CEE 450/550
Water Distribution and Waste Water Collection System Design
Department of Civil & Environmental Engineering
Old Dominion University
Fall 2014

CEE 450/550: Water Distribution and Waste Water Collection System Design.
Lecture 3 hours; 3 credits. Prerequisite: CEE 330, Co-requisite: CEE 340.
Design of Water Distribution Systems, Sanitary Sewer Systems and Appurtenances.

Goals: To provide senior undergraduate students and graduate students in civil and environmental engineering experience in the application of hydraulics and human needs and demands in the design of water distribution systems and wastewater collection systems. Extensive use is made of commercially or otherwise available software packages to facilitate consideration of various options and to enhance computational capabilities. Project management, report writing, and oral presentations are integrated in the design projects.

Text: WATER SUPPLY AND POLLUTION CONTROL, Warren Viessman, Jr., Mark J. Hammer, Elisabeth M. Perez, Paul A. Chadik, 8th edition, Pearson Prentice Hall, 2009. ISBN: 0-13-233717-7.

Handouts may be provided in class from time to time. Other sources will be identified for reference and/or use.

Time/Days: 7:10 p.m. to 9:50 p.m. / Wednesday

Location: Kaufman Hall 125

Instructor: Matthias Wittenberg, Dr.-Ing., P.E., D.WRE, REM
Adjunct Assistant Professor of Civil and Environmental Engineering
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Office Hours: By appointment

Topics:
1. Water distribution systems, demands, demand variables, pipe flow, networks, pumps, appurtenances, materials.
2. Modeling of water distribution systems
3. Design problem considerations for water distribution
4. Wastewater collection systems, pipe flow, inflows, inflow variables, appurtenances, installation, materials
5. Modeling of wastewater collection systems
6. Design problem considerations for wastewater collection

Reading Assignments: Required reading assignments will be made in class from time to time.

Computer Usage: Extensive use of commercial and otherwise available software packages.

Homework: Working independently, unless otherwise stated.
1. Tutorials on WaterCAD software.
2. Problems related to analysis/design of elements of municipal water distribution systems.
3. Tutorials on SewerCAD software.
4. Problems related to analysis/design of elements of municipal sanitary sewer systems.

Projects: Design teams of students complete preliminary designs and project reports for two systems:

1. Design of a municipal water distribution system.
2. Design of a municipal sanitary sewer system.

Critical Dates:

Oct. 8 Exam 1
Oct. 15 Reports and presentations for design of a water distribution system.
Dec. 3 Reports and presentations for design of a sanitary sewer system.
Dec. 10 Exam 2

Grading: Each Design Project:

Written/Technical	100	points
Oral Presentation	50	points
Team Work	50	points
Report	200	points

Total Course Items:

Exam 1	100 points
Exam 2	100 points
Water Design Project	200 points
Sewer Design Project	200 points
Total Points	600*

*Note:
1. Will be normalized to a 100-percent basis.
2. If minor homework, pop quizzes, etc. are given, these points will increase the total points and this increased total will be normalized to a 100-percent basis

Grade Scale:

From 93 to 100 Percent	A
From 90 to 93	A-
From 87 to 90	B+
From 84 to 87	B
From 81 to 84	B-
From 78 to 81	C+
From 75 to 78	C
From 72 to 75	C-*
From 69 to 72	D+*
From 66 to 69	D*
From 63 to 66	D-*
Below 63	F

* Note: These grades are not available for graduate students.

Critical Notes:

1. Class attendance is required.
2. Students are responsible for all materials handed out and verbal information provided.
3. Students are expected to be on time for the beginning of class and to stay until dismissal of the class.
4. Civility and respect for and in regard to others in this class is the acceptable order.
5. The **HONOR CODE** applies to all aspects of this class both within and outside the classroom.