

## Wastewater Collection Technology Education

A.A. DEGREE: 60 units

CERTIFICATE OF ACHIEVEMENT: 21 units

### DESCRIPTION

The Wastewater Collection Technology Education program is designed to prepare students to maintain and operate equipment; maintain, restore, monitor, evaluate and adjust collection systems; and maintain lift stations. Students completing the required courses for this degree 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.

### REQUIRED CORE COURSES: (21 UNITS)

WTRM101	Introduction to Water, Wastewater Technology . . .	3
WTRM102	Beginning Water, Wastewater, Distribution Math . .	3
WTRM103	Introduction to Electrical and Instrumentation . . . . .	3
	Processes . . . . .	3
WTRM104	Motors and Pumps, Operation and Maintenance . .	3
WTRM107	Beginning Wastewater Treatment Operations . . . .	3
WTRM113	Beginning Wastewater Collection . . . . .	3
WTRM116	Advanced Wastewater Collections . . . . .	3

### LIST A: SELECT ONE OF THE FOLLOWING (3 UNITS)

WTRM105	Water Distribution 1 . . . . .	3
WTRM106	Beginning Water Treatment Plant Operation . . . . .	3
WTRM109	Advanced Water Treatment Plant Operation . . . . .	3
WTRM110	Advanced Water/Wastewater/Distribution Math . . . .	3
WTRM111	Advanced Wastewater Treatment Plant Operation . .	3
WTRM112	Applied Hydraulics . . . . .	3
WTRM114	Laboratory Analysis for Water, Wastewater . . . . .	3
WTRM115	Supervision . . . . .	3

### LIST B: SELECT TWO OF THE FOLLOWING (4 - 8 UNITS)

WTRM118	Introduction to Occupational Health and Safety . . .	3
WTRM121	Mechanical Maintenance . . . . .	3
WTRM132	Advanced Water Distribution . . . . .	3
WTRM133	Water Conservation . . . . .	3
WTRM134	Industrial Wastewater / Stormwater Management . .	4
WTRM235	Pollution Prevention . . . . .	3
WTRM190	Occupational Work Experience/Water/Wastewater . .	1-4
	Technology . . . . .	

### FOR CERTIFICATE COMPLETE CORE COURSES: 21 UNITS

### FOR ASSOCIATE DEGREE COMPLETE CORE (21 UNITS) , LIST A (3 UNITS) AND LIST B (4-8 UNITS), AND GENERAL EDUCATION REQUIREMENTS: (35 - 39 UNITS)

A student may complete the Gavilan College A.A./A.S. general education, the CSU-GE Breadth or the IGETC pattern, plus sufficient electives to meet a 60 unit total. See a counselor for details.

NOTE: A course may be used to satisfy both general education and major courses. See "Double Counting Rule".

