

GEOPHYSICS - DOCTOR OF PHILOSOPHY (PHD)

The interdisciplinary doctoral program in geophysics encourages students with a variety of undergraduate backgrounds to pursue graduate study in the physics of the Earth, with special emphasis on the interior of the planet. Students specialize in one of the subfields of geophysics while gaining a broad, general background in the discipline and in-depth education in the relevant aspects of the parent fields of geology, physics and engineering.

Students enter the program by applying for admission to one of the following departments:

- Aerospace engineering sciences
- Astrophysical and planetary sciences
- Civil, environmental and architectural engineering
- Electrical and computer engineering
- Geography
- Geological sciences
- Mechanical engineering
- Physics

Upon satisfactory performance on the doctoral preliminary examination given by the home department, the student may formally apply for admission to the geophysics doctoral program.

The program is administered by the geophysics graduate program committee, which includes representatives from each of the participating departments. The comprehensive examination and the dissertation defense are directed by this committee, with a faculty member of the home department normally chairing these procedures.

For more information, visit the Geophysics Studies Program (<http://www.colorado.edu/geophysics/>) website.

Requirements

Candidates for the doctoral degree must complete at least 30 credit hours in coursework numbered 5000 or above, of which at least 20 must be taken at CU Boulder.

In addition to coursework, candidates must take a total of at least 30 credit hours of doctoral dissertation, with not more than 10 of these taken in any one semester and not more than 10 dissertation credit hours taken before the semester during which the comprehensive examination is passed.

Required Courses and Credits

Code	Title	Credit Hours
Required Courses		
ASTR/GEOL/PHYS 6610	Earth and Planetary Physics 1 (Seismology)	3
ASTR/GEOL/PHYS 6620	Earth and Planetary Physics 2 (Geodesy)	3
ASTR/GEOL/PHYS 6630	Earth and Planetary Physics 3 (Geodynamics)	3

ASTR/GEOL/PHYS 6650	Seminar in Geophysics	1-3
One semester of graduate-level applied mathematics from the following:		3
PHYS/MATH 5030	Intermediate Mathematical Physics 1	
APPM 5350	Methods in Applied Mathematics: Fourier Series and Boundary Value Problems	
ASTR 5540	Mathematical Methods	
MCEN 5020	Methods of Engineering Analysis 1	
Dissertation		
GEOL 8990	Doctoral Dissertation ¹	30
Electives		
Additional courses compatible with the student's research interests to complete the 60-credit minimum.		17-15
Total Credit Hours		60

¹ Or equivalent in home department.

For a list of approved elective courses, visit the Geophysics PhD Program (<https://www.colorado.edu/geophysics/academics/geophysics-phd-program/>) webpage.

Learning Outcomes

By the completion of the program, students will be able to:

- Digest, synthesize and critically evaluate geophysical literature and the research of others.
- Identify interesting tractable questions and articulate testable hypotheses in the realm of geophysical science.
- Design and conduct rigorous scientific research in geophysics, including adapting plans and navigating challenges where necessary.
- Communicate knowledge and its significance effectively to a variety of audiences.