

ROWAN COLLEGE  
CURRICULUM COMMITTEE

PROPOSAL TITLE: Transportation Engineering 0908 - 461

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

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| <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>96-47-11</u></p> <p>DATE RECEIVED:</p> <p style="font-size: 2em; text-align: center;">1 SENATE</p> <p style="text-align: center;">JUL 9</p> <p style="font-size: 1.5em; text-align: center;">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>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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| <p>STEP #4 (ACADEMIC DEAN)</p> <p><input checked="" type="checkbox"/> RECOMMEND</p> <p><input type="checkbox"/> NOT RECOMMEND</p> <p><input type="checkbox"/> CONDITIONALLY RECOMMEND<br/>(SEE COMMENTS)</p> <p>DATE &amp; SIGNATURE, DEAN OF SCHOOL</p> | <p>COMMENTS:</p> <p style="font-size: 2em; text-align: center;"><i>[Signature]</i> <u>5/19/96</u></p> |
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| <p>STEP #5 (SENATE CURRICULUM COMMITTEE)</p> <p>DATE OF OPEN HEARING <u>10-28-96</u></p> <p>APPROVED BY SENATE CURRICULUM COMMITTEE (DATE) <u>10/28/96</u></p> <p><input type="checkbox"/> RETURNED TO SPONSOR(S) FOR THE FOLLOWING REASONS:</p> <p>_____</p> <p>_____</p> |  |
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| <p>STEP #6 (SENATE)</p> <p>DATE PRESENTED TO SENATE <u>11-20-96</u></p> <p><input checked="" type="checkbox"/> APPROVED      <input type="checkbox"/> NOT APPROVED</p> <p>NOTIFICATION TO EXECUTIVE VICE PRESIDENT/PROVOST (DATE) _____</p> <p>SENATE CURRICULUM COMMITTEE CHAIR SIGNATURE/DATE <u><i>[Signature]</i> 12/1/97</u></p> |  |
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STEP #7 (EXECUTIVE VICE PRESIDENT/PROVOST)

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

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

IF NO, REASONS ARE AS FOLLOWS:

STUDENT CREDIT HOURS 5

FACULTY LOAD HOURS 5

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

OFFICIAL COPY & APPROVAL SHEET FILED (DATE) 4/31/97

SIGNATURE, EXECUTIVE VICE PRESIDENT/PROVOST C. Motters

REGISTRAR

DATE APPROVED COURSE DESCRIPTION RECEIVED 14 MAR 1997

HEGIS TAXONOMY AND COURSE NUMBER ASSIGNED 0908-461

DATE/SIGNATURE OF REGISTRAR B. Kelly

NOTIFICATION FORWARD:

\_\_\_ SENATE CURRICULUM COMMITTEE CHAIRPERSON

\_\_\_ DEPARTMENT CHAIRPERSON(S)

\_\_\_ ACADEMIC DEAN(S)

\_\_\_ REGISTRAR

\_\_\_ SPONSOR(S)

Course Proposal:

1. Details:

- a) Course Title: Transportation Engineering
- b) Sponsor: Dr. Ralph Alan Dusseau and School of Engineering Curriculum Committee
- c) Credit Hours: 3 credit hours
- d) Course Level: Senior (0908.461)
- e) Curricular Effect: Required course for all civil engineering students
- f) Prerequisites: Microeconomics
- 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 1998 will teach this course.

Library: Library acquisitions will be required.

Equipment: Appropriate field measurement equipment will be required.

Computers: Computer laboratory access will be required. Acquisition, training, and utilization of professional transportation engineering software will also be required.

2. Rationale:

The proposed course is the revised version of a civil engineering course entitled "Transportation Systems" 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 fundamental theme of the course is transportation engineering systems including highway systems and mass transit systems (such as buses, railways, and airlines). The course will

deal with the analysis, design, construction, operation, maintenance, rehabilitation, and efficiency of transportation engineering systems including the impact and interaction of sociological, geographic, economic, and environmental factors.

### 3. Essence of the Course:

#### a) Objectives:

Upon completion of the course, civil engineering students will be able to perform the following tasks related to highway transportation systems using field measurements, computer analyses, and hand calculations:

Traffic flow analysis

Signal design

Intersection analysis and design

Interchange analysis and design

Highway geometry analysis

Highway alignment design

Upon completion of the course, civil engineering students will be also able to perform the following tasks related to mass transit systems using field measurements, computer analyses, and hand calculations:

Analysis of local and regional bus systems

Analysis of local and regional rail transit systems

Analysis of air traffic systems

Upon completion of the course, civil engineering students will also be able to assess the impact of the following factors on the analysis, design, construction, operation, maintenance, rehabilitation, and efficiency of transportation systems:

Sociological factors

Economic factors

Geographic factors

Environmental factors

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

Highway Systems:

Traffic Flow

Signals

Intersections

Interchanges

Highway Geometry

Highway Alignment

Mass Transit Systems:

Local and Regional Bus Systems

Local and Regional Rail Transit Systems

Air Traffic Systems

Factors that Impact Transportation Systems:

Sociological Factors

Economic Factors

Geographic Factors

Environmental Factors

c) Evaluation and Grading Procedure of Students:

Student grades will be based on team problems, 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 the revised version of a course entitled "Transportation Systems" which 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:

Transportation Engineering (0908.461)

(Prerequisites: Microeconomics)

The course deals with the analysis, design, construction, operation, maintenance, rehabilitation, and efficiency of transportation systems including highway systems and mass transit systems. The course includes a study of the impact on transportation systems caused by sociological, geographic, economic, and environmental factors. The course also includes appropriate field measurements and computer applications.