

# NATURAL RESOURCES MANAGEMENT

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.

<b>Year One</b>			
<sup>1</sup> BIO 120 General Biology I Prerequisites: High school chemistry, CHM 109, or CHM 115 strongly recommended (CHM 109 or 115 may be taken concurrently with BIO 120) <b>See notes below regarding BIO 120/121 option</b> CHM 109 Introductory Chemistry <b>OR</b> CHM 115 Principles of Chemistry I Prerequisites: High school chemistry and (MTH 110 or MTH 122 or MTH 125 or MTH 201) <sup>★</sup> NRM 150/Gen Ed/WRT 120 <sup>2</sup> – choose two Elective – choose any 1 credit course to reach 15 for the semester	4  4  6/7 1	<sup>1</sup> BIO 121 General Biology II Prerequisites: MTH 110 or may be taken concurrently <b>See notes below regarding BIO 120/121 option</b> <sup>★</sup> NRM 150 Introduction to Natural Resources <b>OR</b> Gen Ed MTH 122 College Algebra <b>OR</b> MTH 123 Trigonometry <b>OR</b> MTH 125 Survey of Calculus <b>OR</b> MTH 201 Calculus 1 Prerequisite: proficiency through math placement – <b>see notes below regarding math placement</b> WRT 150 Strategies in Writing <sup>2</sup> or WRT 130 if chose WRT 120 in fall Elective – choose any 1 credit course to reach 15 credits for the semester if needed	4  3  3/4  4/3 1
<b>★NRM 150 can be taken in either semester during the first year.</b>			
<i>Total</i>	15	<i>Total</i>	15/16
<b>Year Two</b>			
BIO 215 Ecology Prerequisite: BIO 120 and BIO 121 (BIO 120 may be taken concurrently) <sup>3</sup> NRM 250 Resource Measurements and Maps <sup>3</sup> NRM 281 Principles of Soil Science Prerequisite: CHM 109 or CHM 115 Gen Ed Elective – choose any 1 credit course to reach 15 for the semester	4  3 4  3 1	NRM Analytical Elective – Choose from: NRM 320 Introduction to Resource Systems Prerequisites: BIO 215 and MTH 122 <b>OR</b> NRM 395 GIS Application in Resource Management Prerequisites: GPY 307 or NRM 250 NRM Elective STA 215 Introductory Applied Statistics Prerequisite: MTH 110 or equivalent ECO 211 Introductory Microeconomics Prerequisites: MTH 110 or MTH 122 or MTH 201, soph standing Gen Ed	3     3 or 4 3  3  3
<i>Total</i>	15	<i>Total</i>	15/16*
<b>Year Three</b>			
NRM 451 Natural Resource Policy Prerequisite: Junior Standing <sup>2</sup> NRM Upper Level Electives (see reverse side for options) ECO 345 Environmental and Resource Economics Plant Identification Course	3  6/7 3 3	NRM Upper Level Electives Gen Ed <b>w/SWS designation</b> <sup>4</sup> Gen Ed or Elective	9/10 3 3
<i>Total</i>	15-16	<i>Total</i>	15-16
<b>Year Four</b>			
BIO 460 Terrestrial Ecosystem Ecology Prerequisites: BIO 215; NRM 281 recommended NRM Upper Level Elective NRM Upper Level Elective <sup>4</sup> Elective	4  3/4 3/4 3/4	NRM 495 <b>SWS</b> Trends in Natural Resources Mgt <b>OR</b> NRM 496 + 497 (Capstone) Prerequisites: Completion of 20 credits in NRM, STA 215 NRM Upper Level Elective <sup>4</sup> Elective <sup>4</sup> Elective	4  3/4 3/4 3/4
<i>Total</i>	15-16*	<i>Total</i>	15-16*

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

A total of 120 credits are required for graduation. Please supplement your schedule with elective courses to reach the required 120 credits.

**\*Students 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.**

<sup>1</sup>Students 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.**

<sup>2</sup>Students who self-place into WRT 120 should take this course in the fall semester and then take WRT 130 in the winter semester of the first year. Students who self-place into WRT 150 can take this course in either semester. A grade of C or higher is required to fulfill the WRT 150 requirement.

<sup>3</sup>NRM majors must complete a total of **36 credits of NRM courses** with a GPA of 2.0 or better. Please see reverse for additional NRM options.

<sup>4</sup>Students should consider adding a complementary minor or certificate – speak with an academic advisor to discuss options.

**Declaring the Natural Resources Management 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", choose "Natural Resource Management-BS"
5. Click "Submit" and then "Change to New Program"

**General Education Overlap**

General Education Categories fulfilled by the Natural Resources Management Major:	
Life Sciences with Lab: BIO 120	Physical Sciences with Lab: CHM 109 or CHM 115
Mathematical Sciences: MTH 122, 123, 125, 201 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 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	ECO 211 Microeconomics ECO 345 Environmental and Resource Economics STA 215 Introductory Applied Statistics

**Natural Resources Management Competency Requirements**

NRM 150 – Introduction to Natural Resources Management (3 cr) NRM 250 – Resource Measurements and Maps (3 cr) NRM 281 – Principles of Soil Science (4 cr) NRM 451 – Natural Resource Policy (3 cr) NRM Capstone (495 or 496+497) (4 cr)	<b>Analytical – Choose one course from:</b> NRM 320 – Introduction to Resource Systems (prerequisites: BIO 215 & MTH 122) NRM 395 – GIS Applications in Resource Management (prerequisites: GPY 307 or NRM 250)
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**Upper Level Resource Management Options – choose at least 10 credits from the following:**

- NRM 330 – Environmental Pollution (3 cr) (prerequisites: BIO 215 and MTH 122)—Winter only
- NRM/BIO 386 – Ecological Restoration and Management (4 cr) *NRM students should choose the NRM option when registering*  
(prerequisites: BIO 215)—Fall only
- NRM/BIO 408 – Wildlife Management (4 cr) *NRM students should choose the NRM option when registering*  
(prerequisites: BIO/NRM 308)—Fall only
- NRM 420 – Wildland Recreation Management (3 cr)—Fall only
- NRM 452 – Watershed and Wetland Management (4 cr) (prerequisites: MTH 122, NRM 150, NRM 250)—Fall only
- NRM 462 – Forest Ecosystem Management (4 cr) (prerequisites: NRM 150, NRM 250)—Winter only

**Plant Identification Options – choose at least one from the following:**

- BIO 243—Plant Identification and Natural History (3cr) (prerequisite: BIO 121)-spring/summer only
- BIO 323—Aquatic and Wetland Plants (3cr) (prerequisite: BIO 121)- fall only
- BIO 333—Systematic Botany (4cr) (prerequisite: BIO 121)-fall only
- BIO 413—Freshwater Algae (3cr) (prerequisites: BIO 121, BIO 215)-winter only

**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 cr) NRM 308 Wildlife Ecology (4 cr) (prerequisites: BIO 215) NRM 380 Special Topics (also NRM 180, 280, 480) NRM 399 Readings in Resource Management NRM 407 NRM and Society: Study Abroad NRM 415 Fire Ecology and Management NRM 417 NRM International Field Studies	NRM 450 Applied Spatial Analysis of Natural Resources (3 cr) (prerequisites: NRM 395 or GPY 307) NRM 486 Advanced Restoration Ecology (3 cr) (prerequisites: NRM/BIO 386) NRM 490 Internship in Resource Management NRM 499 Research in Resource Management
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**Notes:**

- NRM 180, 280, 380 and 480 are designations for a special topics class. 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 (readings) and no more than 3 credits of NRM 499 (research) will be counted towards the major.
- No more than 3 credits of NRM 499 (research) will be counted towards the major.
- No more than 5 credits of NRM 490 (internship) and NRM 499 (research) total can be applied to the major.