

Water Resource Management, M.S. - Continuing & Global Education

DEPARTMENT

Department of Earth and Environmental Sciences

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MN in Geology, Minor
BS in Geology, B.S.
MS in Geology, M.S.
BS in Environmental Sciences, B.S.
MS in Water Resource Management, M.S. - Continuing & Global Education
CERT in Geographic Information Systems, Certificate of Adv Study - Continuing & Global Education
CRED in Single Subject Credential - Geological Science
Courses Offered

The Department of Earth and Environmental Sciences at California State University, Fresno offers courses leading to the Bachelor of Science and Master of Science in Geology -- as well as the Bachelor of Arts in Natural Sciences and the Minor in Geology -- which are especially well-suited for primary and secondary teachers.

Coursework and research emphasize field and laboratory investigations of geologic and environmental problems. Our field orientation takes advantage of the university's proximity to the Sierra Nevadas, the California Coast Ranges, coastal California, and the desert provinces. This unique location gives faculty and students access to an unparalleled outdoor laboratory, all within short trips from the university.

The department's close relationship with state agencies and the private sector enables many students to pursue internships or part-time employment in geologic and environmental work while they complete their degrees.

The Bachelor of Science in Geology prepares students for employment in petroleum geology, mineral exploration, land-use planning, environmental assessment, hydrology, and engineering geology, or for teaching earth science or physical science at the secondary level. The Master of Science program provides a graduate degree for students who want to work in industry or government on the professional level, for students who want to teach earth science in junior college, or for students who wish to pursue further graduate study.

The Bachelor of Science in Environmental Sciences offers an interdisciplinary approach to the natural sciences with an emphasis on biology, chemistry, and geology. This degree is designed for students interested in areas such as pollution abatement, water resources, ecosystem protection, restoration, or management.

Students may also participate in coursework and research in marine geology and oceanography offered through Moss Landing Marine Laboratories in Monterey Bay. Consult the chairs of the Earth and Environmental Sciences and Biology departments. See Moss Landing Marine Laboratories, Biology Department.

REQUIREMENTS

Master of Science in Water Resource Management Degree Requirements

The M.S. in Water Resources Management is an online degree program offered through the Division of Continuing and Global Education. Classes within the degree program can only be taken after qualifying for admission to the M.S. degree program. In addition to meeting the requirements for a classified graduate student standing set forth by the university's Division of Graduate Studies, students must complete the predetermined courses in a predetermined sequence over the five-semester period.

The M.S. in Water Resource Management was developed to meet the growing demand for advanced knowledge in water resources and their use in the urban, industrial, and agricultural environment. The degree includes political and policy

aspects of water use as well as an understanding of the economics involved. The program of study will rely upon the use of Geographic Information Systems (GIS) to assemble and analyze databases describing water availability, use, and reclamation. The student will also gain a proficiency in water management that relies on spatial visualizations and basic modeling skills used to track the natural variability of water supplies and water-use forecasting. Each student will acquire a deep understanding of the physical processes of water delivery and storage along with the management of these water resources.

The aim and goal of the M.S. degree in Water Resource Management is to introduce the student to a systematic understanding of how water is delivered to the terrestrial environment from our climate system, follow it through its storage and use. Water moves through the natural and manmade environment where it is monitored, pumped, and applied to urban and agricultural systems. Once used, it then must be treated as effluent and returned to the natural environment. The student is expected to integrate the effects of changes in water availability in terms of supply and also the effect on its economics and the politics surrounding these changes.

The M.S. in Water Resource Management consists of eight courses, an internship with 150 hours working in a professional environment, and a culminating project course (Water Resource Management Project) for a total of 30 units of graduate level academic credit. Each of the classes will be taught entirely online with instructors using a variety of delivery styles and methods to interact with the students. The desired design is to complete the program as a cohort (i.e., lock-step program). Courses are based on the concepts learned[in previous courses and students must enroll in courses in the chronological order listed below. Successful completion of all courses is required to earn the M.S. in Water Resources Management.

The students are required to complete a "Fundamentals of Geographic Information Systems (GIS)" class that will instruct them on the basics of ArcGIS software prior to the programs initiation. This prerequisite can be satisfied by taking EES 211 (offered through Continuing and Global Education), baccalaureate GIS classes, or technical classes offered through ESRI or other GIS software companies. GIS will be used in many of the assignments throughout the program.

Formal admission to Fresno State through CSU mentor is required for participation in the M.S. in Water Resource Management with the exception of graduate students who are currently admitted to the university. All candidates interested shall meet the university admission requirements including the following criteria. Applicants will qualify if they already hold a bachelor's degree from an accredited institution of higher education and hold a 3.0 or higher grade point average (GPA calculated from the last 60 unites from an accredited institution)

Core Classes (24 units)

EES 212, 264, 265, 266, 267, 268, 269, 270

Internship (3 units)

EES 263

Final Project (3 units)

EES 298

Total (30 units)

FACULTY

For faculty phone numbers and e-mail, see the campus directory.

For more on the faculty, see the faculty pages.

The faculty pages are updated by the department or program.