

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 115 strongly recommended (CHM 109 or 115, 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 OR CHM 115 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 or ³ WRT 120 (<i>self-placement</i>)	3	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
Elective (<i>dependent on WRT placement</i>)	1	³ WRT 130 or WRT 150 Strategies in Writing (<i>self-placement</i>)	3-4
Total	15	Total	15/16
★ NRM 150 can be taken in either semester during the first year.			
Year Two			
BIO 215 Ecology <i>Fall Only</i> Prerequisites: BIO 121	4	NRM 405 GIS Applications in Resource Management Prerequisites: GPY 307 or NRM 250	3
⁵ NRM 250 Resource Measurements and Mapping	3	NRM Elective (<i>options on second page</i>)	3-4
⁵ NRM 281 Principles of Soil Science Prerequisites: CHM 109 or 115	4	STA 215 Introductory Applied Statistics Prerequisite: MTH 110 or equivalent	3
General Education	3	ECO 211 Introductory Microeconomics Prerequisites: MTH 110 or 122 or 201 & Sophomore standing	3
Elective	1	General Education	3
Total	15	Total	15/16*
Year Three			
NRM 451 Natural Resource Policy Prerequisite: Junior Standing	3	⁵ NRM Upper-Level 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
ECO 345 Environmental and Resource Economics Prerequisite: Junior Standing & ECO 200 or 211	3	⁶ 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 460 Terrestrial Ecosystem Ecology Prerequisites: BIO 215 or NRM 281 (<i>recommended</i>)	4	NRM 495 Senior Project and Seminar (<i>SWS</i>) OR NRM 496 & 497 Trends in NRM & NRM Field Trip (<i>Capstone</i>) Prerequisites: Senior Standing, STA 215, and one upper level NRM course	3
⁵ NRM Upper-Level Elective	3-4	⁵ NRM Elective	3-4
⁵ NRM Upper-Level Elective	3-4	⁷ Elective	6-9
NRM 377 Project Design and Seminar	1		
⁷ Elective	3		
Total	15/16*	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.

²**NRM 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.

⁶SWS = Supplemental Writing Skills. Students must complete 2 courses with an SWS attribute.

⁷Elective 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.

Declaring the Natural Resources Management Major:

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

General Education Overlap

Life Sciences with Lab: BIO 120	Physical Sciences with Lab: CHM 109 or CHM 115
Mathematical Sciences: MTH 122, 123, 125, 201 and/or STA 215	Social and Behavioral Sciences: ECO 211
Issues: NRM 451, ECO 345	

Natural Resources Management Cognate Requirements

There are a minimum of 32 credits of cognates required in the curriculum:

MTH 122 College Algebra <u>OR</u> MTH 123 Trigonometry <u>OR</u> MTH 125 Survey of Calculus <u>OR</u> MTH 201 Calculus I	BIO 460 Terrestrial Ecosystem Ecology CHM 109 Introductory Chemistry <u>OR</u> CHM 115 Principles of Chemistry I
BIO 120 General Biology I BIO 121 General Biology II BIO 215 Ecology	ECO 211 Microeconomics ECO 345 Environmental and Resource Economics 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) <u>OR</u> NRM 496 & 497 Trends in NRM & NRM Field Trip (3) *Completion of 20 credits in NRM & STA 215
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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****

NRM 330 Environmental Pollution (3) Winter only
*BIO 215, MTH 122, CHM 109 or CHM 116
NRM/BIO 386 Ecological Restoration and Management (4) Fall only
*BIO 215
NRM/BIO 408 Wildlife Management (4) Fall only
*BIO/NRM 308
NRM 415 Fire Ecology and Management (3) Winter only
*BIO 215
NRM 420 Wildland Recreation Management (3) Fall only
NRM 430 Advanced Fire Management (2) Spring Break even years
*NRM 230
NRM 454 Watershed and Wetland Management (4) Fall only
*MTH 122, NRM 150 & 250
NRM 462 Forest Ecosystem Management (4) Winter only
*NRM 150 & 250
NRM 472 Fisheries Management (3) Winter only
*BIO 362 & STA 215

Plant Identification Options

Choose **ONE** from the following:

BIO 243 Plant Identification and Natural History (3) Spring/Summer only
*BIO 121
NRM 263 Forest Vegetation of the Great Lakes Region (2) Fall only
*BIO 121
BIO 323 Aquatic and Wetland Plants (3) Fall only
*BIO 121
BIO 333 Systematic Botany (4) Fall only
*BIO 121
BIO 413 Freshwater Algae (3) Winter only
*BIO 121 & 215

Natural Resources Management Electives

NRM majors must complete a total of at least 36 credits of NRM courses with a GPA of 2.0 or better. Choose electives from the list below or choose additional Upper-Level Resource Management options.

NRM 240 Principles of Climatology (4) NRM 308 Wildlife Ecology (4) *BIO 215 NRM 180/280/380/280 Special Topics (1-4) *Course content and number of credits offered changes every semester NRM 399 Readings in Resource Management (1-3) NRM/EGR 406 Renewable Energy Systems (3)	NRM 407 NRM and Society: Study Abroad *Please contact the Study Abroad Office NRM 417 NRM International Field Studies (1-4) NRM 450 Applied Spatial Analysis of Natural Resources (3) *NRM 405 or GPY 307 NRM 486 Advanced Restoration Ecology (3) *NRM/BIO 386 NRM 490 Internship in Resource Management (1-5) NRM 499 Research in Resource Management (1-3)
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Notes:

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.

It is imperative to meet with your **FACULTY ADVISOR** and an **ADVISOR IN THE CLAS ACADEMIC ADVISING CENTER** regularly.

CLAS Advisors: Michelle X Taylor (taylormx@gvsu.edu) and Khalaya Daniels (daniekha@gvsu.edu).

No more than 5 credits of NRM 490 and NRM 499, **TOTAL**, will be counted towards the major.

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