5-12-2005

Curricular Report No. 2004-05-8 from the Graduate Council to the Faculty Senate

University of Rhode Island Faculty Senate

UNIVERSITY OF
Rhode Island

Faculty Senate

Serial Number #04-05--31

TO: President Robert L. Carothers

FROM: Chairperson of the Faculty Senate

1. The attached BILL, titled Curricular Report No. 2004-05-8 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 May 12, 2005.
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 June 2, 2005 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.

May 13, 2005
(date)

G. Faye Boudreaux-Bartels
Chairperson of the Faculty Senate

ENDORSEMENT

TO: Chairperson of the Faculty Senate

FROM: President of the University

RECEIVED MAY 17 2005

Returned.

a. Approved ✓.

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

c. Disapproved ___.

5/23/05
(date)

President

Form revised 9/98

UNIVERSITY OF RHODE ISLAND
The Graduate School
CURRICULAR REPORT FROM THE GRADUATE COUNCIL TO
THE FACULTY SENATE: REPORT NO. 2004-2005-8

At meeting No. 403 held April 22, 2005, 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. College of Engineering:
1. Department of Electrical Engineering
a. Changes:

ELE 501 Linear Transform Analysis - change in description and prerequisite to read:
ELE 501 Linear Transform Analysis (3)
Transform analysis (including Fourier, Laplace, and z-transforms) of continuous- and discrete-time systems and signals. Properties of transforms, computational efficiency, and applications such as compact representations of video and sound. (Lec. 3) Pre: vectors, matrices, calculus with real and complex variables.

2. Department of Chemical Engineering
a. Changes:

CHE 501, 502 Graduate Seminar - change in description to read:
CHE 501, 502 Graduate Seminar
Seminars presented by speakers from academia and industry. (Seminar) Required of all graduate students, with a maximum of 1 credit per year allowed. May be repeated for a maximum of 2 credits. S/U credit.

CHE 513 Advanced Chemical Engineering Thermodynamics I - change in description to read:
CHE 513 Advanced Chemical Engineering Thermodynamics I
Applications of the first, second, and third laws of thermodynamics and their relation to chemical engineering processes. Emphasis on properties of fluids, chemical and physical equilibria, phase stability, and polymers. (Lec. 3) Pre: 313, 314 or equivalent, graduate standing, or permission of chairperson. In alternate years.

CHE 530 Polymer Chemistry - change in description to read:
CHE 530 Polymer Chemistry
Molecular weight distribution, polymer synthesis, chain conformation, solution properties and phase behavior, and characterization techniques. (Lec. 3) Pre: CHM 228 and CHE 332 or permission of instructor. In alternate years.

CHE 531 Polymer Engineering - change in description
CHE 531 Polymer Engineering
Glass and crystalline transitions, viscoelasticity, time-temperature superposition, polymer processing, and mechanical properties of plastics, fibers, and elastomers. (Lec. 3) Pre: CHE 348 or MCE 448 or permission of instructor. In alternate years.

CHE 541 Transport Phenomena I - change in description
CHE 541 Transport Phenomena I
Analysis of transport processes including momentum, heat and mass transfer. Development of mathematical models and their solutions. (Lec. 3) Pre: 347, 348 or equivalent, graduate standing, or permission of chairperson. In alternate years.

CHE 548 Separations for Biotechnology - change in description
CHE 548 Separations for Biotechnology
A study of methods of concentration used in biotechnology and pharmaceutical industries for production and isolation of products. (Lec. 3) Pre: 348 or 447. In alternate years.

CHE 614 Advanced Chemical Engineering Thermodynamics II - change in description
CHE 614 Advanced Chemical Engineering Thermodynamics II
Advanced topics in phase stability, phase and chemical equilibrium, and statistical thermodynamics.

CHE 641 Transport Phenomena II - change in description
CHE 641 Transport Phenomena II
Steady, unsteady, and multidimensional heat transfer. Mass transport at low and high fluxes; approximate methods for heat and mass transfer problems. (Lec. 3) Pre: 541 or permission of instructor. In alternate years.

3. Department of Civil and Environmental Engineering:
   a. Temporary Course:

CVE 543X Traffic Flow Theory (3)
A review and critical analysis of the fundamentals of traffic flow theory and its advanced topics including the two-and three-dimensional relationships between characteristics, and the simulation of traffic flow. Pre: STA 409 or CVE 442.

4. Department of Industrial and Manufacturing Engineering
   a. Changes:

IME 513 Statistical Quality Assurance - change in title to read:
IME 513 Quality Engineering

IME 525 Simulation - change in title to read:
IME 525 Systems Simulation

IME 555 Engineering Applications of Mathematical Programming - change in title and description to read:
IME 555 Deterministic Systems Optimization (3)
Linear, non-linear and integer formulations and solutions. Sensitivity analysis and pricing problems; degeneracy and duality; decomposition methods for large-scale systems; topics in applied convex, integer, nonlinear, and quadratic programming methods. Use of mathematical programming languages. Alternate years. Math 362 or equivalent or Permission of Instructor.

IME 660 Methods of Optimization - change in title to read:
IME 660 Non-Linear Optimization

5. Department of Mechanical Engineering
   a. Changes:

MCE 501, 502 Graduate Seminar - change in description to read:
MCE 501, 502 Graduate Seminar (1 each)
Seminars and discussions presented by members of academia and industry. Attendance required of all students in graduate residence.

MCE 550 Theory of Continuous Media - change in description and prerequisite to read:
MCE 550 Theory of Continuous Media (3)
Foundations for advanced studies in mechanical and thermal behavior of solids and fluids. Cartesian and general tensors, small and large deformation theory, Cauchy and Piola-Kirchhoff stress, conservation principles, constitutive laws with applications to materials of engineering interest. Pre: CVE 220, MCE 354, 372 or equivalent.

MCE 561 Computational Methods in Solid Mechanics - change in description and prerequisite to read:
MCE 561 Computational Methods in Solid Mechanics (3)
Finite and boundary element methods based on variational and weighted residual concepts; implementation to statis and dynamic field problems in elasticity, plasticity, and heat conduction. Pre: 466 and 571 or permission of instructor.

MCE 563 Advanced Dynamics - change in description and prerequisite to read:
MCE 563 Advanced Dynamics (3)
Newtonian mechanics, motion in rotating coordinate systems, Lagrangian Mechanics, Hamilton's principle. Variational methods, nonconservative and nonholonomic systems; matrix-tensor specifications of rigid body motions, normal coordinates. Hamilton's equation of motion, canonical transformation, Hamilton-Jacobi theory. Pre: 366 and 372 or equivalent.

MCE 564 Advanced Vibrations - change in description and prerequisite to read:

MCE 564 Advanced Vibrations (3)
Theory of vibration of lumped-parameter multi-degree-of-freedom systems; distributed-parameter systems: exact and approximate solutions; nonlinear and random vibrations. Experimental methods and design procedures. (Lec 3) Pre: 366 or 464 or equivalent.

MCE 565 Wave Motion and Vibration of Continuous Media - change in description and prerequisite to read:

MCE 565 Wave Motion and Vibration of Continuous Media (3)
Wave motion and vibrations of strings, rods, beams, plates, and membranes; dynamic elasticity theory; Rayleight surface waves; solutions using separation of variables and integral transforms. (Lec. 3) Pre: CVE 220, MCE 372, 464, or equivalent.

MCE 571 Theory of Elasticity I - change in description and prerequisite to read:

MCE 571 Theory of Elasticity I (3)
Development of basic field equations; general concepts of stress and strain; generalized Hooke's law; plane problems; stress functions; Saint Venant torsion and flexure; introduction to three-dimensional problems. (Lec. 3) Pre: CVE 220, MCE 372 or equivalent.

MCE 576 Fracture Mechanics - change in description and prerequisite to read:

MCE 576 Fracture Mechanics (3)
Fundamentals of linear and nonlinear materials behavior, linear elastic fracture mechanics, stress analysis and energy viewpoints, two- and three-dimensional problems, elastic-plastic considerations, dynamic and time-dependent fracture, fatigue crack growth, micro-mechanics of fracture processes, experimental techniques, application to design. Lec. (3) Pre: 426 or 571 or permission of instructor.

MCE 666 Nonlinear Mechanics - change in description and prerequisite to read:

MCE 666 Nonlinear Mechanics (3)
Dynamics of nonlinear systems, free and forced oscillations; qualitative geometric analysis, perturbation methods, approximate methods, bifurcations, invariant manifolds, chaos, application to mechanics, physics and biology. (Lec. 3) Pre: 464, 564 or equivalent.

MCE 671 Theory of Elasticity II - change in description and prerequisite to read:

MCE 671 Theory of Elasticity II (3)
Continuation of 571; advanced topics selected from: complex variable methods; anisotropic solutions; thermoelasticity; displacement potentials and

stress functions for three-dimensional problems; micromechanics modeling; variational, approximate, and numerical methods. (Lec. 3) Pre: 571 or equivalent.

MCE 678 Micromechanics - change in description and prerequisite to read:
MCE 678 Micromechanics (3)
Mechanics of material behavior from the micro structural viewpoint; physical mechanisms of Deformation and Fracture; continuum Mechanics and thermodynamics; rheological classification of solids; thermodynamics and viscoelasticity; plasticity and viscoplasticity; damage mechanisms; applications to metals, ceramics and composites. (Lec. 3) Pre: 571, CHE 333 or equivalent.

MCE 679 Theory of Plasticity - change in description to read:
MCE 679 Theory of Plasticity (3)
Uniaxial behavior of plasticity; perfect plasticity, plastic potential; work-hardening materials, loading surface and loading rules, flow rules; stress-strain relationships; non-linear kinematic hardening models; foundation of state-variable approaches, viscoplasticity; applications to engineering materials. (Lec. 3) Pre: 571 or permission of instructor.

MCE 691, 692 Special Problems - change in description to read:
MCE 691, 692 Special Problems (1-3 each)
Advanced work under the supervision of a faculty member arranged to suit individual student requirements. (Independent Study) Pre: permission of instructor. May be repeated to a maximum of 6 credits.

B. College of Pharmacy
   1. Request approved to allow students to simultaneously enroll in the Pharm.D. and M.S. programs.

C. College of Arts and Sciences
   1. Graduate School of Library and Information Studies
      a. Changes:

LSC 528 Media in the Library - change in title and description to read:
LSC 528 Instructional Technology in Library & Information Services
Provides an introduction to instructional design, development, and motivation theories and their application in producing instructional materials, including emerging technology in library and information environments.

LSC 529 Theory and Productions of Library Media Communications - change in title and description to read:
LSC 529 Information Design
Provides an introduction to the analysis, planning, presentation, and evaluation of effective communication through the use of tools and theories of communication, and message, instructional, and information design.

LSC 548 Internet for Librarians - change in title and description to read:
LSC 548 Information Architecture
Introduces principles of information architecture, library science and information science to plan, design, develop, and evaluate cohesive web sites and intranets that are attractive, navigable, manageable, and expandable.

II. Matters Requiring Confirmation by Faculty Senate

A. College of Engineering
1. Department of Civil and Environmental Engineering:
a. Changes:

CVE 681 Advanced Geotechnical Engineering I - change in title, number and description to read:
CVE 580 Consolidation, Seepage, and Clay Mineralogy
Consolidation of soils, permeability; steady state and transient seepage; stress distributions; clay mineralogy. (Spring, 3 credits, Lecture) Pre: CVE 381 or equivalent.

CVE 682 Advanced Geotechnical Engineering II - change in title, number and description to read:
CVE 579 Soil Behavior
Shear strength of soils, including stress-strain and volume change behavior, stress paths, and drained and undrained behavior. Stability of slopes, including limit equilibrium approaches, analytical and number solutions. (Fall, 3 credits, Lecture) Pre: CVE 381 or equivalent.

2. Department of Mechanical Engineering:
a. Delete course:

MCE 506 Expert Systems for Mechanical Design and Manufacturing (3)
Expert systems structure; knowledge bases, inference engines, and artificial intelligence languages. Applications to mechanical design and manufacturing problems. Graph theory and expert systems for mechanism design; features for design and manufacturing. (Lec. 3) Pre: 401 or equivalent.

3. Department of Industrial and Manufacturing Engineering
a. New Course:

IME 552 Lean Manufacturing Systems (3)
Advanced study of manufacturing system design. Specific topics include lean manufacturing, waste elimination, reduction of cycle and set up times, reconfigurable systems, quality and performance analysis. (Lecture 3) Pre: 451 and 452 or permission of instructor.

B. College of Arts and Sciences

1. Department of Modern Languages:

a. New Course:

SPA 513 Bilingualism in Spanish-speaking Communities
Study of bilingualism from perspective of psycholinguistics. Study of different bilingual educational models and programs in the Spanish-speaking world and in the U.S.

2. Department of Psychology:

a. New Course:

PSY 626 Psychology of Sex and Gender
Examines theory and research relevant to sex and gender from social psychological, multicultural and interdisciplinary perspectives. Focuses on topics relevant to men, women, transgendered people, transsexuals and intersexuals. In alternate years.

3. Department of Women's Studies:

a. New Course:

WMS 500 Colloquium in WMS.
Discussion of research methods in WMS; presentations on current research and issues relevant to women's and gender studies.

C. College of Nursing

1. Deletion of emphasis areas:

Program Requirements:
Delete two areas of emphasis under specialization in advanced critical practice (critical care and parent-child nursing)

2. Deletion of courses:

NUR 521 Theoretical Study of Major Problems in Nursing Practice (3)
Major theories and concepts for developing strategies in nursing practice. Emphasis on developing nursing strategies through theoretical analysis of problems viewed in the context of organizational and societal systems.

NUR 522 Practicum in the Study of Major Problems in Nursing Practice (3)
Field study of major nursing problems with emphasis on examination, evaluation, and revision of nursing strategies for problems in the context of organizational and societal systems.

NUR 562 Advanced Clinical Study of Nursing Practice in Critical Care (6)
Study and application of the theories of practice and of biopsychosocial interaction in advanced critical care nursing. Analysis of patient problems and nursing

strategies relevant to critical care patients.

NUR 569 Theoretical Study of Advanced Nursing (3)
Theoretical foundations of advanced nursing practice. Emphasis is on the reciprocal nature of the relationship between theories, client problems, and nursing strategies in the areas of advanced practice.

3. New Course:

NUR 550 Theoretical Study of the Clinical Nurse Leader Role (3)
In-depth study of concepts of leadership central to hospital based, unit level practice of the CNL: advanced organizational communication, horizontal leadership, lateral integration of care, role analysis and implementation. (Fall. Seminar.) Pre: NUR 505, 507, 510 or permission of instructor.