

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			
¹ General Education OR ¹ WRT 120 (<i>self-placement</i>)	3-4	¹ WRT 130 OR WRT 150 Strategies in Writing (<i>self-placement</i>)	3-4
CHM 125 Principles of Chemistry I	3	GEO 112 Earth History	4
Prerequisites: High school chemistry and (MTH 110 or MTH 122 or MTH 125 or MTH 201, CHM 126 (corequisite))		Prerequisite: A course in physical or general geology. GEO 111 (<i>preferred</i>).	
CHM 126 Principles of Chemistry I (Lab)	1	MTH 123 Trigonometry	3
Prerequisites: High school chemistry & MTH 110, 122, 125, or 201	4	Prerequisite: MTH 122 (<i>can be taken concurrently</i>) or Math placement exam	
^{2,3} GEO 111 Exploring the Earth	3	² CHM 127 Principles of Chemistry II	4
MTH 122 Algebra		Prerequisites: CHM 125+126 & MTH 122, 125 or 201	1
Prerequisite: MTH 110 or Math placement exam		CHM 128 Principles of Chemistry II (Lab)	
Total	14/15	Total	15/16*
Year Two			
GEO 214 Solid Earth Materials and Systems OR GEO 220 Earth Surface Materials and Systems	4	GEO 214 Solid Earth Materials and Systems OR GEO 220 Earth Surface Materials and Systems	4
Prerequisites: GEO 111 & CHM 125/126; GEO 112 & 175 (<i>can be taken concurrently</i>)		Prerequisites: GEO 111 & CHM 125/126; GEO 112 & 175 (<i>can be taken concurrently</i>)	
GEO 175 Research Tools for Geosciences	1	⁴ MTH/CIS/STA/GIS Elective Course	3-4
Prerequisites: GEO 111 & 112 (<i>can be taken concurrently</i>)		General Education	3
⁴ MTH/CIS/STA/GIS Elective Course (<i>options on second page</i>)	3-4	General Education	3
General Education	3	General Education (<i>Dependent on MTH/CIS/STA/GIS Elective</i>)	3
General Education	3		
Total	14/15	Total	13/17*
Year Three			
GEO 311 Structural Geology	4	GEO 312 Sedimentation-Stratigraphy	4
Prerequisites: GEO 214 & MTH 123		Prerequisite: GEO 112	
¹¹ GEO 315 Geological Field Methods (<i>Fall Even and Spring Odd</i>)	3	GEO 314 Petrography: Mineral and Rock Analysis	2
Prerequisites: GEO 112 & GEO 214 or 220		Prerequisite: GEO 214	
⁵ Physics Sequence Course (<i>options on second page</i>)	5	⁵ Physics Sequence Course	5
General Education	3	⁶ Geology Elective (<i>options on second page</i>)	3-4
Total	15	Total	14/15
Year Four			
⁷ GEO 484 Geology Seminar Fall Only	1	⁹ GEO 411 Global Tectonics	3
Prerequisites: GEO 214 & 220, & Junior standing in the Geology, Geology-Chemistry, or Earth science major or Geology Minor		Prerequisites: GEO 214 & 220	
⁶ Geology Elective	2-4	OR GEO 414 Advanced Petrology	
⁸ Minor/Elective	3	Prerequisite: GEO 314	
⁸ Minor/Elective	3	^{7,10} GEO 485 Geology Seminar (SWS) <i>Winter Only</i>	1
Issues	3	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.	
Prerequisite: Junior Standing		⁶ Geology Elective	2-4
General Education	3	General Education	3
		⁸ Minor/Elective	3
		⁸ Minor/Elective	3
Total	15/17*	Total	15/17*
¹¹ Summer field camp (3-6)			

¹Students 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.

²Students 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.

³The 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.

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

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

⁶Geology 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.

⁷Students 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.

⁸Elective 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.

⁹Students must take either GEO 411 or GEO 414. GEO 414 requires GEO 314 (*can be taken concurrently*).

¹⁰SWS = Supplemental Writing Skills. Students must complete 2 courses with a SWS attribute.

¹¹Geology 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.

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"

General Education Overlap			
Mathematical Sciences: MTH 122		Physical Science w/Lab: GEO 111	
Sequence Courses			
Mathematics/Computer Science/GIS/Statistics Elective Courses			
Choose <u>ONE</u> sequence <u>AND</u> 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 <u>AND</u> MTH 202 Calculus II (4) Prerequisite: MTH 201	Choose <u>ONE</u> 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) <u>AND ONE</u> 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 <u>AND</u> STA 216 Intermediate Applied Statistics (3) Prerequisite: STA 215 or STA 312
Physics Sequence			
Choose <u>ONE</u> 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	
For students with the Advanced Waiver/Override for Mathematics based on ACT scores, it is <u>STRONGLY RECOMMENDED</u> 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 <u>PRIOR</u> to taking PHY 220 and 221.			