Geological Sciences

College of Arts & Sciences

The Department of Earth and Environmental Sciences offers graduate studies leading to the M.S. and Ph.D. degrees in Geology. Students with degrees in geology, any other natural science, or engineering are invited to apply.

Admission to pursue an M.S. or Ph.D. degree requires a bachelor's degree, a minimum grade point average of 2.75, three letters of reference and results from the verbal, quantitative, and analytical Graduate Record Examination (GRE). TOEFL scores are required for international applicants. For more details, please consult Admissions Information and Assistantships and Fellowships.
Research within the Department of Earth and Environmental Sciences is funded by grants and contracts from NSF, DOE, PRF, and other federal, state, and industrial sources. Areas of graduate research are in fields covered by regular and adjunct faculty, including coal geology, hydrogeology, stratigraphy, petrology, geophysics, and tectonics.

Admission Requirements
Admission criteria include GPA, GRE scores, prior course work, letters of reference, previous experience, and match with faculty research interests. This program requires an undergraduate GPA of at least 3.0 on all undergraduate and graduate work. For international applicants, we require that applicants rank in the top 25% of their graduating classes.

GRE must be taken, but there is no minimum score. Applicants who score at least 75th percentile on one category of the GRE and who have (a) an overall undergraduate GPA of 3.30, (b) a GPA of 3.60 for the last 60 credit hours of undergraduate work, or (c) a GPA of 3.80 for a completed master's degree (in each case from a US institution) are eligible for a Pirtle Fellowship, which provides $3,000 in summer salary.
Most applicants have a "standard" geology background, but strong students with backgrounds in the sciences and engineering are also admitted. Spoken English proficiency is important because many of our graduate students are employed as teaching assistants (in particular, as laboratory instructors). For international applicants, the Graduate School requires a minimum score of 550 on the TOEFL (213 on the computerized version; 79 on the internet-based version) or 6.5 on the IELTS. We typically only consider admission to the PhD program after completion of a master's degree either here at UK or at another US or European institution. Students who are deficient in one or more respects may be admitted provi¬sionally or as non-degree students by action of the Graduate Committee. Your chances of admission are better if you've identified faculty members with whom you might work. We recommend you consult our faculty research specialties at https://ees.as.uky.edu/faculty and directly contact faculty in your areas of interest. All application materials should be uploaded directly to the UK Graduate School's Apply Yourself program on the application website (https://app.applyyourself.com/AYApplicantLogin/fl_ApplicantConnectLogin.asp?id=ukgrad).

Degree Requirements
The Doctor of Philosophy in Geological Sciences requires candidates complete at least 42 hours of graduate course work, including that taken for a master's degree (which counts for 18hours). Ph.D. students must take 3 credits of EES 695-001 (Scientific Communication), unless they have already completed these requirements as a student in the M.S. program. The normal full-time load is 3 courses (usually 9-10 credits) each semester, and no more than 12 credits per semester should be taken. Individual Work in Geology (EES782) and Research in Geological Sciences (EES790) will include data collection (field, laboratory, and/

or library) and must not duplicate dissertation research. A research plan must be approved by a faculty member, who will direct the research, as well as the DGS. The faculty member who directed the research will provide a final evaluation of the project. The evaluation will be conveyed to the DGS.

The Master of Science in Geological Sciences (Plan A) requires the completion of graduate course work and a thesis. The student must complete at least 24 credit hours of graduate course work. The normal graduate load is 9-10 credits during each of the first two semesters, and no more than 12 credits is advised. Graduate courses are those in the 500, 600, or 700 series, or in the 400G series if outside the Department of Earth and Environmental Sciences. At least 16 credits must be in EES course work, including 3 credits of Scientific Communication (EES 695-001). At least 12 credits must be in the 600 or 700 series, and at least 9 of the 600- or 700-level credits must be in EES courses. At least 16 hours must be regular (non-research) courses. Full-time students who are enrolled in at least 3 hours but less than 9 hours of coursework, which is typical in the third semester of the M.S. program, should register for EES768 (Residence Credit for the Master's Degree) to reach 9 hours total.

Graduate Courses

EES 530	Low Temperature Geochem
EES 645	Tops In Petrology and Geochemistry
EES 741	Environmental Clay Mineralogy
EES 550	Fundamental Geophysics
EES 560	Geophysical Field Methods
EES 625	Topics in Geophysics
EES 626	Gravity and Magnetic Methods
EES 670	Exploration Seismology
EES 675	Earthquake Seismology
EES 676	Paleoseismology
EES 585	Hydrogeology
EES 610	Topics in Hydrogeology/Surficial Processes
EES 685	Groundwater Modeling
EES 490	Earth Dynamics
EES 620	Tectonics
EES 624	Advanced Structural Geology
EES 652	Tectonics and Stratigraphy
EES 735	Special Topics in Structure and Tectonics
EES 511	Petroleum Geology
EES 555	Stratigraphy
EES 570	Sem In Geological Sci
EES 695	Scientific Communication
EES 748	Master's Thesis Research
EES 749	Dissertation Research
EES 767	Dissertation Residency Credit
EES 768	Res Cr Masters Degree
EES 769	Res Cr For Doctors Deg
EES 782	Individ Work In Geology
EES 790	Research In Geological Science