## **BIOLOGY-BA OR BS-PRE-VETERINARY**

The BA degree requires 3<sup>rd</sup> semester proficiency in a foreign language (201 level).

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

strongly recommended (CHM 109 or 115 may be taken concurrently)OR BIO 120 General Biology I Prerequisite: MTH 110 (may be taken concurrently)OR BIO 120 General Biology I Prerequisite: MTH 110 (may be taken concurrently)CHM 115 Principles of Chemistry I 122 or MTH 222 or MTH 2014 (6)CHM 116 Principles of Chemistry II Prerequisite: MTH 120 or MTH 2014 (6)''ATTH 122 cor MTH 2013 Prerequisite: MTH 110 or assignment through Grand Valley math placement3 (6)WRT 130 Strategies in Writing Gen EdBIO 215 Ecology Prerequisite: MTH 120 and BIO 121 (BIO 120 may be taken concurrently)4 (6)BIO 210 Evolutionary Biology Prerequisite: BIO 120 and BIO 121 (BIO 120 may be taken concurrently)CHM 241 Organic Chemistry for Life Sciences I Prerequisite: CHM 11677 (7)HIM 220 rod HI 10, rod HI 16 Prerequisite: BIO 120 and BIO 121 (BIO 120 may be taken concurrently)CHM 241 Organic Chemistry for Life Sciences I Prerequisite: CHM 11677 (7)HIM 220 rod HI 10, rod HI 16 Prerequisite: BIO 120 and BIO 121 (BIO 120 may be taken concurrently)CHM 241 Organic Chemistry for Life Sciences I Prerequisite: CHM 11677 Prerequisite: BIO 120 and BIO 121 (BIO 120 may be taken concurrently)CHM 461 Biochemistry I15TotalGen Ed3Total15Prerequisite: CHM 1122 may be taken concurrently)3Gen Ed3''ATTH 122 cr assignment through Grand Valley math placement (MTH 122 may be taken concurrently)3''ATTH 23 Trigonometry Prerequisite: CHM 242, CHM 247 or CHM 248 Prerequisite: CHM 240 CHM 241 Dreneral Physics I <th>or CHM 115 taken(6)Prerequisite: MTH 110 (may be taken concurrently)(6)OR BIO 120 General Biology I4Prerequisites: High school chemistry, CHM 109, or CHM 115(6)4strongly recommended (CHM 109 or 115 may be taken concurrently)(6)4CHM 116 Principles of Chemistry II510 or MTH(6)Prerequisites: CHM 115 and (MTH 122 or MTH 125 or MTH 201)(7) 201)and Valley3WRT 150 Strategies in Writing Gen Ed4rs14Total16*Year Two4BIO 210 Evolutionary Biology3</br></th>	or CHM 115 taken(6)Prerequisite: MTH 110 (may be taken concurrently)(6)OR BIO 120 General Biology I4Prerequisites: High school chemistry, CHM 109, or CHM 115(6)4strongly recommended (CHM 109 or 115 may be taken concurrently)(6)4CHM 116 Principles of Chemistry II510 or MTH(6)Prerequisites: CHM 115 and (MTH 122 or MTH 125 or MTH 201)(7) 				
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Prerequisites: CHM 242, CHM 247 or CHM 248       Prerequisites: BIO 120. Concurrent enrollment in BIO 376 is         PHY 220 General Physics I       5       required         Prerequisites: MTH 122 and MTH 123       (7)       PHY 221 General Physics II <sup>5</sup> Category I BIO Elective Course       3-4       Prerequisites: PHY 220         Gen Ed       3.4       Issue         Gen Ed       15-16*       Gen Ed         Year-Your					
PHY 220 General Physics I       5       required       required         Prerequisites: MTH 122 and MTH 123       (7)       PHY 221 General Physics II       Physics II <sup>5</sup> Category I BIO Elective Course       3-4       Prerequisites: PHY 220       Physics II         Gen Ed       3       Issue       Gen Ed       Ferequisites: PHY 220         Total       15-16*       Gen Ed       Total       Ferequisites: PHY 220         CMB 405 Cell and Molecular Biology       4       BIO 495 Perspectives in Biology (Capstone)       Image: Physical P					
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<sup>5</sup> Category I BIO Elective Course       3-4       Prerequisites: PHY 220         Gen Ed       3       Issue         Gen Ed       6en Ed       Gen Ed <b>Total</b> 15-16* <b>Year Four CMB 405</b> Cell and Molecular Biology          4 <b>BIO 495</b> Perspectives in Biology (Capstone)					
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Contract     Solution       Gen Ed       Total       15-16*       Year Four       CMB 405 Cell and Molecular Biology       4     BIO 495 Perspectives in Biology (Capstone)					
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Year Four       CMB 405 Cell and Molecular Biology     4     BIO 495 Perspectives in Biology (Capstone)					
CMB 405 Cell and Molecular Biology4BIO 495 Perspectives in Biology (Capstone)					
Prerequisites: (BIO 375 or 355), BIO 376, and (CHM 232 or Prerequisites: Senior Standing and CMB 405 (may be taken					
CHM 242 or CHM 247) may be taken concurrently concurrently					
Prerequisites: CMB 405 (may be taken concurrently) (4) <sup>4</sup> Elective					
BIO 357 Environmental Microbiology 4 <sup>4</sup> Elective					
Prerequisite: BIO 120 or instructor permission (6) Gen Ed					
OR BMS 212 Introductory Microbiology and BMS 213 4					
Microbiology and Lab (7)	S 213 4				
Prerequisites: BIO 120, and CHM 230 or CHM 232 or					
CHM 241	(7)				
Issue 3	(7)				
Total 14 Total 15	232 or (7)				

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

<sup>1</sup> Choose one of the following to complete the math cognate for the major: MTH 125: Survey of Calculus, MTH 201: Calculus, or STA 215: Introductory Applied Statistics. Students who don't place into MTH 201 should take MTH 124 as a prerequisite instead of MTH 122+123.

<sup>2</sup> Students must generally demonstrate competency in college algebra and trigonometry as a prerequisite to veterinary school admission. This requirement can be satisfied in various ways depending on the student and the requirements of specific schools. You should consult with your

advisor regarding the best way to meet this requirement while also satisfying the statistics and mathematics cognate requirements for the Biology major. MTH 122/123 are prerequisites for PHY 220 and are not part of the Biology major. MTH 124 and MTH 201 will substitute for MTH 122 and MTH 123. To take the Math Proficiency Tests for MTH 122 and/or 123 online, visit this link: gvsu.edu/s/mv

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

<sup>4</sup>Elective refers to any course that can apply towards the 120 credit needed to graduate.

<sup>5</sup>Students must complete a minimum of 41 credits of Biology coursework. If students still do not have 41 credits of Biology coursework after completing both the Biology core requirements (above) and the requirements for their chosen emphasis (below), they should select additional Biology courses from the elective categories, BIO Issues courses, credits in research (BIO 499), or internship credit (BIO 490). Students should consult with a Biology advisor prior to selecting elective courses.

## Declaring the Biology-Pre-Veterinary Medicine Major:

- 1. In myBanner, select "Student" > "Student Records" > "Change Major" > "Change Major 1/Program"
- 2. Choose "Biology-BA or Biology-BS Preveterinary Medicine" from the drop-down box.
- 3. Click "Submit" and then "Change to New Program"

Students must complete	one course from Categories I and II.			
The BIO-General major requires a total of 41 credits of BIO class	ses, including certain CMB and BMS courses. Elective courses may only			
count in one category.				
Classes marked with a * are recommended for Pre-Vet students.				
Category I: Plant Organismal Biology	Category II: Animal Organismal Biology			
BIO 243 Plant Identification & Natural History (3) w/lab	<sup>1</sup> BIO 222 Natural History of Vertebrates (3) w/lab*			
<sup>2</sup> BIO 303 Plant Morphology (4) w/lab	<sup>2</sup> BIO 232 Natural History of Invertebrates (3) w/lab*			
<sup>2</sup> BIO 313 Plants and Islands (4) w/lab	<sup>1</sup> BIO 272 Insect Biology and Diversity (3) w/lab			
<sup>1</sup> BIO 323 Aquatic and Wetland Plants (3) w/lab	<sup>2</sup> BIO 302 Comparative Vertebrate Anatomy (4) w/lab*			
<sup>1</sup> BIO 333 Systematic Botany (4) w/lab	<sup>2</sup> BIO 342 Ornithology (3) w/lab*			
<sup>1</sup> BIO 383 Plant-Fungal Interactions (4) w/lab	<sup>1</sup> BIO 362 Fisheries Biology (4) w/lab			
<sup>2</sup> BIO 403 Plant Structure and Function (4) w/lab	<sup>2</sup> BIO 402 Aquatic Insects (3) w/lab			
<sup>2</sup> BIO 413 Freshwater Algae (3) w/lab	<sup>1</sup> BIO 412 Mammalogy (4) w/lab*			
<sup>2</sup> BIO 423 Plant Biotechnology (3) w/lab	<sup>1</sup> BIO 422 Embryology (3) w/lab*			
<sup>1</sup> BIO 433 Plant Ecology (4) w/lab	<sup>1</sup> BIO 432 Comparative Animal Physiology (4) w/lab*			
	BMS 208+309 Human Anatomy and Lab (4)*			
	BMS 290+291 Human Physiology and Lab (4)*			
Numbers in parentheses indicate # of credits	*Strongly Recommended for Pre-Vet Students			
<sup>1</sup> Offered in Fall semesters only				
<sup>2</sup> Offered in Winter semesters only				
Excluded and Restricted Courses:	The following courses can satisfy part of Gen Ed Issues requirement and may			
The following courses may not count towards the Biology major:	count towards the Biology major after elective-category requirements are			
BIO 104 - Biology for the 21 <sup>st</sup> Century (4)	satisfied:			
BIO 105 - Environmental Science (3)	BIO 309 - Plants and Human Health (3)			
BIO 107 - Great Lakes & Other Water Resources (4)	BIO 311 - Who's Running Your Life: Genes, Evolution and Behavior (3)			
BIO 109 - Plants in the World (4)	BIO 319 - Global Agricultural Sustainability (3)			
BIO 205 - Genetics for K-8 Pre-Service Teachers (2)	BIO 328 - Biomedical Ethics (3)			
Any other biology course whose description prevents it from being	BIO 329 - Evolution of Social Behavior (3)			
used in the major.	BIO 338 - Environmental Ethics (3)			
The following course may only count towards the Biology major with				
advisor's permission.				
BIO 355 - Human Genetics (3)	Other Biology Elective Choice for Pre-Vet Students:			
Note: students may count BIO 357 or BMS 212/213 towards the	*BIO 352 - Animal Behavior (3) (does not count toward Category I or II)			
Biology degree, but not both				

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

<u>Biology Pre-Vet Faculty</u> <u>Advisor (retiring in</u> <u>December 2017):</u>		y Department <u>triert@gvsu.edu</u> /triert/prevet/index_advising.html
CLAS Academic Advisors:	Jo Ann Litton <u>littonj@gvsu.edu</u>	Julie Amon-Mattox <u>amonju@gvsu.edu</u>

See <u>http://gvsu.edu/s/zY</u> for additional details regarding professional school information.

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