

AGRICULTURE, SPECIALIZATION IN WATER ENGINEERING (MS)

Offered at: San Luis Obispo Campus

<https://grad.calpoly.edu/program.php?pid=40>

The MS in Agriculture program provides students with advanced knowledge and skills in their areas of interest to succeed in their future endeavors. The MS in Agriculture with a Water Engineering specialization is available to students with backgrounds in civil, environmental, and agricultural engineering. The program of study includes water, water transmission, water treatment, and water management. It produces students who can design infrastructure and manage water resources with an interdisciplinary approach for agriculture, industry, and municipalities. Students may elect to take elective courses to reinforce these areas or examine other areas such as water treatment, urban water planning, groundwater and surface water hydrology, etc. Graduates from this program can be found at engineering consulting and design firms, irrigation districts (engineers and managers), municipal water agencies, state water resources departments, and federal agencies (e.g., U.S. Bureau of Reclamation, National Resources Conservation Service).

Requirements for Admission

Students apply via Cal State Apply (<https://www.calstate.edu/apply/>) and must submit a transcript, a personal statement addressing motivation for pursuing a Master's in Agriculture at Cal Poly, and two letters of recommendation. In addition, applicants who did not obtain their undergraduate degree at Cal Poly are also required to submit scores from the GRE General test. Communicating with the Graduate Program Coordinator before applying is strongly recommended.

International Students must meet all the standard eligibility criteria and demonstrate proficiency in English (English Proficiency Exam Requirements)

Prerequisites: A bachelor's degree in engineering from ABET accredited institution, or undergraduate coursework equivalent and pass the FE exam (contact Graduate Program Coordinator for more details), and a surveying course and fluid dynamics/hydraulics course.

Minimum GPA: Must have attained a minimum grade point average of 2.75 in the last 60 semester units attempted.

Application due date: Applications are accepted for Fall and Spring semesters. Please see Graduate Student Dates and Deadlines (<https://www.calpoly.edu/admissions/graduate-student/dates-and-deadlines/>) for application deadlines.

Advancement to Candidacy

Six units of graduate coursework completed with a cumulative GPA of 3.0 or higher and completions of the CAFES Graduate Committee Form.

Culminating Experience

Thesis: Along with a faculty advisor, students will work on a specific research topic, preparing a written thesis, and present it to the public as a 45-minute thesis seminar, after which the thesis committee will have the opportunity to privately ask related questions as the student defends the thesis.

Program Learning Objectives

1. Demonstrate expertise in engineering water conveyance and control systems.
2. Develop, test or select the appropriate technology for modernizing water delivery systems based on current conditions and future needs.
3. Demonstrate effective communication skills.
4. Formulate decisions utilizing professional ethics within their respective disciplines.
5. Examine the value and role of diversity of people and ideas when developing agricultural system solutions.
6. Investigate problems using critical thinking and derive appropriate solutions for designing water delivery and conveyance systems.

Code	Title	Units
REQUIRED COURSES		
AG 5581 or FSN 5505	Graduate Seminar Orientation to Graduate Studies	1
BRAE 5599	Thesis	6
BRAE 5532	Water Pumps and Wells	3
BRAE 5533	Irrigation Project Design	3
ESCI 5501	Research Planning	3
STAT 5110	Introductory Statistics for Graduate Students	3
STAT 5120	Intermediate Statistics for Graduate Students	3
Approved Electives		
Select from the following:		8
BRAE 4414	Irrigation Engineering	

BRAE 5405	Chemigation
BRAE 5500	Individual Study
CE 4434	Groundwater Hydraulics and Hydrology
CE 4435	Engineering Hydrology and Stormwater Management
CE 4440	Hydraulic Systems Engineering
CE 5533	Sustainable Urban Stormwater Management
CE 5536	Advanced Modeling in Water Resources
ENVE 5535	Physico-Chemical Water and Wastewater Treatment
ENVE 5542	Sustainable Environmental Engineering
IME 5544	Advanced Engineering Economy
MATH 5691	Applied Mathematics for Engineers
MATH 5651	Numerical Analysis

Total Units**30**