

MAJOR IN GEOLOGY, GEOLOGY CONCENTRATION

Requirements Effective Fall 2022

Freshman

		AUCC	Credits
CHEM 111	General Chemistry I (GT-SC2)	3A	4
CHEM 112	General Chemistry Lab I (GT-SC1)	3A	1
CO 150	College Composition (GT-CO2)	1A	3
GEOL 150 ¹	Physical Geology for Scientists and Engineers	3A	4
GEOL 154	Historical and Analytical Geology		4
MATH 124	Logarithmic and Exponential Functions (GT-MA1)	1B	1
MATH 125	Numerical Trigonometry (GT-MA1)	1B	1
MATH 126	Analytic Trigonometry (GT-MA1)	1B	1
Select one course from the following:			3-4
MATH 159	One Year Calculus IB (GT-MA1)	1B	
MATH 160 ²	Calculus for Physical Scientists I (GT-MA1)	1B	
Arts and Humanities (http://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#arts-humanities)			3
Diversity, Equity, and Inclusion (http://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#diversity-equity-inclusion)			3
Total Credits			28-29

Sophomore

CHEM 113	General Chemistry II		3
CHEM 114	General Chemistry Lab II		1
GEOL 232	Mineralogy		3
GEOL 250	The Solid Earth		3
GEOL 332	Optical Mineralogy		2
GEOL 364	Igneous and Metamorphic Petrology	4B	4
MATH 161	Calculus for Physical Scientists II (GT-MA1)	1B	4
Select one course from the following:			3
CO 300	Writing Arguments (GT-CO3)	2	
CO 301B	Writing in the Disciplines: Sciences (GT-CO3)	2	
JTC 300	Strategic Writing and Communication (GT-CO3)	2	
Select one course from the following:			5
PH 121	General Physics I (GT-SC1)	3A	
PH 141	Physics for Scientists and Engineers I (GT-SC1)	3A	
Social and Behavioral Sciences (http://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#social-behavioral-sciences)			3
Total Credits			31

Junior

GEOL 344	Stratigraphy and Sedimentology	4A	4
GEOL 372	Structural Geology	4B	4
GEOL 376	Geologic Field Methods	4A,4C	3
Select one course from the following:			4
NR 319	Geospatial Applications in Natural Resources		

NR 322	Intro. to Geographic Information Systems		5
Select one course from the following:			
PH 122	General Physics II (GT-SC1)	3A	
PH 142	Physics for Scientists and Engineers II (GT-SC1)	3A	
Select one course from the following:			
MATH 340	Intro to Ordinary Differential Equations		3-4
STAT 301	Introduction to Applied Statistical Methods		
STAT 315	Intro to Theory and Practice of Statistics		
Arts and Humanities (http://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#arts-humanities)		3B	3
Historical Perspectives (http://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#historical-perspectives)		3D	3
Total Credits			29-30
Summer			
GEOL 436	Geology Summer Field Course	4C	6
Total Credits			6
Senior			
GEOL 366	Sedimentary Petrology and Geochemistry	4A,4B	4
GEOL 454	Geomorphology		4
Geology Electives ³			7
Select 3 credits from Technical Elective Department List			
CHEM 245	Fundamentals of Organic Chemistry		
CHEM 261	Fundamentals of Inorganic Chemistry		
CHEM 335	Introduction to Analytical Chemistry		
CHEM 341	Modern Organic Chemistry I		
CHEM 473	Foundations of Physical Chemistry		
CHEM 474	Physical Chemistry I		
CIVE 322	Basic Hydrology		
CIVE 440	Nonpoint Source Pollution		
GR 323/NR 323	Remote Sensing and Image Interpretation		
MATH 261	Calculus for Physical Scientists III		
MATH 340	Intro to Ordinary Differential Equations		
MATH 369	Linear Algebra I		
NR 300	Biological Diversity		
NR 322	Intro. to Geographic Information Systems		
NR 422	GIS Applications in Natural Resource Management		
PH 314	Introduction to Modern Physics		
PH 361	Physical Thermodynamics		
SOCR 440	Pedology		
SOCR 455	Microbiomes of Soil Systems		
SOCR 470	Soil Physics		
STAT 315 ⁴	Intro to Theory and Practice of Statistics		
WR 406	Seasonal Snow Environments		
CIVE 529	Environmental Organic Chemistry		
NR 426	Programming for GIS I		
NR 427	Programming for GIS II		
NR 503/GR 503	Remote Sensing and Image Analysis		
WR 416	Land Use Hydrology		
WR 418	Land Use and Water Quality		

Electives ⁵	6-8
Total Credits	24-26
Program Total Credits:	120

¹ GEOL 120, GEOL 122 or GEOL 124 in combination with GEOL 121 may be substituted for GEOL 150.

² MATH 160 is recommended.

³ Select at least two upper-division regular or experimental GEOL courses (300-381, 402-481, 500-581) for a minimum of five credits. A maximum of two credits may be satisfied by non-regular courses (courses ending in -82 to -99) and GEOL 401, which may only count once.

⁴ STAT 315 can be used to fulfill technical elective requirement if not taken for statistics requirement in junior year.

⁵ Select enough elective credits to bring the program total to a minimum of 120 credits, of which at least 42 must be upper-division (300- to 400-level).