

ROWAN COLLEGE
CURRICULUM COMMITTEE

(R)

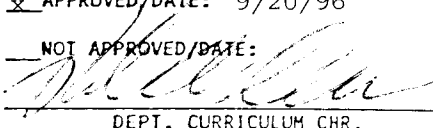
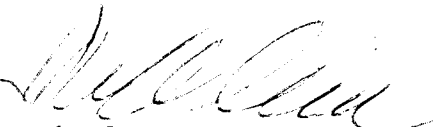
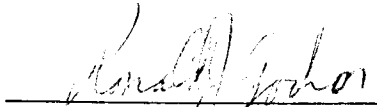
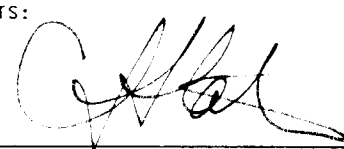
PROPOSAL TITLE: Engineering Estimating for Seniors 1968-404

UNDERGRADUATE GRADUATE 3 CREDIT HOURS

SPONSOR(S): Ralph Alan Dusseau

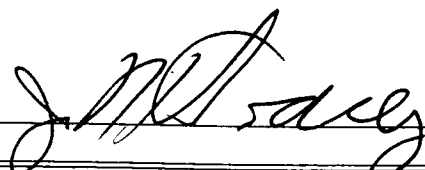
DEPARTMENT & TELEPHONE# Civil Engineering, 4628

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

STEP #1 (DEPARTMENT)	STEP #2 (RECEIPT)	STEP #3 (SCHOOL)
<input checked="" type="checkbox"/> APPROVED/DATE: 9/20/96 <input type="checkbox"/> NOT APPROVED/DATE:  DEPT. CURRICULUM CHR. Ralph Alan Dusseau <input checked="" type="checkbox"/> REVIEWED/DATE: 9/20/96  Ralph Alan Dusseau DEPT. CHR.	SCC# <u>96-92-37</u> DATE RECEIVED:  SENATE CURRICULUM CHR.	REVIEWED DATE:- <u>9/23/96</u> <input checked="" type="checkbox"/> RECOMMEND TO APPROVE <input type="checkbox"/> RECOMMEND NOT TO APPROVE FORWARD FOR OPEN HEARING <input checked="" type="checkbox"/> WITHOUT RESERVATIONS <input type="checkbox"/> WITH RESERVATIONS COMMENTS:  SCHOOL COMMITTEE CHR.

STEP #4 (ACADEMIC DEAN) COMMENTS:

RECOMMEND
 NOT RECOMMEND
 CONDITIONALLY RECOMMEND (SEE COMMENTS)

DATE & SIGNATURE, DEAN OF SCHOOL  9/23/96

STEP #5 (SENATE CURRICULUM COMMITTEE)

DATE OF OPEN HEARING _____

APPROVED BY SENATE CURRICULUM COMMITTEE (DATE) 1/29/97

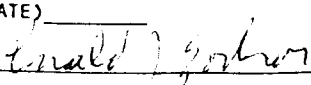
RETURNED TO SPONSOR(S) FOR THE FOLLOWING REASONS:

STEP #6 (SENATE)

DATE PRESENTED TO SENATE _____

APPROVED NOT APPROVED

NOTIFICATION TO EXECUTIVE VICE PRESIDENT/PROVOST (DATE) _____

SENATE CURRICULUM COMMITTEE CHAIR SIGNATURE/DATE  2/7/97

STEP #7 (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 [Signature]

REGISTRAR

DATE APPROVED COURSE DESCRIPTION RECEIVED 14/12/10/97

HEGIS TAXONOMY AND COURSE NUMBER ASSIGNED 0908.404

DATE/SIGNATURE OF REGISTRAR [Signature]

NOTIFICATION FORWARD:

___ SENATE CURRICULUM COMMITTEE CHAIRPERSON

___ DEPARTMENT CHAIRPERSON(S)

___ ACADEMIC DEAN(S)

___ REGISTRAR

___ SPONSOR(S)

Course Proposal:

1. Details:

- a) Course Title: Engineering Estimating for Seniors
- b) Sponsor: Dr. Ralph Alan Dusseau and School of Engineering Curriculum Committee
- c) Credit Hours: 3 credit hours
- d) Course Level: Senior (0908.404)
- e) Curricular Effect: Elective course for civil engineering graduate students
- f) Prerequisites: Microeconomics and senior standing
- g) Suggested Time/
Scale of Implementation: One section during spring semesters
- h) Resources

Faculty: Existing faculty can teach this course.

Library: Library acquisitions will be required.

Equipment: No laboratory equipment will be required.

Computers: Computer laboratory access will be required. Additional software may be required, although existing spreadsheets should be sufficient.

2. Rationale:

The proposed course is an additional civil engineering elective that would supplement 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 the development of engineering estimates, i.e. cost estimates for the construction of a civil engineering project or project component. This is an important skill for all civil engineering students.

3. Essence of the Course:

a) Objectives:

Upon completion of the course, civil engineering students will be able to develop accurate engineering estimates of the cost of civil engineering projects and project components including the following tasks:

Determining labor costs including the following:

Determining the manhours required for a given task

Deriving wage rates for trades and crews

Calculating fringe benefit costs

Assessing required labor contingency

Determining material costs including the following:

Performing quantity takeoffs for materials

Assessing accurate material prices

Assessing required material contingency

Determining equipment costs including the following:

Calculating soil volumes and choosing soil
stabilization methods

Choosing bulldozer and/or front-end loader types and
calculating equipment productivity

Choosing scraper, crane, and excavator types and
calculating equipment productivity

Choosing truck and/or wagon types and calculating
equipment productivity

Deriving total project costs including:

Direct and indirect costs

Field and home-office costs

Cost contingency

Performing civil engineering estimates utilizing
spreadsheets and/or specific estimating software for the
following project components:

Piles, cofferdams, wellpoints, and earthdrilling

Water systems, sanitary sewers, and storm sewers

Road and highway pavements

Reinforced concrete buildings and bridges

Structural steel buildings and bridges

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 construction engineering technology. The topics to be covered will include the following:

Labor Costs:

Manhours

Wage Rates

Fringe Benefits

Labor Contingency

Material Costs:

Quantity Takeoff

Material Pricing

Material Contingency

Equipment Costs:

Soil Volumes and Stabilization

Bulldozers and Front-End Loaders

Scrapers, Cranes, and Excavators

Trucks and Wagons

Total Project Costs:

Direct and Indirect Costs

Field and Home-Office Costs

Cost Contingency

Civil and Environmental Engineering Estimates:

Piles, Cofferdams, Wellpoints, and Earthdrilling

Water Systems, Storm Sewers and Sanitary Sewers

Road and Highway Pavements

Reinforced Concrete Buildings and Bridges

Structural Steel Buildings and Bridges

c) Evaluation and Grading Procedure of Students:

Student grades will be based on individual and team projects, 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 an additional elective that would supplement 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:

Engineering Estimating for Seniors (0908.404)

(Prerequisites: Microeconomics and senior standing)

The course deals with the development of engineering estimates for civil engineering projects and project components including labor, materials, and equipment. Total project costs including direct and indirect costs, field and home-office costs, and contingency are covered. Also covered are the various types of civil engineering estimates including piles and cofferdams, wellpoints and earthdrilling, water and sewer systems, road and highway pavements, concrete buildings and bridges, and steel buildings and bridges. The course includes appropriate computer applications.