

Graduate Council Report

January 6, 2011

New Courses

AFST 601. Methods of Inquiry Into Africana Studies. (3-0). Credit 3. Familiarization with the methodological tradition of African-centered thinking and its relationship to the more popular term Afro-centricity; representation of the thoughts of notable African centered and Afrocentric scholars throughout history as a means to center African descended people throughout history, social analysis and theoretical accounts. Prerequisite: Graduate classification

BIOL 610. Evolution. (3-0). Credit 3. Fundamentals of evolutionary biology, with an emphasis on evolutionary theory. Prerequisite: Graduate classification or approval of instructor

BMEN 625. Biophotonics. (3-0). Credit 3. Theory and application of optical instrumentation, including light sources, lasers, detectors, and optical fibers; instrumentation and engineering in biomedical applications of optics in therapeutics, diagnostics, and biosensing. Prerequisite: Graduate classification or instructor approval

CHEM-670. Physical Methods in Biological Chemistry. (3-0). Credit 3. Overview of current methods for the characterization of biological macromolecules, including protein structure, protein-ligand interactions, protein folding. Techniques discussed include nuclear magnetic resonance, optical spectroscopy, calorimetry, electron paramagnetic resonance, Mössbauer spectroscopy, X-ray crystallography, electron microscopy, and mass spectrometry. Prerequisite: Graduate classification or approval of Instructor

CSCE 664. Wireless and Mobile Systems. (3-0). Credit 3. Wireless and mobile systems; wireless communication fundamentals; wireless medium access control design; transmission scheduling; network and transport protocols over wireless design, simulation and evaluation; wireless capacity; telecommunication systems; vehicular, adhoc, and sensor network systems; wireless security; mobile applications. Prerequisite: CSCE 463 or CSCE 464 or approval of instructor

HIST 635. Writing History. (3-0). Credit 3. Development of writing skills for graduate students in history; preparation of publishable-quality article-length essays based on primary sources; peer review and criticism. Prerequisite: Graduate standing, approval of instructor

HORT 645. World Agriculture and International Plant Breeding. (1-0). Credit 1. Evolution of world agriculture; plant breeding and improved varieties; international agricultural research centers and green revolution; population growth; environmental challenges; IPR; role of plant breeding and biotechnology in meeting world food needs. Prerequisite: SCSC 304, HORT 404 or consent of instructor. Cross-listed with: SCSC 645

ISEN 643. Strategic Construction and Engineering Management. (3-0). Credit 3. Strategic and systems perspectives applied to construction and engineering management projects, organizations, and industries; system dynamics methodology to model construction and engineering systems; understanding drivers of performance; feedback and high leverage points for performance improvement. Prerequisite: Graduate classification or permission of the instructor. Cross-listed with: CVEN 654

MSEN 603. Fundamentals of Soft and Biomaterials. (3-0). Credit 3. Introductory graduate-level survey on the general areas of soft materials and biomaterials; includes basic concepts of colloidal particle physics, polymer physics and chemistry and general concepts in biomaterials. Prerequisite: Undergraduate general chemistry course; graduate classification

OCEN 677. Environmental Fluid Mechanics. (3-0). Credit 3. Introduction to fluid and mass transport in naturally occurring flows. Topics include molecular and turbulent diffusion; dispersion; river, estuary, and ocean mixing; dissolution boundary layers; tidal mixing; offshore wastewater outfalls; introduction to environmental quality numerical modeling. Prerequisite: CVEN 311 or equivalent

SCSC 645. World Agriculture and International Plant Breeding. (1-0). Credit 1. Evolution of world agriculture; plant breeding and improved varieties; international agricultural research centers and green revolution; population growth; environmental challenges; IPR; role of plant breeding and biotechnology in meeting world food needs. Prerequisite: SCSC 304, HORT 404 or consent of instructor. Cross-listed with: HORT 645

Course Change Requests

CHEM 660. Nuclear Chemistry.

Course Hours:

FROM: (3-4) Credit 4.

TO: (3-0) Credit 3.

Description:

FROM:

Radioactive decay, nuclear models, nuclear spectroscopy, nuclear reactions, fission and other topics of current interest in nuclear chemical research. Laboratory work to emphasize modern nuclear chemical instrumentation.

TO:

Radioactive decay, nuclear models, nuclear spectroscopy, nuclear reactions, fission and other topics of current interest in nuclear chemical research.

CVEN 654. Strategic Construction and Engineering Management.

Prerequisite:

FROM:

Graduate classification

TO:

Graduate classification or permission of instructor

Description:

FROM:

Strategic and systems perspectives are applied to construction and engineering management in projects, organizations, and industries. The system dynamics methodology is used to model construction and engineering systems to improve understanding of the drivers of performance and the use of feedback and high leverage points to improve performance.

TO:

Strategic and systems perspectives applied to construction and engineering management projects, organizations and industries; system dynamics methodology to model construction and engineering systems; understanding drivers of performance; feedback and high leverage points for performance improvement.

HISP 606. Spanish of the Southwest.

Prerequisite:

FROM:

HISP 602 or approval of instructor

TO:

Graduate classification and proficiency in Spanish

Title:

FROM:

Spanish of the Southwest

TO:

Spanish in the United States

Description:

FROM:

Descriptive analysis of written varieties of southwest Spanish from Texas, New Mexico, and Arizona. Structure and variation of (a) the sound system, (b) grammatical patterns, and (c) the lexicon. Instruction to sociolinguistic issues relevant to southwest language studies.

TO:

In-depth description and analysis of Spanish varieties spoken in the United States, by both traditional and new immigrant populations, including New Mexico and Louisiana Spanish, Mexican, Cuban, Puerto Rican, Dominican, Central and South American dialects; topics include accommodation, koinéization, borrowing, code-switching, attitudes and policies related to language maintenance and shift.

HISP 614. Hispanic Dialectology.

Prerequisite:

FROM:

Graduate classification

TO:

Graduate classification and proficiency in Spanish

Title:

FROM:

Hispanic Dialectology

TO:

Spanish Dialectology

Description:

FROM:

Topics include varieties of Spanish spoken throughout the Americas, Spanish-speaking regions covered include South America, the Caribbean, Central America, and North America, including the southwestern United States. The course covers historical background, structural linguistics, and sociolinguistic issues (social and stylistic variation).

TO:

Analysis of regional linguistic variation from a synchronic and diachronic perspective; topics include varieties spoken in Spain, the Americas, and worldwide; dialect diversification, contact varieties, Spanish-based pidgins and creoles.

NUEN 618. Nuclear Control Systems.**Prerequisite:****FROM:**

MATH 609 and NUEN 606 or registration therein.

TO:

MATH 609 and NUEN 602

Title:**FROM:**

Nuclear Control Systems

TO:

Multiphysics computations in nuclear science and engineering

Course Hours:

FROM: (3-0) Credit 3.

TO: (2-2) Credit 3.

Description:**FROM:**

Reactor kinetics and fundamentals of servo-control developed and applied to nuclear reactors. Safety aspects of reactor control and operational problems.

TO:

Tightly coupled multiphysics simulation techniques and application to typical problems arising in nuclear science and engineering (reactor dynamics and safety transients, conjugate heat transfer, radiative transfer, fluid structure interaction).

NUEN 630. Monte Carlo Methods for Particle Transport

Prerequisite:

FROM:

None

TO:

Approval of Instructor, MCNP/MCNPX code single user license from RSICC, ORNL, USA

Title:

FROM:

Computational Methods for Particle Transport Problems

TO:

Monte Carlo Methods for Particle Transport

Course Hours:

FROM: (4-4) Credit 4.

TO: (2-2) Credit 3.

Description:

FROM:

Key properties of linear Boltzmann equation, including analytic solution of model problems, discretization methods; analysis of how well discretization methods reproduce important characteristics of exact solution; assessment of which properties are most important in various application.

TO:

Principles of Monte Carlo method; random number generation; random variable sampling; particle tracking; statistical error estimation; ACE format cross-sections; introduction to MCNP code; MCNP applied to radiation shielding, criticality safety, reactor physics and detector modeling; MCNP output analysis, statistical tests, and tallying procedures; variance reduction techniques; Monte Carlo algorithm development.

Special Consideration Items

Graduate Council approved the College of Liberal Arts request for a Graduate Certificate in Africana Studies.