

Earth and Environmental Sciences - Graduate

Programs

DOCTORAL DEGREE

- [Earth and Environmental Sciences PhD \(BS Entry\)](https://catalog.uta.edu/archives/2025-2026/science/earth/graduate/ees-phd/) (<https://catalog.uta.edu/archives/2025-2026/science/earth/graduate/ees-phd/>)
- [Earth and Environmental Sciences PhD \(MS Entry\)](https://catalog.uta.edu/archives/2025-2026/science/earth/graduate/ees-ms-to-phd/) (<https://catalog.uta.edu/archives/2025-2026/science/earth/graduate/ees-ms-to-phd/>)

MASTER'S DEGREES

- [Master of Science in Earth and Environmental Science \(Energy Geoscience Professional\)](https://catalog.uta.edu/archives/2025-2026/science/earth/graduate/ees-energy-geoscience-professional-ms/) (<https://catalog.uta.edu/archives/2025-2026/science/earth/graduate/ees-energy-geoscience-professional-ms/>)
- [Master of Science in Earth and Environmental Science \(Environmental Professional\)](https://catalog.uta.edu/archives/2025-2026/science/earth/graduate/ees-professional-ms/) (<https://catalog.uta.edu/archives/2025-2026/science/earth/graduate/ees-professional-ms/>)
- [Master of Science in Earth and Environmental Science \(Environmental Science\)](https://catalog.uta.edu/archives/2025-2026/science/earth/graduate/ees-environmental-science-ms/) (<https://catalog.uta.edu/archives/2025-2026/science/earth/graduate/ees-environmental-science-ms/>)
- [Master of Science in Earth and Environmental Science \(Geoscience Professional\)](https://catalog.uta.edu/archives/2025-2026/science/earth/graduate/ees-geoscience-ms/) (<https://catalog.uta.edu/archives/2025-2026/science/earth/graduate/ees-geoscience-ms/>)

Earth and Environmental Sciences Master's Program Admissions

For unconditional admission a student must meet the following requirements:

For the Environmental Science Options: A B.S. degree in biology, chemistry, geoscience, mathematics, or engineering with the following courses or their equivalent: 1 semester of introductory physics for science majors; 2 semesters of introductory chemistry for science majors; and Calculus I and II. Students with a Bachelor's Degree in other sciences will also be considered, subject to satisfactory completion of deficiency courses.

For the Geoscience Options: A B.S. degree in an Earth Science discipline with the following courses or their equivalent: Mineralogy, Petrology, Structure, Stratigraphy/sedimentology, Field Geology and Geophysics or Paleontology. In addition, one semester of Biology, Calculus I and II, and a year of Chemistry and Physics is required.

For all Options:

1. A minimum undergraduate GPA of 3.0 on a 4.0 scale, as calculated by the Graduate School.
2. Graduate Record Examination (GRE) scores are used in conjunction with GPA's. For example a person with a GPA below 3.0 will need a GRE score better than average. Masters students who have succeeded in the Earth and Environmental Sciences Program typically score higher than the 60th Percentile on the verbal and quantitative portion of the GRE.
3. An applicant whose native language is not English must submit a score of at least 550 on the paper-based TOEFL, a score of at least 213 on the computer-based TOEFL, a minimum score of 40 on the TSE, a minimum score of 6.5 on the IELTS, or a minimum TOEFL iBT total score of 79 with sectional scores that meet or exceed 22 for the writing section, 21 for the speaking section, 20 for the reading section, and 16 for the listening section. However, an applicant whose native language is not English with a bachelor's or a master's degree from a regionally accredited U.S. college or university is not required to submit a TOEFL, TOEFL iBT, TSE or IELTS score for admission purposes.
4. Favorable letters of recommendation from people familiar with the applicant's academic work.

Master's Degree Requirements

EARTH AND ENVIRONMENTAL SCIENCES MASTER'S DEGREE

There are additional requirements for all Master's programs listed in this CATALOG under University Requirements and Policies.

Environmental Science Thesis Option

Core Courses

General core courses		7
EVSE 5303	SUSTAINABILITY ISSUES SEMINAR III	
EVSE 5454	STATISTICS FOR EARTH AND ENVIRONMENTAL SCIENTISTS	
Select one of the following engineering courses		3
CE 5321	ENGINEERING FOR ENVIRONMENTAL SCIENTISTS	
CE 5319	PHYSICAL-CHEMICAL PROCESSES II	
or CE 5328	FUNDAMENTALS OF AIR POLLUTION	
Select one of the following science courses		3

EVSE 5309	ENVIRONMENTAL SYSTEMS-BIOLOGICAL ASPECTS ¹	
EVSE 5310	ENVIRONMENTAL SYSTEMS-CHEMICAL ASPECTS ¹	
EVSE 5311	ENVIRONMENTAL SYSTEMS-GEOLOGICAL ASPECTS ¹	
Select one of the following in City, or Regional Planning:		3
PLAN 5342	ENVIRONMENTAL POLICY	
PLAN 5343	FOUNDATIONS OF ENVIRONMENTAL POLICY	
PLAN 5351	TECHNIQUES OF ENVIRONMENTAL ASSESSMENT	
Electives within one of the following departments: Biology, Chemistry, Earth and Environmental Sciences, Civil and Environmental Engineering, or Urban and Public Affairs		6
Two semesters of GEOL 5199 or EVSE 5199 - Seminar		2
EVSE 5698	THESIS	6
Total Hours		30

¹ Students with less than 20 undergraduate hours in biology, chemistry, or geology will need to take a third environmental systems course as a deficiency. Students entering with a BS degree in one of these areas must take their two courses in the other areas.

Environmental Science Non-Thesis Option

Core Courses

General core courses		7
EVSE 5303	SUSTAINABILITY ISSUES SEMINAR III	
EVSE 5454	STATISTICS FOR EARTH AND ENVIRONMENTAL SCIENTISTS	
Select one of the following engineering courses		3
CE 5321	ENGINEERING FOR ENVIRONMENTAL SCIENTISTS	
CE 5319	PHYSICAL-CHEMICAL PROCESSES II	
or CE 5328	FUNDAMENTALS OF AIR POLLUTION	
Select one of the following in science:		3
EVSE 5309	ENVIRONMENTAL SYSTEMS-BIOLOGICAL ASPECTS ¹	
EVSE 5313	ENVIRONMENTAL REGULATION OF CHEMICAL HAZARDS ¹	
EVSE 5311	ENVIRONMENTAL SYSTEMS-GEOLOGICAL ASPECTS ¹	
Select one of the following in City and Regional Planning		3
PLAN 5305	LAND USE, MANAGEMENT AND DEVELOPMENT	
PLAN 5316	LAND USE PLANNING AND THE LAW	
PLAN 5352	ENVIRONMENT ASSESSMENT POLICY & PRACTICE	
Electives within one of the following departments: Biology, Chemistry, Earth and Environmental Sciences, Civil and Environmental Engineering, or Urban and Public Affairs		9
EVSE Seminar		2
Two semesters of GEOL 5199 or EVSE 5199		
EVSE 5395	MASTER'S PROJECT	3
Successful completion of the Master's Comprehensive Examination in the final semester		
Total Hours		30

¹ Students with less than 20 undergraduate hours in biology, chemistry, or geology will need to take a third environmental systems course as a deficiency. Students entering with a BS degree in one of these areas must take their two courses in the other areas.

² Must include at least 6 hours in department(s) outside that in which the first 9 hours of electives are taken.

The Geoscience Thesis Option

Core Courses

GEOL 5454	STATISTICS FOR EARTH AND ENVIRONMENTAL SCIENTISTS	4
Select one of the following in engineering (or advisor approved):		3
CE 5321	ENGINEERING FOR ENVIRONMENTAL SCIENTISTS	
IE 5304	ADVANCED ENGINEERING ECONOMY	
take two hours in the following seminar:		2

GEOL 5199	TECHNICAL SESSIONS	
Advisor Approved Electives		15
GEOL 5698	THESIS	6
Total Hours		30

The Geoscience Non-Thesis Option

Core Courses

GEOL 5454	STATISTICS FOR EARTH AND ENVIRONMENTAL SCIENTISTS	4
Select one of the following in engineering (or advisor approved):		3
CE 5321	ENGINEERING FOR ENVIRONMENTAL SCIENTISTS	
IE 5304	ADVANCED ENGINEERING ECONOMY	
take two hours in the following seminar:		2
GEOL 5199	TECHNICAL SESSIONS	
Advisor Approved Electives		18
GEOL 5395	MASTER'S PROJECT	3
Total Hours		30

Environmental Science Professional Option

Foundations

EVSE 5454	STATISTICS FOR EARTH AND ENVIRONMENTAL SCIENTISTS	4
Select one of the following engineering courses		3
CE 5321	ENGINEERING FOR ENVIRONMENTAL SCIENTISTS	
IE 5304	ADVANCED ENGINEERING ECONOMY	
For science, select any 5000-level EVSE or GEOL course except 5000-level EVSE or GEOL research credits		3
For City and Regional Planning select any 5000-level PLAN course		3

Specialization

EVSE 5120	ENVIRONMENTAL PROFESSIONAL MENTORING & BUSINESS ETHICS	1
EVSE 5199	SEMINAR IN ENVIRONMENTAL & EARTH SCIENCES	1
EVSE 5115	PROFESSIONAL EXPERIENCE	1
or EVSE 6197	RESEARCH IN ENVIRONMENTAL & EARTH SCIENCES	
Electives		
Select 11 hours from one of the following departments: Biology, Chemistry, Earth and Environmental Sciences, Civil and Environmental Engineering, or Urban and Public Affairs		11
EVSE 5395	MASTER'S PROJECT	3
Successful completion of the Master's Comprehensive Examination in final semester.		
Total Hours		30

¹ Students with less than 20 undergraduate hours in biology, chemistry, or geology will need to take a third environmental systems course as a deficiency. Students entering with a BS degree in one of these areas must take their two courses in the other areas.

Energy Geoscience Professional Option

Foundations

GEOL 5454	STATISTICS FOR EARTH AND ENVIRONMENTAL SCIENTISTS	4
GEOL 5351	SUSTAINABLE ENERGY RESOURCES	3
GEOL 5190	GEOSCIENCE INTERNSHIP	1
or GEOL 5199	TECHNICAL SESSIONS	
IE 5304	ADVANCED ENGINEERING ECONOMY	3

Specialization

Select 13 hours from one of the following departments: Biology, Chemistry, Earth and Environmental Sciences, or Civil and Environmental Engineering		13
Select thesis or non-thesis option		6
Non-thesis option		

Select an additional advisor-approved course	
GEOL 5395	MASTER'S PROJECT
Thesis option	
GEOL 5698	THESIS
Total Hours	30

Dual Degree Program

Dual master's degrees can be arranged with any suitable program. By participating in a dual degree program, students may apply 6-18 total semester credit hours jointly to meet the requirements of both degrees, thus reducing the total number of hours which would be required to earn both degrees separately. The number of hours which may be jointly applied ranges from six to 18, subject to the approval of Graduate Advisors from both programs. Degree plans, thesis or professional report proposals and programs of work must be approved by Graduate Advisors from both programs. The successful candidate will be awarded both degrees rather than one joint degree.

To participate in the dual degree program, students must make separate application to each program and must submit a separate program of work for each degree. Those interested in the dual degree program should consult the appropriate Graduate Advisors for further information on course requirements. See also the statement on Dual Degree Programs in the general information section of this catalog.

Arrangements to offer a dual degree have already been made between Earth and Environmental Sciences and the Program in City and Regional Planning (M.C.R.P. degree), School of Urban and Public Affairs.

Admission Requirements

For unconditional admission a student must meet the following requirements:

1. A masters degree or at least 30 hours of graduate coursework in environmental science, biology, chemistry, geology, mathematics or engineering.
 2. A strong quantitative background including courses in differential and integral calculus (i.e., Calculus I and II). Students that have not taken these courses will be expected to complete them during their first year of residence.
 3. A minimum graduate coursework GPA of 3.0 on a 4.0 scale, as calculated by the Graduate School.
 4. Graduate Record Examination (GRE) scores are considered in admission decisions. Doctoral students who have succeeded in the Earth and Environmental Sciences Program typically score higher than the 60th percentile the verbal and the quantitative portion of the GRE.
 5. For applicants whose native language is not English and have not completed a Bachelors degree at a US institution, they must meet the following minimums: TOEFL iBT (minimum 81 overall, with sectional scores of at least 22 writing, 23 speaking, 20 reading, or 16 listening) or IELTS (minimum overall band of 6.5, with a speaking score of 7.0).
 6. Favorable letters of recommendation from people familiar with the applicant's academic work and/or professional work.
 7. A statement must be submitted to the program detailing the applicant's specific research interests and identifying the faculty member who is requested as supervisor of the dissertation research.
 8. Students may be considered for unconditional admission if further review of their transcripts, recommendation letters, correspondence or direct interactions with Earth and Environmental Sciences faculty, and statement of research interests indicates that they are qualified to enter the doctoral program.
- 1.

Doctoral Degree Requirements

EARTH AND ENVIRONMENTAL SCIENCES DOCTORAL DEGREE

Foundations

EVSE 5454	STATISTICS FOR EARTH AND ENVIRONMENTAL SCIENTISTS	4
Select one of the following engineering courses		3
CE 5321	ENGINEERING FOR ENVIRONMENTAL SCIENTISTS	
CE 5319	PHYSICAL-CHEMICAL PROCESSES II	
or CE 5328	FUNDAMENTALS OF AIR POLLUTION	
Select 3 hours in EVSE or GEOL at the 5000 level		3
Select 3 hours in PLAN at the 5000 level		3
Select two semesters of:		2
EVSE 5199	SEMINAR IN ENVIRONMENTAL & EARTH SCIENCES	
or GEOL 5199	TECHNICAL SESSIONS	
Select 6 hours in EVSE, GEOL, CE, PLAN, or BIOL at the 5000/6000 level		6
Dissertation		

Select at least 9 hours from: 9

EVSE 6399	DISSERTATION
EVSE 6699	DISSERTATION
EVSE 6999	DISSERTATION
EVSE 7399	DOCTORAL DEGREE COMPLETION

Total Hours 30

Students who enter with a master's degree in a science or engineering field, or with 30 semester hours of graduate coursework, take a diagnostic examination in the first year of residence to evaluate this previous work. Students take their comprehensive exam in the third year of residence. Dissertation hours and doctoral degree completion course are taken after passing the comprehensive exam. The student's supervising committee must approve all courses taken to meet degree requirements.

Students may choose among any of the five participating units for their primary and secondary areas of emphasis. Course selection within these areas of emphasis is guided by the student's supervising committee and must result in a cohesive program that supports the dissertation research.