

EARTH AND ENVIRONMENTAL SCIENCE MS

The Master of Science in Earth and Environmental Science is designed for students who wish to transition from an undergraduate degree to the workforce in professional science, or for students who desire additional research experience to advance their careers or to prepare for additional postgraduate studies. The program consists of 30 units of advanced coursework and directed individual study. Two tracks of study are available including thesis-based and course-based curricula. In the thesis-based track, students carry out an independent research project culminating in a thesis which is presented during an oral defense. In the course-based track, students complete an Earth or environmental science-related internship during their final semester, which will be their culminating experience in the program. The curriculum is composed of several core courses within a discipline followed by courses selected by the student's individual needs or interest. Our faculty conducts active research in applied ecology, environmental chemistry, atmospheric science, paleontology, hydrogeology, petrology, volcanology, and economic geology. The department maintains high expectations and standards for professional conduct and productivity which prepare students to meet their specific goals.

Advising Requirement

Advising is mandatory for this program. Consult your department advisor or program coordinator for information.

Requirements for the MS in Earth and Environmental Science

Completion of all requirements as established by the graduate advisory committee, and Graduate Studies, to include:

1. Completion of an approved program consisting of 30 units of 400/500/600-level courses. Substitutions for required courses must be taken at California State University, Chico and must be approved by the Graduate Coordinator.
 - a. A core of 12 units in required courses to include EARTH 540, EARTH 600, EARTH 601, EARTH 602, EARTH 660, and MATH 615.
 - b. Six units of coursework selected from EARTH 630, EARTH 640, EARTH 650, and EARTH 652.
 - c. Three units of coursework selected from EARTH 617, EARTH 619, EARTH 621 and EARTH 625.
 - d. Selection of either the internship or thesis track for culminating activity. The internship track requires three units of EARTH 689, and six units selected from MGMT 444, OSCM 607, POLS 660A, POLS 660B, or POLS 660C. The thesis track requires at least one unit of EARTH 699T; the remaining eight units may be made up with units of EARTH 697 or other courses as approved by the graduate advisory committee and Graduate Coordinator.
 - e. At least 18 of the units required for the degree in 600-level courses.
 - f. Not more than 15 units taken before admission to classified status.
 - g. At least nine units completed after advancement to candidacy.
2. Completion and final approval of a thesis (for thesis track) as specified by the student's graduate advisory committee.

3. Approval by the graduate advisory committee (thesis track only) and the Graduate Coordinator on behalf of the faculty of the University.

Requirements for the MS in Earth and Environmental Science

Course	Title	Units
ERTH 540	Professional Ethics in Scientific Research	3
ERTH 600	Graduate Seminar I	1
ERTH 601	Graduate Seminar II	1
ERTH 602	Graduate Seminar III	1
ERTH 660	Numerical Analysis	3
MATH 615	Data Analysis for Graduate Research	3
Select two of the following:		6
ERTH 630	Quaternary Geology	
ERTH 640	Hydrogeochemistry	
ERTH 650	Environmental Monitoring	
ERTH 652	Science and Environmental Regulations	
Select one of the following:		3
ERTH 617	Advanced Topics in Geology	
ERTH 619	Advanced Topics in Atmospheric Science	
ERTH 621	Advanced Topics in Hydrology	
ERTH 625	Advanced Topics in Environmental Science	

Culminating Activity

Select one of the following tracks:

Internship (p. 1)

Thesis (p. 1)

Internship Track

Course	Title	Units
ERTH 689	Capstone Internship	3
Select two of the following:		6
MGMT 444	Managing Project Teams	
OSCM 607	Operations Planning and Execution	
POLS 660A	Public Management	
POLS 660B	Public Personnel Administration	
POLS 660C	Public Budgeting and Finance	

Thesis Track

Course	Title	Units
ERTH 699T	Master's Thesis	1-6
Select additional units from courses approved by the graduate advisory committee. Select sufficient units to ensure 30 in the program.		

Graduate Grading Requirements

All courses in the major (with the exceptions of Comprehensive Examination - 696, Independent Study - 697, Master's Project - 699P, and Master's Thesis - 699T) must be taken for a letter grade, except those courses specified by the department as ABC/No Credit (400/500-level courses), AB/No Credit (600-level courses), or Credit/No Credit grading only. A maximum of 10 units combined of ABC/No Credit, AB/No Credit, and Credit/No Credit grades may be used on the approved program (including 696, 697, 699P, 699T and courses outside the major). While

grading standards are determined by individual programs and instructors, it is also the policy of the University that unsatisfactory grades may be given when work fails to reflect achievement of the high standards, including high writing standards, expected of students pursuing graduate study.

Students must maintain a minimum 3.0 grade point average in each of the following three categories: all coursework taken at any accredited institution subsequent to admission to the master's program; all coursework taken at Chico State subsequent to admission to the program; and all courses in the approved master's degree program. Failure to maintain a 3.0 average in any category will result in academic notice in the master's program. Failure to remedy the deficiency within one semester with appropriate courses approved by the program coordinator may result in disqualification from the master's program. See Graduate Education Policies (<https://catalog.csuchico.edu/graduate-requirements/graduate-education-policies/#academicstanding>) for more information.

Continuous enrollment is required. At the discretion of the academic program, a maximum of 30 percent of the units counted toward the degree requirements may be special session credit earned in non-matriculated status combined with all transfer coursework. This applies to special session credit earned through Open University, or in courses offered for academic credit through Professional & Continuing Education. Correspondence courses and UC Extension coursework are not acceptable for transfer.

Graduate Time Limit

All requirements for the degree are to be completed within five years of the end of the semester of enrollment in the oldest course applied toward the degree. See Master's Degree Requirements (<https://catalog.csuchico.edu/graduate-requirements/masters-degree-requirements/>) for complete details on general degree requirements.

The MS degree is available for advanced study in biological, chemical, geoscience, physical, or engineering aspects of environmental science. Prospective students should discuss their interests and goals with the appropriate program Graduate Coordinator.

Graduate Requirement in Writing Proficiency

All students must demonstrate competency in writing skills as a requirement for graduation. Earth and environmental science students will normally demonstrate their writing proficiency through successful completion of EARTH 600, EARTH 601, and EARTH 602, or an approved substitute.

Prerequisites for Admission to Conditionally Classified Status

1. Satisfactory grade point average as specified in Graduate and Postbaccalaureate Admission Requirements (<https://catalog.csuchico.edu/graduate-requirements/graduate-postbaccalaureate-admission-requirements/>).
2. Approval by the department and Graduate Studies.
3. An acceptable baccalaureate in one of the natural sciences, engineering, mathematics, or allied field from a regionally accredited institution, or an equivalent approved by Graduate Studies. The prospective student must have sufficient background to undertake a graduate program in environmental science: one year of mathematics

(either one semester of statistics and one semester of calculus or one year of calculus), two semesters of college physics, two semesters of chemistry, and a semester of ecology. Applicants without a sufficient background may be conditionally admitted, pending the correction of deficiencies as specified by the department.

4. A one-page statement of purpose that addresses the following questions:
 - a. The area of study in which you wish to specialize and why.
 - b. The faculty members with whom you would like to conduct research.
 - c. Your career goals and plans for the future.
 - d. Your special preparation in and fitness for your proposed area of study.
 - e. Explanations of any problems or inconsistencies in your records or scores.
5. Submission of two letters of recommendation from individuals who have had a working or academic relationship with you. Letters should address your personal characteristics, performance, experience, strengths, weaknesses, capabilities, and professional promise.
6. Acceptance by a faculty mentor in the program who will serve as the thesis or project advisor.

Advancement to Classified Status

In addition to any requirements listed above:

1. Formation of a graduate committee, consisting of at least two members and including at least one tenured or tenure-track member of the Department of Earth and Environmental Sciences.
2. Submission of an approved master's degree program plan, developed in consultation with the graduate advisory committee.
3. Correction of all deficiencies in background as specified by the department at the time of admission.

Advancement to Candidacy

In addition to any requirements listed above:

1. Completion of at least nine units of the approved master's degree program plan at the University and completion of any specific coursework as specified by the graduate advisory committee.
2. Submission of a thesis proposal or project/internship proposal approved by the graduate advisory committee.