I. ACTION ITEMS:

1. Minutes from the March 23, 2023 Graduate Council Meeting (Enclosure 1).

CERTIFICATES:

2. The College of Engineering seeks to create a graduate certificate in Artificial Intelligence (#17877). Dr. Christina Gardner-McCune will be present for discussion (Enclosure 2).

3. The College of Engineering seeks to create a graduate certificate in Civil Infrastructure Assessment (#17940). Dr. Jennifer Bridge will be present for discussion (Enclosure 3).

4. The College of Engineering seeks to create a graduate certificate in Coastal Engineering and Management (#17930). Dr. Mike Annable will be present for discussion (Enclosure 4).

5. The College of Engineering seeks to create a graduate certificate in Coastal Resilience Engineering (#17943). Dr. Jennifer Bridge will be present for discussion (Enclosure 5).

6. The College of Engineering seeks to create a graduate certificate in Fundamental Computer Science (#17786). Dr. Christina Gardner-McCune will be present for discussion (Enclosure 6).

7. The College of Medicine seeks to modify the curriculum for the graduate certificate in Medical Microbiology (#18347). Dr. Paul Gulig will be present for discussion (Enclosure 7).

CONCENTRATION:

8. The College of Medicine seeks to rename the graduate concentration in Physiology and Functional Genomics to Physiology and Aging (#18391). Dr. Tom Rowe, Dr. Shinichi Someya and Ms. Robyn Edwards will be present for discussion (Enclosure 8).

MAJORS:

9. The College of Agricultural and Life Sciences seeks to modify the curriculum for the Master of Science (M.S.) with a major in Interdisciplinary Ecology (non-thesis) (#18183). Dr. Ramesh Reddy will be present for discussion (Enclosure 9).

10. The College of Agricultural and Life Sciences seeks to modify the curriculum for the Master of Science (M.S.) with a major in Interdisciplinary Ecology (thesis) (#18215). Dr. Ramesh Reddy will be present for discussion (Enclosure 10).

11. The College of Agricultural and Life Sciences seeks to modify the curriculum for the Doctor of Philosophy (Ph.D.) with a major in Interdisciplinary Ecology (#18207). Dr. Ramesh Reddy will be present for discussion (Enclosure 11).
12. The College of Agricultural and Life Science seeks to modify the title of the major for the Master of Science (M.S.) degree from a major in “Soil and Water Sciences” to a major in “Soil, Water, and Ecosystem Sciences” (#18074). Dr. Patrick Chris Wilson will be present for discussion (Enclosure 12).

13. The College of Agricultural and Life Science seeks to modify the title of the major for the Doctor of Philosophy (Ph.D.) degree from a major in “Soil and Water Sciences” to a major in “Soil, Water, and Ecosystem Sciences” (#18075). Dr. Patrick Chris Wilson will be present for discussion (Enclosure 13).

DEGREE:

14. The College of Medicine seeks to create a graduate degree for the Master of Science (M.S.) with a major in Genetics and Genomics (#18061). Dr. Connie Mulligan will be present for discussion (Enclosure 14).

COMBINATION DEGREES:

15. The College of Liberal Arts and Sciences seeks to create a combination degree program between the Bachelor of Arts (B.A.) or the Bachelor of Science (B.S.) degree with a major in Anthropology and the Master of Arts (M.A.) degree with a major in Anthropology (#17438). Dr. Kenneth Sassaman will be present for discussion (Enclosure 15).

16. The College of Health and Human Performance and the Levin College of Law seeks to create a combination degree program between the Master of Science (M.S.) with a major in Sport Management and the Juris Doctor (J.D.) degree (#17244). Dr. Cyntrice Thomas will be present for discussion (Enclosure 16).

II. INFORMATION ITEM / ADMINISTRATIVE ACTIONS:

17. Graduate Curriculum Committee – March Minutes and April Agenda. (Enclosure 17).

18. Update on the Graduate Council election 2023-2026

19. Graduate Programs – Distance or Self-Funded – No new items

III. DISCUSSION ITEMS:

20. In-residence policy for Ph.D.

21. Chat GPT
MEMBERS PRESENT: Dr. Nicole Stedman (Chair), Dr. Monika Ardelt, Dr. Linda Bloom, Dr. Hitomi Greenslet, Dr. Cynthia Griffin, Dr. Tanya Koropeckyj-Cox, Dr. Timothy Murtha, Dr. K. Ramesh Reddy, Dr. Marta Wayne, Paul C. Wassel III (GSC representative), and Alexander Wong (GSC alternate)

MEMBERS ABSENT: Dr. J.C. Bunch, Dr. James Essegbey, Dr. Corene Matyas, and Dr. Aner Sela

GUESTS PRESENT: Dr. Mike Daniels (College of Liberal Arts and Sciences), Dr. Stephanie Hanson (College of Public Health and Health Professions), Sandie Houder (College of Agricultural and Life Sciences), Diana Hull (Office of the Registrar), Dr. Jessica Kramer (College of Public Health and Health Professions), Dr. Maria Leite (Academic Affairs), Bill McElroy (College of Engineering), Dr. Amy Mобley (College of Health and Human Performance), Dr. Johnathan Orsini (Office of the Provost/Distance Learning), and Dr. Eric Triplett (College of Agricultural and Life Sciences)

STAFF PRESENT: Dr. Tom Kelleher, Gann Enholm, Megan Lewis, Frankie Tai (Recording), Patty Van Wert, and Stacy Wallace

The meeting was called to order at 1:02 p.m.

Dr. Stedman welcomed everyone to this month’s meeting of the Graduate Council and gave a brief summary of the pending proposals to be presented to the Council.

I. ACTION ITEMS:

1. Minutes from the February 16, 2023 Graduate Council Meeting. A motion to approve was made, seconded, and passed unanimously.

CERTIFICATES:

2. The College of Agricultural and Life Sciences seeks to modify the curriculum for the graduate certificate in Ecological Restoration (#18055). Sandie Houder was present (via Zoom) for discussion. A motion to approve was made, seconded, and passed unanimously, with a proposed effective date of earliest available.

3. The College Engineering seeks to modify the curriculum for the graduate certificate in Engineering Innovation (#18110). Dr. Kelleher presented the proposal on behalf of the unit. A motion to approve was made, seconded, and passed unanimously, with a proposed effective date of earliest available.
4. The College of Engineering seeks to modify the curriculum for the graduate certificate in Engineering Project Management (#17948). Bill McElroy was present for discussion. A motion to approve was made, seconded, and passed unanimously, with a proposed effective date of earliest available.

5. The College of Agricultural and Life Sciences seeks to modify the curriculum for the graduate certificate in Natural Resource Policy and Administration (#18053). Sandie Houder was present (via Zoom) for discussion. A motion to approve was made, seconded, and passed unanimously, with a proposed effective date of earliest available.

CONCENTRATIONS:

6. The College of Public Health and Health Professions seeks to create a graduate concentration in Disability, Health, and Participation for the Doctor of Philosophy (Ph.D.) with a major in Rehabilitation Science (#17830). Dr. Stephanie Hanson and Dr. Jessica Kramer were present (via Zoom) for discussion. A motion to approve was made, seconded, and passed unanimously, with a proposed effective date of Fall 2023.

7. The College of Public Health and Health Professions seeks to modify the curriculum for the graduate concentration in Health Data Science (#17367). Dr. Stephanie Hanson and Dr. Steve Foti were present (via Zoom) for discussion. A motion to approve was made, seconded, and passed unanimously, with a proposed effective date of Fall 2023.

MAJORS:

8. The College of Liberal Arts and Sciences seeks to modify the curriculum for the Master of Statistics, the Master of Science in Statistics, and the Doctor of Philosophy with a major in Statistics (#18129). Dr. Mike Daniels was present (via Zoom) for discussion. A motion to approve was made, seconded, and passed unanimously, with a proposed effective date of Fall 2023.

9. The College of Health and Human Performance seeks to modify the curriculum for the Master of Science (MS) with a major in Health Education and Behavior (HEB) (#18366). Dr. Amy Mobley was present (via Zoom) for discussion. A motion to approve was made, seconded, and passed unanimously, with a proposed effective date of Fall 2023.

2023-2026 BALLOT:

10. Approval of the ballot for election to Graduate Council 2023-2026. (Appendix A). A motion to approve the list was made, seconded, and passed unanimously.

II. INFORMATION ITEM / ADMINISTRATIVE ACTIONS:

11. Graduate Curriculum Committee – February Minutes and March Agenda.

12. Graduate Programs – Distance or Self-Funded
   ● CALS – Soil Water and Ecosystems Sciences certificate in Fertilizer Technology
A working draft of an application form for proposals for online Ph.D. programs was distributed.
Dr. Triplett provided a sample of responses using the draft form, which the Council reviewed.
Council discussed additional questions and fields to add to the form. Based on feedback, the form
will be revised and a path provided (via https://approval.ufl.edu) for consideration of proposals.

III. DISCUSSION ITEM:

14. Graduate Faculty Status
Discussed the possibility of creating a training or system for nominees for graduate faculty status
to acknowledge the obligations and responsibilities of external members serving on graduate
supervisory committees. This tool could be used to help clear future requests for faculty
members to be granted graduate faculty status for the purposes of serving as members of
committees outside of their home unit and in cases in which the faculty member’s home unit
does not offer a graduate degree.

The meeting adjourned at 2:21 p.m.
### Appendix A

<table>
<thead>
<tr>
<th>Name</th>
<th>Rank</th>
<th>College</th>
<th>Department</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dr. Alin Ceobanu</td>
<td>Associate Professor</td>
<td>College of Liberal Arts and Sciences</td>
<td>Department of Sociology and Criminology &amp; Law</td>
</tr>
<tr>
<td>Dr. Jessie Fernandez</td>
<td>Assistant Professor</td>
<td>College of Agricultural and Life Sciences</td>
<td>Department of Microbiology and Cell Science</td>
</tr>
<tr>
<td>Dr. Michael D. Martinez</td>
<td>Professor and Graduate Coordinator</td>
<td>College of Liberal Arts and Sciences</td>
<td>Department of Political Science</td>
</tr>
<tr>
<td>Dr. Linjuan Rita Men</td>
<td>Professor</td>
<td>College of Journalism and Communications</td>
<td>Department of Public Relations</td>
</tr>
<tr>
<td>Dr. Connie Mulligan</td>
<td>Professor</td>
<td>College of Liberal Arts and Sciences</td>
<td>Department of Anthropology</td>
</tr>
<tr>
<td>Dr. Joni Williams Splett</td>
<td>Associate Professor</td>
<td>College of Education</td>
<td>Department of Special Education, School Psychology and Early Childhood Studies</td>
</tr>
</tbody>
</table>
Info

Request: New Graduate Certificate in Artificial Intelligence

Description of request: The College of Engineering seeks to create a graduate certificate in Artificial Intelligence with an on-campus, traditional delivery modality.

Submitter: Christina Gardner-McCune gmccune@ufl.edu

Created: 4/12/2023 1:37:09 PM

Form version: 6

Responses

Certificate Name
Enter the name of the certificate. Example: Urban Pest Management.

Artificial Intelligence

Transcript Title
Enter the transcript title of the certificate. This is limited to 50 characters, including spaces.

Artificial Intelligence

Credits
Enter the total number of credit hours needed to complete the certificate program.

9

Level
Enter the program level of the certificate.

Graduate

CIP Code
Enter the six digit Classification of Instructional Programs (CIP) code for the degree program associated with the proposed certificate. The code has the numerical format XX.XXXX. Contact the Office of Institutional Planning and Research (OIPR) to verify the CIP code for the existing degree program.

11.0101

Degree Program
Enter the degree program associated with the CIP code entered above (e.g. Accounting).

MS or PhD with a major in Computer Science
Effective Term

*Enter the term (semester and year) that the certificate would start. Please keep in mind that this may be adjusted depending on University deadlines for approval process.*

Fall

Effective Year

2023

Certificate Description

*Enter a description of the certificate. This is limited to 50 words or fewer.*

The Artificial Intelligence certificate provides rigorous training in the fundamentals of artificial intelligence, ethics, and current software tools. Courses provide methodological and practical foundations in AI, neural networks, machine learning, and AI ethics. The certificate prepares students to apply AI and ML methods to a variety of application domains.

Requirements for Admission

*List any requirements for admission to this new certificate program such as grade point average, background in the discipline, current enrollment status, etc.. Please indicate if the certificate only accepts students of a particular status: for example, current UF graduate students, graduate students in a specific college, non-degree seeking students, or any student status.*

This certificate is appropriate for individuals with computing related-undergraduate degrees (e.g., Computer Science, Computer Engineering, Information Systems), or minor in Computer science and/or 3+ years of industrial experience.

Requirements for Completion

*List all of requirements for completion of the certificate program, such as courses, internships, projects, etc. For each course, indicate prefix, number, title, # credits, and established grading scheme (letter grade or S/U). The title should be identical to the official title of the course as listed in the Graduate catalog or [http://gradcatalog.ufl.edu/](http://gradcatalog.ufl.edu/)*

Students must complete the following courses:

1. PHI 6699 Ethics, AI, and Data (3 credits), Grading: Letter Grade (Required)

2. Two of the following courses:
   - COT 5615 MATH FOR INTELLIGENT SYSTEMS, (3 credits), Grading: Letter Grade
   - CAP 6615 NEURAL NETWORKS FOR COMPUTING, (3 credits), Grading: Letter Grade
   - CAP 6610 MACHINE LEARNING (3 credits), Grading: Letter Grade

All work used for the Graduate Certificate must meet a minimum overall 3.0 GPA (truncated).
Rationale and Place in Curriculum
Describe the rationale for offering this new certificate and having it on the transcript, its place in the curriculum, how it will enhance the quality of the existing program or department. Also describe its overlap with any existing certificates and programs, and a justification for any such overlap. Note that documentation of consultation will be expected for any certificate with overlapping content.

AI has emerged in the past twenty years as a key component of next-generation technology infrastructure. It has now become vital for students and faculty to acquaint themselves with this new discipline so that the promise and perils of AI are understood by society at large. Within the existing computing curriculum, AI sits at the intersection and complements algorithms, high-performance computing, embedded devices, statistics and optimization, while impacting other disciplines areas such as economics, medicine, linguistics not to mention philosophy.

This AI Certificate organizes several AI courses offered by the department into a pathway for graduate students interested in deepening their knowledge of Artificial Intelligence. One of its core advantages of offering a certificate now is the widespread application not only in science and engineering but to society at large and our department has courses to address them from arcane applied math at one end to applications in human-centered computing at the other.

While there are a number of disciplinary applied AI certificates being offered by other departments and colleges focused on AI, this is the only Artificial Intelligence certificate focused on equipping computing professionals on the bleeding edge of the science of Artificial Intelligence.

Credits earned in the certificate may be eligible for subsequent transfer of credit to a UF master’s degree program. (subject to the approval of the supervisory committee and Graduate Council policies governing transfer credit).

Student Learning Outcomes
List each student learning outcome with its associated courses, assessment type (e.g. course-related exam/assignment/grade, final paper/project/presentation, standardized exam, capstone) and method (e.g. rubric, faculty committee, single faculty member).

Since AI relies heavily on high-performance computing project-based evaluation is key in which each student gets to do a project on their own and a collaborative project using state-of-the-art AI platforms.

A capstone AI project with close supervision by a faculty member is highly recommended.
Info
Request: New Graduate Certificate in Civil Infrastructure Assessment
Description of request: The Herbert Wertheim College of Engineering seeks to create a new graduate certificate in Civil Infrastructure Assessment with an on-campus, traditional delivery modality
Submitter: Jennifer Bridge jennifer.bridge@essie.ufl.edu
Created: 4/12/2023 11:18:27 AM
Form version: 4

Responses
Certificate Name
Enter the name of the certificate. Example: Urban Pest Management.

Civil Infrastructure Assessment

Transcript Title
Enter the transcript title of the certificate. This is limited to 50 characters, including spaces.

Civil Infrastructure Assessment

Credits
Enter the total number of credit hours needed to complete the certificate program.

9

Level
Enter the program level of the certificate.

Graduate

CIP Code
Enter the six digit Classification of Instructional Programs (CIP) code for the degree program associated with the proposed certificate. The code has the numerical format XX.XXXX. Contact the Office of Institutional Planning and Research (OIPR) to verify the CIP code for the existing degree program.

14.0801

Degree Program
Enter the degree program associated with the CIP code entered above (e.g. Accounting).

Civil Engineering
Effective Term
Enter the term (semester and year) that the certificate would start. Please keep in mind that this may be adjusted depending on University deadlines for approval process.

Earliest Available

Effective Year

Earliest Available

Certificate Description
Enter a description of the certificate. This is limited to 50 words or fewer.

The Civil Infrastructure Assessment graduate certificate provides comprehensive training and education on the development and application of technologies to evaluate structural safety and maintenance requirements. Courses provide students with practical knowledge and experience in the collection, analysis, and visualization of infrastructure performance data for effective decision support.

Requirements for Admission
List any requirements for admission to this new certificate program such as grade point average, background in the discipline, current enrollment status, etc.. Please indicate if the certificate only accepts students of a particular status: for example, current UF graduate students, graduate students in a specific college, non-degree seeking students, or any student status.

This is a graduate-level program. Students enrolling in this program are expected to be successful if they have the following background:

• Partial differential equations, statistics, statics and dynamics
• Basic programming skills (e.g. Python)

Admission requires a bachelor's degree in an engineering program from a regionally accredited institution. The program is open to currently enrolled UF graduate students and to non-degree- seeking students as well. Credits earned in the certificate may be eligible for subsequent transfer of credit to a UF master degree program. (subject to the approval of the supervisory committee and Graduate Council policies governing transfer credit).

Requirements for Completion
List all of requirements for completion of the certificate program, such as courses, internships, projects, etc. For each course, indicate prefix, number, title, # credits, and established grading scheme (letter grade or S/U). The title should be identical to the official title of the course as listed in the Graduate catalog or <a href="http://gradcatalog.ufl.edu/">Graduate</a> catalog.
Nine total credits required:

CGN6XXXC Structural Health Monitoring: 3 credits; letter-graded (approval #17846)
CGN6XXX Engineering and Construction Analytics using BIM 3 credits; letter-graded (approval #17863)
CGN6XXX Nondestructive Evaluation of Civil Infrastructure: 3 credits; letter-graded (approval #17842)

Students must complete all three of the above courses with a grade of B or better to earn the graduate certificate.

Rationale and Place in Curriculum
Describe the rationale for offering this new certificate and having it on the transcript, its place in the curriculum, how it will enhance the quality of the existing program or department. Also describe its overlap with any existing certificates and programs, and a justification for any such overlap. Note that documentation of consultation will be expected for any certificate with overlapping content.

Aging civil infrastructure, such as buildings and bridges, requires effective monitoring and maintenance to continue to fulfill its intended function while ensuring the safety of those who use it. With coastal civil infrastructure subject to demanding environmental conditions and extreme storms and increasing requirements for routine structural inspections of older buildings, there is a gap in the workforce gap for engineers specifically trained in structural assessment technologies and applications. The design of new infrastructure is the focus of undergraduate and graduate civil engineering programs; however, very few educational programs focus on the maintenance and safety needs of existing structures. Building on an solid undergraduate engineering background, this graduate certificate aims to provide the appropriate training, knowledge and skills to prepare students to work in the growing field of existing infrastructure structural assessment and forensic engineering.

Credits earned in the certificate may be eligible for subsequent transfer of credit to a UF master’s degree program (subject to the approval of the supervisory committee and Graduate Council policies governing transfer credit).

Student Learning Outcomes
List each student learning outcome with its associated courses, assessment type (e.g. course-related exam/assignment/grade, final paper/project/presentation, standardized exam, capstone) and method (e.g. rubric, faculty committee, single faculty member).

1. Skills: Ability to select appropriate structural assessment technology and use it to evaluate structural performance/defect, and prepare a report that quantifies structural performance/defect for use in designing a maintenance strategy. The outcome is assessed in CGN6XXXC Structural Health Monitoring via completion of all course labs. The outcome is met if students, evaluated by course instructor, achieves at least 80/100 combined average for all lab reports.
2. Communication: Ability to develop a report that quantifies structural performance/defect for use in designing a maintenance strategy. The outcome is assessed in CGN6XXX Nondestructive Evaluation of Civil Infrastructure via final class project. The outcome is met if students, evaluated by course instructor, achieve at least 80/100 on the final project.

3. Skills: Ability to create and use building information modeling (BIM) for building performance and data visualization. The outcome is assessed in CGN6XXX Building Information Modeling via final class project. The outcome is met if students, evaluated by course instructor, achieve at least 80/100 on the final project.
Certificate | New for request 17930

Info
Request: Graduate Certificate in Coastal Engineering and Management
Description of request: The College of Engineering seeks to create a graduate certificate in Coastal Engineering and Management with an on-campus, traditional delivery modality.
Submitter: Elliot Douglas elliott.douglas@essie.ufl.edu
Created: 4/5/2023 1:29:42 PM
Form version: 2

Responses
Certificate Name
Enter the name of the certificate. Example: Urban Pest Management.

Coastal Engineering and Management

Transcript Title
Enter the transcript title of the certificate. This is limited to 50 characters, including spaces.

Coastal Engineering and Management

Credits
Enter the total number of credit hours needed to complete the certificate program.

9

Level
Enter the program level of the certificate.

Graduate

CIP Code
Enter the six digit Classification of Instructional Programs (CIP) code for the degree program associated with the proposed certificate. The code has the numerical format XX.XXXX. Contact the Office of Institutional Planning and Research (OIPR) to verify the CIP code for the existing degree program.

14.1401

Degree Program
Enter the degree program associated with the CIP code entered above (e.g. Accounting).

Environmental Engineering

Effective Term
Enter the term (semester and year) that the certificate would start. Please keep in mind that this may be adjusted depending on University deadlines for approval process.
Effective Year

2023

Certificate Description

Enter a description of the certificate. This is limited to 50 words or fewer.

Provides unique training in nature-based solutions and natural infrastructure as fundamental elements to coastal planning as well as in the policy framework and management context that are required for the successful implementation of coastal management solutions.

Requirements for Admission

List any requirements for admission to this new certificate program such as grade point average, background in the discipline, current enrollment status, etc.. Please indicate if the certificate only accepts students of a particular status: for example, current UF graduate students, graduate students in a specific college, non-degree seeking students, or any student status.

The certificate may be earned by any graduate student within the Herbert Wertheim College of Engineering who is in good standing.

Requirements for Completion

List all of requirements for completion of the certificate program, such as courses, internships, projects, etc. For each course, indicate prefix, number, title, # credits, and established grading scheme (letter grade or S/U). The title should be identical to the official title of the course as listed in the Graduate catalog or <a href="http://gradcatalog.ufl.edu/">Graduate</a> catalog.

EGN 6XXX Engineering Nature-Based Coastal Solutions (3 cr) - letter grade (approval #17928)
EES 6XXX Coastal Policy Lab (3 cr) – letter grade (approval #17870)
EES 6345 Florida Marine and Coastal Law and Policy (3 cr) - letter grade (approval #17927)

Rationale and Place in Curriculum

Describe the rationale for offering this new certificate and having it on the transcript, its place in the curriculum, how it will enhance the quality of the existing program or department. Also describe its overlap with any existing certificates and programs, and a justification for any such overlap. Note that documentation of consultation will be expected for any certificate with overlapping content.

Currently, engineering firms, government agencies, and NGOs throughout the state and nation are demanding a workforce knowledgeable about regulation and policy while also desiring skills in coastal engineering design and management. Likewise, students who move through science and engineering undergraduate programs often
express an interest in developing a better understanding of the disciplines they will interact with after graduation and a broader suite of skills to take into the workforce, including professional skills such as communication, collaboration, and leadership. Coastal engineering and related professions increasingly demand a workforce that possesses these skills from the outset and expect academic institutions to provide the necessary training. There is currently no set of courses or certificates at UF that provides this training, thus this certificate will fill a currently unmet need in the curriculum. Students can take the certificate courses at any point during their degree.

Credits earned in the certificate may be eligible for subsequent transfer of credit to a UF master’s degree program. (subject to the approval of the supervisory committee and Graduate Council policies governing transfer credit).

**Student Learning Outcomes**

List each student learning outcome with its associated courses, assessment type (e.g. course-related exam/assignment/grade, final paper/project/presentation, standardized exam, capstone) and method (e.g. rubric, faculty committee, single faculty member).

Program Goal
Goal: Each year 10 students enroll in the certificate
Evaluation Method: Enrollment figures

Student Learning
Outcome SLO Area:
Content Knowledge
Assessment Method: Test administered after all coursework for the certificate has been completed
Certificate|New for request 17943

Info
Request: New Graduate Certificate: Coastal Resilience Engineering
Description of request: The College of Engineering seeks to create a new graduate certificate in Coastal Resilience Engineering, with an on-campus, traditional delivery modality.
Submitter: Robert Thieke robert.thieke@essie.ufl.edu
Created: 3/29/2023 5:10:40 PM
Form version: 3

Responses
Certificate Name
Enter the name of the certificate. Example: Urban Pest Management.
Coastal Resilience Engineering

Transcript Title
Enter the transcript title of the certificate. This is limited to 50 characters, including spaces.
Coastal Resilience Engineering

Credits
Enter the total number of credit hours needed to complete the certificate program.
9

Level
Enter the program level of the certificate.
Graduate

CIP Code
Enter the six digit Classification of Instructional Programs (CIP) code for the degree program associated with the proposed certificate. The code has the numerical format XX.XXXX. Contact the Office of Institutional Planning and Research (OIPR) to verify the CIP code for the existing degree program.
14.0801

Degree Program
Enter the degree program associated with the CIP code entered above (e.g. Accounting).
Civil Engineering

Effective Term
Enter the term (semester and year) that the certificate would start. Please keep in mind that this may be adjusted depending on University deadlines for approval process.
Earliest Available
Effective Year

Earliest Available

Certificate Description

Entr a description of the certificate. This is limited to 50 words or fewer.

The Coastal Resilience Engineering graduate certificate provides comprehensive training on the foundations of coastal engineering. Courses provide fundamental knowledge and tools for resilient and adaptable solutions to coastal engineering challenges. The certificate prepares students to apply integrated field data, analytical tools, and numerical methods to solve complex coastal engineering problems.

Requirements for Admission

List any requirements for admission to this new certificate program such as grade point average, background in the discipline, current enrollment status, etc. Please indicate if the certificate only accepts students of a particular status: for example, current UF graduate students, graduate students in a specific college, non-degree seeking students, or any student status.

This is a graduate-level program. Students enrolling in this program are expected to be successful if they have the following background:

- Knowledge of the fundamental of fluid dynamics, materials, calculus, and statistics

Admission requires a bachelor's degree in civil or environmental engineering or a similarly appropriate major (as defined by the Civil Engineering Dept.) from a regionally accredited institution. The program is open to currently enrolled UF graduate students and to non-degree-seeking students as well. Credits earned in the certificate may be eligible for subsequent transfer of credit to a UF master degree program. (subject to the approval of the supervisory committee and Graduate Council policies governing transfer credit)

Requirements for Completion

List all of requirements for completion of the certificate program, such as courses, internships, projects, etc. For each course, indicate prefix, number, title, # credits, and established grading scheme (letter grade or S/U). The title should be identical to the official title of the course as listed in the Graduate catalog or <a href="http://gradcatalog.ufl.edu/">Graduate</a> catalog.

Nine total credits required:

- OCP 6XXX Estuarine Circulation: 3 credits; letter-graded (Approval #17871)
- EOC 6XXX Field Methods for Coastal Engineers: 3 credits; letter-graded (Approval #17872)
- EOC 6XXX Nearshore Coastal Processes: 3 credits; letter-graded (Approval #17873)

Students must complete the three courses with a grade of B or better to earn the graduate certificate.

Rationale and Place in Curriculum

Describe the rationale for offering this new certificate and having it on the transcript, its place in the curriculum, how it will enhance the quality of the existing program or department. Also describe its overlap with any existing certificates and programs, and a justification for any such
Climate change impacts together with increased use and development of coastal areas severely threatens the resiliency of coastal communities and coastal-based industries. Civil and Environmental Engineering students have the fundamental knowledge of fluid mechanics, materials, calculus, and statistics required as a baseline to pursue coastal specialization. This certificate builds on these strengths and augments them with fundamentals of coastal engineering with specialized courses taught in the Civil and Coastal Engineering Department. The certificate program provides the appropriate training, knowledge, and skills to students to prepare them for a career in the field of coastal engineering with an emphasis on resilience and adaptation. We expect this certificate will greatly enhance graduate opportunities and help fill a significant workforce gap.

Credits earned in the certificate may be eligible for subsequent transfer of credit to a UF master’s degree program. (subject to the approval of the supervisory committee and Graduate Council policies governing transfer credit).

**Student Learning Outcomes**

List each student learning outcome with its associated courses, assessment type (e.g. course-related exam/assignment/grade, final paper/project/presentation, standardized exam, capstone) and method (e.g. rubric, faculty committee, single faculty member).

Student Learning Outcome – Skills - Ability to analyze coastal engineering problems and develop/evaluate a range of resilient solutions.

Evaluation Method: This outcome will be directly assessed via separate assessments in each of the three required certificate courses as appropriate:
- EOC 6XXX Field Methods for Coastal Engineers - Final project evaluation - analysis and application of oceanic and meteorological data (Approval #17872)
- EOC 6XXX Nearshore Coastal Processes - Homework assignments on application of longshore sediment transport model, calculation of sediment budgets (Approval #17873)
- OCP 6XXX Estuarine Circulation - Final exam question on estuarine response (Approval #17871)

This outcome is met if 75% of the students score 75% or higher on each of the assessments.
Certificate | New for request 17786

Info
Request: New Graduate Certificate in Fundamental Computer Science
Description of request: The College of Engineering seeks to create a graduate certificate in Fundamental Computer Science with an on-campus, traditional delivery modality.
Submitter: Christina Gardner-McCune gmccune@ufl.edu
Created: 4/10/2023 3:36:06 AM
Form version: 4

Responses
Certificate Name
Enter the name of the certificate. Example: Urban Pest Management.

Fundamental Computer Science

Transcript Title
Enter the transcript title of the certificate. This is limited to 50 characters, including spaces.

Fundamental Computer Science

Credits
Enter the total number of credit hours needed to complete the certificate program.

9

Level
Enter the program level of the certificate.

Graduate

CIP Code
Enter the six digit Classification of Instructional Programs (CIP) code for the degree program associated with the proposed certificate. The code has the numerical format XX.XXXX. Contact the Office of Institutional Planning and Research (OIPR) to verify the CIP code for the existing degree program.

11.0101

Degree Program
Enter the degree program associated with the CIP code entered above (e.g. Accounting).

Computer Science

Effective Term
Enter the term (semester and year) that the certificate would start. Please keep in mind that this may be adjusted depending on University deadlines for approval process.
Certificate Description

Enter a description of the certificate. This is limited to 50 words or fewer.

The Fundamental Computer Science graduate certificate provides students with the academic background necessary to understand the application of computers to scientific, engineering, and artificial intelligence problems and prepares them for further graduate study in computer-related disciplines. This certificate is in-person, project-oriented and experiential, and involves instructors from academia and industry.

Requirements for Admission

List any requirements for admission to this new certificate program such as grade point average, background in the discipline, current enrollment status, etc. Please indicate if the certificate only accepts students of a particular status: for example, current UF graduate students, graduate students in a specific college, non-degree seeking students, or any student status.

This certificate is appropriate for individuals with computing related undergraduate degrees (e.g., Computer Science, Computer Engineering, Information Systems), or minor in Computer science and/or 3+ years of industrial experience.

Requirements for Completion

List all of requirements for completion of the certificate program, such as courses, internships, projects, etc. For each course, indicate prefix, number, title, # credits, and established grading scheme (letter grade or S/U). The title should be identical to the official title of the course as listed in the Graduate catalog or <a href="http://gradcatalog.ufl.edu/">Graduate</a> catalog.

Students must complete the following courses (9 credits):
1. COT 5405 Analysis of Algorithms (3 credits), Grading: Letter Grade
2. COP 5556 Programming Language Principles (3 credits), Grading: Letter Grade
3. COP 5536 Advanced Data Structures (3 credits), Grading: Letter Grade

All work used for the Graduate Certificate must meet a minimum overall 3.0 GPA (truncated).

Rationale and Place in Curriculum

Describe the rationale for offering this new certificate and having it on the transcript, its place in the curriculum, how it will enhance the quality of the existing program or department. Also describe its overlap with any existing certificates and programs, and a justification for any such overlap. Note that documentation of consultation will be expected for any certificate with overlapping content.
The courses in this certificate are part of our required courses to get a M.S. with a major in Computer Science and represent the foundational knowledge in computer science: Algorithms, Data Structures, and Programming language principles. This set of courses prepares students for more advanced graduate computing courses. There is no overlap between any of the certificates.

Credits earned in the certificate may be eligible for subsequent transfer of credit to a UF master’s degree program. (subject to the approval of the supervisory committee and Graduate Council policies governing transfer credit).

**Student Learning Outcomes**

*List each student learning outcome with its associated courses, assessment type (e.g. course-related exam/assignment/grade, final paper/project/presentation, standardized exam, capstone) and method (e.g. rubric, faculty committee, single faculty member).*

We use each of the course related projects and relevant assignments to measure the following student learning outcomes:

1. design and develop of advanced data structures and algorithms
2. evaluate the time complexity and space requirements for advanced data structures and algorithms
3. use appropriate programming language principles to solve real-world and complex problems.

We will develop a rubric that will be used by each course instructor to measure the students ability as they relate to these learning outcomes.
Request: Medical Microbiology Graduate Certificate Curriculum Modification

Description of request: The College of Medicine seeks to modify the curriculum for the graduate certificate in Medical Microbiology

Submitter: Paul Gulig gulig@ufl.edu

Created: 3/29/2023 10:26:15 PM

Form version: 2

Responses

Current Certificate Name

Medical Microbiology

Effective Term
Select the requested term and year that the certificate change(s) will first be implemented. Selecting "Earliest" will allow the change to be effective in the earliest term after full approval.

Summer

Effective Year

2023

Requested Action

Other (selecting this option will open additional form fields below)

Change Certificate Name?

No

Change Certificate Name on Transcript?

No

Current Transcript Name

Medical Microbiology

Change Credit Hours?

No

Change Certificate Description?

No
Change Certificate Prerequisites?

No

Change Certificate Requirements?

Yes

Current Requirements

Required (5 credits):
GMS6121 (Infectious Diseases; 3 credits; Letter-graded)
GMS7133 (Advanced Molecular Virology; 2 credits; Letter-graded)

Plus 3 credits from
GMS6108 (Bacterial Physiology, Antibiotics, and Genetics; 3 credits; Letter-graded)
MCB6670C (The Microbiome; 3 credits; Letter-graded)
MCB6424 (Probiotics; 3 credits; Letter-graded)

Proposed Requirements

Required (5 credits):
GMS6121 (Infectious Diseases; 3 credits; Letter-graded)
GMS7133 (Advanced Molecular Virology; 2 credits; Letter-graded)

Plus 2 or 3 credits from advanced bacteriology:
GMS6108 (Bacterial Physiology, Antibiotics, and Genetics; 3 credits; Letter-graded)
GMS6XXX (Advanced Bacteriology; 2 credits; Letter-graded) (approval #18107)
MCB6670C (The Microbiome; 3 credits; Letter-graded)
MCB6424 (Probiotics; 3 credits; Letter-graded)

Plus 3 or 4 credits from the following electives:
GMS6108 (Bacterial Physiology, Antibiotics, and Genetics; 3 credits; Letter-graded)
GMS6XXX (Advanced Bacteriology; 2 credits; Letter-graded) (approval #18107)
GMS7192 (Journal Colloquy; 1 credit [may be repeated once]; Letter-graded)
GMS6132 (Introductory Gene and Immunotherapy; 2 credits; Letter-graded)
MCB6670C (The Microbiome; 3 credits; Letter-graded)
MCB6424 (Probiotics; 3 credits; Letter-graded)
MCB6355 (Microbial/Host Defense; 1 credit; Letter-graded)
Impact on Program

Provide more flexibility and options students to complete the curriculum.

Rationale for Proposed Change(s)

The current curriculum requires 3 credits from among 3 different advanced bacteriology courses, all 3 credits. GMS 6108 is extremely challenging and may not be appropriate for all students. MCB6670C and MCB6424 are only taught in the spring semester.

A new course, GMS 6109 (Advanced Bacteriology), is in the approval process that is in the approval process (18107). GMS 6109 is a 2 credit course that does not change the SLOs and assessment methods for the certificate.

In allowing the 2 credit course to satisfy the advanced bacteriology requirement, students will have to complete 1 addition credit from among the elective courses already in the certificate's curriculum.

Assessment Data Review

Describe the Student Learning Outcome and/or program goal data that was reviewed to support the proposed changes.

Knowledge Number:
SLO1
Outcome: Describe the structure, physiology, and genetics of infectious agents and the pathogenesis of their diseases.

Skills
Number: SLO2
Outcome: Interpret peer-reviewed publications on infectious diseases.

Academic Assessment Plan Changes

Describe the modifications to the Academic Assessment Plan that result from the proposed change. These changes must be approved by the Academic Assessment Committee. A separate request must be completed for this, which can be found here: https://approval.ufl.edu/start-new-request/modify-aapslo-gradpro/

There are no changes to the Academic Assessment Plan as a result of adding GMS 6109 to the certificate's curriculum.
Concentration | Modify for request 18391

Info
Request: Concentration Name Change - Physiology and Functional Genomics to Physiology and Aging
Description of request: The College of Medicine seeks to rename the graduate concentration in Physiology and Functional Genomics to Physiology and Aging
Submitter: Casey Griffith cgriffith@aa.ufl.edu
Created: 4/12/2023 12:43:34 PM
Form version: 4

Responses
Degree Level
Indicate the degree level in which the concentration is offered.

D - Doctoral Degree

Thesis or Non-Thesis
Is this concentration for a thesis or non-thesis degree?

Thesis

Concentration
Enter the name of the concentration to be modified.

Physiology and Functional Genomics

Effective Term
Enter the term (semester and year) at which the modification should be effective.

Summer

Effective Year

2023

Is this an undergraduate Innovation Academy Program

No

Department/Degree/Majors to Offer Concentration
List all the department / degree / major combinations at the degree level offering the concentration.

College of Medicine/Ph.D./Medical Sciences
For example, if you are requesting a change to the "Wetland Sciences" concentration at the master's level, you would need to list all master's level degree / major combinations from every participating department:

- Forest Resources and Conservation: M.S. in Fisheries and Aquatic Sciences
- Forest Resources and Conservation: M.S. in Forest Resources and Conservation
- Forest Resources and Conservation: M.F.A.S. in Fisheries and Aquatic Sciences
- Forest Resources and Conservation: M.F.R.C. in Forest Resources and Conservation
- Geography: M.A in Geography
- Geography: M.S. in Geography
- Geological Sciences: M.S. in Geology
- Geological Sciences: M.S.T. in Geology

**Current Curriculum for Concentration**

There are no current plans to change the curriculum. Possible changes to meet the needs and requirements of new students in the newly added discipline will be discussed in the future.

**Proposed Concentration Changes**

*Describe the proposed changes to the concentration. If requesting a name change please provide details here as well.*

The Department of Physiology and Functional Genomics was merged with the Department of Aging in 2022. We are now the Department of Physiology and Aging. The College of Medicine seeks to rename the graduate concentration in Physiology and Functional Genomics to Physiology and Aging to reflect this merger, and to reflect the varied research interests of the faculty that will be mentoring future Ph.D. students. We are currently not requesting any changes to the concentration.

**Pedagogical Rationale/Justification**

*Describe the rationale for the proposed changes to the concentration.*

This request is just for a name change; there are no changes in courses or directional change in the teaching of our graduate students. There is no pedagogical change or rationale to be justified. We will contact current students to determine their preferences, and update their records in the Student Information System. All newly enrolled students will complete the Physiology and Aging Concentration.

**Impacts on other programs**

*Describe any potential impact on other programs or departments, including increased need for general education or common prerequisite courses, or increased need for required or elective courses outside of the existing program.*

There will be no impact on any other programs.
Assessment Data Review
*Describe the Student Learning Outcomes and/or program goal data that was reviewed to support the proposed changes.*

The curriculum will remain the same. We are just requesting the name change.

**Academic Learning Compact and Academic Assessment Plan**
*Describe the modifications to the Academic Assessment Plan that result from the proposed change.*

No Modifications to the Academic Assessment Plan

**Catalog Copy**
*Submitter agrees to prepare and upload document showing the catalog copy with the current and proposed curricula edited using the “track changes” feature in Word.*

No
Major|Modify_Curriculum for request 18183

Info
Request: Modify the curriculum of the Master of Science (M.S.) Non-thesis Degree with a major in Interdisciplinary Ecology
Description of request: The College of Agricultural and Life Sciences seeks to modify the curriculum for the Master of Science (M.S.) with a major in Interdisciplinary Ecology (non-thesis)
Submitter: Danny Coenen dcoenen@ufl.edu
Created: 4/7/2023 1:35:37 PM
Form version: 6

Responses
Major Name
Enter the name of the major. Example: "Mathematical Modeling"

Interdisciplinary Ecology

Major Code
Enter the two-letter or three-letter major code.

IEC

Degree Program Name
Enter the name of the degree program in which the major is offered.

Master of Science (non-thesis)

Undergraduate Innovation Academy Program
Is this an undergraduate program in the Innovation Academy?

No

Effective Term
Enter the term (semester and year) that the curriculum change would be effective.

Earliest Available

Effective Year

Earliest Available

Current Curriculum for Major

Current coursework requirements and curriculum are described in more detail at http://snre.ifas.ufl.edu/academics/graduate/courses-syllabi-and-curriculum/. These are distributed across five categories of curriculum areas of specialization (Table 1). Choices
among the courses in each of the categories are selected by the student and the supervisory committee to meet the student’s needs, interests, and degree program goals. Specifically, current curriculum requirements are summarized below:

- 15 credit hours distributed across five core curriculum topical areas (Table 1).
- A 1-credit hour Interdisciplinary Ecology seminar course is required.
- To meet the total 30 credit hours requirement for the MS Non-Thesis program, additional relevant courses are selected from the list of 472 courses as electives in one of the fields of study.

Partner academic department chairs and SNRE affiliate faculty reviewed the courses listed on the SNRE web site and identified courses currently taught in their units. This initial review resulted in 472 courses distributed across five core curriculum topical areas.

Table 1. Total number of courses currently listed in five core categories of the Interdisciplinary Ecology MS (Non-Thesis) program. Proposal to decrease the number of core courses to smaller pool. Also proposed to change the description of the course categories.

<table>
<thead>
<tr>
<th>Current Course Categories</th>
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<th>Proposed Course Categories</th>
<th>Proposed [number of core courses]</th>
<th>Proposed [number of elective courses]</th>
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</thead>
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<tr>
<td>Natural Science Distribution</td>
<td>108</td>
<td>Natural Sciences</td>
<td>22</td>
<td>86</td>
</tr>
<tr>
<td>Social Science Distribution</td>
<td>133</td>
<td>Social Sciences</td>
<td>19</td>
<td>114</td>
</tr>
<tr>
<td>Sustainability Studies Distribution</td>
<td>83</td>
<td>Sustainability Science</td>
<td>18</td>
<td>65</td>
</tr>
<tr>
<td>Statistics + Research Design &amp; Methods</td>
<td>107</td>
<td>Data Science</td>
<td>23</td>
<td>84</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>472</strong></td>
<td><strong>103</strong></td>
<td><strong>369</strong></td>
<td></td>
</tr>
</tbody>
</table>

**Proposed Curriculum Changes**

*Describe the proposed changes to the curriculum. You may list out the specific changes or provide the new semester models where changes are proposed. Please be precise and clear in stating requested changes. If the change is to offer the program through UF Online, please explain and attach a letter of support from the Director of UF Online.*

The SNRE Graduate Curriculum Committee reviewed the curriculum and revised the descriptions of the five categories of the Interdisciplinary Ecology curriculum (Table 1). The central theme of the revised descriptions is similar to the current curriculum with the exception of two categories (Table 1). All available 472 courses are grouped into five categories. The committee reviewed their syllabi and identified 18+ courses that fit best for each category.
From the existing list of courses, 18+ courses are identified as core courses for each topic area and the remaining courses are grouped into electives. The curriculum is restricted to courses with unique numbers (i.e., temporary courses or special topics are not included in the formal curriculum).

Ecology
The Interdisciplinary Ecology graduate program requires at least one course from the approved list of ecology courses for MS Non-Thesis students. Core courses in this track enable students to gain a foundational understanding of ecological concepts or to explore the ecology of organisms, populations, communities and/or ecosystems more deeply.

Natural Sciences
The Interdisciplinary Ecology graduate program requires at least one course from the approved list of natural sciences courses for MS Non-Thesis students. Natural science courses seek to convey how biotic and abiotic resources are linked to management actions and outcomes within an ecosystem context. This is an extremely broad realm that includes core courses on biophysical systems and processes, natural ecosystems, and intensively managed and built ecosystems dedicated to meeting human needs.

Social Sciences
The Interdisciplinary Ecology graduate program requires at least one course from the approved list of social sciences courses for MS Non-Thesis students. Social science courses encompass a diverse range of academic disciplines (including but not necessarily limited to Anthropology, Criminology, Economics, Geography, History, Political Science, Psychology, Religion, and Sociology) that focus on issues of human thought, action, institutions, conflicts, and management of natural resources and the environment. Core courses in the social sciences focus on central theoretical concerns and/or offer surveys of major topics in a social science discipline regarding natural resources and the environment. Social science electives tend to be more specialized, whether they focus on theoretical perspectives, substantive topics, management problems or regions of the world.

Sustainability Science
The Interdisciplinary Ecology graduate program requires at least one course from the approved list of sustainability science courses for MS Non-Thesis students. These courses focus on the integration of ecological, natural sciences, and social factors to sustain humans and ecological systems. Sustainability science emphasizes interdisciplinary issues that require integrative thinking to address complex problem related to the integrity and resilience of natural and social systems over time, including those that blend environmental policy, economics, justice, and environmental health.

Data Science
The Interdisciplinary Ecology graduate program requires at least one course from the approved list of courses in data science for MS Non-Thesis students. These courses focus on analyzing and interpreting data and information using methods drawn from statistics,
geospatial science, information science, and disciplinary knowledge. Electives within this category support development of a foundation in statistical concepts, experimental design, interpretation of documents, interviews, and observations, or application of theoretical and statistical models.

We propose the following for revised curriculum as described in Table 2.

- Current 472 courses are grouped into: (1) core courses and (2) elective courses.
- 15 credit hours are distributed across five core curriculum areas (Table 2).
- A 1-credit hour Interdisciplinary SNRE seminar course is required. The seminar requires registration for one semester and students are encouraged attend the seminar during the remaining semesters of the entire program.
- To meet the total 30 credit hours requirement for the MS Non-Thesis program, additional relevant courses are selected from both groups of courses.
- If the student cannot find a suitable course in the approved list of core courses, with the approval of the supervisory committee, the student can petition the SNRE Director to substitute up to 2 courses. Elective courses are not limited to the list provided and can be substituted without petition with the approval of the supervisory committee.

Table 2. Proposal to change the description of course category titles, but no change in the core course requirement for MS Non-Thesis program.

<table>
<thead>
<tr>
<th>Current Course Categories</th>
<th>Current credit hours</th>
<th>Proposed Course Categories</th>
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<td>3</td>
<td>Principles of Ecology</td>
<td>3</td>
</tr>
<tr>
<td>Natural Science Distribution</td>
<td>3</td>
<td>Natural Sciences</td>
<td>3</td>
</tr>
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<td>3</td>
<td>Social Sciences</td>
<td>3</td>
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<tr>
<td>Sustainability Studies Distribution</td>
<td>3</td>
<td>Sustainability Science</td>
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</tr>
<tr>
<td>SNRE Seminar</td>
<td>1</td>
<td>SNRE Seminar*</td>
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<tr>
<td>Electives</td>
<td>11</td>
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*Required registration for one semester and attendance encouraged for the remaining semesters during entire program

**UF Online Curriculum Change**

*Will this curriculum change be applied to a UF online program as well?*
No

**Pedagogical Rationale/Justification**

*Describe the rationale for the proposed changes to the curriculum.*

During the year 2022, SNRE submitted a proposal to reduce the total credit hour requirement of 36 credit hours to 30 credit hours. This proposal is approved at the level UF Board of Trustees, and we expect complete approval process during Spring 2023 for implementation by Summer 2023. The proposed revisions to the core area descriptions are the first update in more than 10 years and provide narrative descriptions of the current state of those disciplines, as well as rationales for which courses are included.

**Impact on Enrollment, Retention, Graduation**

*Describe any potential impact of the curriculum changes on students who are currently in the major.*

The student learning outcomes for MS Non-Thesis program are not changed, aside from an updated verb in SLO #1 to reflect current guidance on assessment through Bloom’s taxonomy. Program quality and integrity are maintained because of the flexibility of the contemporary degree program.

**Assessment Data Review**

*Describe the Student Learning Outcome and/or program goal data that was reviewed to support the proposed changes.*

The proposed curriculum equally supports SLO #1 and enhances SLO #2. Foundational knowledge competencies of SLO #1 are still supported by the interdisciplinary program.

SLO #1: Knowledge outcome – acquire knowledge of the components, processes, and interactions of the social-ecological system.
SLO #2: Skills outcome - apply the scientific method to generate new knowledge.
SLO #3: Professional behavior outcome - Interact with professional peers with honesty, ethical behavior, cultural sensitivity, teamwork, and effective communication.

The assessment method for SLOs includes (1) evaluation of the student’s Program of Study by the Faculty Advisor and Supervisory Committee and the School using a faculty-developed rubric; (2) Evaluation during the technical paper or capstone project by the Faculty Advisor and Supervisory Committee using a faculty-developed rubric.

The “criterion for success” is that 100% of MS Non-Thesis students achieve an outcome that is commensurate with the degree. It was determined that all MS Non-Thesis students in the Interdisciplinary Ecology degree program demonstrated: (1) a thorough understanding of the components, processes, and interactions of the social-ecological system commensurate with the degree; (2) the ability to apply the scientific method to generate new knowledge, and (3) the professional behavior expected.
Academic Learning Compact and Academic Assessment Plan

Describe the modifications to the Academic Learning Compact (for undergraduate programs) and Academic Assessment Plan that result from the proposed change.

There will be no modifications to our Academic Assessment Plan.

A comparison of the curriculum ‘current’ and ‘proposed’ for the MS the Non-Thesis degree programs is shown in Tables 1 and 2.

Catalog Copy

Submitter agrees to prepare and upload document showing the catalog copy with the current and proposed curricula edited using the “track changes” feature in Word.

Yes
Master of Science (M.S.) with a major in Interdisciplinary Ecology (non-thesis)
Curriculum Breakdown

Current Curriculum

Current coursework requirements and curriculum are described in more detail at http://snre.ifas.ufl.edu/academics/graduate/courses-syllabi-and-curriculum/. These are distributed across five categories of curriculum areas of specialization (Table 1). Choices among the courses in each of the categories are selected by the student and the supervisory committee to meet the student’s needs, interests, and degree program goals. Specifically, current curriculum requirements are summarized below:

- 15 credit hours distributed across five core curriculum topical areas (Table 1).
- A 1-credit hour Interdisciplinary Ecology seminar course is required.
- To meet the total 30 credit hours requirement for the MS Non-Thesis program, additional relevant courses are selected from the list of 472 courses as electives in one of the fields of study.

Partner academic department chairs and SNRE affiliate faculty reviewed the courses listed on the SNRE web site and identified courses currently taught in their units. This initial review resulted in 472 courses distributed across five core curriculum topical areas.

Table 1. Total number of courses currently listed in five core categories of the Interdisciplinary Ecology MS (Non-Thesis) program. Proposal to decrease the number of core courses to smaller pool. Also proposed to change the description of the course categories.

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Proposed Curriculum
Current coursework requirements and curriculum are described in more detail at http://snre.ifas.ufl.edu/academics/graduate/courses-syllabi-and-curriculum/.

We propose the following for revised curriculum as described in Table 2.

- Current 472 courses are grouped into: (1) core courses and (2) elective courses.
- 15 credit hours are distributed across five core curriculum areas (Table 2).
- A 1-credit hour Interdisciplinary SNRE seminar course is required. The seminar requires registration for one semester and students are encouraged attend the seminar during the remaining semesters of the entire program.
- To meet the total 30 credit hours requirement for the MS-thesis program, additional relevant courses are selected from both groups of courses.
- If the student cannot find a suitable course in the approved list of core courses, with the approval of the supervisory committee, the student can petition the SNRE Director to substitute up to 2 courses. Elective courses are not limited to the list provided and can be substituted without petition with the approval of the supervisory committee.

Table 2. Proposal to change the description of course category titles, but no change in the core course requirement for MS Non-Thesis program.

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*Required registration for one semester and attendance encouraged for the remaining semesters during entire program.
Modify Curriculum for request 18215

Info

Request: Modify the curriculum of the Master of Science (M.S.) Thesis Degree with a major in Interdisciplinary Ecology

Description of request: The College of Agricultural and Life Sciences seeks to modify the curriculum for the Master of Science (M.S.) with a major in Interdisciplinary Ecology (thesis)

Submitter: Danny Coenen dcoenen@ufl.edu

Created: 4/12/2023 9:52:44 PM

Form version: 6

Responses

Major Name

Enter the name of the major. Example: "Mathematical Modeling"

Interdisciplinary Ecology

Major Code

Enter the two-letter or three-letter major code.

IEC

Degree Program Name

Enter the name of the degree program in which the major is offered.

Master of Science (thesis)

Undergraduate Innovation Academy Program

Is this an undergraduate program in the Innovation Academy?

No

Effective Term

Enter the term (semester and year) that the curriculum change would be effective.

Earliest Available

Effective Year

Earliest Available

Current Curriculum for Major

Current coursework requirement and curriculum are described in more detail at http://snre.ifas.ufl.edu/academics/graduate/courses-syllabi-and-curriculum/ and are also listed below. These are distributed across five categories of curriculum areas of
specialization (Table 1). Choices among the courses in each of the category are selected by the student and the supervisory committee to meet the student’s needs, interests, and degree program goals. Specifically, current curriculum requirements are summarized below:

- 15 credit hours distributed across five core curriculum topical areas (Table 1).
- A 1-credit hour Interdisciplinary Ecology seminar course is required.
- To meet the total 30 credit hours requirement for the MS-thesis program, additional relevant courses are selected from the list 472 of courses as electives in one of the fields of study and research credit hours to meet the needs of thesis work.

Partner academic department chairs and SNRE affiliate faculty reviewed the courses listed on the SNRE web site and identified courses currently taught in their units. This initial review resulted in 472 courses distributed across five core curriculum topical areas.

Table 1. Total number of courses currently listed in five core categories of the Interdisciplinary Ecology M.S-thesis) program. Proposal to decrease the number of core courses to smaller pool. Also proposed to change the description of the course categories.

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<thead>
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<th>Current Course Categories</th>
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</thead>
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<td>108</td>
<td>Natural Sciences</td>
<td>22</td>
<td>86</td>
</tr>
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<td>133</td>
<td>Social Sciences</td>
<td>19</td>
<td>114</td>
</tr>
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<td>83</td>
<td>Sustainability Science</td>
<td>18</td>
<td>65</td>
</tr>
<tr>
<td>Statistics + Research Design &amp; Methods</td>
<td>107</td>
<td>Data Science</td>
<td>23</td>
<td>84</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>472</strong></td>
<td><strong>103</strong></td>
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<td></td>
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</tbody>
</table>

**Proposed Curriculum Changes**

*Describe the proposed changes to the curriculum. You may list out the specific changes or provide the new semester models where changes are proposed. Please be precise and clear in stating requested changes. If the change is to offer the program through UF Online, please explain and attach a letter of support from the Director of UF Online.*

The SNRE Graduate Curriculum Committee reviewed the curriculum and revised the descriptions of the five categories of the Interdisciplinary Ecology curriculum (Table 1). The central theme of the revised descriptions is similar to the current curriculum with the exception of two categories (Table 1). All available 472 courses are grouped into five
categories. The committee reviewed their syllabi and identified 18+ courses that fit best for each category.

From the existing list of courses, 18+ courses are identified as core courses for each topic area and the remaining courses are grouped into electives. The curriculum is restricted to courses with unique numbers (i.e., temporary courses or special topics are not included in the formal curriculum).

Ecology
The Interdisciplinary Ecology graduate program requires at least one course from the approved list of ecology courses for MS thesis students. Core courses in this track enable students to gain a foundational understanding of ecological concepts or to explore the ecology of organisms, populations, communities and/or ecosystems more deeply.

Natural Sciences
The Interdisciplinary Ecology graduate program requires at least one course from the approved list of natural sciences courses for MS thesis students. Natural science courses seek to convey how biotic and abiotic resources are linked to management actions and outcomes within an ecosystem context. This is an extremely broad realm that includes core courses on biophysical systems and processes, natural ecosystems, and intensively managed and built ecosystems dedicated to meeting human needs.

Social Sciences
The Interdisciplinary Ecology graduate program requires at least one course from the approved list of social sciences courses for MS thesis students. Social science courses encompass a diverse range of academic disciplines (including but not necessarily limited to Anthropology, Criminology, Economics, Geography, History, Political Science, Psychology, Religion, and Sociology) that focus on issues of human thought, action, institutions, conflicts, and management of natural resources and the environment. Core courses in the social sciences focus on central theoretical concerns and/or offer surveys of major topics in a social science discipline regarding natural resources and the environment. Social science electives tend to be more specialized, whether they focus on theoretical perspectives, substantive topics, management problems or regions of the world.

Sustainability Science
The Interdisciplinary Ecology graduate program requires at least one course from the approved list of sustainability science courses for MS thesis students. These courses focus on the integration of ecological, natural sciences, and social factors to sustain humans and ecological systems. Sustainability science emphasizes interdisciplinary issues that require integrative thinking to address complex problem related to the integrity and resilience of natural and social systems over time, including those that blend environmental policy, economics, justice, and environmental health.

Data Science
The Interdisciplinary Ecology graduate program requires at least one course from the approved list of courses in data science for MS thesis students. These courses focus on
analyzing and interpreting data and information using methods drawn from statistics, geospatial science, information science, and disciplinary knowledge. Electives within this category support development of a foundation in statistical concepts, experimental design, interpretation of documents, interviews, and observations, or application of theoretical and statistical models.

We propose the following for revised curriculum as described in Table 2.

- Current 472 courses are grouped into: (1) core courses and (2) elective courses.
- 15 credit hours are distributed across five core curriculum areas (Table 2).
- A 1-credit hour Interdisciplinary SNRE seminar course is required. The seminar requires registration for one semester and students are encouraged attend the seminar during the remaining semesters of the entire program.
- To meet the total 30 credit hours requirement for the MS thesis program, additional relevant courses are selected from both groups of courses and research credit hours to meet the needs of thesis specialization work.
- If the student cannot find a suitable course in the approved list of core courses, with the approval of the supervisory committee, the student can petition the SNRE Director to substitute up to 2 courses. Elective courses are not limited to the list provided and can be substituted without petition with the approval of the supervisory committee.

Table 2. Proposal to change the description of course category titles, but no change in the core course requirement for MS-thesis program.

<table>
<thead>
<tr>
<th>Current Course Categories</th>
<th>Current  credit hours</th>
<th>Proposed Course Categories</th>
<th>Proposed  credit hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Principles of Ecology, Perspectives or Systems Ecology</td>
<td>3</td>
<td>Principles of Ecology</td>
<td>3</td>
</tr>
<tr>
<td>Natural Science Distribution</td>
<td>3</td>
<td>Natural Sciences</td>
<td>3</td>
</tr>
<tr>
<td>Social Science Distribution</td>
<td>3</td>
<td>Social Sciences</td>
<td>3</td>
</tr>
<tr>
<td>Sustainability Studies Distribution</td>
<td>3</td>
<td>Sustainability Science</td>
<td>3</td>
</tr>
<tr>
<td>Statistics + Research Design &amp; Methods</td>
<td>3</td>
<td>Data Science</td>
<td>3</td>
</tr>
<tr>
<td>SNRE Seminar</td>
<td>1</td>
<td>SNRE Seminar*</td>
<td>1</td>
</tr>
<tr>
<td>Electives</td>
<td>9 - 12</td>
<td>Electives and Research</td>
<td>14</td>
</tr>
<tr>
<td>Research</td>
<td>2 - 5</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>30</strong></td>
<td><strong>Total</strong></td>
<td><strong>30</strong></td>
</tr>
</tbody>
</table>

*Required registration for one semester and attendance encouraged for the remaining semesters during entire program

**Research:** Thesis (XXX 6971): Detailed instructions: You must take research credit hours in the course code of your Faculty Advisor’s department. Please see their department.
staff to register. Exceptions will occur if your Advisor’s department lacks the appropriate course code (examples are Museum, Latin American Studies for 7980, and some other departments). In those cases, please contact the SNRE graduate staff member.

**NOTE:** The maximum number of 6971 credits that count toward the IE MS thesis degree is 6 hours.

**NOTE:** for MS students: you MUST register for 3 hours (if in Fall or Spring semesters, OR, for 2 hours in Summer C semester) of 6971

**UF Online Curriculum Change**

*Will this curriculum change be applied to a UF online program as well?*

No

**Pedagogical Rationale/Justification**

*Describe the rationale for the proposed changes to the curriculum.*

During the year 2022, SNRE submitted a proposal to reduce the total credit hour requirement of 36 credit hours to 30 credit hours. This proposal is approved at the level UF Board of Trustees, and we expect complete approval process during Spring 2023 for implementation by Summer 2023. The proposed revisions to the core area descriptions are the first update in more than 10 years and provide narrative descriptions of the current state of those disciplines, as well as rationales for which courses are included.

**Impact on Enrollment, Retention, Graduation**

*Describe any potential impact of the curriculum changes on students who are currently in the major.*

The student learning outcomes for the MS Thesis program are not changed, aside from an updated verb in SLO #1 to reflect current guidance on assessment through Bloom’s taxonomy. Program quality and integrity are maintained because of the flexibility of the contemporary degree program.

**Assessment Data Review**

*Describe the Student Learning Outcome and/or program goal data that was reviewed to support the proposed changes.*

The proposed curriculum equally supports SLO #1 and enhances SLO #2. Foundational knowledge competencies of SLO #1 are still supported by the interdisciplinary program. SLO #2 will be enhanced because reduced course requirements support compensatory improvement in opportunities for MS thesis students to generate new knowledge through research.

SLO #1: Knowledge outcome – acquire knowledge of the components, processes, and interactions of the social-ecological system.

SLO #2: Skills outcome - apply the scientific method to generate new knowledge.

SLO #3: Professional behavior outcome - Interact with professional peers with honesty, ethical behavior, cultural sensitivity, teamwork, and effective communication.
The assessment method for SLOs includes (1) evaluation of the student’s Program of Study by the Faculty Advisor and Supervisory Committee and the School using a faculty-developed rubric; (2) Evaluation during the technical paper or capstone project by the Faculty Advisor and Supervisory Committee using a faculty-developed rubric.

The “criterion for success” is that 100% of MS thesis students achieve an outcome that is commensurate with the degree. It was determined that all MS thesis students in the Interdisciplinary Ecology degree program demonstrated: (1) a thorough understanding of the components, processes, and interactions of the social-ecological system commensurate with the degree; (2) the ability to apply the scientific method to generate new knowledge, and (3) the professional behavior expected.

Academic Learning Compact and Academic Assessment Plan
Describe the modifications to the Academic Learning Compact (for undergraduate programs) and Academic Assessment Plan that result from the proposed change.

There will be no modifications to our Academic Assessment Plan.

A comparison of the curriculum ‘current’ and ‘proposed’ for the MS thesis degree programs is shown in Tables 1 and 2.

Catalog Copy
Submitter agrees to prepare and upload document showing the catalog copy with the current and proposed curricula edited using the “track changes” feature in Word.

Yes
Master of Science (M.S.) with a major in Interdisciplinary Ecology (thesis)
Curriculum Breakdown

Current Curriculum

Current coursework requirement and curriculum are described in more detail at http://snre.ifas.ufl.edu/academics/graduate/courses-syllabi-and-curriculum/. These are distributed across five categories of curriculum areas of specialization (Table 1). Choices among the courses in each of the category are selected by the student and the supervisory committee to meet the student’s needs, interests, and degree program goals. Specifically, current curriculum requirements are summarized below:

- 15 credit hours distributed across five core curriculum topical areas (Table 1).
- A 1-credit hour Interdisciplinary Ecology seminar course is required.
- To meet the total 30 credit hours requirement for the MS-thesis program, additional relevant courses are selected from the list 472 of courses as electives in one of the fields of study and research credit hours to meet the needs of thesis work.

Partner academic department chairs and SNRE affiliate faculty reviewed the courses listed on the SNRE web site and identified courses currently taught in their units. This initial review resulted in 472 courses distributed across five core curriculum topical areas.

Table 1. Total number of courses currently listed in five core categories of the Interdisciplinary Ecology M.S-thesis) program. Proposal to decrease the number of core courses to smaller pool. Also proposed to change the description of the course categories.

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<td>108</td>
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</tr>
<tr>
<td>Social Science Distribution</td>
<td>133</td>
<td>Social Sciences</td>
<td>19</td>
<td>114</td>
</tr>
<tr>
<td>Sustainability Studies Distribution</td>
<td>83</td>
<td>Sustainability Science</td>
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<tr>
<td>Total</td>
<td>472</td>
<td></td>
<td>103</td>
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Proposed Curriculum

Current coursework requirement and curriculum are described in more detail at http://snre.ifas.ufl.edu/academics/graduate/courses-syllabi-and-curriculum/. We propose the following for revised curriculum as described in Table 2.

- Current 472 courses are grouped into: (1) core courses and (2) elective courses.
- 15 credit hours are distributed across five core curriculum areas (Table 2).
- A 1-credit hour Interdisciplinary SNRE seminar course is required. The seminar requires registration for one semester and students are encouraged attend the seminar during the remaining semesters of the entire program.
- To meet the total 30 credit hours requirement for the MS thesis program, additional relevant courses are selected from both groups of courses and research credit hours to meet the needs of thesis specialization work.
- If the student cannot find a suitable course in the approved list of core courses, with the approval of the supervisory committee, the student can petition the SNRE Director to substitute up to 2 courses. Elective courses are not limited to the list provided and can be substituted without petition with the approval of the supervisory committee.

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<td>Principles of Ecology</td>
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<tr>
<td>Ecology</td>
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*Required registration for one semester and attendance encouraged for the remaining semesters during entire program

**Research:** Thesis (XXX 6971): Detailed instructions: You must take research credit hours in the course code of your Faculty Advisor’s department. Please see their department staff to register.
Exceptions will occur if your Advisor’s department lacks the appropriate course code (examples are Museum, Latin American Studies for 7980, and some other departments). In those cases, please contact the SNRE graduate staff member.

**NOTE:** The maximum number of 6971 credits that count toward the IE MS thesis degree is 6 hours.

**NOTE:** for MS students: you MUST register for 3 hours (if in Fall or Spring semesters, OR, for 2 hours in Summer C semester) of 6971.
Info
Request: Modify the curriculum of the Doctor of Philosophy (Ph.D.) Degree with a major in Interdisciplinary Ecology
Description of request: The College of Agricultural and Life Sciences seeks to modify the curriculum for the Doctor of Philosophy (Ph.D.) with a major in Interdisciplinary Ecology
Submitter: Danny Coenen dcoenen@ufl.edu
Created: 4/12/2023 9:56:51 PM
Form version: 4

Responses
Major Name
Enter the name of the major. Example: "Mathematical Modeling"

Interdisciplinary Ecology

Major Code
Enter the two-letter or three-letter major code.

IEC

Degree Program Name
Enter the name of the degree program in which the major is offered.

Doctor of Philosophy

Undergraduate Innovation Academy Program
Is this an undergraduate program in the Innovation Academy?

No

Effective Term
Enter the term (semester and year) that the curriculum change would be effective.

Earliest Available

Effective Year

Earliest Available

Current Curriculum for Major

Current coursework requirements and curriculum are described in more detail at http://snre.ifas.ufl.edu/academics/graduate/courses-syllabi-and-curriculum/. These are distributed across five categories of curriculum areas of specialization (Table 2). Choices among the courses in each of the categories are selected by the student and the
supervisory committee to meet the student’s needs, interests, and degree program goals. Specifically, current curriculum requirements are summarized below:

- 24 credit hours distributed across five core curriculum topical areas (Table 2).
- A 1-credit hour Interdisciplinary Ecology seminar course is required.
- A concentration of 12 or more credits in an approved subprogram is required.
- Up to 30 credit hours of letter-graded (B or better) relevant courses from the student’s M.S. degree program can be transferred into their PhD program.
- To meet the total 90 credit hours requirement for the PhD program, additional relevant courses are selected as electives in one of the fields of study and research credit hours to meet the needs of dissertation specialization work.

Partner academic department chairs and SNRE affiliate faculty reviewed the courses listed on the SNRE web site and identified courses currently taught in their units. This initial review resulted in 472 courses distributed across five core curriculum topical areas.

Table 2. Total number of courses currently listed in five core categories of the Interdisciplinary Ecology PhD program. Proposal to decrease the number of core courses to a smaller pool. Also proposed to change the description of the course categories.

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<td><strong>369</strong></td>
<td></td>
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**Proposed Curriculum Changes**

Describe the proposed changes to the curriculum. You may list out the specific changes or provide the new semester models where changes are proposed. Please be precise and clear in stating requested changes. If the change is to offer the program through UF Online, please explain and attach a letter of support from the Director of UF Online.

The SNRE Graduate Curriculum Committee reviewed the curriculum and revised the descriptions of the five categories of the Interdisciplinary Ecology curriculum (Table 2). The central theme of the revised descriptions is similar to the current curriculum with
the exception of two categories (Table 2). All available 472 courses are grouped into five
categories. The committee reviewed the syllabi and identified 18+ courses that best fit
each category.

From the existing list of courses, 18+ courses as identified as core courses for each topic
area and the remaining courses are grouped into electives. The curriculum is restricted
to courses with unique numbers (i.e., temporary courses or special topics are not
included in the formal curriculum). Core courses were selected as both providing a
sufficient perspective of the foundational principles of each topic area, while also
remaining accessible to non-specialists.

Ecology
The Interdisciplinary Ecology graduate programs requires at least one course from the
approved list of ecology courses for PhD students. Core courses in this track enable
students to gain a foundational understanding of ecological concepts or to explore the
ecology of organisms, populations, communities and/or ecosystems more deeply.

Natural Sciences
The Interdisciplinary Ecology graduate program requires at least one course from the
approved list of natural sciences courses for PhD Students. Natural science courses seek
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courses in the social sciences focus on central theoretical concerns and/or offer surveys
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Sustainability science emphasizes interdisciplinary issues that require integrative
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economics, justice, and environmental health
Data Science

The Interdisciplinary Ecology graduate program requires at least one course from the approved list of courses in data science for PhD students. These courses focus on analyzing and interpreting data and information using methods drawn from statistics, geospatial science, information science, and disciplinary knowledge. Electives within this category support development of a foundation in statistical concepts, experimental design, interpretation of documents, interviews, and observations, or application of theoretical and statistical models.

We propose the following for revised curriculum as described in Table 3.

- Current 472 courses are grouped into: (1) core courses and (2) elective courses.
- 15 credit hours are distributed across five core curriculum specialized areas (Table 3).
- A concentration of 12 or more credits in an approved subprogram is recommended.
- A 1-credit hour Interdisciplinary SNRE seminar course is required. The seminar requires registration for one semester and students are encouraged attend the seminar during the remaining semesters of the entire program.
- Up to 30 credit hours of letter-graded (B or better) relevant courses from the student’s MS degree program can be transferred into their PhD program.
- To meet the total 90 credit hours requirement for the PhD program, additional relevant courses are selected from both groups of courses and research credit hours to meet the needs of dissertation specialization work.
- If the student cannot find a suitable course in the approved list of core courses, with the approval of the supervisory committee, the student can petition the SNRE Director to substitute up to 2 courses. Elective courses are not limited to the list provided and can be substituted without petition with the approval of the supervisory committee.

Table 3. Proposal to decrease core course requirement for the PhD program from a minimum of 25 credit hours to a minimum of 16 credit hours. Also proposed is a revised description of course category titles.

<table>
<thead>
<tr>
<th>Current Course Categories</th>
<th>Current credit hours</th>
<th>Proposed Course Categories</th>
<th>Proposed credit hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Principles of Ecology, Perspectives or Systems Ecology</td>
<td>6</td>
<td>Principles of Ecology</td>
<td>3</td>
</tr>
<tr>
<td>Natural Science Distribution</td>
<td>3</td>
<td>Natural Sciences</td>
<td>3</td>
</tr>
<tr>
<td>Social Science Distribution</td>
<td>3</td>
<td>Social Sciences</td>
<td>3</td>
</tr>
<tr>
<td>Sustainability Studies Distribution</td>
<td>3</td>
<td>Sustainability Science</td>
<td>3</td>
</tr>
<tr>
<td>Statistics + Research Design &amp; Methods</td>
<td>9</td>
<td>Data Science</td>
<td>3</td>
</tr>
<tr>
<td>Interdisciplinary Ecology Seminar Required</td>
<td>1</td>
<td>Interdisciplinary Ecology Seminar*</td>
<td>1</td>
</tr>
<tr>
<td>Electives and Research</td>
<td>65**</td>
<td>Electives and Research</td>
<td>74**</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>90</strong></td>
<td><strong>Total</strong></td>
<td><strong>90</strong></td>
</tr>
</tbody>
</table>
*Required registration for one semester and attendance encouraged for the remaining
semesters during entire program

**Graduate students with MS degree can transfer up to 30 credit hours from letter
graded courses.

**Research**: Advanced Research (XXX 7979), and/or Dissertation (XXX 7980): Detailed
instructions: You must take research credit hours in the course code of your Faculty
Advisor’s department; please see their department staff to register.

**NOTE**: for Ph.D. students: You MUST register for 3 hours (if in Fall or Spring semesters,
OR for 2 hours in a Summer C term) of 7979 hours (Advanced Research) if you are a
Ph.D. student in the semester that you are taking the Qualifying Exam.

**NOTE**: for Ph.D. students: Once you have passed the Qualifying Exam and advanced to
Candidacy, you should no longer register for 7979 hours (Advanced Research). A
Doctoral Candidate will instead register for 7980 hours (Research for Doctoral
Dissertation).

**NOTE**: for Ph.D. candidates: You MUST register for 3 hours (if in Fall or Spring semesters,
OR, for 2 hours in Summer C semester) of 7980 hours when you are taking your Final
Exam (final defense) semester.

**UF Online Curriculum Change**

*Will this curriculum change be applied to a UF online program as well?*

No

**Pedagogical Rationale/Justification**

*Describe the rationale for the proposed changes to the curriculum.*

The proposed revision in credit requirement is primarily intended to align with the
requirements of comparable programs offered by departments at UF (see Table 1). All
programs require 90 credit hours but vary in the number of core credit hour
requirements. The average core credit requirement is 16, whereas SNRE currently
requires 25. The proposed revisions to the core area descriptions are the first update in
more than 10 years and provide narrative descriptions of the current state of those
disciplines, as well as rationales for which courses are included.

Table 1. Core course requirements of graduate programs offered by academic
departments currently collaborating with the School of Natural Resources and
Environment.

<table>
<thead>
<tr>
<th>Graduate Program</th>
<th>Core Courses-Credit Hours</th>
<th>Electives + Research Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
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</table>
Impact on Enrollment, Retention, Graduation

Describe any potential impact of the curriculum changes on students who are currently in the major.

The student learning outcomes for the PhD program are not changed, aside from an updated verb in SLO #1 to reflect current guidance on assessment through Bloom’s taxonomy. Program quality and integrity are maintained because of the flexibility of the contemporary degree program.

Assessment Data Review

Describe the Student Learning Outcome and/or program goal data that was reviewed to support the proposed changes.

The proposed curriculum equally supports SLO #1 and enhances SLO #2. Foundational knowledge competencies of SLO #1 are still supported by the interdisciplinary program. SLO #2 will be enhanced because reduced course requirements support compensatory improvement in opportunities for PhD students to generate new knowledge through research.

SLO #1: Knowledge outcome – acquire knowledge of the components, processes, and interactions of the social-ecological system.

SLO #2: Skills outcome - apply the scientific method to generate new knowledge.
SLO #3: Professional behavior outcome - Interact with professional peers with honesty, ethical behavior, cultural sensitivity, teamwork, and effective communication.

The assessment method for SLOs includes (1) evaluation of the student’s Program of Study by the Faculty Advisor and Supervisory Committee and the School using a faculty-developed rubric; (2) Evaluation of the dissertation by the Faculty Advisor and Supervisory Committee using a faculty-developed rubric.

The “criterion for success” is that 100% of PhD level students achieve an outcome that is commensurate with the degree. It was determined that all PhD students in the Interdisciplinary Ecology degree program demonstrated: (1) a thorough understanding of the components, processes, and interactions of the social-ecological system commensurate with the degree; (2) the ability to apply the scientific method to generate new knowledge, and (3) the professional behavior expected.

**Academic Learning Compact and Academic Assessment Plan**

Describe the modifications to the Academic Learning Compact (for undergraduate programs) and Academic Assessment Plan that result from the proposed change.

There will be no modifications to our Academic Assessment Plan.

A comparison of the curriculum ‘current’ and ‘proposed’ for PhD degree programs is shown in Tables 1 and 2.

For the credit changes reflect reducing the current requirement of two courses each in (1) principles of ecology, perspective or systems ecology and (2) three courses in statistics, research design and methods to one course in each. Note that there are still major and elective credit opportunities that provide students with flexibility in how to craft their program.

**Catalog Copy**

Submitter agrees to prepare and upload document showing the catalog copy with the current and proposed curricula edited using the “track changes” feature in Word.

Yes
Doctor of Philosophy (Ph.D.) with a major in Interdisciplinary Ecology
Curriculum Breakdown

Table 1. Core course requirements of graduate programs offered by academic departments currently collaborating with the School of Natural Resources and Environment.

<table>
<thead>
<tr>
<th>Graduate Program</th>
<th>Core Courses-Credit Hours</th>
<th>Electives + Research Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agricultural and Biological Engineering</td>
<td>12</td>
<td>78</td>
</tr>
<tr>
<td>Agricultural Education and Communication</td>
<td>32</td>
<td>58</td>
</tr>
<tr>
<td>Agronomy</td>
<td>13</td>
<td>77</td>
</tr>
<tr>
<td>Anthropology</td>
<td>30</td>
<td>60</td>
</tr>
<tr>
<td>Biology</td>
<td>9</td>
<td>81</td>
</tr>
<tr>
<td>Entomology and Nematology</td>
<td>17</td>
<td>73</td>
</tr>
<tr>
<td>Environmental Engineering Sciences</td>
<td>15</td>
<td>75</td>
</tr>
<tr>
<td>Environmental &amp; Global Health</td>
<td>15</td>
<td>75</td>
</tr>
<tr>
<td>Fisheries and Aquatic Sciences</td>
<td>8</td>
<td>82</td>
</tr>
<tr>
<td>Forestry</td>
<td>12</td>
<td>78</td>
</tr>
<tr>
<td>Food and Resource Economics</td>
<td>21</td>
<td>69</td>
</tr>
<tr>
<td>Family Youth and Community Sciences</td>
<td>15</td>
<td>75</td>
</tr>
<tr>
<td>Geography</td>
<td>22</td>
<td>68</td>
</tr>
<tr>
<td>Geological Sciences</td>
<td>5</td>
<td>85</td>
</tr>
<tr>
<td>Horticultural Sciences</td>
<td>12</td>
<td>78</td>
</tr>
<tr>
<td><strong>Interdisciplinary Ecology</strong></td>
<td><strong>25</strong></td>
<td><strong>65</strong></td>
</tr>
<tr>
<td>Landscape Architecture</td>
<td>10</td>
<td>80</td>
</tr>
<tr>
<td>Microbiology and Cell Science</td>
<td>4</td>
<td>86</td>
</tr>
<tr>
<td>Political Science</td>
<td>9</td>
<td>81</td>
</tr>
<tr>
<td>Sociology and Criminology</td>
<td>24</td>
<td>66</td>
</tr>
<tr>
<td>Soil, Water, and Ecosystem Sciences</td>
<td>6</td>
<td>84</td>
</tr>
<tr>
<td>Statistics</td>
<td>12</td>
<td>78</td>
</tr>
<tr>
<td>Urban and Regional Planning</td>
<td>45</td>
<td>45</td>
</tr>
<tr>
<td>Wildlife Ecology and Conservation</td>
<td>15</td>
<td>75</td>
</tr>
</tbody>
</table>

**Mean: 16**

Current Curriculum

Current coursework requirements and curriculum are described in more detail at [http://snre.ifas.ufl.edu/academics/graduate/courses-syllabi-and-curriculum/](http://snre.ifas.ufl.edu/academics/graduate/courses-syllabi-and-curriculum/). These are distributed across five categories of curriculum areas of specialization (Table 2). Choices among the courses in each of the categories are selected by the student and the supervisory committee to meet the student’s needs, interests, and degree program goals. Specifically, current curriculum requirements are summarized below:
- 24 credit hours distributed across five core curriculum topical areas (Table 2).
- A 1-credit hour Interdisciplinary Ecology seminar course is required.
- A concentration of 12 or more credits in an approved subprogram is required.
- Up to 30 credit hours of letter-graded (B or better) relevant courses from the student’s M.S degree program can be transferred into their PhD program.
- To meet the total 90 credit hours requirement for the PhD program, additional relevant courses are selected as electives in one of the fields of study and research credit hours to meet the needs of dissertation specialization work.

Partner academic department chairs and SNRE affiliate faculty reviewed the courses listed on the SNRE web site and identified courses currently taught in their units. This initial review resulted in 472 courses distributed across five core curriculum topical areas.

**Table 2.** Total number of courses currently listed in five core categories of the Interdisciplinary Ecology PhD program. Proposal to decrease the number of core courses to a smaller pool. Also proposed to change the description of the course categories.

<table>
<thead>
<tr>
<th>Current Course Categories</th>
<th>Current number of courses</th>
<th>Proposed Course Categories</th>
<th>Proposed number of core courses</th>
<th>Proposed number of elective courses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Natural Science Distribution</td>
<td>108</td>
<td>Natural Sciences</td>
<td>22</td>
<td>86</td>
</tr>
<tr>
<td>Social Science Distribution</td>
<td>133</td>
<td>Social Sciences</td>
<td>19</td>
<td>114</td>
</tr>
<tr>
<td>Sustainability Studies Distribution</td>
<td>83</td>
<td>Sustainability Science</td>
<td>18</td>
<td>65</td>
</tr>
<tr>
<td>Statistics + Research Design &amp; Methods</td>
<td>107</td>
<td>Data Science</td>
<td>23</td>
<td>84</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>472</strong></td>
<td><strong>103</strong></td>
<td><strong>369</strong></td>
<td></td>
</tr>
</tbody>
</table>

**Proposed Curriculum**

The SNRE Graduate Curriculum Committee reviewed the curriculum and revised the descriptions of the five categories of the Interdisciplinary Ecology curriculum (Table 2). The central theme of the revised descriptions is similar to the current curriculum with the exception of two categories (Table 2). All available 472 courses are grouped into five categories. The committee reviewed the syllabi and identified 18+ courses that best fit each category.

From the existing list of courses, 18+ courses are identified as core courses for each topic area and the remaining courses are grouped into electives. The curriculum is restricted to courses with
unique numbers (i.e., temporary courses or special topics are not included in the formal curriculum). Core courses were selected as both providing a sufficient perspective of the foundational principles of each topic area, while also remaining accessible to non-specialists.

Current coursework requirements and curriculum are described in more detail at http://snre.ifas.ufl.edu/academics/graduate/courses-syllabi-and-curriculum/.

We propose the following for revised curriculum as described in Table 3.

- Current 472 courses are grouped into: (1) core courses and (2) elective courses.
- 15 credit hours are distributed across five core curriculum specialized areas (Table 3).
- A concentration of 12 or more credits in an approved subprogram is recommended.
- A 1-credit hour Interdisciplinary SNRE seminar course is required. The seminar requires registration for one semester and students are encouraged attend the seminar during the remaining semesters of the entire program.
- Up to 30 credit hours of letter-graded (B or better) relevant courses from the student’s MS degree program can be transferred into their PhD program.
- To meet the total 90 credit hours requirement for the PhD program, additional relevant courses are selected from both groups of courses and research credit hours to meet the needs of dissertation specialization work.
- If the student cannot find a suitable course in the approved list of core courses, with the approval of the supervisory committee, the student can petition the SNRE Director to substitute up to 2 courses. Elective courses are not limited to the list provided and can be substituted without petition with the approval of the supervisory committee.

**Table 3.** Proposal to decrease core course requirement for the PhD program from a minimum of 25 credit hours to a minimum of 16 credit hours. Also proposed is a revised description of course category titles.

<table>
<thead>
<tr>
<th>Current Course Categories</th>
<th>Current credit hours</th>
<th>Proposed Course Categories</th>
<th>Proposed credit hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Principles of Ecology, Perspectives or Systems Ecology</td>
<td>6</td>
<td>Principles of Ecology</td>
<td>3</td>
</tr>
<tr>
<td>Natural Science Distribution</td>
<td>3</td>
<td>Natural Sciences</td>
<td>3</td>
</tr>
<tr>
<td>Social Science Distribution</td>
<td>3</td>
<td>Social Sciences</td>
<td>3</td>
</tr>
<tr>
<td>Sustainability Studies Distribution</td>
<td>3</td>
<td>Sustainability Science</td>
<td>3</td>
</tr>
<tr>
<td>Statistics + Research Design &amp; Methods</td>
<td>9</td>
<td>Data Science</td>
<td>3</td>
</tr>
<tr>
<td>Interdisciplinary Ecology Seminar</td>
<td>1</td>
<td>Interdisciplinary Ecology Seminar*</td>
<td>1</td>
</tr>
<tr>
<td>Required</td>
<td>25</td>
<td>Required</td>
<td>16</td>
</tr>
<tr>
<td>Electives and Research</td>
<td>65**</td>
<td>Electives and Research</td>
<td>74**</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>90</strong></td>
<td><strong>Total</strong></td>
<td><strong>90</strong></td>
</tr>
</tbody>
</table>
*Required registration for one semester and attendance encouraged for the remaining semesters during entire program

**Graduate students with MS degree can transfer up to 30 credit hours from letter graded courses.

Research: Advanced Research (XXX 7979), and/or Dissertation (XXX 7980): Detailed instructions: You must take research credit hours in the course code of your Faculty Advisor’s department; please see their department staff to register.

NOTE: for Ph.D. students: You MUST register for 3 hours (if in Fall or Spring semesters, OR for 2 hours in a Summer C term) of 7979 hours (Advanced Research) if you are a Ph.D. student in the semester that you are taking the Qualifying Exam.

NOTE: for Ph.D. students: Once you have passed the Qualifying Exam and advanced to Candidacy, you should no longer register for 7979 hours (Advanced Research). A Doctoral Candidate will instead register for 7980 hours (Research for Doctoral Dissertation).

NOTE: for Ph.D. candidates: You MUST register for 3 hours (if in Fall or Spring semesters, OR, for 2 hours in Summer C semester) of 7980 hours when you are taking your Final Exam (final defense) semester.
Program-Major/Change_Name for request 18074

Info
Request: Soil, Water, and Ecosystem Sciences MS Major Change
Description of request: The College of Agricultural and Life Sciences seeks to modify the title of the major for the Master of Science (M.S.) degree from a major in "Soil and Water Sciences" to a major in "Soil, Water, and Ecosystem Sciences"
Submitter: Patrick Wilson pcwilson@ufl.edu
Created: 4/3/2023 9:38:01 AM
Form version: 3

Responses
Current Degree Program Name
Enter the name of the degree program. A list of approved programs is available at the SUS Academic Program Inventory database.

Master of Science with a major in Soil and Water Sciences

CIP Code
Enter the six digit Classification of Instructional Programs (CIP) code for the existing degree program. The code has the numerical format XX.XXXX. Contact the Office of Institutional Planning and Research (OIPR) to verify the CIP code for the existing degree program.

01.1201

Requested Name Change
Change the name of a major.

Change of CIP Code
Is the program changing CIP codes?

• Changing/requesting a new CIP code is a process maintained outside of the Academic Approval System, requiring additional steps/documentation. For more information please contact the Office of Academic Affairs.

No

Current Major Name
Enter the current major name (e.g., "Tree Surgery").

Soil and Water Sciences

Proposed Major Name
Enter the proposed major name (e.g., "Tree Surgery Practice")

Soil, Water, and Ecosystem Sciences
**Current Major Code**
Enter the current two-letter or three-letter major code.

SWS

**Proposed Major Code**
Enter the proposed two-letter or three-letter major code.

SWS

**Effective Term**
Enter the term (semester and year) that students would first be admitted to the renamed degree and/or major.

Earliest Available

**Effective Year**

2023

**Pedagogical Rationale/Justification**
Describe the rationale for the proposed change.

The College of Agricultural and Life Sciences seeks to modify the title of the major for the Master of Science (M.S.) degree from a major in "Soil and Water Sciences" to a major in "Soil, Water, and Ecosystem Sciences". We would like to make the name change optional for current students enrolled in the program if this is mechanistically possible at the University level. We can contact current students to determine their preferences and report those preferences to the appropriate people if needed. All newly enrolled students will work towards the "Soil, Water, and Ecosystems" major.

This request is being made in response to our department recently changing its name from "Soil and Water Sciences" to "Soil, Water, and Ecosystem Sciences" to better reflect program activity and expertise. We would like to update the name of the major to maintain parity with the department and our teaching program.

**Assessment Data Review**
Describe the Student Learning Outcome and/or program goal data that was reviewed to support the proposed changes.

No changes were needed since this is only a name change. The Student Learning Outcomes and Program Goals are not changed.

**Academic Learning Compact and Academic Assessment Plan**
Describe the modifications to the Academic Learning Compact (for undergraduate programs) and Academic Assessment Plan that result from the proposed change.
No modifications to the Academic Assessment Plan are needed since this is only a name change.
Program-Major/Change_Name for request 18075

Info
Request: Soil, Water, and Ecosystem Sciences PhD Major Name Change
Description of request: The College of Agricultural and Life Sciences seeks to modify the title of the major for the Doctor of Philosophy (Ph.D.) degree from a major in "Soil and Water Sciences" to a major in "Soil, Water, and Ecosystem Sciences"
Submitter: Patrick Wilson pcwilson@ufl.edu
Created: 4/3/2023 9:36:04 AM
Form version: 2

Responses
Current Degree Program Name
Enter the name of the degree program. A list of approved programs is available at the SUS Academic Program Inventory database.

Doctor of Philosophy with a major in Soil and Water Sciences

CIP Code
Enter the six digit Classification of Instructional Programs (CIP) code for the existing degree program. The code has the numerical format XX.XXXX. Contact the Office of Institutional Planning and Research (OIPR) to verify the CIP code for the existing degree program.

01.1201

Requested Name Change

Change the name of a major.

Change of CIP Code
Is the program changing CIP codes?

• Changing/requesting a new CIP code is a process maintained outside of the Academic Approval System, requiring additional steps/documentation. For more information please contact the Office of Academic Affairs.

No

Current Major Name
Enter the current major name (e.g., "Tree Surgery").

Soil and Water Sciences

Proposed Major Name
Enter the proposed major name (e.g., "Tree Surgery Practice")

Soil, Water, and Ecosystem Sciences
Current Major Code
Enter the current two-letter or three-letter major code.

SWS

Proposed Major Code
Enter the proposed two-letter or three-letter major code.

SWS

Effective Term
Enter the term (semester and year) that students would first be admitted to the renamed degree and/or major.

Earliest Available

Effective Year

2023

Pedagogical Rationale/Justification
Describe the rationale for the proposed change.

The College of Agricultural and Life Sciences seeks to modify the title of the major for the Doctor of Philosophy (Ph.D.) degree from a major in "Soil and Water Sciences" to a major in "Soil, Water, and Ecosystem Sciences". We would like to make the name change optional for current students enrolled in the program if this is mechanistically possible at the University level. We can contact current students to determine their preferences and report those preferences to the appropriate people if needed. All newly enrolled students will work towards the "Soil, Water, and Ecosystems" major.

This request is being made in response to our department recently changing its name from "Soil and Water Sciences" to "Soil, Water, and Ecosystem Sciences" to better reflect program activity and expertise. We would like to update the name of the major to maintain parity with the department and our teaching program.

Assessment Data Review
Describe the Student Learning Outcome and/or program goal data that was reviewed to support the proposed changes.

No changes were needed since this is only a name change. The Student Learning Outcomes and Program Goals are not changed.

Academic Learning Compact and Academic Assessment Plan
Describe the modifications to the Academic Learning Compact (for undergraduate programs) and Academic Assessment Plan that result from the proposed change.
No modifications to the Academic Assessment Plan are needed since this is only a name change.
New Master of Science (M.S.) degree with a major in Genetics and Genomics

Description: The College of Medicine seeks to create a Master of Science (M.S.) degree with a major in Genetics and Genomics.

Board of Governors, State University System of Florida
REQUEST TO OFFER A NEW DEGREE PROGRAM
In Accordance with BOG Regulation 8.011
(Please do not revise this proposal format without prior approval from Board staff)

University of Florida
Institution Submitting Proposal

Fall 2023
Proposed Implementation Term

Graduate School Multi-college (CALS, CLAS, COM)
(Dept. in which Genetics Institute members hold appointments)

Name of College(s) or School(s)

Genetics and genomics
Academic Specialty or Field

26.0801
Proposed CIP Code (2020 CIP)

Master of Science with a major in Genetics & Genomics
Complete Name of Degree

The submission of this proposal constitutes a commitment by the university that, if the proposal is approved, the necessary financial resources and the criteria for establishing new programs have been met prior to the initiation of the program.

Date Approved by the University Board of Trustees

President’s Signature Date

Board of Trustees Chair’s Signature Date

Provost’s Signature Date

PROJECTED ENROLLMENTS AND PROGRAM COSTS

Provide headcount (HC) and full-time equivalent (FTE) student estimates for Years 1 through 5. HC and FTE estimates should be identical to those in Appendix A – Table 1. Indicate the program costs for the first and the fifth years of implementation as shown in the appropriate columns in Appendix A – Table 3A or 3B. Calculate an Educational and General (E&G) cost per FTE for Years 1 and 5 by dividing total E&G by FTE.
<table>
<thead>
<tr>
<th>Implementation Timeframe</th>
<th>HC</th>
<th>FTE</th>
<th>E&amp;G Cost per FTE</th>
<th>E&amp;G Funds</th>
<th>Contract &amp; Grants Funds</th>
<th>Auxiliary/Philanthropy Funds</th>
<th>Total Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Year 1</td>
<td>5</td>
<td>3.75</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>Year 2</td>
<td>7</td>
<td>5.25</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>Year 3</td>
<td>11</td>
<td>8.25</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>Year 4</td>
<td>15</td>
<td>11.25</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>Year 5</td>
<td>20</td>
<td>15</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
</tbody>
</table>
Additional Required Signatures

I confirm that I have reviewed and approved Need and Demand Section III.F. of this proposal.

______________________________  ____________________________
Signature of Equal Opportunity Officer  Date

I confirm that I have reviewed and approved Non-Faculty Resources Section VIII.A. and VIII.B. of this proposal.

______________________________  ____________________________
Signature of Library Dean/Director  Date
Introduction

I. Program Description and Relationship to System-Level Goals

A. Describe within a few paragraphs the proposed program under consideration, and its overall purpose, including:

- degree level(s)
- majors, concentrations, tracks, specializations, or areas of emphasis
- total number of credit hours
- possible career outcomes for each major (provide additional details on meeting workforce need in Section III)

The University of Florida is proposing a Master of Science (M.S.) degree with a major in Genetics & Genomics. No concentrations, tracks, or specializations are planned, and the non-thesis degree program will be 33 credit hours. A successful Ph.D. program in Genetics & Genomics began in 2006.

Genetics & Genomics is one of the fastest-growing scientific fields with both basic and translational aspects relevant to technological and medical breakthroughs. UF is well-positioned to offer a cost-effective STEM M.S. degree that provides courses in the cutting-edge fields of bioinformatics, computational biology, genomic technology, and artificial intelligence/machine learning, as well as hands-on research experience. As more students earn B.S. degrees, given the increased national support for college education, an M.S. degree will often be needed to remain competitive in the job market and for further graduate education. Students with B.S. degrees in the biological sciences from multiple departments at UF, e.g., Biology, Psychology, Statistics, Zoology, will be prepared for the M.S. degree in Genetics & Genomics.

Successful completion of the M.S. degree will prepare students for an immediate job as a Genetic counselor (SOC 29-9092), Biological Science Teacher, Postsecondary (SOC 25-1042), Biological Technician (SOC 19-4021), or Biological Scientist, All Other (SOC 19-1029). A Genetics & Genomics M.S. will also increase the student’s competitiveness for medical school or continuance to the Ph.D. in Genetics & Genomics or a related field.

B. If the proposed program qualifies as a Program of Strategic Emphasis, as described in the Florida Board of Governors 2025 System Strategic Plan, please indicate the category.

- Critical Workforce
  - ☐ Education
  - ☐ Health
  - ☐ Gap Analysis

- Economic Development
  - ☐ Global Competitiveness
  - ☒ Science, Technology, Engineering, and Math (STEM)

☐ Does not qualify as a Program of Strategic Emphasis.
II. Strategic Plan Alignment, Projected Benefits, and Institutional Mission and Strength

A. Describe how the proposed program directly or indirectly supports the following:
   - System strategic planning goals (see link to the 2025 System Strategic Plan on the New Program Proposals & Resources webpage)
   - the institution's mission
   - the institution's strategic plan

The M.S. degree in Genetics & Genomics (G&G) program directly supports the main SUS goal of increased production of graduates in STEM fields. Genetics & Genomics is one of the most diverse and applicable of the STEM fields and includes all of the fields listed in the first sentence of the 2025 System Strategic Plan - “To be truly great, Florida must have well-educated citizens who are working in diverse fields, from science and engineering to medicine and bioscience to computer science.”

The University of Florida (UF) has made a commitment to STEM fields and specifically to artificial intelligence (AI) and machine learning. The proposed program includes training in bioinformatics, biostatistics, precision medicine, computer science, and machine learning in a 33-credit/4-semester M.S. degree program.

There is a state and national need for more workers trained in STEM fields, and particularly in the high-tech fields of genomic technology, bioinformatics, and computational biology. The M.S. with a major in Genetics & Genomics will address this need by providing two semesters of rigorous coursework in genomics, bioinformatics, and quantitative analysis of ‘big data’ and two semesters of professional development, including hands-on research experience in a UF laboratory or in a biotechnology company in the Gainesville area.

B. Describe how the proposed program specifically relates to existing institutional strengths. This can include:
   - existing related academic programs
   - existing programs of strategic emphasis
   - institutes and centers
   - other strengths of the institution

The proposed M.S. degree in G&G program builds on the success of the G&G Ph.D. program that began in 2006. Students in the M.S. in G&G program will take the same classes as G&G Ph.D. students in Year 1 Fall and Spring, so no new courses are required for the M.S. degree. The Ph.D. and M.S. degree programs with a major in G&G are collaborative and interdisciplinary in nature so these programs are managed by the UF Genetics Institute (UFGI). UFGI is a multi-college institution with over 200 faculty from more than 50 departments in nine colleges and three centers/institutes at UF. Thus, there is a wealth of faculty, courses, and laboratories to support the M.S. in G&G degree. The strengths and benefits of the M.S. program to UF and the UFGI will be synergistic.

C. Provide the date the pre-proposal was presented to the Council of Academic
Vice Presidents Academic Program Coordination (CAVP ACG). Specify whether any concerns were raised, and, if so, provide a narrative explaining how each concern has been or will be addressed.

The pre-proposal was presented and approved at the CAVP review group at the Sept 7, 2022, meeting. There were no concerns.

D. In the table below, provide a detailed overview and narrative of the institutional planning and approval process leading up to the submission of this proposal to the Board office. Include a chronology of all activities, providing the names and positions of both university personnel and external individuals who participated in these activities.

- If the proposed program is a bachelor's level, provide the date the program was entered into the APPRiSe system, and, if applicable, provide narrative responding to any comments received from APPRiSe.
- If the proposed program is a doctoral-level program, provide the date(s) of the external consultant's review in the planning table. Include the external consultant's report and the institution's responses to the report as Appendix B.

Planning Process

In 2016, a 10-year review of the Genetics & Genomics Ph.D. program recommended expanding the Genetics & Genomics Program to include an M.S. degree option. With the hiring of program specialist Dr. Brittany Hollister in 2019, the appointment of Dr. Connie Mulligan as G&G Ph.D. program coordinator in 2021, and the appointment of Dr. Tom Burris as Director of the UFGI in 2021, a pre-proposal for an M.S. in G&G was submitted in November 2021. The pre-proposal was approved in Sept 2022, and the full proposal was submitted in November 2022.

<table>
<thead>
<tr>
<th>Date</th>
<th>Participants</th>
<th>Planning Activity Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Summer 2021</td>
<td>Genetics Institute Director Dr. Tom Burris</td>
<td>Based on the 10-year review of the Genetics &amp; Genomics Ph.D. program, we began developing a new M.S. degree in Genetics &amp; Genomics</td>
</tr>
<tr>
<td></td>
<td>Genetics &amp; Genomics Graduate Program Coordinator Dr. Connie Mulligan</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Academic program specialist Dr. Brittany Hollister</td>
<td></td>
</tr>
<tr>
<td>Sept 2021</td>
<td>Dean of College of Medicine Dr. Colleen Koch</td>
<td>COM Dean supports the M.S. degree proposal</td>
</tr>
<tr>
<td>Nov 2021</td>
<td>Genetics &amp; Genomics Graduate Program Coordinator Dr. Connie Mulligan</td>
<td>Pre-proposal is submitted to the Office of the Provost</td>
</tr>
<tr>
<td>Sept 2022</td>
<td>Assistant Provost Dr. Cheryl Gater</td>
<td>Pre-proposal is approved by the Council of Academic Vice Presidents</td>
</tr>
</tbody>
</table>
E. Provide a timetable of key events necessary for the implementation of the proposed program following approval of the program by the Board office or the Board of Governors, as appropriate, and the program has been added to the State University System Academic Degree Program Inventory.

Events Leading to Implementation

All necessary faculty and courses already exist, and recruitment activities for the M.S. degree will build on existing recruitment activities for the G&G Ph.D. program. Nothing else is necessary to implement the M.S. in G&G degree.

<table>
<thead>
<tr>
<th>Date</th>
<th>Implementation Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fall 2022</td>
<td>Degree Proposal submitted for university approval</td>
</tr>
<tr>
<td>June 8, 2023</td>
<td>Board of Trustee Approval</td>
</tr>
<tr>
<td>Summer 2023</td>
<td>Recruitment and admission of first M.S. cohort</td>
</tr>
<tr>
<td>Fall 2023</td>
<td>Projected implementation of degree program</td>
</tr>
</tbody>
</table>

Institutional and State Level Accountability

III. Need and Demand

A. Describe the workforce need for the proposed program. The response should, at a minimum, include the following:

- current state workforce data as provided by Florida’s Department of Economic Opportunity
- current national workforce data as provided by the U.S. Department of Labor’s Bureau of Labor Statistics
- requests for the proposed program from agencies or industries in your service area
- any specific needs for research and service that the program would fulfill

There is a great national and state need for students with MS-level training in Genetics & Genomics. The following table reports data from the FL DEO showing predicted growth of 7.0 – 23.8% for the four occupations specifically associated with the Genetics & Genomics CIP (highlighted in yellow) and positive growth for all related occupations. Furthermore, the table shows that FL DEO recommends M.S. degrees for six of the occupations, in contrast to the US BLS, that only recommends M.S. degrees for two of the occupations, reflecting the FL DEO’s understanding of the value of an M.S. STEM degree.

<table>
<thead>
<tr>
<th>SOC Code</th>
<th>SOC Title</th>
<th>2022</th>
<th>2030</th>
<th>Percent Growth</th>
<th>Total Job Openings</th>
<th>FL DEO</th>
<th>US BLS</th>
</tr>
</thead>
<tbody>
<tr>
<td>19-1022</td>
<td>Microbiologists</td>
<td>293</td>
<td>327</td>
<td>11.6</td>
<td>249</td>
<td>M+</td>
<td>B</td>
</tr>
<tr>
<td>19-1023</td>
<td>Zoologists and Wildlife Biologists</td>
<td>1,628</td>
<td>1,719</td>
<td>5.6</td>
<td>1,250</td>
<td>B</td>
<td>B</td>
</tr>
<tr>
<td>19-1029</td>
<td>Biological Scientists, All Other</td>
<td>1,979</td>
<td>2,118</td>
<td>7.0</td>
<td>1,558</td>
<td>B</td>
<td>B</td>
</tr>
<tr>
<td>19-1031</td>
<td>Conservation Scientists</td>
<td>603</td>
<td>652</td>
<td>8.1</td>
<td>504</td>
<td>B</td>
<td>B</td>
</tr>
</tbody>
</table>
In the following table, data from the US BLS that are specific for Florida support the predicted growth of Genetics & Genomics related occupations and demonstrate high annual wages starting at $40,000-$77,878.

<table>
<thead>
<tr>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>26.0801</td>
<td>Genetics, General.</td>
<td>19-1029</td>
<td>Biological Scientists, All Other</td>
<td>7.30%</td>
<td>$ 70,450</td>
</tr>
<tr>
<td></td>
<td></td>
<td>19-4021</td>
<td>Biological Technicians</td>
<td>14.20%</td>
<td>$ 40,851</td>
</tr>
<tr>
<td></td>
<td></td>
<td>25-1042</td>
<td>Biological Science Teachers, Postsecondary</td>
<td>13.60% NOT AVAILABLE</td>
<td>$ 77,878 NOT AVAILABLE</td>
</tr>
<tr>
<td></td>
<td></td>
<td>29-9092</td>
<td>Genetic Counselors</td>
<td>NOT AVAILABLE</td>
<td>NOT AVAILABLE</td>
</tr>
</tbody>
</table>

Finally, students with an M.S. with a major in Genetics & Genomics will be more competitive than students with only a B.S. degree for admission into Ph.D. programs. There are a wealth of jobs for students who complete a Ph.D. in Genetics and Genomics, as evidenced by the October 31, 2022 listing in Science Careers (the journal for the American Association for the Advancement of Science) showing 73 advertised jobs in Genetics and 49 advertised jobs in Functional Genomics and Pharmacogenomics (see screenshots below).
B. Provide and describe data that support student demand for the proposed program. Include questions asked, results, and other communications with prospective students.

Recognizing the critical and unmet need for training in this cutting-edge area, the University of Florida established an intercollegiate Ph.D. Program in Genetics & Genomics in 2006. The ten-year review of this program obtained input from program students, graduate faculty affiliated with the program, and an external advisory board (see excerpts below and see pages 6-8 of the full report in Table 2 – Appendix I). All three groups recommended expanding the Genetics & Genomics Program to include an M.S. degree option. The benefits of such a program are clear – there is considerable demand for individuals trained in genomic technology, bioinformatics, and computational biology, as provided by the current Genetics & Genomics curriculum, and this demand will grow as data-intensive practices make further inroads into medicine and agriculture. We anticipate high demand for an M.S. degree in Genetics & Genomics.

Excerpts from a 10-year review of the G&G Ph.D. program:
- Student evaluation summary - There was broad support for the development of a Master of Science program to complement the existing Ph.D. program. Some G&G students wish to obtain an M.S. degree in addition to their Ph.D. Others see the inclusion of the M.S. as a way to expand the census of students in the program and strengthen the overall intellectual environment.
- Faculty evaluation summary - The committee recommended adding an M.S. program noting that the focus of the G&G Program on computational approaches if translated to an M.S. program, would fill an important workforce niche. The increasing impact of Big Data on genetics would make such trainees particularly competitive for jobs in both academia and industry. To facilitate the creation of such a program, the committee also suggested exploring the possibility of moving some of the curricula to an online delivery format.
- External advisory board evaluation - Strong employment opportunities for graduates with an M.S. focused on bioinformatics and computational biology
- Final review recommendation - Reviewers were uniform in their recommendation of expanding the G&G Program to include an M.S. degree option. The benefits of such a program are clear—there is considerable demand for individuals with training in bioinformatics and computational biology, and this demand is likely to grow as data-intensive practices make further inroads into medicine and agriculture.

C. Complete Appendix A – Table 1 (1-A for undergraduate and 1-B for graduate) with projected student headcount (HC) and full-time equivalents (FTE).
   • Undergraduate FTE must be calculated based on 30 credit hours per year
   • Graduate FTE must be calculated based on 24 credit hours per year

In the space below, provide an explanation for the enrollment projections. If students within the institution are expected to change academic programs to enroll in the proposed program, describe the anticipated enrollment shifts and impact on enrollment in other programs.

Enrollment is expected to start at 5 students in Year 1 and modestly increase to 20 students in Year 5. Enrollment may increase faster since STEM M.S. programs are becoming more popular with students so they can maintain competitiveness in the job market as well as apply to graduate and medical school—if enrollment exceeds our predictions, we will add sections of the existing courses to accommodate more students. We anticipate that the majority of students will come from B.S. degree programs at UF or other public universities in Florida. We expect a small number of out-of-state students and international students. We do not anticipate any students transferring from other graduate programs at UF.

D. Describe the anticipated benefit of the proposed program to the university, local community, and the state. Benefits of the program should be described both quantitatively and qualitatively.

University: UF has made a commitment to STEM fields and specifically to artificial intelligence (AI) and machine learning. The proposed program supports UF goals since the curriculum includes training in bioinformatics, biostatistics, precision medicine, computer science, and machine learning.

Local community: The high caliber and entrepreneurship of UF faculty have created a dynamic atmosphere to market UF-developed technologies at Sid Martin Biotech and other start-up companies in the area. M.S. students will be a benefit to these companies while they are in the program through internships in the 3rd the 4th semesters (see letters of support in Table 1 – Appendix D) and as trained employees after they graduate.

State of Florida: There is a great state need for students with M.S.-level training in Genetics & Genomics that will be provided by the proposed degree program. The table in Section III. A reports data from the FL DEO shows predicted growth of 7.0–23.8% for the four occupations specifically associated with the Genetics & Genomics CIP and positive growth for all related occupations.
E. If other public or private institutions in Florida have similar programs that exist at the four- or six-digit CIP Code or in other CIP Codes where 60 percent of the coursework is comparable, identify the institution(s) and geographic location(s). Summarize the outcome(s) of communication with appropriate personnel (e.g., department chairs, program coordinators, deans) at those institutions regarding the potential impact on their enrollment and opportunities for possible collaboration in the areas of instruction and research.

There is currently no M.S. degree under this CIP code within the SUS.

F. Describe the process for the recruitment and retention of a diverse student body in the proposed program. If the proposed program substantially duplicates a program at FAMU or FIU, provide a letter of support from the impacted institution(s) addressing how the program will impact the institution’s ability to attract students of races different from that which is predominant on the FAMU or FIU campus. The institution’s Equal Opportunity Officer shall review this Section of the proposal, sign, and date the additional signatures page to indicate that all requirements of this section have been completed.

The proposed program does not substantially duplicate programs at FAMU or FIU. We plan to build on the success of the current Genetics & Genomics Ph.D. program in recruiting and retaining a diverse student body. The Genetics & Genomics Ph.D. program has traditionally enrolled and graduated a highly diverse student body. Since the program began in 2006, the gender distribution of graduates is 51% female and 49% male, which is unusually balanced for a STEM field. Counting only US residents, the ethnic distribution of graduates is 39% under-represented minorities (URM; Hispanic/Latino, African American, and American Indian students) and 61% whites. The recent incoming cohorts are as follows: 25% URM in 2019, 50% URM in 2020, 50% URM in 2021, and 75% URM in 2022. Furthermore, in the 16 years since the Ph.D. program started, only a single URM student (<5%) has left the program without a Ph.D.

We also plan to recruit first-generation students. Many students who graduate with a B.S. degree in the biological sciences are not yet competitive for a job in biotechnology or for a Ph.D. program. Many of these students are first-generation students, and we plan to actively recruit for the M.S. degree in G&G.

Establishing an M.S. degree in Genetics & Genomics builds on the success of the current Ph.D. program and will diversify UF’s graduate student population.
IV. Curriculum

A. Describe all admission standards and all graduation requirements for the program. Hyperlinks to institutional websites may be used to supplement the information provided in this subsection; however, these links may not serve as a standalone response. For graduation requirements, please describe any additional requirements that do not appear in the program of study (e.g., milestones, academic engagement, publication requirements).

Admission standards for coursework are the same as those for the G&G Ph.D. program: A or B in undergraduate courses in genetics, statistics, and Calculus I is expected. Undergraduate research will strengthen a student’s application but is not required. Admission to the University of Florida Graduate School includes submission of undergraduate transcripts, resume or curriculum vitae, and letters of recommendation. The GRE is not required for admission.

The M.S. degree program is based on coursework plus two semesters of GMS 5905 Foundations for a Career in Genetics & Genomics—successful completion of these courses with a minimum GPA of 3.0 is required for the M.S. degree.

Oversight for M.S. students will be at the program level through a supervisory committee that will be chaired by the graduate coordinator. Members of the supervisory committee will include instructors of the first-year courses and other faculty who are involved in graduate student mentoring and education.

B. Describe the specific expected student learning outcomes associated with the proposed program and include strategies for assessing the proposed program's learning outcomes. If the proposed program is a baccalaureate degree, include a hyperlink to the published Academic Learning Compact and the document itself as Appendix C.

Student Learning Outcomes:

- Students will acquire expertise in genomics, bioinformatics, biostatistics, precision medicine, computer science, and machine learning as assessed by earning a grade of A or B in the relevant coursework.

- Students will acquire hands-on expertise in generating and analyzing genomic data, including the use of biostatistics, bioinformatics, machine learning, and artificial intelligence techniques, as assessed by earning a grade of A or B in GMS 5905 Foundations for a Career in Genetics & Genomics.

C. If the proposed program is an AS-to-BS capstone, provide evidence that it adheres to the guidelines approved by the Articulation Coordinating Committee for such programs, as outlined in State Board of Education Rule 6A-10.024. Additionally, please list the prerequisites, if any, and identify the specific AS degrees that may transfer into the proposed program.

☒ Not applicable to this program because it is not an AS-to-BS Capstone.
D. Describe the curricular framework for the proposed program, including the following information where applicable:

- total numbers of semester credit hours for the degree
- number of credit hours for each course
- required courses, restricted electives, and unrestricted electives
- a sequenced course of study for all majors, concentrations, tracks, or areas of emphasis

The non-thesis M.S. degree consists of 33 letter-graded credits taken over 4 semesters – a sample curriculum is provided below:

Year 1 Fall:
- PCB 5065 – Advanced Genetics (4 credits)
- PHC 6052 – Introduction to Biostatistical Methods (3 credits)
- GMS 6221 – Ethics in Genetics (1 credit)
- GMS 6290 – G&G seminar (1 credit)

Year 1 Spring:
- GMS 6231 – Genomics and Bioinformatics (3 credits)
- PHC 6088 – Statistical Analysis of Genetic Data (3 credits)
- GMS 6290 – G&G seminar (1 credit)
- GMS 6014 – Applications of Bioinformatics to Genetics (1 credit)
- Elective – 1 of the following 1 credit courses:
  - GMS 6224 – Foundations in Precision Medicine: Medical Molecular Genetics
  - PHC 6134 – Foundations in Precision Medicine: Genomic Technologies
  - PHC 6598 – Foundations in Precision Medicine: Genetic Epidemiology

Year 1 Summer:
- GMS 5905 – Special topics in Biomedical Sciences/Foundations for a Career in Genetics & Genomics (we will create new course proposal and allow 6 credits/semester, max of 12 credits) (6 credits)

Year 2 Fall:
- GMS 5905 – Special topics in Biomedical Sciences/Foundations for a Career in Genetics & Genomics (we will create new course proposal and allow 6 credits/semester, max of 12 credits) (5 credits)
- GMS 6290 – G&G seminar (1 credit)
- Elective - 1 of the following 3 credit courses or related courses:
  - BSC 6451 – Computational Tools for Research in Biology
  - ANG 6532 – Molecular Genetics of Disease
  - STA 6703 – Statistical Machine Learning
  - BCH 6415 – Advanced Molecular and Cellular Biology

Major courses for the M.S. degree in Genetics & Genomics include:
- PCB 5065 – Advanced Genetics (4 credits)
- GMS 6014 – Applications of Bioinformatics to Genetics (1 credit)
- GMS 5905 – Special topics in Biomedical Sciences/Foundations for a Career in Genetics & Genomics (we will create a new course proposal and allow 6 credits/semester, max of
Final term enrollment of GMS 6290 will serve as the capstone course and culminating experience for the M.S. degree and will include a final oral comprehensive examination.

Transfer of credits: Only graduate-level work (5000-7999) with a grade of B or better is eligible for transfer. A maximum of 9 transfer credits is allowed, and courses must duplicate the material covered in the M.S. in G&G curriculum. Credits must come from UF or institutions approved by UF. Credits transferred from other institutions are applied towards the degree requirements, but grades earned are not computed in the student’s grade point average. Acceptance of transfer of credit requires approval by the Coordinator of the Genetics & Genomics Graduate Program and the Dean of the Graduate School.

E. Provide a brief description for each course in the proposed curriculum.

Required Courses:

GMS 5905 Special topics in Biomedical Sciences/Foundations for a Career in Genetics & Genomics is a course designed for G&G M.S. students combining experiential learning, critical thinking, and professional development. The course combines a hands-on internship (in a biotechnology company, core laboratory, or faculty laboratory) with weekly discussions of research progress and professional development activities, including resume and cover letter writing, job searches, and mock interviews.

NOTE: The graduate coordinator will be the instructor of record for this course and will be in charge of assigning a letter grade. The grade will reflect performance in weekly discussions as well as performance during the internship, which will be made in consultation with the internship supervisor. A new course proposal is forthcoming and will allow 6 credits/semester, max of 12 credits.

GMS 6014 Applications of Bioinformatics to Genetics is focused on the storage, retrieval, and analysis of information related to genetics.

GMS 6221 Ethics in Genetics - Ethical issues in human subjects research on genetics as well as the clinical ethical issues, are covered, as are informed consent and confidentiality in genetic testing. Other topics include ethical issues raised by whole genome and exome testing, prenatal genetic diagnosis and selective implantation of embryos, ownership and custody of stored biological samples in genetic testing, and legal and policy responses to genetic discrimination and health disparities.

GMS 6231 Genomics and Bioinformatics – GMS 6231 explores the principles of genomic characterization and bioinformatic analysis of eukaryotes, including an overview of analytical platforms, computational tools, experimental design, analysis methods, and databases used to study DNA sequence, gene expression, and protein levels.

GMS 6290 G&G seminar is a weekly seminar that is required for all G&G Ph.D. and M.S. students. GMS 6290 provides students an opportunity to orally present their research as well as learn about possible careers from professionals in the field of Genetics & Genomics and other
professional development. This course will be taken in the final semester as the capstone course for the M.S degree and will include a final oral comprehensive exam.

PCB 5065 Advanced Genetics - The objective of PCB 5065 is to strengthen the students’ comprehension of genetic concepts so that they can apply genetic analysis to their own research problems. PCB 5065 is designed to establish a strong foundation for advanced specialty courses in genetics and to complement advanced courses in molecular biology.

PHC 6052 Introduction to Biostatistical Methods – PHC 6052 is a sophisticated introduction to the concepts and methods of biostatistical data analysis. The topics include descriptive statistics, probability, standard probability distributions, sampling distributions, point and confidence interval estimation, hypothesis testing, power and sample size estimation, one and two-sample parametric and non-parametric methods for analyzing continuous or discrete data, and simple linear regression.

PHC 6088 - Statistical Analysis of Genetic Data covers statistical procedures for genetic studies, including basic population/quantitative genetic concepts, QTL mapping, linkage analysis for human diseases, genome-wide association studies, and the analysis of gene expression data for eQTL analysis. This course emphasizes the statistical theory behind methods for analyzing genetic data and its application in useful software tools.

Elective Courses:

ANG 6532 Molecular Genetics of Disease is the only course at UF that focuses exclusively on the genetics of human disease. The availability of whole genome sequences, development of high-throughput sequencing platforms, and public databases of genetic variants have greatly accelerated the discovery of genes involved in disease, leading to breakthroughs in diagnosis and treatment. Students in ANG 6532 will learn about the cause, inheritance, diagnosis, and treatment of specific simple and complex diseases.

BCH 6415 Advanced Molecular and Cell Biology – BCH 6415 is a course on current state-of-the-art aspects of molecular biology that focuses on the current scientific literature on nuclear structure and organization, transcription, RNA processing, protein synthesis, post-translational regulation, DNA replication, DNA repair, and DNA recombination, and experimental approaches to understanding these cellular processes.

BSC 6451 Computational Tools for Research in Biology introduces computational tools for research: Linux command line, Python scripting, and databases. BSC 6451 prepares students to conduct large-scale data analysis on high-performance computing resources.

GMS 6224 Foundations in Precision Medicine: Medical Molecular Genetics focuses on human genetics by providing foundational knowledge related to the human genome structure and organization, the molecular pathogenesis at the gene and chromosome level, and the application of genetic knowledge in modern medicine using real work examples.

PHC 6134 Foundations in Precision Medicine: Genomic Technologies focuses on current developments and emerging trends in genomic testing, clinical and research applications of emerging genomic tests, the role of computing and data science, and applications of bioinformatics in genomics
PHC 6598 Foundations in Precision Medicine: Genetic Epidemiology utilizes specialized molecular and statistical methods to identify genetic factors that might be involved in disease etiology. This course provides exposure to fundamental concepts, terminologies, and principles in human population genetics and molecular biology relevant to understanding genetic epidemiologic approaches.

STA 6703 Statistical Machine Learning - Methodology and application of tools of statistical (machine) learning targeted at graduate students in engineering, applied statistics/biostatistics and quantitative life sciences. Statistical approaches to machine learning are emphasized. Application and the intuition behind statistical methods rather than formal derivations and full mathematical proofs of the procedures are prioritized.

F. For degree programs in medicine, nursing, and/or allied health sciences, please identify the courses that contain the competencies necessary to meet the requirements identified in Section 1004.08, Florida Statutes. For teacher preparation programs, identify the courses that contain the competencies necessary to meet the requirements outlined in Section 1004.04, Florida Statutes.

☒ Not applicable to this program because the program is not a medicine, nursing, allied health sciences, or teacher preparation program.

G. Describe any potential impact on related academic programs or departments, such as an increased need for general education or common prerequisite courses or increased need for required or elective courses outside of the proposed academic program. If the proposed program is a collaborative effort between multiple academic departments, colleges, or schools within the institution, provide letters of support or MOUs from each department, college, or school in Appendix D.

The M.S. degree in G&G is built upon the established curriculum for the Genetics & Genomics Ph.D. program and uses all existing courses. The projected enrollment for the M.S. degree is modest, so we do not anticipate significant impacts on other programs. The UFGI does not have primary faculty, i.e., all faculty in the UFGI have their tenure home in their departments, so all courses are based in other departments (see Table 1 – Appendix D for letters of support from home departments for the required courses).

H. Identify any established or planned educational sites where the program will be offered or administered. If the proposed program will only be offered or administered at a site(s) other than the main campus, provide a rationale.

The proposed program will be offered on the main UF campus in Gainesville, FL.

I. Describe the anticipated mode of delivery for the proposed program (e.g., face-to-face, distance learning, hybrid). If the mode(s) of delivery will require specialized services or additional financial support, please describe the projected costs below and discuss how they are reflected in Appendix A –
Table 3A or 3B.

The mode of delivery will be face-to-face. No specialized services or additional financial support is required.

J. Provide a narrative addressing the feasibility of delivering the proposed program through collaboration with other institutions, both public and private. Cite any specific queries made of other institutions with respect to shared courses, distance/distributed learning technologies, and joint-use facilities for research or internships.

The M.S. degree in G&G does not require any shared courses, shared/distributed learning technologies, or joint-use facilities with other institutions. Although we have not made any inquiries, we are open to the idea of collaborating with other institutions in the state that are interested in our M.S. degree program.

K. Describe any currently available sites for internship and/or practicum experiences. Describe any plans to seek additional sites in Years 1 through 5.

☐ Not applicable to this program because the program does not require internships or practicums.

Internships are a critical component of the M.S. degree in G&G. Internships are included as a component of GMS 5905 – Special topics in Biomedical Sciences/Foundations for a Career in Genetics & Genomics. A new course proposal will be created (6 credits/semester, max 12 credits, letter-graded; see full course description in Section IV.E.)

Internships will provide hands-on experience in the generation and analyzing genetic data, which will prepare the student for an immediate job as a Genetic counselor (SOC 29-9092), Biological Science Teacher, Postsecondary (SOC 25-1042), Biological Technician (SOC 19-4021), or Biological Scientist, All Other (SOC 19-1029). The internships will also provide needed research experience, and increase the student’s competitiveness for medical school or their ability to continue to the Ph.D. in Genetics & Genomics or a related field.

The internships will be hosted in biotechnology companies in the Gainesville area, including Cadre Bioscience, Pelagos Pharmaceutical, Inc, and Rapid Genomics, and in faculty laboratories at UF and UF’s core service laboratories at the Interdisciplinary Center for Biotechnology Research or (see letters of support in Table 1 – Appendix D). Additional laboratories at local biotechnology companies and at UF will be added between Years 1 and 5 – we do not anticipate any problems adding new internships since there are 200 faculty associated with the UFGI and dozens of biotechnology companies in the Gainesville area.

V. Program Quality Indicators - Reviews and Accreditation

A. List all accreditation agencies and learned societies that would be concerned with the proposed program. If the institution intends to seek specialized accreditation for the proposed program, as described in Board of Governors
Regulation 3.006, provide a timeline for seeking specialized accreditation. If specialized accreditation will not be sought, please provide an explanation.

No specialized accreditation is needed for an M.S. degree in G&G. There is no accreditation agency for genetics and genomics. M.S. graduates will be seeking jobs or applying to medical and doctoral programs, all of which will look for evidence of knowledge and hands-on experience in generating and analyzing genetic and genomic data, which will be provided by the M.S. program.

B. Identify all internal or external academic program reviews and/or accreditation visits for any degree programs related to the proposed program at the institution, including but not limited to programs within academic unit(s) associated with the proposed degree program. List all recommendations emanating from the reviews and summarize the institution’s progress in implementing those recommendations.

In 2016, there was a 10-year review performed for the BOG for the current G&G Ph.D. program (see Table 2 – Appendix I). One of the main recommendations from the review was to add an M.S. degree to the G&G program, which has resulted in the current M.S. degree proposal.

C. For all degree programs, discuss how employer-driven or industry-driven competencies were identified and incorporated into the curriculum. Additionally, indicate whether an industry or employer advisory council exists to provide input for curriculum development, student assessment, and academic-force alignment. If an advisory council is not already in place, describe any plans to develop one or other plans to ensure academic-workforce alignment.

A critical component of the M.S. degree in G&G is the required internships. The willingness of biotechnology companies and university laboratories to host M.S. G&G interns indicates they value the training that will be provided by the M.S. program. As part of the internships, we will solicit feedback from the host laboratories to inquire about additional expertise that would make our M.S. students more competitive, and we will develop 1-credit courses focused on specific genetic data platforms or computational expertise.

VI. Faculty Participation

A. Use Appendix A – Table 2 to identify existing and anticipated full-time faculty who will participate in the proposed program through Year 5, excluding visiting or adjunct faculty. Include the following information for each faculty member or position in Appendix A – Table 2:

- the faculty code associated with the source of funding for the position
- faculty member’s name
- highest degree held
- academic discipline or specialization
- anticipated participation start date in the proposed program
• contract status (e.g., tenure, tenure-earning, or multi-year annual [MYA])
• contract length in months
• percent of annual effort that will support the proposed program (e.g., instruction, advising, supervising)

This information should be summarized below in narrative form. Additionally, please provide the curriculum vitae (CV) for each identified faculty member in Appendix E.

The faculty who will participate in the M.S. degree in G&G consist of the Graduate Coordinator, Program Specialist, and instructors of all required courses for the M.S. degree. On average, these faculty have been associated with the UFGI and the G&G Ph.D. program for more than 7 years, including three faculty who have been associated with both the institute and the Ph.D. program since their inception in 2006. These faculty are all committed to the success of the existing Ph.D. program and the proposed M.S. program.

B. Provide specific evidence demonstrating that the academic unit(s) associated with the proposed program have been productive in teaching, research, and service. Such evidence may include trends over time for average course load, FTE productivity, student HC in major or service courses, degrees granted, external funding attracted, and other qualitative indicators of excellence (e.g., thesis, dissertation, or research supervision).

The G&G Ph.D. program was established in 2006 and has graduated a total of 49 Ph.D. students with an average time to graduation of 5 years, 1 month. Two G&G Ph.D. students have been awarded prestigious NSF Graduate Research Fellowships, and two have been awarded highly competitive NIH F32/31 fellowships.

UFGI faculty, with 197 members, are very productive. In 2021-2022, UFGI faculty published 785 articles, filed 66 patents, and were awarded $73.6 M in research grants. See a list of publications by week at http://ufgi.ufl.edu/.

VII. Budget

A. Use Appendix A – Table 3A or 3B to provide projected costs and associated funding sources for Year 1 and Year 5 of program operation. In narrative form, describe all projected costs and funding sources for the proposed program(s). Data for Year 1 and Year 5 should reflect snapshots in time rather than cumulative costs.

The curriculum for the M.S. degree in G&G uses existing courses that can accommodate the projected 5-20 M.S. students without any changes. Costs and funding sources in Appendix A – Table 3A reflect the percent effort by the course instructors and the program administrators listed in Table 2 and the fact that none of the instructors are supported by funds from the Genetics Institute.

B. Use Appendix A – Table 4 to show how existing Education & General (E&G)
funds will be reallocated to support the proposed program in Year 1. Describe each funding source identified in Appendix A – Table 4, and provide a justification below for the reallocation of resources. Describe the impact the reallocation of financial resources will have on existing programs, including any possible financial impact of a shift in faculty effort, reallocation of instructional resources, greater use of adjunct faculty and teaching assistants, and explain what steps will be taken to mitigate such impacts.

No funds will be reallocated for the M.S. degree in G&G. Existing courses can accommodate the projected 5-20 M.S. students without any changes or reallocation of funds.

C. If the institution intends to operate the program through continuing education, seek approval for market tuition rate, or establish a differentiated graduate-level tuition, as described in Board of Governors Regulation 8.002, provide a rationale and a timeline for seeking Board of Governors’ approval.

☒ Not applicable to this program because the program will not operate through continuing education, seek approval for market tuition rate, or establish a differentiated graduate-level tuition

D. Provide the expected resident and non-resident tuition rate for the proposed program for both resident and non-resident students. The tuition rates should be reported on a per credit hour basis, unless the institution has received approval for a different tuition structure. If the proposed program will operate as a continuing education program per Board of Governors Regulation 8.002, please describe how the tuition amount was calculated and how it is reflected in Appendix A – Table 3B.

Per UF regulation 3.0375, the following tuition will be charged: $448.73/credit hour for residents and $1173.45/credit hour for non-residents (https://www.fa.ufl.edu/directives/2022-23-academic-year-tuition-and-fees/)

E. Describe external resources, both financial and in-kind support, that are available to support the proposed program, and explain how this amount is reflected in Appendix A – Table 3A or 3B.

No external resources are needed for the M.S. degree in G&G because the curriculum uses existing courses that can accommodate the projected 5-20 M.S. students without any changes.

See Table 1 – Appendix D for letters of support from home departments for the required courses.

VIII. Non-Faculty Resources

A. Describe library resources currently available to implement and/or sustain the
proposed program through Year 5 below, including but not limited to the following:

- the total number of volumes and serials available in the discipline and related disciplines
- all major journals that are available to the university's students

The Library Director must sign the additional signatures page to indicate that they have review Sections VIII.A. and VIII.B.

There are a total of 33,462 genetics or genomics volumes available to UF students. The 82 available genetics and genomics journals are listed in Table 2 – Appendix J and can also be viewed at https://guides.uflib.ufl.edu/c.php?g=720884&p=5137438. The current library liaison for the UFGI, Dr. Aida Miró-Herrans, is a former graduate of the G&G Ph.D. program and has been very supportive of both the Ph.D. program and the proposed M.S. program.

B. Discuss any additional library resources that are needed to implement and/or sustain the program through Year 5. Describe how those costs are reflected in Appendix A – Table 3A or 3B.

☒ Not applicable to this program because no additional library resources are needed to implement or sustain the proposed program.

C. Describe any specialized equipment and space currently available to implement and/or sustain the proposed program through Year 5.

The UF Genetics Institute is housed in the Cancer and Genetics Research Complex, with state-of-the-art research and conference/teaching facilities. These facilities include one dedicated classroom, one large auditorium, 4 conference rooms, 27 faculty research labs, 21 shared research support labs plus equipment (e.g., cold rooms and autoclaves), and 27 faculty offices. All of these resources are available for the M.S. in G&G degree program.

D. Describe any additional specialized equipment or space that will be needed to implement and/or sustain the proposed program through Year 5. Include any projected Instruction and Research (I&R) costs of additional space in Appendix A – Table 3A or 3B. Costs for new construction should be provided in response to Section X.E. below.

☒ Not applicable to this program because no new I&R costs are needed to implement or sustain the program through Year 5.

E. If a new capital expenditure for instructional or research space is required, indicate where this item appears on the university's fixed capital outlay priority list. Appendix A – Table 3A or 3B includes only I&R costs. If non-I&R costs, such as indirect costs affecting libraries and student services, are expected to increase as a result of the program, describe and estimate those expenses in narrative form below. It is expected that high enrollment programs, in particular, would necessitate increased costs in non-I&R...
activities.
☒ Not applicable to this program because no new capital expenditures are needed to implement or sustain the program through Year 5.

F. Describe any additional special categories of resources needed to operate the proposed program through Year 5, such as access to proprietary research facilities, specialized services, or extended travel, and explain how those projected costs of special resources are reflected in Appendix A – Table 3A or 3B.
☒ Not applicable to this program because no additional special categories of resources are needed to implement or sustain the program through Year 5.

G. Describe fellowships, scholarships, and graduate assistantships to be allocated to the proposed program through Year 5, and explain how those are reflected in Appendix A – Table 3A or 3B.
☒ Not applicable to this program because no fellowships, scholarships, and/or graduate assistantships will be allocated to the proposed program through Year 5.
## IX. Required Appendices

The appendices listed in tables 1 & 2 below are required for all proposed degree programs except where specifically noted. Institutions should check the appropriate box to indicate if a particular appendix is included to ensure all program-specific requirements are met. Institutions may provide additional appendices to supplement the information provided in the proposal and list them in Table 4 below.

### Table 1. Required Appendices by Degree Level

<table>
<thead>
<tr>
<th>Appendix</th>
<th>Appendix Title</th>
<th>Supplemental Instructions</th>
<th>Included? Yes/No</th>
<th>Required for Degree Program Level</th>
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<tbody>
<tr>
<td>A</td>
<td>Tables 1-4</td>
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<td></td>
<td>Bachelors  Masters/ Specialist  Doctoral/ Professional</td>
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<tr>
<td>B</td>
<td>Consultant's Report and Institutional Response</td>
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<td>C</td>
<td>Academic Learning Compacts</td>
<td>Include a copy of the approved or proposed Academic Learning Compacts for the program</td>
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</tr>
<tr>
<td>D</td>
<td>Letters of Support or MOU from Other Academic Units</td>
<td>Required only for programs offered in collaboration with multiple academic units within the institution</td>
<td></td>
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<tr>
<td>E</td>
<td>Faculty Curriculum Vitae</td>
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<td></td>
<td>X  X  X</td>
</tr>
<tr>
<td>F</td>
<td>Common Prerequisite Request Form</td>
<td>This form should also be emailed directly to the BOG Director of Articulation prior to submitting the program proposal to the Board office for review.</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>G</td>
<td>Request for Exemption to the 120 Credit Hour Requirement</td>
<td>Required only for baccalaureate degree programs seeking approval to exceed the 120 credit hour requirement</td>
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<td>X</td>
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<tr>
<td>H</td>
<td>Request for Limited Access Status</td>
<td>Required only for baccalaureate degree programs seeking approval for limited access status</td>
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<td>X</td>
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Table 2. Additional Appendices

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<tr>
<th>Appendix</th>
<th>Appendix Title</th>
<th>Description</th>
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<tbody>
<tr>
<td>I</td>
<td>BOG Review Genetics &amp; Genomics Ph.D.</td>
<td>10-year review of Genetics &amp; Genomics Ph.D. program from 2016</td>
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<tr>
<td>J</td>
<td>Genetics &amp; Genomics journal list, Nov 2022</td>
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Info

Request: Combination degree between the Bachelor of Art (B.A.) or the Bachelor of Science (B.S.) with a major in Anthropology and the Master of Arts (M.A.) with a major in Anthropology

Description of request: The College of Liberal Arts and Sciences seeks to create a combination degree program between the Bachelor of Arts (B.A.) or the Bachelor of Science (B.S.) degree with a major in Anthropology and the Master of Arts (M.A.) degree with a major in Anthropology

Submitter: Kenneth Sassaman sassaman@ufl.edu

Created: 4/12/2023 12:29:33 PM

Form version: 6

Responses

Department Name (Undergraduate Degree Program)
Enter the name of the department offering the undergraduate degree program.

Anthropology

College Name (Undergraduate Degree Program)
Enter the complete name for the college/school for the department listed above.

College of Liberal Arts and Science

Major Name (Undergraduate Degree Program)
Enter the name of the undergraduate degree program (e.g., Bachelor of Arts in History).

Bachelor of Arts with major in Anthropology or Bachelor of Science with a major in Anthropology

Major Code (Undergraduate Degree Program)
Enter the major code of the undergraduate degree program (e.g., HY).

APY

Department Name (Graduate Degree Program)
Enter the name of the department offering the graduate degree program.

Anthropology

College Name (Graduate Degree Program)
Enter the complete name for the college/school for the department listed above.

College of Liberal Arts and Science
**Major Name (Graduate Degree Program)**
Enter the name of the graduate degree program (e.g., Master of Arts in History).

Master of Arts with major in Anthropology

**Major Code (Graduate Degree Program)**
Enter the major code of the graduate degree program (e.g., HY).

APY

**Effective Term**
Enter the term (semester and year) that students would first be admitted to the program.

Fall

**Effective Year**
2023

**What is the rationale for proposing this Combination Degree?**

Undergraduate Anthropology students need the opportunity and encouragement to pursue graduate education in the profession without committing to a PhD program that would delay professional employment by years. They have expressed strong interest in earning an M.A. lead directly to a rewarding career. This is especially feasible for students seeking careers in public archaeology and related topics in anthropology attending to societal needs of heritage management (aka cultural resource management or CRM). Since the 1960s, federal and state laws protecting historical and archaeological sites from the impacts of land development have provided opportunities for graduate-trained students to pursue careers in the technical, administrative, and regulatory aspects of CRM. Passage of the federal Infrastructure Investment and Jobs Act in 2021 ensures that careers in CRM will burgeon in years to come. Our consultations with colleagues in the private sector, government agencies, and federally recognized tribes underscore the growing demand for trained personnel.

Mid-level careers in heritage management require an M.A. degree. The proposed Combination Degree is designed expressly to bridge highly qualified UF undergraduate majors in Anthropology with a terminal M.A. degree and certificate options in CRM and related fields of heritage management (e.g., tribal repatriation, community impacts, curation, and collections management). Curriculum for certificates in these specialties will center on marketable skills. To ensure the best possible employment outcomes for graduates, the Combination Degree program will provide opportunities for paid internships in the final semester of their M.A. program with governmental, private-sector, and tribal partners whose input in the design of the certificates and related curriculum ensures the best fit between partner needs and student training.
NOTE: Currently under review by UF administration is our first and most relevant graduate certificate, Public Archaeology (17733), with curriculum focused on skills for M.A.-level employment in public archaeology (CRM) with government, tribes, and the private sector, all of which are contributing to curriculum development and providing internship options. In the offing are additional graduate certificates in Indigenous Archaeology, Biocultural Heritage, and Collections and Curation.

What are the benefits of establishing this program?

For undergraduate Anthropology majors the proposed Combination Degree will reduce the time and expense required for them to obtain the M.A. degree. These students will have the opportunity to take more challenging courses, including those not available at the undergraduate level, and those more relevant to future careers. With curriculum focused on marketable skills as well as professionalism and leadership, capped by a paid internship, graduates will earn the credentials for employment commensurate with training.

For the department the proposed combination degree is expected to become a beacon for recruiting more students to the Anthropology graduate program. The department will retain some of our high-achieving B.A./B.S. students who would otherwise go elsewhere for graduate study. The combination degree program may attract other undergraduates from cognate disciplines to acquire a second major in Anthropology, making them eligible for this program. Being trained in a comprehensive approach to cultural heritage that prepares students for the future of a profession will not only give graduates a leg up in the employment competition of an expanding market but also bring prestige to UF as a leader in reimagining heritage management.

Double-counted credits and Degree Requirements

How will double-counted credits meet the requirements of both degrees? Please note both undergraduate and graduate degree requirements.

Undergraduate students may double count up to 12 credit hours of letter-graded graduate courses earned with a grade of B or higher toward both degrees. These will count among the 18 credit hours in ANT electives required for the B.A. or B.S. degree. They may include courses that are simultaneously offered at both the undergraduate and graduate levels (e.g., ANT 3164/ANG 5164 The Inca and Their Ancestors; ANT4147C/ANG 6120C Environmental Archaeology) with undergraduates in the combination degree program electing to take the graduate section; or stand-alone graduate courses (e.g., ANG 5172 Historical Archaeology; ANG 6191 Archaeology of Death). Undergraduate majors must still take all regular required courses for the B.A. or B.S. degree at the 2000-4000 level. No graduate level course can replace an undergraduate major required course (ANT 2410, ANT 2140, ANT 3514C, ANT 3620, ANT 4931). There is no coursework that is required for both undergraduates and graduate students.

As for graduate degree requirements, students in the combined degree program are encouraged to take one or both of the two first-year graduate required proseminars
(ANG 5595 Proseminar in Biological and Archaeological Anthropology, ANG 5621 Proseminar in Cultural and Linguistic Anthropology) while still an undergraduate, as a double-counted course. That will fulfill a graduate degree course requirement, while counting as electives while still an undergraduate. There are no other required lecture/seminar courses for MA students concentrating in archaeology. The other 6 credit hours undergraduates may double-count will be electives toward the minimum 30 hours needed for the M.A. degree.

The double-counted courses must be letter-graded, and students must earn a B grade or better to fulfill the MA degree program requirements.

To reiterate, the Combined Degree Program is being offered to undergraduates who intend to apply for and complete a Terminal M.A. with certificate. Required and elective courses that count for the certificate (typically 9-12 credit hours) must be completed while in the graduate program; courses taken while an undergraduate will not fulfill the graduate certificate requirements. Given the variety of certificate options that have been/will be proposed, students in the combined degree program will be closely mentored to make sure they take courses for the certificate at the appropriate time.

For example: suggested schedule for students intending to earn the M.A. with certificate in Public Archaeology:

4th year fall semester:
• ANG 5595 Proseminar in Biological and Archaeological Anthropology (required for 1st year M.A. students)
• one ANG elective (a graduate course not required for the certificate)
• any ANT required course not yet completed
• other electives

4th year spring semester:
• ANG 5621 Proseminar in Cultural and Linguistic Anthropology (required for 1st year M.A. students)
• one ANG elective (a course not required for the certificate)
• ANT 4931 Capstone in Anthropology (required for majors in the senior year)
• other electives

5th year fall semester:
• ANG 5xxx Law and the Practice of Public Archaeology (required for certificate)
• ANG course in Archaeological Materials Analysis (for certificate; chosen from a list)
• any other elective ANG courses

5th year spring Semester:
• ANG 5184 Principles of Archaeology (required for certificate)
• ANG course in Digital Data Literacy in Archaeology (for Certificate, chosen from a list)
• any other ANG course, including up to 6 credits of internship (ANG 6945 Internship in Anthropology)
Coherent Course of Study

How does the Combination degree program present a coherent course of study? Please explain how the combination program maintains a logical, sequential course of study that maintains both the integrity of the undergraduate 8-semester plan and the graduate course of study.

The combination degree option is open only to students seeking a Terminal M.A. with a certificate that has its own stated requirements. Such students will have already determined their interests and goals for the M.A. degree and the post-graduation careers for which the certificate programs are designed. The objective of the combination degree is to provide highly qualified UF undergraduates with a seamless transition from the B.A./B.S. degree program into the M.A. degree program so that the course of study is logical and consistent in its sequencing.

As part of the application process for the combination degree, students will be personally advised by a faculty member to help select relevant and appropriate graduate-level courses, with further approval from the Director of the graduate certificate they intend to apply for at the M.A. level. The application must also be approved by the Anthropology Undergraduate and Graduate Coordinators. During this advisory process, students will plan which graduate courses to take to meet general M.A. requirements, and anticipate courses they will take once in the M.A. program to fulfill the certificate requirements.

Students are personally advised by a faculty member, in consultation with the Director of their graduate certificate program, throughout their time as both undergraduate and graduate students to maintain a coherent, planned course of study and expedite the awarding of the M.A. degree.

Meeting Degree Requirements

Please describe the process used to determine the meeting of requirements for both degrees as a coherent course of study for students.

The University application form is reviewed and approved by both the Undergraduate and Graduate Coordinators to ensure that both the bachelor’s degree and master’s degree requirements will be met. Undergraduate students are mentored and monitored by their faculty advisor, somewhat similar to the relationship graduate students have with the chair of their supervisory committee.

Students must earn a grade of “B” or higher in the letter-graded graduate-level courses they take while undergraduates so that these courses will count for the M.A. degree.

Students in this program must formally apply for admission to the Anthropology graduate program for an M.A. degree. At that time, the admitting faculty and Graduate Coordinator will assess whether the student has fulfilled the requirements of the combination degree such that the eligible graduate-level courses taken while an undergraduate will be double-counted if they are ultimately admitted.
**Student Qualifications**

*How are students determined to be academically qualified for this Combination program?*

*Please describe the additional criteria used to select students for this combination program beyond the GPA. These include but are not limited to:*

(a) faculty recommendations  
(b) student performance on external examinations  
(c) evidence such as portfolios, recordings, software programs, created or creative works  
(d) any other indicators of the students’ potential for success

Beyond the GPA itself, students’ academic qualifications are evaluated on the basis of faculty recommendations. Two letters of recommendation written by their personal instructors are required, one of which must be from the faculty member who is advising them through the process. The letters should address students’ potential for success in the combination degree program.

Their academic qualifications are also evaluated on the basis of a required 300-word essay on the student’s personal goals and how achieving the undergraduate and then the graduate degree in conjunction with their intended Certificate will impact their educational and professional aspirations.

**Eligibility Requirements**

*Please provide the specific admissions requirements for this program, including but not limited to the minimum GPA, GRE score (when appropriate), the application procedures, and the eligibility period when a student may apply for this program.*

To be eligible for the combination degree, students must be declared Anthropology majors (B.A.- or B.S.-seeking) with at least 60 credits (junior standing) by the start of the combination degree program. They must have earned a 3.2 or better Cumulative GPA and a 3.5 or better GPA in Upper Division courses by the start of the program.

In addition, they must have completed at least three of the four required core courses for Anthropology majors, including the core course most directly related to the graduate certificate they seek to obtain by the start of the program.

The application procedure is as follows:

Undergraduates are made aware of the combination degree program via regular announcements from the Undergraduate Coordinator and information on the department website or from their course instructors. Interested students are directed to select and meet with a faculty advisor to help them complete the two required application forms: a Department of Anthropology application form that ensures they meet the eligibility criteria as well as the University combination degree application form, along with supplemental materials. It is anticipated that the same faculty advisor will play a leading role in the student’s M.A. program of study if the student is admitted to the graduate program.
The advisor assists the student in determining their eligibility and interests in the intended graduate certificate program. The student will draft a statement of goals (300 words) to be reviewed by the advisor as part of this initial process. Together student and advisor will decide which semester the student should begin taking graduate-level courses for shared credit, how many credit hours total, and which specific courses, taking care that no Undergraduate degree requirements are being missed and that no courses required for the graduate Certificate are taken while an undergraduate.

The student then submits a final version of the statement of goals, accompanied by two letters of recommendation separately submitted (one from the faculty member advising the student, the other from another instructor) along with the department application form. These materials are submitted for approval by the Anthropology Undergraduate Coordinator to ensure all undergraduate degree requirements are being met. It is also signed off by the Director of the intended graduate certificate program to ensure that there is no overlap between the shared courses and those required for the certificate program.

With these preliminary approvals, the final University application form is completed and submitted to the Anthropology Undergraduate Coordinator for approval, and then to the Anthropology Graduate Coordinator for signature indicating approval by the Graduate Department. Once all departmental approvals are met, the form is submitted to the CLAS Undergraduate Advising Office and then to Undergraduate Affairs.

If while the student is pursuing the combination degree there is a change in the listed shared credit courses (e.g., a course is not available, or a new relevant course is offered), the student must consult with their faculty advisor to make a substitution and submit a revised combination degree request form for approval by the Undergraduate Coordinator to update their record before the bachelor's degree is awarded.

To ensure thorough and timely approval of applications for the combination degree, there is a submission deadline of April 1st for the following fall semester, and November 1st for the following spring semester.

In the fall of their senior year, students should apply for the M.A. degree in Anthropology (Dec. 15th deadline) and follow all stated requirements and procedures.

**Is this combination degree double-counting 12 or fewer credits?**

Yes

**Double-counted Credit Justification**

Provide a justification of the number of double-counted credits. Please explain how the double-counted credits do not compromise the integrity and quality of the combined programs and enable students to meet each program’s learning outcomes at no loss of fidelity.
The double-counted credits are graduate-level courses that are mostly electives for graduate students. The content is more rigorous and challenging, and the workload (readings, papers, seminar discussion) is higher than for undergraduate courses. A few courses exist at both the graduate and undergraduate level (e.g., “The Inca and Their Ancestors” has both a graduate [ANG 5164] and undergraduate [ANT 3164] section), such that students in the combination degree program could opt for the graduate section. Most of them, however, have no undergraduate equivalent, and provide more varied and enriched opportunities for high-achieving students to pursue studies in their areas of interest. Undergraduate students will always be a minority in graduate-level courses, so as not to diminish the integrity and quality of those courses. In order to be double-counted, letter-graded graduate-level courses taken while still an undergraduate must earn a “B” or higher grade. There is no loss of fidelity for either program’s learning outcomes.

**Impacts on Other Programs**

Describe any potential impact on other programs or departments, including increased need for general education or common prerequisite courses, or increased need for required or elective courses outside of the existing program.

There are no anticipated impacts on other UF programs or departments.
Degree | New | CombinationDegree-GradPro for request 17244

**Info**

**Request:** Sport Management MS/JD Combination Degree Program

**Description of request:** The College of Health and Human Performance and the Levin College of Law seeks to create a combination degree program between the Master of Science (M.S.) degree with a major in Sport Management and the Juris Doctor (J.D.) degree

**Submitter:** Cyntrice Thomas cthomas10@ufl.edu

**Created:** 4/12/2023 2:32:46 PM

**Form version:** 5

**Responses**

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Major Code (Professional Degree Program)
Enter the major code of the professional degree program (e.g., HY).

LAW

Effective Term
Enter the term (semester and year) that students would first be admitted to the program.

Fall

Effective Year
Earliest Available

What is the rationale for proposing this Combination Degree?
The Combination Degree Program is a credit-sharing arrangement that allows qualified students to combine their legal studies with graduate work, resulting in two degrees earned in a reduced amount of time.

What are the benefits of establishing this program?
The Combination Degree program allows students to earn a professional degree and graduate degree in a shorter amount of time. While it would normally take five years to complete both degrees separately, students are able to complete them in four years. It gives students the opportunity to complete a professional law degree and also develop a specialization and earn a master's degree in sports management, which can make future attorneys more attractive and competitive when seeking employment in the area of sport law.

Double-counted credits and Degree Requirements

How will double-counted credits meet the requirements of both degrees? Please note both graduate and professional degree requirements.

The Master of Science with a major in Sport Management requires that students in the non-thesis track complete a total of 36 credits hours, including 15 credits of core courses, six credits of a research core, and 15 credits of electives. Students in this graduate/professional combination degree program are able to count 12 credits of letter-graded law school coursework earned with a grade of B or higher as electives for their graduate degree. The purpose of the elective credits is to allow students to take courses in sport management or other departments that will complement their sport management concentration. In that same vein, students are allowed to double count their law courses as electives. In regards to the Juris Doctor, students are required to complete 88 credit hours of work, 59 of which must be completed in the law school. The total number of credits includes certain required courses and law electives of their choosing, and this can include 12 credits of letter-graded graduate course work earned with a grade of B or
higher. Because both degrees allow for elective credits to be earned outside of their program, the double counting of credits does not interfere with students meeting the degree requirements and overall degree requirements for each degree in the combination degree program.

Students in the combination degree program are exempt from taking only one Sport Management research core course, HLP 6535 (Research Methods), because they are already required to take LAW 5803, Legal Research, and LAW 5792, Legal Writing. As legal professionals, students are more likely to engage in legal research and writing as opposed to the more empirical, traditional research methods used in sport management.

Coherent Course of Study

*How does the Combination degree program present a coherent course of study? Please explain how the combination program maintains a logical, sequential course of study that maintains both the integrity of the graduate 8-semester plan and the professional course of study.*

The Combination Degree program does not interfere with the integrity of the M.S. with a major in Sport Management or the Juris Doctor. Students in the combined degree program are expected to complete their first year of law school independent of any graduate coursework to ensure that they are engaged in the initial and most important year of their law coursework. As first-year students are given the essential foundations of law, and the graduate coursework is set aside during that time so that students can focus completely only without the interference of outside coursework.

In the graduate program, students have the flexibility to take the courses in the order that they choose. As a result there is no sequence for taking graduate courses. Additionally, all of the required courses in Sport Management are offered in both the fall and spring semesters so as to give students the option to take courses in a way that best fits their law school curriculum.

Meeting Degree Requirements

*Please describe the process used to determine the meeting of requirements for both degrees as a coherent course of study for students.*

Students are required to meet with their academic advisors in both colleges at the start of their programs to plan out a program of study that will ensure that they are aware of each degree's requirements and have a plan to meet those requirements. The academic advisor, as the chair of the students Supervisory Committee in the Department of Sport Management, keeps track of all students in the program to ensure that the courses they take are acceptable for the degree and that their performance in their courses meet the requirements of the graduate school.

This includes the submission of a completed Joint Degree Authorization form to Graduate School in the term in which the student is admitted to the second program.

Both degrees must be awarded in the same semester.
Student Qualifications

How are students determined to be academically qualified for this Combination program? Please describe the additional criteria used to select students for this combination program beyond the GPA. These include but are not limited to:

(a) faculty recommendations
(b) student performance on external examinations
(c) evidence such as portfolios, recordings, software programs, created or creative works
(d) any other indicators of the students’ potential for success

Candidates for the program must meet the entrance requirements for and be accepted by both Colleges. Each College must be informed by the student at the time of application to the second program that he/she intends to pursue the combination graduate/professional degree program. Students are encouraged to announce their intention of seeking to seek this combination degree program as soon as possible.

Letters of recommendation, undergraduate transcripts, personal statements, and undergraduate upper upper-level GPAs are considered in determining admission to each program. While the GRE is no longer required for admission into the M.S. in Sport Management program, an additional personal survey response is required, and the law school also evaluates LSAT scores to determine admission.

Eligibility Requirements

Please provide the specific admissions requirements for this program, including but not limited to the minimum GPA, GRE score (when appropriate), the application procedures, and the eligibility period when a student may apply for this program.

Students are required to apply and be accepted to both degree programs in order to be eligible for the combination degree. The students must have a 3.0 an upper-level undergraduate GPA. However, the GRE is not required for the master’s program, but the LSAT is required for admission to the law school.

Students initially admitted to the Juris Doctor must then be admitted to the graduate degree no later than the end of the fourth consecutive semester. Students initially admitted to the graduate degree must then be admitted to the Juris Doctor no later than the end of the second consecutive semester. A summer term is counted as half of a single semester in the College of Law (only one 8-week session) or may count as full semester in the Department of Sport Management if the student enrolls in both Summer A and Summer B or Summer C (12 weeks).

A completed Combination Graduate/Professional Authorization form must be submitted to the Graduate School for participation approval in the term in which the student is admitted to the second program. Professional coursework earned prior to the necessary combination participation approval from the Graduate School will not be eligible to accrue towards the graduate degree.

This combination degree program is not open to students who have already earned one of these degrees.
Is this combination degree double-counting 12 or fewer credits?

Yes

Double-counted Credit Justification

Provide a justification of the number of double-counted credits. Please explain how the double-counted credits do not compromise the integrity and quality of the combined programs and enable students to meet each program’s learning outcomes at no loss of fidelity.

Both degrees allow for elective credits to be earned outside of their program; the double counting of credits does not interfere with students meeting the degree requirements and overall degree requirements for each degree in the combination degree program. Students in the combination degree program are able to count 12 credits from one degree as elective credits for the other degree. This does not interfere with the students meeting the degree objectives for either degree. The only exception is that students in the combination degree program are not required to take one Sport Management research core course, HLP 6535 (Research Methods), because they are already required to take LAW 5803, Legal Research, and LAW 5792, Legal Writing. As legal professionals, students are more likely to engage in legal research and writing as opposed to the more empirical, traditional research methods used in sport management.

Impacts on Other Programs

Describe any potential impact on other programs or departments, including increased need for general education or common prerequisite courses, or increased need for required or elective courses outside of the existing program.

There will be no impact on other programs or departments outside of the combination degree as there are no general education requirements or prerequisites for either program, nor are students required to take electives outside of either department.
Graduate Curriculum Committee
Minutes

March 9, 2023
Meeting Materials

Voting Conducted
via Zoom
I. Presentation and review of the Minutes from the February Meeting of the Graduate Curriculum Committee (GCC).

II. Update(s) to the Committee: The following was reviewed by the Graduate Curriculum Committee (GCC) previously. The GCC felt further follow-up and/or clarifications were necessary before the proposals could move forward to the University Curriculum Committee (UCC). Suggestions and/or follow-up required are noted below the proposals.

   There are no updates to present at this time.

III. Course Change Proposals: The following proposals are newly requested revisions to existing courses already within the current course catalog in curriculum inventory. The changes requested are listed below each of the proposals.

   There are no modifications to present at this time.

IV. New Course Proposal(s) from the University Curriculum Committee: The following are newly requested course proposals that were presented at the February UCC meeting. Proposed course titles and descriptions are listed below.

   CLAS – Anthropology
   1. ANG 5930    Special Topics
      Link to proposal:   https://secure.aa.ufl.edu/Approval/reports/18001

      Proposal has been conditionally approved. Once revised, the proposal can be administratively approved after further review by the Chair of the GCC.

   ENG – Mechanical & Aerospace Engineering
   2. EGM 5XXX    Modeling and Control of Biomolecular Machines
      Link to proposal:   https://secure.aa.ufl.edu/Approval/reports/17933

      Proposal has been conditionally approved. Once revised, the proposal can be administratively approved without further review by the GCC.

V. New Course Proposal(s) (with attached syllabi): The following are newly requested course proposals. Proposed course titles and descriptions are listed below. Syllabi have been included with these new course requests, at the request of GCC Members.
1. APK 6XXX   **MATLAB for Biomedical Sciences**  
   Link to proposal:  [https://secure.aa.ufl.edu/Approval/reports/17628](https://secure.aa.ufl.edu/Approval/reports/17628)  
   Proposal has been approved by the GCC.

2. EEE 5XXX   **Introduction to RF Circuits**  
   Link to proposal:  [https://secure.aa.ufl.edu/Approval/reports/17829](https://secure.aa.ufl.edu/Approval/reports/17829)  
   Proposal has been conditionally approved. Once revised, the proposal can be administratively approved without further review by the GCC.

3. EEL 5XXX   **Control of Biological Systems**  
   Link to proposal:  [https://secure.aa.ufl.edu/Approval/reports/17758](https://secure.aa.ufl.edu/Approval/reports/17758)  
   Proposal has been conditionally approved. Once revised, the proposal can be administratively approved without further review by the GCC.

4. EGS 6XXX   **Agile Project Management for Engineers and Scientists**  
   Link to proposal:  [https://secure.aa.ufl.edu/Approval/reports/17947](https://secure.aa.ufl.edu/Approval/reports/17947)  
   Proposal has been conditionally approved. Once revised, the proposal can be administratively approved without further review by the GCC.

5. PHC 6XXX   **Foundations of Public Health**  
   Link to proposal:  [https://secure.aa.ufl.edu/Approval/reports/18145](https://secure.aa.ufl.edu/Approval/reports/18145)  
   Proposal has been conditionally approved. Once revised, the proposal can be administratively approved without further review by the GCC.

6. PHC 6XXX   **Introduction to Qualitative Research Methods for Public Health and Health**  
   Link to proposal:  [https://secure.aa.ufl.edu/Approval/reports/18170](https://secure.aa.ufl.edu/Approval/reports/18170)  
   Proposal has been conditionally approved. Once revised, the proposal can be administratively approved without further review by the GCC.

7. PHC 6XXX   **Programming Basics for Biostatistics**  
   Link to proposal:  [https://secure.aa.ufl.edu/Approval/reports/18127](https://secure.aa.ufl.edu/Approval/reports/18127)  
   Proposal has been conditionally approved. Once revised, the proposal can be administratively approved without further review by the GCC.
Proposal has been conditionally approved. Once revised, the proposal can be administratively approved without further review by the GCC.

8. PHC 7XXX  
   *Advanced Statistical Learning for Biostatistics*

   Link to proposal:  [https://secure(aa).ufl.edu/Approval/reports/17265](https://secure(aa).ufl.edu/Approval/reports/17265)

Proposal has been conditionally approved. Once revised, the proposal can be administratively approved without further review by the GCC.

VI. Information Items:

1. **ANG 6592** – 18147 – Change to course title
2. **PHA 6211** – 18019 – Change to course title and description
Graduate Curriculum Committee

Agenda

April 11, 2023
Meeting Materials

Voting Conducted
via Zoom
I. Presentation and review of the Minutes from the March Meeting of the Graduate Curriculum Committee (GCC).

II. Update(s) to the Committee: The following was reviewed by the Graduate Curriculum Committee (GCC) previously. The GCC felt further follow-up and/or clarifications were necessary before the proposals could move forward to the University Curriculum Committee (UCC). Suggestions and/or follow-up required are noted below the proposals.

There are no updates to present at this time.

III. Course Change Proposals: The following proposals are newly requested revisions to existing courses already within the current course catalog in curriculum inventory. The changes requested are listed below each of the proposals.

There are no modifications to present at this time.

IV. New Course Proposal(s) from the University Curriculum Committee: The following are newly requested course proposals that were presented at the February UCC meeting. Proposed course titles and descriptions are listed below.

HHP – Applied Physiology and Kinesiology

1. APK 5XXX  Applied Sport Science
   Link to proposal:  https://secure.aa.ufl.edu/Approval/reports/18051

   Examines fundamental concepts related to the acquisition, analysis, and interpretation of data relevant to the outcome of human performance across myriad physical and cognitive domains including sport, exercise, tactical operations, and medical professions. Addresses the use of statistics and broader fields of data science, artificial intelligence, analytics, and technology management necessary to evaluate performance and strategically adjust training methods to enhance performance.

2. APK 5XXX  Strength and Conditioning for Beginning Practitioners
   Link to proposal:  https://secure.aa.ufl.edu/Approval/reports/18031

   This course addresses the principles of designing training programs of varying duration aimed at improving muscular strength, power, speed, agility, endurance, balance, stability, and hypertrophy. Emphasis will be placed on creating and administering evidence-based periodized training programs and ensuring safe and productive technique of fundamental exercises in each modality.
3. ESI 5XXX  Data Analytics for ISE  
Link to proposal:  https://secure.aa.ufl.edu/Approval/reports/17540

Provides an understanding of the skills necessary for managing and analyzing data. The concepts that will be covered in this class include python basics, exploratory data analysis, data manipulation, data cleaning, data wrangling, and machine learning. All the technical skills will be motivated by different examples involving data (3 credits).

4. ESI 5XXX  Introduction to Financial Technology  
Link to proposal:  https://secure.aa.ufl.edu/Approval/reports/17849

Explores the impacts of financial technology in our day to day lives. Students will learn the technology behind payments, credit, lending and asset management, as well as applications of blockchain technology for investments and financial transactions. The course will provide an overview of the FinTech industry, decentralized finance and major applications of the blockchain. Topics on privacy, security and regulation of FinTech will be covered.

5. ESI 5XXX  Machine Learning for Financial Risk Management  
Link to proposal:  https://secure.aa.ufl.edu/Approval/reports/17884

Explores how machine learning changes the practice of risk management and financial engineering. Covers the best practices for model selection and construction for big financial data, including regression and classification techniques, and deep learning with applications to forecasting financial time series.

6. ESI 5XXX  Numerical Methods in Financial Engineering  
Link to proposal:  https://secure.aa.ufl.edu/Approval/reports/17850

Presents the basic numerical and simulation techniques for the pricing of derivative securities. The material includes numerical methods commonly used in financial engineering, including random number generation, stochastic processes, statistics, and differential equations. Applications of each topic will be presented along the course through case studies with real market data.

7. ESI 5XXX  Optimization for Financial Engineering  
Link to proposal:  https://secure.aa.ufl.edu/Approval/reports/17883

Introduces optimization theories and methods to support the practice of financial engineering. The course will cover the use methodologies from mathematical programming in financial decision-making and their applications to portfolio and asset management. It will also involve building optimization models based on financial market data and risk assessment using optimization modeling languages.
8. **ESI 5XXX  Stochastic Calculus in Financial Engineering**
   Link to proposal:  [https://secure.aa.ufl.edu/Approval/reports/17851](https://secure.aa.ufl.edu/Approval/reports/17851)

   Introduces students to the basic ideas and methods of stochastic calculus and its applications in finance, which are essential for the practice of quantitative finance and risk management. Covers arbitrage and risk-neutral pricing in a discrete-time setting, continuous-time models using Brownian motion, Markov processes, stochastic integral, stochastic differential equations, Ito’s formula, change of measure, martingales, and applications to option pricing.

9. **ESI 6892  Master’s Project in Financial Engineering**
   Link to proposal:  [https://secure.aa.ufl.edu/Approval/reports/17937](https://secure.aa.ufl.edu/Approval/reports/17937)

   Capstone event in the Financial Engineering curriculum. Students develop an in-depth analysis on a financial engineering topic under the supervision of the course instructor. The effort culminates in a written project report and a presentation to the class.

V. **New Course Proposal(s) (with attached syllabi):** The following are newly requested course proposals. Proposed course titles and descriptions are listed below. Syllabi have been included with these new course requests, at the request of GCC Members.

**HHP – Applied Physiology and Kinesiology**

1. **APK 6XXX  Grant Writing in Health & Human Performance**
   Link to proposal:  [https://secure.aa.ufl.edu/Approval/reports/17627](https://secure.aa.ufl.edu/Approval/reports/17627)

   This course will acquaint students with grant submission requirements (primarily NIH format). We will focus on NIH predoctoral (F31) specific aims and research strategy, but more general grant writing tips and approaches will also be discussed. The course will conclude with the formation of “study sections” to peer review proposals.

**ENG – Civil and Coastal Engineering**

2. **CGN 6XXX  Engineering and Construction Analytics using BIM**
   Link to proposal:  [https://secure.aa.ufl.edu/Approval/reports/17863](https://secure.aa.ufl.edu/Approval/reports/17863)

   This course provides an exploration of model-based engineering and construction analytics using Building Information Modeling (BIM) to understand structural properties, constructability, and maintainability of structures. Topics include model-based designs; finite element analysis based on BIM; mechanical, electrical and plumbing (MEP) models; constructability and maintainability assessment; model-informed construction time and cost analysis, and reality capture for infrastructure assessment.
3. **ECO 7XXX  Applied Macroeconomics I**  
   Link to proposal:  [https://secure.aa.ufl.edu/Approval/reports/18335](https://secure.aa.ufl.edu/Approval/reports/18335)  

Prepares doctoral students to be researchers in Modern Macroeconomics. Constructs and solves Dynamic Stochastic General Equilibrium (DSGE) models. Uses real-world economic data to estimate and calibrate DSGE models using Bayesian methods. Identifies and measures the size of macroeconomic shocks on output, employment, prices, and other relevant macroeconomic variables.

4. **ECO 7XXX  Applied Macroeconomics II**  
   Link to proposal:  [https://secure.aa.ufl.edu/Approval/reports/18337](https://secure.aa.ufl.edu/Approval/reports/18337)  

Expands the set of analytical tools that students may use to answer important questions in macroeconomics. Focuses on models that capture interactions between heterogeneous agents, such as households or firms, and their implications for economic performance. Examines the role of market imperfections and financial frictions.

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5. **EES 6XXX  Coastal Policy Lab**  
   Link to proposal:  [https://secure.aa.ufl.edu/Approval/reports/17870](https://secure.aa.ufl.edu/Approval/reports/17870)  

Field and laboratory work on engineering and policy outcomes for marine and coastal stakeholders. Includes research and development of engineering and policy outcomes that can be deployed by clients in the marine and coastal environments.

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6. **ENY 6XXXC  Social Insects**  
   Link to proposal:  [https://secure.aa.ufl.edu/Approval/reports/18204](https://secure.aa.ufl.edu/Approval/reports/18204)  

Provides an overview of social insect biology in the context of comparative social evolution. Topics include the diversity of social behaviors in insects, evolutionary origins of sociality, kin recognition, caste systems, communication in social groups, and impacts of social insects.

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7. **MCB 6XXX  Analysis, Interpretation, and Visualization of Microbiological Data**  
   Link to proposal:  [https://secure.aa.ufl.edu/Approval/reports/18024](https://secure.aa.ufl.edu/Approval/reports/18024)  

This course will focus on the analysis and interpretation of microbiological data using R language and other command line tools with a series of examples that range in complexity. Students will analyze various types of microbiological data, including RNAseq, 16SrRNA gene sequencing, direct and indirect measurements of microbial growth, and measurements of microbial bioproducts, among others. Finally, students will use good practices for data reproducibility.
8. PHA 6XXX  *Nanomedicine-based Immunotherapy*
   Link to proposal:  [https://secure.aa.ufl.edu/Approval/reports/18359](https://secure.aa.ufl.edu/Approval/reports/18359)

   This interdisciplinary course will cover the whole spectrum of nanomedicine drug development through the lens of immunology and immunotherapy, by integrating nanomedicine formulation with Drug Delivery, Pharmaceutical Analysis, and Pharmacokinetics. The topics covered in this course include nanomedicine formulation and characterization, pharmacology (PK&PD), and their clinical translation.

9. PHA 6XXX  *Population Pharmacokinetics and Pharmacodynamics*
   Link to proposal:  [https://secure.aa.ufl.edu/Approval/reports/18353](https://secure.aa.ufl.edu/Approval/reports/18353)

   This 3-credit course provides an in-depth understanding of the theoretical concepts in, and hands-on applications of population PK/PD modeling using continuous and non-continuous data. Upon completion, students will understand nonlinear mixed-effect modeling theory and implementation, data formatting, population PK/PD model development, plus evaluation criteria and simulation. This will expose students to multiple population PK/PD software platforms, including Monolix Suite, Pumas AI, Phoenix, R

HHP – Sport Management

10. SPM 6XXX  *Fair Competition*
    Link to proposal:  [https://secure.aa.ufl.edu/Approval/reports/18115](https://secure.aa.ufl.edu/Approval/reports/18115)

    This course is an intensive introduction to the labor law and the law of antitrust. We will focus on: collective bargaining agreements and arbitration in sports, the basics of antitrust in the context of the sports industry and the impact of antitrust regulation on business strategy in sports.

11. SPM 6XXX  *Sport Business Law*
    Link to proposal:  [https://secure.aa.ufl.edu/Approval/reports/18116](https://secure.aa.ufl.edu/Approval/reports/18116)

    This course will cover human resources management and employment/labor law, governance in sport organization, event and venue management and marketing management in the context of sport organizations. This course builds on the basic principles of law introduced in Issues in Sport Law and Advanced Sport Law.

VI. Information Items:

1. AEB 5188 – 17995 – Change pre-requisites
2. AEB 5326 – 17996 – Change pre-requisites
3. **AEB 5516** – 17998 – Change pre-requisites
4. **AEB 6385** – 17999 – Change pre-requisites
5. **AEB 6675** – 18000 – Change pre-requisites
6. **AEB 6106** – 18004 – Change pre-requisites
7. **AEB 6553** – 18005 – Change pre-requisites
8. **AEB 7108** – 18007 – Change pre-requisites
9. **AEB 7184** – 18008 – Change pre-requisites
10. **AEB 7220** – 18009 – Change pre-requisites
11. **AEB 7453** – 18010 – Change pre-requisites
12. **AEB 7504** – 18011 – Change pre-requisites
13. **AEB 7571** – 18012 – Change pre-requisites
14. **AEB 7572** – 18013 – Change pre-requisites
15. **AEB 7645** – 18014 – Change pre-requisites
16. **AEB 7182** – 18015 – Change pre-requisites
17. **AEB 7333** – 18016 – Change pre-requisites
18. **AEB 7483** – 18017 – Change pre-requisites
19. **AEB 7573** – 18018 – Change pre-requisites
20. **APK 6900** – 18311 – Transfer Ownership
21. **APK 6490** – 18312 – Transfer Ownership
22. **CGN 7980** – 18195 – Change pre-requisite
23. **CGN 7979** – 18199 – Change pre-requisites
24. **EDH 6040** – 18179 – Change course description
25. **EOC 7980** – 18196 – Change pre-requisites
26. **EOC 7979** – 18200 – Change pre-requisites
27. **FAS 6932** – 18343 – Adjust repeatable max from 10 to 12
28. **FOR 6934** – 18344 – Adjust repeatable max from 10 to 12
29. **HLP 6911** – 18313 – Share Ownership
30. **HLP 6935** – 18314 – Share Ownership
31. **LEI 5121** – 18315 – Transfer Ownership
32. **LEI 6903** – 18316 – Transfer Ownership
33. **PET 5936** – 18317 – Transfer Ownership
34. **PET 6910** – 18318 & 18319 – Transfer Ownership
35. **PET 6947** – 18321 – Transfer Ownership
36. **PET 6971** – 18322 – Transfer Ownership
37. **PHC 6000** – 18242 – Share Ownership
38. **PHC 6002** – 18243 – Share Ownership
41. PHC 6003 – 18244 – Share Ownership
42. PHC 6011 – 18245 – Share Ownership
43. PHC 6016 – 18246 – Share Ownership
44. PHC 6194 – 18247 – Share Ownership
45. PHC 6405 – 18387 – Change pre-requisites