



CE 434 – Solid and Hazardous Waste Engineering and Management

Code and Name: CE 434 – Solid and Hazardous Waste Engineering and Management

Credit Hours: 3 (Lecture: 3, Tutorial: 1)

Textbook:

- Integrated Solid Waste Management: Engineering Principles and Management by Tchobanoglous G., Theisen H., Vigil S.A., 1st Ed., McGraw-Hill, 1993

Other References:

- *Course handouts: distributed on a regular basis to provide more information on the topic.*

Course Description:

Investigation of the regulatory and technical issues affecting solid and hazardous waste management, with an emphasis on the principles governing the transport, fate, and remediation of solid and hazardous waste in the subsurface, including advection, dispersion, sorption, inter-phase mass transfer, and transformation reactions.

Pre-requisites: CE 331 Environmental Engineering Processes

Co-requisites: None

Course Learning Outcomes:

With relation to ABET Student Outcomes (From Fall 2019-SOs: 1-7)

1. Describe characteristics of solid waste (1)
2. Record regulatory and technical issues related to solid and hazardous waste management (1)
3. Outline remediation of solid and hazardous waste (2)
4. Estimate and analyze problems related to solid and hazardous waste (1)
5. Evaluate these problems following regulatory standards(2)
6. Justify the designed remedial technology(2)

Topics to be covered:

- Characteristics of solid waste
- Regulatory and technical issues affecting solid and hazardous waste management
- Remediation of solid and hazardous waste in subsurface
- Remediation of solid and hazardous waste in subsurface including dispersion
- Remediation of solid and hazardous waste in subsurface including inter-phase mass transfer
- Remediation of solid and hazardous waste in subsurface including transformation reactions

Grading Policy:

The grading for the course is: 60% coursework and 40% Final Exam. The course work consists of two Midterm Exams, where each midterm exam is worth 20%. It also includes quizzes, and/or projects for the remaining 20% that is modified by the course instructor.

