

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

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 364	Igneous and Metamorphic Petrology	4B	4
MATH 151	Mathematical Algorithms in Matlab I		1
MATH 161	Calculus for Physical Scientists II (GT-MA1)	1B	4
MATH 261	Calculus for Physical Scientists III		4
PH 141	Physics for Scientists and Engineers I (GT-SC1)	3A	5
Historical Perspectives (http://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#historical-perspectives)		3D	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
MATH 340	Intro to Ordinary Differential Equations		4
PH 142	Physics for Scientists and Engineers II (GT-SC1)	3A	5
Select one course from the following:			3
MATH 369	Linear Algebra I		
STAT 301	Introduction to Applied Statistical Methods		
STAT 315	Intro to Theory and Practice of Statistics		
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	
Arts and Humanities (http://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#arts-humanities)		3B	3
Total Credits			29
Summer			
GEOL 436	Geology Summer Field Course	4C	6
Total Credits			6
Senior			
Directed Technical Electives (select a minimum of 12 credits - see list below):			12-14
Upper-Division Geology Electives ²			3-5
Arts and Humanities (http://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#arts-humanities)		3B	3
Electives ³			2-6
Total Credits			24
Program Total Credits:			120

Directed Technical Electives List (Select a minimum of 12 credits)

Code	Title	Credits
GEOL 440	Geodetic and Near-Surface Geophysical Methods	4
GEOL 442	Applied Geophysics	4
GEOL 452	Hydrogeology	4
GEOL 540	Petrophysics and Well Log Interpretation	3
GEOL 541	Geostatistics	2
GEOL 570	Plate Tectonics	3
GEOL 574	Geodynamics	3
GEOL 578	Global Seismology	4
GEOL 579	Solid Earth Inverse Methods and Practices	3
MATH 317	Advanced Calculus of One Variable	3
MATH 332	Partial Differential Equations	3
MATH 417	Advanced Calculus I	3
MATH 418	Advanced Calculus II	3
MATH 419	Introduction to Complex Variables	3
MATH 450	Introduction to Numerical Analysis I	3
MATH 469	Linear Algebra II	3
MATH 530	Mathematics for Scientists and Engineers	3
PH 245	Introduction to Electronics	3
PH 314	Introduction to Modern Physics	4
PH 341	Mechanics	4
PH 351	Electricity and Magnetism	4
PH 353	Optics and Waves	4
PH 361	Physical Thermodynamics	3
One option may be selected from the following if not used to satisfy Junior year program requirements:		3
MATH 369	Linear Algebra I	
STAT 301 or STAT 315	Introduction to Applied Statistical Methods Intro to Theory and Practice of Statistics	

² Select 3 to 5 credits in 300- to 500-level GEOL courses excluding GEOL 384, GEOL 401, GEOL 492, GEOL 494A-I.

³ 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).

¹ GEOL 110, GEOL 120, GEOL 122 or GEOL 124 in combination with GEOL 121 may be substituted for GEOL 150.