OCEAN SCIENCES (OCE) GRADUATE HANDBOOK, 2015-2016

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1. INTRODUCTION

This document outlines procedures and requirements for Ph.D. and M.S. students in the Ocean Sciences (OCE) program at RSMAS. It serves as a **supplement** to the RSMAS (http://www.rsmas.miami.edu/assets/rsmas_graduate_handbook_2014-15.pdf) and UM (https://umshare.miami.edu/web/wda/grad/pdf/graduatestudenthandbook.pdf) graduate handbooks.

Students should be aware of all the requirements and procedures in these handbooks. Students are responsible for following the procedures and meeting the requirements outlined in these handbooks in order to complete their degrees in a timely fashion. Any uncertainties regarding the procedures and requirements should be clarified with the OCE program director and the RSMAS Graduate Studies Office (GSO).

All progress should be recorded in the students' files at GSO. Information about the necessary forms is available in the RSMAS Graduate Handbook.

2. PROGRAM REQUIREMENTS

The applicable requirements are those in effect during the academic year in which the student first registers in the program, unless stated otherwise in this handbook or by the program director.

All RSMAS courses are listed on the GSO website. Students should consult their advisors and the OCE program director regarding their choices of courses; courses taken by students should be approved by their advisors. Any deviations from the requirements listed below must be approved by the advisor and the OCE Academic Committee.

OCE requirements for **Doctor of Philosophy**

a) Comprehensive examination: A grade of PhD-pass is required to bypass the M.S. degree and begin working towards the Ph.D. Students earning a grade of MS-pass may pursue a Ph.D. after completing the M.S. degree, subject to approval from their M.S. thesis committee.

b) Seminar: Regular attendance at a regularly scheduled OCE, MPO or AMP seminar series is required. In the same seminar series, each student is expected to give at least one 15-minute presentation each year after the student passes the comprehensive examination.

c) A minimum of 27 course credits is required for the Ph.D. degree, of which at least 9 course credits must be from 700-level courses. All OCE Ph.D. students are required to take, or have taken an equivalent course in another program, at least two of the following three courses: Ocean Biogeochemistry (OCE 610), Introduction to Physical Oceanography (OCE 603), Analytical

Methods in Applied Marine Physics (OCE 701). At least one 3-credit course must be taken outside the OCE program, unless the student came to RSMAS with an M.S. degree from another institution. Courses with the 'RSM' designation count as outside courses.

d) OCE students follow one of four academic tracks: ocean dynamics; air-sea interaction and remote sensing; marine biogeochemistry; biophysical interactions. Each of the four tracks has course requirements in addition to those listed in c). For students in the ocean dynamics track, the following courses are required: Geophysical Fluid Dynamics I (OCE 611) and Geophysical Fluid Dynamics II (OCE 711). For students in the air-sea interaction and remote sensing track, the following courses are required: Applied Ocean Hydrodynamics (OCE 675) and Wave Propagation in the Ocean Environment (OCE 676). For students in the marine biogeochemistry track, the following courses are required: Introduction to Biological Oceanography (MBE 704) and Chemical Oceanography (OCE 705). For students in the biophysical interactions track, the following courses are required: Introduction to Biological Oceanography (MBE 704) and Math for Biophysical Interactions (OCE course number to be determined).

e) In addition to completing the course credits identified in c) and d), all Ph.D. students are required to complete: i) either the writing skills course (RSM 780, 1 credit) or the Dallas Murphy Writing Workshop; and ii) three educational training courses (RSM 771, 1 credit; RSM 772, 3 credits; RSM 773, 3 credits).

Required courses are normally taken during the student's first full year of study (beginning in the Fall semester). Material from all required courses is covered in the comprehensive examination.

A student in the Ph.D. program may exit the Ph.D. program and enter into the M.S. program, as long as he/she does not already have an M.S. degree from OCE.

Expectations and Timeline

Year 1. End of spring: Comprehensive exam

Year 2. Fall or spring: Form Ph.D. committee

Years 2/3. Teaching assistant (2 semesters)

Year 3. Fall or spring: Ph.D. qualifying exam and candidacy

Expectation: Research results of quality equivalent to that of one peer-reviewed journal article; clearly written proposal and timeline.

Years 4-5. Ph.D. dissertation submission and defense

Expectation: Normally the equivalent of 2 peer-reviewed articles with student as first author that have been or are expected to be published (to be discussed with student's committee).

OCE requirements for **Master of Science**

a) Comprehensive examination: Grade of PhD-pass or MS-pass. (A student receiving a grade of PhD-pass has the option of bypassing the M.S. degree, but may choose to complete the M.S. degree.)

b) Seminar: Regular attendance at a regularly scheduled OCE, MPO or AMP seminar series is required. In the same seminar series each student is expected to give at least one 15-minute presentation each year after the student passes the comprehensive examination.

c) OCE M.S. students are required to complete at least 24 course credits. There are four approved M.S. tracks, which are identical to the four approved Ph.D. tracks; required courses for OCE M.S. students are identical to those for OCE Ph.D. students in all four approved tracks. The remaining course credits are based on graduate courses offered by OCE, RSMAS, or UM. M.S. candidates in OCE are *not* required to take any classes outside OCE.

d) M.S. students may, but are not required to, attend the Dallas Murphy Writing Workshop, take the writing skills course (RSM 780, 1 credit), or take the three educational training courses (RSM 771, 1 credit; RSM 772, 3 credits; RSM 773, 3 credits). These courses do not count toward the required 24 course credits described in c).

Required courses are normally taken during the student's first full year of study (beginning in the fall semester). Material from all required courses is covered on the comprehensive examination.

M.S. students may take graduate courses offered by OCE, RSMAS, or UM.

M.S. candidates should submit their thesis proposal for approval by their thesis committee during the first fall semester following their comprehensive examination. A meeting between the student and the committee to discuss the proposal is expected.

Expectations and Timeline

Year 1. End of spring term: comprehensive exam

Year 2. Fall term: form M.S. committee; M.S. thesis proposal and candidacy

Spring or summer terms: M.S. thesis submission and defense

Expectation: Research results of quality equivalent to one peer-reviewed journal article; preliminary results and a clear research plan and timeline.

3. EXAMINATIONS

Comprehensive Examination (end of first year)

All M.S. and Ph.D. students are required to take the comprehensive examination. For full-time students, the comprehensive examination should be taken before the end of their first full year of graduate studies at RSMAS (beginning in the fall semester). This examination will be arranged by a comprehensive examination committee comprised of the OCE graduate program director and the instructors (or their assignees) of the required courses taken by the students.

The purpose of this examination is to evaluate students' understanding of materials in the required courses, and their ability to integrate and apply these materials. The outcome of the comprehensive examination determines whether students are permitted to proceed to the M.S. or Ph.D. program.

The comprehensive examination consists of oral and written components. The written component, which lasts no longer than 8 hours, consists of a combination of open- and closed-book questions on the material covered in the required courses taken by each student. The oral component, which lasts no longer than 2 hours for each student, may include questions from all the courses taken by the student. Students and advisors will receive feedback from the comprehensive exam committee on the strengths and weaknesses of the student, and possible recommendations on how to address those.

The outcome of the exam, which is determined by the comprehensive examination committee, is based on the student's performance on this examination, together with consideration of the student's first year academic record. Possible exam outcomes are:

- PhD-pass - Students with this result may bypass the M.S. degree and start working toward earning a Ph.D. If the student chooses to, he/she may complete a M.S. degree before pursuing a Ph.D.

- MS-pass - Students with this result are required to defend a masters thesis and get approval from his/her M.S. thesis committee before pursuing a Ph.D.

- Fail - Students with this result will have an opportunity to re-take the exam once.

Ph.D. Qualifying Examination (by end of third year)

These guidelines complement those given in the UM Graduate Student Handbook: https://umshare.miami.edu/web/wda/grad/pdf/graduatestudenthandbook.pdf

Ph.D. students are expected to take the qualifying exam and proposal defense by the end of their third full year in the program (beginning in the fall semester). If a student needs to take the exam after that time, he/she will need to provide a written explanation to, and get approval from, the OCE academic committee.

Example of a typical timeline for the qualifying exam and dissertation proposal:

1 Feb: Student gives dissertation proposal to Ph.D. committee
15 Feb: Student takes written qualifying exam
22 Feb: Oral qualifying exam with Ph.D. committee

While the exact format is left to the discretion of the Ph.D. committee, a typical oral qualifying exam consists of an hour of questions based on the written qualifying exam and other related questions, and a second hour in which the student presents his/her dissertation proposal. It is recommended that the presentation emphasizes future work, rather than a review of previous results, which are in the written proposal.

Expectations of the Qualifying Exam

Written exam. The student's written answers should be judged by committee members to demonstrate that the student has adequately addressed each question on the exam. The questions are usually related to the research described in the dissertation proposal.

Oral exam. The student should demonstrate the ability to express him/herself clearly while providing satisfactory responses to questions raised by the committee that relate to the written qualifying exam questions, and any other questions asked by the committee members.

Dissertation proposal. The proposal should be written by the student in clear English. The proposal should demonstrate the capability of the student to produce and present research of a quality that, when completed, is suitable for submission to a peer-reviewed journal. Emphasis should be placed on the proposed research: the questions and hypotheses to be tested, the data and methodology used to test the hypotheses, and some anticipated results (which may or may not be realized). A student is encouraged to discuss the proposal with the advisor.

Expectations leading up to the qualifying exam:

- Communication with the student's advisor at least once per month to give research updates;
- Formal establishment of dissertation committee, and an initial committee meeting at least 1 month prior to the qualifying exam.

Possible qualifying exam outcomes are:

- Pass - meets all expectations;
- Fail - unsatisfactory written proposal or unsatisfactory oral defense of proposal.

In some cases, the committee may require revisions to a proposal or question, or a retake of the oral exam. Normally there is no need to retake the entire exam or have a full committee meeting.

4. TRANSFER OF STUDENTS INTO OCE, AND TRANSFER OF CREDITS

Students from other graduate programs at RSMAS may transfer into OCE. A Graduate Program Transfer Form must be completed and placed on file in the RSMAS Graduate Studies Office. The transfer requires signatures from the student, the student's advisor, directors of the original and new programs, and the RSMAS Associate Dean of Graduate Studies. The transfer form can be obtained from the Graduate Studies Office.

Course credits from graduate programs at other universities may be counted toward the course credit requirements described in Section 2 of this document. Requests for transfer of course credits and/or waiver of required courses should be made during the first year of graduate study at RSMAS; such requests must be approved by the student's graduate advisor and the OCE academic committee. Normally, a limit of 12 transferred course credits is imposed.