BIOENGINEERING BS
Biomedical Health Care Informatics (BHI)
2017–2018

Contact Information
• Honors College Advisor: Richard Todd Stafford (rstaffo2@gmu.edu)
• Undergraduate Advisor: Claudia Borke (cborke@gmu.edu)

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

Honors College advisors are available to help with a variety of other advising issues, including help with the Honors College curriculum, changing majors, identifying and declaring minors, identifying and selecting high-impact experiences unavailable within the major (including interdisciplinary research, some internships, service learning, etc.).

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
o Honors College Requirement
♦ Department Requirement
△ College Requirement

<table>
<thead>
<tr>
<th>1st Year – 1st Semester (Fall)</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>o HNRS 110: Research Methods (Grade C or better required)^1</td>
<td>4</td>
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<tr>
<td>♦ MATH 113: Analytic Geometry and Calculus I (a placement exam is required)</td>
<td>4</td>
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<tr>
<td>♦ CS 112: Introduction To Computer Programming (passing placement exam at the MATH 113 level is required)</td>
<td>4</td>
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<tr>
<td>♦ ENGR 107 or ENGR 107H: Introduction to Engineering (Grade C or better required)^2</td>
<td>2</td>
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<tr>
<td>♦ ECON 103 or ECON 103H: Cont. Microecon. Principles,^2 PSYC 100: Basic Concepts in Psychology OR SOCI 101: Introductory Sociology^2</td>
<td>3</td>
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<tr>
<td>Semester Total</td>
<td>17</td>
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<tr>
<th>1st Year – 2nd Semester (Spring)</th>
<th>Credits</th>
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<tr>
<td>♦ CHEM 251 or CHEM 211 and CHEM 213^3</td>
<td>4</td>
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<tr>
<td>♦ BENG 101: Intro to Bioengineering</td>
<td>3</td>
</tr>
<tr>
<td>♦ MATH 114: Analytic Geometry and Calculus II (prerequisite: “C” or better in MATH 113) or MATH 116: Analytic Geometry and Calculus II Honors ^2</td>
<td>4</td>
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<tr>
<td>♦ PHYS 160/161 or PHYS 160H/161: University Physics I (Pre- or co-requisite MATH 114 or MATH 116)^4</td>
<td>3/1</td>
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<td>Semester Total</td>
<td>15</td>
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<tr>
<th>2nd Year – 1st Semester (Fall)</th>
<th>Credits</th>
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<tbody>
<tr>
<td>o HNRS 131: Contemporary Society in Multiple Perspectives^1</td>
<td>3</td>
</tr>
<tr>
<td>♦ BIOL 213: Cell Structure and Function</td>
<td>4</td>
</tr>
<tr>
<td>♦ MATH 203: Linear Algebra (Prerequisite MATH 114 or MATH 116)^4</td>
<td>3</td>
</tr>
<tr>
<td>♦ MATH 213: Analytic Geometry and Calculus III or MATH 215^5</td>
<td>3</td>
</tr>
<tr>
<td>♦ PHYS 260/261 or PHYS 260H/261: University Physics II (Corequisite MATH 213)^4</td>
<td>4</td>
</tr>
<tr>
<td>Semester Total</td>
<td>17</td>
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### 2nd Year – 2nd Semester (Spring)

- **BENG 313**: Physiology for Engineers (Prerequisites: BIOL 213, BIOL 215, and better in MATH 114) | 3
- **BENG 220**: Physical Bases of Biomedical Systems (Prerequisites: BENG 101, PHYS 160, MATH 203; Corequisite: MATH 214 or 216) | 3
- **HAP 301**: Healthcare Delivery | 3
- **HAP 360**: Intro to Health Inform. Systems | 3
- **MATH 214**: Elementary Differential Equations (Prerequisite: MATH 213 or 215) or MATH 216 | 3

**Semester Total**: 15

### 3rd Year – 1st Semester (Fall)

- **HNRS 240**: Reading the Past | 3
- **BENG 320**: Discrete Signals and Systems BE | 3
- **BENG 380/381**: Intro to Circuits and Electronics & Lab | 3/1
- **IT 214**: Database Fundamentals OR HAP 361 Health Databases | 3
- **CS 222**: Computer Programming for Engineers OR CS 211 or CS 211 H: Object-Oriented Programming | 3

**Semester Total**: 16

### 3rd Year – 2nd Semester (Spring)

- **HNRS 353**: Technology in the Contemporary World (grade of C or better required) | 3
- **BENG 301/302**: BE Measurements & Lab | 3/1
- **BENG 304**: Modeling and Control of Physiological Systems | 3
- **STAT 344**: Probability for Engineers (Prerequisite: MATH 213 or 215) | 3
- **BENG 322**: Health Data Challenges OR HAP 436 Electr. Health Data in Proc. Impr. | 3

**Semester Total**: 16

### 4th Year – 1st Semester (Fall)

- **HNRS 122**: Reading the Arts | 3
- **BENG 491**: BE Senior Seminar I | 1
- **BENG 492**: Senior Advanced Design Project I | 2
- **BENG 420**: Bioinformatics for Engineers | 3
- **Technical Elective** | 3
- **‘Department-approved Humanities/Social Science Elective’** | 3

**Semester Total**: 15

### 4th Year – 2nd Semester (Spring)

- **BENG 493**: Senior Advanced Design Project II | 2
- **BENG 495**: BE Senior Seminar II | 1
- **Technical Elective** | 3
- **Technical Elective** | 3
- **‘Department-approved Humanities/Social Science Elective’** | 3

**Semester Total**: 12

**Total Hours**: 123

### NOTES

1. Students may also elect to take HNRS 108: Research Methods (3 credits) in their first semester. Students who take HNRS 108 must take HNRS 109 (3 credits) in their second semester and will need to use an alternative sample schedule to adjust their second semester schedules to reflect this. Alternative sample schedules are available from the Bioengineering Department. The HNRS 108/109 sequence offers a less compressed first year research experience with additional writing support.
2. The Honors sections of these courses can be used to satisfy Honors College Requirement 3.

3. Honors College seminars are topical, with each section focusing on a different topic. Descriptions of each section are posted before registration at https://honorscollege.gmu.edu/academics/courses.

4. All bioengineers will be required to register for a specific section of MATH 203 including a 1-hour recitation with MATLAB applications.

5. To sign up for IT 214 please request an override with the IST department. The Override Request Form can be found on their webpage: https://ist.gmu.edu/students/current-students/registering-for-classes/registration-errors-and-overrides/.

6. Students choose from sets of approved technical electives, including one of the Technical Electives from an approved life science course (See Bioengineering Student Guide for details).

7. College requirements (VS) include 24 credit hours of department-approved, humanities and/or social science electives.

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

Honors College students complete HNRS 108/109 or 110, HNRS 122, HNRS 131 or 230, HNRS 240, and HNRS 353. If students leave the Honors College, completed courses will fulfill corresponding general education requirements in the Mason Core.

Honors College students complete Requirement 3 (Advanced Topics) by taking two additional Honors courses beyond Requirements 1 and 2 of the Honors College Curriculum.