

NATURAL RESOURCES & ENVIRONMENTAL MANAGEMENT - BS

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

*This sample plan assumes that the MTH 110 requirement has been fulfilled. If MTH 110 is needed, students should take the course in the **FIRST SEMESTER** in place of the chemistry option and move chemistry to the winter semester in place of the elective option.*

Year One			
¹ BIO 120 General Biology I Prerequisites: High school chemistry; CHM 109 or CHM 125 & 126 strongly recommended (CHM 109 or 125 & 126, may be taken concurrently with BIO 120)	4	¹ BIO 121 General Biology II Prerequisites: MTH 110 (<i>can be taken concurrently</i>)	4
CHM 109 Introductory Chemistry Prerequisites: MTH 109 or 110 (may be taken concurrently) OR CHM 125 & 126 Principles of Chemistry I Prerequisites: High school chemistry & MTH 110 or 122 or 125 or 201	4	² NRM 150 Intro to Natural Resources Conservation OR General Education	3
² NRM 150 Intro to Natural Resources Conservation OR General Education General Education or ³ WRT 120 (<i>self-placement</i>) Elective (<i>dependent on WRT placement</i>)	3-4 1	⁴ MTH 122 College Algebra OR MTH 123 Trigonometry OR MTH 125 Survey of Calculus OR MTH 201 Calculus I Prerequisite: Math placement exam	3-4
	3	³ WRT 130 or WRT 150 Strategies in Writing (<i>self-placement</i>) Elective (<i>dependent on WRT placement</i>)	3-4 1
Total	15	Total	15/16
★ NRM 150 can be taken in either semester during the first year.			
Year Two			
BIO 215 Ecology <u>Fall Only</u> (CLAS Voyage, Experiential Learning) Prerequisites: BIO 121	4	NRM 405 GIS Applications in Resource Management (CLAS Voyage, Experiential Learning) Prerequisites: GPY 307 or NRM 250	3
⁵ NRM 250 Resource Measurements and Mapping	3	STA 215 Introductory Applied Statistics Prerequisite: MTH 110 or equivalent	3
⁵ NRM 281 Principles of Soil Science Prerequisites: CHM 109 or 125 & 126	4	NRM Elective (<i>options on second page</i>)	3
General Education	3	NRM Elective General Education	3
Elective	1		3
Total	15	Total	15/16*
Year Three			
NRM 451 Natural Resource Policy (<i>Issues</i>) Prerequisite: Junior Standing	3	NRM Elective	3-4
⁵ NRM Upper-Level Elective (<i>options on second page</i>)	3-4	⁵ NRM Upper-Level Elective	3-4
⁵ NRM Upper-Level Elective	3-4	⁵ NRM Upper-Level Elective	3-4
⁶ Human Dimensions of Resource Management Elective	3	⁷ General Education (<i>SWS</i>)	3
Plant Identification Course	3	General Education OR ⁷ Elective	3
Total	15/16	Total	15/16
Year Four			
BIO 461 Terrestrial Ecosystem Ecology Prerequisites: BIO 215 or NRM 281 (<i>recommended</i>)	4	NRM 495 Senior Project and Seminar (SWS) (CLAS Voyage, Capstone) Prerequisites: Senior Standing, STA 215, and one upper level NRM course	3
NRM 377 Project Design and Seminar	1		
⁸ Electives	9	⁵ NRM Elective (<i>if needed</i>)	3-4
Elective (<i>if needed</i>)	1	⁸ Elective	6-9
Total	14/15*	Total	15*

¹Students have the option of starting in BIO 120 or 121 in the fall semester. Students who have an ACT science sub-score of 22 and below should start with BIO 121.

²NRM 150 can be taken in either Fall or Winter semester during their first year.

³Students who self-place into WRT 120 should take this course in the fall semester and then take WRT 130 in the winter semester of their first year. WRT 150 can take it in either semester during their first year. Students will not need to take WRT 150 if they have earned credit for the course through AP/Dual Enrollment. A grade of C or better (**NOT A-C-**) is required in WRT 130 or 150 to satisfy the WRT requirement.

⁴Students who have fulfilled the MTH 122 or 123 requirement based on ACT or SAT scores are still required to complete a college level mathematics course higher than MTH 110. Students should choose from MTH 125 or MTH 201.

⁵NRM majors must complete a **TOTAL** of 36 credits of NRM courses with a GPA of 2.0 or better. Please see the second page for additional NRM options.

⁶NRM majors must complete 3 credits of a Human Dimensions of Resource Management elective. Please see second page for Human Dimensions options

⁷SWS = Supplemental Writing Skills. Students must complete 2 courses with an SWS attribute.

⁸Elective refers to any course to help you earn the required 120 credits to graduate. However, students should consider adding a complementary minor or certificate. See both your Academic advisor and Faculty Advisor for more information.

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

*The block tuition rate is for 12-15 credits. You will pay additional tuition for any credits over 15. For more information contact the Office of Financial Aid.

*A major GPA of 2.0 or higher within the major is required to graduate.

CLAS Voyage Courses	
What is the CLAS Voyage? https://www.gvsu.edu/clas/clas-voyage-1184.htm or search "GVSU CLAS Voyage"	
Experiential Learning	BIO 215, NRM 405, NRM 330, 454, NRM 462
Capstone	NRM 495

General Education Overlap	
Life Sciences with Lab: BIO 120	Physical Sciences with Lab: CHM 109 or CHM 125 & 126
Mathematical Sciences: MTH 122, 123, 125, 201 and/or STA 215	
Issues: NRM 451, ECO 345, ANT 340, BIO 319, BIO 338, GEO 360, GPY 324, GPY 363, GPY 412, INT 330, or PLS 303	

Natural Resources Management Cognate Requirements	
There are a minimum of 32 credits of cognates required in the curriculum:	
MTH 122 College Algebra OR MTH 123 Trigonometry OR MTH 125 Survey of Calculus OR MTH 201 Calculus I	BIO 460 Terrestrial Ecosystem Ecology CHM 109 Introductory Chemistry OR CHM 115 Principles of Chemistry I
BIO 120 General Biology I BIO 121 General Biology II BIO 215 Ecology	STA 215 Introductory Applied Statistics

Natural Resources Management Competency Requirements	
NRM 150 Intro to Natural Resources Conservation (3) NRM 250 Resource Measurements and Mapping (3) NRM 281 Principles of Soil Science (4) *CHM 109 or 115 NRM 377 Project Design and Seminar (1)	NRM 405 GIS Applications in Resource Management (3) *GPY 307 or NRM 250 NRM 451 Natural Resource Policy (3) *Junior Standing NRM 495 Trends in Natural Resources Management (3) (SWS) (Capstone) *Completion of 20 credits in NRM & STA 215

Upper-Level Resource Management Options Choose at least TEN credits from the following: **When a course is cross listed between BIO & NRM, students SHOULD CHOOSE THE NRM OPTION **	Plant Identification Options Choose ONE from the following:
NRM 330 Environmental Pollution (3) <u>Winter only</u> (CLAS Voyage, Experiential Learning) *BIO 215, MTH 122, CHM 109 or CHM 116 NRM/BIO 386 Ecological Restoration and Management (4) <u>Fall only</u> *BIO 215 NRM/BIO 408 Wildlife Management (4) <u>Fall only</u> *BIO/NRM 308 NRM 415 Fire Ecology and Management (3) <u>Winter only</u> *BIO 215 NRM 420 Wildland Recreation Management (3) <u>Fall only</u> NRM 430 Advanced Fire Management (2) <u>Spring Break Even Years</u> *NRM 230 NRM 454 Watershed and Wetland Management (4) <u>Fall only</u> (CLAS Voyage, Experiential Learning) *MTH 122, NRM 150 & 250 NRM 462 Forest Ecosystem Management (4) <u>Winter only</u> (CLAS Voyage, Experiential Learning) *NRM 150 & 250 NRM 472 Fisheries Management (3) <u>Winter of odd years</u> *BIO 362 & STA 215	BIO 243 Plant Identification and Natural History (3) <u>Spring/Summer only</u> *BIO 121 NRM 263 Forest Vegetation of the Great Lakes Region (2) <u>Fall only</u> *BIO 121 BIO 323 Aquatic and Wetland Plants (3) <u>Fall only</u> *BIO 121 BIO 333 Systematic Botany (4) <u>Fall only</u> *BIO 121 BIO 413 Freshwater Algae (3) <u>Winter only</u> *BIO 121 & 215

Human Dimensions of Resource Management (complete at least 3 credits) <i>No course may count towards both a human dimensions course and an upper-level resource management course:</i>	
ANT 340 Culture and the Environment (3) (Issues) BIO 319 Global Agricultural Sustainability (3) (Issues) BIO 338 Environmental Ethics (3) (Issues) ECO 345 Environmental and Resource Economics (3) (Issues) ENS/NRM/SOC 222 Social Inquiry and West Michigan Water (3)	GPY 363 World Forests and their Use (3) (Issues) GPY 412 Global Climate and Environmental Change (3) (Issues) INT 330 The Idea of Nature (3) (Issues) NRM 330 Environmental Pollution (3) NRM 420 Wildland Recreation Management (3)

It is imperative to meet with your **FACULTY ADVISOR** and an **ADVISOR IN THE CLAS ACADEMIC ADVISING CENTER** regularly.
CLAS Advisors: Brandon Moskun (moskun@gvsu.edu) and Khalaya Daniels (daniekha@gvsu.edu).

GEO 360 Global Climate and Environmental Change (3) (Issues) GPY 324 Urbanization (3) (Issues)	PLS 303 Introduction to U.S. Environmental Policy (3) (Issues)
Natural Resources Management Electives	
<i>NRM majors must complete a total of at least 36 credits of NRM courses with a GPA of 2.0 or better. Choose at least 9 credits in electives from the list below or choose additional Upper-Level Resource Management options.</i>	
NRM 240 Principles of Climatology (4) NRM 222 Social Inquiry and West Michigan Water (3) <i>* Crossed listed with ENS 222 and SOC 222</i> NRM 308 Wildlife Ecology (4) <i>*BIO 215</i> NRM 180/280/380/280 Special Topics (1-4) <i>*Course content and number of credits offered changes every semester</i> NRM 399 Readings in Resource Management (1-3) NRM/EGR 406 Renewable Energy Systems (3)	NRM 407 NRM and Society: Study Abroad <i>*Please contact the Study Abroad Office</i> NRM 417 NRM International Field Studies (1-4) NRM 435 Fundamentals of Web GIS & Drones (3) <i>*NRM 250 or GPY 200</i> NRM 450 Applied Spatial Analysis of Natural Resources (3) <i>*NRM 405 or GPY 307</i> NRM 486 Advanced Restoration Ecology (3) <i>*NRM/BIO 386</i> NRM 497 Issues in Western U.S. Natural Resources Management (2) NRM 490 Internship in Resource Management (1-5) NRM 499 Research in Resource Management (1-3)
Notes:	
<p>NRM 180, 280, 380 and 480: You may take multiple classes with an NRM X80 designation because each class will cover a different topic. No more than 3 credits of NRM 399 will be counted towards the major. No more than 3 credits of NRM 499 will be counted towards the major. No more than 5 credits of NRM 490 and NRM 499, TOTAL, will be counted towards the major.</p>	

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