

CE 317 – INTRODUCTION TO ENVIRONMENTAL ENGINEERING

Type (check one): Required: X Elective:

2005-2006 Catalog Data: CE 317. Introduction to Environmental Engineering. Introduction of pollution in Environmental Engineering, mass balance, environmental regulations, water/wastewater characteristics, water/wastewater treatment, solid and hazardous waste management, and air pollution and control. Written communication skills are required. Prerequisites: CHEM 115, CHEM 115L. Offered in the Spring semester. *One semester; three credits.*

Prerequisites: CHEM 115 and CHEM 115L

Co-Requisites: None

Textbook: Vesilind, P.A. and Morgan S.M., *Introduction to Environmental Engineering*, 2nd edition, Thomson Brooks/Cole, 2004.

Other Required Materials: None

Other References: None

Instructor: Dr. L. Yu Lin, Professor of Civil and Environmental Engineering

Course Objectives: This course is designed to provide an introduction of the fundamental concepts in water and wastewater characteristics, delivery and collection of water and wastewater, analysis of water and wastewater, and water treatment design.

Prerequisites by Topics: 1. Flow in Closed Conduit
 2. General Chemistry

Topics: 1. Introduction
 2. Water chemistry
 3. Material and energy balance
 4. Hydrology
 5. Water quality management
 6. Water treatment and processing
 7. Air pollution
 8. Solid waste engineering
 9. Hazardous waste management

Class Schedule: Three 50-minute sessions per week

Prepared by: Dr. L. Yu Lin, P.E.

Date: January 2005

**PROFESSIONAL COMPONENT:
CE 317 – ENVIRONMENTAL ENGINEERING ANALYSIS AND DESIGN**

Category (check one)	<input type="checkbox"/> Math/Basic Science <input checked="" type="checkbox"/> Engineering <input type="checkbox"/> General Education <input type="checkbox"/> Other
Design (check one)	<input type="checkbox"/> Significant <input checked="" type="checkbox"/> Some <input type="checkbox"/> None
Realistic Constraints (check all that apply)	<input checked="" type="checkbox"/> Economic <input checked="" type="checkbox"/> Environmental <input type="checkbox"/> Sustainability <input type="checkbox"/> Manufacturability <input type="checkbox"/> Ethical <input checked="" type="checkbox"/> Health & Safety <input checked="" type="checkbox"/> Social <input type="checkbox"/> Political

Relationship to Program Outcomes:

Check all that apply:

- (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
- (d) an ability to function on multi-disciplinary teams
- (e) an ability to identify, formulate, and solve engineering problems
- (f) an understanding of professional and ethical responsibility
- (g) an ability to communicate effectively
- (h) the broad education necessary to understand the impact of engineering solutions in a global and societal context
- (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