

Umpqua Community College

WQT 228

Wastewater Collection Systems

Course Outline

COURSE DESCRIPTION

Course introduces the basics of wastewater and storm water collection systems. Primary focus will be pipe sizing, general system components, installation, inspection, operation and maintenance techniques. Elementary street construction and inspections are also studied in conjunction with storm drainage. Field trips may be made to existing facilities and work under construction. Course prepares students for Wastewater Collection Systems Operator Level I State examination.

COURSE OUTCOMES

Students who successfully complete this course will:

1. Describe the purpose and function of wastewater collection systems and ancillary devices and equipment
2. Apply the concepts and principals of hydraulic computations as they relate to gravity flow systems.
3. Explain sources and symptoms of collection system defects and failures and potential corrective actions
4. Describe collection system maintenance activities and the safety procedures necessary to properly complete these.

COURSE TEXTBOOK

“Operation and Maintenance of Wastewater Collection Systems, Volume 1,” 8th Edition, Office of Water Programs, Sacramento State, 2018, ISBN 13: 978-1-323-49772-2

SCHEDULE OF ASSIGNMENTS:

Week	Topic and Reading	Assessments
1	Topic: Introduction to Wastewater Collection Systems Text Reading: Chapter 1 Math: Calculating Area, Wetted Perimeter, Flow	Homework Discussion Quiz
2 & 3	Topic: Design Fundamentals, Flow, Velocity, Piping Text Reading: Chapter 2 Math: Continuity and Manning Equations, Round Pipe and Other Flow Conduit Shapes	Homework Discussion Quiz
4 & 5	Topic: Safe Procedures Text Reading: Chapter 3 Math: Work, Horsepower, Electrical Energy	Homework Discussion Quiz
6 & 7	Topic: Inspection and Testing Text Reading: Chapter 4 Math: Review	Midterm Homework Discussion Quiz

8	Topic: Cleaning and Maintenance Text Reading: Chapter 5 Math: Review	Homework Discussion Quiz
9	Topic: Underground Repair Text Reading: Chapter 6 Collection System Tour Assignment Due	Homework Discussion Quiz
10	Topic: Storm Water Drainage	Homework Discussion
11	Final Exam	