

# Syllabus

## CE 4153 – Water and Wastewater Lab

### Course Description

This course is a laboratory course with the primary objective of teaching basic techniques for acquiring analytical and experimental data relative to water and wastewater systems. Proper laboratory techniques are emphasized throughout the semester. When applicable, the environmental significance of the topic is discussed as an introduction to the experiment. A secondary objective of the course is to improve the student's written communication skills through laboratory report preparation. Emphasis is placed on concise, accurate reporting of findings of experiments investigating the effect of modifying certain laboratory procedures or experiments regarding variables affecting water or wastewater treatment processes.

### Textbook

No textbook is required for this course. Handouts regarding laboratory procedures and experiments are provided as needed.

### Method of Instruction

Each class period begins with a 30-45 minute lecture regarding the laboratory exercise planned for that day. The lecture includes a discussion of why that exercise is significant to environmental engineering, how the exercise will be conducted, and individual responsibilities for conducting the experiment.

### Outline of Topics Covered

See attached class schedule

### Method of Evaluation

The student's grade will be derived from three parts: (1) Quizzes covering the upcoming laboratory reading assignment and all past classes (30%), (2) grades received on the lab reports submitted throughout the semester (30%), and (3) a written exam covering all of the material that was discussed throughout the semester (40%). The course grade will be derived from the student's overall average in accordance with the ranges shown in Table 1 below.

Table 1 – Grade Determination

<u>Final Average, %</u>	<u>Course Grade</u>
≥ 90	A
80-89	B
70-79	C
60-69	D
< 60	F

**CE 4153**  
**\*Class Schedule**

<u>Date</u>	<u>Assignment</u>
Jan 19, 20, 21 Jan 26, 27, 28	Introduction, Safety Identification of Equipment
Feb 2, 3, 4 Feb 9, 10, 11 Feb 16, 17, 18 Feb 23, 24, 25	pH, Conductivity Balance, Std Solutions, Alkalinity Hardness, Chlorides Spectrophotometers
Mar 2, 3, 4 Mar 9, 10, 11 Mar 16 – 18 Mar 23, 24, 25 Mar 30, 31, Apr 1	Solids, Turbidity Sulfates Spring Break Jar Test Water Softening
Apr 6, 7, 8 Apr 13, 14, 15 Apr 20, 21, 22 Apr 27, 28, 29	Nitrogen Dissolved Oxygen and BOD COD Course Review
May 4, 5, 6	Written Exam

\*Class schedule is for 3 sections on Tuesday, Wednesday, and Thursday of each week.

**Lab Reports**  
**1 page maximum (exclusive of graphs)**  
**Typed**

**Grade Determination**  
Lab Quizzes = 30%  
Lab Reports = 30%  
Written Exam = 40%

**SAFETY GLASSES ARE ABSOLUTELY REQUIRED AT ALL TIMES WHEN IN LAB**