

WATER RESOURCES MANAGEMENT ASSOCIATE IN SCIENCE AND CERTIFICATE OF ACHIEVEMENT



This major prepares students to design, implement and evaluate water conservation/water resources management programs and to assist in developing more diversified water resource portfolios in the water and wastewater sector or in the landscape and property management field. Emphasis is on emerging technologies and methods that lead to long-term sustainability of our water and wastewater resources. Attaining a certificate or degree in this major will prepare students to enter careers in water conservation, watershed management, water resources and groundwater, public information, and community education. Careers in landscape and facilities maintenance, irrigation system design, urban water management, and landscape design are also options. Students successfully completing the core requirements for this major will qualify to take the American Water Works Association's Water Use Efficiency Practitioner certification examination, the Landscape Water Management certification offered by the California Landscape Contractor's Association, and the Certified Landscape Water Manager certification offered by the Irrigation Association. In addition to preparing students for entry level jobs in the water and wastewater field, courses in this major prepare students to transfer to a number of four-year college or university degree programs, including Water Resources, Environmental Sciences, and Natural Resources Management.

Program Learning Outcomes

Upon successful completion of this program, students will be able to:

- Describe the essential uses of water, the infrastructure that has been developed to meet demand, and the problems the water industry faces.
- Identify a specified number of legal and financial constraints which complicate efficient and effective water resource management.
- Explain the concept and importance of water portfolio diversification.
- Describe the political/organizational structures and list the major agencies involved in providing water in the greater San Diego region.
- Compare and contrast the sources of wastewater, the major collection/transportation networks, and the major wastewater treatment/reclamation facilities operating in San Diego County.
- Identify the major regulatory agencies that monitor and regulate the water/wastewater industry.
- Explain how the current carbon footprint of the water and wastewater infrastructure significantly impacts California's energy and power demands.
- Compare and contrast a specified number of resource recovery/alternative treatment methods.

Associate in Science Degree Requirements

Code	Title	Units
CWS-101	Fundamentals of Water & Wastewater	3
CWS-103	Water Resources Management	3
CWS-105	Water Conservation	3
CWS-115	Wastewater Reclamation and Reuse	3
OH-120	Fundamentals of Ornamental Horticulture	3
OH-170	Plant Materials: Trees and Shrubs	3
OH-221	Landscape Construction: Irrigation and Carpentry	3
OH-250	Landscape Water Management	2
CWS-290 or OH-290	Cooperative Work Experience Cooperative Work Experience Education	2
Select two of the following:		5-6
CWS-102	Calculations in Water & Wastewater	
CWS-112	Water Treatment Plant Operations	
CWS-114	Wastewater Treatment Plant Operations	
CWS-130	Water Distribution Systems	
CWS-132	Wastewater Collection Systems	
CWS-280	Backflow Tester Training	
CWS-282	Cross-Connection Control Specialist	
CWS-284	Cross-Connection Control Specialist- Recycled Water	
Select two of the following:		4-7
OH-102	Xeriscape: Water Conservation in the Landscape	
OH-140	Soils	
OH-174	Turf and Ground Cover Management	
OH-220	Landscape Construction: Concrete and Masonry	
OH-235	Principles of Landscape Irrigation	
OH-238	Irrigation System Design	
OH-255	Sustainable Urban Landscape Principles and Practices	
Total Units		34-38

Plus General Education Requirements (<https://catalog.gcccd.edu/cuyamaca/degree-requirements-transfer-information/>)

Certificate of Achievement

Students who complete only the major requirements above qualify for a Certificate in Water Resources Management. An official request must be filed with the Admissions and Records Office prior to the deadline as stated in the Academic Calendar.