

MAJOR IN GEOSCIENCES, GEOPHYSICS CONCENTRATION

Requirements Effective Fall 2026

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	Earth and Climate Change Through Time		4
GEOL 192	New Student Seminar--Exploring Geosciences		1
MATH 160	Calculus for Physical Scientists I (GT-MA1)	1B	4
1C (https://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#aucc)		1C	3
Social and Behavioral Sciences (https://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#social-behavioral-sciences)		3C	3
Elective			3

Total Credits

30

Sophomore

CHEM 113	General Chemistry II		3
CHEM 114	General Chemistry Lab II		1
GEOL 310	Earth Materials		4
GEOL 311	Earth's Interior		3
GEOL 312	Earth's Surface		2
GEOL 313	Earth Systems		2
GEOL 314	Earth's Surface Laboratory		1
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

Total Credits

30

Junior

GEOL 344	Stratigraphy and Sedimentology	4A	3
GEOL 372	Structural Geology	4B	4
GEOL 376	Geologic Field Methods	4A,4C	2
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
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 (https://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#arts-humanities)		3B	3
---	--	----	---

Historical Perspectives (<https://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#historical-perspectives>) 3D 3

Total Credits **27**

Summer

GEOL 476 Field Geoscience Capstone 4A,4C 4

Total Credits **4**

Senior

Select one course from the following 4

GEOL 440 Geodetic and Near-Surface Geophysical Methods

GEOL 442 Applied Geophysics

GEOL 3XX - 5XX² 6

Directed Technical Electives (see list below) 6

Arts and Humanities (<https://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#arts-humanities>) 3B 3

Electives³ 10

Total Credits **29**

Program Total Credits: **120**

Directed Technical Electives List

Code	Title	Credits
GEOL 440	Geodetic and Near-Surface Geophysical Methods ⁴	4
GEOL 442	Applied Geophysics ⁴	4
GEOL 452	Hydrogeology	4
GEOL 476	Field Geoscience Capstone ⁵	1-6
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 369	Linear Algebra I	3
MATH 417	Advanced Calculus I	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
STAT 301	Introduction to Applied Statistical Methods	3
STAT 315	Intro to Theory and Practice of Statistics	3

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).

⁴ GEOL 440 or GEOL 442 may be taken as a Technical Elective if not taken to satisfy other requirements in the program.

⁵ Additional credits of GEOL 476 may be taken as elective credits in addition to the four credits required to satisfy major requirements.

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

² Select 6 credits in 300- to 500-level GEOL courses not taken elsewhere, excluding GEOL 384, GEOL 401, GEOL 492, GEOL 494A-I.