

**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>1</sup> General Education <b>OR</b> <sup>1</sup> WRT 120 ( <i>self-placement</i> )	3-4	<sup>1</sup> WRT 130 <b>OR</b> WRT 150 Strategies in Writing ( <i>self-placement</i> )	3-4
<sup>2</sup> CHM 115 Principles of Chemistry I ( <i>Fall or Winter semester</i> ) Prerequisites: High school chemistry, MTH 110 or 122 or 125 or 201	4	CHM 116 Principles of Chemistry II Prerequisites: CHM 115 & MTH 122, 125 or 201	4
<sup>2,3</sup> <b>GEO 111</b> Exploring the Earth MTH 122 Algebra Prerequisite: MTH 110 or Math placement exam	4 3	<b>GEO 112</b> Earth History Prerequisite: A course in physical or general geology. GEO 111 ( <i>preferred</i> ). MTH 123 Trigonometry Prerequisite: MTH 122 ( <i>can be taken concurrently</i> ) or Math placement exam	4 3
<i>Total</i>	14/15	<i>Total</i>	15/16*
Year Two			
<b>GEO 220</b> Solid Earth Materials and Systems <b>OR</b> <b>GEO 214</b> Earth Surface Materials and Systems Prerequisites: GEO 111 & CHM 115; GEO 112 & 175 ( <i>can be taken concurrently</i> )	4	<b>GEO 214</b> Solid Earth Materials and Systems <b>OR</b> <b>GEO 220</b> Earth Surface Materials and Systems Prerequisites: GEO 111 & CHM 115; GEO 112 & 175 ( <i>can be taken concurrently</i> )	4
<b>GEO 175</b> Research Tools for Geosciences Prerequisites: GEO 111 & 112 ( <i>can be taken concurrently</i> )	1	<sup>4</sup> MTH/CIS/GIS/STA Elective Course General Education	3-4 3
<sup>4</sup> MTH/CIS/GIS/STA Elective Course ( <i>options on second page</i> ) General Education	3-4 3	General Education ( <i>Dependent on MTH/CIS/STA/GIS Elective course</i> )	3 3
<i>Total</i>	14/15	<i>Total</i>	13/17*
Year Three			
<b>GEO 311</b> Structural Geology Prerequisites: GEO 214 & MTH 123	4	<b>GEO 312</b> Sedimentation-Stratigraphy Prerequisite: GEO 112	4
<b>GEO 320</b> Geomorphology Prerequisite: GEO 112	4	<sup>6</sup> ENV GEO Elective <b>OR</b> Geology Elective ( <i>options on second page</i> )	2-4
<sup>5</sup> Physics Sequence Course ( <i>options on second page</i> ) General Education	5 3	<sup>5</sup> Physics Sequence Course General Education <b>OR</b> Issues Issues prerequisite: Junior Standing	5 3
<i>Total</i>	16*	<i>Total</i>	14/16*
Year Four			
<sup>7</sup> <b>GEO 486</b> Geology Seminar <i>Fall Only</i> Prerequisite: GEO 214 & 220, & Junior standing in the Geology, Geology-Chemistry, or Earth science major or Geology Minor	1	<sup>10,7</sup> <b>GEO 485</b> Geology Seminar ( <i>SWS</i> ) <i>Winter Only</i> Prerequisite: GEO 214 & 220, at least Junior standing in the Geology, Geology-Chemistry, or Earth science Major or Geology Minor. Permit required: must secure a mentor and define a research question before enrolling.	1
<sup>8</sup> <b>GEO 315</b> Geological Field Methods <i>Fall Even and Spring Odd</i> Prerequisites: GEO 112 & GEO 214 or 220	3	<sup>6</sup> ENV GEO Elective <b>or</b> Geology Elective	2-4
<b>GEO 440</b> Geohydrology Prerequisite: GEO 220	3	General Education	3
Issues Prerequisite: Junior Standing	3	General Education	3
<sup>9</sup> Electives	3	<sup>9</sup> Minor/Elective	3
<i>Total</i>	12/14	<i>Total</i>	12/17*
<b><sup>8</sup>Summer field camp (3-8)</b>			

<sup>1</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>2</sup> Students with an ACT Science Sub score 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 sub score is below 22. However, CHM 109 does NOT count toward the Geology major.

<sup>3</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

<sup>4</sup> Geology majors must complete **TWO** math, computer science, GIS, **OR** statistics courses. The options are listed on second page.

<sup>5</sup> Geology majors must complete a **TWO-SEMESTER** sequence of physics courses. The options are listed on second page.

<sup>6</sup> Geology majors selecting the Environmental Emphasis must take **ONE** ENV GEO Elective (3-4) from the following courses: GEO 420, GEO 425, GEO 430, GEO 445, GEO 470; and **ONE** Geology 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 "themed" Issues courses at the 300-level cannot count towards the Geology major.

<sup>7</sup>Students must take GEO 486 (Fall Only) and GEO 485 (Winter Only). The preferred order is to take GEO 486 first and students are encouraged to identify a project and mentor early.

<sup>8</sup>Geology Majors **MUST** participate in an approved Summer Field Camp in Geology (taught by another college) for at least **THREE** 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.

<sup>9</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.

<sup>10</sup>SWS = Supplemental Writing Skills. Students must complete 2 courses with a SWS attribute.

\*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 Geology Major:**

1. In myBanner, select "Student" > "Student Records" > "Change Major" > "Change Major 1/Program"
2. Choose "Geology-BS" from the drop-down box.
3. Click "Submit" and then "Change to New Program"
4. Email the Office of the Registrar to declare Environmental Geology Emphasis

**General Education Overlap**

Mathematical Sciences: MTH 122	Physical Science with a Lab: GEO 111
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**Sequence Courses**

**Mathematics/Computer Science/GIS/Statistics Elective Courses**

Choose one sequence and complete both courses from that sequence

Mathematics	Computer Science	GIS	Statistics
MTH 201 Calculus I (4) Prerequisites: (MTH 122 and 123) or placement into MTH 201 via the calculus readiness test  <b>AND</b>  MTH 202 Calculus II (4) Prerequisite: MTH 201	Choose one course from each group:  <u>Group 1</u> CIS 160 Programming with Visual Basic (3) CIS 161 Computational Science (3) CIS 162 Computer Science I (4)  <u>Group 2</u> CIS 163 Computer Science II I (4) CIS 231 Problem Solving using spreadsheets (3) CIS 260 Application Development in Visual Basic (4)	GPY 307 Introduction to Computer Mapping/Geographic Information Systems (3)  <b>AND</b> one of the following:  GPY 407 Advanced GIS (4) GEO 425 GIS Applications in Geology (3) NRM 395 GIS Applications in Resource Management (3)	STA 215 Introductory Applied Statistics (3) Prerequisite: MTH 110 or equivalent  <b>AND</b>  STA 216 Intermediate Applied Statistics (3) Prerequisite: STA 215 or STA 312

**Physics Sequence**

Choose **ONE** of the two course Physics sequences:

<b>PHY 220</b> General Physics I (5) Prerequisites: MTH 122 and MTH 123 <b>PHY 221</b> General Physics II (5) Prerequisite: PHY 220	<b>PHY 230</b> Principles of Physics I (5) Prerequisite: MTH 201 ( <i>MTH 202 is recommended as a corequisite</i> ) <b>PHY 231</b> Principles of Physics II (5) Prerequisites: PHY 230 and MTH 202
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For students with the Advanced Waiver/Override for Mathematics based on ACT scores, it is **STRONGLY RECOMMENDED** 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 **PRIOR** to taking PHY 220 and 221.