## COLLEGE OF LIBERAL ARTS AND SCIENCES (CLAS) ACADEMIC ADVISING CENTER

## NATURAL RESOURCES & ENVIRONMENTAL MANAGEMENT - BS

2023-2024

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				
<sup>1</sup> BIO 120 General Biology I	4	<sup>1</sup> BIO 121 General Biology II	4	
Prerequisites: High school chemistry; CHM 109 or 115		Prerequisites: MTH 110 (can be taken concurrently)		
strongly recommended (CHM 109 or 115, may be taken		<sup>2</sup> NRM 150 Intro to Natural Resources Conservation	3	
concurrently with BIO 120)		<u><b>OR</b></u> General Education		
CHM 109 Introductory Chemistry OR CHM 115 Principles of	4	<sup>4</sup> MTH 122 College Algebra <u><i>OR</i></u> MTH 123 Trigonometry <u><i>OR</i></u>	3-4	
Chemistry I		MTH 125 Survey of Calculus <u>OR</u> MTH 201 Calculus I		
Prerequisites: High school chemistry & MTH 110 or 122 or		Prerequisite: Math placement exam		
125 or 201		<sup>3</sup> WRT 130 or WRT 150 Strategies in Writing ( <i>self-placement</i> )	3-4	
<sup>2</sup> NRM 150 Intro to Natural Resources Conservation <u>OR</u> General	3	Elective (dependent on WRT placement)	1	
Education				
General Education or <sup>3</sup> WRT 120 (self-placement)	3-4			
Elective (dependent on WRT placement)	1			
Total	15	Total	15/16	

**\***NRM 150 can be taken in either semester during the first year

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

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

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

<sup>3</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 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.

<sup>4</sup>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>5</sup>NRM majors must complete a <u>TOTAL</u> of 36 credits of NRM courses with a GPA of 2.0 or better. Please see the second page for additional NRM options. <sup>6</sup>SWS = Supplemental Writing Skills. Students must complete 2 courses with an SWS attribute.

<sup>7</sup>Elective 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 the second s	of cognates required in the curriculum:				
MTH 122 College Algebra	BIO 460 Terrestrial Ecosystem Ecology				
OR MTH 123 Trigonometry					
OR MTH 125 Survey of Calculus	CHIMI 109 Introductory Chemistry				
BIO 120 General Biology I	ECO 211 Microeconomics				
BIO 121 General Biology II	ECO 345 Environmental and Resource Economics				
BIO 215 Ecology	STA 215 Introductory Applied Statistics				
Natural Resources Managem	ent Competency Requirements				
NRM 150 Intro to Natural Resources Conservation (3)	NRM 405 GIS Applications in Resource Management (3)				
NRM 250 Resource Measurements and Mapping (3)	*GPY 307 or NRM 250				
NRM 281 Principles of Soil Science (4)	NRM 451 Natural Resource Policy (3)				
*CHM 109 or 115	*Junior Standing				
<b>NKM 377</b> Project Design and Seminar (1)	<b>OR NEW 495</b> Trends in Natural Resources Management (3) (SWS) (Capstone)				
	*Completion of 20 credits in NRM & STA 215				
Upper-Level Resource Management Options					
Choose at least <b>TEN</b> credits from the following:	Plant Identification Ontions				
**When a course is cross listed between BIO & NRM, students SHOULD	Choose <b>ONE</b> from the following:				
CHOOSE THE NRM OPTION**					
NRM 330 Environmental Pollution (3) Winter only	BIO 243 Plant Identification and Natural History (3) Spring/Summer only				
*BIO 215, MTH 122, CHM 109 or CHM 116	*BIO 121				
<b>NRM/</b> BIO 386 Ecological Restoration and Management (4) <u>Fall only</u>	NRM 263 Forest Vegetation of the Great Lakes Region (2) Fall only				
BIO 215 NRM/BIO 408 Wildlife Management (4) Fall only	BIO 121 BIO 323 Aquatic and Wetland Plants (3) Fall only				
*BIO/NRM 308	*BIO 121				
NRM 415 Fire Ecology and Management (3) Winter only	BIO 333 Systematic Botany (4) Fall only				
*BIO 215	*BIO 121				
NRM 420 Wildland Recreation Management (3) Fall only	BIO 413 Freshwater Algae (3) Winter only				
NRM 430 Advanced Fire Management (2) Spring Break even years	*BIO 121 & 215				
*NRM 230					
NRM 454 Watershed and Wetland Management (4) Fall only					
"MIH 122, NKM 150 & 250 NPM 462 Ecrost Ecosystem Management (4) Winter only					
*NRM 150 & 250					
NRM 472 Fisheries Management (3) Winter only					
*BIO 362 & STA 215					
Natural Resources Management Electives					
NRM majors must complete a total of at least 36 credits of NRM courses with a G	PA of 2.0 or better. Choose electives from the list below or choose additional Upper-				
Level Resource M	lanagement options.				
NRM 240 Principles of Climatology (4)	*Plage contact the Study Abroad Office				
*BIO 215	NRM 417 NRM International Field Studies (1-4)				
NRM 180/280/380/280 Special Topics (1-4)	<b>NRM 450</b> Applied Spatial Analysis of Natural Resources (3)				
*Course content and number of	*NRM 405 or GPY 307				
credits offered changes every semester	NRM 486 Advanced Restoration Ecology (3)				
NRM 399 Readings in Resource Management (1-3)	*NRM/BIO 386				
NRM/EGR 406 Renewable Energy Systems (3)	NRM 490 Internship in Resource Management (1-5)				
	NRM 499 Research in Resource Management (1-3)				
Notes:					
NRM 180, 280, 380 and 480: You may take multiple classes with an NRM	INKIVI 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. It is imperative to meet with your *FACULTY ADVISOR* and an *ADVISOR IN THE CLAS ACADEMIC ADVISING CENTER* regularly.

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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.