3-20-1986

Curricular Report No. 1985-86-4 from the Graduate council to the Faculty Senate

University of Rhode Island Faculty Senate

Serial Number #85-86--22

THE UNIVERSITY OF RHODE ISLAND
Kingston, Rhode Island

FACULTY SENATE
BILL

Adopted by the Faculty Senate

TO: President Edward D. Eddy

FROM: Chairperson of the Faculty Senate

1. The attached BILL, titled Curricular Report No. 1985-86-4 from the Graduate Council to the Faculty Senate, is forwarded for your consideration.

2. The original and two copies for your use are included.

3. This BILL was adopted by vote of the Faculty Senate on March 20, 1986 (date).

4. After considering this bill, will you please indicate your approval or disapproval. Return the original or forward it to the Board of Governors, completing the appropriate endorsement below.

5. In accordance with Section 10, paragraph 4 of the Senate's By-Laws, this bill will become effective April 10, 1986, three weeks after Senate approval, unless: (1) specific dates for implementation are written into the bill; (2) you return it disapproved; (3) you forward it to the Board of Governors for their approval; or (4) the University Faculty petitions for a referendum. If the bill is forwarded to the Board of Governors, it will not become effective until approved by the Board.

March 21, 1986 (date)

Richard Katula
Richard Katula
Chairperson of the Faculty Senate

ENDORSEMENT

TO: Chairperson of the Faculty Senate

FROM: President of the University

Returned.

a. Approved ✓.

b. Approved subject to final approval by Board of Governors ____.

c. Disapproved ____.

April 10, 1986 (date)

Edward D. Eddy
President

Form revised 10/83

UNIVERSITY OF RHODE ISLAND
The Graduate School

CURRICULAR REPORT FROM THE GRADUATE COUNCIL TO THE FACULTY SENATE - Rpt No. 1985-86-4

At its Meeting No. 248 held February 21, 1986 the Graduate Council considered and approved the following curricular matters which are now submitted to the Faculty Senate for information or confirmation as indicated.

I. Matters of Information.
A. Graduate School of Oceanography
1. Temporary Course

OCG 930X Workshop in Oceanography Topics for Teachers I,II,SS, 0-3 each Especially designed for teachers of physical sciences. Basic topics in oceanography from an advanced or pedagogical perspective. (Lec or Lab) Pre: Certified teacher. Staff

B. College of Arts and Sciences
1. Department of Geology
a. Temporary Course

GEL 930X Workshop in Geology Topics for Teachers I,II,SS, 0-3each Especially designed for teachers of physical sciences. Basic topics of geology from an advanced or pedagogical perspective. (Lec or Lab) Pre: Certified teacher. Staff

2. Department of Botany
a. Temporary Course

BOT 930X Workshop in Botany Topics for Teachers I,II,SS, 0-3 each Especially designed for teachers of biology. Basic topics of botany from an advanced or pedagogical perspective. (Lec or Lab) Pre: Certified teacher. Staff

II. Matters Requiring Confirmation by the Faculty Senate.
A. College of Arts and Sciences
1. Department of Botany
a. Add (New)

BOT 930 Workshop in Botany Topics for Teachers I,II,SS, 0-3 each Especially designed for teachers of biology. Basic topics of botany from an advanced or pedagogical perspective. (Lec or Lab) Pre: Certified teacher. Staff

2. Department of Chemistry
a. Add (New)

CHM 930 Workshop in Chemistry Topics for Teachers I,II,SS, 0-3 each Especially designed for teachers of physical sciences. Basic topics of chemistry from an advanced or pedagogical perspective. (Lec or Lab) Pre: Certified teacher. Staff

3. Department of Geology
a. Add (New)

GEL 930 Workshop in Geology Topics for Teachers I,II,SS, 0-3 each Especially designed for teachers of physical sciences. Basic topics of geology from an advanced or pedagogical perspective. (Lec or Lab) Pre: Certified teacher. Staff

C.A.C. #227--86-3-5

A. Informational Matters

1. College of Business Administration

a. Department of Management

1) ADD: BSL 460X Entrepreneurial Law (1,3) Study of legal issues of concern to the entrepreneur - business organizations; limited partnership syndications; bankruptcy, SEC regulations and patent and trademark protection. Pre: 333. Staff

2) CHANGE: Prerequisite for MGT 410 to "Pre: 301, ACC 202, FIN 301, MGS 309, MKT 301, senior standing in the College of Business Administration or permission of instructor."

b. Department of Marketing

CHANGE: Prerequisite for MKT 442 to "Pre: 301, 341 or permission of instructor."

2. College of Engineering

a. Department of Electrical Engineering

1) CHANGE: Prerequisite for ELE 405 to "Pre: 205 or CSC 311."

2) CHANGE: Prerequisite for ELE 408 to "Pre: 405 or CSC 311."

b. Department of Mechanical Engineering and Applied Mechanics

1) CHANGE: Description and prerequisite for the following courses:

a) MCE 423 Design of Machine Elements (1,3) Design of machinery involving strength of materials, adequacy of design, factor of safety, stress concentration, fatigue, creep, power transmission devices, gears, springs, shafts, fasteners, ball bearing reliability, associated computer methods. (Lec. 3) Pre: 317, 323, 372, CHE 333, and CVE 220. Nash

b) MCE 428 Mechanical Control Systems (1,3) Analysis of mechanical, electromechanical, hydraulic, pneumatic, and thermal control

B. College of Pharmacy
1. Department of Pharmaceutics
a. Add (New)

PHC 633 Advanced Physical Pharmacy Laboratory II,2
Laboratory exercises dealing with the physical-chemical principles used in evaluation of pharmaceutical substances. (Lab 2a) Pre: CHM 435. Paruta

b. Change

PHC 631 Advanced Physical Pharmacy - change in description, prerequisite, credits and deletion of lab to read:

PHC 631 Advanced Physical Pharmacy II,3
Theory and application of physical-chemical principles to problems in pharmaceutical research, with emphasis on methods by which properties of new medicinal agents are determined. (Lec 3) Pre: CHM 435 or permission of department. Paruta

2. Environmental Health Sciences
At the request of the Environmental Health Sciences Steering Committee the Graduate Council voted that there be an immediate suspension of accepting new graduate students into the program for the 1986-87 academic year.

C. College of Engineering
1. Department of Chemical Engineering
a. Add (New)

CHE 531 Polymer Engineering I or II,3
Polymer processing and mechanical properties of plastics, fibers and elastomers. (Lec 3) Pre: CHE 348 or MCE 448 or permission of instructor. Barnett

b. Change

CHE 641 Transport Phenomena II - description changed to:

CHE 641 Transport Phenomena II II,3
Steady, unsteady and multidimensional heat conduction; convection. Mass transport at low and high fluxes; diffusion and chemical reaction; perturbation analysis; boundary layer theory; approximate methods for heat and mass transfer problems. (Lec 3) Pre: CHE 541 or permission of instructor. Bose

2. Department of Civil and Environmental Engineering
(Geotechnical Area)
a. Changes

Specialization listed as "Soil Mechanics" is changed to "Geotechnical Engineering"

CVE 681 Advanced Soil Mechanics - title changed to- Advanced Soil Mechanics I

CVE 682 Advanced Soil Mechanics - title and offering changed to- Advanced Soil Mechanics II; Offered Spring of odd calendar years.

b. Add (New)

CVE 583 Advanced Foundation Engineering I,3
Settlements of shallow foundations, bearing capacity, deep foundations, lateral earth pressure theories, rigid retaining walls, flexible bulkheads, slope stability, special topics. (Lec 3) Pre: CVE 483 or equivalent. Offered Fall of even calendar years. Next offered Fall 1986. Kovacs/Faruque/Silva

CVE 585 Soil Dynamics II,3
Vibration characteristics, wave propagation in soils, foundation vibration theory, foundation design for vibrating loads, vibration isolation, blast vibrations, dynamic soil properties, liquefaction potential, vibratory and dynamic compaction, computer implementation. (Lec 3) Pre: CVE 483 or consent of instructor. Offered every third year. Next offered Spring 1989. Faruque/Kovacs

CVE 684 Soil Structure Interaction I,3
Introduction, energy, finite difference, finite element methods, beams and plates on elastic foundation, analysis of single and group piles, wave equation, joints, interfaces-related topics, computer application, software developments. (Lec 3) Pre: CVE 551. Offered every fourth year. Next offered Fall 1989. Faruque/Karamanlidis

CVE 686 Constitutive Laws for Geological Materials II,3
Review of stress, strain, invariants, constitutive laws, material nonlinearity, testing, test data, first and second order elasticity models, hypo elasticity, quasilinear models theory of plasticity, plasticity models for geological materials. Computer implementation. (Lec 3) Pre: CVE 682. Offered every fourth year. Next offered Spring 1990. Faruque

(Transportation Area)

The Graduate Council voted to restore the specialization in Transportation Engineering to read-

Transportation Engineering: Properties of pavement materials, pavement theory and design, pavement management system, highway location and geometric design. For Master's only: traffic operation and control, transportation cost, transportation supply and demand analysis, and transportation system analysis.

a. Add (New)

CVE 545 Pavement Design I,3
Pavement types. Pavement system components. Stresses in the pavement structure. Design factors and criteria, pavement stabilization, structural design of flexible and rigid pavements for highways and airports, pavement maintenance and overlay design. (Lec 3) Pre: CVE 347 or equivalent. Offered Fall of odd calendar years. Next offered Fall 1987. Lee/Kovacs

CVE 547 Geometric Design of Highways I,3
Evaluation of alternative designs. Criteria and practices of geometric design; at grade intersections, interchanges, channelization, weaving parking facilities, and road appurtenances; safety considerations, lane balancing, ramps and terminals. (Lec 3) Pre: CVE 347 or equivalent. Offered Fall of even calendar years. Next offered Fall 1986. Lee

CVE 548 Pavement Materials and Mix Design II,3
Surficial soils. Material characterization and testing; elastic, viscoelastic and plastic behavior. Fracture, fatigue, and rutting; design of bituminous mixtures. Other pavement materials and additives. Pavement recycling. (Lec 2, Lab 3) Pre: CVE 347 or equivalent. Offered Spring of even calendar years. Next offered Spring 1988. Faruque/Lee

CVE 641 Pavement Evaluation and Rehabilitation II,3
Pavement performance concepts. Criteria for pavement evaluation. Measurement of pavement distress and structural capacity. Analysis and interpretation of pavement evaluation data. Correlation of data with performance ratings. Formulation and evaluation of maintenance and rehabilitation alternatives. (Lec 3) Pre: CVE 545 or equivalent. Offered Spring of odd calendar years. Next offered Spring 1987. Lee

(Structures area)

a. Changes

CVE 551 Advanced Structural Analysis - title and description to read-

CVE 551 Finite Element Analysis in Civil Engineering I I or II,3
Direct stiffness method. Royleish-Ritz and Galerkin methods. Isoparametric elements. Frames, trusses, plane stress and strain. Bending of thin plates. (Lec 3) Pre: CVE 453 or permission of instructor. Staff

CVE 655 Finite Element Analysis in Civil Engineering - title and description to read-

CVE 655 Finite Element Analysis in Civil Engineering II I,3
Isoparametric models for three dimensional continua, hierarchical elements. Reduced integration concepts, penalty method, discrete Kirchhoff method. Eulerian, total and updated Lagrangian formulations. (Lec 3) Pre: CVE 551 or permission of instructor.Offered Fall of even calendar years. Next offered Fall 1986. Staff

CVE 696 Numerical Methods in Structural Engineering - title and description to read-

CVE 696 Computational Methods for Inelastic Stress Analysis II,3
Introduction; basic numerical solution for nonlinear problems; elastoplasticity and viscoplasticity in one dimension; elastoplastic analysis of beams and frames; elastoplasticity and viscoplasticity in two dimensions; finite element expressions and program structure. (Lec 3) Pre: CVE 551 or permission of instructor. Offered every fourth year. Next offered Spring 1987. Karamanlidis/McEwen

b. Add (New)

CVE 556 Variational Methods in Structural Engineering I,3
Introduction; principle of minimum potential energy; principle of minimum complementary energy; generalized variational formulations; principles with relaxed continuity requirements; application to structures, soils, groundwater flow. (Lec 3) Pre: CVE 453 or permission of instructor. Offered every fourth year. Next offered Fall 1986. Karamanlidis/Chang

CVE 657 Structural Stability II,3
Introduction; principal forms of equilibrium paths and their stability; conservative elastic systems; buckling of prismatic members; imperfections; plastic deformations; post-buckling of frames and reticulated structures; numerical methods; catastrophe theory. (Lec 3) Pre: CVE 556 or permission of instructor. Karamanlidis/McEwen

3. Department of Electrical Engineering
a. Changes

ELE 506 Digital Signal Processing - description changed to read-

ELE 506 Digital Signal Processing II,3
Digital representations of signals and noise; sampling and aliasing; design of digital processing systems for signal parameter estimation and signal detection; digital filter structures; discrete Fourier transform and FFT algorithm, periodogram. (Lec 3) Pre: ELE 501 and 509. Staff

b. Add (New)

ELE 546 Computer Based Instrumentation I,3
Design of memory systems, input-output techniques, direct memory access controllers, instrument buses, video displays, multiprocessors-coprocessors, real-time operation, device handler integration into high level language and mass storage. (Lec 2, Lab 3) Pre: ELE 205, ELE 314, ELE 405 concurrently. Ohley/Sun

ELE 625 Guided Waves in Optical and IR Fibers I,3
Guided electromagnetic wave aspects of optical and IR fibers, novel approximation methods for solution of vectorial and scalar wave equations in optical fibers, theory of transparency and nonlinear optical interactions in solids as applied to design of optical fibers. (Lec 3) Pre: ELE 511 and ELE 525. Mitra

4. Department of Mechanical Engineering
a. Add (New)

MCE(CHE) 650 Advanced Topics in Heat Transfer I or II,3
Advanced topics in heat transfer which are of current research interest. Topics may involve all modes of heat transfer and could include phase change and mass transfer. (Lec 3) Pre: MCE 545, 546, or permission of instructor. Staff

MCE 680 Advanced Topics in Solid Mechanics I or II,3
Advanced studies in the mechanics of solids with specific topics determined by current department interests. Designed for students with at least one year of previous graduate studies. (Lec 3) May not be repeated. Pre: Permission of instructor. Staff