

Ph.D. in Geological Sciences

The PhD in Geological Sciences was approved in 1974 as the first doctoral degree program of the University. The PhD program embraces a variety of advanced disciplines in Earth and Environmental Sciences, with research themes focused in Earth System Geochemistry, Geospatial Research, Professional and Entrepreneurial Geosciences, Science Learning and Education, Solid Earth and Geophysics, and Tectonics and Sedimentation, although PhD degrees may be obtained in any field of the geological sciences. The program has a vibrant group of ~20 tenured and tenure-track faculty, with a research portfolio addressing global challenges in the environment and natural resources, while taking advantage of the unique and excellent geological settings in our region for research and education. The PhD program is hosted in the attractive Geological Sciences Building with 90,000-sq.ft spaces for offices, laboratories, and classrooms. The department facilities that support our PhD research include a variety of geochemical instruments for advanced isotope and element analysis (MC-ICP-MS, ICP-MS, ICP-OES, IRMS, Laser isotope analyzer, electron microprobe, laser diffraction particle size analyzer and many others), geophysical research infrastructure (seismometers, gravimeters, magnetometers, differential GPS receivers, surface and downhole conductivity and resistivity tools, ground-penetrating radar), geospatial facility, and extensive computational and software resources.

Admission Requirements

In addition to the materials required of all doctoral program applicants by the UTEP Graduate School, applicants for the Ph.D. in Geological Sciences must provide

1. Three letters of reference
2. A personal statement/essay explaining the applicant's motivation for pursuing the doctorate and their qualifications and preparation for doctoral study
3. GRE is not a requirement

All admission requirements will be reviewed holistically to assess the potential of the applicant. We strongly encourage applicants to contact the Geological Science faculty for research opportunities.

Degree Requirements

All University-wide UTEP requirements for doctoral degrees and student progress will apply. Doctoral students are required to enroll in the Geological Sciences Department Seminar for four semesters.

Doctoral Candidacy Requirements

1. Successful completion of the prescribed Comprehensive Examination (Parts I and II).
2. Removal of any academic deficiencies, if identified in the results of those Comprehensive Examinations.
3. Approval for Candidacy by the Graduate School upon the recommendation of the Comprehensive Examination Committee.

Doctoral Committees

For each doctoral candidate, a Doctoral Committee will consist of the dissertation advisor, at least three additional faculty members in the Department of Geological Sciences, and at least one member of the Graduate Faculty from outside the Department of Geological Sciences. The student's Doctoral Committee shall be approved by the Geological Sciences Department's Graduate Program Committee.

Examinations

A Comprehensive Examination Part I, demonstrating the student's mastery of general knowledge required for completion of a doctorate in Geological Sciences, is required of all students and is expected to be completed during their second semester of enrollment. This examination will be administered by a committee of five faculty members from the Department of Geological Sciences, approved by the Department's Graduate Program Committee. The student's Comprehensive Examination Committee may pass the student without noting any deficiencies, may pass the student conditionally with deficiencies that must be remedied (for example, by completing and passing certain courses within a specified time frame), or may fail the student and require the examination be retaken within a specific time frame. Any student who fails the Comprehensive Examination twice shall be barred from further consideration for Doctoral Candidacy.

The student's Doctoral Committee will administer the Comprehensive Examination part II. The Comprehensive Examination Part II is expected to be completed in the semester following successful completion (with all deficiencies removed) of the Comprehensive Examination Part I. The Comprehensive Examination Part II will consist of an oral defense of the student's written Dissertation Proposal in front of their Doctoral Committee, followed by questioning by the committee. The written dissertation proposal, approved by the student's doctoral advisor, must be submitted to the Doctoral Committee no less than 14 days before the examination.

Dissertation

A doctoral dissertation is required. This dissertation must demonstrate the candidate's capacity for originality and independence in recognizing a significant research question, in carrying out an effective investigation, and in interpreting and reporting the results. The subject of the dissertation is to be selected in consultation with the dissertation advisor, and it must be approved by the student's Doctoral Committee. The candidate is required

to successfully defend the dissertation in an open meeting under the supervision of his or her Doctoral Committee. A draft copy of the dissertation, approved by the student's doctoral advisor, must be submitted to the Doctoral Committee 14 days before the defense.

Degree Plan

Required Credits: 60

Code	Title	Hours
PhD in Geology (All courses require a grade of C or better)		
Required Courses:		
GEOL 6115 or GEOL 5101	Adv Topics in Geological Scien (4 semesters required) Graduate Seminar	4
Electives:		
Select 50 hours of graduate courses in GEOL and/or GEOP and/or ESCI from the following, and other courses in Science or Engineering, subject to approval by the approval by the student's major professor/advisor:		50
ESCI 5315	Topics in Environmental Sci.	
GEOL 5115	Selected Topics in Geol Scien	
GEOL 5162	Directed Study in Geology	
GEOL 5215	Selected Topics in Geol Scienc	
GEOL 5262	Directed Study in Geology	
GEOL 5289	Graduate Research in Geol Sci	
GEOL 5303	Computer Appl in Earth Sci	
GEOL 5304	Earth Structure	
GEOL 5305	Earth Materials	
GEOL 5308	Planetary Geology	
GEOL 5309	Mineral Resrcs, Econ & Environ	
GEOL 5310	Intro Entrepreneurial Geosci	
GEOL 5315	Selected Topics-Geological Sci	
GEOL 5317	Hydrogeology	
GEOL 5318	Petroleum Geology	
GEOL 5320	Environmental Tracers in Water	
GEOL 5321	Introduction to GIST	
GEOL 5322	Advanced GIST	
GEOL 5323	Spat Analysis Earth/Env Sci	
GEOL 5324	Geocomputation	
GEOL 5343	Isotope Geology	
GEOL 5344	Advanced Petrology	
GEOL 5362	Directed Study in Geology	
GEOL 5363	Sandstone Petrography	
GEOL 5364	Sedimentary Depositional Envir	
GEOL 5365	Basin Analysis	
GEOL 5375	Quantit Techniq Geological Sci	
GEOL 5376	Low Temperature Geochemistry	
GEOL 5378	Global Biochemical Cycles	
GEOL 5381	Paleoclimatology	
GEOL 5389	Graduate Research in Geol Sci	
GEOL 5397	Geol/Mineral Resources Mexico	
GEOL 5398	Thesis	
GEOL 5399	Thesis	
GEOL 5401	Fundamentals of Earth Science	
GEOL 5402	Fundmntls/Fld Meth in Earth Sci	
GEOL 6105	Directed Study in Geology	
GEOL 6205	Directed Study in Geology	
GEOL 6296	Doctoral Research in Geol Sci	

GEOL 6305	Directed Study in Geology	
GEOL 6315	Adv Topics in Geological Scien	
GEOL 6320	Dissertation	
GEOL 6321	Dissertation	
GEOL 6330	Sandstone Petrography	
GEOL 6332	Carbonate Petrogrph & Dep. Env	
GEOL 6334	Sedimentary Depositional Env	
GEOL 6336	Sequence Stratigraphy	
GEOL 6340	Hydrogeology	
GEOL 6342	Environmental Tracers in Water	
GEOL 6396	Doctoral Research in Geol Sci	
GEOP 5163	Directed Study in Geophysics	
GEOP 5263	Directed Study in Geophysics	
GEOP 5306	Atmospheric Processes	
GEOP 5335	Intro to Remote Sensing	
GEOP 5336	Digital Image Processing	
GEOP 5352	Geophysical Inverse Theory	
GEOP 5353	Reflection Seismic Data Proces	
GEOP 5354	Seismology	
GEOP 5356	Topics in Geophysics	
GEOP 5357	Well Logging	
GEOP 5361	Plate Tectonics	
GEOP 5363	Directed Study in Geophysics	
GEOP 5460	Geop App-Digital Signal Proces	
GEOP 6110	Directed Study in Geophysics	
GEOP 6210	Directed Study in Geophysics	
GEOP 6310	Directed Study in Geophysics	
GEOP 6350	Advanced Seismology	
GEOP 6352	Advanced Seismic Methods	
Comprehensive Examination:		
Complete Comprehensive Examination		
Thesis:		
GEOL 6320 & GEOL 6321	Dissertation and Dissertation	6

Total Hours**60**