



## **SCHOOL OF MARINE SCIENCES**

### **Handbook for Graduate Programs**

**in**

**Marine Biology**

**Oceanography**

**Marine Policy**

**Dual Degree  
(Marine Policy and  
Marine Biology *or* Oceanography)**

**Professional Science Master's**

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	<b>Marine Biology</b>	<b>Oceanography</b>	<b>Marine Policy</b>	<b>Dual Degree</b>	<b>PSM</b>
Advisory committee formed by	2 <sup>nd</sup> semester	2 <sup>nd</sup> semester	2 <sup>nd</sup> semester	3 <sup>rd</sup> semester	An advisor is required at admission. No committee required.
Advisory committee composition	At least three members including advisor (and co-advisor)	At least three members including advisor (and co-advisor)	At least three members including advisor (and co-advisor)	At least four members; including two advisors, one from policy/social sciences and one or two from natural sciences,	
Program of Study to Grad School by	End of 2 <sup>nd</sup> semester	End of 2 <sup>nd</sup> semester	End of 2 <sup>nd</sup> semester	End of 3 <sup>rd</sup> semester	End of 1st semester
<b>Minimum # of credits</b>	30	30	30	48 <sup>2</sup>	24
<b>Minimum</b> class credits <sup>1</sup> (does not include thesis credits)	15 credits, including 12 @ ≥ 500 level, excluding thesis	15 credits, including 12 @ ≥ 500 level, excluding thesis	24, including 6 credits of marine-policy relevant coursework (committee approved)	36	15 from List #1, 9 from List #2
Required courses (all count towards minimum class credits)	SMS 691 SMS 500 Statistics (≥ 400 level) Oceanography (≥ 400 level)	SMS 691 SMS 501 SMS 520 SMS 541	SMS 691 Six credits from Table 4 below	All of the courses required by the two programs	SMS691; SMS682 (Internship in Marine Science)
Transfer credits	No more than 6 to 12 credits. Restrictions and permissions apply; consult Advisor, Program Coordinator and Graduate School.				Internship in Marine Science - SMS 682
<b>Minimum</b> thesis credits	6 (max 15)	6 (max 15)	6 thesis or internship credits	12 (6 for MB or OCE and 6 for MP)	NA
Thesis or non-thesis degree	Thesis	Thesis	Thesis or non-thesis	Integrated thesis, two separate theses (science & policy), or a MB or OCE thesis & MP internship	Non-thesis
May Graduate symposium	Annually	Annually	Annually	Annually	Annually
Milestones form	Annually	Annually	Not required	Annually for MB/OCE	
Committee meeting	Annually	Annually	Annually	Annually	Annually
Thesis proposal seminar (oral) by	End of 2 <sup>nd</sup> semester	Not required	Not required	End of 3 <sup>rd</sup> semester for MB	NA
Thesis proposal due by	Beginning 3 <sup>rd</sup> semester	Before 2 <sup>nd</sup> ann. review	Not required	Beginning 4 <sup>th</sup> semester for MB	NA
Cruise requirement?	No	Yes	No	Only for Oceanography degrees	No
Oral thesis defense?	Yes	Yes	Yes, if Thesis Option	Yes	Final presentation strongly encouraged
Time limit	6 years	6 years	6 years	6 years	6 years

<sup>1</sup> UMaine graduate school requires 12 credits at a >500 level, you must have at least 15 credit hours of course work to graduate. Courses at 400-499 level may count towards the remaining course credit with prior permission from the student's advisory committee. The maximum number of thesis credits is 15. Please review the Graduate School policies:

<http://gradcatalog.umaine.edu/content.php?catoid=32&navoid=577>

<sup>2</sup> The SMS dual degree allows 6 credits from MB/OCE degree to count towards MP requirements and 6 credits from MP to count towards MB/OCE (so up to 12 credits may be double counted).

<b>Table 2: Summary of Requirements for the Ph.D. Degree Programs</b>			
	<b>Marine Biology</b>	<b>Oceanography</b>	<b>Marine Policy</b>
Advisory committee formed by	End of 2 <sup>nd</sup> semester	End of 2 <sup>nd</sup> semester	<p>There is no PhD program for Marine Policy.</p> <p>Students interested in a pursuing a Policy-related PhD often apply through the Interdisciplinary PhD program administered by the Graduate School or through the Ecology and Environmental Sciences (EES) program.</p>
Program of Study form to Grad School by	End of 2 <sup>nd</sup> semester	End of 2 <sup>nd</sup> semester	
<b>Minimum</b> class credits	18 credits (required plus electives $\geq$ 500-level)	16 credits (core courses plus 6 cr. $\geq$ 500-level)	
<b>Minimum</b> research credits	6 credits SMS 699 (thesis credits)	6 credits SMS 699 (thesis credits)	
Required courses	SMS 691 SMS 500 Statistics Course ( $\geq$ 400-level) Oceanography ( $\geq$ 400-level; see specific degree requirements)	SMS 691 SMS 501 SMS 520 SMS 541	
Transfer credits	6 to 30 credits, but not more than 50% of total credits for degree. Restrictions and permissions apply; consult advisor, Program Coordinator and Graduate School.		
Thesis or non-thesis degree	Thesis	Thesis	
May Graduate symposium	Annually	Annually	
Milestones form	Annually	Annually	
Committee meeting	Annually	Annually	
Written comps*	Before end of 4 <sup>th</sup> semester	Before end of 4 <sup>th</sup> semester	
Written proposal*	Before beginning of 5 <sup>th</sup> semester	2 weeks before Oral exam & presented as part of the Oral exam	
Oral comps*	Before end of 4 <sup>th</sup> semester	Before end of 4 <sup>th</sup> semester, within 1 yr of passing written comps	
Cruise requirement?	No	Yes	
Dissertation defense?	Yes	Yes	
Time limit	8 years	8 years	

\* Completing Comprehensive exams and Written proposal constitutes admission to candidacy; Students have 4 years from first date of registration to be admitted to candidacy and an additional 4 years after achieving candidacy in which to complete all work for the doctoral degree. After admission to candidacy, PhD students may register for a minimum of 1 thesis credit per semester to be considered full-time.

## **OVERVIEW AND DESCRIPTION OF PROGRAMS**

### **Marine Biology (M.S. and Ph.D.)**

The graduate degree programs in Marine Biology provide students with broad knowledge regarding marine organisms and processes, including but not restricted to emphases in taxonomy/systematics, comparative morphology, evolution, genetics, physiology, cell and molecular biology, developmental biology, and ecology. We train our master's (M.S.) candidates to enter the workforce in various marine industries, teaching, government and non-governmental organizations, and research support capacities, and to enter doctoral (Ph.D.) programs at the University of Maine or other institutions. We train our Ph.D. students for teaching, research and administrative/management careers in academia, business, and government and non-governmental organizations. As part of this enterprise, we emphasize integrative approaches to marine science, and help students to develop skills in formulating hypotheses and solving problems that will be applicable in many professional situations. This includes developing and refining skills in scientific communication, both oral and written. It also involves developing an awareness and appreciation of ethical conduct in science and the societal implications of scientific research.

### **Oceanography (M.S. and Ph.D.)**

The University of Maine's Oceanography Program creates and communicates integrated understanding of oceanographic processes by weaving fundamentals from basic sciences and mathematics into a fully interdisciplinary, marine context. As leaders in ocean observation and prediction, we focus expertise on the Gulf of Maine and maintain active research programs throughout the world's oceans. Mentorship of students in the Program emphasizes fundamentals, novel composites of disciplines tailored to the students' research, and an adaptive, problem-solving skill set that prepares students for rapid change within both their profession and the oceans themselves.

### **Marine Policy (M.S.)**

The Master of Science degree in Marine Policy is designed to take advantage of the strong interdisciplinary nature of the School of Marine Sciences. All students in the program will receive training in the human dimensions of coastal and marine systems, social science aspects of marine resource management, in marine sciences, in marine policy or law, and in empirical methods. The program includes a thesis and non-thesis option (i.e., internship).

### **Dual Degree in Marine Policy and Marine Science (M.S.)**

The Dual Degree Program in marine policy and science is intended for students interested in the application of science and policy in government agencies, non-governmental organizations, or industry. The program is intended to provide terminal degrees but does not rule out continuation to a Ph.D. The course of study is normally three years. It leads to two master's degrees: one in marine science (specializing in Marine Biology *or* Oceanography) and one in Marine Policy.

## **Professional Science Master's (PSM) Degree in Marine Sciences**

The School of Marine Sciences supports the development of an educated and informed citizenry and workforce. The PSM in Marine Sciences is intended for students who want to combine further education in marine science and policy with coursework and training in specific workplace skills such as communications, education, data management, or business and public administration. It differs from the M.S. degrees in its emphasis on professional practice rather than original research. It is a non-thesis degree that requires a 5-credit internship.

### **Admission to the Programs**

A student may be admitted to the Marine Biology or Oceanography degree program as a prospective candidate for either the M.S. or Ph.D. degree. The degree program in Marine Policy, and the Dual Degree Program in Marine Policy and Science (Marine Biology *or* Oceanography), offer only the M.S. degree. The Professional Science Master's (PSM) is a separate degree program.

A student who does not hold a M.S. degree when entering the Marine Biology or Oceanography Program normally will be admitted to the M.S. degree program, which provides the student with direct supervision in the beginning of his/her career. The decision to admit a student directly to the Ph.D. program without a M.S. degree will be made by the Admissions Committee, in consensus with the prospective advisor (major professor) and the Graduate Program Coordinator in Marine Biology or Oceanography. A student who holds an M.S. degree in a relevant discipline will generally be admitted as a prospective Ph.D. candidate. Sometimes the student may be required by the Admissions Committee, in consultation with the prospective advisor and the graduate program coordinator in Marine Biology or Oceanography, to enter the M.S. program before entering the Ph.D. program; subsequently, a recommendation to admit the student to the Ph.D. program may be made by the student's major professor and Advisory Committee.

### **Requirements for Graduate Degrees**

The requirements for the M.S. and Ph.D. degrees in Marine Biology, Oceanography, Marine Policy, M.S. Dual Degree in Marine Policy and Science, and the Professional Science Master's at the University of Maine include those established by the University of Maine Graduate School as described in the current Graduate Catalog and website (<http://www.umaine.edu/graduate/>). Requirements also include the specific requirements of the Marine Biology, Oceanography, Marine Policy, Dual Degree and PSM Degree Programs of the School of Marine Sciences, as instituted by the faculties of those programs and described in this handbook. Common requirements and expectations for the various degree programs are enumerated below, with requirements specific to the M.S. or Ph.D. programs following in separate sections. Tables 1 and 2 provide convenient summaries, but necessarily leave out some details. It is the student's responsibility to become familiar with the program requirements and to be certain that all graduation requirements and deadlines are met; your major professor will work with you in this, but remember—it is *your* degree that is at stake.

## Requirements & Responsibilities common to all SMS Graduate Programs

**Orientation:** The School of Marine Sciences holds an orientation session for new graduate students early in the fall semester. This *required* event aims to:

- introduce students to the faculty and other graduate students in the program;
- acquaint students with resources on the Orono campus, at the Darling Marine Center, and statewide;
- communicate faculty expectations of graduate students and the rights and responsibilities of graduate students — especially where they differ from expectations and responsibilities of those in SMS undergraduate programs;
- familiarize students with program requirements and timelines;
- inform students of opportunities for outside funding and internships; and
- provide a relaxed format in which students can ask questions and identify resources to facilitate the transition to graduate school.

**Marine Science Seminar (SMS 691):** All marine biology, oceanography, and PSM students should register for this seminar class, preferably in the first year of study. Marine policy students are strongly encouraged to take it. This graduate seminar focuses on aspects of professional development, performance, and conduct currently practiced in marine sciences. Topics include professional habits of mind, science communication, scientific ethics, and responsible conduct of research. This course meets the Graduate School requirement for Responsible Conduct of Research Training.

**Graduate Student Symposium:** All full-time students are expected to present research results and/or plans for future research at the annual SMS Graduate Student Symposium, usually held at the end of Spring Semester at the Darling Marine Center. Students should alternate oral and poster presentations from year to year, to practice communicating in both media. Part-time students are expected to present every second year, but should attend every year. If a student cannot attend the symposium because of field sampling or another commitment, the student is expected to prepare a poster to be presented *in absentia*. If a student completes *all* degree requirements in the semester in which the Symposium occurs, the student will be excused from presenting at the Symposium, *unless* the student intends to pursue an additional degree in the School of Marine Sciences.

The goals of the SMS Graduate Symposium include:

- Creating a collegial opportunity where graduate students present their research in formats typical of major science meetings and socialize in a professional setting with their peers and faculty;
- Enabling graduate students to receive feedback on their research from the full diversity of SMS faculty and graduate students;
- Creating an opportunity for SMS graduate students and faculty to become familiar with the geographically extensive facilities associated with UMaine's marine sciences program, and specifically, UMaine's marine laboratory, the DMC.

**Student Responsibilities:** You are responsible for conducting yourself as a professional and for taking the responsibility for learning—not only through coursework, but also through readings,

research, discussions, and seminars. *Students are expected to attend the weekly SMS seminar, usually held on Friday morning.* Unlike the undergraduate experience of most students, graduate school is an open-ended learning experience. In general, the student who learns more will do better. Grades matter less than achievement of competencies, although there are grade standards that are enforced. This change of academic focus may be disorienting, and you should develop a continuing dialogue with Advisory Committee members and other faculty regarding the emphasis of ongoing learning and research efforts. Building this dialogue is one key to success because the most important evaluations you receive will come in the form of recommendation letters from those advisors and faculty members when you complete your degree and seek further educational or employment opportunities.

**You, the student, are responsible for:**

- Rectifying any deficiencies in your background and meeting all requirements for the degree (this is done in consultation with the Advisor and Advisory Committee, who may require that certain basic courses be taken);
- Completing and documenting required safety training (see below);
- Assembling an Advisory Committee (see Tables 1 & 2 for deadline). It is the student's responsibility to meet with the Advisory Committee at least annually. The advisor will help to schedule the meeting.
- Registering for courses on time (students should pre-register during designated registration periods in the fall and spring, well in advance of each semester, which is important because it allows faculty to plan for a course);
- Completing/updating your Milestones form (as required by different programs) at the end of each semester, including providing an annual self-assessment at the end of the spring semester, and uploading appropriate files as requested by the program graduate coordinator;
- Making sure that your academic file containing records of coursework, copies of forms, correspondence, etc. is kept up-to-date (this file is kept in the SMS office); and
- Meeting deadlines and completing forms required by the Graduate School – this is especially important as you near graduation (the annual Graduate School calendar includes dates relative to curriculum and degree granting, and there is a useful “[Graduation Checklist](#)” on the Graduate School web site for May, August, and December completion of degrees: <https://umaine.edu/graduate/students/graduation/>); and
- As a courtesy to other faculty who may wish to attend the thesis or dissertation defense, you must place a final draft copy of your thesis in the SMS administrative office after the Advisory Committee decides on its acceptability and after you make the required changes, usually a week before the defense.

***Safety & Responsible Conduct in Research Training:*** All University of Maine employees are required to undergo Annual Basic Safety Training, and graduate students should also complete Chemical Hygiene (Lab Safety) Training that is specific to the laboratory where you are working. Other trainings may also be required (e.g. Information Security, Sexual Harassment, Conflict of Interest, FERPA, Accessibility Awareness, and Title IX training). These trainings are available in the UMS Academy, accessible from the [mycampus.maine.edu](http://mycampus.maine.edu) portal.

You should consult with your advisor or the laboratory manager where you will be working as soon as possible after arriving on campus regarding details of this requirement, which includes



documenting that you have received the training. Depending on your activities, you may need other special training regarding topics such as Biomedical Waste, Boat (Watercraft) Safety, Dive Safety (Scientific Diving), Field Work, Fire Extinguishers, First Aid/CPR, etc. (see <http://www2.umaine.edu/SEM/Training/training.htm> for a complete list and links). If you are conducting research or taking courses at Darling Marine Center please also consult the DMC-specific safety requirements, available at <https://dmc.umaine.edu/welcome/safety/>

Additionally, all students must receive training in responsible conduct in research, and this is included in the required graduate seminar class, SMS 691. If you will be conducting research with live vertebrate animals or human subjects, additional training and approvals are required. Consult the IACUC website (<http://umaine.edu/research/research-compliance/institutional-animal-care-and-use-committee-iacuc/>) or IRB website (<http://www.umaine.edu/research/research-compliance/institutional-review-board-for-the-protection-of-human-subjects-irb/>) for details.

**Optional Teaching:** Graduate programs in SMS do not require you to acquire teaching experience. SMS faculty members believe that it is important for graduate students, especially Ph.D. students, to gain experience as teachers, and encourage them to do so. If you wish to be a teaching assistant (TA), consult with your advisor to be certain that this is agreeable and advisable. You and your advisor can then request your appointment as a TA, depending on the availability of such an assistantship and the sufficiency of your background to assist in the course. See the Graduate School's web site for further information, including a handbook for teaching assistants. Application procedures and deadlines for SMS TA positions are available from the SMS Associate Directors and publicized well in advance. The deadline for applications to TA in the upcoming academic year is usually in February.

**When you have questions or need help:** Your first resources are this handbook, followed by your Advisor and other members of your advisory committee, and the Graduate School website. For informal assistance, you will find that other SMS graduate students can be very helpful. For formal assistance, however, you may need to consult with any or all of the following:

*The Graduate School:* The Graduate School is located in Stoddard Hall, and is staffed by helpful people. You can find their contact information on the Graduate School website (<http://www.umaine.edu/graduate/> -- click on Contact, then Meet Our Staff). Students will need help from the Graduate School when registering for classes their first semester.

*The SMS Graduate Program Coordinators:* These faculty members are elected to serve as program coordinators for Marine Biology, Marine Policy, Oceanography, and PSM. They often respond to initial inquiries from prospective students, are responsible for tracking progress of all students in their respective degree programs, serve as their program representative to the SMS Policy Advisory Committee, and organize regular program faculty meetings (at least one a semester) as well as the annual review of students enrolled in Marine Biology and Oceanography graduate programs. The Program Coordinator also approves and signs some of the official SMS and Graduate School documents that you will generate during your degree program. Current Graduate Program Coordinators are listed in the specific program requirements that follow.

*The SMS Administrative Staff:* Currently, Ms. Carrie Love maintains all SMS graduate student records and handles paperwork associated with graduate student appointments in cooperation with fiscal staff members Ms. Jessie Gunning and Ms. Jodie Feero.

*The SMS Associate Director for Graduate Studies:* The Associate Director assists the Director of the School of Marine Sciences in overseeing and coordinating graduate program curricula, research and training. If you have a higher-order concern, consult with the Associate Director for Graduate Studies.

## Requirements for Marine Biology M.S. and Ph.D.

### The Graduate Program Coordinator

The current Graduate Program Coordinator in Marine Biology is Dr. Damian Brady. His contact information is:

Damian Brady  
Associate Professor  
University of Maine  
193 Clark Cove Rd.  
Walpole, ME 04573  
damian.brady@maine.edu  
(207) 563-8102 (office)

### Advisor

Students will be first accepted by an advisor prior to their formal acceptance into the Marine Biology Program. Students generally are not admitted “at large,” but must have identified a major professor (advisor) who agrees to direct and help to support their research. In most cases this advisor will work with the student throughout his or her degree program. The student should discuss research interests with the advisor, and if the research interests are misaligned, the student should pursue a change of advisor as early as possible in the program, although such changes are unusual.

*\*\*Advisor–advisee relationships are unique and different for each student. Some advisors and advisees get along remarkably well and have a strong friendship as well as a strong sense of mentoring, while some advisors and students have a strictly professional relationship. Some advisors are “hands-on” in their approach to mentoring students, while other advisors take a more distant approach. Each student will have a different chemistry with the advisor. The key to having a good relationship is to have open lines of communication. A lot of frustration and confusion occurs because either the student or advisor miscommunicated. Sometimes a member of the Advisory Committee can help to smooth over a difficult relationship. \*\**

### Advisory Committee

Each student, with his or her advisor, should assemble an Advisory Committee by the end of the student’s second (M.S. & Ph.D.) semester (as you focus your research, committee membership may also need to be adjusted). The Ph.D. student and advisor may wish to assemble a more informal Advisory Group of at least three members early in the second semester and to complete the full Advisory Committee, including an appropriate external member, later in the second semester. All committee members must be members of the University of Maine Graduate Faculty, and depending on the degree program (M.S. or Ph.D.), 2–3 of the committee members must be SMS Faculty. Faculty members from outside the University of Maine are eligible to serve on graduate committees, but must be appointed as external graduate faculty. Appendix 2 details the criteria for SMS Graduate Faculty appointments.

The advisor normally serves as chair of the Advisory Committee. The Advisory Committee acts as a resource and provides advice to the student in developing the Program of Study and the thesis/dissertation research, provides oversight of the student's academic and research progress, participates in evaluating whether a M.S. or Ph.D. student is qualified to advance to candidacy, evaluates the thesis/dissertation, and administers the final M.S. or Ph.D. oral examination.

*\*\* As with advisors, students will have a different relationship with each member of the Advisory Committee. Committee members represent a wealth of knowledge, providing expertise, equipment, and mentoring, rounding out your thesis and graduate experience. Take care in assembling your committee—choose committee members who are not overcommitted, and who get along well with other committee members, because having tension within a committee can add stress to your graduate experience. \*\**

### **Program of Study**

The student, in consultation with the Advisory Committee, should develop a Program of Study as early as possible. The Program of Study specifies all academic work to be undertaken by the student, including all courses to be taken while the student is enrolled in the degree program. The Program of Study also identifies the topic of the thesis or dissertation project and includes a brief description of the research to be undertaken; a separate, more detailed written proposal for research is also required (see section 3 following). The Program of Study form (available on the Graduate School website for [MS](#) or [PhD](#)) must be approved and signed by the student's Advisory Committee **and** the Graduate Program Coordinator, **and submitted to the Graduate School** before the end of the student's second semester. Please be aware of the Graduate School's requirement that the Program of Study "...must be submitted to the Graduate School before the student's third registration will be approved, or upon completion of 12 hours of graduate credit, whichever comes first."

The Program of Study states the student's required curriculum and is a binding contract. Changes may be made only if a "Request for Change in Program," approved and signed by the student's Advisory Committee and the Graduate Program Coordinator, is submitted to the Graduate School.

### **Electives and Advanced Courses**

In addition to required courses (see below), you should select elective courses that contribute to your background and ability to qualify as a competent investigator and scholar in your particular research area as well as in related disciplines. A list of recommended elective courses is provided in Table 3. Courses at the 400-level and higher qualify for graduate credit. However, please be aware of the Graduate School's requirement that students working toward the M.S. degree "...**must present a minimum of 12 hours (exclusive of thesis) of 500- and 600-level course work** to partially satisfy requirements for that degree."

*\*\* Particularly because there are so few required or "core" courses, graduate students in Marine Biology are encouraged to consider taking courses that are not directly related to their research topic. Science is becoming increasingly specialized, and courses and Programs of Study sometimes reflect this. At the same time, marine biology is by nature a hybrid enterprise*

*and is increasingly multidisciplinary. Graduate school will be your last opportunity to take formal courses in which experts have distilled large bodies of knowledge for you. Animal ecologists might consider taking a course in microbiology or phycology, and physiologists, biochemists, or molecular biologists might benefit from learning about biogeochemistry or coral reef ecology. \*\**

### **Degree Requirements common to the M.S. and Ph.D. in Marine Biology**

In addition to the requirements defined by the University of Maine Graduate School, these requirements must be met by all students, M.S. and Ph.D., enrolled in the Marine Biology degree program. Degree-specific requirements are detailed in the sections that follow.

#### **1. Required Courses & Symposium Participation**

- i. SMS 500 (Marine Biology)
- ii. One semester of oceanography is required, which can be met by any Oceanography course of 400 level or higher, in consultation with the student's advisor and thesis committee. Other coursework could fulfill this requirement at the discretion of the student's advisor and Graduate Program Coordinator;
- iii. one semester of statistics at the graduate level, e.g. MAT/STS 437, BIO 593, PSE 509;
- iv. one semester of SMS 691 Marine Science Seminar, which also meets the Graduate School's Responsible Conduct in Research training requirement;
- v. participation in the SMS Graduate Symposium during each year of full-time study (part-time students must participate at least every other year).

**2. Foreign Language Requirement:** There is no formal foreign language requirement for either the M.S. or Ph.D. degree. However, if the student's Advisory Committee deems it necessary, such a requirement may be instituted for that student.

**3. Written Proposal for Thesis or Dissertation:** Each degree candidate is required to submit a statement of the proposed problem for a thesis or dissertation. The due date for this is specified by degree program (see Tables 1 & 2). This proposal must be discussed in a meeting of the student's Advisory Committee and endorsed by all committee members; a copy of the final version should be a part of the student's file.

*\*\* There is no set format or length for such a proposal, which is determined by each advisor and student. The research proposal is integral to formulating a rational Program of Study, and therefore usually is submitted to the Advisory Committee prior to that deliberation. \*\**

**4. Progress of Students:** The faculty of the Marine Biology degree program annually review the progress of each student in course work, research, and general progress toward the degree. To aid students, advisors and advisory committees in record-keeping and staying on schedule, a tracking system in Google Forms is used to record progress in meeting specific course requirements, and to allow the opportunity for student self-assessment and Faculty assessment. Students and advisors are responsible for completing/updating Forms at least 2 weeks prior to the annual review (generally held near the end of the spring semester). Self-assessments and other documents will be uploaded to Google Forms; there are also options to add comments for each

milestone. The faculty will discuss each student's progress and provide written feedback to the student, via the Program Coordinator, following the review.

Grounds for dismissal or probation of a student are as follows:

- Any grade lower than a "B-" in a course prescribed by the student's Advisory Committee
- Any report to the Marine Biology degree program faculty from the Advisor or any faculty member indicating dissatisfaction with the student's progress. In this case, the report must be discussed at a meeting of a quorum of Marine Biology degree program faculty, who shall vote on any subsequent action.

### **5. M.S. Degree Requirements:**

In addition to the University of Maine Graduate School degree requirements (see University of Maine Graduate Catalog for details (<http://gradcatalog.umaine.edu>) and general Marine Biology requirements described above, there are several requirements specific to the M.S. Degree in Marine Biology.

*5a. M.S. Advisory Committee:* The Advisory Committee for a student in the M.S. degree program shall comprise a minimum of three members, at least two of whom shall be faculty in the School of Marine Sciences; all must be members of the Graduate Faculty.

*5b. Public research proposal seminar.* This seminar will last 30 minutes (20 minutes presentation; 10 minutes discussion). This seminar should set the general marine biological background for the research, present hypotheses to be tested, methods to be used, and present preliminary data, if available. This seminar replaces a prior requirement for a written comprehensive exam, and serves as an opportunity for students to demonstrate their knowledge of the relevant background for their research and to obtain helpful feedback from faculty and students with whom they might not otherwise interact. To ensure the latter, all Marine Biology Program faculty and students are encouraged to attend these seminars, and the Marine Biology Program Coordinator may set specific target dates and times for these seminars. The seminar is not graded.

*5c. Thesis Defense:* Students will present a final draft copy of their thesis to the members of their committee at least three weeks before their scheduled final defense. Committee members must determine if the thesis is acceptable (apart from minor corrections) at least one week before the scheduled defense. Prior to defending, students must file a Tentative Thesis Acceptance form & Notice of Oral Examination form with the Graduate School (see Graduate School website for deadlines associated with these forms). The final defense will consist of a seminar by the candidate, followed by an oral final examination of not more than two hours covering the candidate's research. This examination is conducted by the thesis committee and any other members of the University graduate faculty who wish to attend, although the decision on the examination rests with the student's thesis committee. A vote to Pass must be unanimous.

*\*\* When you have successfully defended your thesis and your committee has completed the "Oral Examination and Final Thesis Acceptance Form," you and your advisor should check to be sure that your personnel file is complete and up-to-date, so that the Graduate Program Coordinator can check this and sign the "Completion of Requirements" form.*

## 6. Ph.D. Degree Requirements:

In addition to the University of Maine Graduate School degree requirements (see University of Maine Graduate Catalog for details (<http://gradcatalog.umaine.edu>) and general Marine Biology requirements described above, students pursuing the Ph.D. degree must also pass a Ph.D. Comprehensive Examination before they are advanced to the status of Ph.D. Candidate. Additional details for the Ph.D. degree include:

*6a. Ph.D. Advisory Committee:* The Advisory Committee for a student in the Ph.D. degree program shall comprise a minimum of five members, at least three of whom shall be faculty in the School of Marine Sciences, and at least one of whom shall be from other academic units in the University of Maine, or preferably, from outside the University.

*\*\* Remember that if you choose to have a faculty member from outside the University of Maine serve on your Advisory Committee, they must be appointed to the Graduate Faculty, and this requires time for consultation, paperwork, and approval by the Dean of the Graduate School. See Appendix 2 for SMS graduate faculty appointment criteria. \*\**

*6b. Public Dissertation Proposal Seminar:* Similar to the proposal seminar for the M.S. degree, this seminar serves as an opportunity for Ph.D. students to practice their oral communication skills, and to receive helpful feedback from students and faculty with whom they might not otherwise interact. The seminar typically lasts 30-45 minutes, with time for discussion and questions. Students often schedule a committee meeting following the proposal, after which time the advisory committee gives its final approval for the proposed work. Unlike the M.S. degree, Ph.D. students must also complete written and oral comprehensive exams.

*6c. Ph.D. Comprehensive Examination:* This examination, administered by the student's Advisory Committee, will consist of written and oral parts. It should be taken no later than the student's fourth semester (or fifth semester if the student matriculated in a Spring-semester). It will be about 12 hours long and consist of four parts. The student must select four topic areas in consultation with his/her major professor and committee as follows:

- Core Disciplines (e.g., evolution, molecular genetics, ecology, physiology, biological oceanography) – choose 2-3 topics;
- Technical Subjects (at an advanced level beyond any other degree requirement (e.g., modeling, microscopy, bioinformatics, systems' design) – choose 0-1 topics; and
- Other Areas (set by the Advisory Committee with agreement by the Marine Biology Coordinator on the Program of Study (POS) – Choose 0-1 topics.

The "Other Area" could be another Core Discipline or an area that is not yet defined in science or a related discipline needed by the student for his/her research, e.g., chemical oceanography. Students are expected to demonstrate advanced knowledge of the areas selected for comps based upon graduate course work and/or directed reading from a Committee member. The student will receive a grade of "satisfactory," or "unsatisfactory" for each area examined. All areas must be passed with at least a grade of "satisfactory" before the oral part of the examination can occur. A student may be re-examined in any or all topic areas only once. Subsequent failure in those areas could require remedial coursework or dismissal from the Ph.D. Program, the decision resting

with the student's Advisory Committee in consultation with the Marine Biology Program Committee.

*\*\* Four areas of questioning are not easily divided evenly among five Advisory Committee members. The student and the Advisory Committee must decide how to deal with this; in practice, a large topical area such as “evolution” or “physiology” may be divided between two committee members having different specialties in these areas. Defining these topical areas rests with the Advisory Committee. Sometimes a committee member is not a marine scientist but is appointed to the committee because of special knowledge or expertise relevant to the student’s needs. In such cases, the questions from this member need not be strictly “marine,” so long as the student understands this and the expectations of the committee member, who will often assign specific readings for the student. It is up to the student and the committee to consult on the source of the questions—coursework, assigned readings, the research proposal, etc.—and on the committee’s expectations of the student. Communication and common sense on the part of the student and the committee are important in completing this requirement. \*\**

The Ph.D. Oral Comprehensive Examination will be an evaluation of the student’s broad area of specialization. The Examining Committee will consist of the student's Advisory Committee, whose Chairperson will preside. Unanimous approval of the Examining Committee is required for passing. Students should complete the written and oral qualifying exams by the end of their fourth semester. Students who do not complete them by the end of the sixth semester will not be allowed to continue in the Ph.D. program, but will have the option of completing a M.S. degree.

6d. *Dissertation Defense*: Students will present a final draft copy of their dissertation to the members of their committee at least three weeks before their scheduled final defense. Committee members must determine if the thesis is acceptable (apart from minor corrections) at least one week before the scheduled defense. Prior to defending, students must file a Tentative Thesis Acceptance form & Notice of Oral Examination form with the Graduate School (see Graduate School website for deadlines associated with these forms). The final defense will consist of a one-hour seminar by the candidate (a 45-minute presentation with 15 minutes for questions and discussion), followed by an oral final examination of the candidate’s research by the thesis committee and any members of the graduate faculty of the University of Maine who wish to attend. A vote to Pass will be taken by the Examining Committee (i.e., the advisory committee) and need not be unanimous for a doctoral candidate to pass the final oral examination; however, only one (1) negative vote will be permitted. [N.B. this voting policy was approved by the Marine Biology Faculty in February 2014, and reflects the Graduate School policy].

*\*\* When you have successfully defended your thesis and your committee has completed the “Oral Examination and Final Thesis Acceptance Form,” you and your advisor should check to be sure that your personnel file is complete and up-to-date, so that the Graduate Program Coordinator can check this and sign the “Completion of Requirements” form.*



**Table 3. Recommended Courses for Marine Biology Graduate Students**

This list is for informational purposes only and is not intended to be either a comprehensive or exclusive list of recommendations and opportunities.

Course Title	Number	Typical term offered	Units	Instructor(s)
Applied Population Genetics	SMS 425	Spring	3	Rawson
Advanced Marine Invertebrate Biology	SMS 510	Fall	3	TBD
Biological Oceanography	SMS 501	Fall	3	Karp-Boss/Runge
Biology of Fishes	SMS 422/598	Fall	3	Hamlin
Chemical Oceanography	SMS 520	Fall	3	Estapa
Coral Reefs	SMS 531	Spring alternating with 563	3	Steneck
Critical Issues in Aquaculture (Fish Parasites)	SMS 401/598	Fall every other year	1-3	Bricknell
Ecology of Marine Sediments	SMS 514	May Term/Summer every other year	2-3	Lindsay
Estuarine Oceanography	SMS 484	Fall	3	Brady
Fisheries Oceanography	SMS 550	Spring	3	
Fisheries Population Dynamics <sup>2</sup>	SMS 562	Spring	3	Chen
Invertebrate Biology	SMS 480	Fall	4*	Waller
Life History and Functional Morphology of Marine Invertebrates of Maine	SMS 491	May Term	3*	Waller
Marine Chemical Ecology	SMS 598	On request		Lindsay
Marine & Freshwater Algae	SMS 373/598	Spring	4*	Brawley
Ecological Genomics	SMS598	Spring	3	Cammen
Zooplankton	SMS 491/598	Fall	3	Runge
*Includes laboratory				

<sup>2</sup> Meets statistics requirement.

## Requirements for Oceanography M.S. and Ph.D.

### The Graduate Program Coordinator

The current Graduate Program Coordinator in Oceanography is Dr. Jeremy Rich. His contact information is:

Jeremy Rich  
Associate Professor of Marine Microbiology  
University of Maine  
School of Marine Sciences  
Darling Marine Center  
193 Clarks Cove Rd  
Walpole, ME 04573  
office: 207-563-8302  
email: [jeremy.rich@maine.edu](mailto:jeremy.rich@maine.edu)

### Advisor and Advisory Committee

A student will be first accepted by an advisor prior to his/her formal acceptance to the Oceanography Program. In most cases the advisor will work with the student throughout his/her degree program. The student should discuss research interests with his/her advisor, and if the research interests are misaligned, the student should pursue a change of advisor as early as possible in his/her program.

The student and his/her advisor should assemble an Advisory Committee by his/her second semester (as the student focuses his/her research, committee membership may also need to be refocused). The Ph.D. student may require more time to assemble an Advisory Committee that includes members from outside SMS. In such a case, the Ph.D. student and his/her advisor should assemble a more informal Advisory Group of at least three members by his/her second semester, and should complete the full Advisory Committee before the beginning of his/her fourth semester.

The advisor will normally serve as chair of the Advisory Committee. The Advisory Committee acts as a resource and provides advice to the student in developing the Program of Study and the thesis/dissertation research, provides oversight of the student's academic and research progress, participates in the formal annual review of the student's progress, participates in evaluation of whether a Ph.D. student is qualified to advance to candidacy, evaluates the thesis/dissertation, and administers the final M.S. or Ph.D. oral examination.

### Program of Study

The student, in consultation with his/her Advisory Committee, should develop a Program of Study as early as possible. The Program of Study is an outline of all academic work to be undertaken by the student, including all courses to be taken while the student is enrolled in the degree program. The Program of Study also identifies the topic of the thesis or dissertation research and includes a preliminary written proposal of the work to be undertaken. (The M.S.

student will have the opportunity to expand on the thesis proposal; please see below, No. 9 under “M.S. Requirements”. The Ph.D. student also will have the opportunity to expand on the dissertation proposal prior to the Oral Dissertation Examination; please see below, No. 10 under “Ph.D. Requirements”). The form (available on the current Graduate School website) must be approved and signed by the student’s Advisory Committee and the Graduate Program Coordinator, and submitted to the Graduate School before the end of the student’s second semester.

The Program of Study is the student’s required curriculum. Changes may only be made if a “Request for Change in Program”, approved and signed by the student’s Advisory Committee and the Graduate Program Coordinator, is submitted to the Graduate School.

### **Core Courses**

Core Oceanography Program courses should be completed with a grade of “B-” or better by the end of the second semester of full-time study, and must be completed by the end of the fourth semester:

SMS 501 Biological Oceanography  
SMS 520 Chemical Oceanography  
SMS 541 Physical Oceanography  
SMS 691 Seminar (the seminar should be taken during the student’s first year)

The requirement for one or more of the core courses may be waived if an equivalent course was taken elsewhere with a grade of “B-“ or better, and if signed approval is given by the student’s advisor, the instructor of the course whose requirement is to be waived, and the Oceanography Graduate Coordinator. Because the student is responsible for integrating the material provided in the core courses, he/she may wish to consider auditing courses for which the requirement has been waived.

A student who lacks the necessary background for any core course should take the initiative to make up the deficiency. Core course faculty can assist the students in determining if they have adequate background and can provide guidance if more background is needed.

### **Elective and Advanced Courses**

Elective courses should be selected to contribute to the background and ability of the student to qualify as a competent investigator and scholar in his/her research area as well as in related disciplines. Courses at the 400 level and higher qualify for graduate credit. Specific requirements for each degree are given below, under appropriate sections for M.S. and Ph.D.

### **Oceanic Research Cruise**

For an oceanography student, first-hand experience at sea is essential training. All Oceanography degree students are required to participate in a minimum of one oceanic research cruise of at least 5 (continuous) days in duration. Specifics regarding this requirement must be approved by the student’s advisor and the Oceanography Graduate Coordinator. A student may have this

requirement waived under special circumstances or by demonstrating previous oceanic cruise experience; the waiver must be signed by the advisor and the Graduate Program coordinator and placed in the student's file.

## **Annual Review**

A review of the progress of all Oceanography Students will be conducted annually by the entire Oceanography Program faculty to provide students with feedback and specific recommendations for improvement. The review will consider grades for courses taken as well as progress of the student toward accomplishing thesis or dissertation research. The review comprises three steps: 1) student self-assessment, 2) Advisory Committee assessment, and 3) Oceanography faculty assessment.

A "Milestones" form (AKA "Tracking" form) will help the student, advisor, and Advisory Committee monitor progress and completion of requirements (some details can be found in Appendix 1). The student and Advisory Committee are responsible before each annual review to update timelines for the student's milestones, including completion of the degree. This step is particularly crucial for part-time students.

### 1. Student Self-Assessment

In preparation for the annual faculty review, and during the two months prior to the review, each student will prepare:

- a. a one-page summary of progress made during the previous year, with supporting figures and tables as necessary,
- b. a one-page statement of work to be undertaken in the coming year, and
- c. a self assessment of strengths and goals for improvement, including how the student plans to achieve the latter and what resources he/she may need to do so. If the student requires financial assistance (e.g., for a course outside the university or to attend a meeting), the student should include a budget and be prepared to discuss the resources required.

### 2. Committee Meeting:

Before the annual faculty review, the student will meet with his/her committee to:

- a. present the written material (#1, above) to the committee,
- b. discuss progress and future plans, and
- c. receive oral and written feedback from the committee. The advisor is responsible for the written assessment.

### 3. Faculty Assessment

Both sets of written material (# 1a, b, c and #2c, above) and grades will be made available to all faculty at the annual review. The review by the entire faculty is intended to make assessments fair and uniform, establishing consistent standards for knowledge, skills and abilities across the Oceanography Program. Following the meeting of the faculty, each student will receive a written evaluation, prepared by the Oceanography Program Coordinator, that summarizes the faculty assessment no later than one month following the Graduate Student Symposium.

Should the faculty find the progress of the student to be “unsatisfactory,” they may recommend corrective action. Should the faculty find the progress of the student as “continuing to be unsatisfactory,” they may recommend that the student be dismissed from the Oceanography Program. Such action must be approved by a majority of the Oceanography Graduate Faculty, with concurrence by the Oceanography Program Coordinator and the Director of the School of Marine Sciences.

### **M.S. Degree Requirements**

In the following description, requirements are labeled according to whether they originate from the Graduate School (**GS**; for full details of those requirements see the Graduate Catalog or current Graduate School web site) or the Oceanography Degree Program (**ODP**).

1. Credit Requirements (**GS**): A minimum of 30 semester hours, including thesis credits, is required. At least six thesis credits, but no more than 15, will be applied toward the degree. A minimum of 15 credit hours of 500- and 600-level coursework is required, including the core Oceanography courses. Only courses at the 400 level and above can be used for graduate credit. The student, in consultation with his/her committee, will select courses most appropriate for his/her career goals.
2. Grades and Credits (**GS**): In general, only a grade of “B-” or better is acceptable for coursework on a student’s program of study, including core Oceanography courses. A grade of “C” may carry graduate credit, if so recommended by the student’s Advisory Committee and approved by the Graduate School; however, no more than 6 credits of “C” grade on a student’s Program of Study can apply toward the GS credit requirement. Audited and Pass-Fail courses are normally not accepted for graduate degree credit.
3. Transfer Credit (**GS**): A maximum of six credits may be transferred from another graduate degree-granting institution, subject to approval by the student’s Advisory Committee. In addition, a total of six credit hours may be transferred from appropriate coursework taken at the University of Maine before matriculation into a graduate degree program.
4. Full-time Registration (**GS**) is defined as six or more course credits per semester.
5. Residence Requirement (**GS**): At least 50 % of the coursework to be applied toward the degree must be taken through the University of Maine.
6. Time Limit (**GS**): All work toward the degree should be completed in two –to three years (but **MUST** be completed within six years) of first registering for work toward the M.S. degree. The student may petition for an extension for filing an “Exception to Regulation” that must be approved by the advisor, the Graduate Coordinator, and the Graduate School.
7. Advisory Committee (**GS**): The Advisory Committee for the M.S. degree comprises a minimum of three members of the Graduate Faculty. The graduate student, in conjunction with his/her advisor, is responsible for establishing the student’s Advisory Committee. If a member of the committee is from outside the University of Maine, the proposed committee member must first be recommended for appointment to the Graduate Faculty by the Graduate Program

Coordinator and appointed by the Director of the Graduate School. **ODP-specific Requirements:** At least two of the three members must be from the Oceanography Graduate Faculty. The Advisory Committee should be formed before the beginning of the student's second semester.

8. Thesis Requirement (**GS**): A thesis is required of all M.S. degrees unless a non-thesis option is specifically given. **ODP-specific Requirement:** The Oceanography Degree Program does not presently offer a non-thesis degree.

9. Thesis Proposal, **ODP-specific Requirement:** In addition to the preliminary thesis topic identified in the Program of Study, a more developed thesis proposal should be submitted to the Advisory Committee before the student's second annual review. A copy of the final version of the proposal will be included in the student's file.

10. Final Examination (**GS**): A final examination for the M.S. degree is required of a student in a thesis program. The examination is the responsibility of the student's Advisory Committee, and only it will evaluate the student's performance. Other members of the faculty may attend and participate in the questioning. **ODP-specific Requirement:** This examination will be given orally. The examination will begin with a public seminar, followed by questions from the audience, after which all members of the public will withdraw. Questions pertaining to the student's thesis will be asked by the Advisory Committee and interested faculty members. The examination will be scored as either a Pass or Fail. In the event of a Fail, the examination may be re-taken at a time to be determined by the student's Advisory Committee but within six months of the initial exam.

11. Application for Graduation (**GS**): A candidate for a M.S. degree must submit an "Application for Degree" to the Office of Student Records according to an established set of dates. The student is responsible for checking with the Graduate School to verify all deadlines.

## **Ph.D. Requirements**

In the following description, requirements are labeled according to whether they originate from the Graduate School (**GS**; for full details of those requirements see the Graduate Catalog or current web site) or the Oceanography Degree Program (**ODP**).

1. Credit Requirements (**GS**): A minimum of 12 hours (exclusive of dissertation credits) of 500- and 600-level coursework is required. Only courses at 400 level and above can be used for graduate credit. A doctoral student must register for a minimum of six credits of dissertation research (SMS 699) overall during their program. **ODP-specific Requirement:** In addition to fulfilling the requirements for the Oceanography core courses (10 credits), a student in the Ph.D. program must take at least six additional credits of coursework at the 500 level, or higher, in Oceanography.

2. Grades and Credits (**GS**): In general, only a grade of "B-" or better is acceptable for coursework on a student's program of study, including the core Oceanography courses. A grade of "C" may carry graduate credit, if so recommended by the student's Advisory Committee and approved by the Graduate School; however, no more than six credits of "C" grade on a student's

Program of Study can apply toward the GS credit requirement. Audited and Pass-Fail courses are normally not accepted for graduate degree credit.

3. Transfer Credit (**GS**): A maximum of 30 credits beyond the bachelor's degree may be transferred from another graduate degree-granting institution, subject to approval by the student's advisory committee. In addition, a total of six credit hours may be transferred from appropriate coursework taken at University of Maine before matriculation in a graduate degree program. In no case may the number of credit hours transferred into a graduate degree program exceed 50 % of the student's entire coursework for the degree.

4. Residency Requirement (**GS**): The minimum residence requirement for the Ph.D. is met by registering for courses or dissertation research through the University of Maine for four semesters beyond the baccalaureate degree or two semesters beyond the M.S. degree.

5. Full-time Registration (**GS**) is defined as six or more course credits per semester. After admission to candidacy (see No. 12, below), one dissertation credit per semester may be considered full time.

6. Time Limit (**GS**): All work for a doctoral degree must be completed within eight years; completion within four to six years is highly recommended. **N.B.:** this requirement has two parts: 1) a student must be admitted to candidacy within four years of his/her first registration within the Ph.D. degree; and 2) the dissertation must be completed within four years of admission to candidacy. The student may petition for an extension for filing an "Exception to Regulation" which must be approved by the advisor, the Graduate Coordinator, and the Graduate School.

7. Advisory Committee (**GS**): The Advisory Committee for the Ph.D. student is composed of a minimum of five members of the Graduate Faculty. It is recommended that one member of the Advisory Committee be from the Graduate Faculty of a department other than that of the student's degree program. The graduate student, in conjunction with his/her advisor, is responsible for establishing the student's Advisory Committee. If a member of the committee is from outside the University of Maine, the proposed committee member must first be recommended for appointment to the Graduate Faculty by the Graduate Program Coordinator and appointed by the Director of the Graduate School. **ODP-specific Requirement:** At least three of the five members must be from the Oceanography Program Graduate Faculty. The Advisory Committee should be assembled before the beginning of his/her second semester of registration within the Ph.D. degree program.

8. Examinations to Determine Admission to Candidacy (**GS**): Comprehensive examinations may be written, oral, or both, and will be administered by the student's academic unit and passed to the satisfaction of the Advisory Committee. These examinations may not be taken until the student has completed at least 1.5 years beyond the bachelor's degree, but must be successfully passed within four years of entry into the doctoral program. **ODP-specific Requirements:** Doctoral students must pass two exams in order to advance to Candidacy for the doctoral degree – a Written Comprehensive Examination and an Oral Dissertation Examination. The purpose of the written exam is to examine the student's ability to synthesize his/her oceanographic coursework and readings of the literature. The purpose of oral exam is to document the student's

ability to formulate both a suite of testable hypotheses and a plan of research that together are likely to lead to publishable findings.

9. **Written Comprehensive Examination (ODP-specific Requirements):** Normally this exam will be taken in the fourth semester of study (Feb.-March) as a Ph.D. student. The written exam will consist of three 3-hour sessions. A first day of two 3-hour sessions will pose broadly integrative oceanographic questions, and a second day of one 3-hour session will focus on the student's particular area of specialization, which may or may not be a traditional sub-discipline of oceanography. The faculty who teach the core Oceanography courses will design and evaluate this exam, with input from the entire Oceanography faculty. Within one month of the exam, the student will be passed; failed with an opportunity to retake the test once more (either in its entirety or in part, depending on the student's performance); or failed and asked to withdraw.

10. **Oral Dissertation Examination (ODP-specific Requirements):** Normally this exam will be taken before the end of the fourth semester of study as a Ph.D. student, but within a year of successful passing of the Written Comprehensive Examination. The oral exam will focus on the student's dissertation proposal (please see No. 11, below), which must be submitted to the student's Advisory Committee a minimum of two weeks prior to the oral exam. At the oral exam, the student will present his/her proposal to the public (30 minutes), followed by a period of public questioning (< 30 minutes). The Advisory Committee, joined by other Oceanography faculty members, will provide a more intensive oral exam on the order of two hours duration on the material contained in the dissertation proposal plus any fundamental science (oceanographic or otherwise) related to the proposed work. This exam will focus on the student's mastery of the field necessary to perform the research, as well as thinking skills (e.g., ability to critique, quantify, and generate hypotheses) necessary for successful pursuit of research. The Advisory Committee must agree unanimously to a conclusion of pass, fail with an opportunity to retake the test once more, or fail and withdraw from the Program. The Advisory Committee may recommend additional coursework or other means of acquiring skills as a result of this examination.

11. **Dissertation Proposal (ODP-specific Requirements):** In addition to the preliminary dissertation proposal, filed at the time of submission of the Program of Study, a fully-developed dissertation proposal of approximately 10 text pages in length must be submitted to the Advisory Committee at least two weeks before the Oral Dissertation Examination (please see No. 10, above). A copy of the final version of the proposal will be included in the student's file.

12. **Admission to Candidacy (GS):** Admission to candidacy signifies that the student has successfully fulfilled all degree requirements except for completing the dissertation, the final oral examination, and a few courses, if appropriate. A student in a Ph.D. program will be admitted to candidacy when the Graduate School is informed that the student has successfully passed the Written Comprehensive Examination, the Oral Dissertation Examination, and has met any other departmental requirements. After admission to candidacy, one dissertation credit per semester may be considered full time.

13. **Dissertation (GS):** The doctoral dissertation must demonstrate the candidate's mastery of the area of research and must embody the results of an original investigation in the principal field of



study. Other requirements, including manner of submission and style are obtainable from the Graduate School.

14. Final Examination (**GS**): After the dissertation has been accepted by the candidate's Advisory Committee, the candidate will appear for a final oral examination by an examining committee of no fewer than five members (i.e., the student's Advisory Committee); if substitutions are necessary, additional members may be appointed to the student's Advisory Committee by the Graduate School. Other members of the faculty may attend and participate in the questioning, but only members of the committee may evaluate the student's performance. The original dissertation must be presented to the Graduate School within its required time limits, available on the Graduate School's web site. **ODP-specific Requirements:** The examination will be given orally and will continue as long as necessary. The examination will begin with a public seminar, followed by questions from the audience, after which all members of the public will withdraw and additional questions will be asked by the student's Advisory Committee and interested faculty members. The questioning may range beyond the topic of the student's dissertation to general aspects of the oceanographic sciences. This examination is scored as either a Pass or Fail. In the event of a Fail, the examination may be re-taken once at a time to be determined by the student's Advisory Committee.

15. Application for Graduation (**GS**): A candidate for a degree must submit an "Application for Degree" to the Office of Student Records according to an established set of dates. The student is responsible for verifying all Graduate School deadlines.

## Requirements for Marine Policy M.S.

### The Graduate Program Coordinator

The current Graduate Program Coordinator in Marine Policy (and the Dual Degree Program) is Dr. Robert Steneck. His contact information is:

Robert Steneck  
Professor of Marine Biology, Oceanography and Marine Policy  
Darling Marine Center  
(207) 549 3062  
[Steneck@maine.edu](mailto:Steneck@maine.edu)

### Advisor

Students will be first accepted by an advisor prior to their formal admission into the Marine Biology Program. Students are not admitted “at large,” but must have identified a major professor (advisor) who agrees to direct and help to support their research. In most cases this advisor will work with the student throughout his or her degree program. The student should discuss research interests with the advisor, and if the research interests are misaligned, the student can change their advisor but should do so as early as possible in the program, although such changes are unusual.

*\*\*Advisor–advisee relationships are unique and different for each student. Some advisors and advisees get along remarkably well and have a strong friendship as well as a strong sense of mentoring, while some advisors and students have a strictly professional relationship. Some advisors are “hands-on” in their approach to mentoring students, while other advisors take a more distant approach. Each student will have a different chemistry with the advisor. The key to having a good relationship is to have open lines of communication. A lot of frustration and confusion occurs because either the student or advisor miscommunicated. Sometimes a member of the Advisory Committee can help to smooth over a difficult relationship. \*\**

### Advisory Committee

Each student, with his or her advisor, should assemble an Advisory Committee by the end of the student’s first semester. The Advisory Committee of at least three members should be formed early in the second semester and may include appropriate graduate faculty from outside SMS. All committee members must be members of the University of Maine Graduate Faculty, 2–3 of the committee members must be SMS Faculty. Faculty members from outside the University of Maine are eligible to serve on graduate committees, but must be appointed as external graduate faculty. Appendix 2 details the criteria for SMS Graduate Faculty appointments.

The advisor normally serves as chair of the Advisory Committee. The Advisory Committee acts as a resource and provides advice to the student in developing the Program of Study and the thesis/dissertation research, provides oversight of the student’s academic and research progress, participates in evaluating whether a M.S. student is qualified to advance to candidacy, evaluates the thesis, and administers the final M.S. oral examination (if taking the thesis option).

*\*\* As with advisors, students will have a different relationship with each member of the Advisory Committee. Committee members represent a wealth of knowledge, providing expertise, equipment, and mentoring, rounding out your thesis and graduate experience. \*\**

### **Program of Study**

The student, in consultation with the Advisory Committee, should develop a Program of Study as early as possible. The Program of Study specifies all academic work to be undertaken by the student, including all courses to be taken while the student is enrolled in the degree program. The Program of Study also identifies the topic of the thesis or dissertation project and includes a brief description of the research to be undertaken. The Program of Study form (available on the Graduate School web site for [MS](#)) must be approved and signed by the student's Advisory Committee **and** the Graduate Program Coordinator, **and submitted to the Graduate School** before the end of the student's second semester. Please be aware of the Graduate School's requirement that the Program of Study "...must be submitted to the Graduate School before the student's third registration will be approved, or upon completion of 12 hours of graduate credit, whichever comes first."

The Program of Study states the student's required curriculum and is a binding contract. Changes may be made only if a "Request for Change in Program," approved and signed by the student's Advisory Committee and the Graduate Program Coordinator, is submitted to the Graduate School.

### **Degree requirements**

A total of 30 credit hours, consisting of at least 24 hours of course credits and 6 credit hours for thesis/internship, are required to complete the M.S. in Marine Policy.

### **Six credit hours of required coursework plus SMS 691 Marine Sciences Seminar**

- Students are required to take the Marine Sciences Seminar (SMS 691) plus at least six credits of Marine Policy relevant courses approved by the thesis committee.

### **Twenty-four credit hours of elective coursework**

The program is designed to give students as much flexibility as possible so that they can take advantage of the various faculty specialties available to them within the School of Marine Sciences and elsewhere in the University. The student and his or her committee will design a program of study. Students will usually take all of their courses at the University of Maine either on the Orono campus or at the Darling Marine Center, but courses taken at the University of Maine School of Law (in Portland) or elsewhere may be credited toward the degree.

### **Six credit hours for thesis/internship**

The program offers both a thesis and a non-thesis option.

Students selecting the thesis option take *SMS 699 - Graduate Thesis (6 credit hours)* and will write a master's thesis that combines theoretical work and research applied to pressing problems. A student's advisory committee must approve a thesis plan in the second semester of the student's enrollment in the program.

Students selecting the non-thesis option take *SMS 683 - Internship in Marine Policy (6 credit hours)* and will undertake an internship with a government agency, a non-governmental organization in the marine area, or a private firm directly concerned with management of marine natural resources or coastal zone management. An internship involves working for the equivalent of three months, full time with the organization. Students in internships write a final paper linking their internship experience with the theoretical and practical literature. A student's advisory committee must approve internship plans prior to beginning the internship.

### Courses available to students

A student and his or her advisory committee can draw upon a large variety of courses both within SMS and elsewhere at UMaine when designing a program of study. The list below is intended to be illustrative only. Other courses are not precluded.

**Table 4.** Courses relevant for Marine Policy and Dual Degrees.

Course Number	Course Name	Likely Semester	Instructor
ANT 464	Ecological Anthropology	Fall	Hanes
ANT 550	Anthro. Dimens. of Enviro. Policy	Varies	Ishenhour
SMS 553	Commons Governance and Global Change	Varies	Beitl
ANT 555	Resource Mgmt-Cross Cultural Perspective	Varies	Beitl
ECO 420	Intermediate Microeconomics	Fall	TBD
ECO 477	Economics of Environmental and Res. Mgmt	Spring	Rubin
ECO 485	Introductory Econometrics	Spring	Evans
ECO 581	Socio-ecological Systems Modeling	Fall	Waring
SMS 531	Coral Reefs	Spring Alt years	Steneck
SIE 510	Geographic Information Systems applications	Spring	Beard
SMS 552	Coupled Natural and Human Systems	Fall	Johnson
SMS 557	Coast Prac. and Coast. Zone Mngmt	Fall	Kelley
SMS 562	Fisheries Population Dynamics	Spring	Chen
SMS 563	Fisheries Policy and Management	Spring	Stoll
SMS 597	Independent Study	All	TBD
SMS 598*	Special topics	All	TBD

## Requirements for Dual M.S. Degree in Marine Policy and Sciences

The School of Marine Sciences offers a unique, strongly interdisciplinary dual degree program in marine policy and science. The course of study is normally three years. It leads to two master's degrees: one in marine science (specializing in Marine Biology or Oceanography) and one in Marine Policy.

Students are required to complete the requirements for a master's degree in one of the marine sciences and the requirements for a marine policy degree (see program descriptions above). Six credit hours from each degree can be counted as electives for the other degree (total of 12 shared credits). This results in a total of 36 course credit hours required, which along with the 12 thesis and or internship credits from both programs results in a total of 48 credits (rather than the 60 required for two completely independent masters degrees). The course requirements for the science degrees are described above. For the policy degree, students complete 18 hours of courses, including 6 hours of required marine policy courses, with 6 additional course credits counted from the science degree.

**Table 5.** Academic credit distribution necessary for attaining a Dual M.S. Degree.

<b>Marine Policy Degree</b>	<b>Credit hours</b>	<b>Marine Science Degree</b>	<b>Credit hours</b>
<b>Policy Courses</b>	<b>18</b>	<b>Marine science courses</b>	<b>18</b>
<b>(including 6 required courses)</b>		<b>(Including required courses)</b>	
<b>Thesis/Internship</b>	<b>6</b>	<b>Thesis</b>	<b>6</b>
<b>Counted from Science degree</b>	<b>6</b>	<b>Counted from Policy degree</b>	<b>6</b>

### Thesis/Internship Options

Students in the dual-degree program may fulfill the thesis/internship requirements for the two degrees in one of three ways (via SMS 699 or SMS 683):

1. A separate thesis may be written for the science degree and for the policy degree.
2. A thesis may be written for the science degree and an internship completed for the policy degree. A student's advisory committee must approve internship plans prior to beginning the internship.
3. A single thesis may be written combining a joint science and policy topic that contains a substantial amount of information on both policy and science.

### Advisory Committee

Students in the dual-degree program will have two graduate advisors, one from marine biology or oceanography and one from marine policy. The graduate advisory committee, at a minimum, consists of the two advisors plus one additional member from the natural sciences and one from the social sciences, *i.e.*, a committee of at least four members. A program of study for each degree, including thesis or internship plans, must be developed and approved by the advisory

committee and the respective graduate program coordinators by the end of the third semester of the student's tenure in the program.

**Program of Study**

Because the Dual Degree program results in two degrees in separate academic programs, two programs of study (PoS) documents must be submitted. Each PoS must show how the program requirements have been met. It is helpful to identify courses to be double counted between the two programs as described above. Once completed, both PoS should be sent to both program coordinators to review and to sign for the academic program they represent.

**Public research proposal seminar**

Dual Degree students are required to present their proposed thesis project in a seminar attended by the faculty and students within the School of Marine Sciences. This seminar will last 30 minutes (20 minutes presentation; 10 minutes discussion). This seminar should set the general marine science background for the research, present hypotheses to be tested, methods to be used, and present preliminary data, if available. It is important for students to recognize the seminar is for an audience broader than just marine policy. This seminar serves as an opportunity for students to demonstrate their knowledge of the relevant background for their research/internship and to obtain helpful feedback from faculty and students with whom they might not otherwise interact. To ensure the latter, all Marine Policy Program faculty and students are encouraged to attend these seminars, and the Marine Policy Program Coordinator may set specific target dates and times for these seminars. The seminar is not graded.

## Requirements for the Professional Science Master's (PSM)

### The Graduate Program Coordinator

The current Graduate Program Coordinator for the Professional Science Masters in Marine Sciences is Dr. Heather Leslie. Her contact information is:

Heather Leslie  
Associate Professor  
Director, Darling Marine Center  
University of Maine  
193 Clarks Cove Road, Walpole ME 04573 USA  
[heather.leslie@maine.edu](mailto:heather.leslie@maine.edu)  
office: 207-563-8299

### Advisor

Prior to admission, PSM students must identify a faculty advisor who commits to direct and help guide them through the PSM program. The student should discuss professional development interests with the advisor. If student interests evolve and are not well matched with their initial advisor, the student should pursue a change of advisor as early as possible in the program. The program coordinator can help facilitate this change.

Following successful admission through the UMaine Graduate School, students will be accepted to the PSM program once their advisor has been identified and confirmed. An advisory committee is not required in this program.

The faculty advisor must be a member of the SMS Graduate Faculty. In their first semester and in consultation with their advisor, the student will create a plan of study that identifies the skill sets they are seeking to develop and the courses and internship that will enable them to achieve those competencies.

Note that PSM students also are encouraged to contact the Associate Director of Graduate Studies and Research and the Director of the School of Marine Sciences, if their advisor is not able to address their questions or concerns.

### Program of Study

The PSM in Marine Sciences requires a minimum of 30 semester credit hours, including 5 credit hours in an internship (details below).

- A minimum of **15 course credit hours** must be completed from List #1 below – six of these credits must come from a set of core courses. Up to six of the 15 credits may be 400-level courses. The student's advisor and PSM program coordinator may approve substitute courses for those in List #1, if (1) the course is highly relevant to the student's career goals, and (2) the student's background in marine sciences is deemed otherwise sufficient for a Master's degree in this field. Relevant non-marine science course areas include but are not limited to anthropology, communications, biology and ecology, business administration, conservation biology and wildlife ecology, climate science,

engineering, mathematics and statistics, psychology, public policy, resource economics, and sociology.

- A minimum of 9 course **credit hours** of professional skills coursework is required (List #2). Students must also take one credit of the marine sciences graduate seminar, SMS 691. Finally, a minimum of five credits of an approved internship is required for completion of this program.
- The internship (**5 credits**) is an important part of the PSM degree and must make a meaningful contribution to the individual's professional development. The purpose of an internship is to immerse the student in an area of professional practice.
  - In the case of an individual on leave from work, the internship may take place at that person's place of employment, but must involve marine science and policy activities that go beyond the individual's normal scope of work and responsibilities.
  - The student's advisor will work with him/her to help identify and develop the internship. Internship hosts may include a local, state or federal government agency; non-profit organization, or private business. Potential opportunities also exist within the University of Maine System, through units such as the Center for Cooperative Aquaculture Research; Darling Marine Center; University of Maine Sea Grant Extension Program; and University of Maine School of Law. PSM candidates are free to identify other internship possibilities in or beyond Maine. While faculty will help identify and develop opportunities, it is ultimately the student's responsibility, with guidance and approval of the student's advisor, to arrange the internship.

Specific requirements are outlined below. SMS course descriptions are provided elsewhere in the Graduate Catalog.

## Degree Requirements

### 1. *Course List #1: Fifteen (15) credits in marine science and policy*<sup>3</sup>, to include:

#### A. Marine Science Core (3 credits, e.g., one course, from among the following):

- SMS 500 Marine Biology
- SMS 501 Biological Oceanography
- SMS 520 Chemical Oceanography
- SMS 525 Marine Biogeochemistry
- SMS 541 Physical Oceanography
- SMS 484 Estuarine Oceanography

#### B. Marine Policy Core (3 credits from among the following. Another course may be substituted with permission from the advisor and program coordinator):

- SMS 563 Fisheries Policy

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<sup>3</sup> Note that some of these courses have specific requirements that would need to be met before enrollment.



C. Other Science and Policy Courses (9 credits, 3 must be at the 500-600 level)

SMS xxx Includes any course at the 400 level or above not already selected from the list of marine science and policy core courses listed in (1) or (2)

SMS 514 Ecology of Marine Sediments

SMS 531 Coral Reef Ecology

SMS 540 Satellite Oceanography

SMS 544 Oceanography and Natural History of the Gulf of Maine

SMS 550 Fisheries Oceanography

SMS 552 Coupled Natural and Human Systems

SMS 553 Institutions and the Management of Common Pool Resources

SMS 560 Marine Geology

SMS 562 Fisheries Population Dynamics

SMS 585 Marine System Modeling

SMS 595 Data Analysis Methods in Marine Sciences

INT 510 Marine Invertebrate Zoology

*A student may select one from among the following:*

SMS 597 Independent Study

SMS 598 Special Topics in Marine Science

SMS 692 Problems in Marine Science I (Fall)

SMS 693 Problems in Marine Science II (Spring)

SMS 697 Readings in Marine Science

*SMS 400-level courses of potential interest:*

SMS 401 Critical Issues in Aquaculture

SMS 402 Oceans and Climate Change

SMS 409 Shellfish Aquaculture

SMS 420 Fish Aquaculture I

SMS 421 Fish Aquaculture II

SMS 422 Biology of Fishes

SMS 425 Applied Population Genetics

SMS 480 Invertebrate Biology

SMS 373/598 Marine and Freshwater Algae

SMS 491 Fisheries Ecology

*Courses outside of SMS are also an option:*

A student may elect to take up to three 400-600 level science or policy courses through another school or department at the University of Maine provided that (1) the selection is approved by the student's advisor and the program coordinator, and (2) the student is considered to have an otherwise adequate background in marine sciences for a PSM in Marine Sciences.

**2. Course List #2. Nine (9) credits of professional skills coursework.** These courses may come from any unit at the University of Maine. Students are encouraged to gain competency in

multiple professional skill areas, including but not limited to Science Communication; Analysis of Large Data Sets; Data Visualization; Participatory and Co-production of Research; and Facilitation. UMaine graduate programs that offer relevant courses to fulfill this requirement include but are not limited to: Business Administration, Civil and Environmental Engineering, Communication, Computer Science, Economics, Education, Mathematics and Statistics, Public Administration, Resource Economics and Policy, Spatial Information Engineering.

**3. One (1) credit graduate seminar, SMS 691.**

**4. Five (5) credits of internship as approved by the student's advisor.**

**5. Participation in the SMS Graduate Symposium during each year of full-time study (part-time students must participate at least every other year).**

Participating faculty include all members of the SMS Graduate Faculty. Please see <https://umaine.edu/marine/smspeople/> for an up to date list.

Per the policies of the UMaine Graduate School, grounds for dismissal or probation of a student are as follows:

- i.* Any grade lower than a "B-" in a course prescribed by the student's Advisor
- ii.* Any report to the PSM degree program faculty from the Advisor or any faculty member indicating dissatisfaction with the student's progress. In this case, the report must be discussed at a meeting of a quorum of PSM degree program faculty, who shall vote on any subsequent action.

## Graduate School Information and Forms

The Graduate School's web site, <http://www.umaine.edu/graduate/>, has a wealth of useful information (including scholarships, awards, and assistantships, and tax information regarding such support), and links to relevant sites. We encourage you to explore these early in your graduate career. Some competitions for support occur annually, and you and your advisor should be aware of and watch for these.

The link on the home page to "Forms & Documents," [https://umaine.edu/graduate/resource\\_category/forms-documents/](https://umaine.edu/graduate/resource_category/forms-documents/), has the latest version of forms that most students and their advisory committees must complete during the students' graduate program. Most of these are listed in your program's Milestones ("tracking") document and in the summary table of requirements and deadlines.

*\*\* SOME ADVICE ABOUT PAPERWORK: Before you can receive your degree, your Graduate Program Coordinator must certify that you have met all of the requirements. This involves checking your personnel file, which should include copies of academic transcripts, all required documents such as the Program of Study, certification that you passed your comprehensive examination, results of the final oral examination and thesis acceptance, etc. Each time one of these forms is completed and signed, you should make photocopies for your own and your advisor's files, as well as giving the original to the SMS Administrative Coordinator, Ms. Jodie Feero, who will retain a copy for your personnel file in the main office and convey the original to the Graduate School. Most of these documents will be returned to SMS after the Graduate School staff has recorded them, but it is safest also to keep the additional copies. There is also a helpful Milestones (tracking) Form that you and your advisor should keep up-to-date in your files. \*\**

### Additional Information That You Might Not Learn Elsewhere

1. Thesis and Dissertation Preparation: Your thesis or dissertation will be the culmination of the original research that you conduct during your graduate program and should be prepared with this in mind. The Graduate School has precise guidelines for the format of these documents, GUIDELINES THAT YOU MUST FOLLOW EXACTLY. These are given in a detailed document, "Guidelines for Thesis and Dissertation Preparation," available on the Graduate School's web site under the link to "Graduate School Documents." Your thesis or dissertation will be reproduced and held in the Library for dissemination to any scholar who requests it, and ensuring a consistent format for the many such documents is the underlying reason for the guidelines. Even a small deviation from the guidelines can result in a delay in the acceptance of your thesis by the Graduate School.

*\*\* Despite its importance, you will write only one dissertation (and perhaps one thesis as well), but you may write dozens of scientific articles in professional journals during your career after graduate school. Accordingly, most students write their thesis or dissertation with an eye toward publishing it (an expectation by most graduate advisors), and indeed some publish parts of their research before writing the dissertation. Especially in the case of a dissertation, the research is usually extensive enough to warrant several publications, perhaps in journals having different*

*styles. This can be accommodated in preparing your dissertation by dividing it into chapters in each of which the style matches that of the journal where you may submit it. All that is necessary is to be certain that the overlying format and organization of the thesis or dissertation conform to the requirements set by the Graduate School. Please be sure to familiarize yourself with the guidelines well before you start to assemble your thesis. \*\**

2. Medical Benefits: The University of Maine requires that its graduate students have medical insurance, and offers such insurance to graduate assistants who do not have alternative coverage. Graduate Assistants, Fellows, and Trainees are *automatically* enrolled in the plan, so those who already have comparable coverage must sign a waiver form declining the UMaine plan. Students appointed as Graduate Research or Teaching Assistants will have received a letter informing them of the details. The letter and a brochure (Student Sickness and Injury Insurance Plan) are also available via a link from the home page of the Graduate School's web site, as is the waiver form and a form for enrolling dependents. The University of Maine Graduate School pays 50% of the insurance cost for Graduate Teaching Assistants (mandatory). The grant paying the stipend for Graduate Research Assistants pays 50% of the insurance cost (mandatory) and may pay up to 100%. The University does not pay any portion of the health insurance expense for Graduate Research Assistants. You should consult with your advisor or the grant administrator, and if necessary, with Ms. Jessie Gunning (Grants Manager and Fiscal Officer in SMS), for details.

3. Taxes: Graduate Assistantship salaries are subject to tax withholding. If you received a scholarship or fellowship, all or part of it may be taxable, even if you did not receive a W2 form; in most cases this information is available from the source of the scholarship or fellowship. International students and non-resident aliens may be subject to specific provisions of tax treaties between their country of residence and the U.S. Please refer to the Graduate School's web site, where there are links to some informational documents such as "General Rules on Taxation of Scholarships & Fellowships" and "Scholarships & Other Payments to International Students Who Are Non-Resident Aliens (Not U.S. Residents)". The Internal Revenue Service publishes a number of documents relevant to graduate students. A good starting point on the web is: <http://www.irs.gov/individuals/students/>.

4. Getting Involved within the School of Marine Sciences and the University of Maine: Faculty, staff, and graduate students in SMS are scattered among many buildings on the Orono campus and at the Darling Marine Center. This requires extra effort to establish a sense of community. There are several academic and social events throughout the academic year in which we encourage you to participate.

- In early September, at the end of the first week of classes, there is a barbecue on the lawn in front of Aubert Hall; all SMS faculty, staff, graduate students, and undergraduates are invited.
- Soon thereafter, following the orientation session for new graduate students, the SMS seminar series commences in the first or second week of fall classes and continues weekly throughout the year (see below).
- SMS 500 and SMS 501 (required for graduate students in Marine Biology and Oceanography, respectively (and Dual Degree students) often coordinate a field trip to

the Darling Marine Center, where students engage in oceanographic and seaside sampling.

- Near the end of Fall Semester there is a Holiday party for all SMS personnel and their families.
- At the end of Spring Semester we hold the annual SMS Graduate Student Symposium at the Darling Marine Center. This overnight event includes not only student oral presentations and posters, but is also a good occasion to socialize.

**Attendance at the SMS weekly seminars is mandatory for graduate students.** Our weekly seminar series brings us together to hear research talks by visiting scientists and members of our own community, and *graduate students are required to attend*. Even if a seminar seems unrelated to your research interests, you will probably learn something from it. Suggestions for speakers are welcome, and graduate students annually select a distinguished scientist to present a seminar.

SMS graduate students have formed a SMS social committee that organizes a monthly social event, usually on the first Friday of each month, at a local restaurant. Posters and email announcements are disseminated well in advance. This is a good opportunity to mingle with fellow graduate students and faculty in a relaxed atmosphere.

Other SMS graduate student activities have included playing soccer, organizing an intramural sports team, or going on an outdoor activity. These types of activities are usually initiated by a group of students—ask around if you are interested, or initiate something yourself. Maine’s nickname is “Vacationland” and the State offers excellent opportunities for hiking, camping, kayaking, skiing, snowshoeing, etc. Take advantage of your surroundings.

On a more academic note, there are several not-for-credit, interest-driven “journal clubs” on campus that may be of interest to you for your research. Often the journal club is focused on a topic and is cross-departmental, *e.g.*, evolutionary biology (some Biological Sciences laboratory groups and SMS laboratory groups), phycology (SMS groups, together with Molecular and Biomedical Sciences groups), etc. Ask around. Journal clubs typically welcome new members and provide a great way to keep up with the current scientific literature. Graduate Students are encouraged to work with interested faculty members to discuss special topics courses not in the Graduate Catalog, and journal clubs for more informal discussions of the recent literature.

The Graduate Student Government (GSG) is one of the most important student-run organizations on campus. The GSG represents all graduate and professional students in addressing issues that specifically concern graduate education and graduate student life. The GSG is governed by a board of representatives that includes one graduate student from each department for every 50 graduate students in that department. This means that the School of Marine Sciences requires 1–2 representatives each year. This board meets every other week to vote on matters of policy, procedure, and budget, and these meetings are open to all graduate students. The primary functions of the GSG are to influence University policy decisions, provide representation on University committees, and sponsor special services to graduate students. These services include providing grants for research and travel (an important local source of funds for which you are encouraged to apply), supporting graduate clubs and organizations, co-hosting the annual Graduate Recognition Ceremony, and sponsoring educational and social events. The GSG is

funded primarily by activity fees paid by graduate students. For more information about the GSG, graduate students are encouraged to visit the GSG office on the third floor of the Memorial Union, or call 581-4548.

**Appendix 1. “Milestones” (tracking) Document for graduate degrees in SMS**

The “milestones” documents for Marine Biology have moved to the online Student Navigator system for completion there. See:

<https://umaine.edu/marine/wp-content/uploads/sites/212/2016/08/SMSMarineBiologyMilestonesIV.pdf>

The information requested and format will change, reflects the following 6-page document is in effect, which may be helpful for organizing your records. An electronic copy of this form is available from the Oceanography Graduate Program Coordinator

**SMS Graduate Oceanography Program: “Milestones” Form**

*Files to be kept by student, advisor, Oceanography Program coordinator*

**Submit by [date] to [Graduate Program Coordinator]**

**Name:** \_\_\_\_\_

**Please email address:** \_\_\_\_\_

**Advisor:** \_\_\_\_\_

**Candidate for (M.S. or Ph.D or PSM):** \_\_\_\_\_

**Status (full-time/part-time):** \_\_\_\_\_

**Program Start Date:** \_\_\_\_\_

**Support Source and Support Duration:**

This academic year (2011–2012):

Next academic year (2012–2013):

Any upcoming breaks in funding, if known:

**Advisory Committee for Thesis or Dissertation:**

Date formed \_\_\_\_\_; list members below:

_____	_____
_____	_____
_____	_____

**Proposed Topic of Thesis or Dissertation Research:** \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**Milestones (enter date of completion of task):**

\_\_\_\_\_ Orientation:

\_\_\_\_\_ Advisory Committee formed:

\_\_\_\_\_ Program of Study filed:

*Completion of credit requirements; indicate status and number (if applicable):*

\_\_\_\_\_ Core courses:

If not completed, state reason: \_\_\_\_\_

\_\_\_\_\_ Advanced courses:

If not completed, state reason: \_\_\_\_\_

\_\_\_\_\_ Thesis/dissertation credits; number to date: \_\_\_\_\_

\_\_\_\_\_ Cruise experience (dates and vessel(s)): \_\_\_\_\_

**If student is in M.S. degree program:**

\_\_\_\_\_ Submitted thesis proposal:

**If student is in Ph.D. degree program (enter date):**

\_\_\_\_\_ Passed written comprehensive exam:

\_\_\_\_\_ Submitted dissertation proposal:

\_\_\_\_\_ Passed oral dissertation exam:

**Anticipated date of degree completion:** \_\_\_\_\_



**Course Work completed:**

<u>Course (title and number)</u>	<u>Semester</u>	<u>Grade</u>
<i>Core Courses:</i>		
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

*Elective and Advanced Courses:*

_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

**Participation in SMS Graduate Student Symposium**

Year                      indicate if presentation was oral or poster

**Record of Advisory Committee Meetings (should be at least one per year):**

Date

Comments and/or recommendations

Self-Assessments (written by the student); append separate, named and dated sheets; include your name in the document file names:

1. one-page (max.) summary of your progress during the previous year, with supporting figures and tables as necessary; include any meetings you have attended; classes you have TA-ed; et cetera.
2. one-page (max.) self assessment of your progress, including strengths, weaknesses, and any needs related to successful achievement of your program goals;
3. one-page (max.) statement of work you plan to undertake in the coming year.

Additional assessments will be forwarded to the student, when completed:

1. Advisory Committee Assessment (written by the advisor), including feedback from the student's committee.
2. Faculty Assessment (written by Graduate Coordinator), including summary from the annual student evaluation by Oceanography Faculty (held at the end of spring semester, if possible following the Graduate Student Symposium).

## **Appendix 2: Criteria for Appointment to the Graduate Faculty**

In order to serve on Graduate Advisory Committees or advise graduate students, faculty must be appointed to the University of Maine Graduate Faculty. The prospective committee member must fill out a “Record of Qualifications” form (available from Graduate School Website), which is then reviewed and approved by the appropriate Graduate Program Coordinator and SMS Director and submitted to the Graduate School for final approval and appointment. The Dean of the Graduate School evaluates all requests for graduate faculty appointment according to the following criteria, which were voted on and approved by the faculty of the School of Marine Sciences. The following document was approved by the SMS faculty in December 2006 and accepted by the Graduate School in January 2007.

### **School of Marine Sciences Appointments to the Graduate Faculty**

Appointments to the Graduate Faculty in the School of Marine Sciences are determined by rules described under Article III of the Graduate School constitution and by the guidelines set forth below.

#### **Full graduate faculty**

1. UM faculty members who join (or joined) the School with a research and/ or teaching appointment will be offered Full graduate faculty status for an initial 5-year period.
2. UM full graduate faculty members may chair graduate committees.
3. Reappointment requires demonstrated commitment to graduate mentoring and active scholarship as shown by effective advising and graduate committee participation, and a publication record with a minimum of four peer-reviewed publications in the previous five-year period. Exceptional candidates having other qualifications will be considered for reappointment by the SMS Peer Review Committee.

#### **Associate graduate faculty**

1. The individual must be a member of the UM faculty and have evidence of demonstrated research expertise, usually represented by a publication record with a minimum of two peer-reviewed publications in the previous 5-year period or a career list of >15 peer-reviewed papers or book chapters.
2. Associate graduate faculty may not chair or co-chair a graduate committee, but may serve as a committee member.
3. Reappointment requires demonstrated commitment to graduate mentoring and scholarship as shown by effective advising and graduate committee participation, and a publication record with a minimum of 1 peer-reviewed publication in the previous five-year period. Exceptional candidates having other qualifications will be considered for reappointment by the SMS Peer Review Committee.

### **External graduate faculty**

1. The individual must show evidence of research expertise relevant to the student's graduate thesis research.
2. The individual must have evidence of demonstrated research expertise, usually represented by a publication record with a minimum of 1 peer-reviewed publication in the previous five-year period or a career list of >10 peer-reviewed papers or book chapters.
3. The individual may not chair a graduate committee, but may serve as a member of a committee. The individual may co-chair a graduate committee after review by the SMS Peer Committee. Such individuals must demonstrate active scholarship as evinced by a publication record with a minimum of four peer-reviewed publications in the previous five-year period.
4. Reappointment requires demonstrated research expertise, usually demonstrated by a publication record with a minimum of 1 peer-reviewed publication in the previous five-year period.
5. Exceptional candidates having other expertise and qualifications will be considered for appointment (and reappointment) after review by the SMS Peer Review Committee.

### **Graduate instructors**

1. The individual must have a record of thorough competence and training in the core subject.
2. The instructor normally holds a Ph.D., but MS level candidates will be considered for appointment by the SMS Peer Review Committee.
3. The individual may not serve on a graduate committee.

Document Approved by the SMS faculty December 2006.

Document Accepted by the Graduate School January 2007.

COMPILED BY: MALCOLM SHICK, SARA LINDSAY, MARY JANE PERRY & YONG CHEN AUGUST 2013

REVISED AUGUST 2015 BY SARA LINDSAY, LEE KARP-BOSS, TERESA JOHNSON

REVISED MAY 2018 BY GAYLE ZYDLEWSKI, ROBERT STENECK, HEATHER LESLIE

REVISED JANUARY 2021 BY DAMIAN BRADY, HEATHER LESLIE, JEREMY RICH, BOB STENECK, JOSH STOLL, HEATHER HAMLIN