

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 | |

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| 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.