

Syllabus
CE 4153 – Water and Wastewater Lab
Spring, 2012

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.

Instructor Information:

Douglas Rittmann, Ph.D., P.E.

Office: E201

E mails: rittmann@utep.edu or drittmann@elp.rr.com

Web site: www.dougrittmann.com or www.mixeddisinfectants.com click on education training link and find information about class at bottom of page.

Office hours: By appointment.

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 power point lectures (30%), (2) 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 to <90	B
70 to <80	C
60 to <70	D
< 60	F

**CE 4153
Class Schedule**

<u>Date</u>	<u>Assignment</u>
Jan 25	Introduction, Safety & Equipment ID
Feb 1	pH, Conductivity,
Feb 8	Balance
Feb 15	Std. Solutions, Alkalinity
Feb 22	Hardness
Feb 29	Chlorides
Mar 7	Spectrophotometers
Mar 12-17	Spring Break, no class
Mar 21	Solids, Turbidity
Mar 28	Sulfates
Apr 4	Jar Test
Apr 11	Water Softening
Apr 18	Nitrogen
Apr 25	Dissolved Oxygen, BOD& COD
May 2	Written Exam

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