



This handbook was designed to help guide you in your role as a member of the Graduate Faculty in the M.S. Environmental Science Program at Florida Gulf Coast University. The Handbook questions that will likely arise as you mentor and advise our graduate students and provides the requisite forms for helping you to keep your graduate students on track for a successful and timely graduation.

Environmental Science M.S.

Graduate Faculty Handbook

2017-2018

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Welcome

Thank you for your willingness to serve as a Graduate Advisor or Thesis Committee member in the Master of Science in Environmental Science degree program at Florida Gulf Coast University. We hope you will find mentoring our graduate students personally rewarding and a great benefit to your own research and scholarship. This handbook was designed to give you an idea of what to expect when mentoring our students as well as the Program's expectations of your responsibilities as a graduate advisor. This Handbook also familiarizes you with relevant policies and procedures related to the Program as well as relevant guidelines, timelines, and forms that you will need to review and use to be successful in your role.

The role of a graduate advisor is an important one and takes many forms. You will be advising students regarding which courses to select in support of their thesis work; you will be supervising their thesis research and ensuring that the various milestones along the way are completed satisfactorily; you will be ensuring that our students have the resources necessary to conduct their research and analyze and interpret the results. You are also the individual most responsible for assuring quality control of the thesis itself. You can also expect to be a shoulder to cry on as your students experience many challenges in life, whether related to their academic experience or not.

Serving as a member of the Graduate Faculty for the M.S. Environmental Science Program is an important responsibility you have elected to undertake. The Program strives to provide its students with high quality education and training, to make sure students have the resources needed to accomplish their thesis research, to encourage them and supervise them to complete their degrees in a timely fashion, and to provide opportunities and advice to ensure they are successful in the next stage of their careers, whether applying their skills and knowledge in the field of environmental science or furthering their graduate studies.

The Program

The Master of Science in Environmental Science Program prepares students to enter or advance in a career as an environmental professional or to continue their graduate studies by entering a Ph.D. program. The Program is designed to meet the needs of students currently employed in the field, those recently completing an undergraduate degree, or anyone interested in a career change.

Florida Gulf Coast University upholds a strong commitment to the environment and emphasizes environmental sustainability. Our Master's Program offers an integrated study of ecosystems (uplands, wetlands, estuaries and coastal systems), environmental science, and ecosystem restoration. We offer small class size and opportunities for research and professional development. We also encourage you to share your research with other professionals in the field by participating in regional and national conferences.

The core of the program focuses on:

- Understanding the science of ecology
- Use of scientific methods
- Application of the concept of sustainability.

Students demonstrate their acquisition of this knowledge and these skills through the completion of a thesis project.

Although there are no concentrations, students are expected to pursue interests in one of the following areas:

- Environmental science
- Organismal ecology
- Ecosystem ecology
- Marine science

2017-2018 Catalog Year

Program Progression and Additional Graduation Requirements

- A minimum of 36 credit hours.
- A minimum cumulative GPA of 3.0 for all coursework in program.
- Provide one signed, bound copy of the student's thesis to the Department of Marine and Ecological Sciences.
- Each student must have a Graduate Committee composed of a minimum of three individuals, two of whom must be part of the graduate faculty in Environmental Science.
- Submit an application to graduate to CAS Advising by the deadline listed in the FGCU Academic Calendar.
- A maximum of 9 credits of course work may be transferred from other institutions or from pre-degree enrollment at FGCU, if those courses are appropriate to the program of study. These are subject to approval of the Graduate Studies Coordinator.

Program Requirements**1. Core Courses (16-18 credits)**

Successful completion of each core course requires a grade of B or better.

Complete the following:

EVR 6022 Environmental Research Methodology (3)

EVS 6920 Graduate Seminar in Current Topics (1)

EVS 6970 Master's Thesis (total of 6-8 credits)

Select one of the following:

EVR 6322 Concepts and Applications of Sustainability (3)

EVS 6937 Environmental Policy (3)

PAD 5620 Environmental Law (3)

Select one of the following:

OCB 6635 Estuarine Ecology (3)

PCB 6064C Advanced Ecology (3)

2. Electives in the Major (18-20 credits)

Select a minimum of 18 hours from the following. Successful completion of each elective requires a grade of C or better. No more than 6 hours may be selected from EVR 5925, EVR 6322, EVS 6937, or PAD 5620. Alternate electives must be approved by the student's Graduate Committee.

EVR 5068C Microbial Ecology (3)

EVR 5145 Ecotoxicology (3)

EVR 5414 Interpreting the Environment (3)

EVR 5925 Environmental Education (3)

EVR 6045C Data Analysis for Environmental Science (3)

EVR 6322 Concepts and Applications of Sustainability (3)

EVR 6907 Independent Study Environmental Science (may be taken more than once) (1-3)

EVR 6936 Special Topics Environmental Science (may be taken more than once) (3)

EVS 5818 Ecological Risk Assessment (3)

EVS 6937 Environmental Policy (3)

EVS 6941 Environmental Practicum I (3-6)

GIS 6308C Advanced GIS: Research Project (3)

GLY 5266C Advanced Biogeochemistry (3)

GLY 5575C Sediment Dynamics (3)

GLY 5661C Conservation Paleobiology (3)

GLY 6566 Carbonate Sedimentology, Petrology and Stratigraphy (3)

OCB 6050 Biological Oceanography (3)

OCC 5115C Advanced Marine Chemistry (3)

OCG 6053 Coastal and Watershed Geology (3)

PAD 5620 Environmental Law (3)

PCB 5307C Limnology (3)

TOTAL CREDITS REQUIRED: 36

Graduate Faculty Credentialing

Graduate Faculty in the College of Arts and Sciences teach graduate courses and serve on Graduate Committees as defined by the University's *Graduate Faculty Appointment and Review Policy* (<https://www2.fgcu.edu/FacultySenate/resources.asp>) approved by the Faculty Senate. Graduate Faculty qualifications are defined for each Graduate Faculty category (Member, Associate Member, Adjunct Member, and Special Associate Member) in the *Graduate Faculty Appointment and Review Policy*. College Graduate Faculty must meet these minimum qualifications (see below for overview). In addition to these minimum qualifications, individuals applying for Graduate Faculty membership in the College as Members or Associate Members must show evidence of widely disseminated, peer-reviewed scholarship within the last three years, and those applying for membership as Adjunct Members must demonstrate a history of productive scholarship or special expertise or experience.

Any College Graduate Faculty member may serve on a Graduate Committee, which must be composed of at least two Graduate Faculty from the Department of Marine and Ecological Sciences. Only Members or Associate Members may chair Graduate Committees. Adjunct members may co-chair graduate thesis committees under special circumstances as approved by the department chair and/or academic dean. All thesis committees must include at least two committee representatives with Member or Associate Member Graduate Faculty status.

The four categories of graduate faculty membership are detailed below (see *Graduate Faculty Appointment and Review Policy* for details (<https://www2.fgcu.edu/FacultySenate/resources.asp>)).

Categories, Functions, and Qualifications of Membership

Member

Functions

- Teach graduate courses in the M.S. Environmental Science Program
- Serve as committee member for Master's theses
- Serve as (Co-) Major Professor of Master's theses

Qualifications

- Faculty appointment/rank: Full-time permanent appointment as Associate or Full Professor or as Assistant Professor for faculty members approved according to procedures in Section III-C below.
- Education: Terminal degree in program's discipline or closely-related discipline; terminal degree in unrelated discipline acceptable in exceptional cases if faculty member provides evidence of significant and ongoing research in program's discipline.
- Scholarly productivity: Evidence of mature, independent research continuing to present.
- Teaching: Evidence of graduate teaching effectiveness should include student evaluations and evaluation by faculty member's supervisor.

Professional Service

- Record of participation in one or more professional organizations related to academic field of specialization.

Associate Member

Functions

- Teach graduate courses in the M.S. Environmental Science Program
- Serve as committee member for Master's theses
- Serve as (Co-) Major Professor of Master's theses
- In exceptional cases and if recommended by academic dean, university may authorize additional functions for *Associate Member*.

Qualifications

- Faculty appointment/rank: Full-time permanent appointment as Assistant Professor or higher.
- Education: Terminal degree in program's discipline or closely-related discipline; terminal degree in unrelated discipline acceptable in exceptional cases if faculty member provides evidence of significant and ongoing research in program's discipline; non-terminal Masters-level degree in program's discipline or in closely-related discipline acceptable in exceptional cases if faculty member provides evidence of significant and sustained professional/scholarly achievements in program's discipline.
- Scholarly productivity: Evidence of significant progress toward development of mature, independent research.
- Teaching: Evidence of effectiveness in college-level teaching. Evidence of teaching effectiveness should include student evaluations and evaluation by faculty member's supervisor.

Adjunct Member

Function

- Teach graduate courses in the M.S. Environmental Science Program
- Serve as committee member for Master's theses
- In exceptional cases and if recommended by academic dean, university may authorize additional functions for *Adjunct Member*.

Qualifications

- Appointment in one of the following categories: visiting faculty employed full-time; faculty employed part-time; lecturers and instructors; non-teaching staff; other qualified professionals with expertise in scholarly discipline/professional field.
- b. Education: Terminal degree or strong and sustained professional experience in appropriate field.
- Teaching: College-level teaching experience and/or strong and sustained professional experience in appropriate field.

Special Associate Member

Functions

- Teach graduate courses in the M.S. Environmental Science Program
- Serve as committee member for Master's theses
- In exceptional cases and if recommended by academic dean, university may authorize additional functions for *Special Associate Member*.

Qualifications

- *Member or Associate Member* who resigns or retires from university is automatically terminated from membership in Graduate Faculty unless faculty member's academic dean recommends the faculty member retain membership as *Special Associate Member*.

Appointment to the Graduate Faculty

Application for membership or reappointment

Faculty in the College of Arts and Sciences may apply for credentialing as a member of the Graduate Faculty according to the *Graduate Faculty Appointment and Review Policy* approved by the Faculty Senate. Additional criteria and standards specific to Graduate Faculty membership within the College of Arts and Sciences are outlined in the College of Arts and Sciences Bylaws. It is the responsibility of the Graduate Affairs Committee to manage the credentialing process in the College.

Special Circumstances

Under special circumstances, the Department Chair may petition the Dean for an expedited credentialing of a faculty member. If the Dean determines that special circumstances exist—defined as those requiring the credentialing of a faculty member outside the normal timeline—the Graduate Affairs Committee or representative (i.e., the Committee Chair or designee), if the request is made during the summer, has the authority to recommend a one-year appointment at the level of Adjunct Member. This limited appointment credentials the faculty member in question, granting her or him sufficient time to make a more formal application for credentialing at the appropriate level in accordance with the normal credentialing timeline.

Application Materials

Each faculty member applying for credentialing as a member of the Graduate Faculty or for reappointment as a member of the Graduate Faculty shall submit the following materials to the College Graduate Affairs Committee:

1. Cover letter requesting credentialing or reappointment as graduate faculty
2. Updated curriculum vitae
3. Evidence of widely disseminated, peer-reviewed scholarship within the last three years (Member and Associate Member) or demonstrated history of productive scholarship or special expertise or experience (Adjunct Member). This evidence may be included in the cover letter or CV so long as it is clearly identifiable.

Application Review and Approval

Applications shall be submitted to the Chair of the College of Arts and Sciences Graduate Affairs Committee. After the application deadline, the Chair will disseminate all applications to members of the Committee and will assign each application to a primary reviewer responsible for presenting the application to the Committee. The Committee Chair will then place the review of applications on the Committee's agenda.

At the next practical Committee meeting, the primary reviewer provides a brief synopsis of the application for discussion. After careful review and discussion of the application, the Committee decides what action is to be taken, including what level of credentialing is to be recommended.

The Committee then notifies the Dean of the College of its decision to approve, defer, or disapprove the application. If the application is approved or deferred pending clarifications and/or modification, the applicant will be notified of those clarifications and/or modifications necessary for further consideration.

Timeline

Credentialing of Graduate Faculty will be conducted each spring, beginning with a call for applications for membership and reappointment no later than January 31st of each year. The subsequent deadline for applications shall occur no later than February 15th. The Graduate Affairs Committee will review the applications and make its recommendations to the Dean of the College of Arts and Sciences no later than March 31st of each year. The Dean of the College will subsequently submit, in writing, her/his recommendation to the Dean of Graduate Studies for final approval.

Reappointment

Graduate Faculty credentialed as Member or Associate Member, holding either a continuing multiyear appointment or tenured position, must apply for reappointment every seven years. Faculty credentialed as Member or Associate Member with a fixed-term contract must apply for reappointment during the same calendar year as the successive appointment review. Faculty credentialed as a Special Associate Member must reapply for reappointment during the final year of their current membership, as originally specified by the College Dean (this membership period is not to exceed seven years). All Faculty credentialed as Adjunct Member must reapply every five years.

Non-reappointment

When a member of the Graduate Faculty is not recommended for reappointment by the Graduate Affairs Committee or the Dean of the College, that faculty member may apply for Adjunct Membership under the Special Circumstances section outlined above. If the faculty member in question does not choose to apply for Adjunct Membership or is not recommended for appointment as an Adjunct Member, then the faculty member will have his or her graduate credentials terminated at the end of the following Summer Session B.

Admissions Process

Definitions

Provisional admission – Admission to the Program in the absence of either official transcripts or an official copy of GRE test scores.

Conditional admission – Admission to the Program in the absence of such supporting documents as letters of recommendation or subject to the achievement of certain conditions as detailed in Section II B below.

10% rule – Students not meeting either the University or Program requirements may be admitted to the Program, but this number may not exceed 10% of the total number of students admitted to the University who do meet University requirements. To ensure compliance, the number of students admitted to the Program using the 10% rule may not exceed 10% of the total number of applicants admitted to the Program who have satisfied either the minimum University requirements, the minimum Program requirements, or both.

In addition to the specific Program policies and procedures detailed below, the University *General Graduate Academic Policies* are posted online (<https://www2.fgcu.edu/FacultySenate/resources.asp>).

Admission Policy

Applicants who have submitted a complete graduate application and who meet both the minimum University and minimum Program requirements may be admitted to the Program, providing that a member of the graduate faculty in the Program agrees to serve as their Interim Advisor.

Applicants who have submitted a complete graduate application and who meet the minimum University requirements for admission but do not meet the minimum Program requirements may be admitted conditionally to the Program, providing that a member of the graduate faculty in the Program agrees to serve as their Interim Advisor. However, applicants whose upper-division undergraduate performance fall below the minimum cumulative 3.0 GPA requirement must earn a grade of B or better in all graduate classes taken during their first 9 credit hours after admission to the program. Failure to satisfy this condition by the end of the semester in which the student completes the first 9 credit hours after admission to the Program will result in the student being dismissed from the Program.

Applicants who have submitted a complete graduate application but who do not meet either the minimum University requirements or the minimum Program requirements generally will not be admitted to the Program. An exception can be made, using the 10% rule in the interests of increasing Program diversity.

Applicants who satisfy the University requirements, Program requirements, or both, and who have a member of the graduate faculty in the Program willing to serve as their Interim Advisor, but who did not submit a completed application, may be considered for provisional or conditional admission to the Program, as defined above.

Initial Screening of Applications

Application materials are scanned into Banner where they are available for viewing and processing by the Program Coordinator. After the application deadline (February 15th), the Program Coordinator begins collating all application materials for review by program faculty. An initial spreadsheet is created that records admission information for each applicant. The Program's Graduate Policy and Admissions Committee then meets with the Program Coordinator to review the applications, ensure that admissions data used to award financial aid are accurate, and identify potential Interim Advisors for those applicants not already identifying a graduate faculty member with whom they wish to work. The Committee also identifies applications that satisfy the minimum program requirements for admission and those that do not. Those that do not satisfy the minimum program requirements may still be considered for provisional or conditional admission but will typically not be eligible for College financial assistance.

Offers of Grant Support by Graduate Faculty

After this initial screening by the Graduate Policy and Admissions Committee is completed, application materials are made available for review by graduate faculty in the Program. Faculty members willing to serve as Interim Advisor/Major Professor and willing to support one or more prospective students should make these offers known to the Program Coordinator no later than March 15th. At this time, faculty members should also confirm with the Program Coordinator the level of grant-funded financial support, if any, they are able to provide in support of the prospective students' graduate education.

Financial Support (Tuition Waivers and Graduate Assistantships)

The Program Coordinator works with prospective students and faculty willing to serve as their Interim Advisors/Major Professors to identify additional financial aid in the form of tuition waivers (in-state) and graduate assistantships. Waivers and graduate assistantships provided by the College are awarded according to the qualifications of the prospective student. Ranking of applicants by qualifications is conducted using the product of the cumulative GPA during the last 60 credits of undergraduate study completed and the average percentiles of the GRE scores (Quantitative and Verbal). Out-of-state tuition waivers and research assistantships provided by external grants shall also be considered in the allocation of College financial support to eligible applicants. Out-of-state tuition waivers are available on a competitive basis from the Office of Research and Graduate studies (<https://www2.fgcu.edu/Graduate/Financing-graduate-studies.html>).

Notification of Funding Decisions

Graduate faculty members shall be notified by the Program Coordinator regarding the availability of financial assistance so that they can finalize their own decisions regarding whether to accept an applicant as a student and serve as the student's Interim Advisor/Major Professor. Faculty willing to serve in this capacity for prospective students should notify the Program Coordinator of their decision no later than April 1st.

Letters of Offer

A letter of offer of admission to the Program along with an offer of financial support (if any) should be sent to the prospective student no later than April 15th. This letter (i.e., email) should also identify the student's Interim Advisor(s). Students admitted without offers of funding may be made financial offers later if funding becomes available, using the same guidelines as above. Students denied admission or whose applications are not completed are also notified via email of the admission decision. The students' Interim Advisors/Major Professors are copied on these correspondences.

Acceptance of Admission Offer

Applicants receiving offers of admission must respond in writing to the Program Coordinator regarding their intention to accept, defer, or turn down the offer of admission no later than May 1st.

Funding for Part-time Students

Generally, only full-time (9 credits per semester) graduate students shall be awarded financial support from the College. Exceptions may be made if, after first offering all available graduate assistantships to full-time students, the teaching needs of the College remain sufficient to fund additional part-time students.

Program Guidelines

Program Focus

The core of the program focuses on understanding the science of ecology, use of the scientific method, interaction between human activities and natural systems, and the history of environmental change. Students demonstrate their acquisition of this knowledge and these skills through completion of a thesis. There are no set concentrations, but students are expected to pursue interests related to the interaction between humans and natural processes in one or more of the following domains: organismal ecology, ecosystem ecology, marine science, and geology as well as the application of science to environmental management and policy decision-making. **A student's thesis topic must be consistent with the Department's curricular and scholarly mission and be compatible with the Program's existing course offerings.**

Interim Advisor

Upon admission to the program, students are assigned one or more Interim Advisor(s) who share similar research interests. If you have agreed to serve as an Interim Advisor, please contact your incoming student(s) as soon as they arrive (preferably before) to help ensure they are registered for appropriate courses. As Interim Advisor for an incoming student, you are indicating your willingness to serve as that student's Major Professor as well. If for some reason you and the student are not able to come to agreement regarding a thesis topic, or if your personalities conflict creating significant challenges, it may be advisable for the student to identify someone else to serve as Major Professor. In some cases, opportunities arise for students that not only allow them to pursue a thesis topic of great interest but also provide financial support. Under these circumstances, students may elect to work with a Major Professor other than their Interim Advisor. If any of these circumstances occur, it is the students' responsibility to find another faculty member willing to supervise their thesis research. It is also up to students to communicate with you as Interim Advisor to confirm that they wish to conduct their thesis under your supervision or that they wish to work with another faculty member. Communication is key here, so if you suspect a student is struggling with an issue such as this, engage that student in a conversation to discuss an appropriate remedy.

Major Professor

Your role as Major Professor should be formalized by the end of the student's first semester. Together, you should plan a program of study that, when completed, will satisfy the degree requirements specified in the University Catalog. Furthermore, you should work with your student to identify a potential thesis topic so she/he can begin working on a Thesis Proposal. As Major Professor, you will be responsible for supervising the student's thesis research, helping the student select appropriate coursework, helping the student identify other members of the Graduate Committee, and advising the student in other matters related to the degree or University policies and procedures. As Major Professor, you also serve as Chair of the student's Graduate Committee.

A Major Professor must meet the following requirements:

1. Hold an appointment as a member of the graduate faculty in the College of Arts and Sciences
2. Hold a terminal degree in the graduate program's discipline or in a closely-related discipline
3. Be a member of the graduate faculty in the Department of Marine and Ecological Studies

Co-Major Professors

In some cases a student may choose to have two professors serve as Major Professor. If the two faculty members agree, they will serve as Co-Major Professors and jointly advise the student and supervise her/his research. Recognizing the scholarly value added by faculty of diverse disciplinary interests as well as the need to maintain scholarly coherence of a graduate program and ensure its proper administration, a faculty member who meets requirements 1 and 2 above but who is not a member of the Department of Marine and Ecological Sciences may serve as Co-Major Professor, provided that the other Co-Major Professor meets all three of the above requirements. Approval of a Co-Major Professor who is not a member of the graduate faculty in the Department shall be granted on a case-by-case basis at the discretion of the graduate faculty in the Department and with the support of the other Co-Major Professor. In exceptional circumstances, a potential Co-Major Professor may be identified who is not employed at Florida Gulf Coast University but who is employed by an outside professional organization or agency. This individual must hold an appointment as a member of the graduate faculty in the College of Arts and Sciences. If you or your student think that having Co-Major Professors is the way to go, all three of you should confer to plan a program of study and to identify a potential thesis topic and complete a draft Thesis Proposal. Both Co-Major Professors must approve all paperwork required for degree completion.

If you should decide to leave the University (e.g., take a position at another university; retire), but are willing to continue to serve, you may continue as a Co-Major Professor if the student selects a second Co-Major Professor who meets all three requirements above.

Graduate Courses

Faculty teaching graduate-level courses co-listed with undergraduate courses are required to schedule a minimum of one additional contact hour per week with the graduate students in the course. Graduate students are also expected to work above and beyond what is required of undergraduate students in these courses.

Recommended Course Sequence

Work with your student to select a program of study that is integrated around a particular research theme and supports the student's thesis research. Electives offered that can be applied toward the degree are described in the University Catalog. The following presents the recommended course sequence based on completing all required courses in 2 years and based on current course rotations.

Recommended Course Sequence

<i>Semester</i>	<i>Course</i>	<i>Credits</i>
Fall Year 1	Estuarine Ecology OCB 6635 OR Advanced Ecology PCB 6064C	3
	Environmental Policy EVS 6937 OR Concepts and Applications of Sustainability EVR 6322	3
	Elective 1	3
Spring Year 1	Environmental Research Methodology EVR 6022	3
	Elective 2	3
	Elective 3	3

Fall Year 2	Master's Thesis EVS 6970	2
	Graduate Seminar Current Topics EVS 6920	1
	Elective 4	3
	Elective 5	3
Spring Year 2	Master's Thesis EVS 6970	6
	Elective 6	3

Continuous Enrollment

Unless granted a leave of absence by the Program, students are required to register for a minimum of one credit each semester (Fall and Spring) and to register for a minimum of one credit during the semester in which students intend to graduate (including Summer). These requirements ensure that students remain active in the Program and that, even if they have already completed their required coursework, they continue to retain their student privileges (e.g., use of the library).

Failure to meet the continuous enrollment requirement will result in a student being dropped from the Program. Any student dropped from the Program for this reason must complete a new graduate application for readmission. If readmitted, the Program can determine which previously earned credits can be applied towards graduation. Failure to register for a minimum of one credit hour during the semester in which the student intends to graduate may result in graduation being postponed until the subsequent semester.

While earning their degree, students must also maintain a minimum cumulative GPA of 3.0 for all graduate work attempted after admission to the Program.

Transfer Credits/Non-Degree Credits

Students may transfer a maximum of nine (9) credit hours from graduate level courses completed at another regionally accredited college or university, or equivalent foreign institution, into the Program. Transfer courses must be applicable toward the M.S. Environmental Science degree, should be current with respect to the specific field of study, and must be approved by the Dean of the College. More than 50% of the credit hours toward the degree must be earned through FGCU. Students may also apply a maximum of nine (9) credit hours completed at FGCU as a non-degree seeking student toward the completion of the degree as approved by the Graduate Committee.

Time Limitations/Extension of Time Limit for Degree

In order to ensure that students working toward their degree maintain currency in their field of study, all credit hours (excluding transfer credits) applied toward the degree must have been earned within the seven (7) academic years prior to graduation. Coursework completed before this time period cannot be applied toward the degree. Any student requiring more time to complete her/his Master's degree may request an extension from the Office of Research and Graduate Studies, provided the student has written approval from her/his Major Professor and Program Coordinator.

Thesis Topic Selection and Thesis Proposal

Work closely with your student early on to identify a topic area for the student's thesis research beginning in the student's first semester. A thesis topic should be selected no later than the end of the second (Spring) semester. This topic should be described in a document that outlines the intended

research topic, summarizes intended research methods, provides a proposed timeline for the research, and includes an initial bibliography of relevant primary literature. This document—the Thesis Proposal—can be used by the student to discuss the intended thesis research with potential Graduate Committee members and should be presented to potential Committee members when inviting them to join the Graduate Committee.

Work closely with your student in the preparation of the student's Thesis Proposal to ensure that it sufficiently outlines the proposed plan of research. The Thesis Proposal should follow the format and style provided in Environmental Research Methodology EVR 6022, the course in which a draft Thesis Proposal is developed. A Thesis Proposal includes a well-developed abstract, a full set of proposed research objectives, a detailed description of proposed research methods, a description of potential results and conclusions, and a reasonably extensive bibliography. The Proposal may go through multiple drafts and can be considered an initial draft of the thesis. All members of the Graduate Committee have the opportunity to provide input toward the final version of the Thesis Proposal, which must be approved by all Committee members before the student begins substantive research toward the thesis. In some cases, the research may require approval by various extramural agencies, research review boards, and intramural panels; in those cases, students must demonstrate they have completed the applications for approval by those entities and that there is a reasonable likelihood of approval being granted before the Graduate Committee approves the Thesis Proposal.

Graduate Committee

Students must have a Graduate Committee composed of three to four (3-4) graduate faculty members, two (2) of whom must be members of the graduate faculty in the Department of Marine and Ecological Sciences. As Major Professor, you serve as Chair of the Graduate Committee. If your student has elected to have Co-Major Professors, both will serve as Co-Chairs of the student's Graduate Committee. In such cases, only one of the Co-Major Professors must be a member of the graduate faculty in the Department of Marine and Ecological Sciences. In addition, the third Committee member (or fourth) may be from any university, FGCU college, or professional organization or agency, but must hold an appointment as a graduate faculty in the College of Arts and Sciences. If only one of you (i.e., Co-Major Professors) is a member of the graduate faculty in the Department of Marine and Ecological Sciences, then the third Committee member must also be a member of the Department. All Graduate Committee members must be appointed as graduate faculty in the College. Once a student's Graduate Committee has been assembled, please complete and have all Committee members sign the Graduate Committee Appointment form (**Appendix B**) and submit to the Program Coordinator.

Thesis Milestones

Milestones are actions and products students should accomplish according to the following schedule if they expect to complete the degree in 2 to 3-years. These milestones are to be considered guidelines rather than firm deadlines. You and your students may elect to complete milestones earlier or later than recommended here. It may also be useful to work with your students to identify additional milestones not included on this list to help them progress through the program. The timing of milestone completion listed below assumes students entered the program in Fall and have been continuously enrolled for 9 credit hours per semester (excluding summer). For students enrolled part-time, milestones should be accomplished after the listed number of completed credit hours in the table below. You are required to maintain and update a Graduate Student Milestones Checklist to be shared with your students (**See Appendix C**).

Milestone	Recommended Completion Date
Appointment of interim mentor	Prior to admission
Selection of Major Professor	During first semester/before 9 credit hours completed
Thesis topic identification/description	Second semester/after 9 credit hours completed
First draft Thesis Proposal	Prior to end of second semester/ 9 – 18 credit hours
Constitution of Thesis Committee	Prior to end of second semester (9 – 18 credit hours)
Application to relevant committees/agencies for permission to conduct research	In tandem with preparation of Thesis Proposal
Approval of Thesis Proposal by Committee	Beginning of third semester/after 18 credit hours
Register for 6-8 thesis credits/ conduct thesis research	Upon approval of Thesis Proposal by Committee
Thesis Defense	End of 2-3 years
Completion and submittal of final thesis	End of 2-3 years

Written Thesis Guidelines

Title Page. — The title page should follow the format shown in **Appendix D** and include the following:

- Author's full legal name
- Full title of the thesis
- Name of the university and administrative unit
- Year in which the thesis was approved

Approval Page. — The Thesis approval page should follow the format shown in **Appendix E** and include the following:

- Name and signature of student.
- Name and signature of each Thesis Committee member.

Page Margins

- Leave 1" margins all around.
- All material included in the submitted thesis (including appendices) must fit within margins.

Text

- Single sided
- Double-spaced in a standard, 12-point font
- Page numbers must appear in upper right, 1" from the top and right edge of page. Page numbers should be same font size as text.

Figures, Tables, Graphics (e.g., maps, photographs, spreadsheets) and over-/under-sized materials

- If such materials are integral to the thesis, they must accompany the submitted thesis.
- Such materials will be submitted in a format that complies with all other thesis submission requirements.
- Photographs and illustrations will be printed directly on the page.
- Necessary allowances for margins (1" margins all around) must be satisfied.

Submission of Electronic Thesis

- Masters Theses are submitted electronically through ProQuest.
- A thesis cannot be submitted electronically unless it has first been approved by the student's Graduate Committee and the final draft of the thesis has been approved by you—the Major Professor.
- Hard- and soft cover (bound) copies of the thesis can be ordered directly through ProQuest.
- The student is responsible for all fees associated with electronic submission including the purchase of bound copies of the thesis.
- Although a signed approval page for the thesis must be submitted to the graduate Program Coordinator, an unsigned copy of the approval page is to be submitted electronically with the thesis through ProQuest.

Bound Copies of the Thesis

- The student is required to order through ProQuest a bound (hardcover) copy of the thesis to be archived in the Department of Marine and Ecological Sciences.
- It is also customary for the student to order a bound (hardcover) copy of the thesis to provide to her/his Major Professor.
- An electronic copy (PDF) of the completed thesis must also be submitted to the Department of Marine and Ecological Sciences (i.e., the Program Coordinator).

Copyright

- Information on copyright registration is available from the U.S. Copyright Office (<http://www.copyright.gov/>).
- The student is responsible for any fees associated with securing a copyright.
- The student is also responsible for inserting the copyright notice on an un-numbered page immediately preceding the title page.

Thesis Defense Guidelines

Be sure your students schedule their Thesis Defense at least one week prior to the last day of classes (Fall, Spring, or Summer Session B) in the semester they intend to graduate and not during a time of semester breaks or holidays. Students should submit a completed draft of the thesis to all Graduate Committee members no later than two weeks prior to the scheduled Defense, and the Committee members will be expected to deliver comments on the draft at the time of the Defense. If students wish written comments prior to the Defense, they should provide the Graduate Committee with a draft thesis no later than four weeks prior to the date of the Defense. The Defense must be announced within the University community using flyers and email broadcasts at least one week (preferably two) prior to the date of the Defense.

During the Thesis Defense, students will first publically present their research to faculty, other students, and guests. Upon completion of the public presentation, attendees will be invited to ask questions. At

the end of the question and answer period, and after the public (non-Committee members) has departed the room, the Graduate Committee will ask additional question regarding the research. As a general rule, the entire process is completed in no more than 2 ½ hours.

Students are expected to defend their thesis to the unanimous satisfaction of the Graduate Committee. Students are also expected to incorporate comments made by Graduate Committee members at the time of the defense into their thesis before the final draft is approved for submittal to the University. Students should therefore anticipate needing additional time to revise their thesis once again before final submission.

Thesis Submission

Once the final draft of the thesis is approved by the Graduate Committee and any last minute changes are approved by the Major Professor, students will upload their thesis electronically through ProQuest. Make sure your students upload the final thesis to ProQuest at least 10 business days before the University Registrar's Certification of Degrees Date for the semester the students intend to graduate (dates available on the ProQuest web page: <https://www2.fgcu.edu/Graduate/proquest.html>). Once the student has uploaded the completed thesis into ProQuest, it is your responsibility to log on to ProQuest, review, and approve the final thesis.

Graduation Checklist/Graduate Certification

Once your students have successfully defended their thesis, Graduate Committee members have all signed the thesis approval page, your students have completed all required revisions and uploaded the final thesis to ProQuest, and you have approved the final uploaded thesis, it is time for you, as Major Professor, to complete a *Graduation Certification Checklist* to ensure your students are allowed to graduate. This checklist verifies that your students have completed 36 credit hours of coursework, including all required courses, and that they have successfully submitted the approved thesis through ProQuest. A sample of the *Graduation Certification Checklist* is provided in **Appendix F**.

Responsibilities/Formal Requirements of the (Co-) Major Professor(s)

(Co-) Major Professor(s) of the Graduate Committee of students in the M.S. Environmental Science degree program are responsible for the following:

Responsibilities

- Working with students to identify a thesis topic.
- Working with students to develop a Thesis Proposal
- Working with students to establish a Graduate Committee.
- Approving and submitting each student's *Graduate Committee Appointment* form to the Program Coordinator.
- Working with students and their Graduate Committee to ensure there is adequate communication between the two. This includes scheduling an initial meeting between students and their Committee members to review the Thesis Proposal and provide feedback.
- Overseeing the completion of the thesis research, including data collection, analysis and interpretation, and visualization/presentation according to disciplinary norms.
- Ensuring students follow the formatting requirements contained under the section Written Thesis Guidelines contained herein. Students should simply be told to follow the format of previous theses.
- Working with students to schedule their Thesis Defense and ensure that the Defense is announced according to Program guidelines.

Formal Requirements.

- Verifying by completing and signing a *Graduate Committee Appointment* form (**Appendix A**) that students have established their Thesis Committee. The completed form should be submitted to the Program Coordinator for archiving.
- Verifying by completing the *Graduate Student Milestones Checklist* (**Appendix B**) that the student is progressing through the Program.
- Verifying by signing the Program *Graduation Certification Checklist* (**Appendix E**) that students have successfully completed all coursework for the degree (i.e., total of 36 credit hours) including all required courses.
- Verifying by signing the Program *Graduation Certification Checklist* (**Appendix E**) that students have successfully defended their thesis.
- Verifying by signing the Program *Graduation Certification Checklist* (**Appendix E**) that the Thesis Approval Page has been signed by all members of the Graduate Committee.

- Verifying by signing the Program *Graduation Certification Checklist (Appendix E)* that students have uploaded their final thesis to ProQuest.
- Verifying by signing the Program *Graduation Certification Checklist (Appendix E)* that you have read and approved the final copy of the thesis for content and formatting prior to approving it in ProQuest.

The above referenced forms are provided as appendices. All forms the in Appendices can also be accessed via the Program's web site.

Program Assessment

Student Learning Outcomes Assessment

Overview of Student Learning Outcomes Assessment at FGCU

Academic programs at FGCU establish and maintain assessment plans and reports that relate University learning goals to program-specific/student learning outcomes, assessment strategies, and intended use of results to lead to improvements in student learning. Additionally, some programs (as appropriate) utilize professional (accreditation) standards and evaluate student learning, in-part, based upon the results of national licensing and certification examinations. Direct assessment methods include embedded assignments and exams while indirect assessments include surveys, peer review, feedback from advisory boards and professional bodies, and post-graduation employment data. These activities are carried out on an ongoing basis, often in a cyclical manner. Based on the results of these assessment cycles, improvements are made to the programs to enhance student learning either through additional physical (e.g., laboratories, instructional equipment, buildings, etc.) and/or human resources (i.e., additional full-time faculty or technical staff) or through changes to the curriculum or its delivery. Measures such as licensing exam passing rates, post-graduation employment data, and student/ employer feedback are used to confirm the efficacy of the improvements and student performance.

Overview of Student Learning Outcomes Assessment in the College

The College of Arts and Sciences has developed an assessment plan that involves faculty and administrators in the planning and assessment process and that is in line with the university institutional effectiveness plan. The dean works collaboratively with chairs, program leaders, and faculty to ensure a commitment to continuous improvement in the college; the assessment process is also a part of the development of the college budget. The associate dean in the college is responsible for overseeing the process.

At the program level, faculty in each program complete an assessment of student learning outcomes on a biennial basis, including both direct and indirect assessment strategies. The iterative nature of the assessments allow program leaders to demonstrate continuous improvement in student learning. The College of Arts and Sciences has developed an assessment schedule and process for all academic programs involving faculty, curriculum teams, and administrators that leads to continuous improvement of programs to include student learning outcomes. A program coordinator or department chair provides oversight within each academic program and works with the faculty in the program to complete the assessments, analyze the data, and generate recommendations for changes to the program. All final changes to programs are determined by the program faculty and, when necessary, and are taken through the University curriculum process. Biennial student learning outcomes reports for the M.S. Environmental Science degree program are included as Appendix B.

Program-Level Learning Outcomes

The current core student learning outcomes for graduates of the M.S. Environmental Science degree program are as follows:

1. Critical Thinking Skills
 - a. An understanding of, and the ability to apply, the scientific method, and the capacity to design and conduct a relevant research investigation using qualitative and quantitative techniques
 - b. Mastery of appropriate methodologies (to include one or more of: statistical analyses, geographic information systems, field and laboratory techniques, system's analysis and simulation modeling).
2. Effective Communication
 - a. Develop skills and experience in communication of concepts of the field of study, and of methods and results of research in the environmental field, at an advanced level.
3. Professional and Technical Expertise
 - a. A strong foundation in ecological principles and their application to the description and interpretation of environmental systems
 - b. An understanding of anthropogenic impacts on ecosystems.
4. Leadership Skills
 - a. The ability to function in a leadership capacity within a professional setting.
5. Continuing Learning
 - a. The capacity for continuing learning, growth, and scholarly activity in their respective disciplines and fields of study.

Assessment of Student Learning Outcomes for Program Improvement

Assessment of Critical Thinking Skills

Critical Thinking Skills are assessed early in the program and at the end of the program. Access points include the Thesis Proposal, developed in EVR 6022 Environmental Resource Methodology, and the Master's Thesis Defense. Student products assessed include the written thesis proposal, written thesis (at time of thesis defense), oral thesis presentation (at time of thesis defense), and the thesis defense before graduate committee members (at time of thesis defense).

Assessment of Effective Communication

Effective Communication is assessed early in the program and at the end of the program. Access points include the Thesis Proposal, developed in EVR 6022 Environmental Resource Methodology, and the Thesis Defense. Student products assessed include the written thesis proposal, written thesis (at time of thesis defense), oral thesis presentation (at time of thesis defense), and the thesis defense before graduate committee members (at time of thesis defense).

Assessment of Professional and Technical Expertise

Professional and Technical Expertise is assessed early in the program through the two courses that comprise the ecological core of the curriculum: Advanced Ecology 6064C and Estuarine Ecology OCB 6635. In the past, student products assessed were the exam scores for the two courses. Beginning Fall 2018, standardized pre- and post-testing will be used to measure the achievement of this outcome. The standardized tests will be administered in the same two courses.

Assessment of Leadership Skills

Leadership Skills are assessed using the M.S. Environmental Science Alumni LinkedIn Subgroup established through the FGCU Alumni Association. Current employment, promotions, or continued higher education or certifications are used as measures of this outcome.

Assessment of Continuing Learning

Continuing Learning is also assessed using the M.S. Environmental Science Alumni LinkedIn Subgroup established through the FGCU Alumni Association. One way to measure the capacity of our alumni for continued learning is to identify those individuals who have gone on to continue their graduate education at other institutions. Such data are currently used to measure of achieving this outcome.

Assessment Plan and Timeline

Critical Thinking Skills

A direct assessment of Critical Thinking Skills will be conducted using each student's Thesis Proposal, which is submitted to their thesis committee prior to beginning thesis research; and each student's Thesis, submitted in partial fulfillment of the requirements for the degree. Direct assessment evaluates student mastery of the field and projected ability to complete independent research under the supervision of a graduate advisor and thesis committee. Members of the program graduate faculty, other than the student's committee members, conduct the assessment of the Thesis Proposal; assessment of the Thesis is conducted by members of the student's thesis committee. Both assessments use the M.S. Environmental Science Critical Thinking Rubric, adapted from the AAC&U Critical Thinking VALUE rubric.

Indirect assessment of critical thinking is conducted by each student who submits a Thesis Proposal, using the same Department rubric to assess their own critical thinking as embodied in the Proposal.

Goals for direct assessment are met when 70% of students submitting a Thesis Proposal attain a minimum average score of 2.7 on a scale of 1-4 using the Critical Thinking Rubric; and if 70% of students defending their theses attain a minimum average score of 2.7 (1-4) using the same Critical Thinking Rubric. Achievement of the outcome using indirect assessment is met if student ratings of their own work align with ratings given by faculty in the direct assessment.

Effective Communication

Direct assessment of effective written communication is conducted using each student's Thesis Proposal, which is submitted to their thesis committee prior to beginning thesis research; and each student's Thesis, submitted in partial fulfillment of the requirements for the degree. Direct assessment of effective oral communication is conducted during each student's public thesis defense upon completion of the thesis research.

Direct assessments require students to communicate with appropriate scientific terminology suitable for a scientific audience. Students' ability to do this is assessed using the Environmental Science Communication Rubrics (adapted from the AAC&U Written Communication and the Oral

Communication VALUE Rubrics). The review of the Thesis Proposal is conducted by a panel of three members of the program faculty; review of the student's Theses will be conducted by the student's thesis committees. Direct assessment of oral communication is conducted by the student's thesis committee at the time of the thesis defense.

Indirect assessment of effective written communication is conducted by requiring each student to use the same Department rubric to assess their own written communication as embodied in the Thesis Proposal. Self-assessment of the oral thesis defense is also conducted.

Goals for the direct assessment are met if 70% of students score a minimum of 2.7 on a scale of 1-4 using the Written Communication Rubric to evaluate the Thesis Proposal; 70% of students score a minimum of 2.7 (1-4) using the Oral Communication Rubric to evaluate the Thesis Presentation; and 70% of students score a minimum of 2.7 (1-4) using the Written Communication Rubric to evaluate the final Thesis. Achievement of the outcome using indirect assessment is met if student ratings of their own work align with ratings given by faculty in the direct assessment.

Professional and Technical Expertise

Professional and technical expertise is best assessed in the context of one or more existing courses. All students in the program must successfully complete either Advanced Ecology OCB 6635 or Estuarine Ecology PCB 6064C. In the past, direct assessment of a strong foundation in ecological principles was implemented at the close of each course using a final exam. Beginning Fall 2018, standardized pre- and post-tests will be administered to students in these same courses to assess achievement of this outcome.

Goals for the direct assessment will be met if 70% of students either score 80% or above on the post-test or if 70% of the students tested show learning gains between the pre- and post-testing.

Leadership Skills

The educational experience of and the professional positions held by our students after graduation are tracked using the M.S. Environmental Science Alumni Subgroup on the professional network LinkedIn. The ability to track students in this manner is limited to the willingness of our graduates to join this professional network. These data allow us to track students for post-graduate assessment. Current employment, past promotions, or continued higher education or certifications are used as measures of outcome achievement.

Goals for achievement of this outcome are currently in development, as the use of LinkedIn to mine alumni data for the purposes of outcome assessment is a modification from the original assessment plan.

Continuing Learning

The educational experience of and the professional positions held by our students after graduation are tracked using the M.S. Environmental Science Alumni Subgroup on the professional network LinkedIn. The ability to track students in this manner is limited to the willingness of our graduates to join this professional network. These data allow us to track students for post-graduate assessment. To

measure capacity of our alumni for continued learning, alumni who have gone on to continue their higher education are identified.

Goals for achievement of this outcome were met if 80% or more of students who continue their higher education successfully complete their additional degrees.

Assessment Instruments

Critical Thinking Thesis Proposal Rubric (Adapted from AAC&U VALUE rubric for Critical Thinking): Used to evaluate attainment of the following student learning outcomes: Critical Thinking Skills (Objectives 1 & 2); Effective Communication. Applied to the thesis proposal and evaluated by panel of three graduate faculty members from the program (direct measure).

Critical Thinking Written Thesis Rubric (Adapted from AAC&U VALUE rubric for Critical Thinking): Used to evaluate attainment of following student learning outcomes: Critical Thinking Skills (Objectives 1 & 2); Effective Communication. Applied to written thesis by members of graduate committee (direct measure).

Oral Thesis Presentation and Defense Rubric (Adapted from the AAC&U rubric for Oral Communication): Used to evaluate attainment of following student learning outcomes: Critical Thinking Skills (Objectives 1 & 2); Effective Communication. Applied to oral thesis presentation and defense by members of thesis committee (direct measure) and by student (indirect measure).

Written Communication Thesis Proposal/Thesis Rubric (Adapted from AAC&U rubric for Written Communication): Used to evaluate attainment of following student learning outcomes: Critical Thinking Skills (Objectives 1 & 2); Effective Communication. Applied to thesis proposal by a panel of three members of the program faculty (direct measure), and to written thesis by members of thesis committee (direct measure) and by student (indirect measure).

Professional & Technical Expertise Standardized Pre-Post Test: Used to evaluate attainment of following learning outcomes: Professional and Technical Expertise (Objectives 1 & 2). Applied to completed tests from Advanced Ecology PDC 6064C and Estuarine Ecology OCB 6935). Assessed by faculty member teaching respective course.

Data Mined and Compiled Using LinkedIn Professional Networking Site: Used to evaluate Leadership Skills outcome and Continuing Learning outcome.

The above rubrics and associated scoring sheets are found in Appendices G through J.

Appendix A: Frequently Asked Questions (FAQs)

Frequently Asked Questions (FAQs)

Listed below are some commonly asked questions from students in the Program. These questions are also addressed in the Program's companion Graduate Student Handbook. Nonetheless, you should be familiar with these questions and be able to answer them should a student come to you. Knowing how to respond to these questions will also give you better insight into the inner workings of the Program. Please refer to the Program Guidelines section above for details.

When I was admitted, my letter of offer listed one or more faculty members as Interim Advisors.

What is an Interim Advisor and is this the same thing as my Major Professor?

Because the M.S. Environmental Science program is thesis-based, it is essential that a faculty who shares the research interests of an incoming student is available to help supervise her/his thesis research. Identifying an Interim Advisor prior to admission ensures there is at least one faculty willing to support a student's research intellectually. If you agree to serve as an Interim Advisor for an incoming student, you are also indicating your willingness to serve as that student's Major Professor. If for some reason you and the student are not able to come to agreement regarding a thesis topic, or if your personalities conflict creating significant challenges, it may be advisable for the student to identify someone else to serve as Major Professor. In some cases, other opportunities arise for students that not only allow them to pursue a thesis topic of great interest but also provide financial support. Under these circumstances, students may elect to work with a Major Professor other than their Interim Advisor. If any of these circumstances occur, it is the students' responsibility to find another faculty member willing to serve as Major Professor. It is also up to the students to communicate with you, as Interim Advisor, whether to confirm that they wish to conduct their thesis research under your supervision or wish to work with another faculty member. Communication is key here, so, if you suspect a student is struggling with an issue such as this, engage that student in conversation to discuss an appropriate remedy. (Refer to Program Guidelines sections on Interim Advisor and Major Professor.)

What type of help should I expect from my major professor?

Major Professors serve a number of roles in the professional development of a graduate student. Most importantly, a Major Professor intellectually and, in many cases, financially supports the student's research. It is important that students have someone who can provide them the training and resources needed to be successful and who can assist them in developing the research design and thesis. If additional resources are required to complete this research, you, as Major Professor, should be willing to assist the student in writing a research proposal to acquire the necessary funding. As Major Professor, you are in a position to introduce your students to your colleagues and potential employers and to help them prepare for and present their work at scientific conferences. You can also provide your students with the exposure needed for successful employment in the field or further graduate studies.

What types of courses should I select in partial fulfillment of the degree?

As Major Professor, you should guide your students in their selection of courses. Because there are few required courses in the program, students have a great deal of flexibility in choosing courses that are of interest and that support their thesis research. Registering for Master's Thesis credits requires your approval as well as that of the instructor of record for the course (EVR 6970), so please advise your students that, when registering for thesis credits, they should

email the instructor of record requesting permission to register and copy you on the email. Your receipt of this email is your tacit approval of the registration unless you indicate otherwise.

What kind of financial support is available to graduate students in the program?

The letter of offer of admissions your students received identified any sources of financial aid the College was able to provide (e.g., tuition waiver, graduate assistantship, research assistantship). Out-of-state tuition waivers are available from the Office of Research and Graduate studies on a competitive basis (<https://www2.fgcu.edu/Graduate/Financing-graduate-studies.html>). In addition, there are a few scholarships specifically for graduate students. Students are advised to submit a Foundation Scholarship Application form (<https://www2.fgcu.edu/FinancialAid/Undergraduate/scholarships.html>) soon after admission. This application puts students on the list for any scholarships for which they are eligible. You may also know of scholarships that are more discipline-related, so please inform your student of such opportunities. The Program Coordinator for the M.S. Environmental Science may also have ideas regarding additional scholarships or sources of funding. (Refer to Program Guidelines section on Financial Support above.)

What is the difference between a Graduate Assistantship, a Teaching Assistantship, and a Research Assistantship?

A limited number of Graduate Assistantships are available to students willing to assist faculty in teaching undergraduate courses. Graduate Assistants are not expected to teach courses but to assist the course instructor in the operation and oversight of the class (e.g., laboratory exercises, field trips, grading). Graduate Assistantships provide \$3,600 for a 20-hour per week commitment during a semester. Courses are assigned a certain number of assistantship hours based on enrollment: regular size classes (i.e., ~36 seats) are assigned 5 hours per week; large enrollment classes (i.e., ~72-81 seats) are assigned 10 hours per week. For Graduate Assistants working less than 20 hours per week, the stipend is prorated.

Faculty members may also have grant monies available in the form of a Research Assistantship. Research Assistantships are awarded directly by the grant researcher, and students receiving such awards typically work toward accomplishing the objectives prescribed by the grant proposal. The value of these awards varies by grant and by hours awarded.

Teaching Assistantships can be awarded to second year graduate students to teach an undergraduate course. To qualify, a graduate student must have completed a minimum of 18 graduate credit hours in their discipline. Teaching Assistants are expected to work with a course mentor but are fully responsible for teaching the course assigned. Teaching assistants are paid at the same rate as an adjunct professor for each course taught.

How do I establish residency and what advantage does being a Florida resident provide?

For out-of-state students (those who do not declare Florida as the State of permanent residency or who are financial dependents of someone else who is not a permanent resident of Florida), it is critical for them to take the appropriate steps to establish residency as soon as possible. The primary benefit of Florida residency for our students is the affordability of their graduate education. Out-of-state tuition is substantially more expensive than in-state tuition. Establishing residency requires that students reside in Florida for a complete 12 months; demonstrating Florida residence requires that a number of documents be presented (e.g., vehicle registration, voter's registration, driver's license, lease or mortgage). These items must be predated one

complete year before the student can become a resident. ***This means students need to begin the process to become a Florida resident before the first day of class of their first semester at FGCU.*** Please refer the student to the following Office of Research and Graduate Studies web site for details: <https://www2.fgcu.edu/Graduate/Residency.html>.

Remember, all applicants are considered non-Florida residents until satisfactory proof of Florida residency is received. Failure to provide all relevant information and required documentation could result in a 'non-Florida resident' classification for tuition purposes. All documentation must be submitted prior to the last day of the drop/add period for the term in which resident status is sought. Please see <https://www2.fgcu.edu/Graduate/Residency.html>.

Is there a minimum number of credits for which I need to be enrolled each semester?

Students are required to register for a minimum of 1 credit hour for each Fall and Spring semester and to register for a minimum of one credit hour during the semester in which they intend to graduate (including Summer). These requirements ensure students remain active in the Program and that, even if they have already completed their required coursework, they continue to retain student privileges (e.g., use of the library). (Refer to Program Guidelines section on Continuous Enrollment above.)

How long should it take for me to finish the program?

The M.S. Environmental Science is designed to be completed in 2 to 3 years; however, time to completion varies based on personal circumstances. Part-time students (<9 credits per semester) will take longer to earn their degree, and full-time students who are working outside the University may find it challenging to devote the hours necessary to complete the thesis research and written thesis in this time frame. The completion of the 36 credit hours required to graduate in two years requires a minimum of 9 credit hours per semester for 4 consecutive semesters (two Fall and two Spring semesters). The program does its best to ensure sufficient courses are available each semester and at times appropriate for the schedules of graduate students. The Program has identified *Graduate Student Milestones*—a series of deadlines that, if followed, will help ensure students earn their degree in a timely fashion.

What is the Graduate Committee and how do I select my Committee members?

The Graduate Committee consists of 3 or more faculty members or environmental professionals who supervise a student's research, mentor her/him through the completion of the thesis, and ultimately approve the thesis for graduation. Committee members must be members of the graduate faculty, and two of them must be graduate faculty in the Department of Marine and Ecological Sciences. The other Committee member(s) might be from another department, another university, or from environmental agencies. These non-departmental members are especially valuable if the student's research requires additional expertise not found among the Program faculty. You and your student should work together to select appropriate Committee members. If someone is invited from outside the University who is not likely to be credentialed as a member of the graduate faculty, be sure this individual is credentialed as a member of the Graduate Faculty before being approved as a member of your Committee.

It is important that individuals selected to serve on the Graduate Committee can add value to the student's thesis research. Do they have expertise relevant to the research? Do they have skills (e.g., experimental design, GIS, statistical analysis) that would help students set up their experiments/sampling design and analyze, interpret, and present their results? Do they have

special resources (e.g., instrumentation, equipment) that would enhance the student's research? (Refer to Program Guidelines section on Graduate Committee above.)

What is a research thesis and how do I develop one?

The thesis is the culminating product of the M.S. Environmental Science degree. It is the written embodiment of a student's research: it identifies important research questions, tests hypotheses related to these questions, and employs the scientific method to answer these questions. Based on the recommendation and approval of the student's Graduate Committee, the thesis may take the form of one lengthy paper or multiple smaller papers. There is no prescribed length: your student should work closely with you and the Graduate Committee to determine what is appropriate for the research conducted and what is sufficient in terms of time committed. Hard copies of successfully completed theses (prior to 2015) are available through the FGCU Library, and electronic copies (since 2015) are available through ProQuest.

The key to getting students started on their thesis research is effective communication. Take the initiative to meet with your students early and often. To remain on track to graduate in two years, your students should have their thesis topic and research questions defined by end of their first semester. During their second semester (Spring) they will develop a research proposal as part of Environmental Research Methodology EVR 6022 and will be expected to present their Thesis Proposals publically at the end of the Spring semester. It is important for you to oversee your students' progress closely to ensure they develop a research design and identify Graduate Committee members so they can begin collecting data no later than the Summer of year one.

What types of thesis research have former students undertaken?

Our graduate students have worked on a variety of thesis topics: most of these projects have applied science to address problems of regional importance in Southwest Florida; they have been conducted in forested uplands, through freshwater and tidally influenced wetlands, in estuaries, and out onto the continental shelf. Although these projects have spanned the physical and biological sciences, all have addressed an environmental problem. The program web page provides a partial list of theses completed by former students.

How do I know I'm tracking through to graduation appropriately?

Incoming students are provided with a Graduate Students Handbook, complimentary to the one you are reading now. The Student Handbook provides a list of the critical steps needed for graduation along with a timeline. The *Graduate Student Milestones Checklists* should be discussed and updated regularly when you meet with your students. You should be checking off certain tasks on this form as they are completed, and you should refer back to it frequently to ensure your students are making progress toward the completion of the degree. (Refer to Program Guidelines section on Thesis Milestones.)

What is the Thesis Proposal and why do I have to present it publically?

Students are required to develop a Thesis Proposal that is reviewed and approved by their Graduate Committees. Proposal development is embedded within Environmental Research Methodology EVR 6022, a course required of all students in the program. The Thesis Proposal is a blueprint for the successful completion of the thesis research: it lays out the questions being asked, how data will be collected to address those questions, how the data will be analyzed and interpreted, and how the research is relevant and unique. It also identifies specific resources students will need to complete their research. At the end of Environmental Research

Methodology EVR 6022, students are required to present their Thesis Proposal publically. This short public presentation is intended to create a forum for feedback from faculty and other students— feedback that can be used to improve the quality of the work. Because student research evolves over time, there is a good chance the Thesis Proposal will not look exactly like the completed thesis. This is expected. Students encounter unforeseen circumstances, and the data they collect may encourage them to reframe their research questions or their sampling design/ experimental approach. Nonetheless, the Thesis Proposal represents the first tangible expression of a student’s thesis, provides a guide to follow or modify as the research is conducted, and creates a document the student can share with potential Graduate Committee members when assembling the Committee. (Refer to Program Guidelines section on Thesis Topic Selection and Thesis Proposal.)

What is the thesis defense?

The Thesis Defense includes a public presentation of the thesis and provides a formal opportunity for the Graduate Committee to review, evaluate, and approve the work completed. The Defense should be scheduled after the thesis is written and close to its final draft and at a time when all Graduate Committee members have provided feedback that has been satisfactorily addressed. The Thesis Defense is also an opportunity for students to present their research to a public audience (typically faculty, students, and guests), highlighting their accomplishments.

The public presentation typically lasts 45 minutes and includes time for attendees to ask questions. After the public presentation, the student and the Graduate Committee meet privately to discuss the content of the thesis to determine whether the work is satisfactory and if any additional changes are required before final approval. If students have been involving and updating their Committee members at various stages of the research and writing, and if they have been addressing the concerns of their Committee members along the way, there should be no surprises. The Thesis Defense must be scheduled during an academic semester no later than one week prior to the last day of classes and not during breaks or holidays. The Defense must be publically announced (email, posted flyers) a minimum of one week prior to the Defense (preferably two). Scheduling must be done cooperatively with the other members of the Graduate Committee; each member must be available, and each member must agree that the student has progressed enough to defend her/his work.

Encourage your students to attend thesis defenses of other students in the program. This will give them an appreciation of the process and of the quality and depth of work expected. (Refer to Program Guidelines Section on Thesis Defense Guidelines.)

What are my graduation requirements?

- Complete a minimum of 36 graduate credit hours.
- Maintain a cumulative GPA of 3.0 for all coursework completed in program.
- Provide one bound copy of their thesis to the Department of Marine and Ecological Sciences.
- Establish a Graduate Committee composed of a minimum of three individuals, two of whom must be part of the graduate faculty in the Department of Marine and Ecological Science.
- Submit an application to graduate by the deadline listed in the FGCU Academic Calendar.
- A maximum of 9 credits of course work may be transferred from other institutions or from pre-degree enrollment at FGCU if those courses are appropriate to the program of study. These are subject to approval of the Program Coordinator.

Appendix B: Sample Graduate Committee Appointment Form

MS Environmental Science
 Graduate Committee Appointment
 (To be completed by all members of the Graduate Committee)

Name of Graduate Student: _____

UIN: _____

Graduate Committee Members

 Major Professor [Print Name]

 Signature

 Affiliation

 Co-Major Professor [Print Name]

 Signature

 Affiliation

 Committee Member [Print Name]

 Signature

 Affiliation

 Committee Member [Print Name]

 Signature

 Affiliation

 Committee Member [Print Name]

 Signature

 Affiliation

The signatories above confirm that they each agree to serve as a member of the Graduate Committee of the above named graduate student. Furthermore, these individuals have verified by signature that they are currently credentialed as a member of the Graduate Faculty at Florida Gulf Coast University.

 M.S. Environmental Science
 Program Coordinator

 Date

Appendix C: Graduate Student Milestones Checklist

M.S. Environmental Science Graduate Student Milestones Checklist

Student: _____

UIN: _____

Major Professor: _____

Semester/Year Admitted: _____

*Milestone**Completed*

<input type="checkbox"/> Name(s) of Interim Advisor(s):	Date: _____
---	-------------

<input type="checkbox"/> Name of Major Professor (s):	Date: _____
---	-------------

<input type="checkbox"/> Thesis topic with brief description:	Date: _____
---	-------------

<input type="checkbox"/> Public presentation of thesis proposal	Date: _____
---	-------------

<input type="checkbox"/> Composition of Thesis Committee: <i>(Three or more members)</i>	Date: _____
---	-------------

_____	_____
_____	_____
_____	_____

Thesis Proposal approved: *(e-copy to Program Coordinator)* Date: _____

Proposal Title:

Thesis defense scheduled Defense Date: _____

Thesis Title

Thesis successfully defended Date: _____

Thesis signed and submitted to ProQuest Date: _____

Appendix D: Sample Thesis Title Page

DIEL MOVEMENT OF JUVENILE SMALLTOOTH SAWFISH *PRISTIS PECTINATA*:
IMPLICATIONS FOR DEFINING THE SIZE OF A NURSERY HOTSPOT

A Thesis

Presented to

The Faculty of the College of Arts and Sciences
Florida Gulf Coast University

In Partial Fulfillment

Of the Requirement for the Degree of
Master of Science

By

Cecily Huston

2017

Appendix E: Sample Thesis Approval Page

Florida Gulf Coast University Thesis

APPROVAL SHEET

This thesis is submitted in partial fulfillment of the
requirements for the degree of
Master of Science

Cecily Huston

Approved: June 13, 2017

S. Gregory Tolley, Advisor

Gregg Poulakis, Committee Member

Philip Stevens, Committee Member

Kara Lefevre, Committee Member

The final copy of this thesis has been examined by the signatories, and we find that both the content and the form meet acceptable presentation standards of scholarly work in the above-mentioned discipline.

Appendix F: Sample Graduation Certification Checklist

MS Environmental Science
 Graduation Certification Checklist
 (To be completed by (Co-) Major Professor(s))

Name of Graduate Student: _____

UIN: _____

Check all that apply:

- All coursework completed (36 credits total)
- Successful Thesis defense
- Thesis Approval Page Signed by Thesis Committee Members
- Program (Major Professor) Approval of Submitted Electronic Thesis
- Graduate Studies Submission of Electronic Thesis

This is to certify that all requirements for the M.S. Environmental Science degree have been successfully completed.

 Associate Dean, College of Arts and Sciences

 Date

 Program Coordinator, M.S. Environmental Science

 Date

 Chair, Thesis Committee (Major Professor)

 Date

Appendix G: Program Assessment Plan and Criteria

Program Assessment Plan and Criteria
M.S. Environmental Science
Critical Thinking

Approved 12/5/10; Modified 10/24/13

I Critical Thinking

Graduates of advanced degree programs at Florida Gulf Coast University will:

Demonstrate excellence in critical thinking, problem solving, analysis, and strategic planning.

Objective 1: An understanding of, and the ability to apply, the scientific method, and the capacity to design and conduct a relevant research investigation using qualitative and/or quantitative techniques.

Objective 2: Mastery of appropriate methodologies (to include one or more of: statistical analyses, geographic information systems, field and laboratory techniques, system's analysis and simulation modeling).

Plan: A direct assessment of learning outcomes associated with critical thinking will be conducted using each student's thesis proposal and each student's written thesis, submitted to the graduate committee in partial fulfillment of the requirements for the M.S. degree. The direct assessments will evaluate students' mastery of their field and projected ability to complete independent research under the supervision of a faculty mentor and committee. Members of the Environmental Science Graduate Faculty, but those other than the student's committee members, will conduct the assessment of the thesis proposal; the assessment of the written thesis will be conducted by members of the student's graduate committee. Assessment of these learning outcomes will be conducted using the Thesis Proposal and the Written Thesis Rubrics as described above.

An indirect assessment of learning outcomes associated with critical thinking will be conducted by each student who submits a thesis proposal by requiring each student to use the same instrument (i.e., Thesis Proposal Rubric) to assess the critical thinking learning outcomes embodied in the thesis proposal.

Criteria: Goals for the direct assessment will be met if 70% of students who submit a final revised thesis proposal, after review and revision under supervision of their major professor, attain a mean score of 2.7 or above on a scale of 1–4 on the Thesis Proposal Rubric; and if 70% of students who have advanced to candidacy successfully defend and submit a completed thesis after receiving guidance from their graduate committee. Goals for the indirect assessment will be met if the differential in points scored between the student (indirect assessment) and the mean score awarded by faculty evaluators (direct assessment) is between 1.0 and -1.0.

Courses or curriculum elements:

1. Thesis Proposal: written document submitted to Graduate Committee
2. Written Thesis: written document in partial fulfillment of the requirements of the degree

Program Assessment Plan and Criteria
M.S. Environmental Science
 Approved 12/5/10; Modified 10/24/13

II Effective Communication

Graduates of advanced degree programs at Florida Gulf Coast University will:

Demonstrate effective use of a variety of communication skills and modalities.

Objective 1: Develop skills and experience in communication of concepts of the field of study, and of methods and results of research in the environmental field, at an advanced level.

Plan: Direct assessment of the learning outcome associated with effective written communication will be conducted using each student's thesis proposal, and each student's written thesis, submitted to the graduate committee in partial fulfillment of the requirements for the M.S. degree. A direct assessment of this learning outcome will also be conducted during each student's oral presentation and defense when research is completed.

Direct assessments will require students to communicate with appropriate scientific terminology suitable for a scientific audience. The thesis proposal will be reviewed by three members of the program's graduate faculty and evaluated using the Thesis Proposal and the Thesis Proposal/Written Thesis Rubrics. The student's written thesis will be reviewed by members of the student's graduate committee and evaluated using the Written Thesis and the Thesis Proposal/Written Thesis Rubrics. Direct assessment of attainment of this learning outcome through oral communication will be conducted by members of the student's graduate committee at the time of the oral thesis presentation and defense using the Oral Thesis Presentation and Defense Rubric.

Indirect assessment of the learning outcome as expressed through effective written communication will be conducted by each student in a self-assessment of the written thesis using the Thesis Proposal/Written Thesis Rubric. Self-assessment of this outcome as expressed through the oral thesis presentation and defense will also be conducted by the student, using the.

Criteria: Goals for the direct assessment will be met if 70% of students achieve a score a 2.7 or above (on a scale of 1–4) on the Thesis Proposal/Written Thesis Rubric, as applied to the thesis proposal; 70% of students achieve a score of 2.7 or above (on a scale of 1–4) on the Oral Thesis Presentation and Defense Rubric as applied to the thesis presentation and defense; and 70% of students achieve a mean score of 2.7 or above (on a scale of 1–4) on the Thesis Proposal/Written Thesis Rubric as applied to the written thesis. Goals for the indirect assessment will be met if the differential in points scored between the student (indirect assessment) and the mean score awarded by faculty evaluators (direct assessment) is between 1.0 and -1.0.

Courses or curriculum elements:

1. Thesis Proposal: written document submitted to Graduate Committee
2. Written Thesis: written document in partial fulfillment of the requirements of the degree
3. Oral Thesis Presentation and Defense: oral presentation of research results in a public forum and subsequent question and answer session with the graduate committee

Program Assessment Plan and Criteria

M.S. Environmental Science

Professional and Technical Expertise

Approved 12/5/10; Modified 10/24/13; 10/27/15

III Professional and Technical Expertise

Graduates of advanced degree programs at Florida Gulf Coast University will:

Exhibit professional and technical expertise consistent with discipline and/or content area accrediting or licensing bodies.

Objective 1: A strong foundation in ecological principles and their application to the description and interpretation of environmental systems;

Objective 2: An understanding of anthropogenic impacts on ecosystems.

Plan: Professional and technical expertise is best assessed in the context of one or more existing courses. All students in the program must successfully complete either Advanced Ecology PCB 6064C or Estuarine Ecology OCB 6635. A direct assessment of outcome D (strong foundation in ecological principles) will be implemented in each course through the use of a standardized pre- and post-test. Similarly, all students in the program are required to take one of three courses that concern societal implications of environmental actions: Concepts & Applications of Sustainability EVR 6322, Environmental Policy EVS 6937, or Environmental Law PAD 5620. Scores from the final exams for these courses will be used to assess outcome E (understanding of anthropogenic impacts).

Criteria: Goals for the direct assessment will be met if 70% of the students score in the acceptable range on the post-test. Goals for the indirect assessment will be met if 70% of the students rate their own accomplishments as satisfactory or better.

Courses or curriculum elements:

1. Course-based pre- and post-tests: test scores will be collected and analyzed at the time the core courses are completed
2. Thesis Defense: student self-assessment will be conducted after the successful completion of the thesis defense.

Program Assessment Plan and Criteria
M.S. Environmental Science
Leadership Skills
Approved 12/5/10; Modified 10/24/13; 10/27/15

IV Leadership Skills

Graduates of advanced degree programs at Florida Gulf Coast University will:

Be prepared for leadership roles in professional and occupational areas and in communities in which they live and work.

Objective 1: The ability to function in a leadership capacity within a professional setting.

Plan: The post-master's educational experience of and the professional positions held by our students will be tracked from time of graduation using the web-based professional network LinkedIn. Alumni from the M.S. Environmental Science program will be invited to join the alumni LinkedIn page upon graduation. Individual profile data related to professional advancement and professional endorsements will be tracked to assess leadership capacity in a professional setting.

Criteria: Goals for the assessment will be the demonstration, within 5 years of employment, that program graduates are advancing professionally and are being endorsed by other professionals in the field.

Elements:

1. Data tracking and mining using LinkedIn.

Program Assessment Plan and Criteria

M.S. Environmental Science

Continuing Learning

Approved 12/5/10; Modified 10/24/13; 10/27/15

V Continuing Learning (University Level)

Graduates of advanced degree programs at Florida Gulf Coast University will:

Demonstrate the capacity for continuing learning, growth, and scholarly activity in their respective disciplines and fields of study.

Objective 1: The capacity for continuing learning, growth, and scholarly activity in their respective disciplines and fields of study.

Plan: The post-master's educational experience of and the professional positions held by our students will be tracked from time of graduation using web-based professional networks such as LinkedIn, Academia.edu, and ResearchGate. Individual profile data related to continuing learning, growth, and scholarly activity will be mined and compiled for assessment of this learning outcome.

Criteria: Goals for the assessment will be the demonstration, within 5 years of employment, that program graduates are exhibiting evidence of continuing learning, growth, and scholarly activity. Such evidence will include, but not be limited to the following: workshop/webinar participation, professional presentations, professional publications, and grant funding.

Elements:

1. Data tracking and mining using LinkedIn, Academia.edu, and ResearchGate, as appropriate.

Appendix H: Program Assessment Instruments

Assessment Instruments
M.S. Environmental Science
Status of Assessment Instruments
Last Modified 10/24/13

Assessment Instruments

1. Thesis Proposal Rubric (Adapted from AAC&U VALUE rubric for Critical Thinking): Used to evaluate the attainment of the following student learning outcomes: Critical Thinking Skills, Objectives 1 and 2; Effective Communication, Objective 1. Applied to the thesis proposal and evaluated by a panel of three graduate faculty members from the program (direct measure) – Available
2. Written Thesis Rubric (Adopted from the AAC&U VALUE rubric for Critical Thinking): Used to evaluate the attainment of the following student learning outcomes: Critical Thinking Skills, Objectives 1 and 2; Effective Communication, Objective 1. Applied to the written thesis by members of the graduate committee (direct measure). – Available
3. Oral Thesis Presentation and Defense Rubric (Adopted from the AAC&U rubric for Oral Communication): Used to evaluate the attainment of the following student learning outcomes: Critical Thinking Skills, Objectives 1 and 2; Effective Communication, Objective 1. Applied to the oral thesis presentation and defense by member of the graduate committee (direct measure) and by the student (indirect measure). – Available
4. Thesis Proposal/Written Thesis Rubric (Adopted from AAC&U rubric for Written Communication): Used to evaluate attainment of the following student learning outcomes: Critical Thinking Skills, Objectives 1 and 2; Effective Communication, Objective 1. Applied to both the thesis proposal, by a panel of three members of the program graduate faculty (direct measure), and the written thesis, by members of the graduate committee (direct measure) and by the student (indirect measure). – Available
5. Professional & Technical Expertise pre- and post-test: Used to evaluate the attainment of the following learning outcomes: Professional and Technical Expertise, Objectives 1 and 2. Completed tests from Advanced Ecology, Estuarine Ecology, and the three management/policy courses. Assessed by the faculty member teaching the respective course. – Data available from course instructors.
6. Professional & Technical Expertise Self-Assessment Survey: Used to evaluate the attainment of the following learning outcomes: Professional and Technical Expertise, Objectives 1 and 2. – Not yet created
7. Data mined and compiled using LinkedIn professional networking service. Used to evaluate Leadership Skills Outcome, Objective 1.
8. Data mined and compiled using LinkedIn professional. Used to evaluate attainment of Continuing Learning outcome, Objective 1.

Thesis Proposal Rubric

	Capstone		Milestones		Benchmark
	4	3	2	1	
Explanation of issues	Issue/problem to be considered critically is stated clearly and described comprehensively, delivering all relevant information necessary for full understanding.	Issue/problem to be considered critically is stated, described, and clarified so that understanding is not seriously impeded by omissions.	Issue/problem to be considered critically is stated but description leaves some terms undefined, ambiguities unexplored, boundaries undetermined, and/or backgrounds unknown.	Issue/problem to be considered critically is stated without clarification or description.	
Evidence <i>Selecting and using information to justify and support a research agenda</i>	Information is taken from source(s) with enough interpretation/evaluation to develop a comprehensive analysis or synthesis. Viewpoints of experts are questioned thoroughly.	Information is taken from source(s) with enough interpretation/evaluation to develop a coherent analysis or synthesis. Viewpoints of experts are subject to questioning.	Information is taken from source(s) with some interpretation/evaluation, but not enough to develop a coherent analysis or synthesis. Viewpoints of experts are taken as mostly fact, with little questioning.	Information is taken from source(s) without any interpretation/evaluation. Viewpoints of experts are taken as fact, without question.	
<u>Influence of context and assumptions</u>	Thoroughly (systematically and methodically) analyzes own and others' assumptions and carefully evaluates the relevance of contexts when presenting a position.	Identifies own and others' assumptions and several relevant contexts when presenting a position.	Questions some assumptions. Identifies several relevant contexts when presenting a position. May be more aware of others' assumptions than one's own (or vice versa).	Shows an emerging awareness of present assumptions (sometimes labels assertions as assumptions). Begins to identify some contexts when presenting a position.	
Student's research design (hypotheses, logic, methods)	Research design (hypotheses, logic, methods) is thorough, imaginative, taking into account the complexities of an issue. Limits of design are acknowledged.	Research design (hypotheses, logic, methods) takes into account the complexities of an issue, but lacks thoroughness.	Research design (hypotheses, logic, methods) lacks creativity and depth but is still adequate for success.	Research design (hypotheses, logic, methods) is stated, but is seriously flawed.	
Implications, significance, and consequences of the research	The significance, consequences, and implications are logical, well presented, and well justified, and reflect student's informed evaluation.	The significance, consequences, and implications are presented and justified, but are not thoroughly developed.	Only a few consequences and implications are presented.	The significance, consequences, and implications are absent or oversimplified.	

Thesis Rubric

	Capstone	Milestones		Benchmark
	4	3	2	1
Explanation of issues	Issue/problem to be considered critically is stated clearly and described comprehensively, delivering all relevant information necessary for full understanding.	Issue/problem to be considered critically is stated, described, and clarified so that understanding is not seriously impeded by omissions.	Issue/problem to be considered critically is stated but description leaves some terms undefined, ambiguities unexplored, boundaries undetermined, and/or backgrounds unknown.	Issue/problem to be considered critically is stated without clarification or description.
Evidence <i>Selecting and using information to investigate a point of view or conclusion</i>	Information is taken from source(s) with enough interpretation/evaluation to develop a comprehensive analysis or synthesis. Viewpoints of experts are questioned thoroughly.	Information is taken from source(s) with enough interpretation/evaluation to develop a coherent analysis or synthesis. Viewpoints of experts are subject to questioning.	Information is taken from source(s) with some interpretation/evaluation, but not enough to develop a coherent analysis or synthesis. Viewpoints of experts are taken as mostly fact, with little questioning.	Information is taken from source(s) without any interpretation/evaluation. Viewpoints of experts are taken as fact, without question.
Influence of context and assumptions	Thoroughly (systematically and methodically) analyzes own and others' assumptions and carefully evaluates the relevance of contexts when presenting a position.	Identifies own and others' assumptions and several relevant contexts when presenting a position.	Questions some assumptions. Identifies several relevant contexts when presenting a position. May be more aware of others' assumptions than one's own (or vice versa).	Shows an emerging awareness of present assumptions (sometimes labels assertions as assumptions). Begins to identify some contexts when presenting a position.
Student's position (perspective, thesis/hypothesis)	Specific position (perspective, thesis/hypothesis) is imaginative, taking into account the complexities of an issue. Limits of position (perspective, thesis/hypothesis) are acknowledged. Others' points of view are synthesized within position (perspective, thesis/hypothesis).	Specific position (perspective, thesis/hypothesis) takes into account the complexities of an issue. Others' points of view are acknowledged within position (perspective, thesis/hypothesis).	Specific position (perspective, thesis/hypothesis) acknowledges different sides of an issue.	Specific position (perspective, thesis/hypothesis) is stated, but is simplistic and obvious.
Conclusions and related outcomes (implications and consequences)	Conclusions and related outcomes (consequences and implications) are logical and reflect student's informed evaluation and ability to place evidence and perspectives discussed in priority order.	Conclusion is logically tied to a range of information, including opposing viewpoints; related outcomes (consequences and implications) are identified clearly.	Conclusion is logically tied to information (because information is chosen to fit the desired conclusion); some related outcomes (consequences and implications) are identified clearly.	Conclusion is inconsistently tied to some of the information discussed; related outcomes (consequences and implications) are oversimplified.

Assessment Score Sheet: Thesis Proposal Rubric
M.S. Environmental Science

The graduate student thesis research proposal should be reviewed after the student finalizes the proposal. Program graduate faculty serve as reviewers, with three faculty members reviewing each proposal (faculty members serving on the student's Graduate Committee must recuse themselves from the review). In addition, the student should use the same rubric to self-assess her/his own critical thinking skills. See attached assessment rubric for scoring guidelines and definitions.

Date of Review:

Graduate Student Author of the Proposal:

Proposal Title:

Name of Person Conducting the Review (either committee member or student):

Category	Score <i>(from 1-4 with 4 being highest; see rubric)</i>
Explanation of issues	
Evidence	
Influence of context & assumptions	
Student's research design	
Implications, significance, and consequences of research	

Assessment Score Sheet: Thesis Rubric
M.S. Environmental Science

The graduate student's thesis should be reviewed after the student and Graduate Committee finalize the thesis and the thesis has been successfully defended. Graduate faculty members serving on the student's Graduate Committee are the reviewers. See attached assessment rubric for scoring criteria and definitions.

Date of Review:

Graduate Student Author of the Proposal:

Proposal Title:

Name of the Graduate Faculty Member Conducting the Review:

Category	Score <i>(from 1-4 with 4 being highest; see rubric)</i>
Explanation of issues	
Evidence	
Influence of context & assumptions	
Student's position	
Conclusions & related outcomes	

Assessment Score Sheet: Oral Thesis Presentation and Defense Rubric
M.S. Environmental Science

The graduate student's oral communication skills are to be assessed by each of the Graduate Committee members and should be self-assessed by the student at the thesis oral presentation and defense. See attached assessment rubric for scoring guidelines and definitions.

Date of Review:

Graduate Student Giving Thesis Presentation:

Thesis Title:

Name of Person Conducting the Review (either committee member or student):

Category	Score <i>(from 1-4 with 4 being highest; see rubric)</i>
Organization	
Language	
Delivery	
Supporting Material	
Central Message	

**Assessment Score Sheet: Written Thesis Proposal/Written Thesis Rubric
M.S. Environmental Science**

The graduate student's written communication skills are to be assessed through review of the Thesis Proposal by 3 members of the program's graduate faculty (not on student's Graduate Committee) and through review of the Thesis by members of the student's Graduate Committee. Additionally, the graduate student will self-assess his/her performance on the Thesis Proposal. See attached assessment rubric for scoring guidelines and definitions.

Date of Review:

Product Being Reviewed (circle one: Research Proposal or Thesis)

Graduate Student Author of the Proposal or Thesis:

Proposal or Thesis Title:

Name of Person Conducting the Review (graduate faculty member or student):

Category	Score <i>(from 1-4 with 4 being highest; see rubric)</i>
Context of and Purpose for Writing	
Content Development	
Genre and Disciplinary Conventions	
Sources and Evidence	
Control of Syntax and Mechanics	