

BIOMEDICAL SCIENCES-BS-GENERAL/APPLIED STATISTICS MINOR

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

Year One			
BIO 120 General Biology I (w/lab) Prerequisites: High school chemistry, CHM 109, or CHM 115 strongly recommended (CHM 109 or 115 may be taken concurrently)	4 (6)	CHM 116 Principles of Chemistry II (w/lab) Prerequisites: CHM 115 and (MTH 122 or MTH 125 or MTH 201)	5 (7)
CHM 115 Principles of Chemistry I (w/lab) Prerequisites: High school chemistry and (MTH 110 or MTH 122 or MTH 125 or MTH 201)	4 (6)	WRT 150 Strategies in Writing	4
⁶ MTH 122 College Algebra Prerequisite: MTH 110 or by Grand Valley math placement	3	STA 215 Introductory Applied Statistics Prerequisite: MTH 110 or equivalent	3
Gen Ed	3	Gen Ed	3
⁴ Elective	1		
<i>Numbers noted within (parentheses) are contact hours</i> Total	15	Total	15
Year Two			
BMS 208 Human Anatomy Prerequisite: BIO 120 or BMS 202	3	BMS 290 Human Physiology Prerequisites: BMS 208 and two semesters of chemistry	3
CHM 241 Organic Chemistry for Life Sciences I (w/lab) Prerequisite: CHM 116	5 (7)	BMS 291 Laboratory in Human Physiology Prerequisite: BMS 290 or concurrent registration	1 (3)
STA 216 Intermediate Applied Statistics Prerequisites: STA 215 or STA 312	3	CHM 242 Organic Chemistry for Life Sciences II (w/lab) Prerequisite: CHM 241	4 (6)
Gen Ed	3	³ BMS 301 Introduction to Research in Biomedical Sciences Prerequisites: STA 215 and sophomore standing	3
⁴ Elective	2	⁶ MTH 123 Trigonometry Prerequisite: MTH 122 or assignment through Grand Valley math placement (MTH 122 may be taken concurrently)	3
Total	16	Total	14
Year Three			
³ BIO 375 Genetics/ BIO 376 Genetics Laboratory Prerequisites: BIO 120. Concurrent enrollment in BIO 376 is required (Recommended for pre-med students)	3/1 (6)	BMS 212 Introductory Microbiology Prerequisites: BIO 120 and (CHM 230 or CHM 232 or CHM 241)	3
OR ³ BIO 355 Human Genetics (lecture only) Prerequisite: BIO 120 or BIO 103, or permission of instructor	3	BMS 213 Laboratory in Microbiology Prerequisite: BMS 212 or concurrent enrollment	1 (4)
CHM 461 Biochemistry I Prerequisite: CHM 242 or CHM 247 and CHM 248	4	PHY 221 General Physics II (w/lab and discussion) Prerequisites: PHY 220	5 (7)
PHY 220 General Physics I (w/lab and discussion) Prerequisites: MTH 122 and MTH 123	5 (7)	² Statistics Elective	3
Gen Ed	3	Issue	3
Total	15-16*	Total	15
Year Four			
⁵ BMS 495 Concepts in Wellness (Capstone) SWS Prerequisites: BMS 208, BMS 212, BMS 290 or 291, and senior standing	3	¹ Biomedical Science Elective	3
Gen Ed	3	¹ Biomedical Science Elective	3
Issue	3	Gen Ed	3
² Statistics Elective	3	² Statistics Elective	3
⁴ Elective	3	⁴ Elective	3
Total	15	Total	15

*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 Statistics Electives must consist of at least 9 hours of upper-division Statistics courses. See list on the back for elective options.

³ Biomedical Science Classes approved as additional cognate courses for the statistics minor

⁴ Elective refers to any course that will help you reach the required 120 credits to graduate.

⁵ Students must complete two courses with an SWS attribute.

⁶ For students with the Advanced Waiver for Mathematics based on ACT/SAT 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. MTH 124 and MTH 201 will substitute for MTH 122 and MTH 123.

To take the Math Proficiency Tests online, visit this link: gvsu.edu/s/mv

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 prerequisites for your professional program.

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 and SOC 101	

Biomedical Science Elective Courses (6 credits required)

Anatomy BMS 309 Laboratory in Human Anatomy (1) ² BMS 355 Anatomy of Joints (2) w/Lab BMS 393 Laboratory Assistant in Human Anatomy (1) ¹ BMS 427 Neuroanatomy (1) ¹ BMS 450 Human Histology (4) w/Lab ² BMS 460 Regional Human Anatomy (4) w/Lab ¹ BIO 422 Embryology (3) w/Lab Physiology BMS 310 Basic Pathophysiology (3) BMS 311 Pharmacological Aspects of Biomedical Sciences (3) ¹ BMS 375 The Biology of Aging (3) BMS 392 Laboratory Assistant in Physiology (1) ² BMS 426 Sensory Systems Neuroscience: Anatomy and Physiology (3) ² BMS 428 Neurosciences (3) ² BMS 475 The Pathology of Aging (3) ² BMS 508 Advanced Human Physiology (3)	Microbiology ¹ BMS 312 Bacterial Genetics (3) (only offered in even-numbered years) ¹ BMS 313 Bacterial Genetics Laboratory (1) (only offered in even-numbered years) BMS 394 Laboratory Assistant in Microbiology (1) ¹ BMS 410 Immunology (3) ² BMS 411 Immunology Laboratory (1) ² BMS 412 Medical Bacteriology (3) ² BMS 413 Medical Bacteriology Laboratory (2) ¹ BMS 422 Bacterial Physiology (3) (only offered in odd-numbered years) ¹ BMS 423 Bacterial Physiology Laboratory (2) (only offered in odd-numbered years) ² BMS 431 Medical Virology (3) ¹ BMS 432 Medical Mycology (2) ¹ BMS 433 Medical Parasitology (3) w/Lab	Nutrition BMS 305 Clinical Nutrition (3) ¹ BMS 306 Advanced Human Nutrition (3) ² BMS 404 Community Nutrition (3) BMS 407 Nutrition in the Life Cycle (3) ² BMS 415 Nutrition and Physical Performance (3) General BMS 380/480 Special Topics in the Biomedical Sciences (1-4) BMS 399 Readings in the Biomedical Sciences (1-3) BMS 492 Biomedical Sciences Internship (1-4) BMS 499 Research in the Biomedical Sciences (1-3) CMB 405 Cell and Molecular Biology (4) CMB 406 Cell and Molecular Biology Laboratory (2) ² CMB 440 Research Applications in Drosophila Genomics (3) w/Lab <i>Numbers in parentheses indicate # of credits</i> ¹ Offered in Fall Only ² Offered in Winter Only
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Statistics Elective Courses (9 credits required)

STA 310 Introduction to Biostatistics STA 311 Introduction to Survey Sampling STA 314 Statistical Quality Methods	STA 315 Design of Experiments STA 317 Nonparametric Statistical Analysis STA 318 Statistical Computing	STA 319 Statistics Project STA 321 Applied Regression Analysis STA 426 Multivariate Data Analysis
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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:

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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>