

WASTEWATER COLLECTION SYSTEMS ASSOCIATE IN SCIENCE AND CERTIFICATE OF ACHIEVEMENT



Students completing the required courses for this major will qualify to take nearly a dozen wastewater related certification examinations offered by the California Water Environment Association (CWEA). Although current State regulations do not require certification of wastewater collection system personnel, many public sector employers either require or prefer job applicants who have obtained the CWEA Wastewater Collection and Maintenance certifications.

Program Learning Outcomes

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

- Define common terminology pertaining to collections system components, design, and management as well as inspection and quality control.
- Identify the types and functions of pipes and fittings used in wastewater collection system design and management.
- Given a wastewater collection map book, identify pipeline dimensions, pipe construction materials, direction of flow, and location of valves, services and lift stations.
- Describe in detail basic underground location and leak detection, trenching and shoring, and backfill and compaction methods of construction used in the field.
- Describe the nine basic cleaning methods and basic principles involved in hydraulic and mechanical cleaning methods.
- List and describe the operation of common valves used in a wastewater collection system.
- Perform basic mathematical computations and conversions relating to wastewater collection systems, pressure, volume, velocity, chemical dosage, and hydraulic and organic loading.

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-132	Wastewater Collection Systems	3
CWS-134	Pumps, Motors & Valves	3
CWS-204	Applied Hydraulics	3
CWS-232	Advanced Wastewater Collection Systems	3
CWS-282	Cross-Connection Control Specialist	3

Select at least six units from the following:

6-7

CWS-103	Water Resources Management
CWS-110	Laboratory Analysis for Water & Wastewater
CWS-112	Water Treatment Plant Operations
CWS-114	Wastewater Treatment Plant Operations
CWS-115	Wastewater Reclamation and Reuse
CWS-130	Water Distribution Systems
CWS-206	Advanced Electrical & Instrumentation Processes
CWS-207	Practical Skills in Water & Wastewater Systems
CWS-210	Advanced Laboratory Analysis for Water & Wastewater
CWS-214	Advanced Wastewater Treatment Plant Operations
CWS-230	Advanced Water Distribution Systems
CWS-270	Public Works Supervision
CWS-280	Backflow Tester Training
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 Collection Systems. An official request must be filed with the Admissions and Records Office prior to the deadline as stated in the Academic Calendar.