



5055 Santa Teresa Blvd  
Gilroy, CA 95023

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## Course Outline

**COURSE:** WTRM 207      **DIVISION:** 50      **ALSO LISTED AS:** WTRM 107

**TERM EFFECTIVE:** Summer 2026

**CURRICULUM APPROVAL DATE** 05/13/2025

**SHORT TITLE:** BEG WASTEWATER TRT OPS

**LONG TITLE:** Beginning Wastewater Treatment Operations

<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

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Out of Class Hrs: 108.00

Total Learning Hrs: 162.00

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### COURSE DESCRIPTION:

This course covers an introduction to the operations and maintenance of a wastewater treatment facility. Topics include industry careers, certifications, advanced wastewater treatment methods, valves and equipment, as well as industry standard math formulas and conversion factors. This course is designed to prepare the student to take the State of California Wastewater Treatment Operator exams (WW1, WW2). This course was previously listed as WTRM 107. **ADVISORY:** Arithmetic proficiency.

**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

71 - Dist. Ed Internet Simultaneous

72 - Dist. Ed Internet Delayed

**STUDENT LEARNING OUTCOMES:**

By the end of this course, a student should:

1. Demonstrate the ability to meet the written test standards for the WW1 and WW2 State of California wastewater treatment operator exams.
2. Describe the various methods, regulations, and procedures related to wastewater treatment standards.

**COURSE OBJECTIVES:**

By the end of this course, a student should:

1. Identify and the use of Acronyms throughout the Wastewater Treatment Industry
2. Describe Career Opportunities in the Wastewater Treatment Industry. State and Voluntary Certifications and their Issuing Organizations.
3. Calculate and identify the industry standard basic math formulas and conversions.
4. Identify pre-treatment, primary treatment, secondary treatment, and tertiary treatment stages.
5. Describe the Secondary Treatment. Fixed Film Processes. Trickling Filters. Rotating Biological Contractors.
6. Identify the disinfection methods used in the wastewater industry.
7. Identify the key biological actions in wastewater treatment.
8. Describe the various sludge digestion processes.
9. Describe the various effluent disposal methods.
10. Identify and describe the various laboratory tests performed for process control and regulatory reporting requirements.

**COURSE CONTENT:**

Curriculum Approval Date 05/13/2025

4 Hours

Content: Instructor and Student Introductions and Networking. Acronyms throughout the Wastewater Treatment Industry. Career Opportunities in the Wastewater Treatment Industry. State and Voluntary Certifications and their Issuing Organizations. Overview of Wastewater Treatment.

6 Hours

Content: Introduction to Wastewater Treatment. Characteristics of Wastewater. Wastewater Collection Systems

6 Hours

Content: Preliminary Treatment. Primary Treatment. Basic water math related to primary treatment.

6 Hours

Content: Biological Concepts. Ponds and Lagoons. Basic water math related to ponds and lagoons.

3 Hours Content: Secondary Treatment. Fixed Film Processes. Trickling Filters. Rotating Biological Contactors. Basic water math related to secondary treatment.

3 Hours

Content: Secondary Treatment. Suspended Film Processes. Activated Sludge. Combined Processes. Trickling Filter Solids Contact. Basic water math related to sludge.

6 Hours

Content: Disinfection of Wastewater. Thickening of Sludge Solids. Basic water math related to disinfection.

6 Hours

Content: Sludge Digestion. Aerobic Digestion. Anaerobic Digestion. Sludge Processing. Biosolids Processing. Biosolids Disposal. Basic water math related to digestion.

6 Hours

Content: Final Effluent Disposal. Secondary Effluent. Tertiary Effluent. Basic water math related to effluent water.

6 Hours

Content: Laboratory Test. Sampling. Maintenance. Safety. Record Keeping.

2 Hours

Final Exam

**METHODS OF INSTRUCTION:**

Lectures and Discussions, Visual Aids, Demonstrations, Facilities Tours (as available)

**OUT OF CLASS ASSIGNMENTS:**

Required Outside Hours 68

Assignment Description

For each topic, students will review examples and complete homework assignments and discussions

Required Outside Hours 40

Assignment Description

Study for quizzes and exams.

**METHODS OF EVALUATION:**

Writing assignments

Evaluation Percent 10

Evaluation Description

Percent range of total grade: 10% to 20% Written Homework or typed

Problem-solving assignments

Evaluation Percent 40

Evaluation Description

Percent range of total grade: 30% to 60 % Homework Problems, Quizzes, Exams, Other: Discussions

Objective examinations

Evaluation Percent 40

Evaluation Description

Percent range of total grade: 30% to 60%

Multiple Choice,

True/False,

Matching Items

Other methods of evaluation

Evaluation Percent 10

Evaluation Description

0% - 20% Class Participation by discussions

**REPRESENTATIVE TEXTBOOKS:**

Kenneth D. Kerri. Operation of Wastewater Treatment Plants, Volume I or other appropriate college level text.. Sacramento, CA: CSU, Sacramento,2019.

Operation of Wastewater Treatment Plants, Volume I, eighth edition or other appropriate college level text., Kenneth D. Kerri, CSU, Sacramento, 2019 or a comparable textbook/material.

Rationale: This text is an important industry standard text and is the most current edition available. This exact textbook is currently being used in the Certificate Water Program courses at CSU, Sacramento.

12th Grade Verified by: MS Word

**OTHER MATERIALS:**

This course may use OER text books when available as supplemental and/or other appropriate college level text may be used.

**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: CCC000588721

Sports/Physical Education Course: N

Taxonomy of Program: 095800