

To: Members of the 2023-2024 Graduate Council

From: Angela Slitt, Chair
Brenton Deboef, Dean
Colleen Mouw, Associate Dean

Date: February 12, 2024

RE: Agenda for Meeting Number 560 of the Graduate Council to be held on Monday,
February 12, 2024 at 2:00 p.m. via Zoom

- I. **Call to order**
- II. **Approval of Minutes - Meeting No. 559, January 16, 2023**
- III. **Announcements**
 - A. Graduate Faculty Summit (*DeBoef*)
 - B. One-time Summer Stipend Support (*Mouw*)
 - C. Professional Development (*Mitnick*)
 - D. Recent appointments to the Graduate Faculty (*Mouw*)
Elvis Carissimi, Outside Scholar, COE
Steven B. Roberts, Outside Scholar, CELS
James E Kennedy, Outside Scholar, CAS
Jill Juris, Outside Scholar, CHS
Christine Weinkauff Duranso, Lecturer/ Teaching Professor, CHS
Miriam Lindner, Lecturer/ Teaching Professor, CHS
- IV. **Graduate Curriculum (Kuali Agenda) (*Mouw*)**

COURSE CHANGES

COLLEGE OF ARTS AND SCIENCES

LSC 538 | Law Librarianship

(3 crs.) Introduction to law librarianship, including U.S. legal system, ecosystem, and sources of law; history of law libraries/librarianship; communities served and their information needs; common challenges faced by the profession. (Accelerated Online Program) Pre: LSC 502 and LSC 504, or permission of instructor.

Change in description, Online Version

LSC 541 | Special Topics in Reference

(3 crs.) Survey course in advanced reference emphasizing library resources, information needs and services in various subject domains, including information in all formats. (Accelerated Online Program) Pre: LSC 504 or permission of instructor.

Change in title, description

LSC 550 | Information Visualization**Change in prerequisite**

(3 crs.) Using current international and national standards and tools of information visualization, the course emphasizes the interdisciplinary nature of design, navigation, representation, and meaning construction of information. (Accelerated Online Program)

LSC 544 | Visual Information Science**Change in prerequisite**

(3 crs.) An introduction to the interdisciplinary study of visual information science related to visual information (data) collection, analysis, processing, transmission, utilization, and communication in modern and digital libraries and information centers. (Accelerated Online Program)

COLLEGE OF EDUCATION**ELS 512 | Research Foundations for International Students****Change in title, description, department**

(3 crs.) In this course, international and multilingual students will be introduced to the fundamental principles of scientific research and scholarly inquiry. Throughout the program, participants will gain knowledge about research components and skills, encompassing the capacity to locate, comprehend, critically assess, and synthesize research articles employing a diverse array of methodologies. Furthermore, students will explore the ethical dimensions intrinsic to research involving human subjects. The culmination of this course is the submission of a literature review following the conventions of APA-style writing. This comprehensive training empowers students to excel in the realm of academic research and scholarly exploration. (Seminar) Pre: University set minimum scores for English proficiency tests, or ESL 122.

ELS 612 | International Graduate Teaching Assistants' Toolkit**Change in title, description, department**

(3 crs.) International Graduate Teaching Assistants Toolkit: Excellence and Ethics, is designed to equip international graduate teaching assistants (IGTAs) with the essential knowledge, skills, and ethical principles required to excel in their teaching roles within higher education institutions. Whether you are a new IGTA or looking to enhance your teaching capabilities, this course offers a comprehensive toolkit to help you navigate the challenges and responsibilities of teaching in an international academic setting. (Seminar)

COLLEGE OF ENVIRONMENTAL & LIFE SCIENCES**TABLED EEC 522 | Computer Intensive Methods In Applied Economics****Change in description, title, credits**

(4 crs.) Use of selected software packages to analyze topics and numerical problems in applied economics, including Stata/R, spreadsheets, and Matlab, based on statistical methods such as causal inference, big data and machine learning techniques. (Lec. 4/Online) Pre: Graduate standing or by permission of instructor.

MLS 501 | Advanced Clinical Microbiology I**Change in description, prerequisite, modality**

(3 crs.) Examines topics in clinical bacteriology, including pathogenicity and antimicrobial susceptibility, processing of clinical microbiology specimens, and the methodologies used to identify and characterize pathogenic bacteria. (Online) Pre: Graduate standing or by permission of instructor.

MLS 510 | Clinical Laboratory Management**Cross-listed, change in description, prerequisite, modality**

(3 crs.) Cross-listed as (CMB) MLS, BTC 510. This course is designed to teach the principles of laboratory management. The focus is to present underlying managerial concepts and then assist the learner in the successful application of this information to real-life situations. (Online) Pre: Graduate standing or department chair approval.

MLS 541 | Advanced Clinical Microbiology II**Change in description, prerequisite, modality**

(3 crs.) Examines topics in clinical microbiology as a continuation of MLS 501. Explores concepts and laboratory methodologies of clinical disciplines: bacteriology, virology, parasitology, mycology, mycobacteriology, and epidemiology. (Online) Pre: MLS 501

NEW COURSES**COLLEGE OF ARTS AND SCIENCES****WRT 509 | UX/UI Portfolio**

(3 crs.) Students create portfolios that demonstrate their expertise to employers, apply best practices in research, information architecture, and content management, develop a distinctive style using formal, conceptual, and technical design skills. (Accelerated Online Program) Pre: WRT 501, 502, 503, 504, ART 505, 506, 507, 508, and 510; or approved URI Online elective.

COLLEGE OF EDUCATION**EDP 609 | Critical Paradigms and Justice in Education**

(3 crs.) This course provides an overview of critical perspectives in educational research and implications for social justice. Students develop an understanding of how education scholars apply critical theories across educational contexts. (Lec. , Seminar /Online) Pre: Admission to the Education Ph.D. Program or by permission of instructor.

EDP 660 | Critical and Sociocultural Lenses on Language and Education

(3 crs.) This discussion-based seminar is designed to engage students in deep exploration of issues related to language and learning from critical and sociocultural perspectives. (Seminar)

COLLEGE OF ENGINEERING**ELE 555 | Probabilistic Robotics**

(3 crs.) This course is designed to provide fundamental and applied knowledge on methods for online estimation, localization, mapping and SLAM in systems, with particular focus on practical application in robotics. (Accelerated Online Program) Pre: Graduate standing; permission of instructor

ELE 557 | Adaptive Control for Robotic Systems

(3 crs.) The course covers classical adaptive control theory, including Lyapunov stability, positive real functions, Kalman-Yakubovich lemma, persistent excitation, neural network approximation, and several nonlinear adaptive control techniques. Applications will focus on industrial robot manipulators and autonomous mobile robots. (Accelerated Online Program) Pre: Graduate standing; permission of instructor

ELE 567 | Medical Instrumentation

(3 crs.) This course is designed to provide fundamental and applied knowledge on medical sensors and electronics, with particular focus on practical application in medical instrumentation. (Accelerated Online Program) Pre: Graduate standing or permission of instructor

ELE 570 | Wearable Internet-of-Things

(3 crs.) A tutorial-driven, project-based, hands-on course with carefully crafted practical tutorials on Internet of things and wearable technologies that allow students to learn programming, coding, circuit designs, and prototyping. (Accelerated Online Program) Pre: graduate standing; permission of instructor

ELE 576 | NeuroRobotics

(3 crs.) As an interdisciplinary course, this course will cover tools and applications in the field of Neural Engineering and neuroscience with an emphasis on real-time corticomuscular-robot interaction/control applications. (Accelerated Online Program) Pre: Graduate standing; permission of instructor

ELE 579 | Detection and Estimation Theory

(3 crs.) This course is designed to provide students with a robust foundation in signal detection and estimation theory, empowering them to extract valuable insights from data and select appropriate algorithms for diverse scenarios. (Accelerated Online Program) Pre: Graduate standing; permission of instructor

ISE 571 | Industry 4.0 Fundamentals

(3 crs.) Overview of the industrial automation field in the context of Industry 4.0. It familiarizes participants with the fundamental principles of industrial controllers, encompassing their constituent components and systems, as well as their contemporary deployment in manufacturing facilities. It underscores the significance of Industry 4.0 and its ramifications on the automation domain. Specific topics of focus include sensor technologies, feedback control, autonomous mobile robots (AMR), industrial communication networks, and rugged embedded systems. (Accelerated Online Program) Pre: Bachelors or advanced standing in STEM major, or permission of instructor.

ISE 572 | Machine Learning for Industry 4.0

(3 crs.) Explores the applications of machine learning techniques in Industry 4.0. The course will provide an in-depth analysis of various techniques such as deep learning, neural networks, and data analysis. These techniques will be examined in the context of predictive maintenance, part status estimation, quality control, intelligent robotics, and other relevant areas. (Accelerated Online Program) Pre: Bachelors or advanced standing in STEM major, or permission of instructor.

ISE 573 | Manufacturing Execution Systems

(3 crs.) Explores Manufacturing Execution Systems (MES) in the context of Industry 4.0, covering topics such as real-time data acquisition, production scheduling, quality management, and integration with other systems. (Accelerated Online Program) Pre: Bachelors or advanced standing in STEM major, or permission of instructor.

ISE 575 | Industry 4.0 Special Projects

(3 crs.) Students will apply their knowledge about Industry 4.0 and machine learning to a real-world case study. The case study will be chosen to provide a comprehensive and practical problem that requires various Industry 4.0 techniques. Students will work in teams to develop and present a solution to the case study, incorporating their knowledge of machine learning techniques, data analysis, and problem-solving skills. Through this course, students will gain hands-on experience and deepen their understanding of the challenges and opportunities of modern manufacturing and intelligent systems in the context of Industry 4.0. (Accelerated Online Program) Pre: Bachelors or advanced standing in STEM major, or permission of instructor.

NUE 511 | Nuclear Reactor Analysis

(3 crs.) Atomic and subatomic particles, atom density, binding energy, radioactive decay, neutron flux, cross-sections, fission/fusion processes, reactor kinetics and control, neutron life cycle, criticality, neutron diffusion, reactivity feedback, and reactor designs. (Online) Pre: MTH 244 or MTH 362, or by permission of instructor

NUE 512 | Nuclear Design and Safety Analysis

(3 crs.) Design and analysis of nuclear power systems, including PWR, BWR, SMR, MSR, VHTR, microreactors, Gen IV, naval reactors, and fusion power. Safety analysis of nuclear systems. (Online) Pre: MCE 341 or CHE 314, or by permission of instructor.

NUE 513 | Nuclear Fuel Cycle and Performance

(3 crs.) Nuclear fuel life cycle, including mining, nuclear materials production, enrichment, nuclear fuels, burnup, and storage of spent nuclear fuel. Advanced reactor designs, nuclear fuels, and advances in the nuclear fuel cycle. (Online) Pre: MCE 341 or CHE 314, or by permission of instructor.

NUE 516 | Nuclear Radiation Damage in Materials

(3 crs.) Microstructure fundamentals, material defects, diffusion, nuclear fission, neutron interactions, radiation damage effects, swelling, creep, mechanical property variations, cladding and control rods, numerical simulation of atomic displacement cascades. (Online) Pre: MTH 244 or 362 and CHE 314 or MCE 341; or by permission of instructor.

COLLEGE OF ENVIRONMENTAL & LIFE SCIENCES

BTC 510 | Clinical Laboratory Management

(3 crs.) Cross-listed as (CMB) BTC, MLS 510. This course is designed to teach the principles of laboratory management. The focus is to present underlying managerial concepts and then assist the learner in the successful application of this information to real-life situations. (Online) Pre: Graduate standing or department chair approval.

BTC 522 | Biotechnology Manufacturing for the Life Sciences

(3 crs.) This course is designed to provide the student with an overview of the biopharmaceutical manufacturing process. The course will study the process of manufacturing proteins and other large molecules on a large-scale according to current good manufacturing practices (cGMP). Lectures will cover the conceptual aspects of upstream and downstream production issues. (Online) Pre: Graduate standing, or by permission of instructor.

BTC 575 | The Business of Biotechnology

(3 crs.) This course is designed to provide participants with an understanding of the critical role business development and licensing functions play in the commercialization of a discovery product and to the development of a successful biotech company. (Online) Pre: Graduate standing or by permission of instructor.

BTC 595 | Molecular Diagnostics

(3 crs.) Crosslisted as (CMB) BTC/MLS. The course provides advanced applications and laboratory skills needed for molecular diagnostic procedures conducted in biotechnology, clinical and research environments. (Online) Pre: Graduate standing or department chair approval.

CMB 510 | Clinical Laboratory Management

(3 crs.) Cross-listed as (CMB) BTC, MLS 510. This course is designed to teach the principles of laboratory management. The focus is to present underlying managerial concepts and then assist the learner in the successful application of this information to real-life situations. (Online) Pre: Graduate standing or department chair approval.

TABLED CMB 537 | Principles of Molecular Biology

(3 crs.) The purpose of the course is to understand basic methods used to study DNA and proteins as it pertains to experimental approaches used in the laboratory. (Lec. 3) Pre: By permission of instructor.

CMB 560 | Experimental Approaches in Molecular and Cell Biology

(3 crs.) Addresses modern approaches to studying problems in advanced biochemistry, molecular and cell biology, including experimental design, genetics-based tools, fluorescence-based methodology, functional interactions, high-resolution microscopy and single molecule studies. (Lec. 3) Pre: Graduate standing or by permission of instructor.

CMB 595 | Molecular Diagnostics

(3 crs.) Crosslisted as (CMB) BTC, MLS. The course provides advanced applications and laboratory skills needed for molecular diagnostic procedures conducted in biotechnology, clinical and research environments. (Online) Pre: Graduate standing or department chair approval.

EVS 510 | Field Practicum in Coastal Resilience

(3 crs.) This course is designed to expose students to the science, management, and policy challenges of achieving resilient coastal environments and communities in the face of a changing climate. (Practicum) Pre: Graduate standing or by permission of instructor.

MLS 542 | Advanced Clinical Microbiology Practicum

(3 crs.) Applies laboratory methodologies to identify, characterize, and classify microbes from clinical microbiology specimens to assist in the diagnosis of infectious disease. (Practicum) Pre: MLS 501 and MLS 541

MLS 595 | Molecular Diagnostics

(3 crs.) Crosslisted as (CMB) BTC/MLS. The course provides advanced applications and laboratory skills needed for molecular diagnostic procedures conducted in biotechnology, clinical and research environments. (Online) Pre: Graduate standing or department chair approval.

GRADUATE SCHOOL OF OCEANOGRAPHY

TABLED OCG 515 | Phenomenal Ocean

(3 crs.) An introduction to fundamental oceanographic processes that uses ocean phenomena to explore four primary sub-disciplines of oceanography (geology, chemistry, physics, and biology) and global change events through an interdisciplinary lens. (Accelerated Online Program)

V. Graduate New Program & Tracks (Kuali Agenda) (DeBoef)

PROGRAMS CHANGES

COLLEGE OF EDUCATION

Special Education - MA

Adding 7 new courses to curriculum

Rationale for Changes to Special Education Graduate Program It is important to note: there are 7 "new" courses being proposed in this curricular change. We are NOT changing the program more than 25% even though this many courses are being proposed. The reason for the changes and proposing new courses is to comply with the changes required by the Rhode Island Department of Education (RIDE) and certification regulation updates in special education which took effect in August 2020.

NEW PROGRAMS

COLLEGE OF ARTS AND SCIENCES

Methods & Practices for Science Storytelling Graduate Certificate

The certificate will introduce students to the strategic use of inclusive science communication and identify storytelling opportunities to translate science with and in diverse contexts for different audiences. Students who

complete this certificate will develop multimedia communication skills through the practice of inclusive and equitable science storytelling.

Students are required to take 15 credits:

SCM545: Video Storytelling for Science and the Environment
SCM 540: Producing with Purpose: The Interview
PHL 553: Philosophy of Science Communication
WRT 534: Visualizing Environmental Advocacy
ART/DSP 502G: Data Visualization

COLLEGE OF ENGINEERING

TABLED Nuclear Engineering - Graduate Certificate

This graduate certificate program in Nuclear Engineering equips students with skills to design and evaluate systems that control and manipulate nuclear energy, including power plant design, reactor control, and safety systems. The program covers engineering problems related to fission and fusion processes, radiation, human and environmental factors, construction, and operational considerations. Course examples include Nuclear Reactor Engineering, Nuclear Fuels, Nuclear Propulsion, Nuclear Radiation and Shielding, and Nuclear Instrumentation and Measurement.

COLLEGE OF ENVIRONMENTAL & LIFE SCIENCES

Graduate Certificate in Cell and Molecular Biology

This certificate offers a carefully designed curriculum that provides advanced training in cell and molecular biology. The certificate is designed to provide flexibility in professional concentration and mode of delivery creating opportunities for professional development in the biotechnology and pharmaceutical industries as well as in a clinical setting. Two courses [BTC/CMB/MLS 501 Clinical Laboratory Management (3 cr) and BTC/CMB/MLS 595 Molecular Diagnostics (3 cr)] provide unifying content that encompasses fundamental knowledge of molecular diagnostic methods and contemporary approaches to laboratory management. Core competencies are then developed through specialization courses (6-9 cr total; Options: Cell and Molecular Biology, Biotechnology or Medical Laboratory Sciences) based on the individual's specific interests and professional needs.

VI. New Business

- A. Graduate Student Academic Appeals Board Appeal Case & Nominations for new GSAAB Board (DeBoef)
- B. Revisions to Graduate Manual section 7.51 (Time to Degree) (DeBoef & Mouw)
- C. Revisions to Graduate Manual Appendix K (ABC) (Mouw)
- D. Revisions to Graduate Manual Appendix J (ABC) (Mouw)
- E. Role of the Program Director (DeBoef)
- F. Leave of absence and withdrawal signatures (Mouw)
- G. EGRA Awards and Feedback (Mouw)

VII. Adjournment