COLLEGE OF LIBERAL ARTS AND SCIENCES (CLAS) ACADEMIC ADVISING CENTER 2014-2015

# BIOLOGY-BA OR BS-WILDLIFE

*The BA degree requires 3rd 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.

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|---|---|---|---|
| **Year One** | | | |
| **BIO 120** General Biology I | 4 | **BIO 121** General Biology II | 4 |
| Prerequisites: High school chemistry, CHM 109, or CHM 115 strongly recommended (CHM 109 or 115 may be taken concurrently) | *(6)* | Prerequisite: None | *(6)* |
| **CHM 115** Principles of Chemistry I | 4 | **CHM 116** Principles of Chemistry II | 5 |
| Prerequisites: High school chemistry and (MTH 110 or MTH 122 or MTH 125 or MTH 201) | *(6)* | Prerequisites: CHM 115 and (MTH 122 or MTH 125 or MTH 201) | *(7)* |
| **MTH 122** College Algebra | 3 | [1]**MTH 123** Trigonometry | 3 |
| Prerequisite: MTH 110 or assignment through Grand Valley math placement | | Prerequisite: MTH 122 or assignment through Grand Valley math placement (MTH 122 may be taken concurrently) | |
| Gen Ed | 3 | **WRT 150** Strategies in Writing | 4 |
| *Numbers noted within (parentheses) are contact hours* *Total* | *14* | *Total* | *16** |
| **Year Two** | | | |
| **BIO 215** General Ecology | 4 | **BIO 375** Genetics and **BIO 376** Genetics Laboratory | 4 |
| Prerequisite: BIO 120 and 12 college credits | *(6)* | Prerequisites: BIO 120. Concurrent enrollment in BIO 376 is required | *(6)* |
| [2]**CHM 231** Introductory Organic Chemistry | 4 | [2]**CHM 232** Biological Chemistry | 4 |
| Prerequisite: CHM 109 or CHM 116 | (5.5) | Prerequisite: CHM 231 | *(5.5)* |
| ***OR* CHM 241** Organic Chemistry for Life Sciences I | 4 | ***OR* CHM 242** Organic Chemistry for Life Sciences II | 4 |
| *(Changing to 5 credits in fall 2015)* Prerequisite: CHM 116 | *(6)* | Prerequisite: CHM 241 | *(6)* |
| [3]MTH Cognate Course | 3 | Gen Ed | 3 |
| Gen Ed | 3 | Gen Ed | 3 |
| [4]Elective | 1 | [4]Elective | 1 |
| *Total* | *15* | *Total* | *15* |
| **Year Three** | | | |
| **BIO 405** Cell and Molecular Biology | 4 | [1]**PHY 221** General Physics II | 5 |
| Prerequisites: (BIO 375 or 355), BIO 376, and (CHM 232 or CHM 242 or CHM 247) may be taken concurrently | | Prerequisite: PHY 220 | *(7)* |
| | | Gen Ed | 3 |
| [5]**BIO 406** SWS Cell and Molecular Biology Laboratory | 2 | Issue | 3 |
| Prerequisites: BIO 405 (may be taken concurrently) | *(4)* | **BIO 308** Wildlife Ecology | 4 |
| **BIO 222** Natural History of Vertebrates | 3 | Prerequisite: BIO 215 | *(6)* |
| Prerequisite: BIO 121 | | | |
| [1]**PHY 220** General Physics I | 5 | | |
| Prerequisites: MTH 122 and MTH 123 | *(7)* | | |
| ***OR* PHY 200** Physics for the Life Sciences | 4 | | |
| Prerequisite: MTH 110 or MTH 122 or MTH 201 | *(6)* | | |
| [4]Elective | 1-2 | | |
| *Total* | *15-16** | *Total* | *15* |
| **Year Four** | | | |
| **BIO 408** Wildlife Management | 4 | **BIO 495** Evolutionary Biology (Capstone) | 3 |
| Prerequisite: BIO/NRM 308 | *(6)* | Prerequisites: Senior Standing, BIO 120, BIO 121, BIO 215, (BIO 375 or 355), BIO 376, (CHM 231 or 241 or 245) | |
| **BIO 333** Systematic Botany | 4 | **BIO 342** Ornithology | 3 |
| Prerequisite: BIO 121 | *(5)* | Prerequisite: BIO 121 | *(5)* |
| **NRM 281** Principles of Soil Science | 4 | [4]Elective | 3 |
| | *(6)* | Gen Ed | 3 |
| Issue | 3 | Gen Ed | 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]MTH 122/123 are prerequisites for PHY 220 and are not part of the Biology major. If a student chooses to take PHY 200, MTH 123 does not need to be completed. PHY 221 is not required but students planning to attend graduate school, professional school, or to pursue secondary teacher certification should complete the PHY 220/221 sequence. ***To take the Math Proficiency Tests for MTH 122 and/or 123 online, visit this link: gvsu.edu/s/jk***

[2] If you plan to attend graduate or professional school you will want to complete the CHM 241/241 sequence.

[3] 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.
[4] Elective refers to any course that will help you earn the required 120 credits to graduate.
[5] Students must complete a total of two courses with an SWS attribute

**Declaring the Biology-Wildlife Major:**

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

**General Education Overlap**

| **General Education Categories fulfilled by the Biology major:** |
|---|
| Life Science and Physical Science: BIO 120 and CHM 115 (both fulfill lab requirement) |
| Mathematical Sciences: STA 215, MTH 122, MTH 123, MTH 201 |

| **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 Systematic 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 380 Principles of Animal Nutrition (3) | BIO 309 Plants and Human Health (3) |
| BIO 473 Ecology and Evolution of Plant-Animal Interactions (3) | BIO 402 Aquatic Insects (3) | BIO 311 Biological Basis of Society (3) |
| BIO 573 Plants of the Great Lakes Area (3)-*with permission* | BIO 412 Mammalogy (4) | BIO 329 Evolution of Social Behavior (3) |
| | BIO 422 Embryology (3) | BIO 349 The Darwinian Revolution (3) |
| | BIO 432 Comparative Animal Physiology (4) | |
| | 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) | |

**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**

## CLAS Academic Advisors:

**Jo Ann Litton**
littonj@gvsu.edu

**Julie Amon**
amonju@gvsu.edu