Department: Civil Engineering  
Number: CE 5322  
Title: Hazardous and Special Wastes Management

Catalog Description:
A study of waste management from cradle to grave: generation, storage, transportation, treatment, disposal, exchanges and minimization. The program emphasizes legislative and technical aspects with focus on treatment and disposal technologies. Analysis and design covers physical, chemical, thermal, or biological processes with general applications to the industrial and energy-producing sectors. Special wastes, such as infectious and radioactive, are addressed as case studies.

Prerequisites: A BS degree in engineering or chemistry, graduate standing in engineering or chemistry, or instructor


Course Objectives:
1. Develop an understanding of the role of engineers in dealing with hazardous materials and the applicable laws
2. Develop an understanding of the basics of environmental law and how it affects engineering decisions
3. Develop an understanding of green/sustainable engineering and its importance to future generations.
4. Develop team skills and knowledge of professional practice principles.
5. Develop competence in the preparation of engineering reports and verbal/presentation skills.
6. Develop an awareness of the environment in which we, as a society, live; and the significance of the local, state, national and global problems that face the engineering community.

Topics covered
1. Environmental ethics, law and policy
2. Sources of law and rules of procedure
3. Law of property
4. Common law remedies for environmental harms
5. Environmental liability
6. Land use regulation
7. Federalism and the environment
8. Principles of administrative law
9. NEPA and ESA
10. Controlling air pollution
11. Clean water act
12. Regulating toxic substances and pesticides
13. Regulating solid and hazardous waste
14. Enforcing environmental laws

Class Schedule
Class: two one hour and twenty minute sessions per week

Contribution of course to meeting the professional component:
Course provides student with the legal background and student design papers deal with actual applications to hazardous waste sites and problems in industry.

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