>◆ MATH 213: Analytic Geometry and Calculus III or MATH 215: Calculus III Honors</td>
<td>3</td>
</tr>
<tr>
<td>◆ PHYS 160/161 or PHYS 160H/161: University Physics I (Pre- or co-requisite MATH 114 or MATH 116)</td>
<td>3/1</td>
</tr>
<tr>
<td>Semester</td>
<td>Total</td>
</tr>
<tr>
<td>----------</td>
<td>-------</td>
</tr>
<tr>
<td>2nd Year – 2nd Semester (Spring)</td>
<td>17</td>
</tr>
<tr>
<td>♦ PHYS 260/261 or PHYS 260H/261: University Physics II (Pre- or co-requisite MATH 213 or MATH 215)</td>
<td>3/1</td>
</tr>
<tr>
<td>♦ BENG 220: Physical Bases of Biomedical Systems (Prerequisites: BENG 101, PHYS 160, MATH 213 or 215; Corequisite: MATH 214 or 216)</td>
<td>3</td>
</tr>
<tr>
<td>♦ MATH 214: Elementary Differential Equations (Prerequisite MATH 213 or 215) or MATH 216 (additional Prerequisite MATH 203)</td>
<td>3</td>
</tr>
<tr>
<td>♦ CHEM 212 or CHEM 212H: General Chemistry II</td>
<td>4</td>
</tr>
<tr>
<td>Semester Total</td>
<td>14</td>
</tr>
<tr>
<td>3rd Year – 1st Semester (Fall)</td>
<td></td>
</tr>
<tr>
<td>♦ CHEM 313/315: Organic Chemistry I and Lab</td>
<td>3/2</td>
</tr>
<tr>
<td>♦ BENG 320: Discrete Signals and Systems (pre-req: B- or better in MATH 214)</td>
<td>3</td>
</tr>
<tr>
<td>♦ BENG 380/381: Intro to Circuits and Electronics &amp; Lab</td>
<td>3/1</td>
</tr>
<tr>
<td>♦ BENG 313: Physiology for Engineers or BIOL 430: Advanced Human Anatomy &amp; Physiology</td>
<td>3 or 4</td>
</tr>
<tr>
<td>Semester Total</td>
<td>16</td>
</tr>
<tr>
<td>3rd Year – 2nd Semester (Spring)</td>
<td></td>
</tr>
<tr>
<td>♦ CHEM 314/318: Organic Chemistry II and Lab</td>
<td>3/2</td>
</tr>
<tr>
<td>♦ BENG 301/302: BE Measurements &amp; Lab</td>
<td>3/1</td>
</tr>
<tr>
<td>♦ BENG 304: Modeling and Control of Physiological Systems</td>
<td>3</td>
</tr>
<tr>
<td>♦ PSYC 100: Basic Concepts of Psychology</td>
<td>3</td>
</tr>
<tr>
<td>Semester Total</td>
<td>15</td>
</tr>
<tr>
<td>4th Year – 1st Semester (Fall)</td>
<td></td>
</tr>
<tr>
<td>o HNRS 240: Reading the Past</td>
<td>3</td>
</tr>
<tr>
<td>♦ BENG 491: BE Senior Seminar I</td>
<td>1</td>
</tr>
<tr>
<td>♦ BENG 492: Senior Advanced Design Project I</td>
<td>2</td>
</tr>
<tr>
<td>♦ BENG 420: Bioinformatics for Engineers</td>
<td>3</td>
</tr>
<tr>
<td>♦ BIOL 483: General Biochemistry</td>
<td>4</td>
</tr>
<tr>
<td>♦ STAT 344: Probability and Statistics for Engineers</td>
<td>3</td>
</tr>
<tr>
<td>Semester Total</td>
<td>16</td>
</tr>
<tr>
<td>4th Year – 2nd Semester (Spring)</td>
<td></td>
</tr>
<tr>
<td>o HNRS 353: Technology in the Contemporary World (grade of C or better required)</td>
<td>3</td>
</tr>
<tr>
<td>♦ BENG 493: Senior Advanced Design Project II</td>
<td>2</td>
</tr>
<tr>
<td>♦ BENG 495: BE Senior Seminar II</td>
<td>1</td>
</tr>
<tr>
<td>♦ BIOL Tech Elective (BIOL 311 or 311H: Genetics)</td>
<td>4</td>
</tr>
<tr>
<td>♦ BIOL Tech Elective (BIOL 305/306: Microbiology)</td>
<td>3/1</td>
</tr>
<tr>
<td>Semester Total</td>
<td>14</td>
</tr>
<tr>
<td>5th Year – 1st Semester (Fall)</td>
<td></td>
</tr>
<tr>
<td>♦ ECE 301: Digital Electronics</td>
<td>3</td>
</tr>
<tr>
<td>♦ ENGR Technical Electives</td>
<td>3</td>
</tr>
<tr>
<td>Course</td>
<td>Credits</td>
</tr>
<tr>
<td>----------------------------------------------------------------------</td>
<td>---------</td>
</tr>
<tr>
<td>ENGR Technical Electives</td>
<td>3</td>
</tr>
<tr>
<td>SOCI 101: Introductory Sociology</td>
<td>3</td>
</tr>
<tr>
<td>PHIL 309: Bioethics (or an approved humanities/social science substitute)</td>
<td>3</td>
</tr>
</tbody>
</table>

Semester Total 15

Total Hours 138

NOTES

1. The Honors sections of these courses can be used to satisfy Honors College Requirement 3 (Advanced Topics).
2. College requirements (VS) include 24 credit hours of department-approved, humanities and/or social science electives.
3. Students interested in Medical School (or other Professional health schools) substitute CHEM 211 (or CHEM 211H) and CHEM 212 (or CHEM 212H) for PHYS 262, PHYS 263, and CHEM 251, which appear in the Bioengineering BMSS Concentration.
4. To ensure that they receive up to date and accurate advice, students interested in medical school or other professional health schools should consult with the Pre-Health Advisor:

   Jane Rockwood  
   Health Professions Advising Office  
   Academic Advising Center, SUB I, Rm 2500, MS 2E6  
   jrockwo1@gmu.edu

HONORS REQUIREMENTS (see advising section of Honors College website for further details)

- All Honors College students earning a BS degree must complete HNRS 110, HNRS 122, HNRS 131, HNRS 240, and HNRS 353. HNRS 110 has no substitutions.

- Students earning a BS degree must complete Requirement 3 (Advanced Topics) by taking two additional Honors courses beyond Requirements 1 and 2 of the Honors College Curriculum. These courses must be approved by your Honors College advisor in your Plan of Study.