

# 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.

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	<b>CHM 116</b> Principles of Chemistry II Prerequisites: CHM 115 and (MTH 122 or MTH 125 or MTH 201)	5
<b>CHM 115</b> Principles of Chemistry I Prerequisites: High school chemistry and (MTH 110 or MTH 122 or MTH 125 or MTH 201)	5	<b>WRT 150</b> Strategies in Writing	4
<b>MTH 122</b> College Algebra Prerequisite: MTH 110 or assignment through Grand Valley math placement	3	Gen Ed	3
Gen Ed	3	Gen Ed	3
<i>Total</i>	15	<i>Total</i>	15
Year Two			
<b>BMS 208</b> Human Anatomy Prerequisite: BIO 120 or BMS 202	3	<b>BIO 375</b> Genetics/ <b>BIO 376</b> Genetics Laboratory Prerequisites: BIO 120. Concurrent enrollment in BIO 376 is required ( <i>Recommended</i> )	3/1
<b>CHM 241</b> Organic Chemistry for Life Sciences I Prerequisite: CHM 116	4	<b>OR BIO 355</b> Human Genetics (lecture only) Prerequisite: BIO 120 or BIO 103, or permission of instructor	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
Gen Ed	3	<b>BMS 301</b> Introduction to Research in Biomedical Sciences Prerequisites: STA 215 and sophomore standing	3
<sup>2</sup> Elective	3	<sup>4</sup> <b>MTH 123</b> Trigonometry Prerequisite: MTH 122 or assignment through Grand Valley math placement (MTH 122 may be taken concurrently)	3
<i>Total</i>	16	<i>Total</i>	13-14
Year Three			
<b>CHM 461</b> Biochemistry I Prerequisite: CHM 242 or CHM 247 and CHM 248	4	<b>BMS 212</b> Introductory Microbiology Prerequisites: BIO 120 and (CHM 230 or CHM 232 or CHM 241)	3
<b>OR CHM 232</b> Biological Chemistry Prerequisite: CHM 231 or 242	4	<b>BMS 213</b> Laboratory in Microbiology Prerequisite: BMS 212 or concurrent enrollment	1
<b>BMS 290</b> Human Physiology Prerequisites: BMS 208 and two semesters of chemistry	3	<b>PHY 221</b> General Physics II Prerequisites: PHY 220	5
<b>BMS 291</b> Laboratory in Human Physiology Prerequisite: BMS 290 or concurrent registration	1	Issue/Theme	3
<b>PHY 220</b> General Physics I Prerequisites: MTH 122 and MTH 123	5	Gen Ed	3
Gen Ed	3		
<i>Total</i>	16	<i>Total</i>	15
Year Four			
<sup>3</sup> <b>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	3
Issue/Theme	3	<sup>1</sup> Biomedical Science Elective	3
<sup>2</sup> Elective	3	Gen Ed	3
<sup>2</sup> Elective	3	<sup>2</sup> Elective	3
<sup>2</sup> Elective	3	<sup>2</sup> Elective	3
<i>Total</i>	15	<i>Total</i>	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.

<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.

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.

Online at: <http://www.gvsu.edu/clasadvising>

**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	
Additional Overlap for Pre-Professional Students	
Social and Behavioral Sciences: PSY 101	Social and Behavioral Sciences: SOC 205
U.S. Diversity: SOC 205	

### 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	Microbiology	Nutrition
BMS 309 Laboratory in Human Anatomy	BMS 312 Bacterial Genetics	BMS 305 Clinical Nutrition
BMS 355 Anatomy of Joints	BMS 313 Bacterial Genetics Laboratory	BMS 306 Advanced Human Nutrition
BMS 427 Neuroanatomy	BMS 322 Bacterial Physiology	BMS 307 Advanced Clinical Nutrition
BMS 428 Neurosciences	BMS 323 Bacterial Physiology Laboratory	BMS 404 Community Nutrition
BMS 450 Human Histology	BMS 410 Immunology	BMS 407 Nutrition in the Life Cycle
BMS 460 Regional Human Anatomy	BMS 411 Immunology Laboratory	BMS 415 Nutrition and Physical Performance
BIO 422 Embryology	BMS 412 Medical Bacteriology	
	BMS 413 Medical Bacteriology Laboratory	
	BMS 431 Medical Virology	
	BMS 432 Medical Mycology	
	BMS 433 Medical Parasitology	
Physiology		General
BMS 310 Basic Pathophysiology		BMS 380 Special Topics in the Biomedical Sciences
BMS 311 Pharmacological Aspects of Biomedical Sciences		BMS 399 Readings in the Biomedical Sciences
BMS 375 The Biology of Aging		BMS 492 Biomedical Sciences Internship
BMS 392 Laboratory Assistant in Physiology		BMS 499 Research in the Biomedical Sciences
		BIO 405 Cell and Molecular Biology
		BIO 406 Cell and Molecular Biology Laboratory
		CHM 461 Biochemistry I