**PROPOSAL TITLE:** Earth Retaining Systems for Seniors

**SPONSOR(S):** Ralph Alan Dusseau

**DEPARTMENT & TELEPHONE #:** Civil Engineering, 4628

**CREDIT HOURS:** 3

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**STEP #1 (DEPARTMENT)**

- **APPROVED/DATE:** 9/20/96
- **RECOMMEND TO APPROVE**
- **NOT RECOMMEND**
- **CONDITIONALLY RECOMMEND**
- **DATE & SIGNATURE, DEAN OF SCHOOL:**

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**STEP #2 (RECEIPT)**

- **SCC# (ILLUS. 2-11)**
- **DATE RECEIVED:**

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**STEP #3 (SCHOOL)**

- **REVIEWED DATE:** 9/23/96
- **RECOMMEND TO APPROVE**
- **RECOMMEND NOT TO APPROVE**
- **FORWARD FOR OPEN HEARING**
- **WITHOUT RESERVATIONS**
- **WITH RESERVATIONS**

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**STEP #4 (ACADEMIC DEAN)**

- **RECOMMEND**
- **NOT RECOMMEND**
- **DATE & SIGNATURE, DEAN OF SCHOOL:** 9/23/96

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**STEP #5 (SENATE CURRICULUM COMMITTEE)**

- **DATE OF OPEN HEARING**
- **APPROVED BY SENATE CURRICULUM COMMITTEE (DATE):** 1/29/97
- **RETURNED TO SPONSOR(S) FOR THE FOLLOWING REASONS:**

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**STEP #6 (SENATE)**

- **DATE PRESENTED TO SENATE**
- **APPROVED**
- **NOT APPROVED**

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**SIGNATURE TO EXECUTIVE VICE PRESIDENT/PROVOST (DATE):**

**DATE CURRICULUM COMMITTEE CHAIR SIGNATURE/DATE:** 2/1/97
STEP 87 (EXECUTIVE VICE PRESIDENT/PROVOST)

DATE RECEIVED

APPROVED: YES NO

IF NO, REASONS ARE AS FOLLOWS:

STUDENT CREDIT HOURS 3

FACULTY LOAD HOURS 3

EQUALIZED CREDIT HOURS

OFFICIAL COPY & APPROVAL SHEET FILED (DATE)

SIGNATURE, EXECUTIVE VICE PRESIDENT/PROVOST

REGISTRAR

DATE APPROVED COURSE DESCRIPTION RECEIVED 12/11/47

NEGIS TAXONOMY AND COURSE NUMBER ASSIGNED 12/08/45

DATE/SIGNATURE OF REGISTRAR

NOTIFICATION FORWARD:

- SENATE CURRICULUM COMMITTEE CHAIRPERSON
- DEPARTMENT CHAIRPERSON(S)
- ACADEMIC DEAN(S)
- REGISTRAR
- SPONSOR(S)
Course Proposal:

1. Details:

a) Course Title: Earth Retaining Systems for Seniors
b) Sponsor: Dr. Ralph Alan Dusseau and School of Engineering Curriculum Committee
c) Credit Hours: 3 credit hours
d) Course Level: Senior (0908.453)
e) Curricular Effect: Elective course for civil engineering graduate students
f) Prerequisites: Geotechnical Engineering or equivalent
g) Suggested Time/
Scale of Implementation: One section during fall semesters

h) Resources

Faculty: A new civil engineering faculty member to be hired in the Fall of 1997 will teach this course.

Library: Library acquisitions will be required.

Equipment: Laboratory space and appropriate experimental equipment for advanced testing of soils and soil properties will be required.

Computers: Computer laboratory access will be required. Acquisition, training, and utilization of appropriate geotechnical engineering analysis software will be required.

2. Rationale:

The proposed course is the revised version of a course entitled "Geotechnical Engineering" which was part of the Engineering Curriculum approved by the College Senate in December 1994. The proposed course is consistent with the establishment of the School of Engineering approved by the Board of Trustees in February 1995.

The fundamental theme of the course is earth retaining systems which are methods for permanently keeping soil in a specified configuration. The purpose of the course is to give civil engineering students working knowledge of the analysis and design of earth retaining systems including retaining walls and other retaining systems, and soil embankments and slopes.
3. Essence of the Course

a) Objectives:

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

Apply the principles of soil mechanics and utilize appropriate advanced geotechnical laboratory equipment and geotechnical engineering software to perform the following tasks:

- Analyze lateral earth pressures
- Analyze the stability of soil slopes
- Design soil slopes
- Analyze the stability of soil embankments
- Design soil embankments
- Analysis of soil friction

Apply the principles of soil mechanics and utilize appropriate geotechnical engineering software to analyze and design the following types of retaining systems:

- Gravity retaining walls
- Cantilever retaining walls
- Soil nail systems
- Geotechnical fabric systems

b) Topical Outline:

The topical outline of the course may vary to some extent depending on the interests of the instructor and the students, and on advances in geotechnical engineering technology. The topics to be covered will include the following:

Advanced Soil Mechanics:

- Analysis of Lateral Earth Pressures
- Analysis of Soil Slope Stability
Design of Soil Slopes
Analysis of Soil Embankment Stability
Design of Soil Embankments
Analysis of Soil Friction

Retaining Wall:
Analysis and Design Gravity Retaining Walls
Analysis and Design Cantilever Retaining Walls

Other Earth Retaining Systems:
Analysis and Design Soil Nail Systems
Analysis and Design Geotechnical Fabric Systems

c) Evaluation and Grading Procedure of Students:

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

d) Course Evaluation:

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

4. Results of Consultations:

The proposed course is the revised version of a course entitled "Geotechnical Engineering" which was part of the Engineering Curriculum approved by the College Senate in December 1994. Consultations were submitted with the original proposal as specified by the Curriculum Committee.
Catalog Description:

Earth Retaining Systems for Seniors (0908.453)

(Prerequisites: Geotechnical Engineering or equivalent)

The fundamental theme of the course is earth retaining systems including advanced principles of soil mechanics and analysis and design of earth retaining systems. The advanced principles of soil mechanics covered include lateral soil pressure and slope stability. The analysis and design of earth retaining systems includes slopes, embankments, retaining walls, and other systems. The course includes appropriate laboratory experiments and computer applications.