

# MAJOR IN GEOLOGY, GEOLOGY CONCENTRATION

## Requirements Effective Fall 2024

### 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 <sup>1</sup>	Dynamic Earth (GT-SC2)	3A	4
GEOL 154	Historical and Analytical Geology		4
GEOL 192	New Student Seminar--Exploring Geosciences		1
MATH 160 <sup>2</sup>	Calculus for Physical Scientists I (GT-MA1)	1B	4
Diversity, Equity, and Inclusion ( <a href="http://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#diversity-equity-inclusion">http://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#diversity-equity-inclusion</a> )		1C	3
Social and Behavioral Sciences ( <a href="http://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#social-behavioural-sciences">http://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#social-behavioural-sciences</a> )		3C	3
Electives			3
<b>Total Credits</b>			<b>30</b>

### 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 <sup>3</sup>	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	
Historical Perspectives ( <a href="http://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#historical-perspectives">http://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#historical-perspectives</a> )		3D	3
<b>Total Credits</b>			<b>31</b>

### Junior

GEOL 344	Stratigraphy and Sedimentology	4A	4
GEOL 372	Structural Geology	4B	4
GEOL 376	Geologic Field Methods	4A,4C	3
NR 319	Introduction to Geospatial Science		4
Select one course from the following:			5
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:			3-4

2 Major in Geology, Geology Concentration

MATH 340	Intro to Ordinary Differential Equations		
STAT 301	Introduction to Applied Statistical Methods		
STAT 315	Intro to Theory and Practice of Statistics		
Arts and Humanities ( <a href="http://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#arts-humanities">http://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#arts-humanities</a> )			3B
<b>Total Credits</b>			<b>26-27</b>
<b>Summer</b>			
GEOL 436	Geology Summer Field Course	4C	6
<b>Total Credits</b>			<b>6</b>
<b>Senior</b>			
GEOL 366	Sedimentary Petrology and Geochemistry	4A,4B	4
GEOL 454	Geomorphology		4
Select 3 credits from Technical Elective Department List			3
ATS 440/GES 440	Sea Level Rise and a Sustainable Future		
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		
CIVE 529	Environmental Organic Chemistry		
DSCI 335	Inferential Reasoning in Data Analysis		
<b>GR 323/NR 323</b>	<b>Remote Sensing and Image Interpretation</b>		
MATH 261	Calculus for Physical Scientists III		
MATH 340	Intro to Ordinary Differential Equations		
MATH 369	Linear Algebra I		
NR 300	Biological Diversity		
NR 400	Public Communication in Natural Resources		
NR 422	GIS Applications in Natural Resource Management		
NR 426	Programming for GIS I		
NR 427	Programming for GIS II		
NR 450	Geospatial Project Design and Analysis		
NR 453	Geospatial Field Methods in Natural Resources		
NR 503/GR 503	Remote Sensing and Image Analysis		
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 <sup>4</sup>	Intro to Theory and Practice of Statistics		
WR 406	Seasonal Snow Environments		
WR 416	Land Use Hydrology		
WR 418	Land Use and Water Quality		
Geology Electives <sup>5</sup>			7
Arts and Humanities ( <a href="http://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#arts-humanities">http://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#arts-humanities</a> )			3B
Electives <sup>6</sup>			5-6
<b>Total Credits</b>			<b>26-27</b>
<b>Program Total Credits:</b>			<b>120</b>

- <sup>1</sup> GEOL 110, GEOL 120, GEOL 122 or GEOL 124 in combination with GEOL 121 may be substituted for GEOL 150.
- <sup>2</sup> MATH 155 may be substituted for MATH 160.
- <sup>3</sup> Students who substituted MATH 155 for MATH 160 should substitute MATH 255 for MATH 161.
- <sup>4</sup> STAT 315 can be used to fulfill technical elective requirement if not taken for statistics requirement in junior year.
- <sup>5</sup> 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.
- <sup>6</sup> 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).