

WASTEWATER TREATMENT OPERATIONS ASSOCIATE IN SCIENCE AND CERTIFICATE OF ACHIEVEMENT



Students who complete the required courses for this certificate and/or degree program will qualify to take the SWRCB certification examination for the Grade I Wastewater Plant Operator as well as nearly a dozen wastewater related certification examinations offered by CWEA. There are over 80 wastewater treatment and reclamation facilities in San Diego County that are currently licensed and regulated by the SWRCB.

Program Learning Outcomes

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

- Describe wastewater collection system components.
- Identify the characteristics and sources of municipal sewage.
- Define wastewater collection system and wastewater treatment plant terminology.
- Describe the basic principles of conventional wastewater treatment.
- Compare and contrast wastewater treatment unit processes including preliminary, primary, secondary and tertiary treatment.
- Explain the basic principles of preliminary, primary, secondary and tertiary treatment.
- Perform basic mathematical calculations and conversions relating to water flow, pressure, volume, velocity, chemical dosage, and hydraulic and organic loading.
- Recognize and comment on safety procedures applicable to service and operation of wastewater collection and treatment systems, including potential problems.

Associate in Science Degree Requirements

Code	Title	Units
CWS-100	Career Pathways in Water & Wastewater	3
CWS-101	Fundamentals of Water & Wastewater	3
CWS-102	Calculations in Water & Wastewater	3
CWS-106	Electrical & Instrumentation Processes	3
CWS-107	Safety in Water & Wastewater	3
CWS-110	Laboratory Analysis for Water & Wastewater	3
CWS-114	Wastewater Treatment Plant Operations	3
CWS-134	Pumps, Motors & Valves	3
CWS-204	Applied Hydraulics	3
CWS-214	Advanced Wastewater Treatment Plant Operations	3
Select at least six units from the following:		6-7
CWS-103	Water Resources Management	

CWS-112	Water Treatment Plant Operations
CWS-115	Wastewater Reclamation and Reuse
CWS-130	Water Distribution Systems
CWS-132	Wastewater Collection Systems
CWS-206	Advanced Electrical & Instrumentation Processes
CWS-207	Practical Skills in Water & Wastewater Systems
CWS-210	Advanced Laboratory Analysis for Water & Wastewater
CWS-212	Advanced Water Treatment Plant Operations
CWS-232	Advanced Wastewater Collection Systems
CWS-268	Membrane Plant Operation
CWS-270	Public Works Supervision
CWS-280	Backflow Tester Training
CWS-282	Cross-Connection Control Specialist
CWS-284	Cross-Connection Control Specialist-Recycled Water
CWS-290	Cooperative Work Experience

Total Units **36-37**

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 Wastewater Treatment Operations. An official request must be filed with the Admissions and Records Office prior to the deadline as stated in the Academic Calendar.