



University Council

August 21, 2020

UNIVERSITY CURRICULUM COMMITTEE – 2020-2021

John Maerz, Chair

Agricultural and Environmental Sciences – Nicholas Fuhrman

Arts and Sciences – Jonathan Evans (Arts)

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Business – Jim Carson

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Education – Mardi Schmeichel

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Environment and Design – Ashley Steffens

Family and Consumer Sciences – Patricia Hunt-Hurst

Forestry and Natural Resources – Joseph Dahlen

Journalism and Mass Communication – Dodie Cantrell-Bickley

Law – Randy Beck

Pharmacy – Michelle McElhannon

Public and International Affairs – Jeffrey Berejikian

Public Health – Brittani Harmon

Social Work – Harold Briggs

Veterinary Medicine – Susan Sanchez

Graduate School – Wendy Ruona

Ex-Officio –Provost S. Jack Hu

Undergraduate Student Representative – TBD

Graduate Student Representative – Gerena Walker

Dear Colleagues:

The attached proposal from the Franklin College of Arts and Sciences for a new Area of Emphasis in Marine Sciences under the major in Integrative Conservation (Ph.D.) will be an agenda item for the August 28, 2020, Full University Curriculum Committee meeting.

Sincerely,

John Maerz, Chair

University Curriculum Committee

cc: Provost S. Jack Hu  
Dr. Rahul Shrivastav

# PROPOSAL FOR AREA OF EMPHASIS

**Date:** February 24, 2020

**School/College:** Franklin College of Arts and Sciences

**Department/Division:** Marine Sciences

**Program (Major and Degree):** Integrative Conservation (Ph.D.)

**Area of Emphasis Title:** Marine Sciences

**Which campus(es) will offer this program?** Athens

**Proposed Effective Date:** Spring 2021

## 1. Area of Emphasis Description:

The Area of Emphasis in Marine Sciences will be offered under the major in Integrative Conservation (Ph.D.) by the Department of Marine Sciences within the Franklin College of Arts and Sciences. The goal of the program is to confront the challenges of 21<sup>st</sup> century conservation research and practice by training agile scientists, and to ensure that students gain disciplinary depth in Marine Sciences while also learning to collaborate across disciplines and fields of practice to seek integrative solutions to complex conservation challenges. This is accomplished through the core ICON courses, electives, and mechanisms such as internships, strategic communication and collaborative research and training.

## 2. Major Requirements:

Requirements for the major in Integrative Conservation (Ph.D.) with an Area of Emphasis in Marine Sciences are identical to the requirements of the existing major in Marine Sciences (Ph.D.) and consist of the 18 credit hours of ICON coursework while simultaneously meeting the requirements for a Ph.D. in Marine Sciences.

### **Integrative Conservation Core (18 hours)**

- ECOL(ICON) 8400, Perspectives on Conservation Ecology and Sustainable Development (2 hours)
- ICON 8001, Principles of Integrative Conservation I (3 hours)
- ICON 8002, Principles of Integrative Conservation II (3 hours)
- ICON 8110, Field Planning and Preparation (1 hour)
- ICON(ANTH)(GEOG)(FANR)(ECOL) 8111 or ICON(ANTH)(GEOG)(FANR)(ECOL) 8111E, Integrative Conservation Internship (3 hours)
- ICON Electives (6 hours) – see below for suggested course list

### **Area of Emphasis in Marine Sciences (30 hours)**

- MARS 7380, Quantitative Methods in Marine Science (3 hours)
- MARS 8010, Biological Oceanographic Processes (3 hours)
- MARS 8020, Chemical Oceanography (3 hours)
- MARS 8030, General Physical Oceanography (3 hours)

### **Additional Requirements**

Additional graduate courses from Marine Sciences and other departments are available to complete each student's program. Students will also acquire field experience by participation in at least one major oceanographic cruise and one extended shore-based study. Students are also required to obtain teaching experience.

## **ICON Program Suggested Electives**

### ***Natural Sciences***

- ANTH 6900, Special Topics in Anthropology (Primate Conservation) (3 hours)
- ANTH 6900, Special Topics in Anthropology (Primate Behavior) (3 hours)
- ECOL 6000, Population and Community Ecology (3 hours)
- ECOL 6080, Principles of Conservation Ecology and Sustainable Development
- ECOL 6150, Population Biology of Infectious Diseases (4 hours)
- ECOL(FANR) 6220, Foundations of Restoration Ecology (3 hours)
- ECOL 6310, Freshwater Ecosystems (4 hours)
- ECOL 8310, Population Ecology (3 hours)
- ECOL 8322, Concepts and Approaches in Ecosystem Ecology (4 hours)
- ECOL 8330, Landscape Ecology (3 hours)
- ECOL(PBIO)(CRSS)(FORS) 8850, Terrestrial Biogeochemical Cycling (4 hours)
- ECOL 8910, Perspectives in Computational Ecology (1-3 hours)
- FANR 6750-6750D, Experimental Methods in Forestry and Natural Resources Research (4 hours)
- FANR 7620-7620L, GIS Applications for Natural Resources (3 hours)
- GENE(ECOL) 6020W, Biotic Responses to Climate Change (3 hours)
- GEOG 6350-6350L, Remote Sensing of Environment (3 hours)
- GEOG 6370-6370L, Geographic Information Science (3 hours)
- GEOG 6460, Field and Lab Methods in Remote Sensing (3 hours)
- GEOG 6040, Global Environmental Change During the Quaternary (3 hours)
- GEOG 6150, Physical Climatology (3 hours)
- GEOG 6810, Conservation Ecology and Resource Management (3 hours)
- GEOG 8120, Seminar in Climatology (3 hours)
- GEOG 8300, Multivariate Techniques in Geography (3 hours)
- MARS 6810, Global Biogeochemical Cycles (3 hours)
- MARS 8050, Climate, Oceans and the Marine Biosphere (3 hours)
- MARS 8160, Marine Ecology (3 hours)
- WILD(FISH) 8300, Wildlife and Fisheries Seminar (1-2 hours)
- WILD(FISH) 8360, Quantitative Conservation Science (3 hours)
- WILD(FISH) 8370-8370L, Bayesian Modeling for Conservation Science (3 hours)

### ***Social Sciences***

- ANTH 6010, Historical Ecology (3 hours)
- ANTH(PBIO) 6300-6300L, Ethnobotany (4 hours)
- ANTH 6490, Foundations of Ecological Anthropology (3 hours)
- ANTH 6620, Methods in Sociocultural Anthropology (3 hours)
- ANTH 8500, Seminar in Ecological Anthropology (3 hours)
- ANTH 8515, Institutional Dimensions of Sustainability (3 hours)
- ANTH 8520, Cultural Dimensions of Biodiversity (3 hours)
- ANTH(ICON) 8560, Conservation and Development Practice (3 hours)
- ANTH 8630, Anthropological Research Design and Proposal Development (3 hours)
- GEOG 6680, Gender and Geography (3 hours)
- GEOG 6810, Political Ecology and Environmental Governance (3 hours)
- GEOG 8305, Seminar in Qualitative Research Methods (3 hours)
- GEOG 8810, Seminar in Human-Environment Relationships (3 hours)
- PRTM 7900, Ecotourism and Sustainable Development (3 hours)

***Law, Policy, Economics***

- AAEC 8100, Nonmarket Economic Valuation Techniques and Applications (3 hours)
- ECOL 8710, Environmental Law Practicum (4 hours)
- ECOL 8730, Environmental Policy (3 hours)
- ENVM 6650, Environmental Economics (3 hours)
- FANR(ECOL) 6810, Natural Resources Law (3 hours)
- FORS(ENGR) 8020, Bio-Based Economy Seminar (1-3 hours)
- MARS(ANTH) 8210, Topics in Coastal Marine Policy (3 hours)

***Other***

- GRSC 8200, Communicating Research and Scholarship (1-3 hours)

## ICON Degree Checklist

### Steps toward degree and timeline for adequate progress<sup>i</sup>

- |   |  |
|---|--|
| <input type="checkbox"/> 1. Selection of Major Professor<br>[End of 1 <sup>st</sup> semester]               | <input type="checkbox"/> 9. Final Program of Study<br>[4 <sup>th</sup> or 5 <sup>th</sup> semester] Must be approved by<br>Grad School before Oral Comp Exam can be<br>scheduled   |
| <input type="checkbox"/> 2. Selection of ICON Representative<br>[End of 2 <sup>nd</sup> semester]           | <input type="checkbox"/> 10. Written Comprehensive Exam [4 <sup>th</sup><br>or 5 <sup>th</sup> semester]   |
| <input type="checkbox"/> 3. Selection of Advisory Committee<br>[End of 2 <sup>nd</sup> semester]            | <input type="checkbox"/> 11. Oral Comprehensive Exam<br>[4 <sup>th</sup> or 5 <sup>th</sup> semester] All information must be<br>provided to Graduate Coordinator's office three<br>weeks prior to desired date for oral exam. |
| <input type="checkbox"/> 4. Meeting with Advisor and ICON Rep<br>[Before beginning of 2 <sup>nd</sup> year] | <input type="checkbox"/> 12. Admission to Candidacy<br>[End of 5 <sup>th</sup> semester]   |
| <input type="checkbox"/> 5. Preliminary Program of Study<br>[End of 2 <sup>nd</sup> semester]               | <input type="checkbox"/> 13. Graduation Application<br>[Before beginning of 8 <sup>th</sup> semester] Please note<br>Graduate School Website for Deadline.   |
| <input type="checkbox"/> 6. Dissertation Proposal Defense [4 <sup>th</sup><br>or 5 <sup>th</sup> semester]  | <input type="checkbox"/> 14. Doctoral Dissertation Approval And Final<br>Oral Examination<br>[End of 8 <sup>th</sup> semester]   |
| <input type="checkbox"/> 7. Human Subjects [Yes No]<br>If yes, IRB approval # _____                         |  |
| <input type="checkbox"/> 8. Animal Use & Care [Yes No]<br>If yes, IACUC approval # _____                    |  |

### Program of Study Checklist

#### Graduate School Requirements

- 30 hours of degree credit: Must include 16 hours of course work at 8000- and/or 9000-level.

#### ICON Requirements

Five (5) ICON core courses (minimum of 12 credit hours) must appear on your Program of Study:

- ICON 8001, Principles of Integrative Conservation I (3 hours)
- ICON 8002, Principles of Integrative Conservation (3 hours)
- ICON 8110\*, Field Planning and Preparation (1 hour) \*only for students enrolling in fall 2015 or later.
- ECOL(ICON) 8400, Perspectives on Conservation Ecology and Sustainable Development (2 hours)
- ICON(ANTH)(GEOG)(FANR)(ECOL) 8111, Integrative Conservation Internship (3-8 hours)

OR

- ICON(ANTH)(GEOG)(FANR)(ECOL) 8111E, Integrative Conservation Internship (3-8 hours) The internship course may be repeated for a maximum of 16 hours of credit. If needed, students may register for internship credit during the fall following their summer internship to complete the requirement. **The internship is not intended to count toward the 16 hours of 8000- or 9000-level coursework required by the Graduate School.**

#### Course electives

- Minimum of two (2) additional graduate-level courses (6 hours total). See "2015-2016 Integrative Conservation Suggested Electives."

#### Home department requirements

- All degree requirements for home departments. See home department handbooks for additional details.

<sup>i</sup> Please note that these are general guidelines; ICON defers to the student's Advisor and Departmental guidelines first. Graduate School forms are available online at: [http://www.grad.uga.edu/forms&publications/currentstudent\\_forms.html](http://www.grad.uga.edu/forms&publications/currentstudent_forms.html)

## Approvals on File

**Proposal:** Area of Emphasis in Marine Sciences under the Major in Integrative Conservation (Ph.D.)

**College:** Franklin College of Arts and Sciences

**Department:** Marine Sciences

**Proposed Effective Term:** Spring 2021

Department:

- Marine Sciences Department Head, Dr. Daniela Di Iorio, 2/24/20
- Center for Integrative Conservation Research Director, Dr. Nathan Nibbelink, 2/24/20

School/College:

- Franklin College of Arts and Sciences Associate Dean, Dr. Jean Martin-Williams, 4/8/20
- Franklin College of Arts and Sciences Dean, Dr. Alan Dorsey, 2/24/20

Graduate School:

- Graduate School Interim Dean, Dr. Ron Walcott, 4/16/20