### College of Liberal Arts and Sciences (CLAS) Academic Advising Center

**Biomedical Sciences-BS-General Emphasis**

This is a general curriculum guide and is not applicable to every student. It is important to meet with your advisor.

<table>
<thead>
<tr>
<th>Year One</th>
<th></th>
<th>Year Two</th>
<th></th>
<th>Year Three</th>
<th></th>
<th>Year Four</th>
<th></th>
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</thead>
<tbody>
<tr>
<td><strong>BIO 120</strong> General Biology I</td>
<td>4</td>
<td><strong>CHM 116</strong> Principles of Chemistry II</td>
<td>5</td>
<td><strong>OR BIO 355</strong> Human Genetics (lecture only)</td>
<td>3</td>
<td><strong>BMS 495</strong> Concepts in Wellness (Capstone) SWS</td>
<td>3</td>
</tr>
<tr>
<td>Prerequisites: High school chemistry, CHM 109, or CHM 115 strongly recommended (CHM 109 or 115 may be taken concurrently)</td>
<td></td>
<td>Prerequisites: CHM 115 and (MTH 122 or MTH 125 or MTH 201)</td>
<td></td>
<td>Prerequisites: BIO 120. Concurrent enrollment in BIO 376 is required (Recommended)</td>
<td></td>
<td>Prerequisites: CHM 242 or CHM 247 and CHM 248</td>
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<tr>
<td><strong>CHM 115</strong> Principles of Chemistry I</td>
<td>5</td>
<td><strong>WRT 150</strong> Strategies in Writing</td>
<td>4</td>
<td><strong>BMS 213</strong> Laboratory in Microbiology</td>
<td>1</td>
<td><strong>BMS 212</strong> Introductory Microbiology</td>
<td>3</td>
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<tr>
<td>Prerequisites: High school chemistry and (MTH 110 or MTH 122 or MTH 125 or MTH 201)</td>
<td></td>
<td>Gen Ed</td>
<td>3</td>
<td>Prerequisites: BMS 212 or concurrent enrollment</td>
<td>1</td>
<td>Prerequisites: BIO 120 and (CHM 230 or CHM 232 or CHM 241)</td>
<td>4</td>
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<tr>
<td><strong>MTH 122</strong> College Algebra</td>
<td>3</td>
<td>Gen Ed</td>
<td>3</td>
<td><strong>PHY 221</strong> General Physics II</td>
<td>5</td>
<td><strong>BMS 290</strong> Human Physiology</td>
<td>3</td>
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<tr>
<td>Prerequisite: MTH 110 or assignment through Grand Valley math placement</td>
<td></td>
<td>Gen Ed</td>
<td>3</td>
<td>Prerequisites: PHY 220</td>
<td>3</td>
<td>Prerequisites: BMS 208 and two semesters of chemistry</td>
<td>4</td>
</tr>
<tr>
<td>Gen Ed</td>
<td>3</td>
<td><strong>BMS 291</strong> Laboratory in Human Physiology</td>
<td>3</td>
<td>Issue/Theme</td>
<td>3</td>
<td><strong>BMS 290</strong> or concurrent registration</td>
<td>1</td>
</tr>
<tr>
<td>2 Elective</td>
<td>3</td>
<td><strong>PHY 220</strong> General Physics I</td>
<td>5</td>
<td>Gen Ed</td>
<td>3</td>
<td>Prerequisites: MTH 122 and MTH 123</td>
<td>3</td>
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<tr>
<td>Total</td>
<td>15</td>
<td></td>
<td></td>
<td>Total</td>
<td>13-14</td>
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<td>Total</td>
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</table>

*The block tuition rate is for 12-15 credits. You will pay additional tuition for any credits over 15.*

1 Biomedical Science Electives must consist of at least 6 hours of upper-division Biomedical Science courses. See list on the back for elective options.

2 Elective refers to any course that will help you reach the required 120 credits to graduate.

3 Students must complete two courses with an SWS attribute.

4 For students with the Advanced Waiver/Override for Mathematics based on ACT scores, it is STRONGLY RECOMMENDED that proficiency in MTH 123 – Trigonometry – be demonstrated by either taking the MTH 123 course or by achieving a passing score on the GVSU math placement test PRIOR to taking PHY 220 and 221.
Declaring the BMS Major:
1. Log into myBanner from the GVSU homepage
2. Once logged in select “Student,” “Student Records,” and then “Change Major”
3. Click on the “Change Major 1/Program” box
4. Click on the down arrow in the box next to “New Major 1/Program,” from here scroll down and choose “Biomedical Science-BS” You have the option of adding an emphasis in Nutrition or Microbiology but this is not required
5. Click “Submit” and then “Change to New Program”

→If you are going into a pre-professional track besides Pre-Veterinary, you will either:
   - declare “Pre-Med” as your SECOND MAJOR if you have decided on a major
   OR
   - declare “Pre-Med” as your FIRST MAJOR if you have not decided on a major

→If you are Pre-Veterinary, and are not yet sure what to major in, we recommend that you declare Biology with Pre-Veterinary emphasis

General Education Overlap

| General Education Categories fulfilled by the Biomedical Sciences Major:          |
|---------------------------------|---------------------------------|
| Life Sciences with Lab: BIO 120                                      |
| Physical Sciences with Lab: CHM 115                                   |
| Mathematical Sciences: STA 215, MTH 122, MTH 123                        |

<table>
<thead>
<tr>
<th>Additional Overlap for Pre-Professional Students</th>
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<tbody>
<tr>
<td>Social and Behavioral Sciences: PSY 101</td>
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<tr>
<td>Social and Behavioral Sciences: SOC 205</td>
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<tr>
<td>U.S. Diversity: SOC 205</td>
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Pre-Professional Students
(Pre-Chiropractic, Pre-Dental, Pre-Medical, Pre-Optometry, Pre-Pharmacy, Pre-Podiatry, & Pre-Veterinary)

Keep in mind that you may choose any major as long as you complete the pre-requisites for your professional program.

The AAMC has approved changes to the MCAT exam starting in 2015 that will add emphasis on the social and behavioral sciences, scientific inquiry and reasoning skills, and introductory biochemistry.

See [www.gvsu.edu/clasadvising/professional-programs-14.htm](http://www.gvsu.edu/clasadvising/professional-programs-14.htm) for additional details regarding professional school preparation and applications.

### Biomedical Science Elective Courses

#### Anatomy
- BMS 309 Laboratory in Human Anatomy
- BMS 355 Anatomy of Joints
- BMS 427 Neuroanatomy
- BMS 428 Neurosciences
- BMS 450 Human Histology
- BMS 460 Regional Human Anatomy
- BIO 422 Embryology

#### Physiology
- BMS 310 Basic Pathophysiology
- BMS 311 Pharmacological Aspects of Biomedical Sciences
- BMS 375 The Biology of Aging
- BMS 392 Laboratory Assistant in Physiology

#### Microbiology
- BMS 312 Bacterial Genetics
- BMS 313 Bacterial Genetics Laboratory
- BMS 322 Bacterial Physiology
- BMS 323 Bacterial Physiology Laboratory
- BMS 410 Immunology
- BMS 411 Immunology Laboratory
- BMS 412 Medical Bacteriology
- BMS 413 Medical Bacteriology Laboratory
- BMS 431 Medical Virology
- BMS 432 Medical Mycology
- BMS 433 Medical Parasitology

#### Nutrition
- BMS 305 Clinical Nutrition
- BMS 306 Advanced Human Nutrition
- BMS 307 Advanced Clinical Nutrition
- BMS 404 Community Nutrition
- BMS 407 Nutrition in the Life Cycle
- BMS 415 Nutrition and Physical Performance

#### General
- BMS 380 Special Topics in the Biomedical Sciences
- BMS 399 Readings in the Biomedical Sciences
- BMS 492 Biomedical Sciences Internship
- BMS 499 Research in the Biomedical Sciences
- BIO 405 Cell and Molecular Biology
- BIO 406 Cell and Molecular Biology Laboratory
- CHM 461 Biochemistry I

Edited 4/26/2013