

CALIFORNIA STATE UNIVERSITY, SACRAMENTO
DEPARTMENT OF CIVIL ENGINEERING

Graduate Program in

WATER RESOURCES ENGINEERING

Civil Engineering encompasses such a broad range of professional activities that the undergraduate preparation for the Bachelor of Science degree must be devoted primarily to fundamental analytical principles and basic design applications. For technical competence in specialized areas and continued effectiveness on the job, graduate study is becoming increasingly necessary.

The Civil Engineering Department offers a graduate program of study in the area of Water Resources Engineering leading to a **Master of Science Degree in Civil Engineering**. The program offers opportunity for advanced study and research in advanced hydraulics and modern hydrologic techniques, flood forecasting and control, ground water modelling, water resources management and policy formulation. Students can also take courses in related areas, such as Environmental Engineering, that are important to water resources.

ADMISSION REQUIREMENTS

Admission as a classified graduate student in Civil Engineering requires:

- an undergraduate degree in Civil Engineering **and**
- a minimum 2.80 grade point average both overall and in upper division engineering courses.

In addition, the merit of past academic endeavor, potential for future study, and professional goals may also be considered for granting admission.

Applicants who have deficiencies in Admission Requirements that can be removed by specified additional preparation may be admitted with conditionally classified graduate status. Any deficiencies will be noted on a written response to the student's admission application.

Students with a baccalaureate degree in a field other than Civil Engineering (e.g., Biology, Chemistry, Geology, Environmental Studies) who wish to pursue the graduate program in Water Resources Engineering will be considered on an individual basis. Students with baccalaureate degrees in Electrical, or Mechanical Engineering may only need to take a few (two or three) additional courses. These students may be admitted as Conditionally Classified students and will be required to complete a specific list of undergraduate prerequisite courses to correct undergraduate deficiencies. These students must have an approved study program on file with the Department while undertaking their qualifying work. On completion of these courses with a grade point average of 2.80 or better, the student may apply for classified graduate status in Civil Engineering..

ADMISSION PROCEDURES

All prospective graduate students, including CSUS graduates, must file the following with the CSUS Admissions Office:

- an application for admission and a supplemental application for graduate admission (forms A & B in the CSUS application booklet obtainable from the Graduate Center - FS 215) **and**
- two sets of official transcripts from **all** colleges and universities attended, other than CSUS.

Students are strongly urged to apply by April 1 for admission to the following fall semester, or October 1 for the following spring, in order to allow time for application processing before the Computer Access Student Phone Entry Registration (CASPER) deadline. Approximately six weeks after receipt of all items listed above, a decision regarding admission will be mailed to the applicant. After being admitted, students must complete a Graduate Student Advising Form (obtainable in the Civil Engineering

Department) and get their study program approved by a Water Resources Engineering faculty adviser. This advising form must be kept current and on file in the department office.

ADVANCEMENT TO CANDIDACY

Each student must file an application for Advancement to Candidacy, indicating a proposed program of graduate study. This procedure should begin as soon as the graduate student has:

- removed any deficiencies in Admission Requirements **and**
- obtained classified graduate status **and**
- completed at least 12 units in the graduate program with a minimum 3.0 grade point average, including at least three courses at the 200 level **and**
- passed the Writing Proficiency Examination (WPE) **and**
- selected a culminating requirement (Plan A, B, or C) and obtained approval of thesis or project topic.

Advancement to Candidacy forms are available in the Office of Graduate Studies. The student fills out the form after planning a degree program in consultation with a Water Resources Engineering Faculty adviser. The completed form is then approved by the Graduate Coordinator of the Department and submitted to the Graduate Center.

DEGREE REQUIREMENTS

The Master of Science degree requires completion of a minimum 30 units of course work and research with a minimum 3.0 grade point average. An outline of degree requirements follows.

Required Courses (18 units)

- ENGR 203 Engineering Statistics (3 units)
- A minimum of **15 units** from the following:
- CE 250 Systems Analysis of Resources Development (3 units)
- CE 251 Water Resources Planning (3 units)
- CE 271 Modern Hydrologic Techniques (3 units)
- CE 272 Hydraulics of Open Channels (3 units)
- CE 274 Hydrologic Modeling (3 units)
- CE 276 Groundwater Hydrology (3 units)

Elective Courses (6-9 units)

- Elective courses are selected with the prior approval of the student's faculty adviser to make up the required units of coursework (excluding the culminating requirement) for the degree, and may include 3 units of CE 299 Special Problems. This course may be used to examine potential thesis or project topics, review pertinent literature and prepare a research proposal.

Culminating Requirement (3-6 units)

Choose one of the following plans with the approval of the faculty advisor:

- Plan A: CE 500 Master's Thesis, 3-6 units (Approval of two faculty readers and a presentation are required)
- Plan B: CE 500 Master's Project, 3-6 units (Approval of two faculty readers and a presentation are required)
- Plan C: CE 500 Master's Degree Individual Study, 3 units and a Comprehensive Examination administered by a departmental committee of three faculty members are required.

FURTHER REFERENCE

All graduate degree programs are subject to general university requirements for graduate degrees, explained in the "Graduate Studies" section of the CSUS Catalog.

For more information on this graduate degree program, contact the Civil Engineering Department • 6000 J Street • Sacramento, CA 95819-6029 • (916) 278-6982 **or** Dr. Saad Merayyan • (916) 278-6983 • merayyan@ecs.csus.edu **or** Dr. Ralph Hwang • (916) 278-6106.

To obtain a CSUS application booklet, contact the CSUS Graduate Center • 6000 J Street • Sacramento, CA 95819-6054 • (916) 278-6470 • Website: <http://www.csus.edu/gradstudies/> .