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New Course Request:

BMEN 622. Bioelectromagnetism. (3-0). Credit 3. This course will provide an introduction to electric, magnetic, and electromagnetic phenomena in association with biological tissues. It will address source modeling based on physiological current including line and volume conductor models as well as electromagnetic-based stimulation, sensing, and imaging. Prerequisite(s): Graduate classification or approval of instructor. Stacked with BMEN 422.

BMEN 641. Numerical Methods in Biomedical Engineering. (3-0). Credit 3. The application of numerical analysis to analyze molecular, cellular and physiological systems, students will learn general techniques used to analyze steady and dynamic systems; these techniques will be applied in a MATLAB programming environment. Prerequisite(s): BIOL 213, VTPP 435, and BMEN 207. Graduate classification or approval of instructor. Stacked with BMEN 441.

EDCI 701. Elementary Science Instructional Strategies and STEM Learning. (3-0). Credit 3. Focuses on developing engaging STEM activities using inquiry and project-based learning approaches; creation of appropriate assessments for STEM activities and integrated STEM learning units. Prerequisite(s): Graduate classification.

EDCI 702. Elementary Mathematics Instructional Strategies and STEM Learning. (3-0). Credit 3. Focuses on teaching models and the design of elementary mathematics for digital age learners; emphases placed on inquiry learning models in science, technology, engineering, and mathematics (STEM). Prerequisite(s): Graduate classification.

FSTC 644. Disease Mechanisms of Foodborne Pathogens. (3-0). Credit 3. Principles of pathogenicity of foodborne bacteria; mechanisms used by disease-causing bacteria leading to human illness; basic principles of immunology and human and bacterial physiology; investigation of bacterial virulence factors and effects of stress response, quorum sensing and other external factors. Prerequisite(s) FSTC 326 or BIOL 351, or approval of instructor.

MEEN 645. Engineering Applications of Solid Mechanics. (3-0). Credit 3. Mechanical and mathematical basis for modeling response of solid bodies undergoing coupled mechanical and non-mechanical effects, analysis of stress and deformation for structural members subjected to axial, torsional, and bending loads, design of multifunctional systems. Prerequisite(s): CVEN 305, MEEN 368, or equivalent. Stacked with MEEN 445.

MSEN 636. Damage Mechanics and Failure in Composite Materials. (3-0). Credit 3. Mechanisms and models related to damage and failure in composite materials. Prerequisite(s): Courses in composite materials, elasticity; graduate classification. Cross-listed with AERO 616; MEMA 616.

NRSC 621. Functional Neuroanatomy. (4-0). Credit 4. A comprehensive review of the neuroanatomical determinants of function; rigorous neuroanatomical foundation relevant for research investigating changes in neural pathways and/or networks involved in sensory and motor functions, learning and memory, perception, selective attention, as well as recovery of function following brain damage. Cross-listed with VIBS 621.

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PLAN 624. Digital Communication in Landscape Architecture and Urban Planning. (2-4). Credit 2. Learn, develop, and apply fundamental knowledge and skills throughout the process of environmental design and planning: base map preparing, site plan designing, cross-section drawing, 2-dimensional plan rendering, 3-dimensional model rendering, and poster presentation.

PLAN 667. Site Planning. (2-4). Credit 2. Introduction to physical planning and design aspects of city planning; the relationship between urban design and city/regional planning; the history of design paradigm; essential tools and applications for physical planning; and site planning and design of physical attributes.

PSAA 657. Terrorism in Today's World. (3-0). Credit 3. Comprehensive survey of international terrorism from its origins to the present; emphasis on how the U.S. government has responded and how it has organized to counter the threat; all major terrorist groups studied; understanding the nature of the terrorist threat and the implications for the U.S. government. Prerequisite(s): Graduate classification. Cross-listed with INTA 657.

PSAA 660. Domestic Terrorism: The Internal Threat to America. (3-0). Credit 3. Survey of domestic terrorism from the first manifestation of terror tactics in the United States to the anarchist movement of the 1880s to the present. Study of domestic terrorist threats, the growing threats from weapons of mass destruction, and the implications WMDs have for all levels of government. Prerequisite(s): Graduate classification.

PSAA 667. Principles of International Law. (3-0). Credit 3. Introduction to the nature and sources of international law, including jurisdiction of states, law governing the making, interpretation, application, and termination of treaties and agreements; recognition of states and government; nationality of persons and corporations; state immunities from jurisdiction and control; and human rights. Prerequisite(s): Graduate classification. Cross-listed with INTA 609.

PSAA 668. U.S. Law of and Homeland Security. (3-0). Credit 3. Analyze the threat to the homeland as reflected in a number of pre and post 9/11 commission reports; master's level course intended for individuals preparing for professional careers in the conduct of international affairs. Prerequisite(s): Graduate classification. Cross-listed with INTA 612.

RDNG 610. Elementary Literacy Instruction for Facilitating STEM Learning. (3-0). Credit 3. Focuses on evidenced based instruction of literacy skills and strategies facilitating student learning of STEM content and processes; traditional literacy and new literacies. Prerequisite(s): Graduate classification.

RPTS 654. Amazon Field School. (4-0). Credit 4. Investigation of social and ecological complexities of biodiversity conservation in tropical ecosystems; biological and social science approaches to evaluate causes, consequences, and solutions to biodiversity loss through ecology, culture, and governance. Cross-listed with VTMI 604 and WFSC 654. Stacked with VTPB 404, RPTS 454, and WFSC 454.

SCSC 640. Intellectual Property in the Plant Sciences. (3-0). Credit 3. This course introduces major foci of intellectual property (IP) impacting plant sciences, including: 1) traditional vs. emerging knowledge economies, 2) governing statutes and treaties, 3) forms of IP, and 4) IP asset identification, valuation, capture, and deployment towards understanding the best practices for IP energy development and IP portfolio management.

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VIBS 621. Fundamental Neuroanatomy. (4-0). Credit 4. A comprehensive review of the neuroanatomical determinants of function; rigorous neuroanatomical foundation relevant for research investigating changes in neural pathways and/or networks involved in sensory and motor functions, learning and memory, perception, selective attention, as well as recovery of function following brain damage. Cross-listed with NRSC 621.

VTMI 604. Amazon Field School. Credit 4. Investigation of social and ecological complexities of biodiversity conservation in tropical ecosystems; biological and social science approaches to evaluate causes, consequences, and solutions to biodiversity loss through ecology, culture, and governance. Cross-listed with RPTS 654 and WFSC 654. Stacked with VTPB 404, RPTS 454, and WFSC 454.

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Course Change Requests:

PHYS 614: Introduction to Methods of Mathematical Physics

Withdrawal (reason): No intention to teach in the future.

PHYS 650: Kinetics of Electronic Processes

Withdrawal (reason): Instructor (Keldysh) retired, and course is so specialized that no one else will be able to teach it.

WFSC 654: Amazon Field School

FROM: Amazon Field School. (4-0). Credit 4. Introduction to social and ecological complexities of biodiversity conservation in tropical ecosystems. Field methods from biological and social science approaches to evaluate causes, consequences, and solutions to biodiversity loss through lenses of ecology, culture, and governance.

TO: **Amazon Field School.** (4-0). Credit 4. Investigation of social and ecological complexities of biodiversity conservation in tropical ecosystems; biological and social science approaches to evaluate causes, consequences, and solutions to biodiversity loss through ecology, culture, and governance. Cross-listed with RPTS 654 and WFSC 654. Stacked with VTPB 404, RPTS 454, and WFSC 454.

Curriculum Change Requests:

Certificate in Engineering Therapeutics Manufacturing:

Brief description of change: Make adjustments and additions to courses that can satisfy this requirement.

Rationale for change: There are additional courses that have content relevant to this certificate. In addition, we have added several graduate-level course that will allow masters and doctoral students to pursue this certificate as well.

Certificate in Quality Engineering for Regulated Medical Technologies:

Brief description of change: Change to primary contact for the certificate as well as adjustments and additions to the course that can satisfy this requirement.

Rationale for change: Now that Dr. Criscione is the Dean of Graduate Programs, an updated contact was needed. We have also recently discovered some typos in the original submission as well as found additional course that have content relevant to

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Special Consideration Items:

Dwight College of Engineering
- MS in Engineering Systems Management
  - Request for Administrative Change Proposal

College of Agriculture and Bush School of Government and Public Service
- Joint Degree between Department of Agricultural Economics and Bush School
  - Request for joint degree between joint degree between agricultural economics and Bush School

Bush School of Government and Public Service
- Certificate of Homeland Security (CHLS)
  - Proposal for course prefix changes to CHLS courses

College of Architecture
- Landscape Architecture and Urban Planning
  - Certificate in Transportation Planning
    - Proposal to add focus area in Graduate Certificate in Transportation Planning