

ROWAN COLLEGE
CURRICULUM COMMITTEE

PROPOSAL TITLE: Surveying and Planning

0908-402

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 style="text-align: center;">STEP #1 (DEPARTMENT)</p> <p>APPROVED/DATE: <u>4-24-96</u></p> <p>NOT APPROVED/DATE: _____</p> <p style="text-align: center;"><i>[Signature]</i></p> <p style="text-align: center;">DEPT. CURRICULUM CHR.</p> <p>REVIEWED/DATE: <u>4-24-96</u></p> <p style="text-align: center;"><i>[Signature]</i></p> <p style="text-align: center;">DEPT. CHR.</p>	<p style="text-align: center;">STEP #2 (RECEIPT)</p> <p>SCC# <u>96-97-10</u></p> <p>DATE RECEIVED: _____</p> <p style="text-align: center; font-size: 2em; font-weight: bold;">SENATE</p> <p style="text-align: center; font-size: 1.5em;">JUL 9</p> <p style="text-align: center; font-size: 1.5em; font-weight: bold;">RECEIVED</p> <p style="text-align: center;"><i>[Signature]</i></p> <p style="text-align: center;">SENATE CURRICULUM CHR.</p>	<p style="text-align: center;">STEP #3 (SCHOOL)</p> <p>REVIEWED DATE: <u>4-19-96</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 style="text-align: center;"><i>[Signature]</i></p> <p style="text-align: center;">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 (SEE COMMENTS)</p> <p>DATE & SIGNATURE, DEAN OF SCHOOL _____</p>	<p>COMMENTS:</p> <p style="text-align: center; font-size: 2em; font-weight: bold;">James P. [Signature] 5/14/96</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>PRESENTED TO SENATE <u>10-30-96</u> <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></u> <u>1/23/97</u></p>

STEP #7 (EXECUTIVE VICE PRESIDENT/PROVOST)

DATE RECEIVED 1 _____

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 [Signature]

REGISTRAR

DATE APPROVED COURSE DESCRIPTION RECEIVED 14 Mar. 97

HEGIS TAXONOMY AND COURSE NUMBER ASSIGNED 0908-402

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: Surveying and Planning
- b) Sponsor: Dr. Ralph Alan Dusseau and School of Engineering Curriculum Committee
- c) Credit Hours: 3 credit hours
- d) Course Level: Senior (0908.402)
- e) Curricular Effect: Required course for all civil engineering students who choose the infrastructure engineering option
- f) Prerequisites: Microeconomics or permission of instructor
- g) Suggested Time/
Scale of Implementation: One section during fall semesters

h) Resources:

Faculty: Existing faculty can teach this course.

Library: Library acquisitions will be required.

Equipment: All necessary laboratory equipment has already been purchased for this course.

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

2. Rationale:

The proposed course is the revised version of a civil engineering course entitled "Engineering Planning" 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 two fundamental themes of the course are surveying and planning which are two important topics for infrastructure engineers. Surveying is the measurement of existing land

topography, while planning is the analysis and design of changes to existing land topography.

The major goal of the course is to give students a working knowledge of both surveying and planning. The topics covered under surveying will include distance measurement, elevation measurement, angle measurement, traverses, topographic surveys, and highway alignment. The topics covered under engineering planning will include introductions to urban and regional planning, geographic information systems, and the impact of sociological, economic, and environmental factors.

3. Essence of the Course:

a) Objectives:

Upon completion of the course, civil engineering students will be able to do the following related to surveying utilizing existing field measurement equipment and using surveying software that will be acquired:

Measure the following:

Distances between fixed points

Horizontal angles

Vertical angles

Elevations above mean sea level

Conduct a traverse around a given plot of land

Utilize computer software to close a traverse

Conduct a topographic survey over a given plot of land

Utilize computer software to perform the following:

Input topographic data for a given plot of land

Plot a topographic representation of the given plot

Layout a roadway profile on an existing piece of land

Utilize computer software to calculate cuts and fills for highway and other projects

Upon completion of the course, civil engineering students will also be able to do the following related to urban and regional planning:

Understand the basic concepts of urban and regional planning

Utilize an existing geographic information system (GIS)
(using appropriate GIS software) for planning purposes

Assess the economic impact of planning decisions

Assess the sociological impact of planning decisions

Assess the environmental impact of planning decisions

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 urban and regional planning and surveying technology. The topics to be covered will include the following:

Surveying:

Distance Measurement Between Fixed Points

Horizontal and Vertical Angle Measurement

Elevation Measurement Relative to Mean Sea Level

Traverses Including Closing the Circuit

Topographic Surveys Including Topographic Mapping

Highway Alignment Surveys Including Cuts and Fills

Urban and Regional Planning:

Applications of Geographic Information Systems

Impact of Economic Factors in Planning

Impact of Sociological Factors in Planning

Impact of Environmental Factors in Planning

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 "Engineering Planning" 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:

Surveying and Planning (0908.402)

(Prerequisites: Microeconomics or permission of instructor)

The course deals with surveying and planning. The topics covered under surveying include distance measurement, angle measurement, elevation measurement, traverses, topographic surveys, and highway alignment. The topics covered under urban and regional planning include applying geographic information systems and assessing the impact of economic, sociological, and environmental factors. The course includes appropriate field measurements and computer applications.