

# BIOMEDICAL SCIENCES-BS-MICROBIOLOGY EMPHASIS

THIS IS A **GENERAL** CURRICULUM GUIDE AND IS NOT APPLICABLE TO EVERY STUDENT. IT IS IMPORTANT TO MEET WITH YOUR ADVISOR.

Year One			
<b>BIO 120</b> General Biology I Prerequisites: High school chemistry, CHM 109, or CHM 115 strongly recommended (CHM 109 or 115 may be taken concurrently)	4 (6)	<b>CHM 116</b> Principles of Chemistry II Prerequisites: CHM 115 and (MTH 122 or MTH 125 or MTH 201)	5 (7)
<b>CHM 115</b> Principles of Chemistry I Prerequisites: High school chemistry and (MTH 110 or MTH 122 or MTH 125 or MTH 201)	4 (6)	<b>WRT 150</b> Strategies in Writing Gen Ed Gen Ed	4 3 3
<b>MTH 122</b> College Algebra Prerequisite: MTH 110 or assignment through Grand Valley math placement	3		
Gen Ed	3		
Elective	1		
<i>Numbers noted within (parentheses) are contact hours</i> <i>Total</i>	<i>15</i>	<i>Total</i>	<i>15</i>
Year Two			
<b>BIO 375</b> Genetics/ <b>BIO 376</b> Genetics Laboratory Prerequisites: BIO 120. Concurrent enrollment in BIO 376 is required (recommended)	3/1 (6)	<b>BMS 212</b> Introductory Microbiology Prerequisites: BIO 120 and (CHM 230 or CHM 232 or CHM 241)	3
<b>OR BIO 355</b> Human Genetics Prerequisite: BIO 120 or BIO 103, or permission of instructor	3	<b>BMS 213</b> Laboratory in Microbiology Prerequisite: BMS 212 or concurrent enrollment	1 (4)
<b>BMS 208</b> Human Anatomy Prerequisite: BIO 120 or BMS 202	3	<b>CHM 242</b> Organic Chemistry for Life Sciences II Prerequisite: CHM 241	4 (6)
<b>CHM 241</b> Organic Chemistry for Life Sciences I Prerequisite: CHM 116	5 (7)	<b>STA 215</b> Introductory Applied Statistics Prerequisite: MTH 110 or equivalent	3
Gen Ed	3	<b>MTH 123</b> Trigonometry Prerequisite: MTH 122 or assignment through Grand Valley math placement (MTH 122 may be taken concurrently)	3
		Gen Ed	3
<i>Total</i>	<i>14-15</i>	<i>Total</i>	<i>17</i>
Year Three			
<b>BMS 422</b> Bacterial Physiology (offered fall in odd numbered years) Prerequisite: BMS 212 or BIO 357	3	<b>BMS 290</b> Human Physiology Prerequisites: BMS 208 and two semesters of chemistry	3
<b>BMS 423</b> Bacterial Physiology Lab Prerequisite: BMS 322 or concurrent registration Prerequisite: BMS 290 or concurrent registration	2 (6)	<b>BMS 291</b> Laboratory in Human Physiology Prerequisites: BMS 290 or concurrent registration	1 (3)
<b>CHM 461</b> Biochemistry I Prerequisite: CHM 242, CHM 247, or CHM 248	4	<b>PHY 220</b> General Physics I Prerequisites: MTH 122 and MTH 123	5 (7)
<b>OR CHM 232</b> Biological Chemistry Prerequisite: CHM 231 or 242	4 (7)	Issue	3
Issue	3	<sup>3</sup> Gen Ed	3
Elective	1		
<i>Total</i>	<i>14</i>	<i>Total</i>	<i>15</i>
Year Four			
<b>BMS 312</b> Bacterial Genetics (offered fall in even numbered years) Prerequisites: BMS 212 or BIO 357, and BIO 355 or BIO 375	3	<b>BMS 499</b> Research in the Biomedical Sciences <sup>1</sup> Biomedical Science Elective	1-3 3
<b>BMS 313</b> Bacterial Genetics Laboratory Prerequisite: BMS 312 or concurrent registration	1 (4)	<sup>1</sup> Biomedical Science Elective	3
<b>PHY 221</b> General Physics II Prerequisites: PHY 220	5 (7)	<sup>2</sup> Elective	3
Gen Ed	3	<sup>2</sup> Elective	3
<sup>2</sup> Elective	3	<sup>2</sup> Elective (if needed)	(2)
<i>Total</i>	<i>15</i>	<i>Total</i>	<i>15</i>

See reverse for notes

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

<sup>1</sup> Biomedical Science Electives must consist of at least 6 hours of upper-division Biomedical Science courses. See list below for elective options.

<sup>2</sup> Elective refers to any course that will help you earn the required 120 credits to graduate.

<sup>3</sup> Students must complete two courses with an SWS attribute.

<sup>4</sup> 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. Students who have AP/IP/dual enrollment credit for MTH 201 (Calculus I), or complete the MTH 122 and 123 proficiency tests, only need to complete STA 215. **To take the Math Proficiency Tests online, visit this link: [gvsu.edu/s/jk](http://gvsu.edu/s/jk)**

#### **Declaring the BMS-Microbiology Major:**

1. In myBanner, select “Student” > “Student Records” > “Change Major” > “Change Major 1/Program”
2. Choose “Biomedical Science-BS Microbiology” from the drop-down box.
3. Click “Submit” and then “Change to New Program”
4. Declare “**Pre-Med**” as your SECOND MAJOR if you are planning on medical, dental, pharmacy, or optometry school.  
→ If you are Pre-Veterinary, the **Biology with Pre-Veterinary emphasis** is recommended

#### **General Education Overlap**

<b>General Education Categories fulfilled by the Biomedical Sciences Major:</b>	
Life Sciences with Lab: BIO 120	Physical Sciences with Lab: CHM 115
Mathematical Sciences: STA 215, MTH 122, MTH 123	
<b>Additional Overlap for Pre-Professional Students</b>	
Social and Behavioral Sciences: PSY 101	Social and Behavioral Sciences: SOC 201

#### **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 March 2015 that will add emphasis on the social and behavioral sciences, scientific inquiry and reasoning skills, and introductory biochemistry.***

<b>Biomedical Science Microbiology Emphasis Elective Courses</b>		
CMB 414 Molecular Biology of the Gene BMS 410 Immunology BMS 411 Immunology Laboratory	BMS 412 Medical Bacteriology BMS 413 Medical Bacteriology Laboratory	BMS 431 Medical Virology CHM 462 Techniques in Biochemistry

It is imperative to meet with your faculty advisor and an advisor in the CLAS Academic Advising Center regularly.

The CLAS Academic Advising Center is located in C-1-140 MAK, 616-331-8585

<http://www.gvsu.edu/clasadvising> (Also find us on Orgsync, Facebook, and Twitter!)

#### **Pre-Professional Advisors:**

**Jo Ann Litton**  
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See <http://gvsu.edu/s/zY> for additional details regarding professional school information.

Follow the Pre-Professional Blog: <https://preprofessionallakers.wordpress.com>