

Computational Geosciences Minor

- Petitions to substitute another course to use toward any requirement must be submitted to the JSG Student Services Office.
- GEO 325K, GEO 325M, and GEO 366M may only apply toward a single category for the minor.

The Computational Geosciences Minor provides a selection of courses that will establish an understanding of computational methods in geosciences. The courses in this minor emphasize the understanding of geophysical and geochemical laws and their equations. Students completing this minor will gain knowledge on how to solve such equations, both analytically and numerically, to solve specific geoscience problems (e.g., transport in porous media to study pollutant plumes, wave equation to study earthquakes and seismic methods). Students will use high-level programming tools (e.g., MATLAB, Python).

Total Hours Required: 15

Requirements

Requirements are listed in the table below. Additional requirements may follow the table, so be sure to read the entire page. Some required courses listed below may also satisfy [General Education](#) requirements, including [Core Curriculum](#). Students should also review the [University's Undergraduate Minor and Certificate Requirements and Policies](#).

Code	Title	Hours
GEO 303	Introduction to Geology	3
OR		
GEO 401	Physical Geology	
GEO 354	Physics of Earth	3
Hours chosen from:		3
GEO 325G	Computational Applications in the Geosciences (preferred for this category for students with no prior programming experience)	
GEO 325K	Computational Methods	
GEO 325M	Numerical Modeling in the Geosciences	
GEO 366M	Mathematical Methods in Geophysics	
Hours chosen from:		6
GEO 325K	Computational Methods	
GEO 325M	Numerical Modeling in the Geosciences	
GEO 344U	Quantitative Seismic Interpretation	
GEO 347G	Climate System Modeling	
GEO 352P	Python for Geoscience Research	
GEO 355G	Geodynamics of the Lithosphere and Mantle	
GEO 360G	Construction and Interpretations of 3-D Stratigraphy	
GEO 365N	Seismic Data Processing	
GEO 365P	Potential Field Applications in Geophysics	
GEO 366M	Mathematical Methods in Geophysics	
GEO 378D	Introduction to Machine Learning and Geosciences	
GEO 465K	Seismic Exploration	
College Requirements - Geosciences		
Undergraduate Minor and Certificate Requirements and Policies		
Total Hours		15

Additional Requirements and Policies

- Registration for any of these courses requires that existing prerequisite course requirements are adequately met.