

**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.

<b>Year One</b>				
<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) <b>WRT 150</b> Strategies in Writing Gen Ed	5 (7) 4 3	
<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)	Gen Ed	3	
<b><sup>4</sup>MTH 122</b> College Algebra Prerequisite: MTH 110 or by Grand Valley math placement	3		3	
Gen Ed Elective	3 1			
<i>Numbers noted within (parentheses) are contact hours</i>	<b>Total</b> 15			<b>Total</b> 15
<b>Year Two</b>				
<b>BMS 208</b> Human Anatomy Prerequisite: BIO 120 or BMS 202	3	<b>BMS 290</b> Human Physiology Prerequisites: BMS 208 and two semesters of chemistry	3	
<b>CHM 241</b> Organic Chemistry for Life Sciences I Prerequisite: CHM 116	5 (7)	<b>BMS 291</b> Laboratory in Human Physiology Prerequisite: BMS 290 or concurrent registration	1 (3)	
<b>STA 215</b> Introductory Applied Statistics Prerequisite: MTH 110 or equivalent	3	<b>CHM 242</b> Organic Chemistry for Life Sciences II Prerequisite: CHM 241	4 (6)	
Gen Ed <sup>2</sup> Elective	3 2	<b>BMS 301</b> Introduction to Research in Biomedical Sciences Prerequisites: STA 215 and sophomore standing <b><sup>4</sup>MTH 123</b> Trigonometry Prerequisite: MTH 122 or assignment through Grand Valley math placement (MTH 122 may be taken concurrently) Gen Ed	3 3	
	<b>Total</b> 16			<b>Total</b> 14
<b>Year Three</b>				
<b>BIO 375</b> Genetics/ <b>BIO 376</b> Genetics Laboratory Prerequisites: BIO 120. Concurrent enrollment in BIO 376 is required ( <i>Recommended for pre-med students</i> )	3/1 (6)	<b>BMS 212</b> Introductory Microbiology Prerequisites: BIO 120 and (CHM 230 or CHM 232 or CHM 241) <b>BMS 213</b> Laboratory in Microbiology Prerequisite: BMS 212 or concurrent enrollment	3 1 (4)	
<b>OR BIO 355</b> Human Genetics (lecture only) Prerequisite: BIO 120 or BIO 103, or permission of instructor	3	<b>PHY 221</b> General Physics II Prerequisites: PHY 220	5 (7)	
<b>CHM 461</b> Biochemistry I Prerequisite: CHM 242 or CHM 247 and CHM 248	4	Issue Gen Ed	3 3	
<b>OR CHM 232</b> Biological Chemistry Prerequisite: CHM 231 or 242	4 (7)			
<b>PHY 220</b> General Physics I Prerequisites: MTH 122 and MTH 123	5 (7)			
Elective	3			
	<b>Total</b> 15-16			<b>Total</b> 15
<b>Year Four</b>				
<b><sup>3</sup>BMS 495</b> Concepts in Wellness (Capstone) SWS Prerequisites: BMS 208, BMS 212, BMS 290 or 291, and senior standing	3	<sup>1</sup> Biomedical Science Elective <sup>1</sup> Biomedical Science Elective Gen Ed <sup>2</sup> Elective <sup>2</sup> Elective	3 3 3 3 3	
Issue <sup>2</sup> Elective <sup>2</sup> Elective <sup>2</sup> Elective	3 3 3 3			
	<b>Total</b> 15			<b>Total</b> 15

\*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 on the back for elective options.<sup>2</sup> Elective refers to any course that will help you reach the required 120 credits to graduate. **Consider a minor or certificate.**<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/IB/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/mv](http://gvsu.edu/s/mv)**

**Declaring the BMS Major:**

1. In myBanner, select "Student" > "Student Records" > "Change Major" > "Change Major 1/Program"
2. Choose "Biomedical Science-BS" from the drop-down box. You have the option of adding an emphasis in Nutrition or Microbiology but this is not required.
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

**Pre-Professional Students**

(Pre-Chiropractic, Pre-Dental, Pre-Medical, Pre-Optometry, Pre-Pharmacy, Pre-Podiatry, &amp; Pre-Veterinary)

*Keep in mind that you may choose any major as long as you complete the prerequisites for your professional program.***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 205
U.S. Diversity: SOC 205	

**Biomedical Science Elective Courses (6 credits required)**

<b>Anatomy</b> BMS 309 Laboratory in Human Anatomy BMS 355 Anatomy of Joints BMS 427 Neuroanatomy BMS 450 Human Histology BMS 460 Regional Human Anatomy BMS 461 Prosected Regional Anatomy BIO 422 Embryology	<b>Microbiology</b> BMS 312 Bacterial Genetics BMS 313 Bacterial Genetics Laboratory BMS 410 Immunology BMS 411 Immunology Laboratory BMS 412 Medical Bacteriology BMS 413 Medical Bacteriology Laboratory BMS 422 Bacterial Physiology BMS 423 Bacterial Physiology Laboratory BMS 431 Medical Virology BMS 432 Medical Mycology BMS 433 Medical Parasitology	<b>Nutrition</b> 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
<b>Physiology</b> BMS 310 Basic Pathophysiology BMS 311 Pharmacological Aspects of Biomedical Sciences BMS 375 The Biology of Aging BMS 392 Laboratory Assistant in Physiology BMS 408 Advanced Human Physiology BMS 426 Sensory Systems Neuroscience: Anatomy and Physiology BMS 428 Neurosciences BMS 475 The Pathology of Aging		<b>General</b> 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 CMB 405 Cell and Molecular Biology CMB 406 Cell and Molecular Biology Laboratory BIO 422 Embryology CHM 461 Biochemistry I

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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