

# MASTER OF SCIENCE: ENVIRONMENTAL AND URBAN GEOSCIENCES

## Student Learning Outcomes

Students graduating from this program will:

- collect, evaluate, interpret, and present geospatial data on a specific research topic.
- be able to analyze and interpret environmental data.
- recognize the ethical challenges in science and research.
- conduct literature searches, critically evaluate scholarly information, assess and defend research findings through oral and written communication.
- Thesis-option students will defend original research data, analyses, and conclusions on a specific research topic

Earth and Environmental Science offers a Master of Science degree in Environmental and Urban Geosciences (M.S. EUG). This program prepares students for advanced study in natural hazards, paleoseismology, geology, geochemistry, climate variability, water resources, wetland dynamics, air and water pollution, geoarchaeology, paleoenvironments, geography, urban and human systems, GIS, and environmental remote sensing. The program provides students with either a thesis or non-thesis option. All students must complete the core curriculum and additional coursework.

## Admissions Requirements

For full admission to the graduate degree program in environmental and urban geosciences, the following requirements must be met:

1. Completion of an undergraduate degree with a major in a geosciences field (such as Environmental Sciences or Studies, Geography, and/or Geology) and a grade-point average of at least 3.0 (A = 4.0) overall, as well as in the major.
2. Submission of scores on the Graduate Record Examination (GRE) is not required but highly recommended. GRE scores may be used to award assistantships.
3. Two letters of recommendation from academic and/or professional references.
4. The student must declare either a thesis or non-thesis degree option in his or her application. If you are declaring a thesis option admission, you must secure a thesis advisor in Geosciences before admission and declare this in your application. For assistance, contact the Graduate Advisor.
5. All application materials must be submitted to the Admissions Office by March 31 for fall semester and October 1 for spring semester for final consideration.
6. All admitted M.S. EUG students must take a mandatory assessment during "Orientation" before the first day of class each semester.

With approval, students with non-geoscience undergraduate degrees may be provisionally admitted on a non-regular degree-seeking basis. After successfully completing recommended courses for the appropriate undergraduate geoscience degree, provisionally-admitted students may be granted degree-seeking status.

## Graduate Assistantships

Teaching assistantships are awarded on a competitive basis only to incoming fully-admitted, graduate students in the thesis option degree program. Assistantship applications and all supporting materials should be submitted by March 31 for fall enrollment and October 1 for spring enrollment. International Graduate Teaching Assistants (GTA) must be certified by the School of Graduate Studies (<http://sgs.umkc.edu/>) prior to serving in any GTA position. Interested international students should contact the School of Graduate Studies for more information.

### Core Curriculum

#### Hours (Total 11 Credit Hours)

Code	Title	Credits
GEOG 5507	Advanced Geographic Information Science	4
GEOG 5544	Advanced Spatial Data Analysis	4
GEOG/GEOLOGY 5597	Graduate Seminar in Geosciences	3

### Thesis Option Program

An additional 19 credit hours of graduate-level geosciences courses must be taken, of which 3-6 credit hours must be GEOG 5599 or GEOLOGY 5599. These courses will be selected in consultation with your thesis advisor.

### Non-Thesis Option Program

An additional 19 credit hours of graduate-level geosciences courses must be taken. Please choose from the following courses:

Code	Title	Credits
ENV-SCI 5550	Ecotoxicology	3
GEOG 5502	Environmental Remote Sensing and Digital Image Analysis	4
GEOG 5504	Biogeography and Landscape Ecology	3
GEOG 5506	Global Environmental Change	3
GEOG 5509	Urban Geography	3
GEOG 5526	Paleoecology: Microfossils and Climate Change	3
GEOG 5546	Global Water and Sustainability	3
GEOG 5548	Satellite Climatology	4
GEOLOGY 5507	Archeological Resources Management	3
GEOLOGY 5509	Field Study in Archaeology	1-5
GEOLOGY 5513	Advanced Mineral Deposits	3
GEOLOGY 5516	Understanding and Living with Volcanoes	3
GEOLOGY 5521	Advanced Methods for Earth and Environmental Science	3
GEOLOGY 5531	X-Ray Diffraction and Fluorescence Methods: X-Ray Mthds Geol/Anly	2
GEOLOGY 5534	Hazardous Waste Operation Management	2
GEOLOGY 5535	Aqueous Geochemistry	3
GEOLOGY 5536	Introduction to Scanning Electron Microscopy Methods	2
GEOLOGY 5541	Environmental Geophysics	3
GEOLOGY 5551	Geotechnics	4
GEOLOGY 5570	Advanced Hydrogeology	3
GEOLOGY 5571	Tectonics	3
GEOLOGY 5572	Earthquake Geology	3

#### Requirements for Retention

1. For newly admitted graduate students, elimination of all undergraduate deficiencies (if any) in the undergraduate major and its supporting prerequisites is required upon or before the completion of the first 12 hours of coursework for graduate credit.
2. A 3.0 (B) average or better must be maintained in all graduate coursework. In addition, a 3.0 (B) average and a satisfactory balance of grades must be maintained in the approved program of study, or the student will be subject to either probationary status or dismissal from the program.
3. Thesis-option M.S. EUG students are required to pass a qualifying examination during first year orientation.

#### Requirements for Graduation

1. Formal acceptance of a Program of Study, including thesis research proposal for thesis option students, is required EES and the School of Graduate Studies upon completion of the GEOG/GEOLOGY 5597.
2. No more than 12 credit hours of the program may be 300- to 400-level courses, and at least 18 credit hours must be at the 5000-level or above.
3. A formal written thesis and final oral examination are required of thesis option M.S. EUG students. The format of the thesis must be in accordance with guidelines of the School of Graduate Studies.
4. Satisfactory compliance with all applicable requirements of the School of Graduate Studies is required, including continuous enrollment and residency. Please refer to the General Graduate Academic Regulations and Information (<https://catalog.umkc.edu/general-graduate-academic-regulations-information/>) section of this catalog.