



5055 Santa Teresa Blvd

Gilroy, CA 95023

Course Outline

COURSE: WTRM 208

DIVISION: 50

ALSO LISTED AS: WTRM 108

TERM EFFECTIVE: Summer 2026

CURRICULUM APPROVAL DATE: 05/13/2025

SHORT TITLE: WATER DISTRIBUTION 2

LONG TITLE: Water Distribution 2

<u>Units</u>	<u>Number of Weeks</u>	<u>Type</u>	<u>Contact Hours/Week</u>	<u>Total Contact Hours</u>
3	18	Lecture:	3	54
		Lab:	0	0
		Other:	0	0
		Total:	3	54

Out of Class Hrs: 108.00

Total Learning Hrs: 162.00

COURSE DESCRIPTION:

Designed as the second part of an integrated sequence of two courses covering water distribution systems. Enables students to gain a more comprehensive understanding of the operation and maintenance of waterworks distribution systems, including advanced calculations, management, safety and emergency response issues. Contemporary issues facing the water and wastewater industry are also explored in depth. This course is part of a series required for eligibility to take the State certification examinations; supports certification examinations for CDPH grade levels D3, D4 and D5. This course was previously listed as WTRM 108. ADVISORY: WTRN 205 Water Distribution 1 and WTRM 202 Beginning Water/Wastewater Mathematics.

CREDIT STATUS: D - Credit - Degree Applicable

GRADING MODES

L - Standard Letter Grade

REPEATABILITY: N - Course may not be repeated

SCHEDULE TYPES:

02 - Lecture and/or discussion

05 - Hybrid

72 - Dist. Ed Internet Delayed

STUDENT LEARNING OUTCOMES:

By the end of this course, a student should:

1. Analyze the operation and maintenance of waterworks distribution systems.
2. Solve advanced mathematical calculations and conversions.
3. Illustrate the safety precautions and procedures related to water distribution.
4. Demonstrate the ability to meet the written test standards for the State of California CDPH Grade Levels D3, D4, and D5 certification exams.

COURSE OBJECTIVES:

By the end of this course, a student should:

1. Mathematically constructing different water math problems applied directly to water distribution principles including, but limited to, area, volume, flow, dosage.
2. Identify and discuss the components of a water distribution system.
3. Define the level and type of disinfection necessary during maintenance and repairs of distribution facilities.
4. Describe the parts and operation of a water well, pumps and motors.
5. Discuss and design traffic controls, trench shoring, and related safety regulations in a construction and operations environment.
6. Describe water quality requirements and regulations as they apply to water distribution.
7. Describe the different forms of backflow prevention and explain the need for backflow prevention.
8. Explain the appropriate administrative applications and record-keeping requirements.

COURSE CONTENT:

Curriculum Approval Date: 05/13/2025

3 Hours

Content: Overview of Course Objectives - Review of Distribution Concepts.

16 Hours

Content: Distribution Advanced Mathematics including area, volume, flow, dosage, solutions, HP, KW power calculations, temperature, pressure gradients, "C" factor, and detention times.

6 Hours

Content: Distribution Components and Appurtenances including valves, hydrants, pipelines, air release valves, tanks, reservoirs and standpipes.

6 Hours

Content: Disinfection

6 Hours

Content: Wells, Pumps, and Motors including types and designs, pump curves and specifications, and repair and maintenance.

3 Hours

Content: Safety - confined space entry, trench safety, MSDS, traffic control, OSHA regulations, and lock out/tagout procedures.

6 Hours

Content: Water Quality including examination of water regulations applicable to a Water Distribution System.

3 Hours

Content: Distribution System Hydraulics including backflow devices, water hammer, cavitation issues, and surge tanks.

3 Hours

Content: Administration including management issues, record-keeping, and reporting requirements.

2 Hours

Final Exam

METHODS OF INSTRUCTION:

Lectures, discussions, Video Presentations (multimedia), Quizzes, Assignments.

OUT OF CLASS ASSIGNMENTS:

Required Outside Hours 54

Assignment Description

Read appropriate textbook chapters and/or module lessons and review study guide and/or discussions and/or assignments. Study for quizzes and exams.

Required Outside Hours 54

Assignment Description

Written Homework - Assignments/Problem-Solving; Math Problems

METHODS OF EVALUATION:

Writing assignments

Evaluation Percent 25

Evaluation Description

Percent range of total grade: 20 % to 40 %

Written Homework

Problem-solving assignments

Evaluation Percent 25

Evaluation Description

Percent range of total grade: 10% to 30%

Math Problems, Quizzes

Objective examinations

Evaluation Percent 50

Evaluation Description

Percent range of total grade: 40% to 60%

Multiple Choice,

Other: Math - Show work

REPRESENTATIVE TEXTBOOKS:

Water Distribution System Operation and Maintenance 7th Edition, or other appropriate college level text., Kenneth D. Kerri, University Enterprises, Inc., 2018 or a comparable textbook/material.

ISBN:

Rationale: This is the industry standard. Yet, if OER textbooks are found, they may be used when available as supplemental.

12th Grade Verified by: Dana Young

ARTICULATION and CERTIFICATE INFORMATION

CSU TRANSFER:

Not Transferable

UC TRANSFER:

Not Transferable

SUPPLEMENTAL DATA:

Basic Skills: N

Classification: Y

Noncredit Category: Y

Cooperative Education:

Program Status: 1 Program Applicable

Special Class Status: N

Prior to College Level: Y

Non Credit Enhanced Funding: N

Funding Agency Code: Y

In-Service: N

Occupational Course: C

Course Control Number: CCC000588728

Sports/Physical Education Course: N

Taxonomy of Program: 095800