

COURSE SYLLABUS (2 Page)

Course Number: CEGR 3155
Course Name: Environmental Laboratory

Credits and Contact Hours: 2

Instructor: William Saunders

Textbook: *Title:* Environmental Engineering Laboratory Manual (3rd ed.)
Authors: Hilger
Year: 2005

Other Supplemental Materials: Handouts

Catalog Description: Laboratory problems in environmental engineering. Emphasis on analysis and presentation of results as well as on the significance of results as they affect theory and/or practice. Technical report writing and evaluation of different forms of written communication. One and a half hours of lecture and three hours of laboratory per week.
Most Recently Offered (Day): Spring 2016, Fall 2015, Summer 2015
Most Recently Offered (Evening): Course has not been offered in 3 years

Pre-Requisites/Co-Requisites: CHEM 1251, CHEM 1251L, CEGR 3141 (Pre- or Corequisite)

Course is: Required (R)

Goals: The objectives of this course are to (1) provide the students hands-on experience with some of the most common laboratory test procedures related to environmental engineering; (2) acquaint students with the applications and interpretations of the laboratory test procedures in the context of environmental engineering practice; and (3) provide students with opportunities to apply and improve their technical writing skills by providing examples of typical engineering report formats and feedback on report content and presentation.

Student Outcomes Addressed:

In this course, students will develop the following Student Outcomes:

- A. an ability to apply knowledge of mathematics, science, and engineering
- B. an ability to design and conduct experiments, as well as to analyze and interpret data
- C. an ability to design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability
- F. an understanding of professional and ethical responsibility
- G. an ability to communicate effectively

- I. a recognition of the need for, and an ability to engage in life-long learning
- J. a knowledge of contemporary issues
- K. an ability to use the techniques, skills, and modern engineering tools necessary for engineering practice

Course Topics:

Topics include Winkler Method, organic contaminants (DO, BOD, TOC & COD), titration curves & alkalinity, nutrients & metals via spectrophotometer (N, P, Cr, & Cu), field investigation (TS, TDS, TSS, VSS, turbidity & conductivity), microbiology and chlorophyll, water and wastewater treatment, and sediment transport.