

GRADUATE COUNCIL AGENDA

APRIL 18, 2024

1:00 PM

110 GRINTER HALL

I. ACTION ITEMS:

1. Minutes from the March 21, 2024, Graduate Council Meeting (Enclosure 1).

CONCENTRATIONS:

2. The College of Liberal Arts and Sciences seeks to participate in the existing interdisciplinary concentration in Clinical and Translational Science for the Doctor of Philosophy (Ph.D.) with a major in Psychology (#19548). Dr. Darragh Devine will be present for discussion (Enclosure 2).
3. The College of Health and Human Performance seeks to modify the curriculum for the concentration in Sport Management for the Doctor of Philosophy (Ph.D.) with a major in Health and Human Performance (#19618). Dr. Cyntrice Thomas will be present for discussion (Enclosure 3).

DEGREE:

4. The College of Veterinary Medicine seeks to create a new degree in Comparative Biomedical Sciences for the Master of Science (M.S.) and Doctor of Philosophy (Ph.D.) (#18414). Dr. Jorge Hernandez and Dr. Janet Robishaw will be present for discussion (Enclosure 4A & 4B).

CERTIFICATE POLICY:

5. Certificate policy – In cases in which a program offers a master's program and graduate certificate of the exact same name, should we allow students who are leaving the master's program to be awarded a certificate if they have already completed all the required courses? Dr. Tom Kelleher will be present for discussion (Enclosure 5).

II. INFORMATION ITEM / ADMINISTRATIVE ACTIONS:

6. Graduate Curriculum Committee – March Minutes and April Agenda (Enclosure 6).
7. The College of Design, Construction and Planning seeks to modify the curriculum for the Master of Integrated Sustainable Development (M.I.S.D.) degree with a major in Integrated Sustainable Development (#19662) (Enclosure 7).
8. Update on the Graduate Council election 2024-2027
9. Graduate Programs – Distance or Self-Supporting (No new items)
10. Graduate Student Success Center

GRADUATE COUNCIL MINUTES

MARCH 21, 2024

1:00 PM

110 GRINTER HALL
Teleconference (Via Zoom)

MEMBERS PRESENT: Dr. Nicole Stedman (Chair), Dr. Linda Bloom, Dr. J.C. Bunch, Dr. James Essegbey, Dr. Hitomi Greenslet, Dr. Kristin Larsen, Dr. Michael Martinez, Dr. Corene Matyas, Dr. Connie Mulligan, Dr. K. Ramesh Reddy, Dr. Joni Williams Splett, Dr. Marta Wayne, Kevin Senior (GSC rep), and Jasleen Kaur (GSC alternate)

MEMBERS ABSENT: Dr. Aner Sela

GUESTS PRESENT: Dr. Casey Bullock (University Registrar), Nancy Clark (College of Design, Construction and Planning), Dr. Megan Forbes (English Language Institute), Dr. David Bloom (College of Medicine), Dr. Cheryl Gater (Associate Provost and Director), Dr. Sarah Gamble (College of Design, Construction and Planning), Dr. George Hack (College of Public Health and Health Professions), Dr. Laura Happe (College of Pharmacy), Diana Hull (Office of the Registrar), Dr. Andrew Noss (College of Liberal Arts and Sciences), Dr. Johnathan Orsini (Office of the Provost/Teaching and Technology), Dr. Peter Sayeski (College of Medicine), Dr. Denise Simmons (Herbert Wertheim College of Engineering), Heather Steingraber (College of Pharmacy), and Ashley Tidwell (Office of Admissions)

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

The meeting was called to order at 1:01 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. (Prior to calling the meeting to order, Dr. Stedman informed everyone that today's Zoom meeting was being recorded.)

I. ACTION ITEMS:

1. Minutes from the February 15, 2024, Graduate Council Meeting. A motion to approve was made, seconded, and passed unanimously.

CERTIFICATES:

2. The College of Public Health and Health Professions seeks to create a graduate certificate in Artificial Intelligence in Public Health and Healthcare (#19118). Dr. George Hack was present for discussion. A motion to approve was made, seconded, and passed unanimously, with a proposed effective date of earliest available.
3. The College of Design, Construction and Planning seeks to create a graduate certificate in Public Interest Design (#19033). Dr. Sarah Gamble was present for discussion. A motion to approve was made, seconded, and passed unanimously, with a proposed effective date of fall 2024.

4. The Herbert Wertheim College of Engineering seeks to close the graduate certificate in Cell and Tissue Science and Engineering (#19090). Dr. Tom Kelleher presented the proposal. A motion to approve was made, seconded, and passed unanimously, with a proposed effective date of earliest available.

CONCENTRATIONS:

5. The College of Medicine seeks to participate in the existing interdisciplinary concentration in Clinical and Translational Science for the Doctor of Philosophy (Ph.D.) with a major in Medical Sciences and a concentration in Medical Physics (#19105). Dr. Manuel Arreola was present (via Zoom) for discussion. A motion to approve was made, seconded, and passed unanimously, with a proposed effective date of earliest available.
6. The College of Medicine seeks to create a graduate concentration in Medical Anatomy & Physiology for the Master of Science (M.S.) with a major in Medical Sciences (#19465). Dr. Peter Sayeski was present (via Zoom) for discussion. A motion to approve was made, seconded, and passed unanimously, with a proposed effective date of summer 2024.

The Chair sought Council approval for consideration of the four (4) items from the College of Pharmacy as a package. Council concurred.

7. The College of Pharmacy seeks to create a graduate concentration in Managed Care Pharmacy for the Master of Science in Pharmacy (M.S.P.) with a major in Pharmaceutical Sciences (#19442). Dr. Laura Happe and Ms. Heather Steingraber were present (via Zoom) for discussion. A motion to approve was made, seconded, and passed unanimously, with a proposed effective date of earliest available.
8. The College of Pharmacy seeks to create a graduate concentration in Pharmaceutical Policy for the Master of Science in Pharmacy (M.S.P.) with a major in Pharmaceutical Sciences (#19443). Dr. Laura Happe and Ms. Heather Steingraber were present (via Zoom) for discussion. A motion to approve was made, seconded, and passed unanimously, with a proposed effective date of earliest available.
9. The College of Pharmacy seeks to create a graduate concentration in Pharmaceutical Value Communications for the Master of Science in Pharmacy (M.S.P.) with a major in Pharmaceutical Sciences (#19444). Dr. Laura Happe and Ms. Heather Steingraber were present (via Zoom) for discussion. A motion to approve was made, seconded, and passed unanimously, with a proposed effective date of earliest available.
10. The College of Pharmacy seeks to create a graduate concentration in Pharmacoeconomics for the Master of Science in Pharmacy (M.S.P.) with a major in Pharmaceutical Sciences (#19441). Dr. Laura Happe and Ms. Heather Steingraber were present (via Zoom) for discussion. A motion to approve was made, seconded, and passed unanimously, with a proposed effective date of earliest available.
11. The College of Public Health and Health Professions seeks to modify the curriculum for the Doctor of Philosophy with a major in Public Health and a concentration in Health Services Research (#18771). Dr. George Hack was present for discussion. A motion to approve was made, seconded, and passed unanimously, with a proposed effective date of fall 2024.

MAJOR MODIFICATION:

12. The College of Liberal Arts and Sciences seeks to modify the curriculum for the Master of Sustainable Development Practice (M.D.P.) with a major in Sustainable Development Practice (#19408). Dr. Andrew

Noss was present for discussion. A motion to approve was made, seconded, and passed unanimously, with a proposed effective date of earliest available.

IELTS:

13. The English Language Institute seeks to have IELTS Academic Speaking scores as an additional means of demonstrating ITA English speaking proficiency. Dr. Megan Forbes was present for discussion. A motion to approve was made, seconded, and passed unanimously, with a proposed effective date of earliest available.

2023-2026 BALLOT:

14. Approval of the ballot for election to Graduate Council 2024-2027. A motion to approve was made, seconded, and passed unanimously.

II. INFORMATION ITEM / ADMINISTRATIVE ACTIONS:

15. Graduate Curriculum Committee – February Minutes and March Agenda.
16. Graduate Programs – Distance or Self-Supporting – (No new items)
Dr. Jonathan Orsini shared that while there are no items to present at this meeting, some proposals are pending with the BOG for review.
16. Graduate Student Success Center
Dean Stedman discussed role and position changes happening in the Graduate Student Success Center. She also shared the plans for Graduate Student Appreciation Week, which will take place Monday, April 1 through Friday, April 5, 2024.
18. The Herbert Wertheim College of Engineering seeks to modify the curriculum for the graduate certificate in Controls Systems (#19426).

III. DISCUSSION ITEMS:

19. The Herbert Wertheim College of Engineering presented use cases for proposals for online/remote Ph.Ds. Dr. Denise Simmons was present to discuss the seven programs. The Graduate School will work with Dr. Simmons, HWCOE units, and the provost's office on next steps to prepare proposals for more formal review and to determine which proposals need formal approval.
20. Certificate policy – In cases in which a program offers a master's program and graduate certificate of the exact same name, should we allow students who are leaving the master's program to be awarded a certificate if they have already completed all the required courses?
The timing and how it could affect assessment plans was discussed. If the assessment was recorded properly, it could be possible. A handout was shared and displayed with draft language for editing the graduate certificate policy. Based on feedback, a revised policy will be brought as an action item to a future meeting.

The meeting adjourned at 2:26 p.m.

Concentration | New for request 19548

Info

Request: Add the Clinical and Translational Science graduate concentration to the Ph.D. with a major in Psychology

Description of request: The College of Liberal Arts and Sciences seeks to participate in the existing interdisciplinary concentration in Clinical and Translational Science for the Doctor of Philosophy (Ph.D.) with a major in Psychology

Submitter: Darragh Devine dpdevine@ufl.edu

Created: 4/3/2024 5:15:04 PM

Form version: 2

Responses

Proposed Action

Choose to add a new concentration if the concentration has never been offered before. In this case documentation of consent from all participating departments must be submitted.

OR,

Choose to participate in an existing concentration if the concentration has already been approved. In this case documentation of consent from all departments offering the major must be submitted.

Begin Participating in a Concentration

Note that documents can be uploaded on the next page or after the request has been initiated.

Concentration Name

Enter the name of the concentration. Example: "Mathematical Modeling" or "Ecological Restoration".

Clinical and Translational Science

Credits

Enter the number of credits for the concentration. Note: as a guideline only, graduate concentrations typically range from 9-21 credits (9-12 for master's degrees, or 9-21 for doctoral degrees).

14

Effective Term

Enter the term (semester and year) that the concentration would start.

Summer

Effective Year

2024

Students

Enter the expected number of new students enrolled in this concentration in the first three years.

1-4

Percentage of Credits Available Fully Online

Indicate the percentage of course credits that will be available through fully online courses.

100%

Percentage of Credits Available Off-Campus

Indicate the percentage of course credits that will be available away from the main Gainesville campus (including courses with onsite & off main campus meetings).

<25%

Is this an additional (secondary) concentration?

Yes

All Department/Degree/Majors Adding Concentration

List the department / degree / major combinations at the degree level chosen that will offer this concentration.

Psychology: Ph.D. with a major in Psychology

For example, to request a new "Wetland Sciences" concentration at the master's level, list all master's level degree / major combinations from all participating departments:

- *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*

Rationale for Proposed Concentration

Describe the rationale for offering this new concentration and having it on the transcript, how it will enhance the quality of the existing major, how it relates to graduate programs at peer institutions. Also describe what distinguishes this new concentration within the existing major(s) in the degree program, the degree of its overlap

with existing majors and concentrations (both in the degree program and in other degree programs at the university), and a justification for any such overlap.

The Clinical & Translational Science (CTS) training program sponsored by the UF Clinical & Translational Science Institute was designed to provide Ph.D. scientists in various disciplines with the knowledge, skills and attitudes to support future career goals related to clinical and translational research. The interdisciplinary concentration in CTS provides additional credentials that would benefit Ph.D. graduates in a variety of disciplines. This is particularly relevant for students in the Behavioral and Cognitive Neuroscience program for the Psychology Ph.D. These students are engaged in research that examines the brain's functioning in relation to a wide variety of normal and pathological behaviors. Students have an opportunity to follow the CTS concentration with funding from the TL-1 training grant and develop their skills in brain research with real clinical impacts.

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.

Students can acquire research skills that are relevant to neurological and behavioral disorders, including drug addiction, neurodegenerative disorders, emotional disorders, and other pathologies. Psychology Ph.D. students already interact with other students and faculty in the McKnight Brain Institute, College of Medicine, and others. Moreover, Psychology Ph.D. students contribute to the mission of the Brain Institute and others through engagement in the Center for Addiction Research and Education (CARE) and others. All courses that are required for the concentration are offered by the UF Clinical and Translational Sciences Institute, and they supplement the courses in the Psychology Ph.D. program. Accordingly, there is no increased reliance on general education courses or other resources from additional graduate programs.

Curriculum Requirements

The requirements for the Clinical and Translational Science doctoral concentration are summarized in Table 1. In addition to core and elective course requirements, students in the CTS concentration will prepare a hypothesis-driven thesis/dissertation project that includes at least one specific aim that involves clinical research, defined by the NIH as patient-oriented research, epidemiologic and behavioral studies, and outcomes research and health services research (<https://grants.nih.gov/grants/glossary.htm>). Doctoral students in the CTS Concentration will also be expected to present their research findings in a poster or oral presentation at least once at a CTSI Annual Research Symposium

Table 1. Curriculum Requirements	
Core Courses	8 credits
Electives	6 credits
total	14 credits
CTS-related Specific Aim	required
research presentation at annual CTSI research symposium	at least one presentation

The CTS core curriculum consists of four required courses with a total of 8 credits selected from Table 2A.

Table 2A. CTS Core Courses		
Course Title	Course Number	Credits
Translational Research & Therapeutics: Bench, Bedside, Community, & Policy	GMS6847	3
Team Science	GMS6945	1
Responsible Conduct of Biomedical Research	GMS 7877	1
CTS Seminar	GMS 6893	2
CTS Journal Club	GMS 6895	1
Introduction to Clinical & Translational Science	GMS 7093 (may also count as group A elective)	2
Ethical, Regulatory, and Practical Conduct of Clinical Research	GMS 6875 (may also count as group A elective)	2

Elective courses have been categorized into three groups:

Elective Group A = Experimental Design

Elective Group B = Quantitative Skills

Elective Group C = Professional Development

For the CTS interdisciplinary concentration students must take at least one course (regardless of number of credits) from each of the three elective groups A-C, with a total of at least 6 elective credits.

Table 2B. CTS Elective Courses			
Group	Course Title	Course Number	Credits
A	Advanced Epidemiology Methods III	PHC 6937	3

A	Applied Survival Analysis	PHC 6937	3
A	Applied Survival Analysis	STA 6177	3
A	Applied Topics in Clinical Effectiveness Research	GMS 6854	2
A	Biology and Epidemiology of HIV/AIDS	PHC 6009	3
A	Cancer Epidemiology	PHC 7007	3
A	Epidemiology of Infectious Disease	PHC 6002	3
A	Epidemiology Research Methods I	PHC 6000	3
A	Experim & Quasi-Exp Res Des Commun Settings	GMS 6844	2
A	Foundations of Qualitative Health Research	NGR 6815	3
A	Gene Therapy From Bench To Bedside	GMS 6059	1
A	General Clinical Research Practicum	BMS 6882	3
A	Health Care Policy and Vulnerable Populations	GMS 6833	3
A	Health Disparities in the United States	PHC 6441	3
A	Health Outcomes Research	GMS 6851	2
A	Human Health Risk Assessment	VME 6607	4
A	Introduction to CTS	GMS 7093	2
A	Longitudinal Research Design	GMS 6829	2
A	Measurement in Epidemiology & Outcomes Res	PHC 6711	3
A	Molecular Epidemiology	PHC 7595	3
A	Nursing Sci Health Disparities Vulnerable Pop	NGR 7661	3
A	Population-Based Research on Aging	GMS 6485	3
A	Principles of Epidemiology in Public Health	PHC 6001	3
A	Psychiatric Epidemiology	PHC 7038	3
A	Public Health Concepts in Infectious Disease	PHC 6517	3
A	Quant Res Design and Measurement in Nursing	NGR 7816	3
A	Research Designs in Health Outcomes and Policy	GMS 6885	3
A	Social Epidemiology	PHC 6016	3
A	Survey Research Methods	PHC 6716	3
B	Adv Applications of Bioinformatics in Genetics	GMS 6232	1
B	Advanced Biostatistical Methods I	PHC 7090	3
B	Advanced Biostatistical Methods II	PHC 7091	3
B	Analytic Methods of Infectious Diseases	PHC 6937	3
B	Applications of Bioinformatics to Genetics	GMS 6014	1
B	Applied Biostatistics I	GMS 6861	3
B	Applied Multivariate Methods	CLP 6529	3
B	Applied Statistical Analysis I	NGR 6840	3
B	Applied Statistical Analysis II	NGR 6845	3
B	Best Methods for the Analysis of Change	CLP 7525	3
B	Biostatistical Computing	PHC 6068	3
B	Biostatistical Computing Using R	PHC 6055	1
B	Biostatistical Computing Using SAS	PHC 6937	3
B	Biostatistical Consulting	PHC 6063	3
B	Biostatistical Methods I	PHC 6050C	3
B	Biostatistical Methods II	PHC 6051	3

B	Critical Skills in Epidemiologic Data Management	PHC 7065	2
B	Data Science for Clinical Research	GMS 6803	3
B	Design & Analysis Translational Res in Biomed Sci	GMS 6841	2
B	Foundations of Biomedical Informatics	GMS 6850	3
B	Genetic Data Analysis	PHC 6937	3
B	Genomics and Bioinformatics	GMS 6231	3
B	Introduction to Biostatistical Methods	PHC 6052	3
B	Introduction to Biostatistical Theory	PHC 6092	3
B	Large Sample Theory	PHC 7066	3
B	Measurement, Design and Statistics I	CLP 6527	3
B	Measurement, Design and Statistics II	CLP 6528	3
B	Mixed Methods	NGR 6807	3
B	Quantitative Literacy	GMS 6865	2
B	Regression Methods for the Health and Life Sciences	PHC 6053	3
B	SAS for Public Health Analysis	PHC 6081	1
B	SAS for Public Health Data	PHC 6080	1
B	Statistical Methods Health Science I	PHC 6050	3
B	Translational Bioinformatics	GMS 6804	3
C	Ethical, Regul, and Practical Conduct of Clin Research	GMS 6875	2
C	Ethics in Genetics	GMS 6221	1
C	Ethics in Population Science	PHC 7427	2
C	Fundamentals of Biomedical Science Education	GMS 7950	1
C	Grant Writing (Special Topics)	GMS 5905	1
C	Grant Writing Skills for Clinical and Health Research	PHC 7727	2
C	Intro to NIH Grant Writing for Biomedical Sciences	GMS 6096	1
C	Writing Circle for Population Science	PHC 7902	1

The selection of elective courses will be made by individual students in consultation with their mentors and supervisory committees, and approved by the CTSI Training Advisory Committee (TAC). They are intended to supplement the student's major concentration and support the clinical and/or translational research component of the student's doctoral research. Additional elective courses not already listed may be approved by the TAC.

Concentration | Modify for request 19618

Info

Request: Modify the curriculum of the Ph.D. degree with a major in Health and Human Performance and a concentration in Sport Management

Description of request: The College of Health and Human Performance seeks to modify the curriculum for the concentration in Sport Management for the Doctor of Philosophy (Ph.D.) with a major in Health and Human Performance.

Submitter: Cyntrice Thomas cthomas10@ufl.edu

Created: 4/10/2024 8:23:37 AM

Form version: 2

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.

Sport Management (HHU_PHD11)

Effective Term

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

Earliest Available

Effective Year

Earliest Available

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.

Sport Management: Doctor of Philosophy (PhD) with a major in Health and Human Performance and a concentration in Sport Management

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

The current concentration requires the following:

Concentration: 15 credits minimum

SPM 7XXX Theories in Sport Management (3 credits; Letter-Graded) (Approval #19359)

SPM 6036 Research Seminar in Sport Management (3 credits; Letter-Graded)

SPM 7900 Readings in Sport Management (Rotating Topic; Letter-Graded) (9 credits total; choose 3 of the 8 options)

Research: 27 credits minimum

SPM 6905 Directed Independent Study (Rotating Topic) (6 credits)

 Research Methods course - Quantitative (3 credits; Letter-Graded)

 Research Methods course - Qualitative (3 credits; Letter-Graded)

HLP 7979 Advanced Research - Qualifying Exam (3 credits; S/U)

HLP 7980 Research for Doctoral Dissertation (12 credits; S/U)

Statistics: 9 credits minimum Statistics Courses (9 credits total)

Outside Concentration: 9 credits minimum Approved Electives (9 credits total)

Proposed Concentration Changes

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

Concentration: 18 credits minimum

SPM 7XXX Theories in Sport Management (3 credits; Letter Grade) (Approval #19359)

SPM 6036 Research Seminar in Sport Management (3 credits; Letter-Graded)

HLP 7939 HHP PhD Professional Development Seminar (3 credits; Letter-Graded)

SPM 6905 Professional Internship (Rotating Topic) (3 credits; Letter-Graded)

SPM 7900 Readings in Sport Management (Rotating Topic; Letter-Graded) (6 credits total; choose 2 of the 7 options)

Research: 24 credits minimum

SPM 6905 Directed Independent Study (Rotating Topic) (3 credits)

Research Methods course - Quantitative (3 credits; Letter-Graded)
Research Methods course - Qualitative (3 credits; Letter-Graded)
HLP 7979 Advanced Research - Qualifying Exam (3 credits; S/U)
HLP 7980 Research for Doctoral Dissertation (12 credits; S/U)

Statistics: 9 credits minimum Statistics Courses (9 credits total)
Outside Concentration: 9 credits minimum Approved Electives (9 credits total)

Pedagogical Rationale/Justification

Describe the rationale for the proposed changes to the concentration.

The department wants to make HLP 7939: Professional Development a required course for all doctoral students. Currently the course is optional but the department believes that it is essential for doctoral students' overall academic and professional development. Additionally, the department would like to include a Professional Internship course for doctoral students either in the form of an internship in the industry or a Teaching Internship to help prepare students for working in the sports industry or in academia.

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 is no impact on other programs or departments.

Assessment Data Review

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

This modification in the program plan meets the goal of enhancing the training of PhD students' professional skills (Program Goal #4).

Academic Learning Compact and Academic Assessment Plan

Describe the modifications to the Academic Assessment Plan that result from the proposed change.

This modification does not affect the AAP because no required courses have been removed from the program plan and there has only been a reduction of three credits from the Research portion of the program plan. Additionally, these are only minimum requirements. Students are still able to take more research courses as they and their advisor deem necessary.

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

Curriculum modification for the graduate concentration in Sport Management
for the Ph.D. with a major in Health and Human Performance

Current Requirements	Proposed Requirements
Concentration: 15 credits minimum	Concentration: 18 credits minimum
<ul style="list-style-type: none"> • SPM 7XXX Theories in Sport Management Theories (3 credits; Letter-Graded) (Approval #19359) • SPM 6036 Research Seminar in Sport Management (3 credits; Letter-Graded) • SPM 7900 Readings in Sport Management Courses (Rotating Topic; Letter-Graded) (9 credits total; choose 3 of the 8 options) 	<ul style="list-style-type: none"> • SPM 7XXX Theories in Sport Management Theories (3 credits; Letter-Graded) (Approval #19359) • SPM 6036 Research Seminar in Sport Management (3 credits; Letter-Graded) • HLP 7939 HHP PhD Professional Development Seminar (3 credits; Letter-Graded) • SPM 6905 Professional Internship (Rotating Topic) (3 credits; Letter-Graded) • SPM 7900 Readings in Sport Management Courses (Rotating Topic; Letter-Graded) (6 credits total; choose 2 of the 7 options)
Research: 27 credits minimum	Research: 24 credits minimum
<ul style="list-style-type: none"> • SPM 6905 Directed Independent Study (Rotating Topic) (6 credits) <ul style="list-style-type: none"> • Research Methods course - Quantitative (3 credits; Letter-Graded) • Research Methods course - Qualitative (3 credits; Letter-Graded) • HLP 7979 Advanced Research - Qualifying Exam (3 credits; S/U) • HLP 7980 Research for Doctoral Dissertation (12 credits; S/U) 	<ul style="list-style-type: none"> • SPM 6905 Directed Independent Study (Rotating Topic) (3 credits) <ul style="list-style-type: none"> • Research Methods course - Quantitative (3 credits; Letter-Graded) • Research Methods course - Qualitative (3 credits; Letter-Graded) • HLP 7979 Advanced Research - Qualifying Exam (3 credits; S/U) • HLP 7980 Research for Doctoral Dissertation (12 credits; S/U)
Statistics: 9 credits minimum Statistics Courses	Statistics: 9 credits minimum Statistics Courses
Outside Concentration: 9 credits minimum Approved Electives	Outside Concentration: 9 credits minimum Approved Electives



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 2024
 Proposed Implementation Term

College of Veterinary Medicine
 Name of College(s) or School(s)

College of Veterinary Medicine
 Name of Department(s)/Division(s)

Comparative Biomedical Sciences
 Academic Specialty or Field

Master of Science with a major in Comparative Biomedical Sciences
 Complete Name of Degree

26.0102
 Proposed CIP Code (2020 CIP)

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

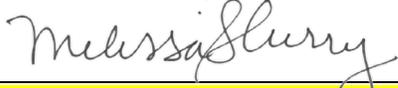
PROJECTED ENROLLMENTS AND PROGRAM COSTS

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.

Implementation Timeframe	HC	FTE	E&G Cost per FTE	E&G Funds	Contract & Grants Funds	Auxiliary/Philanthropy Funds	Total Cost
Year 1	3	2.25	\$11,880	\$26,731			\$26,731
Year 2	4	3					
Year 3	4	3					
Year 4	5	3.75					
Year 5	6	4.5	\$13,372	\$60,173			\$60,173

Additional Required Signatures

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

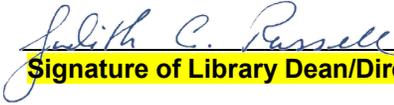


Signature of Equal Opportunity Officer

04/03/2023

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

March 23, 2023

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 mission of the UF CVM's graduate program is "to provide high-quality research training for graduate students in the comparative biomedical sciences (UF SACSCOC Accreditation)", veterinary medicine and related disciplines.

The graduate program is designed to cultivate problem-solving abilities, critical thinking, team science, leadership, and science communication, as well as other professional skills essential for conducting research. This program is flexible and allows students to train in various areas of emphasis including infectious diseases and immunology, physiological sciences, forensic sciences, aquatic animals and ecosystem health, artificial intelligence, and other areas of emphasis presented below.

The graduate program aligns with the College of Veterinary Medicine's mission statement, which is "The College of Veterinary Medicine advances animal, human, and environmental health through education, research, and patient care." It also aligns with the University's mission "to lead and serve the state of Florida, the nation and the world by pursuing and disseminating new knowledge while building upon the experiences of the past."

Degree Program: [Master of Science with a major in Comparative Biomedical Sciences](#)

Level: [Master of Science](#)

Major: [Comparative Biomedical Sciences](#).

Areas of emphasis: [UF CVM strengths and areas of emphasis in research graduate training](#) include, but are not limited to discovery and translational solutions for (i) infectious diseases and immunology, (ii) physiological sciences, (iii) forensic sciences, (iv) microbiology, virology, and parasitology, (v) zoo medicine (vi) aquatic animals and ecosystem health, (vii) livestock and wildlife population health, (viii) equine gastroenterology; (ix) orthopedic bioengineering using animal models, (x) clinical and translational research in selected disciplines such as cardiology, dermatology, oncology, and ophthalmology, and (xi) novel diagnostic and therapeutic applications to improve human and animal health using artificial intelligence. UF CVM is uniquely situated to pursue these investigations with emphasis on non-human species, and in comparative medicine in animals and humans.

Total number of credit hours: [30](#). [The Master of Science with a major in Comparative Biomedical Sciences is structured to be completed \(in-residence\) in two years.](#)

Master's students will take 30 credits of coursework. At least 12 of the 30 credits must be in the major, including 8 credits in required courses: VME 6937L VMS Graduate Seminar Series or equivalent (1 credit), VME 6767 Responsible Conduct in Research or equivalent (1), Statistics (3), and Biochemistry or Molecular Biology (3). At the end of the graduating semester, the student must successfully complete a final defense of the thesis.

Career outcomes: UF CVM master's graduates will join the biomedical research workforce in the private sector, government, NGOs, non-profits, or continue their graduate education and training at the PhD level in Florida, the United States, and internationally. Additional details on meeting workforce need are presented in Section III below.

Employment of medical scientists is projected to grow 17% from 2021 to 2031, much faster than the average for all occupations (US Bureau of Labor Statistics).
<https://www.bls.gov/ooh/life-physical-and-social-science/medical-scientists.htm>

Additional details on meeting workforce need are presented in Section III below.

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 SUS goals focus on three critical points to realize its mission and its 2025 vision: *Excellence, Productivity, and Strategic Priorities for a Knowledge Economy.*

Goals for Teaching and Learning

Excellence

GOAL 1: Strengthen Quality and Reputation of the Universities

Improve the quality and relevance of the System's institutions with regard to state, national, and international preeminence.

Productivity

GOAL 2: Increase Degree Productivity and Program Efficiency-Increase access and efficient degree completion for students.

Strategic Priorities for a Knowledge-Based Economy

GOAL 3: Increase the Number of Degrees Awarded in STEM/Health and Other Programs of Strategic Emphasis.

Increase student access and success in degree programs in the STEM/health fields and other Programs of Strategic Emphasis that respond to existing, evolving, and emerging critical needs and opportunities.

UF CVM Master of Science with a major in Comparative Biomedical Sciences will fulfill all three goals for teaching and learning by providing graduate education and training of the highest quality with emphasis in discovery and translational solutions for infectious diseases and immunology, physiological sciences, forensic sciences, and other areas of emphasis identified above, in Florida, USA, and internationally; therefore, it will support Goals 1 and 2. New graduates will acquire scientific knowledge and skills required to compete and collaborate in today's global society and market place. This will be a new STEM/Health degree; therefore, it will support Goal 3.

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 UF's College of Veterinary Medicine is part of the UF Academic Health Center (the most comprehensive academic health center in the Southeast). The Academic Health Center includes the colleges of Dentistry, Medicine, Nursing, Pharmacy, Public Health and Health Professions, and Veterinary Medicine.

UF CVM is the state's only veterinary college. It is ranked # 7 among veterinary medical colleges nationwide by the U.S. News & World Report. Our UF Small Animal Hospital caseload is the 2nd largest among academic veterinary hospitals in USA.

Established in 1977, UF CVM offers four degree programs: Doctor of Veterinary Medicine (DVM), a Master of Science with a major in Veterinary Medical Sciences (VMS), a PhD degree in VMS, and a Master of Preventive Veterinary Medicine

approved effective Fall 2023. In addition, a DVM/MPH degree is offered jointly by the College of Public Health and Health Professions and the College of Veterinary Medicine

Since 1993, nearly 400 students have completed the Master degree or PhD degree in VMS. In addition, more than 500 students have completed our master's online program in VMS, with a concentration in shelter medicine, forensic toxicology, or veterinary forensic sciences.

UF CVM's professional and graduate education programs are supported by 190 faculty members from five CVM academic departments (Comparative, Diagnostic, and Population Medicine, Large Animal Clinical Sciences, Small Animal Clinical Sciences, Physiological Sciences, and Infectious Diseases and Immunology) and other academic units on campus. In year 2022, 42 of 190 CVM faculty members were engaged in graduate education and training; 21 of 42 faculty members were involved in didactic teaching (e.g., Graduate Seminars, Graduate Journal Club: mechanisms of microbial virulence, Responsible Conduct in Research, Advanced Toxicology, Ecotoxicology and Risk Assessment, Advanced Bioinformatics, other courses) and 3 of 42 faculty members served as major professors of master's students.

CVM faculty are accomplished professors and researchers with 5-60 years of experience in education, research, consulting, and human/institutional capacity development programs in Florida, nationally, and internationally. The faculty publish in high quality peer-review journals, offer training workshops to practicing veterinarians, graduate students, farmers and ranchers in Florida, the USA, and abroad. CVM faculty share education, research, and administration resources, and will support the master's curriculum and transdisciplinary research relevant to Florida's citizens.

UF CVM master's program with a major in Comparative Biomedical Sciences will maximize existing resources to address challenges and opportunities in Florida, such as pathogen discovery, rapid diagnostic tests, pathogen virulence factors and mechanisms used to evade animal/human's immune system and cause disease, vaccine development, neuroscience and neurophysiology, toxicology, organ systems physiology, early detection and risk management of diseases or unusual mortality events in aquatic animals and related ecosystems, horses, beef cattle, dairy cattle, white-tailed deer, fish, and zoo animals, as well as cure of chronic diseases and cancer in companion animals.

In its association with UF's Institute of Food and Agricultural Sciences, UF CVM provides Extension veterinary services to farmers and ranchers of commercial livestock or wildlife operations, and aquaculture farms throughout the state.

- 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 reviewed and approved by the CAVP Academic Coordinating Group

on September 13, 2023, and no concerns were raised.

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.**

The external consultant's report and UF CVM response is presented in Appendix B.

Planning Process

Date	Participants	Planning Activity Description
October 28, 2022	Dianne McFarlane, Professor and Chair, UF CVM Department of Large Animal Clinical Sciences and faculty (n = 30).	CVM LACS strategic plan meeting: faculty approved action to explore PhD degree STEM options.
February 2, 2023	Adam Biedrzycki, Ricardo Chebel, Klibs Galvao, Jorge Hernandez (UF CVM LACS PhD Biomedical Sciences Lead Faculty).	A draft pre-proposal for the creation of PhD in Biomedical Sciences (CIP 26-0102, STEM) was reviewed by UF CVM LACS Lead faculty.

Date	Participants	Planning Activity Description
February 8, 2023	Jorge Hernandez (CVM Director of Graduate Education), John Bowen, Ricardo Chebel, Aria Eshraghi, Domenico Santoro, Janet Yamamoto (CVM Graduate Studies Committee members).	CVM Director of Graduate Education informed CVM Graduate Studies Committee that CVM ORGS will present the draft pre-proposal to UF Graduate School and UF Office of Institutional Planning and Research reps for guidance.
February 13, 2023	Jorge Hernandez (CVM Director of Graduate Education), David Pascual, (CVM Associate Dean for Research & Graduate Studies), Stacy Wallace (UF Graduate School Associate Director), Tom Kelleher (UF Graduate School Associate Dean), Kathy Lebo (UF Assistant Provost and Director of Institutional Planning and Research).	Draft pre-proposal was discussed.
February 14, 2023	Dianne McFarlane (CVM LACS Department Chair) and David Pascual (CVM Associate Dean for Research & Graduate Studies).	Draft pre-proposal was reviewed and approved.
February 15, 2023	Dana Zimmer, CVM Dean.	The pre-proposal was sent to UF Provost for review and possible approval.

February 21, 2023	Iske Larkin, Mary Brown (CVM Department Graduate Coordinators), Elizabeth Brammer-Robbins, Ricardo Chebel, Aria Eshraghi (CVM Graduate Studies Committee members), Domenico Santoro and John Bowden (CVM Department Graduate Coordinators and CVM Graduate Studies Committee members), David Allred (faculty member in the Department of Infectious Diseases and Immunology), Adam Biedrzycki and Klibs Galvao (faculty members in the Department of Large Animal Clinical Sciences--LACS), Dianne McFarlane (Professor and Chair in LACS), Jorge Hernandez (CVM Director of Graduate Education), David Pascual, (CVM Associate Dean for Research & Graduate Studies), and Chris Adin (CVM Executive Associate Dean).	A draft full proposal was reviewed for feedback and input.
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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 (tentative)

Date	Implementation Activity
Week of Feb 24, 2023	The full proposal (PhD) was sent to CVM faculty members for review and comments.
March 7, 2023	LACS faculty voted in favor to continue exploring new degree in Biomedical Sciences at the College, University, and SUS levels. Response rate = 22/28 (79%); all in favor.
March 8, 2023	CVM Graduate Studies Committee (Elizabeth Brammer-Robbins, John Bowden, Ricardo Chebel, Aria Eshraghi, Domenico Santoro, Janet Yamamoto) approved to continue exploring the new PhD degree in Biomedical Sciences at the College, University, and SUS levels.
March 10, 2023	CVM Faculty Council sent revised draft full-proposal to CVM faculty for review in preparation for Faculty Assembly.
March 13, 2023	External Consultant's Review.
March 20, 2023	CVM Faculty Assembly. CVM Faculty Assembly. Motion to continue exploring PhD degree and master's degree in Biomedical Sciences at the university and SUS levels was approved. In-person vote. Response rate: 22/22 (100%). Yes: 21/22. Abstain: 1/22. Via zoom: Response rate 28/33 (85%), all in favor.
	OIPR. Approval of CIP code by UF Office of Institutional Planning and Research.
	APAF. Approval from the UF Associate Provost for Academic and Faculty Affairs.
	GC. Approval from the UF Graduate Council.
	UCC. UF University Curriculum Committee is notified of the request.
	FSSC. Approval from UF Faculty Senate Steering Committee. Senate. Approval from UF Faculty Senate.
	AA. Approval from UF Academic Affairs.
	BOT. Approval from the Board of Trustees.
	BOG. Approval from the Board of Governors.
	AA. UF Academic Affairs is notified of the request.
	GS. UF Graduate School is notified of the request.
	OUR. Approval from UF Office of the University Registrar.
	OIPR. UF Office of Institutional Planning and Research is notified of the request.
	College. UF CVM is notified on the request approval.

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**

Employment of medical scientists is projected to grow 17% from 2021 to 2031, much faster than the average for all occupations (US Bureau of Labor Statistics).

<https://www.bls.gov/ooh/life-physical-and-social-science/medical-scientists.htm>

There is a shortage of veterinarians to meet societal needs in biomedical sciences in different disciplines (Rosol et al. The Need for Veterinarians in Biomedical Research. J Vet Med Edu 2009; 36:70-75).

Since 1991, the current UF CVM's master's program with a major in Veterinary Medical Sciences (VMS) has produced about 200 master's graduates (trained in-residence) who have entered the workforce in research or professional positions in the private sector, academia, or government in Florida, the United States, and internationally.

Student interest. In 2022, 30 students were enrolled in the Master of Science program with a major in Veterinary Medical Sciences at UF CVM.

Nineteen of 30 (63%) students were enrolled in the Master's:Residency 1+2 or 1+3-year training program in selected disciplines (e.g., anesthesiology, dermatology, food animal medicine & reproduction, oncology, ophthalmology, small animal surgery, or large animal surgery). After completion of the Master's:Residency program, most graduates (70%) go to multispecialty group practices in the private sector; others join the teaching/research taskforce in academia or continue their graduate education at the PhD level.

Eight students (27%) were enrolled in the traditional two-year master's program in Veterinary Medical Sciences and were engaged in veterinary clinical research in companion animals, food animals, or aquatic animals. After completion of the master's program, most graduates (about 50%) go to multispecialty group practices in the private sector or continue their graduate education at the PhD level (50%).

Three (10%) students were enrolled in the traditional two-year master's program in Veterinary Medical Sciences and were **engaged in biomedical research** with emphasis in infectious diseases and immunology or physiological sciences. After completion of the master's program, most graduates continue their graduate education at the PhD level at UF or at other institutions of higher education in USA.

B. Provide and describe data that support student demand for the proposed program. Include questions asked, results, and other communications with prospective students.

Enrollment projections are based on annual number of students enrolled in current master's program in with a major in Veterinary Medical Sciences (VMS) in-residence in 2022. In that year, three of 30 students were engaged in biomedical research. Although, the new degree is structured as a stand-alone master's with a major in Comparative Biomedical Sciences (thesis- based), [PhD students who have met the](#)

master's degree requirements may be eligible to obtain such a degree as fall back to the PhD degree.

- 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.

We expect the annual enrollment of new master's students with a major in Comparative Biomedical Sciences will go up from three students in Year 1 to six students in Year 5.

We do not expect students from other UF academic units will change academic programs to enroll in the new master's program with a major in Comparative Biomedical Sciences at UF CVM.

- 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.**

Quantitative benefits. The estimated total Educational and General (E&G) cost of the proposed new UF CVM Master of Science with a major in Comparative Biomedical Sciences program is similar to that of existing UF CVM master's degree with a major in Veterinary Medical Sciences (\$26,731 in Year 1 and \$60,173 in Year 5). The amount in Year 1 is based on an expected 100% reallocated base from the current master's program in Veterinary Medical Sciences, and specific for faculty members (n = 3) engaged in supervised research as major professors (Appendix 1, Table 3-A).

The budget does not require new UF CVM funding allocation for implementation of the new master's degree with a major in Comparative Biomedical Sciences.

New master's enrollment projections are described above.

Qualitative benefits. The mission of UF CVM's graduate program in Veterinary Medical Sciences (VMS) is to provide high-quality research training for graduate students in the biomedical sciences (UF SACSCOC Accreditation).

The new master's degree with a major in Comparative Biomedical Sciences offers a second option for graduate education and training in biomedical research (in addition to the current Master of Science degree with a major in Veterinary Medical Sciences with emphasis in veterinary clinical research).

The **CIP 26-0102** Biomedical Sciences, General, is appropriately aligned with UF CVM's mission in graduate education and the scope of master's education and training in comparative biomedical sciences in main areas of emphasis identified

above.

The Master of Science with a major in Comparative Biomedical Sciences offered at UF CVM will be a STEM/Health degree; therefore, it will support SUS Goal 3 in its mission of Teaching and Learning for a Knowledge-Based Economy: *Increase the number of degrees awarded in STEM/Health and other programs of strategic emphasis that respond to existing, evolving, and emerging critical needs and opportunities.*

- 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.**

Florida State University (FSU). Tallahassee, Florida. The Department of Biological Sciences offers a Master of Science degree with a major in Biology under CIP 26-0102 Biomedical Sciences, Other.

Florida Atlantic University (FAU). Boca Raton, Florida. The Charles E. Schmidt College of Medicine offers a Master of Science degree with a main Biomedical Science under CIP 26-0102 Biomedical Sciences, Other.

University of Central Florida (UCF). Orlando Florida. The College of Medicine offers a non-thesis Master of Science with a major in Biomedical Sciences under CIP 26-0102 Biomedical Sciences, Other.

Source: <https://www.flbog.edu/resources/data-analytics/dashboards/degrees-awarded-by-classification-of-instructional-programs-cip-code/>

Overall, required master’s coursework varies between UF CVM, FSU, FAU, and UCF; but the programs at UF CVM and FSU require education and instruction in graduate seminars.

FSU Cell & Molecular Biology¹ CIP 26-0102	FAU Biomedical Sciences² CIP 26-0102	UCF Biomedical Sciences³ CIP 26-0102	UF CVM Biomedical Sciences⁴ CIP 26-0102
Required Courses			
BSC 691 Bio Sci Colloquium; Seminar (one department seminar); Teaching (one course).	Human Genetics; Advanced Molecular and Cellular Biology; Biomedical Writing.	The Master of Science with a major in Biomedical Sciences is a non-thesis program.	VME 6937L VMS Graduate Seminar Series (or equivalent); VME 6767 Issues in Responsible Conduct of Research (or equivalent); PHC 6088 Statistical Analysis of Genetic Data (or equivalent) (3);

		BCH 5413 Mammalian Molecular Biology and Genetics (or equivalent);
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¹<https://www.bio.fsu.edu/grad/handbook/>

²<https://www.fau.edu/medicine/documents/ms-biomedical-program-student-guide.pdf>

³<https://www.ucf.edu/degree/biomedical-sciences-ms/>

⁴<https://research.vetmed.ufl.edu/studies/>

In addition,

UF College of Medicine offers a Master of Science with major in Medical Sciences under CIP 26- 9999 Biological and Biomedical Sciences, Other.

Overall, required master’s core coursework varies between UF CVM, UF College of Medicine, and UF IFAS Animal Sciences. The programs as UF CVM and IFAS Animal Sciences require education and instruction in responsible conduct of research.

UF College of Medicine Medical Sciences ¹	UF IFAS Animal Sciences Animal Molecular and Cellular Biology ²	UF CVM Biomedical Sciences ³
CIP 26-0102	CIP 26-0102	CIP 26-0102
Required Courses		
GMS 6003 Essentials of Graduate Research & Professional Development (1 credit); GMS 7194 Biotechnology Seminar (1).	VME 6767 Issues in Responsible Conduct of Research (or equivalent) (1).	VME 6937L VMS Graduate Seminar Series (or equivalent) (1 credit); VME 6767 Issues in Responsible Conduct of Research (or equivalent) (1); PHC 6088 Statistical Analysis of Genetic Data (or equivalent) (3); BCH 5413 Mammalian Molecular Biology and Genetics (or equivalent) (3).

¹<https://mgm.ufl.edu/academics/programs/masters-of-science-programs/masters-in-medical-science/>

²<https://programs.ifas.ufl.edu/animal-molecular-and-cellular-biology/admissions-requirements/>

³ <https://research.vetmed.ufl.edu/studies/>

What’s in common or different between the new Master of Science degree with a major in Comparative Biomedical Sciences and the current Master of Science

degree with a major in Veterinary Medical Sciences at UF CVM?

The two degrees share the same required core coursework (8 credits). Specifically, graduate seminars (1 credit), responsible conduct of research (1), statistics* (3) and biochemistry or molecular biology (3).

*Students enrolled in the master's program with a major in Comparative Biomedical Sciences can select statistical courses more aligned with biomedical research such as: PHC 6088 Statistical Analysis of Genetic Data (An introduction to statistical procedures for genetic studies. This class will emphasize the statistical theory behind methods for analyzing genetic data and its application in useful software tools) or equivalent as suggested by the student's supervisory committee or the Department Graduate Coordinator.

*Students enrolled in the master's program in Veterinary Medical Sciences can select statistical courses more aligned with clinical research such as: PHC 6020 Clinical Trial Methods (Basic statistical concepts and methods used in clinical trials and the statistical principles and methods including phase I to IV clinical trials) or equivalent as suggested by the student's supervisory committee or the Department Graduate Coordinator.

The main difference in education and training between the two degrees is the scope of research (biomedical vs. veterinary clinical) in selected master's thesis and related coursework (15-18 credits). The scope of thesis for the new master's program in Comparative Biomedical Sciences is on biomedical research involving new discoveries and new translational solutions for diseases in animal and human populations. In contrast, the scope of thesis in the existing master's program with a major in Veterinary Medical Sciences is on veterinary clinical research. It involves patient-oriented research in animal populations, clinical trials, epidemiologic studies, outcomes research, or health services research.

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 UF CVM is committed to recruitment and retention activities and to the success of individual programs. The CVM Office for Community Engagement & Diversity Outreach (OCEDO) will enhance and strengthen already successful individual efforts by providing activities for potential URM students in the PhD program with a major in Comparative Biomedical Sciences. Dr. Michael Bowie (Assistant Dean, OCEDO) will work with affinity organizations, like the Multicultural Veterinary Medical Association, National Association for Black Veterinarians, Black DVM Network, Latinx Veterinary Medical Association, and Association of Asian Veterinary Medical Professionals, to recruit underrepresented students into the PhD program with a major in Comparative Biomedical Sciences.

By gathering the research success stories of our outstanding URM students across the individual graduate programs, the UF CVM Office of Research and Graduate Studies (ORGS) in conjunction with CVM OCEDO will be in a position to develop materials that highlight the strength and breadth of URM scholars at UF. The PhD program with a major in Comparative Biomedical Sciences will work with CVM ORGS, CVM OCEDO, and the CVM marketing team to develop display and advertising materials that highlight the scientific success of our URM trainees and use recruiting funds to cost-effectively target diverse populations at national meetings of affinity organizations. Ads will be placed on the websites of these affinity organizations. Prospective URM scholars will be introduced to the program via a UF webpage, which is continually being improved, to outline our program, our faculty and research, and potential career opportunities that arise from being a successful graduate of the program. We hope that incoming participants consider these unique opportunities when making their decisions about PhD graduate programs.

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

- [i] Bachelor's degree, veterinary degree (DVM or equivalent), or Master's degree.
- [ii] An upper division undergraduate GPA of 3.2 or the equivalent.
- [iii] Three appropriate letters of recommendation.
- [iv] Non-U.S. citizens whose native language is not English must submit a score of at least 80 on the internet TOEFL (Test of English as a Foreign Language), (iBT & Home Edition), 550 TOEFL PBT, or 6.0 IELTS Academic. Established special exceptions for missing language scores are at the purview of the graduate school.
- [v] In UF CVM, GRE score is not required

Graduation requirements

In order to obtain the Master of Science degree with a major in Comparative Biomedical Sciences, the student must complete required coursework (8 credits) in biochemistry or molecular biology (3 credits), statistics (3), responsible conduct in research (1), graduate seminars (1), a Final Examination, and a Master's thesis on main area(s) of emphasis identified above (i.e., infectious diseases and immunology, physiological sciences, forensic sciences, other). The thesis degree requires a minimum of 12 credits in the major. Overall and major credits must satisfy the associated 3.00 truncated minimum GPA requirement. In addition, all other Graduate Council policies governing master's degree requirements must be satisfied.

- B. Describe the specific expected student learning outcomes associated with the proposed program. 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 Outcome 1 Scientific Methods (Knowledge)

Students demonstrate competence in the use of scientific methods to advance animal, human, and/or environmental health. Assessment method: students will pass a general knowledge-based examination and successfully complete a master's thesis.

Student Learning Outcome 2 Evaluate Research Methods (Skills)

Students critically evaluate research methods, data, and information published in scientific journals and books. Assessment method: Students will successfully complete one seminar course that requires reading, presentation and critical evaluation of the student's own research reports published in scientific journals.

Student Learning Outcome 3 Speaking (Skills)

Students apply speaking skills needed to communicate orally in formal and informal settings. Assessment method: Oral thesis defense.

Student Learning Outcome 4 Writing (Skills)

Students write effectively in a manner appropriate to biomedical sciences. Assessment method: Successful completion of a master's thesis.

Student Learning Outcome 5 Professional Behavior

Students exhibit ethical and professional behavior throughout their studies and research. Assessment method: students successfully complete a formal course on the responsible and ethical conduct of research.

Source: UF CVM Annual Report submitted to UF Provost Office and SACSCOC for accreditation purposes.

- 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

Total numbers of semester credit hours for the degree. Thirty credits. At least 12 of the 30 credits must be in the major. VME 6971 master's thesis does not count toward major credit requirements.

Number of credit hours for each course. Number of credits hours per course is variable. In general, Graduate Seminar courses are 1 credit per course, per semester. Responsible Conduct in Research (1 credit). Statistics (3 credits). Biochemistry/Molecular Biology (3 credits). Supervised Research (1-5 credits per semester, 5 credits maximum count toward the degree). Supervised Teaching (1-5 credits per semester, 5 credits maximum count toward the degree). Master's thesis (1-6 credits per semester; 6 credits maximum count towards the degree).

Required courses. Eight graduate-level course credits: Graduate Seminars (1 credits). Responsible Conduct in Research (1 credit). Statistics (3 credits). Biochemistry/Molecular Biology (3 credits). Elective courses are selected and justified by the student in consultation with the Master's Student Supervisory Committee, and in coordination with a Department Graduate Coordinator. Elective courses should support key elements of critical thinking and capacity to conduct independent and team research by the student.

Sequence of course of study for the major. In general, required courses should be completed during the first-year of the master's education and training. Students are expected to successfully complete all requirements of the master's degree (including a final defense of their thesis) and graduate after two-years of education and training.

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

Required Courses

VME 6937L VMS Graduate Seminar Series (1 credit; grading scheme: letter grade). This course is a forum for CVM graduate students and faculty to exchange information that can advance animal health, human health, and environmental health.

VME 6767 Issues in the Responsible Conduct of Research (1 credit; grading scheme: satisfactory/unsatisfactory). Presentation and discussion of issues; guiding principles and potential pitfalls.

PHC 6088 Statistical Analysis of Genetic Data or equivalent (3 credits; grading scheme: letter grade). An introduction to statistical procedures for genetic studies.

BCH 5413 Mammalian Molecular Biology and Genetics (3 credits; grading scheme: letter grade). Biochemical and genetic approaches to understanding vertebrate and particularly mammalian molecular biology, moving from basic processes of replication, transcription, and protein synthesis to signal transduction, cell cycle, cancer, genomics, and developmental genetics.

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.

The Master of Science with a major in Comparative Biomedical Sciences does not require teacher preparation programs as outlined in Section 100.04 Florida Statutes.

- F. 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 potential impact on related academic programs or departments is negligible.

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 new degree will be offered and administered at the UF College of Veterinary Medicine (CVM) in Gainesville, Florida. UF CVM is the state's only College of Veterinary Medicine. In addition, UF CVM is part of the UF Academic Health Center (the most comprehensive academic health center in the Southeast). The Academic Health Center includes the colleges of Dentistry, Medicine, Nursing, Pharmacy, Public Health and Health Professions, and Veterinary Medicine.

<https://ufhealth.org/academic-health-center/overview>

- G. 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 anticipated mode of delivery for the new master's program with a major in Comparative Biomedical Sciences will be face-to-face. The delivery system will be traditional, in-residence, on main campus (UF College of Veterinary Medicine). The program will not require specialized services or additional support. All required and additional courses are available at the UF College of Veterinary Medicine or other academic units on main campus in Gainesville, Florida. When necessary, UF CVM faculty will reach out to faculty in other universities for collaboration.

- H. 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.**

All required and additional courses are available at the UF College of Veterinary Medicine or other academic units on main campus in Gainesville, Florida. When necessary, UF CVM faculty will reach out to faculty in other universities for collaboration.

- I. 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.

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.

In consultation with UF Graduate School and UF Office of Institutional Planning and Research, the UF College of Veterinary Medicine will seek accreditation of the new master's program with a major in Comparative Biomedical Sciences through the Southern Association of Colleges and Schools Commission on Colleges as soon as the proposed program is approved.

- 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.

UF CVM offers a Master of Science program with a major in Veterinary Medical Sciences (VMS). The master's with a major in VMS is accredited by the Southern Association of Colleges and Schools Commission on Colleges (SACSCOC).

Annual reports with requested data and information (e.g., program goals, student learning outcomes) are prepared and submitted to UF Provost Office and SACSCOC for evaluation/approval.

In Fall 2019, the curriculum of the master's with a major in VMS was reviewed/revised by the UF CVM Graduate Studies Committee, where all master's students in-residence are now required to receive education and training in responsible conduct in research. The new requirement was successfully implemented in all five CVM academic departments (Comparative Diagnostic and Population Medicine; Infectious Diseases and Immunology; Physiological Sciences; Large Animal Clinical Sciences; Small Animal Clinical Sciences) in Fall 2020.

In Spring 2023, UF CVM Graduate Studies Committee approved a revised master's Final Exam Submission Form to comply with new evaluation methods for Student Learning Outcome. In the reviewed Form, the student's supervisory committee members are required to assess and rate the master's student ability to apply appropriate research methods vis-à-vis problems presented during the exam, ability to apply critical reflection to the knowledge gained from the academic program, and ability to effectively respond to scholarly questions—as Satisfactory or unsatisfactory. In addition, committee members are required to provide written

feedback about the student's performance (i.e., overall strengths and areas for growth). The revised Form was implemented in Spring 2023.

- 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.**

In the last 10 years (2013-2022) 11 of 73 (15%) new graduates in the master's program with a major in Veterinary Medical Sciences were engaged in biomedical research with emphasis in infectious diseases and immunology or physiological sciences. After completion of the master's program, five of 11 graduates continued their graduate education at the PhD level at UF, four accepted research-related positions in the private sector or in academia, one accepted a faculty position at UF, and one was accepted in UF DVM program.

UF master's program competencies are more aligned for research positions in academia. All UF CVM master's students are required to receive education and training in science communication, responsible conduct in research, statistics, and biochemistry or molecular biology. In addition, master's students are expected to participate in professional development activities (leadership, communication, management, team science, other) offered by UF Graduate School and UF Health Office of Biomedical Research Career Development.

An industry or employer advisory council is not in place. UF CVM Office of Research and Graduate Studies will facilitate a process to establish an advisory council in Fall 2023 for implementation by Fall 2024.

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.

Appendix A, Table 2 includes requested data and information. For budget estimations only, the list of faculty includes three UF CVM faculty members who were engaged in the master's program with a major in Veterinary Medical Sciences (in the area of biomedical sciences) as major professors in Year 2022. The estimated Faculty (person-years) = 0.15 in Year 1 and 0.30 in Year 5.

In this proposal (Master of Science with a major in Comparative Biomedical Sciences), the budget does not include Faculty (person-years) specific for didactic teaching because that parameter is already captured in the full proposal for the Ph.D. with a major in Comparative Biomedical Sciences.

Appendix E includes the curriculum vitae of UF CVM faculty members engaged in didactic teaching in UF CVM graduate program (in-residence).

- 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).**

Teaching workload. The number of UF CVM faculty members increased by 53% from 124 in 2015 to 190 in 2022.

In 2022, about 50 CVM faculty members were engaged in didactic teaching in the graduate program (in-residence or online). Fifteen of the 50 faculty members offered education and training through independent studies, in-residence (i.e., VME 6915 Problems in Veterinary Medicine, selected topics).

Twenty four or more faculty members were engaged in didactic teaching in the graduate program, in-residence, <https://research.vetmed.ufl.edu/studies/courses/in-residence-courses/> in the following courses:

VME 6767 Issues in the Responsible Conduct of Research (1 credit, S/U)
VME 6907 Mechanisms of Microbial Virulence Journal Club (1 credit, Letter-Graded)
VME 6932 Seminar in Physiological Sciences (1 credit, S/U)
VME 6933 Seminar in Infectious Diseases and Experimental Pathology (1 credit, S/U)
VME 6934 Interdisciplinary Seminars in Reproduction and Prod Med (Rotating Topic) (1 credit, Letter-Graded)
VME 6937L VMS Graduate Seminar Series (1 credit, Letter-Graded)
VME 6938 Topics in Aquatic Animal Health (1 credit, Letter-Graded)
VME 5244 Physiology: Organ Systems (4 credits, Letter-Graded)
VME 6010 Aquatic Animal Conservation Issues (3 credits, Letter-Graded)
VME 6070 Systemic Review and Meta-Analysis for Biomedical Res (2 credits, Letter-Graded)
VME 6195 Wildlife Virology: Emerging Wildlife Viruses (3 credits, Letter-Graded)
VME 6200 Fundamentals of Respiratory Physiology (3 credits, Letter-Graded)
VME 6200L Lab Assessments for Fundamentals of Respiratory Physiology (2 credits, Letter-Graded)

VME 6464 Molecular Pathogenesis (3 credits, Letter-Graded)
VME 6505 Auto Immunity (1 credit, Letter-Graded)
VME 6508 Veterinary Virology: Molecular and Evolutionary Biology (3 credits, Letter-Graded)
VME 6603 Advanced Toxicology (3 credits, Letter-Graded)
VME 6651 Seminars in Veterinary Anesthesia and Analgesia (2 credits, S/U)
VME 6710C Advanced Small Animal Airway and Thoracic Surgery (1 credit, Letter-Graded)
VME 6714C Small Animal Orthopedic Minimally Invasive Surgery (1 credit, Letter-Graded)
VME 6771 Veterinary Epidemiologic Research (3 credits, Letter-Graded)
VME 6934 Ecotoxicology/Risk Assessment (Rotating Topic) (3 credits, Letter-Graded)
VME 6934 Advanced Small Animal Arthrology (Rotating Topic) (1 credit, Letter-Graded)
VME 6934 Small Animal, Soft Tissue, Minimally Invasive Surgery (Rotating Topic) (1 credit, Letter-Graded)

New courses in preparation include:

Comparative Immunology
Animal Models of Infectious Diseases and Immunology
Advanced Topics in Nutrition, Metabolism and Immunology

Student enrollment. We expect the annual enrollment of new master's students in Comparative Biomedical Sciences will increase from three in Year 1 to six in Year 5. On average, master's students take 24 credits in graduate-level courses per year (9 credits in Fall, 9 in Spring, and 6 in Summer) in addition to their research workload and professional development activities.

Research extramural support. UF CVM extramurally sponsored federal grants funding increased 2.7 times from \$8.4 million in FY 2017 to \$22.8 million in FY 2021.

Indicator of excellence. During 2015, UF CVM was ranked No. 14 among veterinary medical colleges nationwide by the US News & World Report. In 2019 and 2022, UF CVM national ranking improved to No. 9. UF CVM is Florida's only College of Veterinary Medicine.

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.**

Reallocated base amounts specific for the master's with a major in Comparative Biomedical Sciences are \$26,731 in Year 1 and \$60,173 in Year 5. Funding source is the UF College of Veterinary Medicine.

Projected costs do not require additional funding for program implementation.

- 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.**

At UF CVM, the expected impact of the reallocation of financial resources on existing programs is negligible.

In Year 1, base funding amount before reallocation = \$26,731. Expected amount to be re-allocated from the existing master's program with a major in Veterinary Clinical Sciences into the new master's degree with a major in Veterinary Clinical Sciences = 26,731 or 100%. The re-allocated amount (100%) is based in the projected number of new students who will enroll in the new master's program with a major in Comparative Biomedical Sciences (n = 3) instead of the current master's program with a major in Veterinary Medical Sciences.

- 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.**

Resident: \$530.69 per credit (2021-2022 academic year).

Non-Resident: \$1,255.41 per credit

Source: <https://www.fa.ufl.edu/directives/2021-22-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.**

In general, the master's program with a major in Comparative Biomedical Sciences will not use external resources of funding. The master's program will be supported by extramural grants by UF CVM faculty.

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.

The UF Health Science Center Library provides free access to physical and/or electronic information resources that include approximately 16,500 journal subscriptions, 147,700 books, and 96 databases. A free interlibrary loan service allows faculty, students, and staff to access external resources that are not included in the library's on-site and electronic collections. The UF College of Veterinary Medicine has an Education Center which includes 24-seat quiet room, UF-secure wireless internet access in all areas, standalone computer stations, collaborative work computer stations with large display monitors, printer/copier stations, group study rooms with computers and large screen displays, a limited selection of frequently-used texts and journals, and high-speed connectivity with HSC Library information systems.

Ms. Hannah Norton, MS in Information Studies, Chair, HSC Library Campus Gainesville, is the HSC Liaison Librarian for the UF College of Veterinary Medicine. While Ms.

Norton's principal location is at the HSC Library. She can meet in person at the CVM Education Center for consultations with college faculty, students, and staff, as well as assistance via e-mail, phone, or zoom. Ms. Norton presents guest lectures on finding and selecting appropriate information for research and clinical care in other curricular programs of the CVM, and is available to do so for this program as well.

Major journals available to UF CVM graduate students include: Science, Nature, Lancet, Preventive Veterinary Medicine, Journal of Dairy Science, Theriogenology, Journal of Zoo and Wildlife Medicine, Journal of the American Veterinary Medical Association, American Journal of Veterinary Medicine, PLOS One, One Health, American Journal of Tropical Medicine & Hygiene, among others.

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.

Specialized equipment for research includes: UF CVM faculty members have access to specialized equipment to support the implementation of research studies associated with master's thesis. Specialized equipment includes:

Aquatic Mammal & Wildlife Medicine: The Aquatic Animal Health program (AAH) incorporates faculty from the CVM and IFAS College of Agriculture and Life Sciences, and maintains close collaborative ties with SeaWorld Adventure Parks, the U.S. Navy Marine Mammal Program, the National Marine Fisheries Service and the Florida Fish

and Wildlife Conservation Commission. Investigators focus on providing state-of-the-art training for graduate students, as well as, post-graduates in education, clinical, diagnostic, and research support for aquatic animals, both wild and under human care, and to combat infectious diseases afflicting aquatic animals.

Translational Medicine: CVM faculty members participate in collaborative multi-college (Medicine, Dentistry and Pharmacy) research programs that include translational research on, e.g., atopic dermatitis, cardiomyopathy, glycogen storage disease, glaucoma, osteosarcoma, degenerative joint diseases, and Sjögren's Syndrome. They evaluate other interventional strategies using gene or stem cell therapies.

Center for Environmental & Human Toxicology (CEHT): The CEHT brings together a multi-disciplinary group of scientists from CVM and the UF campus who study the effects of chemicals on animal, human, and environmental health. The research and teaching activities of the center provide a resource for the State of Florida to identify and reduce risks associated with environmental pollution, food contamination, and workplace hazards. The center also provides risk assessment support to environmental state regulatory agencies. Investigators have access to the latest instrumentation in Inductively Coupled Plasma mass spectrometry (ICP-MS) and liquid chromatography mass spectrometry (LC MS/MS).

Center for Inflammation & Mucosal Immunology (CIMI): CIMI investigators are recognized leaders in host-gut microbial interactions, autoimmune diseases, and targeted intervention therapies for immunopathophysiology of pain, Crohn's disease, nephrolithiasis, Sjögren's Syndrome, allergy, cancer, and mucosal infectious diseases including COVID-19, brucellosis, and noroviruses. These programs currently attract a diverse group of graduate students. CIMI and CVM investigators have access to state-of-the-art analytical and cell-sorting flow cytometry.

Interdisciplinary Center for Biotechnology Research (ICBR): UF ICBR provides world-class services to a wide range of life science researchers. UF ICBR also offers learning opportunities for scientists and their students through training to use equipment, seminar series and hosted workshops. Most of the core service laboratories are located centrally, in the Cancer and Genetics Research Complex – a space constructed with support from the National Institutes of Health (NIH.) There are, on average, 58 ICBR staff members, with 22% faculty, 45% full-time staff and 33% postdoctoral associates and temporary or part-time positions.
<https://biotech.ufl.edu/about-icbr/>

HiPerGator: The University of Florida supercomputer is a cluster that includes the latest generation of processors and offers nodes for memory-intensive computation. HiPerGator's high-performance storage systems can be accessed from diverse interfaces, including Globus, UFApps for Research, and other tools.
<https://www.rc.ufl.edu/about/hipergator/>

Classroom. Graduate courses will be delivered in selected UF CVM classroom facilities: (i) Lecture Hall A (capacity 133 students), (ii) Lecture Hall B (capacity 103 students), (iii) Deriso Hall conference/teaching room (capacity 20 students), or (iv) the Education Center's computer lab (capacity 132 students).

Research lab space. UF CVM faculty members have access to research laboratory

space to support the implementation of research studies associated with master's theses. UF CVM has more than 79,000 square feet of dedicated research space.

Faculty office space. UF CVM faculty members have own office space at the UF's CVM. Faculty offices are equipped with modern computer hardware/software systems, phone/email/zoom/WIFI internet connection (all appropriate to support the master's program).

Student office space. All UF CVM graduate students in-residence have access to office space in one of five assigned academic departments (Comparative Diagnostic and Population Medicine; Infectious Diseases and Immunology; Large Animal Clinical Sciences; Physiological Sciences; Small Animal Clinical Sciences).

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.

At UF CVM, graduate assistantships are limited to graduate students enrolled in the PhD program or in the Master's:Residency program.

In certain cases, graduate assistantships can be requested and justified when a major professor has funding to cover the cost of stipend for selected graduate student(s) enrolled in the master's program

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

Appendix	Appendix Title	Supplemental	Included?	Required for Degree Program Level		
		Instructions	Yes/No	Bachelors	Masters/ Specialist	Doctoral/ Professional
A	Tables 1-4			X	X	X
B	Consultant's Report and Institutional Response					X
C	Academic Learning Compacts	Include a copy of the approved or proposed Academic Learning Compacts for the program		X		
D	Letters of Support or MOU from Other Academic Units	Required only for programs offered in collaboration with multiple academic units within the institution		X	X	X
E	Faculty Curriculum Vitae			X	X	X
F	Common Prerequisite Request Form	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.		X		
G	Request for Exemption to the 120 Credit Hour Requirement	Required only for baccalaureate degree programs seeking approval to exceed the 120 credit hour requirement		X		

H	Request for Limited Access Status	Required only for baccalaureate degree programs seeking approval for limited access status		X		
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Table 2. Additional Appendices

Appendix	Appendix Title	Description



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 2024
 Proposed Implementation Term

College of Veterinary Medicine
 Name of College(s) or School(s)

College of Veterinary Medicine
 Name of Department(s)/Division(s)

Comparative Biomedical Sciences
 Academic Specialty or Field

Doctor of Philosophy with a major in Comparative Biomedical Sciences
 Complete Name of Degree

26.0102
 Proposed CIP Code (2020 CIP)

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.

Implementation Timeframe	HC	FTE	E&G Cost per FTE	E&G Funds	Contract & Grants Funds	Auxiliary/Philanthropy Funds	Total Cost
Year 1	10	7.5	\$49,179	\$368,843			\$368,843
Year 2	11	8.25					
Year 3	12	9					
Year 4	13	9.75					
Year 5	15	11.25	\$36,901	\$415,137			\$415,137

Additional Required Signatures

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

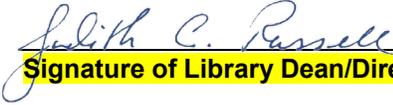


Signature of Equal Opportunity Officer

04/03/2023

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

March 23, 2023

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 mission of the UF CVM's graduate program is "to provide high-quality research training for graduate students in the biomedical sciences (UF SACSCOC Accreditation)", veterinary medicine and related disciplines.

The graduate program is designed to cultivate problem-solving abilities, critical thinking, team science, leadership, and science communication, as well as other professional skills essential for conducting research. This program is flexible and allows students to train in various areas of emphasis including infectious diseases and immunology, physiological sciences, forensic sciences, aquatic animals and ecosystem health, artificial intelligence, and other areas of emphasis presented below.

The graduate program aligns with the College of Veterinary Medicine's mission statement, which is "The College of Veterinary Medicine advances animal, human, and environmental health through education, research, and patient care." It also aligns with the University's mission "to lead and serve the state of Florida, the nation and the world by pursuing and disseminating new knowledge while building upon the experiences of the past."

Degree Program: PhD with a major in Comparative Biomedical Sciences

Level: PhD

Major: Comparative Biomedical Sciences

Areas of emphasis: UF CVM strengths and areas of emphasis in research graduate training include, but are not limited to discovery and translational solutions for (i) infectious diseases and immunology, (ii) physiological sciences, (iii) forensic sciences, (iv) microbiology, virology, and parasitology, (v) zoo medicine (vi) aquatic animals and ecosystem health, (vii) livestock and wildlife population health, (viii) equine gastroenterology; (ix) orthopedic bioengineering using animal models, (x) clinical and translational research in selected disciplines such as cardiology, dermatology, oncology, and ophthalmology, and (xi) novel diagnostic and therapeutic applications to improve human and animal health using artificial intelligence. UF CVM is uniquely situated to pursue these investigations with emphasis on non-human species, and in comparative medicine in animals and humans.

Total number of credit hours: 90. The PhD with a major in Comparative Biomedical Sciences is structured to be completed (in-residence) in four to five years. PhD students will take 90 credits of coursework, including 14 credits in required

courses: VME 6937L VMS Graduate Seminar Series or equivalent (6 credits), VME 6767 Responsible Conduct in Research or equivalent (1), Grant Writing (1), Statistics (3), Biochemistry or Molecular Biology (3). The Qualifying Exam will be completed within seven terms after enrollment. At the end of the graduating semester, the PhD candidate must successfully complete a final examination or defense.

Program Change

Because the required coursework (14 credits) is the same for the existing PhD degree in Veterinary Medical Sciences (VMS) and the new PhD degree with a major in Comparative Biomedical Sciences, VMS students may be eligible to change to the PhD degree in Comparative Biomedical Sciences.

When such transfer is desired, it should be approved before the Qualifying Exam is completed. (e.g., within first seven terms after enrollment).

Master's Option

A stand-alone master's with a major in Comparative Biomedical Sciences (thesis-based) is structured to be completed in-residence in two years, independently of the PhD. Master's students will take 30 credits of coursework, including 8 credits in required courses aligned with the requirements of the PhD: VME 6937L VMS Graduate Seminar Series or equivalent (1 credit), VME 6767 Responsible Conduct in Research or equivalent (1), Statistics (3), Biochemistry or Molecular Biology (3), as well as 22 credits in research and elective courses. PhD students who have met the master's degree requirements may be eligible to receive the Master of Science degree.

Career outcomes: UF CVM PhD graduates will join the biomedical research workforce in research-intensive positions in academia or in research-related positions in the private sector, government, NGOs, or non-profits in Florida, the United States, and internationally.

Employment of medical scientists is projected to grow 17% from 2021 to 2031, much faster than the average for all occupations (US Bureau of Labor Statistics).

<https://www.bls.gov/ooh/life-physical-and-social-science/medical-scientists.htm>

Additional details on meeting workforce need are presented in Section III.

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 SUS goals focus on three critical points to realize its mission and its 2025 vision: *Excellence, Productivity, and Strategic Priorities for a Knowledge Economy*.

Goals for Teaching and Learning

Excellence

GOAL 1: Strengthen Quality and Reputation of the Universities

Improve the quality and relevance of the System's institutions with regard to state, national, and international preeminence.

Productivity

GOAL 2: Increase Degree Productivity and Program Efficiency-Increase access and efficient degree completion for students.

Strategic Priorities for a Knowledge-Based Economy

GOAL 3: Increase the Number of Degrees Awarded in STEM/Health and Other Programs of Strategic Emphasis.

Increase student access and success in degree programs in the STEM/health fields and other Programs of Strategic Emphasis that respond to existing, evolving, and emerging critical needs and opportunities.

UF CVM's PhD with a major in Comparative Biomedical Sciences will fulfill all three goals for teaching and learning by providing graduate education and training of the highest quality with emphasis in discovery and translational solutions for infectious diseases and immunology, physiological sciences, forensic sciences, and other areas of emphasis identified above, in Florida, USA, and internationally; therefore, it will support Goals 1 and 2. New graduates will acquire scientific knowledge and skills required to compete and collaborate in today's global society and market place. This will be a new STEM/Health degree; therefore, it will support Goal 3.

Information on the need and demand for the proposed PhD degree is presented in Section III.

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 UF's College of Veterinary Medicine is part of the UF Academic Health Center (the most comprehensive academic health center in the Southeast). The Academic Health Center includes the colleges of Dentistry, Medicine, Nursing, Pharmacy, Public Health and Health Professions, and Veterinary Medicine.

<https://ufhealth.org/academic-health-center/overview>

UF CVM is the state's only veterinary college. It is ranked # 7 among veterinary medical colleges nationwide by the U.S. News & World Report. Our UF Small Animal Hospital caseload is the 2nd largest among academic veterinary hospitals in USA.

Established in 1977, UF CVM offers four degree programs: doctor in veterinary medicine (DVM), a Master's in Veterinary Medical Sciences (VMS), a PhD degree in VMS, and a Master of Preventive Veterinary Medicine approved effective Fall 2023. In addition, a CVM/MPH degree is offered jointly by the College of Public Health and Health Professions and the College of Veterinary Medicine.

Since 1993, nearly 400 students have completed the Master degree or PhD degree in VMS. In addition, more than 500 students have completed our Master's online program in VMS, with a concentration in shelter medicine, forensic toxicology, or veterinary forensic sciences.

UF CVM's professional and graduate education programs are supported by 190 faculty members from five CVM academic departments (Comparative, Diagnostic, and Population Medicine, Large Animal Clinical Sciences, Small Animal Clinical Sciences, Physiological Sciences, and Infectious Diseases and Immunology) and other academic units on campus. In year 2022, 42 of 190 CVM faculty members were engaged in graduate education and training; 21 of 42 faculty members were involved in didactic teaching (e.g., Graduate Seminars, Graduate Journal Club: mechanisms of microbial virulence, Responsible Conduct in Research, Advanced Toxicology, Ecotoxicology and Risk Assessment, Advanced Bioinformatics, other courses) and 35 of 42 faculty members served as major professors of one or more PhD students.

CVM faculty are accomplished professors and researchers with 5-60 years of experience in education, research, consulting, and human/institutional capacity development programs in Florida, nationally, and internationally. The faculty publish in high quality peer-review journals, offer training workshops to practicing veterinarians, graduate students, farmers and ranchers in Florida, the USA, and abroad. CVM faculty share education, research, and administration resources, and will support the PhD curriculum and transdisciplinary research relevant to Florida's

citizens.

UF CVM's PhD program with a major in Comparative Biomedical Sciences will maximize existing resources to address challenges and opportunities in Florida, such as pathogen discovery, rapid diagnostic tests, pathogen virulence factors and mechanisms used to evade animal/human's immune system and cause disease, vaccine development, neuroscience and neurophysiology, toxicology, organ systems physiology, early detection and risk management of diseases or unusual mortality events in aquatic animals and related ecosystems, horses, beef cattle, dairy cattle, white-tailed deer, fish, and zoo animals, as well as cure of chronic diseases and cancer in companion animals.

In its association with UF's Institute of Food and Agricultural Sciences, UF CVM provides Extension veterinary services to farmers and ranchers of commercial livestock or wildlife operations, and aquaculture farms throughout the state.

- 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 reviewed and approved by the CAVP Academic Coordinating Group on September 13, 2023, and no concerns were raised.

- 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.

The external consultant's report and UF CVM response is presented in Appendix B.

Planning Process

Date	Participants	Planning Activity Description
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October 28, 2022	Dianne McFarlane, Professor and Chair, UF CVM Department of Large Animal Clinical Sciences and faculty (n = 30).	CVM LACS strategic plan meeting: faculty approved action to explore PhD degree STEM options.
February 2, 2023	Adam Biedrzycki, Ricardo Chebel, Klibs Galvao, Jorge Hernandez (UF CVM LACS PhD Biomedical Sciences Lead Faculty).	A draft pre-proposal for the creation of PhD in Biomedical Sciences (CIP 26-0102, STEM) was reviewed by UF CVM LACS Lead faculty.

Date	Participants	Planning Activity Description
February 8, 2023	Jorge Hernandez (CVM Director of Graduate Education), John Bowen, Ricardo Chebel, Aria Eshraghi, Domenico Santoro, Janet Yamamoto (CVM Graduate Studies Committee members).	CVM Director of Graduate Education informed CVM Graduate Studies Committee that CVM ORGS will present the draft pre-proposal to UF Graduate School and UF Office of Institutional Planning and Research reps for guidance.
February 13, 2023	Jorge Hernandez (CVM Director of Graduate Education), David Pascual, (CVM Associate Dean for Research & Graduate Studies), Stacy Wallace (UF Graduate School Associate Director), Tom Kelleher (UF Graduate School Associate Dean), Kathy Lebo (UF Assistant Provost and Director of Institutional Planning and Research).	Draft pre-proposal was discussed.
February 14, 2023	Dianne McFarlane (CVM LACS Department Chair) and David Pascual (CVM Associate Dean for Research & Graduate Studies).	Draft pre-proposal was reviewed and approved.

February 15, 2023	Dana Zimmel, CVM Dean.	The pre-proposal was sent to UF Provost for review and possible approval.
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February 21, 2023	Iske Larkin, Mary Brown (CVM Department Graduate Coordinators), Elizabeth Brammer-Robbins, Ricardo Chebel, Aria Eshraghi (CVM Graduate Studies Committee members), Domenico Santoro and John Bowden (CVM Department Graduate Coordinators and CVM Graduate Studies Committee members), David Allred (faculty member in the Department of Infectious Diseases and Immunology), Adam Biedrzycki and Klibs Galvao (faculty members in the Department of Large Animal Clinical Sciences--LACS), Dianne McFarlane (Professor and Chair in LACS), Jorge Hernandez (CVM Director of Graduate Education), David Pascual, (CVM Associate Dean for Research & Graduate Studies), and Chris Adin (CVM Executive Associate Dean).	A draft full proposal was reviewed for feedback and input.
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- 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

Date	Implementation Activity
February 24, 2023	The full proposal was sent to CVM faculty members for review and comments.
March 7, 2023	LACS faculty voted in favor to continue exploring new degree in Biomedical Sciences at the College, University, and SUS levels. Response rate = 22/28 (79%); all in favor.
March 8, 2023	CVM Graduate Studies Committee (Elizabeth Brammer-Robbins, John Bowden, Ricardo Chebel, Aria Eshraghi, Domenico Santoro, Janet Yamamoto) unanimously approved to continue exploring the new PhD degree in Biomedical Sciences at the College, University, and SUS levels.
March 10, 2023	CVM Faculty Council sent revised draft full-proposal to CVM faculty for review in preparation for Faculty Assembly.
March 13, 2023	External Consultant's Review.
March 20, 2023	CVM Faculty Assembly. Motion to continue exploring PhD degree and Master's degree in Biomedical Sciences at the university and SUS levels was approved. In-person vote. Response rate: 22/22 (100%). Yes: 21/22. Abstain: 1/22. Via zoom: Response rate 28/33 (85%), all in favor.
September 13, 2023	Pre-proposal approved at CAVP ACG meeting
Fall 2023	Proposal submitted for review with UF internal approval process, including the following:
	GC. Approval from the UF Graduate Council.
	UCC. UF University Curriculum Committee is notified of the request.
	FSSC. Approval from UF Faculty Senate Steering Committee.
	Senate. Approval from UF Faculty Senate.
	AA. Approval from UF Academic Affairs.
Fall 2023/Spring 2024	BOT. Approval from the Board of Trustees.
Spring 2024	BOG. Approval from the Board of Governors.
Spring 2024	AA. UF Academic Affairs is notified of the request.
Spring 2024	GS. UF Graduate School is notified of the request.
Summer 2024	OUR. Approval from UF Office of the University Registrar.
Summer 2024	OIPR. UF Office of Institutional Planning and Research is notified of the request.
Summer 2024	College. UF CVM is notified on the request approval.

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**

Employment of medical scientists is projected to grow 17% from 2021 to 2031, much faster than the average for all occupations (US Bureau of Labor Statistics). <https://www.bls.gov/ooh/life-physical-and-social-science/medical-scientists.htm>

There is a shortage of veterinarians to meet societal needs in biomedical sciences in different disciplines (Rosol et al. The Need for Veterinarians in Biomedical Research. J Vet Med Edu 2009; 36:70-75).

Since 1991, the existing UF CVM's PhD program in Veterinary Medical Sciences (VMS) has produced a total 195 PhD graduates who have entered the workforce in research or professional positions in academia, private sector, or government in Florida, the United States, and internationally.

Student interest. UF CVM's PhD education and training is mainly in biomedical sciences in different disciplines. In the last 10 years (2013-2022), most PhD graduates (48/53 or 91%) were engaged in biomedical research with emphasis in infectious diseases and immunology or physiological sciences (n = 17), or aquatic animals and ecosystem health, wildlife population health, or equine gastroenterology (n = 31). In addition, five of 53 (9%) PhD graduates were engaged in animal agriculture and veterinary clinical sciences with emphasis in cattle diseases (e.g., mastitis, metritis, tick-borne diseases). Overall, average time to graduation was 4.7 years. After graduation, 51 of 53 new graduates joined the research taskforce in academia (n = 30/51 or 59%), private sector (n = 12/51 or 23%), or government (n = 9/51 or 18%) in Florida, the United States, or abroad. Among the 30 PhD graduates in academia, 20 accepted postdoctoral research positions (including ten at UF) and 10 accepted faculty positions at public universities (including two as clinical assistant professors at UF CVM and one at Virginia Tech College of Veterinary Medicine, two as assistant professors at Washington State University and one at University of Toledo, and four more at public universities in Chile, Dominican Republic, Paraguay, or Thailand).

B. Provide and describe data that support student demand for the proposed program. Include questions asked, results, and other communications with prospective students.

Enrollment projections are based on annual number of students enrolled in current PhD program in Veterinary Medical Sciences (VMS) in the last 10 years.

During 2013-2022, an average of seven new PhD students enrolled in the PhD program in VMS every year. In the last two years (2021 and 2022), PhD student annual enrollment went up to 10 and 11 students, respectively. We expect the annual enrollment of new PhD students will go up to 15 annually in the next five years.

We expect 20 of 30 existing PhD students in VMS will change major to enroll in the proposed PhD program with a major in Comparative Biomedical Sciences at UF CVM; most students (15/20) will be international students.

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.

The annual enrollment of new PhD students will go up from **7 students** in the last seven years (2013-2020) to **10 students** in 2021, and to **15 students** in 2025.

The projected enrollment of new students will produce a total population of about **60 PhD students** in 2025.

The projected increased enrollment in the next five years is associated with a strategic budget allocation at UF CVM to support graduate education; particularly the PhD program. The projected enrollment of 15 new students per year and a total population of 60 PhD students is aligned with the PhD program size of Top Five veterinary programs in the country.

We do not expect students from other UF academic units will change academic programs to enroll in the new PhD program with a major in Comparative Biomedical Sciences at UF CVM.

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.

Quantitative benefits. The total Educational and General (E&G) cost of the proposed new UF CVM's PhD with a major in Comparative Biomedical Sciences program = \$368,843 in Year 1 and \$415,137 in Year 5 for faculty salaries. The amount in Year 1 is based on an expected reallocated base from the current PhD program in Veterinary Medical Sciences distributed across the three colleges. (Appendix 1, Table 3-A).

The budget does not require new UF CVM funding allocation for implementation of the new PhD degree with a major in Comparative Biomedical Sciences.

The PhD program will be supported by using current and projected funding allocations by UF CVM in the mission of graduate education from Year 1 to Year 5, as well as extramural grants by UF CVM faculty. Additional budget information in presented in Section VII below.

New PhD enrollment projections are described above.

Qualitative benefits. The mission of UF CVM's graduate program in Veterinary Medical Sciences (VMS) is to provide high-quality research training for graduate students in the **biomedical sciences** (UF SACSCOC Accreditation).

The CIP 26.0102 Comparative Biomedical Sciences, General, is appropriately aligned with UF CVM's mission in graduate education and the scope of PhD education and training in biomedical sciences in main areas of emphasis identified above.

The PhD with a major in Comparative Biomedical Sciences offered at UF CVM will be a STEM/Health degree; therefore, it will support SUS Goal 3 in its mission of Teaching and Learning for a Knowledge-Based Economy: *Increase the number of degrees awarded in STEM/Health and other programs of strategic emphasis that respond to existing, evolving, and emerging critical needs and opportunities.*

Since 1991, UF CVM's PhD program in VMS has been offered under the Classification of Instructional Program (CIP) 01.8101, which is justified for education and training in Agricultural Sciences, Veterinary Sciences/Vet Clinical Sciences, General. The CIP 01.8101 is non-STEM; a classification that has recently affected our capacity to recruit highly qualified PhD applicants with interest in biomedical science education and training. These applicants accepted other (STEM) options at UF PhD programs (e.g., Animal Molecular and Cellular Biology, UF IFAS Department of Animal Sciences, CIP 26.0406) while retaining UF CVM faculty as their major professors, or at other universities in the United States.

- 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.**

Florida State University (FSU). Tallahassee, Florida. The Department of Biological Sciences offers PhD degree with a major in Biology in three tracks: Cell and Molecular Biology, Ecology and Evolution, and Neuroscience under CIP 26.0102 Biomedical Sciences, Other.

Florida International University (FIU). Miami, Florida. The Herbert Wertheim College of Medicine offers a PhD degree with a major in Biomedical Sciences under CIP 26.0102 Biomedical Sciences, Other.

University of Central Florida (UCF). Orlando Florida. under CIP 26.0102 Biomedical Sciences, Other.

Source: <https://www.flbog.edu/resources/data-analytics/dashboards/degrees-awarded-by-classification-of-instructional-programs-cip-code/>

Overall, required PhD coursework varies between UF CVM, FSU, FIU, and UCF; but most programs require education and instruction in graduate seminars, responsible conduct of research, and statistics.

FSU Cell & Molecular Biology¹	FIU Biomedical Sciences²	UCF Biomedical Sciences³	UF CVM Comparative Biomedical Sciences⁴
CIP 26.0102	CIP 26.0102	CIP 26.0102	CIP 26.0102
Required Courses			
BSC 6921-Bio Sci Colloquium or Neuroscience equivalent; Seminars (3 credits); BSC 5900 (Directed Individual Study); BSC 5971 (Thesis Research); Responsible Conduct of Research; Teaching Requirement.	GMS 6103 Molecular Microbiology and Infectious Diseases GMS 6220 Molecular Genetics and Cellular Biology GMS 6605 Basic Structure of the Human Body GMS 6864 Principles of Clinical Epidemiology and Biostatistics GMS 6939 Graduate Seminar GMS 6942 Laboratory Rotations GMS 6962 Formation of Committee: Appointment of Dissertation Committee: Preliminary Proposal GMS 6979 Research Credits GMS 6481 Physiology and Immunology	BSC 6432 Biomedical Sciences I BSC 6431 Practice of Biomedical Sciences IDS 6694 Experimental Design and Analysis in Biomedical Sciences GMS 6860 Statistics for Biomedical Scientists PCB5815 Molecular Aspects of Obesity, Diabetes and Metabolism PCB5837 Cellular and Molecular Neuroscience PCB5236 Cancer Biology MCB 6273 Advanced Topics in Infectious Processes	VME 6937L VMS Graduate Seminar Series (or equivalent); VME 6767 Issues in Responsible Conduct of Research (or equivalent); PHC 6088 Statistical Analysis of Genetic Data (or equivalent); BCH 5413 Mammalian Molecular Biology and Genetics (or equivalent); GMS 6096 Intro NIH Grant Writing Biomedical Sciences (or equivalent).

¹<https://www.bio.fsu.edu/grad/handbook/>

²<https://medicine.fiu.edu/academics/phd-in-biomedical-sciences/curriculum/index.html>

³<https://www.ucf.edu/degree/biomedical-sciences-phd/>

⁴<https://research.vetmed.ufl.edu/studies/>

In addition,

UF College of Medicine offers a PhD degree in Medical Sciences under CIP 26-9999 Biological and Biomedical Sciences, Other.

Overall, required PhD's core coursework varies between UF CVM, UF College of Medicine, and UF IFAS Animal Sciences; but all three programs require education and training in responsible conduct of research.

UF College of Medicine Medical Sciences ¹	UF IFAS Animal Sciences Animal Molecular and Cellular Biology ²	UF CVM Comparative Biomedical Sciences ³
CIP 26.0102	CIP 26.0102	CIP 26.0102
Required Courses		
<p>Foundational/Core Curriculum</p> <p>Fall Semester GMS 6001 Fundamentals of Biomedical Sciences I (5 credits);</p> <p>GMS 6003 Essentials of Graduate Research & Professional Development (1)</p> <p>GMS 6090 Research Rotations (2)</p> <p>GMS 6895 Journal Club (1)</p> <p>Career Development/ Research Seminar Series</p> <p>Spring Semester Any combination of introductory or fundamental or advanced coursework (6)</p> <p>GMS 6090 Research Rotation (1)</p> <p>GMS 7877 Responsible Conduct in Biomedical Research (1)</p> <p>Customized Concentration-Focused Curriculum</p> <p>Fall Semester GMS 6003 Essentials of Graduate Research & Professional Development (1 credit)</p> <p>GMS 6090 Research Rotations (2)</p> <p>GMS 6895 Journal Club (1)</p> <p>Spring Semester</p>	<p>BCH 5413 Eukaryotic Molecular Biology (3 credits)</p> <p>GMS 6421 Advanced Cell Biology (4)</p> <p>VME 6767 Issues in Responsible Conduct of Research (or equivalent) (1)</p>	<p>VME 6937L VMS Graduate Seminar Series (or equivalent) (6 credits)</p> <p>VME 6767 Issues in Responsible Conduct of Research (or equivalent) (1)</p> <p>PHC 6088 Statistical Analysis of Genetic Data (or equivalent) (3)</p> <p>BCH 5413 Mammalian Molecular Biology and Genetics (or equivalent) (3)</p> <p>GMS 6096 Intro NIH Grant Writing Biomedical Sciences (or equivalent) (1)</p>

GMS 6090 Research Rotation (1)		
GMS 7877 Responsible Conduct in Biomedical Research (1)		

¹https://biomed.med.ufl.edu/wordpress/files/2022/08/BMS-Handbook_August2022-final.pdf

²<https://programs.ifas.ufl.edu/animal-molecular-and-cellular-biology/admissions-requirements/>

³<https://research.vetmed.ufl.edu/studies/>

What's in common or different between the new PhD degree with a major in Comparative Biomedical Sciences and the current PhD degree in Veterinary Medical Sciences at UF CVM?

The two degrees share the same required core coursework (**14 credits**). Specifically, graduate seminars (6 credits), responsible conduct of research (1), grant writing (1), statistics* (3) and biochemistry or molecular biology (3).

*Students enrolled in the PhD program with a major in Comparative Biomedical Sciences can select statistical courses more aligned with biomedical research such as: **PHC 6088 Statistical Analysis of Genetic Data**. The course covers the statistical theory behind methods for analyzing genetic data and its application using software tools. Equivalent courses can be suggested by the student's supervisory committee or the Department Graduate Coordinator.

*Students enrolled in the PhD program in Veterinary Medical Sciences can select statistical courses more aligned with clinical research such as: **PHC 6020 Clinical Trial Methods**. The course covers statistical concepts and methods used in clinical trials, as well as statistical principles and methods including phase I to IV clinical trials. Equivalent courses can be suggested by the student's supervisory committee or the Department Graduate Coordinator.

The main difference in education and training between the two degrees is the scope of research (biomedical vs. veterinary clinical) in selected PhD dissertations and related coursework (≥ 74 credits). The scope of dissertation for the new PhD program with a major in Comparative Biomedical Sciences is on biomedical research involving new discoveries and new translational solutions for diseases in animal and human populations. In contrast, the scope of dissertation in the current PhD Program in Veterinary Medical Sciences is on veterinary clinical research. It involves patient-oriented research in animal populations, clinical trials, epidemiologic studies, outcomes research, or health services research.

Table below shows an example of different courses taken by two UF CVM PhD graduates who were engaged in biomedical research or veterinary clinical research. After graduation, the first graduate accepted a postdoc position at UF CVM's Department of Infectious Diseases & Immunology and is now a faculty member in that Department. The second graduate returned to a clinical faculty position at the University of Mosul' College of Veterinary Medicine in Iraq, and recently accepted a

postdoc position at Cornell University's Department of Population Medicine & Diagnostic Sciences. The scope of research education and training (under VME 6910 Supervised Research; VME 7979 Advanced Research, before admission to candidacy or passing the Qualifying Exam; and VME 7980 Doctoral Research, after admission to candidacy) was different between the two graduates.

	Biomedical research	Clinical research
Dissertation	Nicotine Modulation of the Maternal-Fetal Host Response to Infection Nicotine & Tobacco Research (2021) 1763–1770	Pregnancy Loss Attributable to Mastitis in Dairy Cows J Dairy Sci (2018) 100:8322-8329
VME 6910 Supervised Research	5 credits (Biomedical)	5 credits (Clinical)
VME 7979 Advanced Research	20 credits (Biomedical)	20 credits (Clinical)
VME 7980 Doctoral Research	74 credits (Biomedical)	36 credits (Clinical)
VME 6905 Prob Vet Med Sci	9 credits (Biomedical)	3 credits (Clinical)
VME 6930s Graduate Seminars	8 (Infectious Diseases)	8 (Vet Med Sci or Anim Sci)
VME 6464 Molecular Pathogenesis	3 credits	
GMS 6140 Principles Immunology	4 credits	
STA 6167 Stats Methods Research 1	3 credits	
STA 6167 Stats Methods Research 2	3 credits	
PHC 5503 Categorical Data Methods		3 credits
PHC 6053 Regression Methods		3 credits
VME 6771 Vet Epidemiol Research		3 credits
ANS 5312C Applied Rumi Repro Manag		3 credits
ANS 6702 Lactation Physiology		1 credit
ANS 6704 Mammal Endocrinology		2 credits
PHA 5267 Principles PharmaEconomics		1 credit

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 UF CVM is committed to recruitment and retention activities and to the success of individual programs. The CVM Office for Community Engagement & Diversity Outreach (OCEDO) will enhance and strengthen already successful individual efforts by providing activities for potential URM students in the PhD program with a major in Comparative Biomedical Sciences. Dr. Michael Bowie (Assistant Dean, OCEDO) will work with affinity organizations, like the Multicultural Veterinary Medical Association, National Association for Black Veterinarians, Black DVM Network, Latinx Veterinary Medical Association, and Association of Asian Veterinary Medical Professionals, to recruit underrepresented students into the PhD program with a major in Comparative Biomedical Sciences.

By gathering the research success stories of our outstanding URM students across the individual graduate programs, the UF CVM Office of Research and Graduate Studies (ORGS) in conjunction with CVM OCEDO will be in a position to develop

materials that highlight the strength and breadth of URM scholars at UF. The PhD program with a major in Comparative Biomedical Sciences will work with CVM ORGS, CVM OCEDO, and the CVM marketing team to develop display and advertising materials that highlight the scientific success of our URM trainees and use recruiting funds to cost-effectively target diverse populations at national meetings of affinity organizations. Ads will be placed on the websites of these affinity organizations. Prospective URM scholars will be introduced to the program via a UF webpage, which is continually being improved, to outline our program, our faculty and research, and potential career opportunities that arise from being a successful graduate of the program. We hope that incoming participants consider these unique opportunities when making their decisions about PhD graduate programs.

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

- [i] Bachelor's degree, veterinary degree (DVM or equivalent), or Master's degree.
- [ii] An upper division undergraduate GPA of 3.2 or the equivalent.
- [iii] Three appropriate letters of recommendation.
- [iv] Non-U.S. citizens whose native language is not English must submit a score of at least 80 on the internet TOEFL (Test of English as a Foreign Language) (iBT & Home Edition), 550 TOEFL PBT, or 6.0 IELTS Academic. Established special exceptions for missing language scores are at the purview of the graduate school.
- [v] In UF CVM, GRE score is not required

Graduation requirements

In order to obtain the PhD degree with a major in Comparative Biomedical Sciences, the student must complete required coursework (14 credits) in biochemistry or molecular biology (3 credits), statistics (3), responsible conduct in research (1), grant writing (1), graduate seminars (6), a Qualifying Examination (within first seven terms/semesters after enrollment), a Final Examination, and a PhD dissertation on main area(s) of emphasis identified above (i.e., infectious diseases and immunology, physiological sciences, forensic sciences, other). UF CVM academic departments may include additional requirements. PhD students must have a truncated 3.00 minimum Overall and Major GPA to be eligible for a degree award.

- B. Describe the specific expected student learning outcomes associated with the proposed program. 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 Outcome 1 Knowledge in Specialization

Students identify, describe, explain and apply the literature, research, and practices relevant to their area of specialization. Assessment method: students are assessed through satisfactory performance of their final defense of their dissertation.

Student Learning Outcome 2 Evaluate Information

Students analyze and critically evaluate new information and ideas contained in books and journal articles, as well as information and ideas presented at scientific meetings, seminars and/or informal discussions with other scientists. Assessment method: Students will successfully complete one or more seminar course or journal club course that requires reading, presentation and critical evaluation of scientific papers.

Student Learning Outcome 3 Presentation, Speaking Skills

Students apply speaking skills needed to communicate orally in formal and informal settings. Assessment method: students produce a research report judged worthy of presentation at local, national and/or international scientific meetings and/or continuing education presentations by their faculty mentor.

Student Learning Outcome 4 Effective Writing Skills

Students write effectively in a manner appropriate to veterinary medical sciences. Assessment method: students write a paper that is judged publishable by the faculty.

Student Learning Outcome 5 Professional Behavior

Students exhibit ethical and professional behavior throughout their studies and research. Assessment method: students successfully complete a formal course on the responsible and ethical conduct of research.

Source: UF CVM Annual Report submitted to UF Provost Office and SACSCOC for accreditation purposes.

- 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**

Total numbers of semester credit hours for the degree. Ninety credits.

Number of credit hours for each course. Number of credits hours per course is variable. In general, Graduate Seminar courses are 1 credit per course, per semester. Responsible Conduct in Research (1 credit). Statistics (3 credits). Grant Writing (1 credit). Biochemistry/Molecular Biology (3 credits). Supervised Research (1-5 credits per semester, 5 credits maximum count toward the degree). Supervised Teaching (1-5 credits per semester, 5 credits maximum count toward the degree).

Advanced Research (1-9 credits per semester, no limit toward the degree, before admission to candidacy or completion or Qualifying Examination). Research for Doctoral Dissertation (1-9 credits per semester, no limit, after admission to candidacy).

Required courses. Fourteen graduate-level course credits: Graduate Seminars (6 credits). Responsible Conduct in Research (1 credit). Statistics (3 credits). Biochemistry/Molecular Biology (3 credits). Grant Writing (1 credit). Elective courses are selected and justified by the student in consultation with the PhD Student Supervisory Committee, and in coordination with a Department Graduate Coordinator. Elective courses should support key elements of critical thinking and capacity to conduct independent and team research by the student.

Sequence of course of study for the major. In general, required courses should be completed during the first two years of PhD education and training (including 4 of 6 required graduate seminar credits). A PhD program goal is for student to successfully complete their Qualifying Examination within the first seven semesters after enrollment. In addition, PhD candidates (after completion of the Qualifying Examination) are expected to successfully complete all requirements of the PhD degree (including a Final Defense of their dissertation) and graduate after 4-5 years of education and training.

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

Required Courses

VME 6937L VMS Graduate Seminar Series (1 credit; grading scheme: letter grade). This course is a forum for CVM graduate students and faculty to exchange information that can advance animal health, human health, and environmental health.

VME 6767 Issues in the Responsible Conduct of Research (1 credit; grading scheme: satisfactory/unsatisfactory). Presentation and discussion of issues; guiding principles and potential pitfalls.

PHC 6088 Statistical Analysis of Genetic Data or equivalent (3 credits; grading scheme: letter grade). An introduction to statistical procedures for genetic studies.

BCH 5413 Mammalian Molecular Biology and Genetics (3 credits; grading scheme: letter grade). Biochemical and genetic approaches to understanding vertebrate and particularly mammalian molecular biology, moving from basic processes of replication, transcription, and protein synthesis to signal transduction, cell cycle, cancer, genomics, and developmental genetics.

GMS 6096 Intro NIH Grant Writing Biomedical Sciences (1 credit; grading scheme: letter grade). An introduction to NIG grant applications. Instruction include, but are not limited to, study aims, research plan biosketch, budget, other topics).

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.

The PhD with a major in Comparative Biomedical Sciences does not require teacher preparation programs as outlined in Section 100.04 Florida Statutes.

- F. 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 potential impact on related academic programs or departments is negligible.

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 new degree will be offered and administered at the UF College of Veterinary Medicine (CVM) in Gainesville, Florida. UF CVM is the state's only College of Veterinary Medicine. In addition, UF CVM is part of the UF Academic Health Center (the most comprehensive academic health center in the Southeast). The Academic Health Center includes the colleges of Dentistry, Medicine, Nursing, Pharmacy, Public Health and Health Professions, and Veterinary Medicine.
<https://ufhealth.org/academic-health-center/overview>

- G. 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 anticipated mode of delivery for the new PhD program with a major in Comparative Biomedical Sciences will be face-to-face. The delivery system will be traditional, in-residence, on main campus (UF College of Veterinary Medicine). The program will not require specialized services or additional support. All required and additional courses are available at the UF College of Veterinary Medicine or other academic units on main campus in Gainesville, Florida. When necessary, UF CVM faculty will reach out to faculty in other universities for collaboration.

- H. 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.**

All required and additional courses are available at the UF College of Veterinary

Medicine or other academic units on main campus in Gainesville, Florida. When necessary, UF CVM faculty will reach out to faculty in other universities for collaboration.

- I. 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.

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.

The program will be accredited as part of the institution's accreditor, SACSCOC. If necessary, the program will seek to find a specialized accreditor, but is not seeking that at this time.

- 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.

UF CVM offers a PhD program in Veterinary Medical Sciences (VMS). The PhD in VMS is accredited by the Southern Association of Colleges and Schools Commission on Colleges (SACSCOC).

Annual reports with requested data and information (e.g., program goals, student learning outcomes) are prepared and submitted to UF Provost's Office and SACSCOC for evaluation/approval.

In Fall 2019, the curriculum of the PhD in VMS was reviewed/revised by the UF CVM Graduate Studies Committee, where all PhD students in-residence are now required to receive education and training in responsible conduct in research and grant writing. The new requirements were successfully implemented in all five CVM academic departments (Comparative Diagnostic and Population Medicine; Infectious Diseases and Immunology; Physiological Sciences; Large Animal Clinical Sciences; Small Animal Clinical Sciences) in Fall 2020.

In Fall 2022, UF CVM Graduate Studies Committee approved a revised PhD Final Exam Submission Form to comply with new evaluation methods for Student Learning Outcome. In the reviewed Form, the student's supervisory committee members are required to assess and rate the PhD candidate's ability to apply appropriate research

methods vis-à-vis problems presented during the exam, ability to apply critical reflection to the knowledge gained from the academic program, and ability to effectively respond to scholarly questions—as Satisfactory or unsatisfactory. In addition, committee members are required to provide written feedback about the PhD candidate's performance (i.e., overall strengths and areas for growth). The revised Form was implemented in Spring 2023.

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.

In the last 10 years (2013-2023), six of every 10 new UF CVM PhD graduates joined the research taskforce in academia. In addition, two of every 10 joined the private sector, and two of every ten accepted research-related positions in government.

UF PhD program competencies are more aligned intensive-research positions in academia. All UF CVM PhD students are required to receive education and training in science communication, responsible conduct in research, statistics, biochemistry or molecular biology, and grant writing. In addition, PhD students are expected to participate in professional development activities (leadership, communication, management, team science, other) offered by UF Graduate School and UF Health Office of Biomedical Research Career Development.

An industry or employer advisory council is not in place. UF CVM Office of Research and Graduate Studies will facilitate a process to establish an advisory council in Fall 2023 for implementation by Fall 2024.

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.

Appendix A, Table 2 includes requested data and information. For budget estimations only, the list of faculty includes 41 UF CVM faculty members who were engaged in didactic teaching in the graduate program or as PhD major professors in Year 2022. The list of faculty will vary in subsequent years, as more faculty engage in didactic teaching or supervised research (as designated major professors of new PhD students).

Selected courses were those offered at UF CVM and mostly attended by PhD students in 2022.

The estimated Faculty (person-years) is 2.49 in Year 1 and 3.39 in Year 5.

Appendix E includes the curriculum vitae of UF CVM faculty members.

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).

Teaching workload. The number of UF CVM faculty members increased by 53% from 124 in 2015 to 190 in 2022.

In 2022, about 50 CVM faculty members were engaged in didactic teaching in the graduate program (in-residence or online). Fifteen of the 50 faculty members offered education and training through independent studies, in-residence (i.e., VME 6915 Problems in Veterinary Medicine, selected topics).

Twenty four or more faculty members were engaged in didactic teaching in the graduate program, in-residence, <https://research.vetmed.ufl.edu/studies/courses/in-residence-courses/> in the following courses:

VME 6767 Issues in the Responsible Conduct of Research (1 credit)
VME 6907 Microbial Virulence Journal Club (1)
VME 6932 Physiological Sciences Seminar Series (1)
VME 6933 Seminars in Infectious Diseases & Immunology (1)
VME 6934 Interdisciplinary Seminars in Reproduction and Prod Med (1)
VME 6937L VMS Graduate Seminar Series (1)
VME 6938 Topics in Aquatic Animal Health (1)
VME 5244 Physiology: Organ Systems (4 credits)
VME 6010 Aquatic Animal Conservation Issues (3)
VME 6070 Systemic Review and Meta-Analysis for Biomedical Res (2)
VME 6195 Wildlife Virology: Emerging Wildlife Viruses (3)
VME 6200 Fundamentals of Respiratory Physiology (3)
VME 6200L Lab Assessments for Fundamentals of Resp Physiology (2)
VME 6464 Molecular Pathogenesis (3)
VME 6505 Auto Immunity (1)
VME 6508 Veterinary Virology: Molecular and Evolutionary Biology (3)
VME 6603 Advanced Toxicology (3)
VME 6651 Seminars in Anesthesia and Analgesia (3)
VME 6710C Advanced Small Animal Airway/Thoracic Surgery

VME 6714C Small Animal Orthopedic Minimally Invasive Surgery (1)
VME 6771 Veterinary Epidemiologic Research (3)
VME 6934 Ecotoxicology/Risk Assessment (3)
VME 6934 Advanced Small Animal Arthrology (1)
VME 6934 Small Animal, Soft Tissue, Minimally Invasive Surgery (1)

New courses in preparation include:

Comparative Immunology
Animal Models of Infectious Diseases and Immunology
Advanced Topics in Nutrition, Metabolism and Immunology

Currently (Spring 2023), 34 UF CVM faculty members serve as major professors of 42 CVM PhD students. Major professors are engaged in graduate education and training through supervised research, as well as guidance, emotional support, and life-balance mentor-mentee best practices (2.5% to 5% effort for program per year).

Student enrollment. In the last 10 years (2013-2022), an average of seven new PhD students enrolled in the UF CVM's PhD program in Veterinary Medical Sciences. In the last two years (2021 and 2022), PhD student enrollment went up to 10 and 11 new PhD students, respectively. We expect the annual enrollment will increase to 15 new PhD students in the next five years (if projected CVM funding for PhD education and training continues). On average, PhD students take 24 credits in graduate-level courses per year (9 credits in Fall, 9 in Spring, and 6 in Summer) in addition to their research workload and professional development activities.

Research extramural support. UF CVM extramurally sponsored federal grants funding increased 2.7 times from \$8.4 million in FY 2017 to \$22.8 million in FY 2021.

Indicator of excellence. During 2015, UF CVM was ranked No. 14 among veterinary medical colleges nationwide by the US News & World Report. In 2019 and 2023, UF CVM national ranking improved to No. 7 and 9, respectively. UF CVM is Florida's only College of Veterinary Medicine.

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.

Reallocated base amounts in Year 1 and Year 5 are \$368,843 and \$415,137, respectively. Funding source is the UF College of Veterinary Medicine.

Projected costs do not require additional funding for program implementation.

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.

In Year 1, base funding amount before reallocation = \$409,826. Expected amount to be re-allocated from the existing PhD program in Veterinary Clinical Sciences into the new PhD degree in Veterinary Clinical Sciences = 368,843 or 90%. The re-allocated amount (90%) is based in the projected number of new students who will enroll in the new PhD program with a major in Comparative Biomedical Sciences (9/10 or 90%) or in the existing program in Veterinary Medical Sciences (1/10 or 10%).

At UF CVM, the expected impact of the reallocation of financial resources on existing programs is negligible.

In Year 1, faculty effort is expected to remain the same.

The number of PhD students appointed as Graduate Assistants with teaching assistant task responsibilities increased from five in 2020 to **15 in 2022**. In the DVM (professional) program, the number of courses supported by PhD Graduate Assistants increased from seven in 2021 to 18 courses in 2022. In the graduate program, the number of courses supported by PhD Graduate Assistants increased from one in 2021 to six courses in 2022. The sources of funding were the UF CVM and extramural grants by UF CVM faculty.

- 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.**

Resident: \$530.69 per credit (2021-2022 academic year).

Non-Resident: \$1,255.41 per credit

Source: <https://www.fa.ufl.edu/directives/2021-22-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.**

In general, the PhD program will not use external resources of funding.

The PhD program will be supported by using current and projected funding allocations by UF CVM in the mission of graduate education, as well as extramural grants by UF CVM faculty.

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.

The UF Health Science Center Library provides free access to physical and/or electronic information resources that include approximately 16,500 journal subscriptions, 147,700 books, and 96 databases. A free interlibrary loan service allows faculty, students, and staff to access external resources that are not included in the library's on-site and electronic collections. The UF College of Veterinary Medicine has an Education Center which includes 24-seat quiet room, UF-secure wireless internet access in all areas, standalone computer stations, collaborative work computer stations with large display monitors, printer/copier stations, group study rooms with computers and large screen displays, a limited selection of frequently-used texts and journals, and high-speed connectivity with HSC Library information systems.

Ms. Hannah Norton, MS in Information Studies, Chair, HSC Library Campus Gainesville, is the HSC Liaison Librarian for the UF College of Veterinary Medicine. While Ms.

Norton's principal location is at the HSC Library. She can meet in person at the CVM Education Center for consultations with college faculty, students, and staff, as well as assistance via e-mail, phone, or zoom. Ms. Norton presents guest lectures on finding and selecting appropriate information for research and clinical care in other curricular programs of the CVM, and is available to do so for this program as well.

Major journals available to UF CVM graduate students include: Science, Nature, Lancet, Preventive Veterinary Medicine, Journal of Dairy Science, Theriogenology, Journal of Zoo and Wildlife Medicine, Journal of the American Veterinary Medical Association, American Journal of Veterinary Medicine, PLOS One, One Health, American Journal of Tropical Medicine & Hygiene, among others.

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.

Specialized equipment for research includes: UF CVM faculty members have access to specialized equipment to support the implementation of research studies associated with PhD dissertations. Specialized equipment includes:

Aquatic Mammal & Wildlife Medicine: The Aquatic Animal Health program (AAH) incorporates faculty from the CVM and IFAS College of Agriculture and Life Sciences, and maintains close collaborative ties with SeaWorld Adventure Parks, the U.S. Navy Marine Mammal Program, the National Marine Fisheries Service and the Florida Fish and Wildlife Conservation Commission. Investigators focus on providing state-of-the-art training for graduate students, as well as, post-graduates in education, clinical, diagnostic, and research support for aquatic animals, both wild and under human care, and to combat infectious diseases afflicting aquatic animals.

Translational Medicine: CVM faculty members participate in collaborative multi-college (Medicine, Dentistry and Pharmacy) research programs that include translational research on, e.g., atopic dermatitis, cardiomyopathy, glycogen storage disease, glaucoma, osteosarcoma, degenerative joint diseases, and Sjögren's Syndrome. They evaluate other interventional strategies using gene or stem cell therapies.

Center for Environmental & Human Toxicology (CEHT): The CEHT brings together a multi-disciplinary group of scientists from CVM and the UF campus who study the effects of chemicals on animal, human, and environmental health. The research and teaching activities of the center provide a resource for the State of Florida to identify and reduce risks associated with environmental pollution, food contamination, and workplace hazards. The center also provides risk assessment support to environmental state regulatory agencies. Investigators have access to the latest instrumentation in Inductively Coupled Plasma mass spectrometry (ICP-MS) and liquid chromatography mass spectrometry (LC MS/MS).

Center for Inflammation & Mucosal Immunology (CIMI): CIMI investigators are recognized leaders in host-gut microbial interactions, autoimmune diseases, and targeted intervention therapies for immunopathophysiology of pain, Crohn's disease, nephrolithiasis, Sjögren's Syndrome, allergy, cancer, and mucosal infectious diseases including COVID-19, brucellosis, and noroviruses. These programs currently attract a diverse group of graduate students. CIMI and CVM investigators have access to state-of-the-art analytical and cell-sorting flow cytometry.

Interdisciplinary Center for Biotechnology Research (ICBR): UF ICBR provides world-class services to a wide range of life science researchers. UF ICBR also offers learning opportunities for scientists and their students through training to use equipment, seminar series and hosted workshops. Most of the core service laboratories are located centrally, in the Cancer and Genetics Research Complex – a space constructed with support from the National Institutes of Health (NIH.) There are, on average, 58 ICBR staff members, with 22% faculty, 45% full-time staff and 33% postdoctoral associates and temporary or part-time positions.

<https://biotech.ufl.edu/about-icbr/>

HiPerGator: The University of Florida supercomputer is a cluster that includes the latest generation of processors and offers nodes for memory-intensive computation. HiPerGator's high-performance storage systems can be accessed from diverse interfaces, including Globus, UFApps for Research, and other tools.

<https://www.rc.ufl.edu/about/hipergator/>

Classroom. Graduate courses will be delivered in selected UF CVM classroom facilities: (i) Lecture Hall A (capacity 133 students), (ii) Lecture Hall B (capacity 103 students), (iii) Deriso Hall conference/teaching room (capacity 20 students), or (iv) the Education Center's computer lab (capacity 132 students).

Research lab space. UF CVM faculty members have access to research laboratory space to support the implementation of research studies associated with PhD dissertations. UF CVM has more than 79,000 square feet of dedicated research space.

Faculty office space. UF CVM faculty members have own office space at the UF's CVM. Faculty offices are equipped with modern computer hardware/software systems, phone/email/zoom/WIFI internet connection (all appropriate to support the PhD program).

Student office space. All UF CVM graduate students in-residence have access to office space in one of five assigned academic departments (Comparative Diagnostic and Population Medicine; Infectious Diseases and Immunology; Large Animal Clinical Sciences; Physiological Sciences; Small Animal Clinical Sciences).

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.

As a part of a strategic plan to grow the UF CVM PhD program, the CVM Administration has plans to increase the number of CVM Dean Four-Year Block Grant Awards from four in 2020 to 10 in 2025. These Awards are not reflected in Appendix A (Table 3A or 3B) as they are part of the UF CVM strategic plan in the mission of graduate education.

Overall, when combined with the number of PhD students funded by CVM Dean Four-Year Block Grant Awards or CVM faculty (extramural grants), the number of PhD students appointed as Graduate Assistants with teaching assistant task responsibilities is expected to increase from 15 in 2022 to 25 in the next five years.

The projected growth of UF CVM's PhD program is expected to match the level of PhD student enrollment in Top Five veterinary colleges or schools in the USA.

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

Appendix	Appendix Title	Supplemental Instructions	Included? Yes/No	Required for Degree Program Level		
				Bachelors	Masters/ Specialist	Doctoral/ Professional
A	Tables 1-4			X	X	X
B	Consultant's Report and Institutional Response					X
C	Academic Learning Compacts	Include a copy of the approved or proposed Academic Learning Compacts for the program		X		
D	Letters of Support or MOU from Other Academic Units	Required only for programs offered in collaboration with multiple academic units within the institution		X	X	X

E	Faculty Curriculum Vitae			X	X	X
F	Common Prerequisite Request Form	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.		X		
G	Request for Exemption to the 120 Credit Hour Requirement	Required only for baccalaureate degree programs seeking approval to exceed the 120 credit hour requirement		X		
H	Request for Limited Access Status	Required only for baccalaureate degree programs seeking approval for limited access status		X		

Table 2. Additional Appendices

Appendix	Appendix Title	Description

UNIVERSITY OF FLORIDA –GRADUATE SCHOOL
GRADUATE CERTIFICATE POLICY
Approved by Graduate Council October 20, 2011
Revised May 17, 2012
Revised May 16, 2013
Revised October 16, 2014
[\[draft revision for spring 2024\]](#)

Definition:

A Graduate Certificate program is a formal collection of courses that together form a coherent program of study offered through an academic unit. A Graduate Certificate is recognition of the acquisition of knowledge and skills in a given field of study. A Graduate Certificate is an academic credential granted by the University of Florida. As such, all Graduate Certificates must follow the requirements of admission, successful completion of approved graduate level coursework, application to receive the credential, and enrollment during the term in which the certificate is awarded and posted to the transcript.

Student Eligibility:

1. Currently enrolled UF graduate students may complete a Graduate Certificate in a specialized field within their major or a Graduate Certificate in another field that enhances their career interests.
2. Non-degree seeking students may pursue a Graduate Certificate with the approval of the academic unit offering the certificate as long as the applicant has at least a bachelor's degree or equivalent from a regionally accredited institution.
3. All Graduate Certificate applicants must apply and be admitted to the certificate program following the processes and procedures of the University, the academic unit offering the Certificate and the College dean or designee.
4. For non-degree-seeking or post-baccalaureate students, course credits identified as part of certificate requirements, but successfully completed prior to formal admission to the certificate program may be credited toward the certificate with the approval of the academic unit and College, so long as at least half of the credit hours required for the certificate are earned during or after the semester in which the student is admitted to the certificate program. *Examples: In a 12 hour graduate certificate program – the student must earn 6 or more credits after being admitted to the graduate certificate program; In a 9 hour graduate certificate program composed of 3 – 3 hour courses the student must earn 6 of the credits after being admitted to the graduate certificate program; In a 15 hour graduate certificate program composed of 5 – 3 hour courses the*

student must earn 9 of the credits after being admitted to the graduate certificate program.

5. Currently enrolled UF graduate students will be permitted to count previously taken coursework towards a Graduate Certificate to which they have been admitted, if approved by the academic unit offering the Graduate Certificate and by the academic unit offering their primary graduate degree program. As with non-degree-seeking students, at least half of the credit hours required for the certificate must be earned during or after the semester in which a degree-seeking student is admitted to the certificate program.
 6. With approval from the academic unit offering the certificate, a student who withdraws from a graduate degree program at UF may count the entirety of previously earned credits needed for the completion of a certificate of the same name as the major, concentration or minor from which they withdrew. In such cases, the credits may only be applied if the student is approved for the certificate within three semesters of withdrawing. Example: A student pursuing a master's degree in a particular major has earned all 12 credits necessary for a certificate program of the same name. If the student withdraws from the graduate degree program, they may apply for and be allowed by the unit to count all 12 credits toward the certificate if they are approved to do so within three semesters of withdrawal.
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Criteria for Completion of a Graduate Certificate:

1. Consistent with longstanding Graduate Council policy, the only passing grades for students in a Graduate Certificate program are A, A-, B+, B, B-, C+, C, and S.
2. All course work used for the Graduate Certificate must meet a minimum overall 3.0 GPA (truncated).
3. Credits earned at another institution may not be used to meet the requirements of a UF Graduate Certificate.
4. Coursework and credits used for a UF Graduate Certificate may also be used to fulfill some requirements for a UF graduate degree, subject to existing Graduate School policy and with the approval of the academic unit offering the graduate degree program. In general, this criterion would be met by the prior inclusion of the graduate certificate coursework in the approved plan of study for the graduate degree.
5. Graduate Certificates may include courses that are a part of an academic program or courses created specifically for the Certificate.
6. Specified courses may be identified as required courses for more than one Graduate Certificate. In that circumstance the credit hours associated with such a course may contribute to only one of the Graduate Certificates. Additional graduate level

coursework, approved by the academic unit, will have to be completed to meet the credit hour requirement of the second or subsequent certificate.

7. Coursework and credits used to satisfy the requirements for a Graduate Certificate may not be used to meet the requirements of a minor.
8. Students currently enrolled in a graduate degree program may not be admitted to a Graduate Certificate program that has the same name as the major, concentration or minor specified as part of their graduate degree program.

Responsibility for Developing and Overseeing a Graduate Certificate:

1. Graduate Certificate programs shall be developed and overseen by an academic unit and governed within the Graduate School. The approval process includes the graduate faculty in the academic unit, the College curriculum committee, the College Dean and the Graduate Council. Graduate Certificates must be offered through an academic unit currently approved to offer one or more graduate degree programs in the relevant field.
2. Graduate Certificates may only be offered in fields of instruction defined by a CIP (Classification of Instructional Programs) code for which the University of Florida has been approved at the graduate level.
3. Graduate Certificates may be created as a collaboration among multiple academic units, Centers or Institutes as long as all parties agree in writing, and at least one of the collaborating entities is a recognized graduate academic unit. Such collaborative graduate certificates must be administered by a single academic entity.
4. Graduate Certificate programs may be administered by campus units such as a Center or Institute that does not offer degrees or courses for academic credit.
5. Proposals for Graduate Certificates must include student learning outcomes and appropriate assessment methods.
- 5-6. [Units are responsible for managing assessment of student learning outcomes in cases in which students withdraw from a degree program and enter a certificate program after already completing the coursework required for the certificate.](#)
- 6-7. _____ A Graduate Certificate must include a minimum of 9 credits hours of approved UF graduate-level coursework.
- 7-8. _____ Graduate Council approval is required when closing a graduate certificate program. Notification must include a plan for permitting currently enrolled students to finish the program.
- 8-9. _____ Changes to the number of required credits or course levels (e.g. professional to graduate) require Graduate Council approval.
- 9-10. _____ Undergraduate coursework cannot be used for credit toward a Graduate Certificate. Professional coursework may contribute to a Graduate Certificate if

inclusion of the professional course(s) was approved by the Graduate Council as part of the Graduate Certificate approval process.

~~10.11.~~ 11.11. Any Graduate Certificate program that has no current students and has not awarded a certificate in the previous 5 years is subject to closure or required resubmission through the approvals process.

~~11.12.~~ 12.12. An existing Graduate Certificate program offered on campus may be offered in the on-line modality without additional review/approval by Graduate Council if it is composed of the same courses and requirements as the on-campus certificate...differing only in the mode of delivery. Such an addition or change in the mode of delivery may require approval by other university entities (e.g. the Office of Teaching and Technology)

~~12.13.~~ 13.13. Academic units interested in creating, modifying or closing a Graduate Certificate must do so through the tracking system at – www.approval.ufl.edu. The Graduate School welcomes preliminary conversations prior to the development of a formal proposal and initiation of the approval process.

Issues to Address in Proposing a Graduate Certificate:

1. The justification for offering a Graduate Certificate must include clearly stated academic, workforce or professional development objectives that are distinct from revenue opportunities.
2. Graduate Certificate enrollees who are not currently UF graduate students must complete their coursework for the Certificate with a 3.0 or higher GPA. They must be informed that only coursework with a letter grade of B or better will be eligible for transfer into a graduate program. All relevant Graduate Council policies apply to any proposed transfer of credits from a Graduate Certificate to a graduate degree program.
3. For graduate programs offering concentrations, the difference between the concentration and any Graduate Certificate must be clearly delineated on the New Certificate Form.
4. Programs that currently have students pursuing a Graduate Certificate must provide a plan for transitioning their students into a Graduate Council approved Graduate Certificate.

Administrative Logistics:

1. Graduate Certificates will be awarded after successful completion of the approved Certificate program and will be posted to the academic transcript. Comments posted to the transcript will be titled "Completed Graduate Certificate in [title] [date]." The Office of the University Registrar will print and distribute Graduate Certificates to the recipients.
2. The Graduate School will maintain a list of approved Graduate Certificates on the Graduate School Website. Academic Units may describe their approved Graduate Certificate programs in their Fields of Instruction in the Graduate Catalog.
3. Only programs of study that involve UF for-credit coursework need to seek approval through the approval system. Programs of study, courses or single classes offered for purpose of continuing education or similar activities may not be termed "Graduate Certificate" and may not bear the official UF seal and will not appear on a UF transcript. Such programs may issue "Certificates of Completion".
4. The academic unit will notify the [Division Office](#) of Enrollment Management when students are admitted into a Graduate Certificate program, following procedures developed and promulgated by the [Division Office](#) of Enrollment Management.
5. Students must be registered during the term in which they receive the Graduate Certificate.
6. Students must apply to receive a Graduate Certificate by the mid-point of the term in which they plan to complete the certificate program requirements.

7. Prospective Graduate Certificate students who do not yet wish to apply formally for the certificate program may register as non-degree seeking students for purposes of taking a limited number of courses that may ultimately be credited toward a graduate certificate. Consistent with UF policy, enrollment as a non-degree seeking student is established on a term-by-term basis and must be approved by the academic unit and the Office of the [University](#) Registrar. Formal admission to the Graduate Certificate program, eliminates the requirement for term-by-term approval for enrollment.
8. Verification of a bachelor's degree or equivalent from a regionally accredited institution is required of all graduate certificate participants.
9. While successful completion of a Graduate Certificate may be used as one element in a holistic assessment of a prospective student's eligibility for admission to the Graduate School, it should not be seen as substituting for other admission requirements.

Graduate Curriculum Committee
Minutes

March 14, 2024
Meeting Materials

Voting Conducted
via Mail-Vote

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.

PHHP – Public Health

1. HSA 6855 *Internship in Health Administration*

Link to proposal: <https://secure.aa.ufl.edu/Approval/reports/19606>

Proposal has been approved by the GCC.

IV. New 5XXX 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.

There are no 5XXX courses to present at this time.

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.

ENG – Mechanical & Aerospace Engineering

1. EAS 6XXX *Advanced Astroynamics*

Link to proposal: <https://secure.aa.ufl.edu/Approval/reports/19418>

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

2. EAS 6XXX *Robust and Adaptive Control for Aerospace Systems*
Link to proposal: <https://secure.aa.ufl.edu/Approval/reports/19425>

Proposal has been approved by the GCC.

3. EAS 6XXX *Spacecraft Attitude Dynamics*
Link to proposal: <https://secure.aa.ufl.edu/Approval/reports/19417>

Proposal has been approved by the GCC.

MED – Health Outcomes and Biomedical Informatics

4. GMS 6XXX *Qualitative Inquiry and Analysis in Intervention Development and Implementation*
Link to proposal: <https://secure.aa.ufl.edu/Approval/reports/19587>

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

PHHP – Public Health

5. HSA 7XXX *Introduction to Health Services Research Methods I*
Link to proposal: <https://secure.aa.ufl.edu/Approval/reports/18749>

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

COP – Medicinal Chemistry

6. PHA 6XXX *Advanced Applications in DNA*
Link to proposal: <https://secure.aa.ufl.edu/Approval/reports/19590>

Proposal has been conditionally approved. Once revised, the GCC wishes to review the proposal again.

7. PHA 6XXX *Applied Statistics for Data Analysis*
Link to proposal: <https://secure.aa.ufl.edu/Approval/reports/19609>

Proposal has been conditionally approved. Once revised, the GCC wishes to review the proposal again.

COP – Pharmacotherapy and Translational Research

8. PHA 6XXX *Forensic Anthropology I*

Link to proposal: <https://secure.aa.ufl.edu/Approval/reports/19386>

Proposal has been conditionally approved. Once revised, the GCC wishes to review the proposal again.

9. PHA 6XXX *Precision Med & Pharmacogenomics Capstone*

Link to proposal: <https://secure.aa.ufl.edu/Approval/reports/19470>

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

COP – Medicinal Chemistry

10. PHA 6XXX *Principles of Drug Action & Development I*

Link to proposal: <https://secure.aa.ufl.edu/Approval/reports/19403>

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

11. PHA 6XXX *Principles of Drug Action & Development II*

Link to proposal: <https://secure.aa.ufl.edu/Approval/reports/19402>

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

12. PHA 6XXX *The Toxicology of Licit & Illicit Drugs of Abuse*

Link to proposal: <https://secure.aa.ufl.edu/Approval/reports/19389>

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

CALS – Wildlife Ecology and Conservation

13. WIS 6XXX *Stakeholder Engagement in Natural Resources*

Link to proposal: <https://secure.aa.ufl.edu/Approval/reports/19467>

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

CLAS – Women’s Studies

14. WST 6XXX *Girlhood Studies*

Link to proposal: <https://secure.aa.ufl.edu/Approval/reports/19511>

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

15. WST 6XXX *History of Women's Medicine*

Link to proposal: <https://secure.aa.ufl.edu/Approval/reports/19490>

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

vi. Information Items:

1. [CAP 5100](#) – 19027 – Change prerequisites
2. [CAP 5108](#) – 19043 – Change prerequisites
3. [CEN 5728](#) – 19042 – Change prerequisites
4. [CNT 5517](#) – 19028 – Change prerequisites
5. [EAS 6905](#) – 19421 – Change course title, description, variable credit, and repeatable credit
6. [ECO 6409](#) – 19588 – Change prerequisites
7. [EGS 6940](#) – 19457 – Change to course title and description
8. [ESI 6617](#) – 19013 – Change prerequisites
9. [GMS 6895](#) – 19452 – Change prerequisites

Graduate Curriculum Committee

Agenda

April 11, 2024
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 5XXX 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.

There are no 5XXX course requests to present at this time.

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.

COE – School of Special Education, School Psychology, and Early Childhood Studies

1. EEX 6XXX *Mathematics Assessment and Instruction for Struggling Learners*

Link to proposal: <https://secure.aa.ufl.edu/Approval/reports/19438>

This course is designed for educators who teach or co-teach mathematics to elementary, middle, or high school students with disabilities and/or struggling learners in a variety of instructional settings (e.g., inclusive classrooms, resource rooms, self-contained classrooms). Educators will explore current research on the nature of mathematics learning and examine a variety of assessment and instructional strategies for students who struggle to learn math well.

CFA – Music

2. MUN 6345 *Chamber Singers*

Link to proposal: <https://secure.aa.ufl.edu/Approval/reports/18180>

Select ensemble of experienced singers that performs advanced choral literature. Students must possess a high degree of musicianship, artistry, and professionalism.

3. MUN 6385 *Choral Union*

Link to proposal: <https://secure.aa.ufl.edu/Approval/reports/18541>

Mixed choral ensemble open to students, faculty, staff, and local residents who have previous choral experience. Course literature is drawn from a variety of historical periods, cultures, and musical styles, presenting students with varied perspectives and experiences.

COP – Medicinal Chemistry

4. PHA 6XXX *Artificial Intelligence in Clinical Toxicology*

Link to proposal: <https://secure.aa.ufl.edu/Approval/reports/19669>

This course is designed for students and professionals in medicine, pharmacy, nursing, and related fields with an interest in applying AI to toxicology.

This course provides an in-depth exploration of artificial intelligence (AI) and its applications in clinical toxicology. Students will learn the fundamentals of AI, machine learning, and programming, focusing on real-world applications in clinical toxicology. The course includes theoretical knowledge and practical skills, preparing students to

COP – Pharmacotherapy and Translational Research

5. PHA 6XXX *Literature Survey in Clinical Pharmacogenomics and Precision Medicine*

Link to proposal: <https://secure.aa.ufl.edu/Approval/reports/19664>

This course will provide an opportunity for students to demonstrate synthesis of foundational and concentration competencies through researching and writing a thesis paper that addresses a research or practice need in precision medicine, individualized medicine, or comprehensive medication management.

COP – Medicinal Chemistry

6. PHA 6XXX *Organic Structure Elucidation*

Link to proposal: <https://secure.aa.ufl.edu/Approval/reports/19593>

introduces the use of spectroscopic methods and tools (IR, NMR, MS, UV) for the accurate determination of molecular structure. This skill is essential for chemists in many areas, such

as medicinal chemistry, process chemistry, natural products chemistry, forensic chemistry, and many other sub-specialties of analytical chemistry. This course will prepare students with an up-to-date presentation of the tools used for the advanced analysis and structure elucidation of organic molecules.

7. PHA 6XXX *Quality Assurance and Control in the Pharmaceutical Industry*

Link to proposal: <https://secure.aa.ufl.edu/Approval/reports/19668>

The two most important elements of quality assurance in the pharmaceutical industry are good laboratory practices (GLP) and good manufacturing practices (GMP) since they directly address the quality of the drug product. This course provides the basis for the understanding of GLP and GMP in the pharmaceutical and related industries as well as an overview of the accreditation process for several regulatory agencies including the FDA and the EMA.

8. PHA 6XXXL *Literature Survey*

Link to proposal: <https://secure.aa.ufl.edu/Approval/reports/19663>

Provides an opportunity for students to demonstrate synthesis of foundational and concentration competencies through researching and writing a thesis paper that addresses a research or practice need in their concentration area.

HHP – Sport Management

9. SPM 5XXX *Environmental Sustainability and Sport*

Link to proposal: <https://secure.aa.ufl.edu/Approval/reports/18879>

The sports industry can impact and influence communities and many sports organizations are evaluating their environmental impacts. The industry is changing through the promotion of healthy and sustainable communities. Sport organizations and venues are looking to embrace environmental programs such as renewable energy, water conservation, recycling and other environmental-friendly practices.

10.SPM 5XXX *High-Performance Coaching: Creating Winning Environments*

Link to proposal: <https://secure.aa.ufl.edu/Approval/reports/19582>

Students will identify and design an environment for their team in high-performance settings to systemize behavior management through a sport lens. Students will create systems that define standards and expectations, identify and reinforce above-the-line behaviors, and identify and convert below-the-line behaviors as they impact the team environment.

CLAS – Sociology

11.SYP 6XXX *The Sociology of Deviance and Social Control*

Link to proposal: <https://secure.aa.ufl.edu/Approval/reports/18836>

Analysis of major sociological approaches, both theoretical and methodological, for studying deviance and social control. Critical assessment of theoretical explanations and empirical research on deviant behavior. Analysis of social factors influencing formal, medical and informal processes of social control and consideration of the impact of stigma and stigma management.

vi. Information Items:

1. [ANG 6930](#) – 19107 – Change maximum repeatable credit
2. [CLP 6945](#) – 19737 – Change maximum repeatable credit
3. [CLP 7934](#) – 19738 – Change maximum repeatable credit
4. [MUN 6315](#) – 18169 – Change to course title and description
5. [MUN 6325](#) – 18174 – Change to course title and description
6. [MUN 6335](#) – 18177 – Change to course title and description
7. [PHC 7980](#) – 19727 – Change maximum repeatable credit
8. [RSD 7979](#) – 19736 – Change maximum repeatable credit
9. [SPA 6524](#) – 19834 – Change maximum repeatable credit
10. [SPA 6531](#) – 19835 – Change maximum repeatable credit
11. [SWS 6722](#) – 18500 – Change to course title, description, objectives, and prerequisites

Major | Modify_Curriculum for request 19662

Info

Request: Modify the curriculum for the graduate major of Integrated Sustainable Development

Description of request: The College of Design, Construction and Planning seeks to modify the curriculum for the Master of Integrated Sustainable Development (M.I.S.D.) degree with a major in Integrated Sustainable Development

Submitter: Bahar Armaghani barmagh@ufl.edu

Created: 4/9/2024 7:27:00 PM

Form version: 4

Responses

Major Name

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

Integrated Sustainable Development

Major Code

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

SD

Degree Program Name

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

Master of Integrated Sustainable Development (M.I.S.D.)

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.

Fall

Effective Year

2024

Current Curriculum for Major

See uploaded list with the required courses too.

Electives (select out of the following courses from a minimum of two disciplines)

ARC 6311C Building Information Modeling (BIM), 3 credit hrs., grade, min. B.
ARC 6883 Vernacular Architecture and Sustainability, 3 credit hrs., grade, min. B.
ARC 6621 Graduate Environmental Technology 2, 3 credit hrs., grade, min. B.
BCN 5905 AI and Machine Learning for Construction,(Rotating Topic), 3 credit hrs., grade, min. B.
BCN 6583 Sustainable Housing, 3 credit hrs., grade, min. B.
BCN 6641 Construction Value Engineering, , 3 credit hrs., grade, min. B.
CGN 5605 Public Works Planning, 3 credit hrs., grade, min. B.
CGN 5606 Public Works Management, 3 credit hrs., grade, min. B.
DCP 6931 Data Science for Interior-Environment Research & Des., (Rotating Topic), 3 credit hrs., grade, min. B.
EES 6007 Advanced Energy and Environment, 3 credit hrs., grade, min. B.
TTE 5006 Advanced Urban Transportation Planning, 3 credit hrs., grade, min. B.
LAA 6382 Ecological and Environmental Policy, 3 credit hrs., grade, min. B.
URP 6716 Transportation Policy & Planning, 3 credit hrs., grade, min. B.
URP 6711 Transportation and Land Use Coordination, 3 credit hrs., grade, min. B.
URP 6100 Planning Theory and History, 3 credit hrs., grade, min. B.
URP 6421 Environmental Land use Planning and Mgmt., 3 credit hrs., grade, min. B.
URP 6541 Economic Development Planning, 3 credit hrs., grade, min. B.

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.

Below are proposed electives that we would like to add to the list of current electives.

ARC6911 Architecture and Climate, (Rotating Topic), 3 credit hrs., grade, min. B.
BCN 6785 Construction Information System, 3 credit hrs., grade, min. B.
DCP 6301 WELL BLDG Strategies, (Rotating Topic), 6 credit hrs., grade, min. B.
FYC 6302 Sustainable Community Development, 3 credit hrs., grade, min. B.

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.

We recommend adding these courses as they cover some aspects of sustainable development, new building standards that are in demand in the industry, and related to climate change that we lack in the current list of elective courses and to give students more options.

Impact on Enrollment, Retention, Graduation

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

None.

Assessment Data Review

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

The first cohort of this degree program started in the fall of 2023. Based on the advising feedback and the students' interests and needs for more elective courses, we propose adding the four proposed courses to give students more options to select from.

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.

N/A

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

Curriculum modification for the graduate major in
Integrated Sustainable Development
for the Master of Integrated Sustainable Development (M.I.S.D.) degree

Current Requirements	Proposed Requirements
Required courses	Required courses
<ul style="list-style-type: none"> • DCP 6221 Economics of Sustainability in the Built Env., 3 credit hrs., grade, min. B. • BCN 6584C Building Energy Modeling, 3 credit hrs., grade, min. B. • BCN 6585 Sustainable Construction, 3 credit hrs., grade, min. B. • DCP 6230 Integrated Sustainable Development Practicum, 6 credit hrs., grade, min. B. 	<ul style="list-style-type: none"> • DCP 6221 Economics of Sustainability in the Built Env., 3 credit hrs., grade, min. B. • BCN 6584C Building Energy Modeling, 3 credit hrs., grade, min. B. • BCN 6585 Sustainable Construction, 3 credit hrs., grade, min. B. • DCP 6230 Integrated Sustainable Development Practicum, 6 credit hrs., grade, min. B.
Electives (select out of the following courses from a minimum of two disciplines)	Electives (select out of the following courses from a minimum of two disciplines)
<ul style="list-style-type: none"> • ARC 6311C Building Information Modeling (BIM), 3 credit hrs., grade, min. B. • ARC 6883 Vernacular Architecture and Sustainability, 3 credit hrs., grade, min. B. • ARC 6621 Graduate Environmental Technology 2, 3 credit hrs., grade, min. B. • BCN 5905 AI and Machine Learning for Construction (Rotating Topic), 3 credit hrs., grade, min. B. • BCN 6583 Sustainable Housing, 3 credit hrs., grade, min. B. • BCN 6641 Construction Value Engineering, 3 credit hrs., grade, min. B. • CGN 5605 Public Works Planning, 3 credit hrs., grade, min. B. • CGN 5606 Public Works Management, 3 credit hrs., grade, min. B. • DCP 6931 Data Science for Interior-Environment Research & Des. (Rotating Topic), 3 credit hrs., grade, min. B. • EES 6007 Advanced Energy and Environment, 3 credit hrs., grade, min. B. • TTE 5006 Advanced Urban Transportation Planning, 3 credit hrs., grade, min. B. • LAA 6382 Ecological and Environmental Policy, 3 credit hrs., grade, min. B. • URP 6716 Transportation Policy & Planning, 3 credit hrs., grade, min. B. • URP 6711 Transportation and Land Use Coordination, 3 credit hrs., grade, min. B. 	<ul style="list-style-type: none"> • ARC 6311C Building Information Modeling (BIM), 3 credit hrs., grade, min. B. • ARC 6883 Vernacular Architecture and Sustainability, 3 credit hrs., grade, min. B. • ARC 6621 Graduate Environmental Technology 2, 3 credit hrs., grade, min. B. • ARC 6911 Architecture and Climate (Rotating Topic), 3 credit hrs., grade, min. B. • BCN 5905 AI and Machine Learning for Construction (Rotating Topic), 3 credit hrs., grade, min. B. • BCN 6583 Sustainable Housing, 3 credit hrs., grade, min. B. • BCN 6641 Construction Value Engineering, 3 credit hrs., grade, min. B. • BCN 6785 Construction Information System, 3 credit hrs., grade, min. B. • CGN 5605 Public Works Planning, 3 credit hrs., grade, min. B. • CGN 5606 Public Works Management, 3 credit hrs., grade, min. B. • DCP 6301 WELL BLDG Strategies (Rotating Topic), 6 credit hrs., grade, min. B. • DCP 6931 Data Science for Interior-Environment Research & Des. (Rotating Topic), 3 credit hrs., grade, min. B. • EES 6007 Advanced Energy and Environment, 3 credit hrs., grade, min. B. • FYC 6302 Sustainable Community Development, 3 credit hrs., grade, min. B.

<ul style="list-style-type: none"> • URP 6100 Planning Theory and History, 3 credit hrs., grade, min. B. • URP 6421 Environmental Land use Planning and Mgmt., 3 credit hrs., grade, min. B. • URP 6541 Economic Development Planning, 3 credit hrs., grade, min. B. 	<ul style="list-style-type: none"> • TTE 5006 Advanced Urban Transportation Planning, 3 credit hrs., grade, min. B. • LAA 6382 Ecological and Environmental Policy, 3 credit hrs., grade, min. B. • URP 6716 Transportation Policy & Planning, 3 credit hrs., grade, min. B. • URP 6711 Transportation and Land Use Coordination, 3 credit hrs., grade, min. B. • URP 6100 Planning Theory and History, 3 credit hrs., grade, min. B. • URP 6421 Environmental Land use Planning and Mgmt., 3 credit hrs., grade, min. B. • URP 6541 Economic Development Planning, 3 credit hrs., grade, min. B.