

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

Year One			
<sup>7</sup> CHM 115 Principles of Chemistry I ( <b>Fall or Winter semester</b> ) Prerequisites: High school chemistry, MTH 110 or MTH 122 or MTH 125 or MTH 201	4	GEO 112 Earth History Prerequisite: A course in physical or general geology	4
<sup>9</sup> GEO 111 Exploring the Earth MTH 122 College Algebra Prerequisite: MTH 110 or assignment through math placement exam	4 3	MTH 123 Trigonometry Prerequisite: MTH 122 (can be taken concurrently) or assignment through math placement exam	3
<sup>6</sup> WRT 150 Strategies of Writing or WRT 120 or Gen Ed	3/4	CHM 116 Principles of Chemistry II Prerequisites: CHM 115 and (MTH 122 or MTH 125 or MTH 201)	5
		<sup>6</sup> WRT 150 Strategies or WRT 130 of Writing or Gen Ed	3/4
<i>Total</i>	<i>14/15</i>	<i>Total</i>	<i>15/16*</i>
Year Two			
GEO 220 Solid Earth Materials and Systems or GEO 214 Earth Surface Materials and Systems Prerequisites: GEO 111 and CHM 115; GEO 112 and 175 may be taken concurrently	4	GEO 214 Solid Earth Materials and Systems or GEO 220 Earth Surface Materials and Systems Prerequisites: GEO 111 and CHM 115; GEO 112 and 175 may be taken concurrently	4
GEO 175 Research Tools for Geosciences Prerequisites: GEO 111 and GEO 112 (can be taken concurrently).	1	<sup>1</sup> MTH/CIS/STA/GIS Elective Course Gen Ed	3-4 6-9
<sup>1</sup> MTH/CIS/STA/GIS Elective Course Gen Ed	3-4 6		
<i>Total</i>	<i>14-15</i>	<i>Total</i>	<i>13-17*</i>
Year Three			
GEO 311 Structural Geology Prerequisites: GEO 214 and MTH 123	4	GEO 312 Sedimentation-Stratigraphy Prerequisite: GEO 112	4
<sup>3</sup> PHY Sequence Course	5	<sup>3</sup> PHY Sequence Course	5
GEO 320 Prerequisite: GEO 112	4	<sup>2</sup> ENV GEO Elective or GEO elective Gen Ed or Issues	2-4 3
Gen Ed	3		
<i>Total</i>	<i>16*</i>	<i>Total</i>	<i>14-16*</i>
Year Four			
<sup>8</sup> GEO 486 Geology Seminar (each fall semester) Prerequisite: GEO 214, GEO 220, and Junior standing in the Geology, Geology-Chemistry, or Earth science major or Geology Minor	1	<sup>5</sup> <sup>8</sup> GEO 485 SWS Geology Seminar (each winter semester) Prerequisite: GEO 214, GEO 220, at least Junior standing in the Geology, Geology-Chemistry, or Earth science Major or Geology Minor. Permit required – students must secure a mentor and define a research question before enrolling in the course.	1
**GEO 315 (offered Fall Even and Spring Odd) Prerequisites: GEO 112 and either GEO 214 or GEO 220	3 3	<sup>2</sup> ENV GEO Elective or GEO elective Gen Ed	2-4 3-6
GEO 440 Prerequisite: GEO 220	3	<sup>4</sup> Electives	3-6
Issues	3		
<sup>4</sup> Electives			
<i>Total</i>	<i>12-14</i>	<i>Total</i>	<i>12-17*</i>
<b>Summer field camp for 3-6 credits**</b>			

**\*\*Geology Majors MUST participate in an approved Summer Field Camp in Geology (taught by another college) for at least 3 credits if they take GEO 315 and at least 6 credits if GEO 315 is not taken. Typically in summer of Year 3 or Year 4**

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

<sup>1</sup> Geology majors must complete two math, computer science, GIS OR statistics courses. The options are listed on the back of this guide.

<sup>2</sup> Geology majors selecting the Environmental Emphasis must take 1 ENV GEO elective (3-4 credits) from the following courses: GEO 420, GEO 425, GEO 430, GEO 445, GEO 470; and 1 GEO elective (at least 3 credits) that is any 300-400 level geology courses. If GEO 315 is used toward field camp credit it cannot also count as an elective. *Students are strongly encouraged to consult faculty advisors to help with selecting electives.* Geology Theme or Issues courses at the 300-level cannot count towards the Geology major.

<sup>3</sup> Geology majors must complete a two semester sequence of physics courses. These options are listed on the back of this guide.

<sup>4</sup> Elective refers to any course to help you earn the required 120 credits to graduate.

<sup>5</sup> Students must complete a total of two courses with an SWS attribute.

<sup>6</sup> Students who self-place into WRT120 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 should take this course in winter semester of the first year. A grade of C or higher is required to fulfill these requirements. Students will not need to take WRT 150 (or 120 & 130) if they have earned credit for the course through AP/Dual Enrollment. A grade of C or better is required.

<sup>7</sup> **Students with an ACT Science Subscore below 22 tend to be more successful if they only take one science course during the Fall semester of Year 1.** CHM 109 is recommended prior to CHM 115 if chemistry was not taken in high school or if the ACT science subscore is below 22. However, CHM 109 does NOT count toward the Geology major.

<sup>8</sup> Students must take GEO 486 (only fall semester) and GEO 485 (only winter semester) – the preferred order is to take GEO 486 first and students are encouraged to identify a project and mentor early.

<sup>9</sup> The preferred entry to the major is GEO 111, but GEO 100, 103, or 105 can count toward the major instead of GEO 111.

Students who select the Environmental emphasis need to officially request the emphasis from the registrar's office.

### Declaring the Geology 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"
5. From here scroll down and find "Geology-BS"
6. Click "Submit" and then click "Change to New Program"

### General Education Overlap

General Education Categories fulfilled by the Geology-BS Major:	
Mathematical Sciences: MTH 122	Physical Science with a Lab: GEO 111

### Sequence Courses

Mathematics/Computer Science/Statistics Elective Courses			
Choose one sequence and complete both courses from that sequence			
Mathematics	Computer Science	GIS	Statistics
<p>MTH 201 Calculus I (4) Prerequisites: (MTH 122 and 123) or placement into MTH 201 via the calculus readiness test</p> <p>MTH 202 Calculus II (4) Prerequisite: MTH 201</p>	<p>Chose one course from each group of CIS courses:</p> <p>Group 1 (3-4 cr)</p> <ul style="list-style-type: none"> <li>o CIS 160 – Programming with Visual Basic (3)</li> <li>o CIS 161 – Computational Science (3)</li> <li>o CIS 162 - Computer Science I (4)</li> </ul> <p>Group 2</p> <ul style="list-style-type: none"> <li>o CIS 163 - Computer Science II I (4)</li> <li>o CIS 231 - Problem Solving using spreadsheets (3)</li> <li>o CIS 260 – Application Development in Visual Basic (4)</li> </ul>	<p>GPY 307– Introduction to Computer Mapping/Geographic Information Systems (3)</p> <p>AND one of the following:</p> <ul style="list-style-type: none"> <li>o GPY 407 – Advanced GIS (4)</li> <li>o GEO 425 - GIS Applications in Geology (3)</li> <li>o NRM 395 – GIS Applications in Resource Management (3)</li> </ul>	<p>STA 215 Introductory Applied Statistics (3) Prerequisite: MTH 110 or equivalent</p> <p>STA 216 Intermediate Applied Statistics (3) Prerequisite: STA 215 or STA 312</p>

### Physics Sequence

Choose ONE of the two course PHY sequences

<p><b>PHY 220 General Physics I (5)</b> Prerequisites: MTH 122 and MTH 123</p> <p><b>PHY 221 General Physics II (5)</b> Prerequisite: PHY 220</p> <p>For students with the Advanced Waiver/Override for Mathematics based on ACT scores, it is <b>STRONGLY RECOMMENDED</b> that proficiency in MTH 123 – Trigonometry – be demonstrated by either taking the MTH 123 course or by achieving a passing score on the GVSU math placement test <b>PRIOR</b> to taking PHY 220 and 221.</p>	<p><b>PHY 230 Principles of Physics I (5)</b> Prerequisite: MTH 201 (MTH 202 is recommended as a corequisite)</p> <p><b>PHY 231 Principles of Physics II (5)</b> Prerequisites: PHY 230 and MTH 202</p>
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**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>  
 Your Academic Advisor in the CLAS Advising Center is Emily Davis, [davisem1@gvsu.edu](mailto:davisem1@gvsu.edu).