

# GEOLOGY-BS

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> ) CHM 125 Principles of Chemistry I <i>Prerequisites: High school chemistry and (MTH 110 or MTH 122 or MTH 125 or MTH 201, CHM 126 (corequisite))</i> CHM 126 Principles of Chemistry I (Lab) <sup>2,3</sup> <b>GEO 111</b> Exploring the Earth MTH 122 Algebra <i>Prerequisite: MTH 110 or Math placement exam</i>	3-4 3  1 4 3	<sup>1</sup> WRT 130 <b>OR</b> WRT 150 Strategies in Writing ( <i>self-placement</i> ) <b>GEO 112</b> Earth History <i>Prerequisite: A course in physical or general geology. GEO 111 (preferred).</i> MTH 123 Trigonometry <i>Prerequisite: MTH 122 (can be taken concurrently) or Math placement exam</i> <sup>2</sup> CHM 127 Principles of Chemistry II <i>Prerequisites: CHM 125+126 &amp; MTH 122, 125 or 201</i> CHM 128 Principles of Chemistry II (Lab)	3-4 4  3 4 1
<i>Total</i>	14/15	<i>Total</i>	15/16*
Year Two			
<b>GEO 220</b> Earth Surface Materials and Systems ( <i>CLAS Voyage, Experiential Learning</i> ) <i>Prerequisites: CHM 125+126 + one GEO 100–111 (GEO 111 preferred). Recommended: GEO 112, GEO 175 (Geo/Climate); ENV 160 (Env Sci).</i> <b>GEO 175</b> Research Tools for Geosciences <i>Prerequisites: one GEO 100–111 (GEO 111 preferred) + GEO 112 (may be concurrent)</i> <sup>4</sup> MTH/CIS/STA/GIS Elective Course ( <i>options on second page</i> ) General Education General Education	4  1 3-4 3 3	<b>GEO 214</b> Solid Earth Materials and Systems (Winter only) <i>Prerequisites: CHM 125+126; GEO 112 &amp; 175 (may be concurrent)</i> <sup>4</sup> MTH/CIS/STA/GIS Elective Course General Education General Education General Education ( <i>Dependent on MTH/CIS/STA/GIS Elective</i> )	4   3-4 3 3 3
<i>Total</i>	14/15	<i>Total</i>	13/17*
Year Three			
<b>GEO 311</b> Structural Geology <i>Prerequisites: GEO 214 &amp; MTH 123</i> <sup>11</sup> <b>GEO 315</b> Geological Field Methods ( <i>Fall Even and Spring Odd</i> ) <i>Prerequisites: GEO 112 &amp; GEO 214 or 220</i> <sup>5</sup> Physics Sequence Course ( <i>options on second page</i> ) General Education	4 3 5 3	<b>GEO 312</b> Sedimentation-Stratigraphy ( <i>CLAS Voyage, Experiential Learning</i> ) <i>Prerequisite: GEO 112</i> <b>GEO 314</b> Petrography: Mineral and Rock Analysis <i>Prerequisite: GEO 214</i> <sup>5</sup> Physics Sequence Course <sup>6</sup> <b>Geology Elective</b> ( <i>options on second page</i> )	4 2 5 3-4
<i>Total</i>	15	<i>Total</i>	14/15
Year Four			
<sup>7</sup> <b>GEO 484</b> Geology Seminar <i>Fall Only</i> ( <i>CLAS Voyage, Capstone</i> ) <i>Prerequisites: GEO 214 &amp; 220, geology, geology-chemistry, earth science, or climate science major, or geology or climate science minor; and junior standing; or permission of instructor.</i> <sup>6</sup> <b>Geology Elective</b> <sup>8</sup> Minor/Elective <sup>8</sup> Minor/Elective Issues <i>Prerequisite: Junior Standing</i> General Education	1 2-4 3 3 3 3	<sup>9</sup> <b>GEO 411</b> Global Tectonics (Winter Even) <i>Prerequisites: GEO 214 &amp; 220</i> <b>OR GEO 414</b> Advanced Petrology <i>Prerequisite: CHM 127/128; GEO 314 (may be concurrent)</i> <sup>7,10</sup> <b>GEO 485</b> Geology Seminar (SWS) <i>Winter Only</i> ( <i>CLAS Voyage, Capstone</i> ) <i>Prerequisite: GEO 214 &amp; 220, geology, geology-chemistry, or earth science major or geology minor; and junior standing in the major; or permission of instructor.</i> <sup>6</sup> <b>Geology Elective</b> General Education <sup>8</sup> Minor/Elective <sup>8</sup> Minor/Elective	3   1  2-4 3 3 3
<i>Total</i>	15/17*	<i>Total</i>	15/17*
<b><sup>11</sup>Summer field camp (3-6)</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 125/126 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, 107 or 109 can count toward the major instead of GEO 111.

<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 must complete **THREE** courses (*at least 9 credits*) of 300-400 level geology elective 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 484 (Fall Only) and GEO 485 (Winter Only). The preferred order is to take GEO 484 first and students are encouraged to identify a project and mentor early.

<sup>8</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>9</sup>Students must take either GEO 411 or GEO 414. GEO 414 requires GEO 314 (*can be taken concurrently*).

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

<sup>11</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.

\*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.

### CLAS Voyage Courses

What is the CLAS Voyage? <https://www.gvsu.edu/clas/clas-voyage-1184.htm> or search “GVSU CLAS Voyage”

Experiential Learning	GEO 312, GEO 220
Capstone	GEO 484, GEO 485

### General Education Overlap

Mathematical Sciences: MTH 122

Physical Science w/Lab: GEO 111

### 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 MTH 124) or placement into MTH 201 via the calculus readiness test	Choose <b>ONE</b> 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 (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 ONE</b> of the following:  GPY 407 Advanced GIS (4) <b>GEO 425</b> 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
<b>AND</b>  MTH 202 Calculus II (4) Prerequisite: MTH 201			

### Physics Sequence

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

PHY 220 General Physics I (5) Prerequisites: MTH 122 & MTH 123 PHY 221 General Physics II (5) Prerequisite: PHY 220	PHY 230 Principles of Physics I (5) Prerequisite: MTH 201 ( <i>MTH 202 recommended corequisite</i> ) PHY 231 Principles of Physics II (5) Prerequisites: PHY 230 & 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 to 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.

It is imperative to meet with your **FACULTY ADVISOR** and an advisor in the CLAS Academic Advising Center regularly.

CLAS Advisors: Your advisors in the CLAS Academic Advising Center are Brandon Moskun ([moskunb@gvsu.edu](mailto:moskunb@gvsu.edu)) and Khalaya Daniels ([daniekha@gvsu.edu](mailto:daniekha@gvsu.edu)).