

ROWAN COLLEGE  
CURRICULUM COMMITTEE

PROPOSAL TITLE: Geotechnical Engineering 0908-351 R

UNDERGRADUATE       GRADUATE      3 CREDIT HOURS

SPONSOR(S): Ralph Alan Dusseau and School of Engineering Curriculum Committee

DEPARTMENT & TELEPHONE# Civil Engineering Program, School of Engineering

CHECK ONE:  COURSE       MINOR PROGRAM       CONCENTRATION       SPECIALIZATION  
 ACHIEVEMENT CERTIFICATE       CERTIFICATION PROGRAM       MAJOR PROGRAM

<p>STEP #1 (DEPARTMENT)</p> <p>APPROVED/DATE: <u>4-24-96</u></p> <p>NOT APPROVED/DATE: _____</p> <p><i>[Signature]</i></p> <p>DEPT. CURRICULUM CHR.</p> <p>REVIEWED/DATE: <u>4-24-96</u></p> <p><i>[Signature]</i></p> <p>DEPT. CHR.</p>	<p>STEP #2 (RECEIPT)</p> <p>SCC# <u>96-97-08</u></p> <p>DATE RECEIVED: _____</p> <p style="text-align: center; font-size: 2em;">1 SENATE</p> <p style="text-align: center;">JUL 9</p> <p style="text-align: center; font-weight: bold; font-size: 1.2em;">RECEIVED</p> <p><i>[Signature]</i></p> <p>SENATE CURRICULUM CHR.</p>	<p>STEP #3 (SCHOOL)</p> <p>REVIEWED DATE: <u>4-18-96</u></p> <p><input checked="" type="checkbox"/> RECOMMEND TO APPROVE</p> <p><input type="checkbox"/> RECOMMEND NOT TO APPROVE</p> <p style="text-align: center;">FORWARD FOR OPEN HEARING</p> <p><input checked="" type="checkbox"/> WITHOUT RESERVATIONS</p> <p><input type="checkbox"/> WITH RESERVATIONS</p> <p>COMMENTS: _____</p> <p><i>[Signature]</i></p> <p>SCHOOL COMMITTEE CHR.</p>
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STEP #4 (ACADEMIC DEAN)      COMMENTS:

RECOMMEND

NOT RECOMMEND

CONDITIONALLY RECOMMEND (SEE COMMENTS)

DATE & SIGNATURE, DEAN OF SCHOOL *[Signature]* 5/14/96

STEP #5 (SENATE CURRICULUM COMMITTEE)

DATE OF OPEN HEARING 10-28-96

APPROVED BY SENATE CURRICULUM COMMITTEE (DATE) 11/28/96

RETURNED TO SPONSOR(S) FOR THE FOLLOWING REASONS:

\_\_\_\_\_

\_\_\_\_\_

STEP #6 (SENATE)

DATE PRESENTED TO SENATE 11-20-96       APPROVED       NOT APPROVED

NOTIFICATION TO EXECUTIVE VICE PRESIDENT/PROVOST (DATE) \_\_\_\_\_

SENATE CURRICULUM COMMITTEE CHAIR SIGNATURE/DATE *[Signature]* 1/25/97

STEP #7 (EXECUTIVE VICE PRESIDENT/PROVOST)

DATE RECEIVED \_\_\_\_\_

APPROVED: \_\_\_ YES \_\_\_ NO

IF NO, REASONS ARE AS FOLLOWS:

STUDENT CREDIT HOURS \_\_\_\_\_

FACULTY LOAD HOURS \_\_\_\_\_

EQUALIZED CREDIT HOURS \_\_\_\_\_

OFFICIAL COPY & APPROVAL SHEET FILED (DATE) 1/31/97

SIGNATURE, EXECUTIVE VICE PRESIDENT/PROVOST C. J. Motterson

REGISTRAR

DATE APPROVED COURSE DESCRIPTION RECEIVED 14/11/97

HEGIS TAXONOMY AND COURSE NUMBER ASSIGNED 6908-351

DATE/SIGNATURE OF REGISTRAR B. J. Kellogg

NOTIFICATION FORWARD:

\_\_\_ SENATE CURRICULUM COMMITTEE CHAIRPERSON

\_\_\_ DEPARTMENT CHAIRPERSON(S)

\_\_\_ ACADEMIC DEAN(S)

\_\_\_ REGISTRAR

\_\_\_ SPONSOR(S)

Course Proposal:

1. Details:

- a) Course Title: Geotechnical Engineering
- b) Sponsor: Dr. Ralph Alan Dusseau and School of Engineering Curriculum Committee
- c) Credit Hours: 3 credit hours
- d) Course Level: Junior (0908.351)
- e) Curricular Effect: Required course for all civil engineering students
- f) Prerequisites: Fluid Mechanics I, Civil Engineering Materials, and Solid Mechanics
- g) Suggested Time/  
Scale of Implementation: One section during spring 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 testing of soils and derivation of soil properties will be required.

Computers: Other than individual computers for data acquisition, no computer laboratory space or resources will be required.

2. Rationale:

The proposed course is the revised version of a civil engineering course entitled "Soil Mechanics and Foundations I" which was part of the Engineering Curriculum Proposal 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 purpose of the course is to give civil engineering students a working knowledge of the principles of geotechnical engineering including soil properties and soil mechanics. This knowledge is essential for the analysis and design of structural foundations and earth retaining structures.

### 3. Essence of the Course:

#### a) Objectives:

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

Apply the theories of soil mechanics and utilize appropriate geotechnical laboratory equipment to analyze the following soil properties:

Grain type

Grain size

Soil gradation

Void ratio

Porosity

Water content

Specific gravity

Soil consistency

Soil classification

Apply the theories of soil mechanics and utilize appropriate geotechnical laboratory equipment to analyze the following soil phenomenon:

Soil permeability

Soil capillarity

Soil seepage

Soil stresses

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:

Soil Properties:

Grain Type

Grain Size

Soil Gradation

Void Ratio

Porosity

Water Content

Degree of Saturation

Specific Gravity

Soil Consistency

Soil Classification

Soil Mechanics:

Permeability

Capillarity

Seepage

Stresses in Soils

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 proposed course is the revised version of a course entitled "Soil Mechanics and Foundations I" that 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.

Catalog Description:

Geotechnical Engineering (0908.351)

(Prerequisites: Fluid Mechanics I, Civil Engineering Materials,  
and Solid Mechanics)

The course deals with the basic principles of geotechnical engineering including soil properties and soil mechanics. The study of soil properties includes soil gradation, void ratio, porosity, water content, degree of saturation, specific gravity, soil consistency, and soil classification. The study of soil mechanics includes permeability, capillarity, seepage, and stresses in soils. The course includes appropriate laboratory experiments.