COLLEGE OF LIBERAL ARTS AND SCIENCES (CLAS) ACADEMIC ADVISING CENTER 2013-2014

BIOLOGY-BA OR BS-PRE-VETERINARY

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 Prerequisites: High school chemistry, CHM 109, or CHM 115 strongly recommended (CHM 109 or 115 may be taken concurrently)	4	CHM 116 Principles of Chemistry II Prerequisites: CHM 115 and (MTH 122 or MTH 125 or MTH 201)	5
		WRT 150 Strategies in Writing	4
CHM 115 Principles of Chemistry I Prerequisites: High school chemistry and (MTH 110 or MTH 122 or MTH 125 or MTH 201)	5	Gen Ed	3
		BIO 121 General Biology II Prerequisite: BIO 120	4
MTH 122 College Algebra Prerequisite: MTH 110 or assignment through Grand Valley math placement	3		
Gen Ed	3		
Total	*15*	*Total*	*16**
Year Two			
BIO 215 General Ecology Prerequisites: BIO 120 and 12 college credits; BIO 121 recommended	4	CHM 242 Organic Chemistry for Life Sciences II Prerequisite: CHM 241	4
		[2]BIO Elective Course	4
CHM 241 Organic Chemistry for Life Sciences I Prerequisite: CHM 116	4	MTH 123 Trigonometry Prerequisite: MTH 122 or assignment through Grand Valley math placement (MTH 122 may be taken concurrently)	3
Gen Ed	3		
[1]MTH Cognate Course	3-4	Gen Ed	3
Total	*14-15*	*Total*	*14*
Year Three			
CHM 461 Biochemistry I Prerequisites: CHM 242, CHM 247 or CHM 248	4	PHY 221 General Physics II Prerequisites: PHY 220	5
PHY 220 General Physics I Prerequisites: MTH 122 and MTH 123	5	BIO 375 Genetics and BIO 376 Genetics Laboratory Prerequisites: BIO 120. Concurrent enrollment in BIO 376 is required	4
[2]BIO Elective Course	4		
Gen Ed	3	Issue/Theme	3
		Gen Ed	3
Total	*16**	*Total*	*15*
Year Four			
BIO 405 Cell and Molecular Biology Prerequisites: (BIO 375 or 355), BIO 376, and (CHM 232 or CHM 242 or CHM 247) may be taken concurrently	4	BIO 495 Evolutionary Biology (Capstone) Prerequisites: Senior Standing, BIO 120, BIO 121, BIO 215, (BIO 375 or 355), BIO 376, (CHM 231 or 241 or 245)	3
[3]BIO 406 SWS Cell and Molecular Biology Laboratory	2	[2]BIO Elective Course	3
BIO 357 Environmental Microbiology Prerequisite: BIO 120 or instructor permission	4	[4]Elective	3
		[4]Elective	3
OR BMS 212 Introductory Microbiology and BMS 213 Microbiology and Lab Prerequisites: BIO 120, and CHM 230 or CHM 232 or CHM 241	4	Gen Ed	3
Issue/Theme	3		
[3]Elective	3		
Total	*16**	*Total*	*15*

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

[1] 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.

[2] Consult with the Pre-Veterinary Advisor to select the appropriate elective classes for vet school. BIO 380, Animal Nutrition is a strongly recommended elective. At least one BIO elective must be from the plant category. .

[3] Students must complete a total of two courses with an SWS attribute.

[4]Elective refers to any course that can apply towards the 120 credit needed to graduate.

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

Biology students can pursue a Bachelor of Arts or Bachelor of Science degree. Students who wish to obtain a BA must fulfill 3rd semester proficiency in a foreign language (201 level). The BS degree requirements are incorporated into the major requirements

Declaring the Biology-Pre-Veterinary 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 "Biology-**BA (or) BS** Preveterinary Medicine"
5. Click "Submit" and then "Change to New Program"

General Education Overlap

General Education Categories fulfilled by the Biology Major:	
Life Sciences with Lab: BIO 120	Physical Sciences with Lab: CHM 115
Mathematical Sciences: MTH 122 or MTH 123	

Pre-Professional Students

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

Keep in mind that you may major in anything so 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 for additional details regarding professional school preparation and applications.

Biology Elective Courses		
Plant Biology	**Animal Biology**	*The following courses are excluded from the biology major:*
BIO 243 Plant Identification and Natural History (3)	BIO 222 Natural History of Vertebrates (3)	BIO 104 Biology for the 21st Century
BIO 303 Plant Morphology (4)	BIO 232 Natural History of Invertebrates (3)	BIO 105 Environmental Science
BIO 323 Aquatic and Wetlands Plants (3)	BIO 272 Insect Biology and Diversity (3)	BIO 107 Great Lakes and Other Water Resources
BIO 333 Systemic Botany (4)	BIO 302 Comparative Vertebrate Anatomy (4)	BIO 109 Plants in the World
BIO 403 Plant Structure and Function (4)	BIO 342 Ornithology (3)	BIO 205 Genetics for K-8 Pre-Service Teachers
BIO 413 Freshwater Algae (3)	BIO 352 Animal Behavior (3)	Any other biology course whose description prevents it from being used in the major
BIO 423 Plant Biotechnology (3)	BIO 362 Fisheries Biology (4)	*Only ONE of the following courses may be counted in the biology major:*
BIO 433 Plant Ecology (4)	BIO 402 Aquatic Insects (3)	BIO 309 Plants and Human Health (3)
BIO 573 Plants of the Great Lakes Area (3)-*with permission*	BIO 412 Mammalogy (4)	BIO 311 Biological Basis of Society (3)
	BIO 422 Embryology (3)	BIO 329 Evolution of Social Behavior (3)
	BIO 432 Comparative Animal Physiology (4)	BIO 349 The Darwinian Revolution (3)
	BIO 572 Field Zoology (3)-*with permission*	
	BMS 208/309 Human Anatomy and Lab (4)	
	BMS 290/291 Human Physiology and Lab (4)	
Additional Biology Electives		
BIO 280 Special Topics in Biology (1-4)	BIO 390 Seminar (1)	BIO 442 Fish Ecology (3)
BIO 308 Wildlife Ecology (4)	BIO 399 Selected Experiences in Biology (1-4)	BIO 450 Stream Ecology (4)
BIO 319 Global Agricultural Sustainability (3)	BIO 408 Wildlife Management (4)	BIO 452 Human Evolution (3)
BIO 325 Human Sexuality (3)	BIO 411 Genetics of Development and Cancer (3)	BIO 460 Terrestrial Ecosystem Ecology (4)
BIO 328 Biomedical Ethics (3)*	BIO 414 Molecular Biology of the Gene (3)	BIO 470 Conservation Biology (3)
BIO 338 Environmental Ethics (3) * *only one of BIO 328 or 338 may be used as elective credit in the major*	BIO 416 Advanced Genetics Laboratory (2)	BIO 480 Special Topics in Biology (1-4)
	BIO 417 International Field Biology (1-4)	BIO 490 Internship (1-6)
	BIO 418 Regional Field Biology (1-4)	BIO 499 Research in Biology (1-4)
BIO 357 Environmental Microbiology (4)	BIO 426 Nucleic Acids Laboratory (3)	BMS 212 Microbiology (3) AND BMS 213 Microbiology Laboratory (1)
BIO 380 Special Topics in Biology (1-4)	BIO 440 Limnology (4)	