

CURRICULUM PROPOSAL FORM

DEADLINES:

REGULAR COURSE PROPOSALS: OCTOBER 23, 1998 FOR FALL, 1999 AND FEBRUARY 19, 1999 FOR SPRING, 2000
SHORT-TERM COURSE PROPOSALS: DECEMBER 11, 1998 FOR FALL, 1999 AND MARCH 26, 1998 FOR SPRING 2000

PROPOSAL TITLE: Solid and Hazardous Waste Management for Seniors

SPONSOR/S: Ralph Alan Dusseau

DEPARTMENT: Civil Engineering

C94E. 431

CHECK ALL THAT APPLY:
 UNDERGRADUATE GRADUATE

COLLEGE: Engineering
If LAS: History/Humanities
 Math/Sciences
 Social/Behavioral Sciences

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TYPE OF PROPOSAL (Check ALL that Apply)

<input type="checkbox"/> General Education	<input type="checkbox"/> New Course (NOT Gen. Ed.)
<input type="checkbox"/> New Course in <u> </u> Bank	<input type="checkbox"/> Name Change (Dept., School, Major)
<input type="checkbox"/> Existing course, Add To <u> </u> Bank	<input type="checkbox"/> Changes in Degree Requirements
<input type="checkbox"/> Multicultural/Global Designation	<input type="checkbox"/> Changes Involve Gen. Ed. requirements
<input type="checkbox"/> Writing Intensive Designation	<input checked="" type="checkbox"/> Minor Changes to Existing Courses
<input type="checkbox"/> New Minor/Concentration/Specialization	<input checked="" type="checkbox"/> Course is NOT General Education
<input type="checkbox"/> New Major/Degree Program	<input type="checkbox"/> Course IS General Education
<input type="checkbox"/> Short Term Course Proposal	

DEPARTMENT
(SIGNATURE INDICATES APPROVAL)

[Signature] 10/5/98 [Signature] 10/5/98

DEPT. CURRICULUM CHAIR / DATE DEPT. CHAIRPERSON / DATE

COLLEGE CURRICULUM COMMITTEE
DATE OF OPEN HEARING (if necessary) 2/9/99

APPROVED
 NOT APPROVED

COMMENTS:

[Signature] 2/9/99
SIGNATURE DATE

ACADEMIC DEAN (& GRADUATE DEAN, for New Graduate Programs Only)

APPROVED
 NOT APPROVED

COMMENTS:

[Signature] 10/19/98
SIGNATURE (Academic Dean) DATE

SIGNATURE (Graduate Dean) DATE

UNIVERSITY CURRICULUM COMMITTEE

DATE OF OPEN HEARING (if necessary) 2/19/99 (meeting minutes)

APPROVED

NOT APPROVED

COMMENTS:

Manuel R. Rojas 3/4/99
SIGNATURE DATE

SENATE

Date announced at Senate: 2/24/99

Voted upon at Senate: Approved Not Approved Date: _____

EXECUTIVE VICE PRESIDENT/PROVOST

APPROVED

NOT APPROVED If no, reasons are as follows:

STUDENT CREDIT HOURS _____ FACULTY LOAD HOURS _____ EQUALIZED CREDIT HOURS _____

OFFICIAL COPY & APPROVAL SHEET FILED (DATE): _____

DATE/SIGNATURE EXECUTIVE VICE PRESIDENT/PROVOST C. M. [Signature]

REGISTRAR

DATE APPROVED COURSE DESCRIPTION RECEIVED _____

HEGIS TAXONOMY & COURSE NUMBER ASSIGNED changed - [unclear]

DATE/SIGNATURE OF REGISTRAR Robert A. Kulat 3/2/99

NOTIFICATION FORWARD:

_____ SENATE CURRICULUM COMMITTEE CHAIRPERSON

_____ DEPARTMENT CHAIRPERSONS

_____ ACADEMIC DEAN(S)

_____ REGISTRAR

_____ SPONSOR(S)

Proposal for a Minor Change in an Existing Course:

1. Details:

- a) Course Title: Solid and Hazardous Waste Management for Seniors
- b) Sponsor: Civil Engineering Curriculum Committee
- c) Credit Hours: 3 credit hours
- d) Course Level: Senior (0908.431)
- e) Curricular Effect: Elective course for all civil engineering students in the environmental emphasis
- f) Prerequisites: Organic Chemistry I (1907.200)
- g) Suggested Time/Scale of Implementation: One section every other spring semester
- h) Resources:

Faculty: Existing faculty will teach this course.

Library: Library acquisitions will be required.

Equipment: Laboratory space and appropriate experimental equipment for solid waste management analysis and design will be required.

Computers: Computer laboratory space and appropriate environmental engineering analysis and design software will be required.

2. Rationale:

The minor changes proposed for this existing course is the change in name and status to an elective course for undergraduate civil engineering students who choose the environmental engineering emphasis. As an elective for undergraduate students, the course can be taught at the graduate level as "Solid and Hazardous Waste Management." The purpose of the courses is to give civil engineering undergraduate students a working knowledge of the rapidly growing field of solid and hazardous waste management. This knowledge is essential for civil engineers who work in the area of environmental engineering.

3. Essence of the Course:

a) Objectives:

Upon completion of the course, civil engineering students will be able to do the following:

Apply the environmental regulations for solid and hazardous wastes.

Understand the management practices, treatment and disposal methods of solid and hazardous wastes.

Understand the basic principles of toxicology and risk assessment.

Work in teams to solve design problems.

b) Topical Outline:

The instructor will supply the students with a syllabus during the first week of classes. The instructor will assess any engineering technology advances and make necessary topic changes as deemed appropriate to maintain the standards of the course. The topics to be covered are listed below:

Introduction to Solid and Hazardous Wastes:

Working Definition

Classification and Generation

Historical Roots and Landmark Episodes

The Regulatory Process:

Environmental Laws:

Resource Conservation and Recovery Acts (RCRA)

Comprehensive Environmental Response, Compensation and Liability Act (CERCLA)

Toxics Substance Control Act (TSCA)

Other Federal Regulations:

Solid Wastes:

Collection, Transfer and Transport

Processing Techniques and Equipment

Recovery of Resources, Conversion Products and Energy

Disposal of Solid Wastes:

Site Selection

Landfill Design and Operation

Incineration

Other Disposal Methods

Hazardous Wastes:

Toxicology:

Principles of Toxicology:

Dose Response Relationships

Carcinogens and Non-Carcinogens

Toxic Effects

Ecotoxicology

Risk Assessment:

Hazard Identification

Exposure Assessment

Toxicity Assessment

Risk Characterization

Site Remediation:

Site and Subsurface Characterization

The Remedial Investigation/Feasibility (RI/FS)
Study

Treatment and Disposal Methods

Containment

c) Evaluation and Grading Procedure of Students:

Student grades will be based on team problems, team projects, team lab reports, individual examinations, and individual homework.

d) Course Evaluation:

The proposed course will be evaluated based on student evaluations and curriculum review by engineering faculty.

4. Results of Consultations:

The revised course was part of the Engineering Curriculum Proposal approved by the College Senate in December 1994. Consultations were submitted with the original proposal as specified by the Curriculum Committee. Additional consultations were sought from the Biological Sciences Department and the Department of Chemistry and Physics. A letter of consultation was received from the Biological Science Department.

Catalog Description:

Solid and Hazardous Waste Management for Seniors (0908.431)

Prerequisites: Organic Chemistry I (1907.200)

The course deals with solid and hazardous waste sources, regulations and management; engineering principles, treatment and disposal methods; design of landfills; recycling; toxicology principles; and risk assessment. The course includes appropriate laboratory experiments and computer applications.