COLLEGE OF LIBERAL ARTS AND SCIENCES (CLAS) ACADEMIC ADVISING CENTER 2013-2014

NATURAL RESOURCE MANAGEMENT-BS-ENVIRONMENTAL SCIENCE

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 a waiver of the MTH 110 prerequisite

Year One			
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)	4	BIO 121 General Biology II Prerequisite: BIO 120	4
		GEO 111 Exploring the Earth	4
		NRM 150 Introduction to Natural Resources	3
MTH 122 College Algebra Prerequisite: MTH 110 or proficiency through math placement – **see notes below regarding the Advanced Math Waiver/Override	3	Gen Ed	3
WRT 150 Strategies in Writing	4		
Gen Ed	3		
Total	*15*	*Total*	*14*
Year Two			
BIO 215 General Ecology Prerequisite: BIO 120 and 12 college credits ; BIO 121 recommended	4	CHM 116 Principles of Chemistry II Prerequisite: CHM 115 and (MTH 122 or 125 or 201)	5
		STA 215 Introductory Applied Statistics Prerequisite: MTH 110 or equivalent	3
CHM 115 Principles of Chemistry I Prerequisites: High school chemistry and (MTH 110 or MTH 122 or MTH 125 or MTH 201)	5	ECO 211 Introductory Microeconomics Prerequisites: MTH 110 or MTH 122 or MTH 201, sophomore standing recommended	3
[1]NRM 250 Resource Measurements and Maps	4		
Gen Ed	3	Gen Ed	3
Total	*16**	*Total*	*14*
Year Three			
[1]NRM 281 Principles of Soil Science	4	NRM 320 Introduction to Resource Systems Prerequisites: BIO 215 and MTH 122	3
[1]NRM 451 Natural Resource Policy	4		
[1]NRM Core Elective	3/4	NRM 330 Environmental Pollution Prerequisite: CHM 109 or CHM 116	3
[2]NRM Cognate Elective	3/4	[1]NRM Core Elective	4
		[2]NRM Cognate Elective	4
Total	*14-16**	*Total*	*14*
Year Four			
BIO 460 Terrestrial Ecosystem Ecology Prerequisites: BIO 215; NRM 281 recommended	4	[3]NRM 495 SWS Trends in Natural Resources Management (Capstone) Prerequisites: Completion of 20 credits in NRM, STA 215	4
NRM 452 Watershed and Wetland Management Prerequisites: GEO 111, MTH 122, and NRM 250	4	[1]NRM Core Elective	4
[1] NRM Core Elective	3/4	[4]Elective	3/4
Issue/Theme	3	Issue/Theme	3
Total	*14-15**	*Total*	*14-15*

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

****Students with the Advanced Math Waiver/Override based on ACT scores are still required to complete a college level mathematics course higher than MTH 110. Students should choose from MTH 122, 123, 125 or 201.**

[1] NRM majors must complete a total of 40 credits of NRM courses with a GPA of 2.0 or better. NRM 150, 250, 281, 330, 451, 452, and 495 are required for the Environmental Science emphasis. Please see reverse for additional NRM options.

[2] NRM majors must complete a minimum of 40 credits of cognate courses (These cannot have NRM prefixes). Please see reverse side for cognate courses.

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

[4] Elective refers to any class to help you earn the required 120 credits for graduation.

NRM classes are generally not offered during the summer. You are encouraged to obtain a natural resources management job, an internship (NRM 490), conduct a research project (NRM 499), or take general education and elective classes during the summer.

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-1-140 MAK, 616-331-8585.
Online at: http://www.gvsu.edu/clasadvising

Natural Resources Management Students only have the option of pursuing a Bachelor of Science degree. The B.S. degree requirements are incorporated into the major and include: MTH 122, NRM 320, and BIO 460

Declaring the Natural Resources Management - Environmental Science 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," from here scroll down and choose "Natural Resources Mgmt – BS Environmental Science"
5. Click "Submit" and then "Change to New Program"

General Education Overlap

General Education Categories fulfilled by the NRM Major:	
Life Sciences with Lab: BIO 120	Physical Sciences with Lab: CHM 115
Mathematical Sciences: MTH 122 or STA 215	Social and Behavioral Sciences: ECO 211
Theme/Issue: NRM 451, BIO 328, ECO 345	

Natural Resources Management Cognate Courses

There are 35 credits of cognates required in the curriculum:

MTH 122 College Algebra	GEO 111 Physical Geology
STA 215 Introductory Applied Statistics	CHM 115 Principles of Chemistry I
BIO 120 General Biology I	CHM 116 Principles of Chemistry II
BIO 121 General Biology II	ECO 211 Microeconomics
BIO 215 General Ecology	

Select the remaining 5 elective credits from the following courses:

BIO 338 Environmental Ethics	CHM 232 Biological Chemistry
BIO 357 Environmental Microbiology	CHM 321 Environmental Chemistry
BIO 399 Selected Experiences in Biology	CHM 322 Environmental Chemical Analysis
BIO 440 Limnology	GEO 112 Earth History
BIO 450 Stream Ecology	GEO 320 Geomorphology
BIO 470 Conservation Biology	GEO 430 Oceanography
BIO 490 Internship	GEO 440 Geohydrology
BIO 499 Research in Biology	GEO 445 Introduction to Geochemistry
CHM 221 Survey of Analytical Chemistry	GPY 307 Introduction To Computer Mapping/GIS
CHM 222 Quantitative Analysis	OSH 414 Environmental Safety and Health Regulations
CHM 231 Introductory Organic Chemistry	PHY 200 Physics for the Life Sciences

Natural Resources Management Core Electives

NRM majors must complete a total of 40 credits of NRM courses with a GPA of 2.0 or better. Choose from the list below to reach the minimum of 40 NRM credits.

(BIO 460, required for the BS cognate, also counts as NRM credit)

BIO 408 Wildlife Management (check with your advisor)	NRM 450 Applied Spatial Analysis of Natural Resources
NRM 140 The Climatic Factor	NRM 462 Forest Ecosystem Management
NRM 380 Special Topics (also NRM 180, 280, 480)	NRM 386 Ecological Restoration and Management
NRM 240 Principles of Climatology	NRM 486 Advanced Restoration Ecology
NRM 308 Wildlife Ecology	NRM 490 Internship in Resource Management
NRM 395 GIS Applications in Resource Management	NRM 499 Research in Resource Management
NRM 399 Readings in Resource Management	
NRM 420 Wildland Recreation Mgmt.	

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) 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.

-BIO 417 and BIO 418 are field trip classes. You MAY be able to count these classes as core classes (NRM credit) but you MUST check with your advisor BEFORE you take the class. No more than 6 credits can be applied to the major.