

Fall 2018

CE 413
Collection Systems Design

Instructor: Bruce DeVantier

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Classpage: <http://enr.siu.edu/ce3/ce413.htm>

Office Hours: 11:00-12:30 Monday through Friday

Required Texts:

Water Supply and Pollution Control, Warren Viessman Jr., Mark Hammer, Elizabeth M. Perez, and Paul A. Chadik, Eighth Edition, 2008, Pearson/Prentice-Hall Publishers, ISBN-9780132337175

Additional References:

Comprehensive Sewer Collection Systems Analysis Handbook, John Nicklow, Paul Boulos, and Misgana Muleta, 2004, MWH Soft, Publishers.

Water Supply and Wastewater Removal, Nazih Shammas and Lawrence Wang, Third Edition, John Wiley & Sons, Inc.

Water Resources Engineering, David Chin, 2000, Pearson/Prentice-Hall Publishers.

Course objectives

The objectives of this course are for students to acquire the knowledge and skills to design pipe systems to collect sanitary and storm sewer flows, as well as learn the range of common appurtenances that accompany the collection systems. Design activities will require application of hydrologic, hydraulic, and pump system fundamental concepts. Students will also develop design strategies for detention and retention pond development.

Course Organization:

Homework: Assigned in sets, due as stated on assignment sheet, 40 % of overall grade

Exams: 3 in-term exams-60% total of overall grade, final exam period used for third

TENTATIVE COURSE OUTLINE

Week	Topic	Related Reading
8/20-8/24	Background and History	Ch. 1
8/27-8/31	Hydrology and Fluid Mechanics Basics	Ch. 3.1-3.2
9/5-9/7	Open Channel Flow in Pipes	6.1-6.4
9/10-9/14	Sanitary Sewer Design Process	7.1-7.4
9/17-9/21	Flow Estimation & Appurtenances	Website
9/24-9/28	Infiltration/Inflow---Sewer Design Calculations	7.5-7.6 & 7.8-7.9
10/1-10/5	Sanitary Sewer Design Particulars--- First Exam	7.5-7.6
10/8-10/12	Surface Water Hydrology	Ch 3.1-3.2, 7.11
10/15-10/19	Rational Equation---Unit Hydrographs	7.11
10/22-10/26	Composite Hydrographs	7.11
10/29-11/2	Storm Water Inlets	7.13 & Website
11/5-11/9	Storm Sewer Design Calculations	7.13
11/12-11/16	Design of Culverts--- Second Exam	7.13
11/19-11/23	***** Thanksgiving Break *****	
11/26-11/30	Design of Culverts	7.16-7.19, Website
12/3-12/7	Storm Water Impoundments	“