

# Geology- Master of Arts, Master of Science, Doctor of Philosophy

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For information, contact:

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## Research and Support Facilities

In addition to standard laboratory and computer equipment, the department houses research laboratories for the investigation of a variety of earth materials and processes including high- and low-temperature mineralogy/geochemistry, geomicrobiology, radiogenic and stable isotope geochemistry, and high-end computational laboratories. Many of these laboratories support material preparation and analysis using state-of-the-art instrumentation including: inductively-coupled plasma optical emission spectrometer (ICP-OES), high-resolution (magnetic sector) ICP mass spectrometer (HR-ICP-MS), multi-collector ICP-MS (MC-ICP-MS), laser ablation (LA), multi-collector thermal ionization mass spectrometer (TIMS), HPLC ion chromatograph, atomic force/scanning tunneling microscope (AFM), single-crystal and powder x-ray diffractometers, hand-held XRF, optical cathodoluminoscope (CL), electrophoretic mobility analyzer, streaming potential analyzer, and portable seismometers. Additional shared facilities on campus include microbiology laboratories, scanning and transmission electron microscopy laboratories, and remote sensing and GIS computer laboratories. In addition, collaborations with numerous research laboratories and institutions provide access to facilities not available on campus. The Department maintains active field programs around the world, including a field station in Wyoming.

## Admission Requirements

Prospective students must have an undergraduate major in geology or a related science, including at least one semester of college chemistry, physics, and calculus. Deficiencies in background, as determined by a faculty committee, may be made up after admission. Either TOEFL or IELTS scores are required for all foreign applicants. In addition, a statement of career objectives and research interests, a resume and three letters of recommendation must be provided.

## Geology- Master of Arts

The Master of Arts degree is a non-thesis program requiring 30 credit hours of coursework, at least 15 hours of which must be in geology. Students may select up to 15 credit hours of coursework in cognate disciplines, with the approval of their committee. Students must pass an oral examination prior to receipt of the degree.

## Geology- Master of Science

The Master of Science degree is a thesis program requiring a minimum of 30 credit hours with a minimum of 24 semester hours of course work plus six semester hours of credit for thesis. Before the end of the first year, a formal oral presentation of the thesis proposal is required. This program culminates in the defense of a thesis based on original research.

## Geology- Doctor of Philosophy

The Ph.D. requires completion of 60 semester hours beyond the M.S. degree or its equivalent, of which at least 15 semester hours are earned through graduate-level science coursework. Before the end of the third semester of the program, Ph.D. candidates take written and oral comprehensive examinations administered by the student's advisory committee. The dissertation prospectus may be presented after the candidate has successfully passed the comprehensive examination and advanced to Ph.D. candidacy, but prior to the end of the fourth semester. The prospectus is to take the form of a proposal to an external funding agency to support the dissertation research. The prospectus must be presented in both written form and as an oral public defense. The program culminates in an oral public defense of a dissertation based on original research.