MINUTES
GRADUATE CURRICULUM COMMITTEE
OCTOBER 24, 2019
238 GRADUATE LIFE CENTER, 2:15-4:15PM

Present: Madlyn Frisard (Chair); Nicole Akers (University Registrar non-voting); Gary Costello (University Registrar non-voting); Sheryl Coutermarsh-Ott (Veterinary Medicine); Rachel Diana (Science); William Huckle (Graduate School); Alexander Leonessa (Engineering); John Tedesco (Liberal Arts & Human Sciences).

Absent: Reza Barkhi for Linda Wallace (College of Business); Jason Holliday (Natural Resources & Environment); Thomas Skuzinski (CAUS)

Visitors: Renee Ryan (BC)

The meeting was called to order at **2:15 PM** by, Madlyn Frisard, Chair.

A motion to adopt the agenda was made, seconded, and approved.

ANNOUNCEMENT OF APPROVAL AND POSTING OF MINUTES

Announcement of approval of minutes: October 10, 2019– Minutes voted on electronically

Old Business:

College of Architecture & Urban Studies

Course: CNST 5304 Construction Safety System Design (New) Spring 2020 (previously tabled on 10/10/2019) (CM-5381)

Motion was made and seconded to **APPROVE** CNST 5304 Construction Safety System Design (New) Spring 2020 (previously tabled on 10/10/2019) (CM-5381) **with minor required modifications**:

- Learning Objectives
  - Objective 5: Split into two objectives to read:
    - Objective 5: Analyze and design interventions.
    - Objective 6: Apply to actual industry case projects.
- Justification:
  - Consider changing “his or her” to “students”
  - Level Justification: Edit “500” to “5000”

Motion passed unanimously.

College of Engineering

Course: MSE 5134 Transmission Electron Microscopy (Revised) Spring 2020 (previously tabled on 4/25/19) (CM-4705)

Motion was made and seconded to **APPROVE** MSE 5134 Transmission Electron Microscopy (Revised) Spring 2020 (previously tabled on 4/25/19) (CM-4705) **with minor required modifications**:

- Learning Objectives
  - Objective 2: Edit to read "Interpret electron microscopy data results.
- Justification
  - Paragraph 3: Move sentence "This course is needed to build upon the basic electron microscopy concepts introduced in the prerequisite, MSE 5334 Advanced Applied Materials Analysis" to the Level Justification paragraph.
- Texts and Special Teaching Aids:
  - Edit to only include author's first initials (Williams, D. & Carter, C) etc.
  - Required text: Edit page numbers to read "pp.760"

Motion passed unanimously.

College of Science

Course: NEUR 6034 Diseases of the Nervous System (New) Spring 2020 (previously tabled on 9/12/19) (CM-5324)

Motion was made and seconded to **APPROVE** NEUR 6034 Diseases of the Nervous System (New) Spring 2020 (previously tabled on 9/12/19) (CM-5324) **with no modifications**.

Motion passed unanimously.

New Business:

College of Agriculture & Life Sciences

Course: HNFE 5214 Physical Activity and Health (New) Spring 2020 (CM-5394)

Motion was made and seconded to **APPROVE** HNFE 5214 Physical Activity and Health (New) Spring 2020 (CM-5394) **with minor required modifications**:

- Justification: Strengthen justification for course by adding a sentence that "this material is not offered elsewhere at Virginia Tech."

- Required Text: Remove bolded font.

Motion passed unanimously.

College of Engineering

Course: BMES 5534 Advanced Computational Methods and Modeling for Biomedical Applications (New) Spring 2020 (CM-5390)

Motion was made and seconded to **APPROVE** BMES 5534 Advanced Computational Methods and Modeling for Biomedical Applications (New) Spring 2020 (CM-5390) **with minor required modifications**:

- Learning Objectives:
    - Objective 1: Edit to read "Analyze the benefits and limitations of various numerical techniques, methods, and tools in biomedical applications.
    - Objective 2: Demonstrate their proper use in biomedical applications.
    - Objective3: Split into two objectives to read:
        - Objective 3: Develop and construct biomedical and physiological models.
        - Objective 4: Generate reports for applications in biotransport, biomechanics, tumor growth dynamics, and model-based medical imaging techniques.
- Justification: Paragraph 1: Change "equip" to "provide."
- Required Text: Edit to read "Springer. pp.388"

Motion passed unanimously.

Course: ECE 5424 (CS 5824) Advanced Machine Learning (New) Spring 2020 (CM-5377)

Motion was made and seconded to **APPROVE** ECE 5424 (CS 5824) Advanced Machine Learning (New) Spring 2020 (CM-5377) **with no modifications**.

With approval of ECE 5424 (CS 5824) Advanced Machine Learning, ***discontinue*** *ECE 5424G Advanced Machine Learning*

Motion passed unanimously.

Course: MSE 5004 Materials Science and Engineering Graduate Fundamentals (New) Spring 2020 (CM-5367)

Motion was made and seconded to **APPROVE** MSE 5004 Materials Science and Engineering Graduate Fundamentals (New) Spring 2020 (CM-5367) **with minor required modifications**:

- Catalog Description: Begin with "Overview of MSE program requirements; Honor code…"
- Learning Objectives:
    - Objective 1: Edit to read "Describe traits that will ensure success in our graduate program.
    - Objective 2: Edit to read "Evaluate different examples of dissertation and thesis manuscripts strengths and weaknesses."
    - Objective 3: Edit to read "Develop strategies for effective communication with peers, faculty, and staff."
    - Create Objective 5: "Describe advising and mentoring types."
    - Create Objective 6: "Demonstrate library research techniques."
- Justification/Level justification: Edit to read "Course is taught at the 5000-level because it is intended to be taken during the first semester…"
- Recommended Texts: Edit to only include author's first initial.

Motion passed unanimously.

Course: MSE 5154 Processing Science in Advanced Manufacturing (New) Spring 2020 (CM-5368)

Motion was made and seconded to **APPROVE** MSE 5154 Processing Science in Advanced Manufacturing (New) Spring 2020 (CM-5368) **with minor required modifications**:

- Texts and Special Teaching Aids
    - Required: Citation for author Bokstein, capitalize "A short course."
    - Recommended: Citation for author Milewski, capitalize "From fundamental…"

Motion passed unanimously.

Course: MSE 5394 Advanced Molecular Dynamics Simulation (New) Spring 2020 (CM-5369)

Motion was made and seconded to **APPROVE** MSE 5394 Advanced Molecular Dynamics Simulation (New) Spring 2020 (CM-5369) **with minor required modifications**:

- ADP Title: Consider editing to read "Adv Molecular Dynamics Sim"
- Catalog Description: Edit to read "Advanced molecular dynamics simulation method. Fundamental molecular dynamics principles, algorithms and components (atomic structure, periodic boundary conditions, interatomic potentials, equations of motion of atoms, statistical ensembles, integration of equations of motion). Numerical integration of equations of motion. Simulations of the time evolution of atoms, particles, or molecules under static or varying thermodynamic conditions and external loads. Connection between atom trajectories and evolution of the

physical property of the simulation system with statistical mechanics principles. Hands-on case studies using LAMMPS (Large-scale Atomic/Molecular Massively Parallel Simulator) molecular dynamics simulation package. Analysis and interpretation of simulation results. Prior knowledge of a programming language such as Fortran, C, C++, Matlab, Mathematica, Python, Java is highly recommended. Pre: Graduate standing. (3H, 3C)"

- Learning Objectives
  - Objective 2: Edit to read "Critique the advantages and limitations of molecular dynamics simulation models."
  - Objective 3: Edit to read "Describe the essential components and algorithms of molecular dynamics simulation method."
  - Objective 4: Change "connection" to "connections"
  - Objective 5: Edit to read "Develop hands-on experience using molecular dynamics to simulate selected advanced materials science using case studies."
  - Objective 6: Edit "basing" to "based"
- Justification
  - Correct spacing
  - Paragraph 1: Edit second sentence to begin "The molecular dynamics simulation…"

Motion passed unanimously.

College of Science

Course: BIOL 5504 Quantitative Methods in Ecology and Evolution (New) Spring 2020 (CM-5352)

Motion was made and seconded to **APPROVE** BIOL 5504 Quantitative Methods in Ecology and Evolution (New) Spring 2020 (CM-5352) **with minor required modifications**:

- Learning Objectives
  - Objective 1: Edit to read "Apply data science best practices…"
  - Objective 3: change "best" to "appropriate"
- Justification
  - Level justification: Edit to read, "Course is taught at the 5000-level because the necessity of advanced knowledge in ecology and/or evolutionary biology is needed for a working understanding of data analysis, and the ability to participate in and lead advanced discussions of scientific literature"
    - Expand level justification to include whether an undergraduate background is needed.
- Text and Special Teaching Aids:
  - Apply consistent use of APA or MLA format to cite reference materials.

- C. Last citation (Bolker) is a duplicate; delete.

Motion passed unanimously.

Course: BIOL 5514 Quantitative Analysis of High-Dimensional Ecological Data (New) Spring 2020 (CM-5353)

Motion was made and seconded to **APPROVE** BIOL 5514 Quantitative Analysis of High-Dimensional Ecological Data (New) Spring 2020 (CM-5353) **with minor required modifications**:

- Justification
  - Level justification: Edit to read, "Course is taught at the 5000-level because the necessity of advanced knowledge in ecology and/or evolutionary biology is needed for a working understanding of data analysis, and the ability to participate in and lead advanced discussions of scientific literature"
    - Expand level justification to include whether an undergraduate background is needed.
- Text and Special Teaching Aids: Apply consistent use of APA or MLA format to cite reference materials and order citations alphabetically.

Motion passed unanimously.

College of Architecture & Urban Studies

New Certificate

Certificate: Establishment of Graduate Certificate: Construction Management (CMGC) (New) (2020); first term and year to enroll: Spring 2020; first term and year to graduate: Fall 2020 (CM-5311)

Motion was made and seconded to **APPROVE** the Establishment of Graduate Certificate: Construction Management (CMGC) (New) (2020); first term and year to enroll: Spring 2020; first term and year to graduate: Fall 2020 (CM-5311) **with minor required modifications**:

- Description of Certificate: Work with SCHEV Liaison on format
  - Provide specific examples of what students will learn to prepare them for industry
  - Delete second paragraph.
- Curriculum Requirements
  - Edit to read "Students will be required to take four courses that provide fundamental competencies in industry principles and practices."
- Number of Credit Hours: Delete "new courses are denoted with an asterisk."

- Faculty: Delete last sentence “While presently there are no plans to hire…”
    - Minimum requirements for faculty: #2 change “and” to “or”
- Resources
    - Edit first sentence to read “Resources required to support the program include existing resources, such as student support…”
    - Delete sentence “More specific program administration is required to maintain….”
- Required Courses:
    - BC 5154: Remove “(BIM).”

Motion passed unanimously.

ADJOURNMENT

A motion was made and seconded to adjourn the meeting at **4:10 PM**.

Respectfully Submitted,
Nicole Akers
Office of the University Registrar