



FLORIDA
INTERNATIONAL
UNIVERSITY

DEPARTMENT OF EARTH & ENVIRONMENT

Ph.D. Earth Systems Science



Graduate Program Handbook

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Introduction

This handbook describes policies and procedures for the Ph.D. in Earth Systems Science offered by the Department of Earth and Environment at FIU. The Ph.D. in Earth Systems Science follows two tracks. One in the Geosciences provides opportunities for concentrated studies in atmospheric sciences, economic geology, geochemistry, geophysics, hydrogeology, igneous petrology, micropaleontology/paleobiology, remote sensing/geographic information systems, stratigraphy/sedimentology, and structural geology/tectonics. Another track in Natural Resource Science and Management provides opportunities for concentrated studies in the investigation of ecological systems, environmental economics and policy, and environmental management practices.

As requirements and procedures change, the Handbook is updated and available at the Earth and Environment web site pages <http://earthenvironment.fiu.edu/programs/graduate/geoscience-grad-programs/>. It complements the general Graduate Policies and Procedures of the FIU University Graduate School (UGS) at <http://gradschool.fiu.edu/students/>, and additional rules and deadlines of the College of Arts, Sciences & Education at <https://case.fiu.edu/academics/graduate/index.html>. This handbook refers to current forms produced by the UGS and supersedes all previous editions of the handbook. Updated forms and current deadlines may be obtained from the University Graduate School web site at <http://gradschool.fiu.edu/>. Additional information on university regulations and course offerings may be found in the graduate and undergraduate FIU Course Catalogs at <http://catalog.fiu.edu/>.

It is the responsibility of every Earth Systems Science doctoral student to be familiar with the policies and procedures within this manual, and to use the forms, procedures, and deadlines of the University Graduate School and College of Arts, Sciences & Education.

Your progress towards the Ph.D. Earth Systems Science degree is important to the Department. If at any time you have problems or questions that cannot be resolved with your Advisor, please do not hesitate to contact the Graduate Program Director for Earth and Environment for help.

Note: Throughout this document, the word “term” refers to either the Fall or Spring semesters, or the Summer C term, which together make up the three terms per academic year.

Ph.D. Program in Geosciences

The Ph.D. in Earth Systems Science is a research-based degree which also requires a significant body of coursework. All doctoral students in the Department of Earth and Environment, whether in the Geosciences or Natural Resource Science and Management major of the degree program, take the same required courses. Satisfactory completion of the following major elements of the program is required for graduation:

- coursework
- a combined written and oral qualifying exam
- a written dissertation research proposal, and oral presentation and defense of it
- a written dissertation presenting original research of publishable quality and quantity, and oral presentation and defense of it.

Procedures and Regulations

Initial Advisement

At the time of application, each student chose a faculty mentor to serve as the Dissertation Advisor, and chose a major within the degree program based on the anticipated research area. The Dissertation Advisor must be a member of the FIU Graduate Faculty who holds Dissertation Advisor status – see <http://gradschool.fiu.edu/facultystaff/> - [facultylist](#) for a listing. Please bear in mind that professors are not obligated to advise you, even if you are admitted and you would like to work with them. If you strongly prefer to work with a particular faculty member, you should make sure that they are willing to advise you before or shortly after you submit your application.

Before classes begin in your first term, you will meet with your Advisor to discuss your coursework. Also, at this time you should begin discussing potential dissertation topics. In addition to meeting with your Advisor, you may want to seek out introductory meetings with other faculty members at the University whose research fields are of potential interest to you, and who would serve on your Dissertation Committee. You may change Advisors if your interests change during the first term. If your schedule is not filled with formal coursework before reaching doctoral candidacy, you should be registered for one or more credits of a section of Supervised Research (GLY 6910 or EVR 6970) under your Advisor's name.

Course Requirements (75 credits)

Formal (non-research) graduate courses	12 credits
ISC 5150 Introduction to Research in Earth and Environment (first fall)	2 credits
GLY 6061 Geoscience Systems (first year, fall)	3 credits
ISC 6153 Environments of a Changing Planet (first year, spring)	3 credits
EVR 6377 Natural Resource Conservation and Policy (first year, spring)	3 credits
Graduate seminars ISC 5151 and ISC 6152	2 credits

Electives (formal graduate courses, seminars, or supervised research)	35 credits
Ph.D. Dissertation (EVR 7980, GLY 7980, MET 7980)	<u>15 credits</u>
Total	75 credits

Courses will be chosen in consultation with your Advisor. Courses outside the department may be taken at the discretion of your Advisor, and taking courses outside the department can also help you choose the “outside member” of your Dissertation Committee (see next section). Electives may be either lecture or research credits. Research credits should be in either a section of Supervised Research (GLY 6910, EVR 6970), or in Ph.D. Dissertation credits (whichever of EVR 7980, GLY 7980 or MET 7980 is most appropriate) under your Advisor’s name. Students may register for Supervised Research from their first semester through the semester they are admitted to doctoral candidacy (Form D-2 signed and deposited with UGS). Thereafter, students must register for at least 3 credits of Ph.D. Dissertation each term until the dissertation is completed (i.e., the Final ETD Approval form is submitted – see below for details). Ph.D. students should never register for Thesis credit (e.g., GLY 6971), which is reserved for master’s students only.

A maximum of 36 credits of graduate level coursework may be transferred from another accredited U.S. graduate program toward your Ph.D. credit requirements, provided that these credits were earned as part of a completed graduate degree. *Transferred courses may not be substituted for the required courses EVR 6377, GLY 6061, ISC 5150, ISC 5151, ISC 6152 or ISC 6153 (see list above).* A maximum of six semester hours of graduate credits earned as part of an incomplete accredited graduate program or as a FIU non-degree-seeking student may be transferred provided the courses were completed less than 9 years ago at time of graduation. All transfer credits must have a minimum grade of B, and be considered acceptable as part of your academic program by your advisor and the Graduate Program Director. Normally, only credits from formal lecture courses are transferable. Transfer credits are assigned at the time of filing the Application for Candidacy form (D-2). The UGS rules for credit transfers are available at <http://gradschool.fiu.edu/students/>.

A full-time student takes 9 credits of coursework each fall and spring term before candidacy and 6 credits during the summer term. After candidacy, only 3 credits of Dissertation are required.

A minimum cumulative GPA of 3.0 in all coursework is required for the Ph.D. degree. Your GPA will be based only on formal lecture and/or lab courses; Supervised Research and Ph.D. Dissertation are graded on a pass/fail basis only. If your GPA drops below 3.0 in any term, you will be put on *Academic Warning* by the College of Arts, Sciences & Education, and any stipend support will be suspended until a plan for bringing up the GPA is worked out with your Advisor and filed with the UGS. Refer to the FIU Graduate Catalog for information on the conditions for academic warning, probation and dismissal.

Dissertation Committee and Research

The focus of the Ph.D. program is the completion of a dissertation involving original research. Timely completion of the program requires that you begin dissertation research in the first term with at least background readings and discussions of these readings with your Advisor, and possibly preliminary lab and fieldwork. This early work will form the basis of your dissertation proposal (see below). Ultimately, your dissertation research should result in publications in the peer-reviewed scientific literature.

Your first summer will normally be the first opportunity to carry out research without concurrent coursework, and should be a time for significant progress. Your research will then continue concurrently with coursework until your coursework is completed. Ideally, you should have all your coursework completed by the end of your second year.

Dissertation research is conducted under the guidance of your Advisor and in consultation with your Dissertation Committee. By the end of your first year, you should (with your Advisor's assistance and approval) appoint the members of your Dissertation Committee and file **Form D-1 Appointment of Dissertation Committee**.

The Dissertation Committee consists of a minimum of 4 members, including your Advisor, as follows:

- i. Your Advisor must be a member of the Graduate Faculty who holds Dissertation Advisor status (<http://gradschool.fiu.edu/facultystaff/#facultylist>) and must be an expert in the field of your expected dissertation research.
- ii. At least two other faculty must be members of the Graduate Faculty of the Department of Earth and Environment.
- iii. A fourth "outside member" is an FIU Graduate Faculty member with no appointment, full or partial, in the Department of Earth and Environment.
- iv. For Geosciences majors, at least two of the members must have terminal degrees in the Geosciences. For Natural Resource majors, at least two of the members must have terminal degrees in the environmental sciences, policy, conservation or management.

All committee appointments must be approved by the Graduate Program Director, College of Arts, Sciences & Education, and the University Graduate School. Additional members may be appointed; if they are not FIU Graduate Faculty their appointment is subject to acceptance by the Provost.

Form D-1 should be submitted no later than the UGS deadline, typically at least two terms before Form D-3 (dissertation proposal), and at least five terms before the anticipated graduation date. Students will meet with their Dissertation Committee at least once a year, usually in the spring semester as part of the UGS annual doctoral student evaluations.

Forms (D1, D2, D3, D-5, and ETD Approval) are at <http://gradschool.fiu.edu/students/-studentforms>. (Note that there is no D-4 form.) After obtaining departmental signatures, the forms should be submitted to the Graduate Secretary for submission to the Dean of

*the College of Arts, Sciences & Education, and for a copy to be included in your file. Each year the University Graduate School publishes deadlines at <http://gradschool.fiu.edu/calendar-deadlines/> for submission of forms and holding a thesis/dissertation defense. However, College of Arts, Sciences & Education **requires that these forms be submitted at least one week before UGS deadlines.***

Qualifying Examination

The purpose of the department's Qualifying Examination is to determine your aptitude for independent Ph.D. research and to identify any deficiencies in your background that might hinder progress toward the degree. The examination should be taken soon after a dissertation committee is nominated (Form D-1). Students entering with a M.S. degree from an accredited U.S. university should be prepared to take the exam during the second term in the program (before completing 18 credits); those without a M.S. degree normally take the exam before four full terms (36 credits) are completed. **The Qualifying Exam will only be administered during Fall and Spring semesters. Further blackout dates include the first week of a semester and the two weeks prior to scheduled final exam week.** Passage of the Qualifying Examination allows continuation to the candidacy examination and dissertation proposal (Forms D-2 and D-3, submitted together). Because the Qualifying Exam is mainly diagnostic, it must be held early enough that remedial coursework or other measures may be applied if needed.

The qualifying examination will consist of both written and oral portions administered by 4 and only 4 FIU graduate faculty members who constitute the Examining Committee. Examiners will be chosen by the committee chair (Advisor) from the FIU members of your Dissertation Committee identified on Form D-1. Substitute examiners may be appointed, if necessary, with the approval of the GPD. You must pass both the written and oral portions of the qualifying examination. Failure to pass will result in termination from the Ph.D. program; however, it may be retaken one time at the discretion of the committee.

The written portion will be a closed-book examination administered by the Graduate Program Director, consisting of questions supplied by the Examining Committee. Examiners will prepare questions that should be answerable in a closed-book format within 90 minutes. You will have 6 hours to complete the examination. You may bring food and/or beverages to the exam, but you may not leave the room without the permission of the GPD until the exam is finished.

Any violation of the closed-book format will be grounds for failure, including the use of pre-prepared answers or files, unauthorized access of texts, articles, notes or the internet, or assistance from any other person during the exam. If you do not understand a question, you may request clarification from the GPD, who can contact an examiner. Examiners will grade the answers to their own questions on a scale from 0 to 4 and return them to the Graduate Program Director. To pass, you must earn a grade of at least 1.0 on every question, and average at least 3.0 for the entire examination. The GPD will submit a memo summarizing the results of the examination to the Dissertation Advisor, which will

be shared with the student and the examining committee prior to the oral examination.

The oral portion of the exam must take place within 2 weeks of completing the written examination. If you do not pass the written examination, the examiners may elect to proceed with the oral examination to explore scientific capabilities that may not have been reflected in the written examination. You are expected to answer questions relating to your research area of interest and to general scientific knowledge. After the examination, the student leaves the room and the Examination Committee deliberates; a result of passing requires a majority vote of the committee. The student is notified of the results of the oral examination immediately after the deliberations. At that time, the members of the Examination Committee may require additional remedial coursework or study, which will be specified on the **Results of the Ph.D. Qualifying Examination form**. Immediately after the oral examination, the Dissertation Advisor will complete the form and submit it to the GPD. In addition, within 30 days the student will be given official written notification of the results, in which the committee may stipulate additional conditions or expectations for the student's continued progress in the program.

*Since faculty examiners must be present for the oral exam, formally schedule this part of the exam **before** choosing a date for the written exam. Note also that neither the oral or written parts should be scheduled during the blackout dates: the first week of a semester and the two weeks prior to scheduled final exam week.*

Dissertation Proposal and Defense: The Candidacy Examination

Students are admitted to doctoral candidacy upon successfully completing all required coursework and passing the Candidacy Exam. The Candidacy Exam **must** take place before completing 60 graduate credits in the program, including transfer credits. For full-time students, this will occur before the end of 8 terms in the program (including summer terms). For Ph.D. students transferring credits from a M.S. program, this will occur earlier. The candidacy exam must also be scheduled at least 4 terms before the anticipated graduation date. It is extremely important that you proceed to candidacy in a timely manner. Students who do not take their candidacy exam before accruing 60 credits will be subject to dismissal from the program.

The purpose of the candidacy exam is to determine whether you are prepared to begin work on the dissertation. The exam consists of an open, publically accessible, presentation followed by a closed oral defense of the proposed dissertation project and related knowledge before the dissertation committee. Prior to scheduling the candidacy exam, you should meet with your Advisor and the Graduate Program Director to verify that all course requirements have been met. You must complete all required coursework before defending your dissertation proposal.

A complete, written Ph.D. dissertation proposal is submitted to your committee members at least **2 weeks** before the exam. The proposal should be developed in close consultation with your dissertation Advisor. The text of the proposal must be no longer than **15** double-spaced pages (excluding abstract, figures, and references). The proposal should include an Abstract, Introduction, Hypotheses, Proposed Research, Preliminary Data,

References, and figures, based on your background research.

At least one week in advance of the candidacy exam, an announcement should be posted in the department and emailed to the Graduate Program Director for email circulation to the department.

At the exam, you will give an oral presentation of the proposal, lasting about 45 minutes, open to students and faculty from the department. Following the presentation, questions will be taken from non-committee members. When these questions are finished, non-committee members leave the room.

At this point, questions are taken from your dissertation committee members. You will justify the objectives of the project and their significance, the proposed methodology, and the relevance of the projected results to the research problem. You may also be required to answer questions demonstrating appropriate background knowledge in your specialization. After the exam, you will leave the room while the committee deliberates. You will be informed of the result of the examination immediately after the deliberation, and the dissertation advisor will summarize the results and stipulations of the committee in writing.

The student can only pass or fail the candidacy examination; the University Graduate School does not allow passing to be contingent on further coursework, papers or any other conditions. Failure of this examination terminates enrollment in the Ph.D. program, though the exam may be retaken one time at the discretion of the committee members.

After passing the candidacy exam, you should immediately submit **Form D-2 Program for Doctoral Degree and Application for Candidacy** together with Form D-3 (see below). This form signifies that your formal coursework has been completed, and that you have passed the qualifying and candidacy exams. The Graduate Program Director will review Form D-2 for accuracy and forward the signed form to the University Graduate School. Form D-2 should be submitted as soon as the candidacy exam results are known and before the end of the term. You will be allowed to register for Ph.D. Dissertation credits (EVR 7980, GLY 7980 or MET 7980) after approval of Form D-2 by the University Graduate School.

Together with submission of Form D-2, the candidate should submit **Form D-3 Doctoral Dissertation Proposal** to the Dean of the College of Arts, Sciences & Education and the University Graduate School along with a **5-page** summary of the proposal. Consult the UGS guidelines for the dissertation proposal <http://gradschool.fiu.edu/thesis-dissertation/>. Form D-3 should be submitted no later than the CASE deadline (<https://case.fiu.edu/academics/graduate/index.html>), typically one week before the UGS deadline <http://gradschool.fiu.edu/calendar-deadlines/> and at least four terms before the anticipated graduation date. In addition, you should email the Graduate Program Director a one-page abstract of your proposal in electronic form (attached MS word doc or PDF file) for posting at the departmental web site.

Responsible Conduct of Research training: All graduate students who file Form D-3 must complete Responsible Conduct of Research (RCR) e-training. You may register for this course online at <http://research.fiu.edu/rcr/>. You must submit a copy of your RCR certificate of completion with Form D-3 and save a copy for your records.

Students must submit forms D-2 and D-3 in the same term, well before the end of term. The University Graduate School is typically swamped at the end of each term, which may result in delays in processing the forms. These delays, in turn, may impact registration for Dissertation credits in the following term.

Non-thesis MS degree enroute: Doctoral candidates who have filed the D-2 and D-3 forms and had them accepted by the University Graduate School can receive a Master of Science (either Geosciences or Environmental Studies) *en route* to the PhD after completion of the requisite credits of graduate coursework with “non-thesis track” appearing in the transcript. Students should notify the GPD of their interest in the *en-route* MS in writing or by e-mail in the semester of UGS acceptance of the D-2 and D-3 forms.

Registration for Dissertation Credits:

Starting in Fall 2019, you must complete at least 15 Ph.D. Dissertation credits (EVR 7980, GLY 7980 or MET 7980) to graduate from the Ph.D. program. Registration for Ph.D. Dissertation credits begins in the term after you pass the candidacy exam. After a doctoral student is admitted to candidacy, continuous registration for 3 credit hours of Ph.D. Dissertation credits each term (including the summer term) is required until the Ph.D. Dissertation credit requirement is fulfilled. Once you begin taking Ph.D. Dissertation credits, you should not register for Supervised Research. If a candidate plans to be absent from FIU in any term prior to completing their dissertation, they should file for a *leave of absence* with the University Graduate School.

Annual Dissertation Progress Conference

Doctoral students who have established a Dissertation Committee with Form D-1 must convene a yearly conference with their committee to discuss their progress in the program. Doctoral students who have not submitted form D-1 will meet with their Advisor only. This meeting typically happens at the end of the Spring semester or in the early summer. Before the face-to-face meeting, students will be instructed to fill out the online **UGS Annual Student Evaluation and Mentoring Plan**, listing important accomplishments and progress toward the degree over the past year, and planned work for the following year. The instruction will come from the UGS, with a deadline to initiate the evaluation process and to schedule the committee meeting. That plan is forwarded to the Advisor for perusal before the meeting. At the meeting, students give a brief overview of their progress. Students should mention if they need clarification of the direction of their research, or if they feel that they are receiving contradictory advice from members of their committee which could be cleared up in a face-to-face meeting. Following this meeting, the advisor and the committee members are successively given access to the online **Evaluation and Mentoring Plan** and may enter comments with their

approval. The Advisor evaluates the student's core competencies and provides an improvement plan if the student did not meet expectations. The date of the face-to-face meeting is recorded. It is important to complete the online evaluation process by the UGS deadline; otherwise, a registration hold, to be lifted only with a petition from the student, will be placed for the following Fall semester

The purposes of the annual conference and form are to assist students and their committees with establishing goals and plans of action toward degree completion, and to highlight students' accomplishments.

Note that the Department Graduate Committee also conducts a brief annual review of doctoral student progress, usually early in the Spring term. All full-time and part-time students in the Earth System Science program are required to submit an Annual Progress and Activity Report to the Graduate Program Secretary. See page 18 for details of this requirement.

Preparing the Dissertation and Scheduling the Defense

Formal FIU guidelines for preparation of your dissertation are found in the Electronic Thesis and Dissertation (ETD) Guide at <http://libguides.fiu.edu/etd> and the *Regulations for Electronic Thesis and Dissertation (ETD) Preparation Manual* accessed on that web page. These guidelines must be followed exactly.

Scheduling the dissertation defense requires a complete dissertation approved by your Dissertation Committee. The dissertation is first shown to the dissertation Advisor, and may be submitted wholly or in sections, depending on the Advisor's instructions. The Advisor will require revisions and improvements until a **high-quality, complete draft** suitable for distribution to the Dissertation Committee is produced. Once the advisor thinks the dissertation is ready to present and defend, you will distribute copies to the other members of your committee, and at that time schedule the dissertation defense with Form D-5 (see below). The candidate must provide copies of the dissertation and defense announcement to the committee at least **5 weeks** before the defense date. This timing gives the committee at least 1 week to read the complete draft and decide if it is provisionally acceptable, and to review the defense announcement and decide if it is an accurate abstract of the dissertation.

At the time **Form D-5 Preliminary Approval of Dissertation and Request for Oral Defense** is filed, the dissertation must be complete and suitable for defense. To schedule the defense, the candidate must submit Form D-5, signed by the Dissertation Committee, to the Graduate Program Director and then to the Graduate Secretary, who submits it to the College of Arts, Sciences & Education (CASE) at least **4 weeks** before the date of the defense or by the term's deadline (whichever is earlier). Together with Form D-5, hard copies of the dissertation and Dissertation Defense Announcement must also be submitted to the CASE. The Graduate Program Director requires 2-3 days to review these documents before submitting them to CASE. If acceptable, CASE signs and forwards it to the UGS for approval. At least one week before the defense, give a copy of the

announcement to the Graduate Secretary to post in the Department, and email an electronic copy to the Graduate Program Director to distribute online.

After the Dissertation Committee has read the dissertation, any member who sees fit, or the Ph.D. candidate, may require an informal meeting of the committee to review the written document before the dissertation defense. This consultation may serve to clarify aspects of the scientific emphasis, direction or significance of the research, organization of the dissertation, the extent of revisions to be expected, scheduling of the dissertation defense, or any other issue where clarification is needed. The consultation is meant to resolve potential disagreements among advisors, streamline the dissertation defense process, provide the candidate with the clearest possible guidance leading up to the defense, and reduce the time spent on revisions after the defense. Committee members whose attendance would be difficult to arrange need not be present. The candidate is not required to be present at this consultation if one is held.

Many students underestimate the amount of time required to prepare a doctoral dissertation. Students should start writing their thesis at least 12 months before their planned graduation date. In fact, writing should start immediately after candidacy. Some students choose to compile a dissertation from separate papers written during their tenure in the Ph.D. program. Consult with your advisor and committee as to the preferred format for your dissertation. Committee members and the Graduate Program Director will not sign Form D-5 for an incomplete dissertation, regardless of any impending deadline. Failure to consider this may result in the delay of your defense and graduation by one term.

Dissertation Defense

At the dissertation defense, you will present your results in a ~45 min talk to the University community and the general public. The committee will then question you on the content, significance, and presentation of the research, and determine the outcome of the defense. Possible outcomes include passing with minor/no revision; passing with major revision; and failure, in which case the dissertation requires major revision and a second defense must be scheduled. Passing requires that the Dissertation Committee approve the current copy of the dissertation before it is forwarded outside the department for further approval (see below). Signature of the **Final ETD Approval Form** (see below) signifies that the document was reviewed and accepted by that committee member, the oral defense was successful, and the final dissertation was approved.

Failure of the dissertation defense should be quite uncommon, and can usually be avoided by careful attention to a few common-sense points:

1. At your proposal defense (candidacy exam) and in annual committee meetings, be sure there is clear agreement among members of your committee about the requirements and expectations for the dissertation.
2. In close consultation with your Advisor, conduct thorough, quality research and careful writing.
3. Between your proposal defense (candidacy exam) and dissertation defense, keep

- your committee informed of progress, especially if there are changes in the scope or focus of work after the candidacy exam.
4. Call additional committee meetings if clarification of your research direction is needed.
 5. Prepare well for the dissertation defense. Construct an organized talk with clear visual aids. Practice the talk with your Advisor several times before your defense, trying to anticipate likely questions and formulate answers in advance.

Submission of Dissertation

After the successful dissertation defense, you will carry out all revisions specified by the committee. Once the revised dissertation is approved by all committee members, final copies must be prepared according to the Electronic Thesis and Dissertation (ETD) Guide at <http://libguides.fiu.edu/etd> and *Regulations for Electronic Thesis and Dissertation (ETD) Preparation Manual* accessed on that web page. The signature page of the dissertation lists your committee members; their signatures are optional, but you might like to collect them for your records. Together with the **Final ETD Approval form** and required attachments, one hard copy of the dissertation (double-sided printing preferred) is to be submitted for the CASE Dean's office. After the UGS receives the approved ETD form from the college, they will send you an email with instructions for uploading the dissertation; the email is usually sent on the date of the deadline for the Final ETD Approval form. The University Graduate School will carefully review the dissertation, and adjustments to format may still be required. Subsequently, the fully approved dissertation is sent to the University Library. At least two hard copies are required for the Department of Earth and Environment: one for the departmental collection, and one for your Advisor. It is also common practice to offer a copy to each member of your Dissertation Committee.

Changing Your Dissertation Advisor or Committee Members

If, subsequent to submitting your dissertation proposal, a committee member is unable to continue to serve, you must file **Form D-1r Approval of Revised Dissertation Committee**. This form will require the signatures of the leaving members and the new replacement members. The signatures of the faculty leaving the committee affirm that the reason for their departure is not related to any concerns regarding the quality of the dissertation. The signatures of the faculty added to the committee affirm they met with the student, reviewed and approved the proposal, and agreed to serve on the committee.

To change dissertation advisors after passing your proposal defense, you must have approval from the Graduate Committee. Requests for approval must be submitted in writing to the Graduate Program Director. You and your Advisor are expected to be in agreement before the request is submitted so that approval is routine. After approval from the Graduate Committee, you must submit Form D-1r. If you and your Advisor disagree over the change, you are both urged to discuss it with the Graduate Program Director and make every effort to resolve the disagreement. If diligent efforts fail to resolve the conflict, both sides will present a brief written summary of their case to the Graduate Program Director. Both sides will then present their case in a hearing before the Graduate

Committee, who will consider the situation and make a recommendation. A Committee member who is involved in the dispute will only present their case and not be allowed to vote. Tie votes will be decided by the department’s Chairperson. Such a hearing is the very last resort in resolving a problem between a student and their Advisor and will not be held unless all other avenues have been unsuccessful.

Milestones Chart for the Ph.D. Degree

A sample sequence of the required courses, forms and milestones for a full-time student in the Ph.D. program is summarized in the table below. Please note that each student's program will differ in the coursework and timing. In every case, make and retain copies of all forms D1, D2, D3, D5 and ETD Approval for your records.

Year 1			Year 2		
Fall	Spring	Summer	Fall	Spring	Summer
Initial advisement	Nominate committee (Form D-1)	Explore research plan	Qualifying Exam	Prepare proposal	Dissertation research
Talk with potential committee members	ISC 5151 E&E Grad. Seminar	Preliminary research/ fieldwork	ISC 6152 E&E Adv. Grad Seminar	Candidacy Exam (Form D-2),proposal (Form D-3)	
GLY 6061 Geoscience Systems	EVR 6377 Nat. Res. Cons. Policy			Committee meeting	
ISC 5150 Intro Research in E & E	ISC 6153 Env. Chang. Planet				
Other courses, Super. Res.	Courses, Super. Res.	Supervised Research	Courses, Super. Res.	Courses, Super. Res.	GLY/EVR/MET 7980 Ph.D. Dissertation

Year 3			Year 4		
Fall	Spring	Summer	Fall	Spring	Summer
Dissertation research	Dissertation research	Dissertation research	Dissertation research, writing	Dissertation research, writing	Defend dissertation (Forms D-5, ETD)
	Committee meeting			Committee meeting, submit draft to committee	Submit final approved dissertation (ETD Form)
GLY/EVR/MET 7980 Ph.D. Dissertation	GLY/EVR/MET 7980 Ph.D. Dissertation	GLY/EVR/MET 7980 Ph.D. Dissertation	GLY/EVR/MET 7980 Ph.D. Dissertation	GLY/EVR/MET 7980 Ph.D. Dissertation	GLY/EVR/MET 7980 Ph.D. Dissertation

Additional Issues

If questions about procedures or requirements arise but are not covered in this handbook, first seek clarification from your dissertation Advisor, and then from the Graduate Program Director. In rare instances, the GPD may ask the Dean of Graduate Studies to waive degree requirements on behalf of a student.

Policies for International Student Visas

Issues for F-1 and J-1 students, which include employment, enrollment, and Falling Out of Status, are typically handled by the International Student Scholar Services (ISSS) office. Some of the policies are as follows:

1. *F-1 students* must always be enrolled full-time. Before Candidacy, full time is 9 credits for Fall and Spring, and 6 credits for Summer. After Candidacy, 3 credits of Dissertation constitute full-time enrollment. The ISSS office has a 30-day window after the beginning of a term to report to the federal Immigration Department if a student has not enrolled full-time and/or reported to campus.
2. *Reduced Course Load* – An RCL form must be signed by the academic advisor and the basic reasons are: a) Academic Difficulty (1st term only), b) Medical Condition, c) Final Semester/Completion of Program, and d) Advancement to Thesis/Dissertation Segment.
3. *Falling Out of Status* – FIU is required to report any student who falls out of F-1 status to DHS – the Department of Homeland Security. The student must file for a Reinstatement in a timely manner if they have fallen out of status. Reasons for being out of status are: a) Less than full time enrollment (without authorization), b) Dropped class, c) Too many on-line classes so they can only enroll for a maximum of 3 online credits each term, d) Academic dismissal, e) Unauthorized employment (even a job that does not pay is considered unauthorized employment), and f) Not maintaining at least a 3.0 GPA.
4. *Employment* – For any type of employment, a student must continually maintain lawful F-1 status. Students are allowed a maximum of 20 hrs. per week. If a student falls out of status, he/she must stop work immediately. The student must obtain proper authorization before engaging in any off-campus employment; whether the employment is paid or unpaid, this offense can lead to deportation.

Financial Aid

Full-time graduate students in the Department of Earth and Environment are usually supported fully with some type of financial aid. Financial aid awards typically include a stipend to cover living expenses and a waiver of tuition, but not a waiver of tuition-related fees or fees for health insurance, parking, etc. Types of financial aid include: Teaching Assistantships (TA), Research Assistantships (RA), FIU fellowships, fellowships from external agencies such as NSF and EPA, and travel grants.

Assistantships

Assistantships are provided by the Department to support graduate studies of qualified students. The number of assistantships is limited, and they are awarded on a competitive basis. Assistantships are normally awarded for the full period of study toward a degree (two years for a master's student, four years for a Ph.D.), but are renewed each term subject to satisfactory performance in the degree program and continued availability of funding.

In order to maintain an Assistantship, you must:

- 1) be registered full time: 9 credits of graduate-level courses each Fall and Spring term, and 6 credits in the Summer C term, prior to Candidacy. After Candidacy, you may register for only 3 dissertation credits per semester until graduation.
- 2) maintain a "B" (3.00) average: If you post a GPA below 3.0 in any term (regardless of your cumulative GPA), you will be placed on warning that your assistantship is in jeopardy. If you post a GPA below 3.0 (Academic Probation) in any term thereafter, you will lose your assistantship.
- 3) make satisfactory progress toward the completion of a thesis or dissertation.

Graduate studies are a full-time endeavor and students receiving assistantships are expected to apply all time not spent on their TA or RA duties towards their academic and research program. All Graduate Assistants (TAs and RAs) must agree not to accept employment outside the University unless written permission is obtained from the Department. Graduate Assistants are expected to work on campus for the duration of their contracts (Fall, Spring, and Summer) unless they are performing off-campus research activities such as fieldwork, travel to conferences, etc. This means that if you are on a TA and teaching for only Summer A or Summer B, you must utilize the time you are not teaching to pursue your research. If you plan to be gone during any term for more than 1 week at a time while under contract, first get the approval of your Advisor and the Graduate Program Director.

Teaching Assistantships

Teaching Assistantships are provided through the College of Arts, Sciences & Education in exchange for instructional or curatorial duties. Students whose native language is other than English must score at least 26 out of 30 points in the speaking section of the Test of English as a Foreign Language (TOEFL) in order to receive a Teaching Assistantship. For the 2019-2020 term, the stipend awarded for a TA is approximately \$24,164 per year.

The Assistantship provides a waiver of most tuition expenses (9 credits in Fall and Spring, 6 credits in Summer). In addition, first-time TAs must register for 1 additional credit of GLY 6941 Supervised Teaching in the Geosciences (for a total of 10 credits) and attend the half-day *New TA Orientation* workshop held in August the week before the start of Fall classes.

The tuition waiver included with a TA covers only the cost of tuition for graduate-level courses. Students are responsible for the cost of any courses taken at the undergraduate level (4000 or below). In addition, students pay annually ~\$2404-\$2439 (depending on whether you are a new student paying orientation and photo fees) plus \$535 for health insurance. These amounts are set by the University and subject to change. Please see the University Catalog or consult the Graduate Program Secretary for more information.

TA duties will normally include teaching two sections of undergraduate laboratory courses per term, but may include other tasks such as grading or curatorial duties. Your teaching assistantship is awarded with the provision that you fulfill certain duties in conducting the classes/labs that you are assigned. You are expected to cover the material indicated by the teaching laboratory managers for introductory courses, and by the lecture instructors for courses with associated labs that you teach. Your primary duties are to:

- 1) conduct the labs from the first week through the last week of the term, and for the full length of time allotted for the class/lab
- 2) notify both the teaching lab manager and the chairperson when a lab class has been cancelled
- 3) submit grades by the university deadline
- 4) participate in field trips associated with the course
- 5) conduct student evaluations for other courses at the end of the term
- 6) monitor examinations for large lecture courses

Research Assistantships

A limited number of research assistantships (RAs) are also available and permit graduate students to conduct research, either their Advisor's and/or theirs, without teaching responsibilities. Most RAs are funded from an external grant or contract administered by your Advisor, so you are required to conduct research on the funded project. In many cases, this work will form part of your Ph.D. research. The same policies, full-time registration and academic requirements for TAs also apply to RAs, except that RAs are not required to take the TA orientation course. In some cases, a RA may provide a higher stipend level and cover fees not provided by a TA, depending on the grant's budget.

Note: Grant writing is an essential component of an academic career. Graduate students often participate with their Advisors in preparing research proposals to funding agencies, as well as writing their own, smaller proposals to fund travel and other research-related activities. Such assistance provides valuable experience in proposal writing.

FIU Doctoral Fellowships

Presidential Fellowships

These highly competitive awards are awarded at the time of application to the Ph.D. program. The fellowships provide \$30,000 per year for two years with an additional third year as a Graduate Assistant. The first and second years provide funds with no obligation other than to make excellent progress in the degree program. Tuition and health insurance for Presidential Fellows is covered for three years. Students awarded Presidential Fellowships are expected to be strong competitors for Dissertation Year Fellowships for a fourth year of support. Thus, strong applicants should be confident of receiving four years of support with only one of those years (3rd year) possibly requiring any specific service in exchange for the support.

Doctoral Evidence Acquisition Fellowships

The DEA Fellowship is intended to support doctoral students who have no financial support for evidence acquisition activities or those students for whom their current means of financial support would significantly interfere with or preclude their ability to collect the evidence needed for their doctoral research. The fellowship provides \$8,300 per term for one term. Applicants must have advanced to Candidacy and have Form D-3 on file with UGS before the term of the fellowship. There are three competitions per year.

Dissertation Year Fellowships

DYFs are awarded to exceptional FIU doctoral candidates during the writing phase of their dissertations. To be competitive, doctoral candidates should have one or more manuscripts from their dissertation research published or in press by the application deadline. The fellowships provide \$8300 per term for two terms through the term in which the dissertation is submitted to the University Graduate School. DYF recipients are expected to graduate within one year of receiving the fellowship. There are three competitions per year.

McKnight Doctoral Fellowship

The McKnight Doctoral Fellowship is awarded at the time of application to a doctoral program, and addresses the underrepresentation of African American and Hispanic faculty at Florida colleges and universities by increasing the number of citizens qualified with Ph.D. degrees to teach in higher education. The fellowship provides three years of stipend (\$12,000 from the Florida Education Fund and \$10,000 from UGS), two additional years of support from the department, and 5 years of tuition waiver and health insurance.

McKnight Dissertation Fellowship

The McKnight Dissertation Fellowship is awarded to students in the process of writing their dissertations, and addresses the underrepresentation of African American and Hispanic faculty at Florida colleges and universities by increasing the number of citizens qualified with Ph.D. degrees to teach in higher education. The fellowship provides one

year of support of a \$12,000 stipend, tuition waiver and travel to McKnight workshops. There are three competitions per year.

For more information on these and other **FIU Fellowships**, see the UGS website: <http://gradschool.fiu.edu/students/funding/>.

Externally Funded Fellowships

Several federal and private agencies provide Graduate Fellowships for Ph.D. students. In many cases, stipends for these programs are considerably higher than those for assistantships or fellowships available through FIU or the state of Florida. These programs are generally very competitive and require a well written, well-thought-out proposal. If you are interested in applying for one of these programs, you should allocate sufficient time and work closely with your advisor to ensure the best possible proposal.

Programs include:

- National Science Foundation
- Environmental Protection Agency
- NASA
- US Department of Defense

Announcements of additional fellowship programs and opportunities are distributed frequently via e-mail by the Graduate Program Director.

Travel Grants

Students are encouraged to seek out and apply for grants to support fieldwork and travel to professional meetings. Below are listed the main sources of funding for travel.

- The College of Arts, Sciences & Education (CASE) supports graduate student travel on a matching basis with the Department if the student is presenting their own research at a professional meeting, traveling for research-related reasons, or interviewing for a job. In those cases, the college awards up to \$200 once per year, which is then matched by the Department. See the CASE web site <https://case.fiu.edu/academics/graduate/index.html> for details.
- The Graduate and Professional Student Committee (GPSC) of the FIU Student Government Association has a system of awarding funding for travel to conferences (up to \$500), and for research (up to \$500) or professional development (up to \$150). Students can apply once during the June 1 – May 31 funding year. Travel funds may not be used for lodging or meals. The deadline for application is 6 weeks before the date of travel, so application must be made well in advance of trips. See <http://gpsec.fiu.edu/> for all the details.
- Support for student travel to professional meetings also may be obtained by applying to professional organizations such as GSA, AGU, or AAPG.

Other Information

Changing Programs

A fully admitted student may apply to change graduate degree programs (M.S. to Ph.D., Ph.D. to M.S., or between departments). A change of a graduate degree program is handled as a new application (except there is no fee) and is evaluated as such by the department. Applicants must meet all minimum requirements of admittance to the new degree program. All changes in program must be supported by the student's Advisor, and approved by the Graduate Program Director and Graduate Committee, who also consider substitution of previously taken courses for required courses. [A Change of Graduate Degree Program](#) form must be filed with the University Graduate School.

Enrollment and Time Limits

Graduate students must maintain active status, which entitles them to use University resources. Doctoral programs require continuous enrollment of at least 3 credit hours per term to maintain active status in the program. International students and students supported with Assistantships are required to be enrolled full-time (9 credits in Fall and Spring, 6 credits in Summer C).

A lapse in enrollment for three consecutive terms requires the student to apply for readmission. A student who finds it necessary to be excused from registration in a graduate degree program for a semester or more must formally petition for a *Leave of Absence*, and medical insurance obtained through the university must also be considered. LORs must be approved by the GPD, CASE and UGS.

All requirements for the doctoral degree, including successful completion of a dissertation, must be completed within 9 years of first enrollment in the program. Students who do not complete their dissertation within this time period may apply for an extension with an Electronic Petition for Exception to Graduate Requirements, which is initiated electronically by the Graduate Program Director.

Contact Information

Department of Earth and Environment

Main office: AHC5 360 (front desk), 305-348-1930, <http://earthenvironment.fiu.edu/>

Chairperson: Dr. Leonard Scinto, AHC5 373, 305-348-1965; and scintol@fiu.edu.

Graduate Program Director: Dr. Assefa M. Melesse, AHC5 390, 305-348-6518, melessea@fiu.edu.

Graduate Secretary (your go-to person for grad student issues, e.g., GA contracts and travel): Ms. Gail Excell, AHC5 393, 305-348-1630, excellg@fiu.edu.

Office Manager: Ms. Caridad Machado, AHC5 378, 305-348-1908, machadoc@fiu.edu

Department Secretary: Ms. Kristen Davis, AHC5 front desk, 305-348-1930, krdavis@fiu.edu

Lab Manger II (manages supplies and computers for research labs, oversees PC 324 computer room): Claudia Garcia, PC 314, 305-348-9997, clgarcia@fiu.edu

Teaching Lab Coordinator for TAs teaching in the Natural Resource Science and Management track of the ESS PhD program): Ms. Seema Sah, OE234, 305/348-6136, <http://sahs@fiu.edu>

Teaching Lab Coordinator for TAs teaching in the Geosciences track of the ESS PhD program): Dr. K. Panneerselvam, PC342A, 305-348-1948, kpanneer@fiu.edu

College of Arts, Sciences & Education ECS 450, 305-348-2038, <https://case.fiu.edu/academics/graduate/index.html> Dean: Dr. Michael Heithaus
Associate Dean of Graduate Studies: Dr. Maureen Donnelly

University Graduate School, PC 230, 305-348-2455, <http://gradschool.fiu.edu>
Dean: Dr. Andres Gil

Other Useful Links

UGS deadlines for forms: <http://gradschool.fiu.edu/calendar-deadlines/>

College of Arts, Sciences & Education deadlines for forms (normally 1 week before UGS deadlines): <https://case.fiu.edu/academics/graduate/index.html>

International student services: <https://globalaffairs.fiu.edu/iss/>

Plagiarism Prevention Guideline

To ensure research integrity and to promote originality in research activities, students are expected to work closely with their advisor and to use other available resources to gain an intimate knowledge of responsible research and proper citations and other attributions.

The Department of Earth and Environment developed the following guideline to educate and prepare students to avoid plagiarism, assert research integrity, and prevent invalidation of their masters and doctoral research.

The guideline is divided into three sections: Informative, preventive and corrective.

Informative

Students are required to attend the following informative training.

1. New students' orientation by the Graduate Program Director. This orientation will include orientation on practices in original research, proper citations, and writing. All new graduate students must attend this annual orientation held a few days before the Fall semester.

Students are encouraged to attend the following informative trainings and activities.

1. Attend the professional development workshops offered by University Graduate School (UGS), WAC (Writing Across the Curriculum), CEW (Center for Excellence in Writing), and the FIU Libraries. These workshops will be organized by the above FIU offices.
2. Use of the resources available both online and face-to-face via UGS, WAC, CEW, and the FIU Libraries.
3. Graduate research seminars through the departmental colloquia. With the help of UGS, the department will invite speakers to talk about research integrity and responsible research practices.

Preventive

1. Admission to graduate studies implies the selection of self-motivated individuals willing to maintain the privilege entrusted to them. As it is a mutual

responsibility, graduate students and their respective advisors should engage in discussion to ensure originality of their research writing and acknowledge proper authorship in the manuscript and citations of their graduate work.

2. Such issue will also be presented in the required Research Methods course (ISC 5150 Research in Earth and Environmental Science) which will include using Plagiarism Prevention Software (PDS).
3. Commit to using Plagiarism Detection Software (PDS). Students can commit to use the available PDS like *Turnitin* to generate similarity report. Students can commit to the use of PDS by signing the form.

Corrective

1. Using Plagiarism Detection Software (PDS). Students who signed the use of PDS, can submit the similarity report as part of the M3 or D5 submissions.
2. Students are required to include a declaration statement in their thesis or dissertation declaring originality and indicating their thesis or dissertation is written entirely by the candidate and it is solely the result of their research work and is not submitted for any other degree requirement. The declaration statement is shown below.

Declaration statement

I, [*student name*], declare that the [*thesis or dissertation*] entitled [*Title*] is the result of my original research work and it has been written by myself under the supervision of my advisor, [*advisor name*]. Reference to the literature, and acknowledgement of collaborative research and discussions are made and appropriate credit has been given within this [*thesis or dissertation*]. I confirm that this work has not been submitted for any other degree qualification.

Student Permission to Submit to Plagiarism Detection Software (PDS)

To: Associate Dean for Graduate Studies, CASE

I, the undersigned, give consent to [*name and title of person running report*], to submit my dissertation, thesis, or capstone project to [*insert name of Plagiarism Detection Software, such as Turnitin*].

I understand the results will be submitted as part of the M-3 or D-5.

Signature of student

Date