COLLEGE OF LIBERAL ARTS AND SCIENCES (CLAS) ACADEMIC ADVISING CENTER 2025-2026

FISHERIES AND AQUATIC SCIENCES-BS

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

Year One			
BIO 121* General Biology II w/lab Prerequisite: MTH 110 (may be taken concurrently)	4 *(6)*	**BIO 120*** General Biology I w/lab (GE Life Science) Prerequisites: High school chemistry, CHM 109, or CHM 115 strongly recommended (CHM 109 or 115 may be taken concurrently)	4 *(6)*
CHM 109 Introductory Chemistry (GE Physical Science) **OR** Prerequisites: MTH 109 or 110 (may be taken concurrently)	*4 (6)*	[1]**CHM 127+128** Principles of Chemistry II w/lab **OR** Prerequisites: CHM 125+126 and (MTH 122 or MTH 125 or MTH 201)	*5 (7)*
[1]**CHM 125+126** Principles of Chemistry I w/lab (GE Physical Science) Prerequisites: High school chemistry and (MTH 110 or MTH 122 or MTH 125 or MTH 201)	*4 (6)*	**CHM 231** Introductory Organic Chemistry w/lab Prerequisite: CHM 109 or CHM 116	4 *(6)*
Gen Ed (GE Art) or [2]WRT 120 (self-placement)	3	**NRM 150** Introduction to Natural Resource Conservation	3
Gen Ed (GE Social/Behavioral) OR [3] **MTH 122** College Algebra Prerequisite: MTH 110 or assignment through Grand Valley math placement	3	[2]**WRT 130 or WRT 150** Strategies in Writing (GE Writing)	3-4
[4]Elective	1	[4]Elective (if needed)	1
**It is strongly recommended that FAS majors take BIO 121 before BIO 120.*			
Numbers noted within (parentheses) are contact hours Total	*15*	*Total*	*15-16**
Year Two			
BIO 215 Ecology w/lab *(summer and fall only)* Prerequisites: BIO 121	4 *(6)*	[5]**MTH 125** Survey of Calculus Prerequisite: MTH 110; or assignment through math placement	3
NRM 250 Natural Resource Measurements & Mapping *(fall with limited winter availability)*	*3 (5)* 3	[2]Physical Science Elective w/ lab (CHM 231, CHM 234, GEO 111, PHY 220 or PHY 200	4-5
STA 215 Intro to Applied Statistics (GE Math) Prerequisite: MTH 110 or equivalent	3	Gen Ed (GE Philosophy & Literature (COM 202 recommended))	3
Gen Ed (GE Historical Analysis) or [3] **MTH 123** Trigonometry Prerequisite: MTH 122 or assignment through Grand Valley math placement (MTH 122 may be taken concurrently)	1-3	Gen Ed (GE Social/Behavioral) [4]Elective	3 1
Gen Ed or [4]Elective			
Total	*14-16**	*Total*	*14-15**
Year Three			
BIO 323* Aquatic and Wetland Plants *(fall only)* Prerequisites: BIO 121	3 *(5)*	**BIO 375** Genetics and **BIO 376** Genetics Laboratory BIO 375 Prerequisites: BIO 120 or CMB 155 and 156 BIO 376 Prerequisites: BIO 375 or 355 (either may be taken concurrently)	4 *(6)*
OR [2/6]Issues Gen Ed-SWS (BIO 338-SWS recommended)	3		
BIO 451 Stream Ecology (fall even years only) **OR**	3 *(5)*		
BIO 440 Limnology *(fall odd years only)* Prerequisites: BIO 215 or permission of instructor	3 *(5)*	**BIO 413* Freshwater Algae** *(winter only)* Prerequisites: BIO 121 and BIO 215	3 *(5)*
BIO 362 Biology and Diversity of Fishes *(fall only)* Prerequisites: BIO 215	4 (6)	**OR** [2/6]Issues Gen Ed-SWS (BIO 338-SWS recommended)	3
		Fisheries & Aquatic Sciences Elective (see below)	3-4
Gen Ed (GE Global Perspectives)	3	Gen Ed (GE US Diversity) or [4]Elective	3
[7]**NRM 377** Project Design & Seminar	1	[4]Elective	1-2
[4]Elective	1	**Only need one of BIO 323 or BIO 413, not both.*	
Total	*15*	*Total*	*15*
Year Four			
BIO 451 Stream Ecology (fall even years only) **OR**	3 *(5)*	**BIO 495 SWS** Perspectives in Biology (Capstone) **OR** Prerequisites: Senior Standing, and either STA 215, MTH 125 or MTH 201	3
BIO 440 Limnology *(fall odd years only)* Prerequisites: BIO 215 or permission of instructor	3 *(5)*		
Fisheries & Aquatic Sciences Elective (see below)	3-4	[2/6]**NRM 495 SWS** Senior Project & Seminar Prerequisites: Senior Standing, STA 215, NRM 377; NRM 454 or NRM 472	3
Fisheries & Aquatic Sciences Elective (see below)	3-4		
Issues Gen Ed (NRM 451 recommended)	3		3 *(5)*
[4]Elective (if needed)	1-3	**BIO 402** Aquatic Insects *(winter only)* Prerequisites: BIO 120 and BIO 121	3-4
		Fisheries & Aquatic Sciences Elective (see below, if needed)	3
		Gen Ed (if needed) or [4]Elective	3
		Gen Ed (if needed) or [4]Elective	
Total	*15*	*Total*	*15-17**

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

[1] Students planning to pursue careers in fisheries management, graduate school, or participate in research are advised to take CHM 125+126 and CHM 127+128.

[2] A grade of C or better is required in WRT 130 or 150 and SWS courses in order to satisfy the WRT requirement at GVSU.

[3] MTH 122 is required for CHM 127+128. MTH 122 + 123 are required for PHY 220. ***Take the Math Proficiency Tests for MTH 122 and/or 123 online: www.gvsu.edu/s/mv***

[4] Students must have a **minimum of 120 credits** to graduate with **58 of the 120 credits** being from a senior level institution and the **final 30 of the 120 credits** completed at GVSU. Elective refers to any course that will help meet these requirements.

[5] MTH 201 can be used in place of MTH 125.

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

[7] NRM 377 is required for NRM 495 and NRM 496/497.

Declaring the Fisheries and Aquatic Sciences Major:

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

General Education Categories fulfilled by the Fisheries & Aquatic Sciences major:
Life Science and Physical Science: BIO 120 and CHM 109 or CHM 125+126 (all fulfill lab requirement)
Mathematical Sciences: STA 215
Philosophy & Literature (recommended): COM 202
Issues (recommended): BIO 338-SWS* and NRM 451*

Fisheries and Aquatic Sciences Electives

Students must complete at least 12 credits from the options below.

Courses marked with a * need approval of a faculty advisor.

Students pursuing American Fisheries Society certification should take NRM 405, NRM 451, and NRM 472. Students interested in aquatic sciences are recommended to select at least 1 genetics course (BIO 475 or BIO 485) and NRM 454. Students interested in marine biology are advised to take BIO 232, BIO 370, GEO 430, and a field course in Marine studies.

BIO 210 – Evolutionary Biology (3)
Prerequisites: BIO 120 and BIO 121

WO BIO 232 – Natural History of Invertebrates (3) w/ lab
Prerequisites: BIO 121

F BIO 323 – Aquatic and Wetland Plants (3) w/ lab
Prerequisites: BIO 121

F BIO 370 – Marine Biology (3)
Prerequisites: BIO 121 and BIO 215

W BIO 413 – Freshwater Algae (3) w/ lab (if not taken for major)
Prerequisites: BIO 121 and BIO 215

BIO 417 – International Field Biology (1-4)*
Prerequisites: Variable and with permission of instructor

BIO 418 – Regional Field Biology (1-4)
Prerequisites: Variable and with permission of instructor

BIO 470 – Conservation Biology (3)
Prerequisites: BIO 215

FE BIO 475 – Population Genetics (3)
Prerequisites: BIO 210 and (either BIO 355 or BIO 375), or by permission

W BIO 485 – Molecular Ecology (3) w/ lab
Prerequisites: BIO 375

CHM 221 – Survey of Analytical Chemistry (4) w/ lab
Prerequisites: CHM 127+128 or one full year of general chemistry

FE GEO 430 – Oceanography (3) w/ lab
Prerequisites: GEO 112

W NRM 405 – GIS Applications in Natural Resources (3) w/ lab
Prerequisites: GPY 307 or NRM 250

NRM 451 – Natural Resource Policy (3)
Prerequisites: Junior standing and completion of Foundations - Natural Sciences; or permission of instructor. Fulfills one Issues requirement.

F NRM 454 – Watershed and Wetland Management (4) w/ lab
Prerequisites: MTH 122, NRM 250

WO NRM 472 – Fisheries Management (3) w/ lab
Prerequisites: BIO 362 and STA 215

F Offered in Fall
W Offered in Winter
SS Offered in Spring/Summer
E Offered in Even years only
O Offered in Odd years only

Physical Science Electives

Must complete one of the following sequences:

- CHM 109 and CHM 231 and one of CHM 234, GEO 111, PHY 220 or PHY 200
- CHM 125+126 and CHM 127+128 and CHM 231

Be active in relevant student clubs, such as the Soil & Water Conservation and Wildlife Clubs. Visit gvsu.campuslabs.com/engage to learn more. More information about the American Fisheries Society certification can be found here, https://fisheries.org/membership/afs-certification/. Consult your faculty advisor for more information.

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-1-120 MAK, 616-331-8585. To schedule an appointment with an advisor in the CLAS Academic Advising Center, visit www.gvsu.edu/clasadvising and click on "Schedule Appointment."