5-10-1990

Curricular Report No. 1989-90-9 from the Graduate Council to the Faculty Senate

University of Rhode Island Faculty Senate

Serial Number #89-90--28

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. 1989-90-9 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 10, 1990 (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 May 31, 1990, 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 11, 1990
(date)

C. B. Peters
Chairperson of the Faculty Senate

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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 _____.

May 22, 1990
(date)

Edward D. Eddy
President

Form revised 4/86

University of Rhode Island
The Graduate School

CURRICULAR REPORT FROM THE GRADUATE COUNCIL TO THE FACULTY SENATE
REPORT NO. 1989-90-9
As corrected editorially

At its Meeting No. 282 held on April 13, 1990, 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 Human Science and Services

1. Department of Human Development, Counseling and Family Studies

a. Temporary Course

HCF 569X Assessment in Family Therapy I,3
Administration and interpretation of assessment instruments for treatment planning and evaluation. Ethical, legal, and theoretical issues related to family systems assessment are discussed. (Sem) Pre: Graduate MFT student or permission of instructor. Adams

B. College of Pharmacy

1. Department of Pharmaceutics

a. Temporary Course

PHC 670X Advanced Pharmacokinetics I,2
Application of classical compartmental and non-compartmental analyses to drug absorption and disposition in linear and non-linear systems. (Lec 2) Pre: PHC 535 or permission of instructor. Rosenbaum

II. Matters Requiring Confirmation by the Faculty Senate.

A. Graduate School of Oceanography

1. Change

OCG 610,611 Fluid Dynamics to read as follows:

OCG 610 Geophysical Fluid Dynamics I I,3
Natural world fluid dynamics emphasizing ocean circulation. Classical fluid dynamics; GFD fundamentals (rotation and stratification); Taylor-Proudman theorem; potential vorticity; planetary waves; geostrophic contours; shallow water quasi-geostrophic theory; frictional layers. (Lec 3) Pre: MCE 551 or equivalent and permission of instructor. Rothstein

OCG 611 Geophysical Fluid Dynamics II II,3
Continuously stratified quasi-geostrophic theory; classical and modern theories of the wind driven ocean circulation; stability theory; oceanic convection; wave-mean flow interactions; ageostrophic dynamics; topographical effects. (Lec 3) Pre: OCG 610. Rothstein

B. College of Resource Development
1. Department of Fisheries, Animal and Veterinary Science
a. Add (New)

ASP 581 Current Topics in Molluscan Aquaculture I,3
Review and critical analysis of recent literature within the field of molluscan biology with emphasis on application to mariculture techniques. Student presentation of selected topics and field trips to state-of-the-art mariculture facilities. (Lec 3) Pre: graduate standing or senior standing with permission of instructor. Rice

C. College of Arts and Sciences
1. Library and Information Studies
a. Add (New)

LSC 535 Public Library Services to Children and Young Adults II,3
Public library services to children and young adults, with emphasis on the development of programs to meet library goals and objectives. (Lec 3) Pre: LSC 502 or permission of instructor. Eaton

2. Clinical Laboratory Science
a. Changes in program requirements for M.S. in Clinical Laboratory Science to read:

Program requirements: 36 credits including BCP 551, EDC 505 or 582, EST 407 or 408 or MGS 530, MTC 510, 512, 513, and 6-9 credits in the area of specialization (MTC 502, 543 for clinical chemistry; ASP 534, MTC 501, 541 for clinical microbiology; MTC 520, 521, 530 for hematology and immunohematology). The remainder of courses are selected from other clinical laboratory science specialties, education, or management. Comprehensive written examination. Major research paper. The following courses are recommended for a minor specialization in health care management: PHP 651, 652, 680. These courses are recommended for a minor specialization in adult education: EDC 505, 529, 582, 583, 584.

b. Change in title for MTC 530 to read:
MTC 530 Advanced Immunohematology

c. Deletions
MTC 503 Advanced Hemostasis and Coagulation
MTC(MIC) 515 Infectious Diseases
MTC 531 Advanced Immunohematology II
MTC 532 Clinical Endrocrinology

ZOO 668(543) Biology of Reproduction in Animals II,3
Evolution of sexual reproduction, neuroendocrine signals, and behavioral controlling mechanisms in diverse phyla. (Lec 3) Pre: ZOO 545, 561 or 567. Twombly, Specker, Cobb

b. Add (New)

ZOO 930 Workshop in Zoology Topics for Teachers I,II, SS, 0-3
Especially designed for secondary school science teachers. Basic topics in zoology from an advanced or pedagogical perspective. (Lec or Lab) Pre: Certified teacher. Staff

4. Department of Marine Affairs
a. Add (New)

MAF 589 Master's Project Research I or II,3
Preparation of a major research paper for MMA students under the guidance of a member of the graduate faculty. Pre: Graduate standing in the MMA program. Staff (to be sectioned).

b. Change in program requirements for the MMA degree

Delete MAF 571; Add MAF 589

5. Department of Physics
a. Deletions

PHY 585 Acoustic Measurements
PHY 661 Nuclear Physics

b. Changes to read as follows:

PHY 510 Mathematical Methods of Physics I I,3
Topics designed to include applications in Physics. Vector and tensor analysis; linear algebra; coordinate systems. Determinants, matrices; introductory group theory. Infinite series, complex analysis, analytic properties, conformal mapping, calculus of residues. Fourier analysis and Laplace transforms. (Lec 3) Pre: Permission of department. Staff

PHY 520 Classical Dynamics I,3
Newton's laws. Conservation theorems and symmetry properties. Lagrangian mechanics. Central force motion. Dynamics of rigid bodies. Hamiltonian mechanics. Canonical transformations. Action-angle coordinates. Hamilton-Jacobi theory. Deterministic chaos. Relativistic mechanics. (Lec 3) Pre: PHY 510. Concurrent registration permitted. Staff

PHY 525 Statistical Physics I I,3
Equilibrium thermodynamics (laws of thermodynamics, thermodynamic potentials). Phase transitions (phase coexistence, Clausius-Clapeyron equation, metastable states, critical point). Kinetic theory. Equilibrium statistical mechanics (microcanonical, canonical, grandcanonical ensembles, bosons, fermions). Critical phenomena. (Lec 3) Pre: PHY 420 or equivalent, PHY 510. Staff

PHY 530 Electromagnetism I II,3
Electrostatics, including boundary value problem. Multipoles, electrostatics of macroscopic media, dielectrics. Magnetostatics. Time-varying fields, Maxwell equations, conservation laws. Plane electro-magnetic waves, wave propagation. Wave guides, resonant cavities. Magnetic materials. (Lec 3) Pre: PHY 510, PHY 520. Concurrent registration permitted. Staff

PHY 560 Experimental Methods in Condensed Matter Science I or II,3
Fundamental experiments on topics related to departmental research. Experimental methodology. (Lec 3) Pre: PHY 484 or equivalent. Staff

PHY 570 Quantum Mechanics I II,3
Dirac notation. Matrix representations, observables, uncertainty relations. Time evolution; Schroedinger and Heisenberg pictures. Schroedinger equation applications. Propagators and Feynman path integrals. Aharonov-Bohm effect. Angular momentum; Wigner-Eckart theorem. Pre: PHY 510, PHY 520. Concurrent registration permitted. Staff

PHY 580 (650) Condensed Matter Physics I I,3
Introductory theories. Crystal lattices (classification, reciprocal lattice, diffraction). Electron energy levels (periodic structures, tight-binding, APW, OPW approximations, pseudopotentials; Fermi surfaces). Phonons (harmonic and anharmonic effects). Dispersion. Electron-phonon interaction. (Lec 3) Pre: PHY 530, PHY 610. Concurrent registration permitted. Staff

PHY 590 Faculty Project I or II, 1-6
A special project directly related to the research program of an individual faculty member (Lec or Lab according to nature of project). Credits not to exceed 6. Pre: Permission of department. Staff

PHY 591 Special Problems I or II, 1-6
Advanced study under the supervision of a faculty member, arranged to suit the individual needs of the student. (Lec or Lab according to nature of problem). Credits not to exceed 6. Pre: Permission of department. Staff

PHY 610(511) Mathematical Methods of Physics II II,3
Topics designed to include applications in Physics. Ordinary and partial differential equations: Sturm-Liouville theory. Numerical methods and computational techniques. Probability and statistics. Integral transforms. Integral equations; Green's functions. Special functions of mathematical physics. (Lec 3) Pre: PHY 510. Staff

PHY 625(620) Statistical Physics II II,3
Equilibrium critical phenomena (critical exponents, scaling relations, multi-critical phenomena). Exact solutions. Renormalization group theory and other approximate methods. Critical behavior of magnets, fluids and surfaces. (Lec 3) Pre: PHY 525, 670. Staff

PHY 630(531) Electromagnetism II I,3
Radiating systems, scattering and diffraction. Special theory of relativity. Dynamics of relativistic particles and electromagnetic fields. Collisions between charged particles, energy loss and scattering. Radiation by moving charges. Multipole fields. (Lec 3) Pre: PHY 530. Staff

PHY 660 Nuclear and Particle Physics II,3
Weak, strong and electromagnetic interactions. Nucleon-nucleon potential, shell model, optical model. Isospin, unitary symmetry, quark model of hadrons. Scattering and reaction theory of few-body systems. Deuteron. Relativistic nuclear and particle phenomena. (Lec 3) Pre: PHY 570, 671. Staff

PHY 670(571) Quantum Mechanics II I,3
Symmetry (parity, translation, time-reversal). Time-independent (dependent) perturbation theory, variational methods. Identical particles. Scattering theory (Lippman-Schwinger equation, Born series, partial waves, resonances, optical theorem, inelastic scattering). Applications. Relativistic quantum mechanics. (Lec 3) Pre: PHY 570, 610, 530. Concurrent registration permitted. Staff

PHY 680(651) Condensed Matter Physics II II,3
Interacting systems. Green's functions. Second quantization. Landau theory of quasi-particles. Schredinger and Heisenberg pictures. Many-body Green's functions. Perturbation series, diagrammatic analysis. Dielectric response. Thermal properties. Phonons in metals. (Lec 3) Pre: PHY 580. Staff

c. Changes in <u>Specializations</u> to read as follows: Acoustics and optics: underwater acoustics; acoustic imaging; ultrasonics; acousto-optical transducers; fiber optics. Astronomy: astrometry; differential photometry. Condensed matter theory: low-dimensional physics; statistical mechanics; magnetism; surface magnetism; Fermi liquid, spin-polarized helium and hydrogen, nonlocal hydrodynamics; chemisorption; superconductivity; alloys; hydrogen in metals; defects in solids. Interdisciplinary physics: computational physics; magnetochemistry, dissipative chaos applied to marine and climate phenomena. Liquid state: liquid crystals; liquid helium; ferro fluids; turbulence; superfluids. Low-temperature physics: ionic mobilities; finite droplet effects; magnetic susceptibility; specific heats; magnetic cooling; quantumsolids, liquids and gases. Physics of inert gas clusters. Neutron physics:

ultra-cold neutrons; neutron optics. Neutron scattering: small-angle scattering; solution scattering; magnetic surfaces and fine particles; crystal structure; amorphous magnets; inelastic scattering; phonons and spin waves; superconductivity. Nuclear theory: direct and inverse scattering theory; few-nucleon systems. Surface physics: electronic and structural properties of surfaces including phase transitions using LEED, AUGER, X-rays, and BNL Synchrotron Facility.

d. Change in the program requirements for the Master of Science in Physics

Add: PHY 525 to the list of required courses.

e. Change in the program requirements for the Ph.D. in Physics

to read-PHY 510, 520, 525, 530, 570, 580, 610, 625, 630, 670, and 680. (rest remains unchanged)

D. College of Nursing

1. Change in required number of program credits for the Master of Science in Nursing as follows:

Increase in the required number of program credits from 36 to 40 for all concentrations except Primary Health Care, where the request is for an increase from 40 to 41.

2. Changes description and credits to:

NUR 562 Advanced Clinical Study of Nursing Practice in Critical Care I or II,6
Study and application of theories of practice and bio-psycho-social interaction in advanced clinical practice in critical care nursing. Analysis of patient problems and nursing strategies relevant to critical care patients. (Lab 12) In alternate years. Next offered 1990-91. Pre: NUR 501, 502 and credit or concurrent enrollment in NUR 561. Fortin

NUR 563 Advanced Clinical Study of Nursing Practice in Gerontology I or II,6
Practicum in the study and application of theoretical knowledge of practice and aging in advanced gerontological nursing. Analysis of central health problems and nursing strategies relevant to older people. (Lab 12) In alternate years. Next offered 1990-91. Pre: NUR 501, 502 and credit or concurrent enrollment in NUR 561. Burbank

NUR 564 Advanced Clinical Study of Nursing Practice in Parent-Child Health I or II,6
Study and application of practice, normal developmental and bio-phychosocial stress theories in advanced clinical practice in parent-child health nursing. Analysis of problems and nursing strategies relevant to parents and children. (Lab 12) In alternate years. Next offered 1990-91. Pre: NUR 501, 502 and credit or concurrent enrollment in NUR 561. Hirsch and McGrath.

NUR 513 Advanced Mental Health Nursing II - credits changed from 2 to 3

NUR 514 Practicum in Advanced Mental Nursing II - credits changed from 4 to 6

NUR 542 Practicum in Nursing Education - credits changed from 3 to 6

NUR 552 Practicum in Nursing Administration - credits changed from 3 to 6

NUR 521 Theoretical Study of Major Problems in Nursing Practice- prerequisite changed to "NUR 501, 502 and concurrent enrollment in NUR 522."

NUR 522 Practicum in the Study of Major Problems in Nursing Practice - prerequisite changed to "NUR 501, 502 and concurrent enrollment in NUR 521."

NUR 510 Advanced Leadership and Nursing Role Development -prerequisite changed to "Graduate standing."

3. Add (New)

NUR 520 Graduate Study Seminar I,II,1
A seminar designed to facilitate the synthesis and examination of knowledge gained in the master's program in regards to nursing knowledge development, advancement of nursing practice and leadership role development. (Sem 1) Pre: Completion of 30 graduate program credits and concurrent enrollment in final sequence of concentration courses. Staff