



**Student Handbook for the  
PhD Program in Integrated Coastal Sciences  
(ICS)**

**2020-2021**

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## **Revision Log**

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## **Preface**

This Handbook is designed to provide students, faculty, and prospective applicants with a concise guide to the policies and procedures of the PhD Program in Integrated Coastal Sciences (ICS). It contains information on application to the program, advisory committees, examinations, internships, the doctoral dissertation, professional development, and relevant rules that govern graduate study at East Carolina University. Excerpts from key Graduate School policies are included for convenience, but students should familiarize themselves with the full and official policies governing graduate study at East Carolina University. These are available in the annual *Graduate Catalog* at <http://catalog.ecu.edu/index.php>. Faculty are encouraged to review the Department of Coastal Studies (DCS) Unit Code for additional information (<https://www.ecu.edu/cs-acad/fsonline/customcf/committee/uc/unitcodes.pdf>). ICS will strive for excellence in student scholarship and faculty mentorship and assessment, while prioritizing a diverse and inclusive learning environment.

## I. Introduction

Many of the complex problems affecting coastal and marine environments exist at the interface between the natural, health, and social sciences. Effective solutions to these problems will arise from creative questioning built on theories, tools, and methods integrated across disciplinary epistemologies. Today's coastal scientist needs a diverse knowledge base and effective communication skills in order to work collaboratively across the natural and social sciences to ensure the sustainable management of sensitive coastal resources. The term "coastal" in this context is broadly defined and includes land comprising the coastal plain and its adjacent coastal waters up to and including the continental shelf.

The Integrated Coastal Sciences (ICS) PhD program, initiated in the Fall, 2019, is designed to train students how to conduct cutting-edge research that combines approaches from the natural and social sciences. Students in the ICS program learn to apply interdisciplinary techniques for understanding coastal issues with a focus on natural, health, and social sciences. They also are trained in the acquisition, interpretation, and synthesis of scientific information on coastal environments and populations. Students conduct research in coastal and estuarine ecology, coastal geosciences, human health as applied to the coast, coastal human dimensions, and coastal and marine economics and policy. Students must choose a primary area from natural or social sciences and a secondary area in the category not already chosen as primary. The website describing the degree may be found here: <https://coastal.ecu.edu/coastalstudies/integrated-coastal-sciences/>.

### Natural Science Subject Areas

- *Coastal and Estuarine Ecology* – focuses on near-shore and estuarine processes important for living marine resources and environmental quality;
- *Coastal Geosciences* – emphasizes coastal processes, geomorphology, biogeochemistry, engineering, and hydrology as they affect use and development of the coastal margin;

### Health and Social Science Subject Areas

- *Coastal and Marine Economics and Policy* - Economic theory of coastal and marine environmental management and policy.
- *Coastal Human Dimensions* –social behavior as they relate to coastal management as well as cultural and historical dimensions of coastal resources.
- *Coastal Health* – Human health applications to coastal ecosystems.

## **II. Code of Conduct**

It is the mission of the faculty in the ICS PhD program to prepare students for the workforce and conduct high-quality teaching, service, and research about coastal processes, materials, and resources that have societal impact and relevance. In support of this mission, our faculty, staff and students have the responsibility to familiarize themselves with and behave according to the ECU Code of Conduct <https://osrr.ecu.edu/policies-procedures/>. Participants in the program will not tolerate nor accept harassment in any form within any professional context.

## **III. Admissions**

The challenge of addressing an interdisciplinary area of study requires a solid academic foundation, typically based in the arts and sciences and enriched through personal experience. Moreover, participation in the ICS PhD requires commitment, motivation, and excellent academic preparation. Applicants do not need to have a coastal science background prior to application or admission into the Program. However, students should have a firm understanding and appreciation for the scientific method and experimentation. Applicants must meet all requirements for admission to the Graduate School of East Carolina University. March 1 is the priority deadline for fall semester admission. Generally, we do not accept applicants for the spring semester. Early applications are encouraged.

Admission to the ICS PhD program is based on several criteria, considered together in a holistic manner. These include GPAs, the GRE General Test, writing samples (e.g. first authored or co-authored manuscripts or publications), letters of reference, and statement of purpose indicating how having an interdisciplinary degree integrating natural and social sciences will help them achieve their career goals. Applicants are expected to have previously obtained a bachelor's degree or successfully completed a master's degree or equivalent professional degree with a grade point average of at least 3.0. A TOEFL exam is expected of non-English speaking international students. GRE scores more than 5 years old will not be accepted.

The ICS PhD Admissions Committee has broad campus representation. The Committee has six members, with three active members in natural sciences and three active members in social and health sciences. Two members of the committee are from within the Department of Coastal Studies.

Campus Interviews – There is no formal campus interview process. However, prospective applicants are strongly encouraged to visit the East Carolina University campuses prior to applying, meet faculty members and students in the ICS program, and explore broad areas of mutual interest with faculty members in their likely field of concentration prior to formal application. The ICS office (252-328-9406) will be pleased to host and schedule these visits. In the event such a visit is not possible, the program will be pleased to arrange telephone or virtual interviews with the ICS program director, its affiliated faculty, and graduate students.

Transfer Credit - Graduate-level course work taken elsewhere is not automatically applicable to a graduate degree program at East Carolina University. However, students may apply approved graduate credits from an MS or MA degree (from ECU or another accredited institution). Graduate work completed prior to admission to the ICS PhD program will be evaluated for transfer credits by the ICS faculty instructor of the appropriate course for which transfer credits are requested, the program director, and a representative of ECU's Graduate School on a case-by-case basis. In general, the potential transfer courses should be PhD level courses (i.e., 6000 level or above per ECU graduate curricula). A maximum of 20 percent of the credit hours in a non-doctoral program from an accredited institution may be applied to the ICS PhD. Petitions for application of transfer credit must be approved by the Administrative Board of the Graduate School (the Graduate Council). Ordinarily the Graduate Council will approve the application of graduate course transfer credit only if (1) the school or department so recommends; (2) the graduate credit was earned at a regionally accredited institution; (3) the student was admitted to a formal graduate degree program at the time the credit was earned with a minimum final course grade of B; and (4) the credit can be satisfactorily incorporated within the applicable time frame for completion of all degree requirements. Evidence to support such petitions (i.e. transcripts) must be supplied. The application for transfer credit may be found here: [https://gradschool.ecu.edu/wp-content/uploads/sites/118/2020/04/Request\\_for\\_transfer\\_credit\\_or\\_excess\\_nondegree\\_credits\\_2020.pdf](https://gradschool.ecu.edu/wp-content/uploads/sites/118/2020/04/Request_for_transfer_credit_or_excess_nondegree_credits_2020.pdf)

#### *ICS Ph.D. Admissions Checklist*

\_\_\_\_ Transcripts - Official transcripts of all undergraduate and graduate courses completed. International student applicants, please note that ECU requires that foreign institution transcripts go through a course-by-course credential evaluation. ECU's list of approved evaluators include WES (World Education Services), IEE (International Education Evaluations, Inc.), ECE (Education Credential Evaluators), Transcript Research, and SpanTran. Such an evaluation will take extra time and should be considered with consideration given to the priority application deadline of March 1st.

\_\_\_\_ GRE Scores- An official report of GRE scores (verbal, quantitative, analytical writing).

\_\_\_\_ TOEFL score (non-English speaking international students)

\_\_\_\_ Letters of Recommendation - Three letters of recommendation, two of which should be from those familiar with the applicant's academic performance and promise.

\_\_\_\_ Statement of Purpose - The Statement of Purpose should demonstrate 1) the basis for the applicant's interest in a coastal sciences program that integrates across natural and health or social sciences, 2) how the ICS program will contribute to the applicant's long-term career aspiration, 3) what the applicant can contribute to the program and fellow students, and 4) a clear indication that the applicant recognizes the sustained personal commitment required for successful completion of the doctorate. A preliminary indication

of the likely area of concentration, major professor, and complementary areas and an explicit statement of whether funding is requested or not should also be included.

\_\_\_\_\_Resume or Curriculum Vitae.

\_\_\_\_\_Writing Sample - Examples or excerpts from formal papers or published articles that demonstrate the applicant's writing and analytical skills.

#### **IV. Advisor and Committee Selection**

##### *Selection of suitable major professor*

If the student has not already identified a major professor or interim advisor, upon admission to the ICS program, the director, in consultation with the student and the admissions committee, will identify an interim faculty advisor/mentor from the student's declared area of concentration. The role of that interim faculty advisor will be to assist the student in identifying appropriate courses, to guide the student toward an appropriate dissertation topic, to serve as chair of the student's dissertation committee, and to aggressively seek funding for the student's research. Ideally, the student will have identified a suitable major advisor within the first year or prior to submitting their application.

##### *Selection of advisory committee*

It is the student's responsibility to explore and identify prospective doctoral dissertation topics as early as possible. Once a topic has been identified, the student, in consultation with their major advisor, should invite faculty members to serve on a Doctoral Advisory Committee to provide the guidance and oversight required to support completion of this requirement.

A total of five individuals (4 internal to ECU and 1 external to ECU) are required for a full committee. The committee shall be comprised of: (1) a chair with expertise in the primary area of the proposed research (usually the major advisor), (2) three additional ECU faculty members with expertise in the primary or secondary concentration area, and (3) an external committee member. At least one faculty member (internal or external) must represent the student's secondary concentration area. The external committee member may be an individual from another university or a specialist whose credentials would qualify to serve as member of the ECU graduate faculty (<https://gradschool.ecu.edu/graduate-faculty-status/>). The external committee member must submit a vitae to the program director who will then forward to the graduate school for approval.

The Doctoral Advisory Committee must accept and approve both the dissertation research proposal and the dissertation as meeting the requirements of the ICS PhD before it is submitted to the Graduate School.

##### *Annual student evaluation*

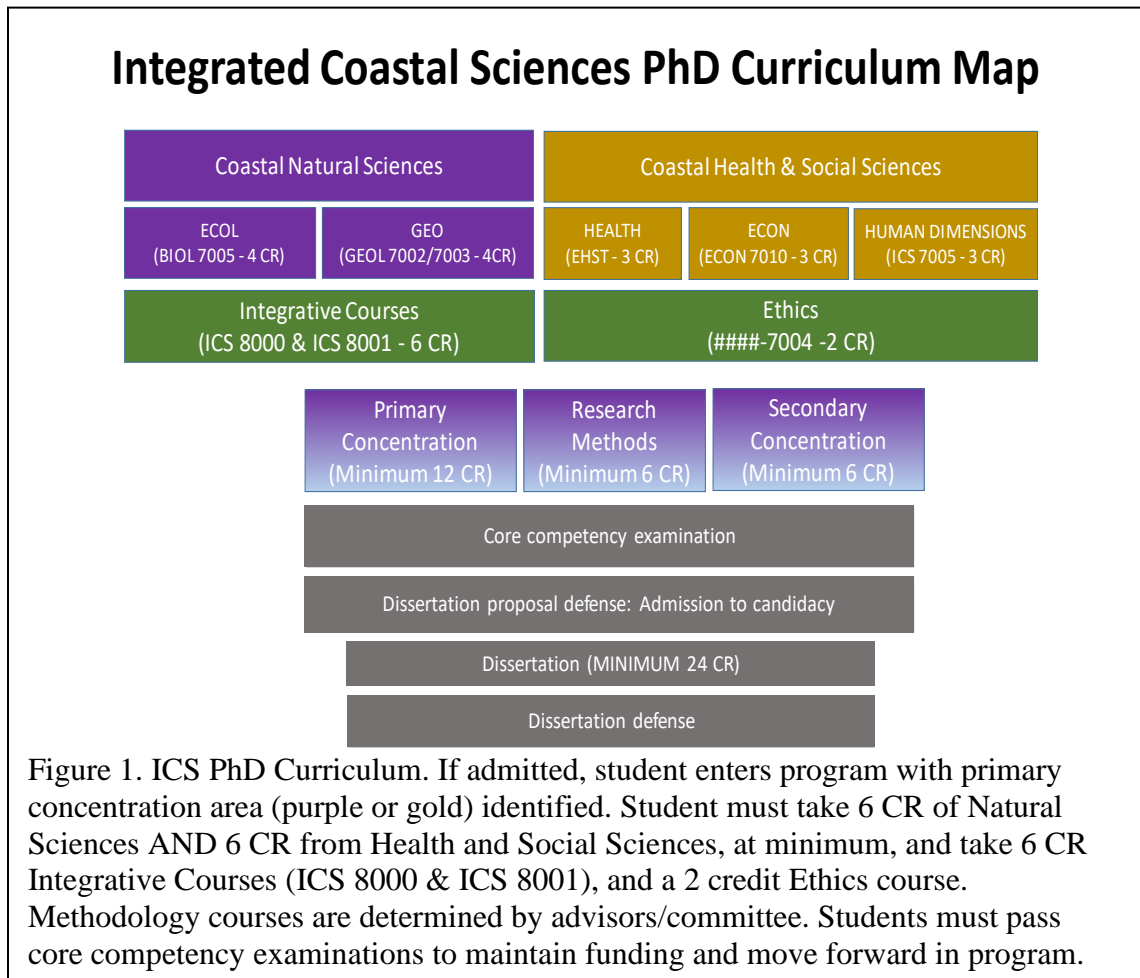
In accordance with ECU Graduate School Policy, all doctoral programs are required to annually evaluate each student's progress toward their degree. Each student (full time or part time), their major advisor(s), and the program director shall meet at least once a year in person, or virtually, to review the student's progress towards completion of milestones.



## V. Graduate Program Requirements and Provisions

### *Curriculum and Coursework*

The doctoral program requires a minimum of 68 credits (CR) of course work beyond a relevant baccalaureate degree, 44 CR of which are general requirements taken by all students (Figs 1,2).



Fundamentals courses are designed to provide background essential to all concentration areas of the ICS program and develop interdisciplinary problem-solving skills. These courses are BIOL 7005 (Coastal Ecological Processes), ICS 7005 (Human Dimensions of Coastal Management), ICS 8000 (Integrative Problem Solving in Coastal Sciences I), ICS 8001 (Integrative Problem Solving in Coastal Sciences II), GEOL 7002/7003 (Coastal Geosciences and lab), GRAD 7004 (Ethics); ECON 7010 (Coastal and Marine Economics and Policy), EHST 6010 (Fundamentals of Environmental Health), and a minimum of 24 CR of dissertation ICS 9000. Collectively, these should amount to 44 CR. In addition to the 44 CR of general requirements, students select 12 CR within their primary area of concentration and 6 CR from a secondary area of concentration, with one of those in the natural sciences (e.g. coastal ecology, coastal geosciences) and the other in the social (e.g.

coastal economics, coastal human dimensions) or coastal health sciences. An additional 6 CR of methodology courses should be taken after consultation with the major professor. As noted earlier, any coursework to be applied to the PhD degree should be at the “6000” level equivalent or greater.

<b>Student:</b>				
<b>Year Entered:</b>				
<b>Banner ID:</b>				
<b>Primary Conc. Area:</b>				
<b>Secondary Conc. Area:</b>				
<b>1) CORE</b>		<b>Date Completed</b>	<b>Needed</b>	<b>Credits Taken</b>
Geoscience	GEOL 7002 (F)		3	
Geoscience Lab	GEOL 7003 (F)		1	
Ecology	BIOL 7005 (F)		4	
Human Dimensions	ICS 7005 (F)		3	
Coastal Economics and Policy	ECON 7010 (S)		3	
Fundamentals of Environmental Health	EHST 6010 (F,S)		3	
Ethics	GRAD/NURS/HUMS 7004 (F,S)		2	
<b>Total</b>			<b>16</b>	<b>0</b>
<b>2) PRIMARY: Students meet with the Dissertation Committee to determine appropriate coursework for the primary concentration. After gaining the approval of the program coordinator, the primary concentration coursework is submitted to Degree Works by way of a petition.</b>				
			3	
			3	
			3	
			3	
			<b>12</b>	<b>0</b>
<b>3) SECONDARY: Select the concentration not chosen as the primary concentration</b>				
			3	
			3	
			<b>6</b>	<b>0</b>
<b>4) RESEARCH METHODS</b>				
			3	
			3	
			<b>6</b>	<b>0</b>
<b>5) INTEGRATIVE COURSEWORK</b>				
	ICS 8000		3	
	ICS 8001		3	
<b>6) DISSERTATION<sup>1,2</sup> (22 CR minimum)</b>				
	ICS 9000		6	0
			<b>22</b>	<b>0</b>
			<b>68</b>	
<sup>1</sup> a maximum of 24 CR of ICS 9000 may be applied to the PhD degree				
<sup>2</sup> Should only be taken after achieving candidacy or after beginning dissertation research				

Figure 2. Curriculum Spreadsheet Template

Additional work and dissertation credits will be determined in consultation with the student's advisor and members of his or her dissertation committee. No more than 15 CR of classes may be taken in one semester. A student is considered enrolled full-time when registered for a minimum of 9 CR during fall and spring semesters. Maintaining an ECU student health insurance plan requires that a student take a minimum of 6 CR per semester.

A list of courses in the Natural, Social, and Health Sciences is provided in the Appendix at the end of this document. Please keep in mind that many of these courses may be appropriate for the Primary, Secondary, or Methodological Concentration areas but may not be regularly offered. There are also other courses periodically offered in other departments that may fulfill ICS curricular requirements. Please consult with the graduate course offerings in the appropriate department as needed.

## **VI. Comprehensive Exams**

### *Comprehensive Examinations (Part 1) - Core Competency Examination*

The Core Competency Examination takes place early in the summer immediately after the first year, when all core courses have been completed. The exam's purpose is to determine the student's grasp of a common, thematic knowledge of the fundamentals of coastal science as well as their ability to integrate across natural and social sciences.

The members of the Core Competency Examination Committee consist of the core course instructors. This committee will develop an exam pertinent to the fundamental core course subject areas listed above.

The exam will consist of two parts, with the first part testing thematic knowledge of subject matter in the core courses and the other testing the integration of that subject matter. The thematic part of the exam will consist of one section for each of the core courses noted above and will be closed book. The part of the exam focusing on the integration question shall assess the student's ability to integrate knowledge and modes of thinking across thematic subject areas to address the problem posed and solve it in a way that would have been unlikely through single disciplinary means. The purpose of the question(s) is thus not based on specific content, but rather to assess the student's ability to demonstrate integrative thinking and is "open book".

Each part of the exam (i.e. thematic and integrative) should take approximately one day (~6-8 hours) to complete. Students are bound by the Honor Code to complete each part according to the guidelines provided. Although the exam may allow use of a computer for typing the exam, consultation of external sources (e.g. internet, textbooks) is not allowed for the thematic portion(s). Students may use internet resources, textbooks, and papers but may not confer with any other individuals during the integrative portion of the exam. Total exam length for both parts will typically be restricted to 2 days. The exam must be taken in its entirety within a single 5 day work-week. Students requiring accommodations based on a disability should go to ECU's Department of Disability Support Services located in Slay Hall 138 (252-737-1016) to request special accommodations.

The examination committee members will grade the exam questions for each of their sections. Based on the expected answer as outlined in writing by the committee member prior to reading the students answers, each committee member will provide a grade of Pass/Fail for their section. An 80% is considered a passing grade. If a student does not pass two thematic subjects, or if the student is unable to demonstrate proper integration across the sections, as assessed by the examiners, then the student will be required to have a follow up oral re-examination. Any student required to have a follow up oral re-examination should meet with the appropriate examiner before the re-examination. In general, the re-examination should occur before the beginning of the fall semester immediately following the summer in which the exam was initially taken. The re-examination will last approximately two hours. Each oral re-examination will cover primarily the sections failed in the original exam.

The ICS program director and the student's advisor may also be in attendance in the reexamination. However, the re-examination is to be conducted by the examination committee. The program director shall serve as an independent observer, and as a mediator if the need arises. The advisor may be involved in the re-examination process in a passive manner and should not interject themselves during the exam itself. If the advisor interjects or interferes with the exam, they will be removed from the exam and the student's re-examination postponed to a later date.

At the end of the oral re-examination, the examination committee will make one of three recommendations:

1. PASS - no further action required related to core courses.
2. ADDITIONAL REMEDIATION - this recommendation can include additional course work at a future date and may delay the student's advancement to candidacy. This option is tantamount to a probation and may also result in suspension of institutional funding.
3. FAIL - recommend that student's program of study be terminated.

The student is only allowed one exam retake and must take remediation action as soon as possible after the re-examination.

### *Comprehensive Examination (Part 2) – Dissertation Proposal Defense*

Prior to beginning their dissertation, students are required to prepare and defend before their doctoral advisory committee a proposal that provides a literature review of the topic proposed for study; a statement of the objectives and hypotheses or research questions guiding the study; a description of the proposed methodology; and a statement about the contribution the proposed project will make to the broad area of coastal science. The dissertation proposal must be written in consultation with the dissertation committee and be no more than 20 double-spaced pages in length plus references. The dissertation proposal must be approved by the student's doctoral advisory committee prior to preparation of the doctoral dissertation itself. The proposal defense presentation is open to the university community at large. Essentially, the proposal defense is the opportunity for

the student to demonstrate that they are knowledgeable about coastal matters in general and more specifically, adequately prepared to undertake their proposed research.

The format of the oral proposal defense is up to the advisor(s) and dissertation committee. In general, students should aim for a 20-30 minute presentation followed by oral questioning, first by the audience and then by the committee members. Although this questioning is designed to specifically address the student's ability to successfully execute their dissertation research, fundamental questions from the core courses, if applicable to the dissertation research, may be asked.

Students who have completed all required coursework, passed the Core Competency Exam, and the Proposal Defense, should complete the "Admission to Candidacy" form and obtain the required signatures for that form. The Admission to Candidacy form should be submitted to the ICS PhD program director for signature and subsequent submission to the Graduate School. The Admission to Candidacy form may be found here - [https://gradschool.ecu.edu/wp-content/uploads/sites/118/2020/04/Advancement to Doctoral Candidacy M3015-1-2019.pdf](https://gradschool.ecu.edu/wp-content/uploads/sites/118/2020/04/Advancement_to_Doctoral_Candidacy_M3015-1-2019.pdf)

## **VII. Dissertation**

Each ICS student is to write and orally defend a dissertation of high quality, representing original and meaningful interdisciplinary research that contributes to the literature in the field of coastal science. The content of the dissertation is the responsibility of the student. It is essential that the dissertation be written so that it addresses both the natural and social science aspects of the dissertation topic. In other words, the student's dissertation must represent study in the student's declared primary and a secondary concentration area(s).

The student shall submit preliminary drafts of the dissertation to the members of the doctoral advisory committee. The committee members, either separately or jointly, should advise the student as to how the dissertation might be improved. The committee should keep in mind that the student may receive conflicting advice and should allow maximum freedom for the student's judgment to operate.

When, in the judgment of the advisory committee, the dissertation is essentially complete, the student, in consultation with the committee chair and members, shall schedule a formal presentation of the research open to the public. Upon completion of the public presentation, the student will provide defense of the thesis before the committee. Upon satisfactory completion of this oral defense and appropriate modifications of the thesis manuscript, the committee and program director will sign and submit the cover page to the Graduate School acknowledging that the student has completed the requirements to receive the doctoral degree.

There is no set format for an ICS PhD Dissertation. Ideally, students should ask an overarching question, design an experiment with objectives or testable hypotheses, for which the answer involves gathering and integrating data from natural and social science disciplines. Those data may be parsed out into several chapters, each of which may be a

stand-alone publication. Alternatively, students may choose to draft their dissertation as one large book-like document. In either case, students and their advisors should attempt to publish their research as peer-reviewed publication(s).

### *Compliance*

Federal and state governments have several health and safety, legal, and administrative laws and regulations that directly affect students and faculty conducting research, particularly those projects funded by external sponsors. The University is charged with the responsibility of ensuring that all students and faculty comply with these rules. Below is a listing of major compliance areas (Table 1).

<b>Table 1. Dissertation Research Conduct and Compliance Websites</b>	
Research Area	URL
Animal Welfare	<a href="https://www.ecu.edu/cs-dhs/iacuc/">https://www.ecu.edu/cs-dhs/iacuc/</a>
Innovations and New Ventures	<a href="https://rede.ecu.edu/innovation/">https://rede.ecu.edu/innovation/</a>
Research Administration (proposals, grants and contracts)	<a href="https://rede.ecu.edu/ora/">https://rede.ecu.edu/ora/</a>
Responsible Conduct	<a href="https://rede.ecu.edu/oric/responsible-conduct-of-research-policies-and-sops/">https://rede.ecu.edu/oric/responsible-conduct-of-research-policies-and-sops/</a>
Protection of Human Participants	<a href="https://rede.ecu.edu/umcibr/human-research-participants/">https://rede.ecu.edu/umcibr/human-research-participants/</a>

## **VIII. Residency Requirements**

Domestic students must make every attempt to immediately declare themselves North Carolina (NC) state residents and minimize their tuition charges. Out-of-state tuition waivers are not guaranteed. Students should consult the following websites to determine their eligibility for in state tuition, <https://www.unca.edu/mya/current-students/academics/office-of-registrar/residence-status.aspx> and <https://ncresidency.cfnc.org/residencyInfo/home>. Here are some actions students should take upon arrival to NC in order to help make their case for NC residency: change their driver's license to one issued from the state of NC, register their vehicle in NC, maintain an NC address as a place of residence. Students should establish financial independence from their families if they are residents of another state, for purposes of filing NC state income taxes. Students may apply for NC residency one year after their arrival in the state. Additional information may be found at the hyperlinks noted above.

## **IX. Withdrawal from the Program**

Students desiring to withdraw officially from the university should apply for withdrawal through the Office of the Registrar. Students will need to complete the Application for Semester/Session Withdrawal form by obtaining the signatures of the designated officials and submitting the form to the Office of the Registrar for final approval. The contact person

for official withdrawals is the Assistant Registrar (328-6524). Students withdrawing for medical/counseling reasons should complete the procedure within 30 days after the last class attendance. All other students withdrawing should complete this procedure immediately after the last class attendance. After classes have ended, no withdrawal, except in the case of severe medical emergency can be filed. During the first thirty class days of a semester, a student may withdraw from school without receiving grades for courses in which he or she enrolled. After the first thirty class days, a student withdrawing from school shall receive a grade of F for all classes that he or she is failing. If you have any questions, please contact the Assistant Registrar at 328-6524.

## **X. Time Limits for Degree Program**

Students enrolled in the ICS program must complete all degree requirements within six years of their entry into the program. Exceptions may be made for illness or Leave of Absence, but must be accompanied by appropriate documentation.

Graduate students who have previously registered for all credits in a graduate degree program but who have not completed all requirements (e.g., dissertation) must continue to register each semester (except summer terms) until all degree requirements are completed and filed with the registrar. Under special circumstances, exception to continuous registration may be approved by the dean of the Graduate School. Students must be registered for the semester of graduation (except summer, if registered for the prior spring semester). ICS students should not register for dissertation research hours (ICS 9000) until all fundamental course requirements have been completed and the student has passed their Core Competency Exam.

Non-resident students must register for a minimum of 1 CR in the final term of their study.

## **XI. Leave of Absence**

A student may take a leave of absence from the program after consulting with the ICS Director. The ICS Director must inform the Dean of the Graduate School of the planned leave and obtain permission prior to authorizing it.

## **XII. Readmission**

Any student who interrupts his or her graduate program by not registering for courses on or off campus during any one semester of the regular academic year must apply for readmission before being allowed to resume graduate work. Applications for readmission are to be made using forms furnished by the Graduate School. Payment for processing fees vary annually but must be made prior to an application being considered for readmission. This readmission fee may be waived only under extenuating circumstances after consultation with the program director. These applications should be presented to the Graduate School at least one week prior to the opening of registration for the semester or summer term in which the student wishes to resume graduate work.

When a graduate program is interrupted for one calendar year, the student will not be readmitted unless he or she meets admission requirements current at the time of the request for readmission. The Graduate School Administrative Board will consider requests to waive this rule in specific cases when a student's major school or department recommends waiver.

### **XIII. Financial Information and Program Milestone Timeline**

#### *Stipends, Tuition, and Health Insurance*

Graduate assistantships, health insurance and tuition remissions are available to highly qualified applicants during their first year and beyond. Students may also receive support as research assistants from faculty supported by grants and contracts, or by seeking competitive fellowship support from agencies such as the National Science Foundation, the Environmental Protection Agency, and the National Oceanic and Atmospheric Administration. Contracts should be signed by the student as soon as they begin full time study but no later than Census Day for the semester.

Limited funds are available to support professional development opportunities for students, including workshop participation and travel to professional conferences.

#### *Sources of Graduate Student Funding*

Graduate students may be funded directly by institutional stipends, departmental teaching assistantships, faculty research assistantships, or fellowships from external funding agencies.

#### *Prioritization for Institutional Funding*

Institutional funding is limited, and the bulk of institutional support goes to funding stipends. Qualified new students are highest on the priority list to receive institutional funding. In general, most highly qualified students who are accepted by the Admissions Committee are made an offer of funding which includes an academic year stipend beginning in Aug of the 1<sup>st</sup> fall semester, health insurance, and in-state tuition remission and a full calendar year stipend, health insurance, and in-state tuition remission for the 2<sup>nd</sup> year. However, there are no guarantees of funding beyond the 2<sup>nd</sup> year of enrollment. Therefore, faculty mentors as well as students are expected to aggressively seek funding to offset the costs of stipends, insurance and tuition remission, and student research expenses.

Prioritization for institutional funding will be based on availability of funds, successful and timely completion of milestones by the student (see Table 2), as well as the advisor's history and attempts at funding their ICS student stipends and research. Additionally, ICS students who have been accepted into Candidacy for their degree, may be instructor of record for undergraduate or introductory level graduate courses after they have completed 18 graduate level credits in that discipline. In such cases, those instructors may receive institutional funding from the program to compensate their efforts at teaching a course.



Faculty who have not been successful in providing stipend support for their students or already have more than one student funded through institutional assistantships should not attempt to recruit or mentor additional PhD students.

Table 2. Suggested Timeline for Completion of ICS Program Milestones

Milestone	Year 1				Year 2				Year 3				Year 4			
	FALL	SPRING	SS1	SS2	FALL	SPRING	SS1	SS2	FALL	SPRING	SS1	SS2	FALL	SPRING	SS1	SS2
Core Course Completion	X	X			X	X										
Completion of other courses	X	X			X	X			X	X						
Selection of major professor																
Core Competency Exam				X												
Selection of Advisory Committee																
Dissertation Proposal Defense																
Conduct Research																
Dissertation Defense														X		
Submission of Dissertation to Graduate School																

### **XIII. Appendix - Courses Applicable to the ICS PhD Program**

ANTH 6020. Advanced Physical Anthropology Methods and Theory  
ANTH 6050. Advanced Research Methods in Cultural Anthropology  
ANTH 6104. Research Design  
BIOS 7021. Biostatistics for Health Professionals I  
BIOL 6800. Population Ecology  
BIOL 6820. Systems Ecology  
BIOL 6850. Advances in Ecology, I  
BIOL 6860. Advances in Ecology, II  
BIOL 7010. Estuarine Ecology  
BIOL 7020. Marine Biology  
BIOL 7200. Invertebrate Biology  
BIOL 7300. Landscape Ecology  
BIOL 7310. Ecological Modeling and Simulation  
BIOL 7320. Ecological Dimensions of Coastal Management  
BIOL 7330. Ecosystems of Coastal Cities  
BIOL 7360. Fisheries Management  
BIOL 7400. Wetland Ecology and Management  
BIOL 7630. Fish Physiology  
BIOL 7900. Ecological Statistics  
BIOL 7920. Conservation Biology  
ECON 8540. Environmental and Resource Economics  
ECON 8350. Applied Research Methods  
ECON 6300. Coastal Populations  
ECON 6301. Econometrics I  
ECON 6302. Econometrics II  
ECON 6401. Microeconomic Theory I  
ECON 6402. Microeconomic Theory II  
ECON 8111. Microeconomic Theory I  
ECON 8310. Econometrics  
ECON 8350. Applied Research Methods  
ECON 8411. Risk Analysis I  
ECON 8510. Applied Welfare Analysis  
ECON 8540. Environmental & Resource Economics  
EHST 5010/5011. Principles of Toxicology/Laboratory  
EHST/MPH 6010. Fundamentals of Environmental Health  
GEOG 6250. Advanced Environmental Impact Analysis  
GEOG 6270. Advanced Water Resources Management and Planning  
GEOG 6150. Quantitative Methods in Geography  
GEOG 6220. Advanced Coastal Geomorphology  
GEOG 6410. Advanced Cartography  
GEOG 6420. Advanced Remote Sensing  
GEOG 6430. Advanced Geographic Information Systems  
GEOG 6440. Spatial Analysis of Coastal Environments  
GEOG 6460. Advanced Digital Terrain Analysis

GEOG 6510. Meteorological Measurement Systems  
GEOG 6540. Advanced Coastal Storms  
GEOG 6590. Advanced Tropical Meteorology  
GEOL 6250. Stratigraphic Analysis  
GEOL 6300. Sedimentary Environments  
GEOL 6301. Sedimentary Environments Lab  
GEOL 6310. Principles of Paleoecology  
GEOL 6311. Principles of Paleoecology Lab  
GEOL 6340. Micropaleontology  
GEOL 6342. Micropaleontology Lab  
GEOL 6350. Environmental and Global Change  
GEOL 6400. Geochemistry  
GEOL 6950. Geological Data Analysis  
GEOL 7002. Coastal and Marine Geology  
GEOL 7003. Coastal and Marine Geology lab  
GEOL 7500. Marine Isotope Geochemistry  
GEOL 7600. Remote Sensing of Coastal Environments  
GEOL 7710. Groundwater Modeling  
GEOL 7930. Principles of Biogeochemical Interactions  
GEOL 7910. Sediment Transport and Depositional Processes  
GEOL 7920. Advanced Surface Water/Groundwater Hydrology  
HLTH/MPH 6011. Introduction to Epidemiology  
HIST 6010. Maritime History of the Atlantic World, 1415-1815  
HIST 6525. Sea Power, 480 BC to the Present  
HIST 6805. History and Theory of Nautical Archaeology  
PHAR 7680. General Toxicology  
PHAR 7682. Advanced Toxicology  
PHAR 7777. Practical Problems in Biometry  
PLAN 6015. Hazards and Emergency/Disaster Planning  
PLAN 6055. Coastal Planning and Policy  
RCLS 6100. Risk Management and Legal Liability in Recreation, Leisure, and  
Recreational Sport  
RCLS 6080. Recreation Facilities Management  
RCLS 6110. Research Methods in Recreation Services and Interventions  
SOCIO 6212. Social Statistics  
SOCIO 6312. Multivariate Techniques and Analysis  
SOCIO 6400. Social Issues in Regional Development  
SOCIO 6600. Society and Coastal Policy