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**Scripps Institution of  
Oceanography  
Ph.D. Student Handbook  
2022-23**

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UC San Diego



SCRIPPS INSTITUTION OF  
OCEANOGRAPHY

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# OVERVIEW

The purpose of this handbook is to provide clarity on policies and procedures in areas most critical to Ph.D. students at the Scripps Institution of Oceanography. While this handbook is comprehensive, it is not exhaustive. This handbook should serve as a resource, in conjunction with other UC San Diego resources, such as the [UC San Diego General Catalog on Graduate Education](#) and the Division of Graduate Education and Postdoctoral Affairs Dean (GEPA) [guide on Policies & Procedures](#). In addition, students can find practical insight and information on non-academic elements of student life on the Department's [Student Guide](#).

Given that there's a number of online guides and resources, students are encouraged to contact the Department's Graduate Coordinators. The Graduate Coordinators are ready to answer any questions or address any concerns. If you are ever unsure, please [ask](#).

\* Please note that as UC San Diego continues to respond to the ongoing COVID-19 pandemic, students should refer to the Return to Learn [website](#) for the most current information on campus operations.

## SCRIPPS Ph.D. DEGREE PROGRAMS

Scripps Institution of Oceanography, a department of UC San Diego, offers instruction leading to a Ph.D. in Oceanography, Marine Biology, and Earth Sciences. In addition, the Scripps Institution of Oceanography offers a joint doctoral degree with San Diego State University in Geophysics. The Ph.D. program is strongly research-oriented and is for students whose final degree objective is the Ph.D.

The Ph.D. program is organized into three academic programs: Climate-Ocean-Atmosphere Program (COAP); Geosciences of the Earth, Oceans, and Planets Program (GEOP); and Ocean Biosciences Program (OBP). Each of these programs is responsible for all graduate educational activities in its area, including teaching, advising, and examining.

Students choose a program when applying. Upon admission, students are assigned a pre-qualifying guidance committee and a curricular group based on their interests. Although students may change curricular groups in fall quarter of their first year, they should commit to a curricular group early on because this choice determines which Departmental Exam they will take and what coursework is required.

In addition, students must finalize their research advisor by the end of spring quarter, of their first year. Students are expected to advance to candidacy by the end of their third year. Students are expected to defend their dissertation and complete the program by the end of their fifth year.

Should students have any questions or concerns about this timeline or any other program requirements, they should contact the department's Graduate Coordinator, [Gilbert Bretado](#).

## GRADUATE STUDENT FINANCIAL SUPPORT

### FUNDING GUARANTEE

Students admitted into the Ph.D. program are typically guaranteed five (5) years of support, provisional on remaining in good academic standing (please see the section on [Good Academic Standing](#)). Financial support may come in the form of employment (as a Graduate Student Researcher), fellowships, teaching assistantships, and other funding sources. Financial support includes tuition & fees and a yearly stipend of \$34,000 (increasing to \$35,000 per year upon advancement to candidacy). Any extramural or outside funding will be applied first, before any University of California or department funds are used.

Students should be aware of their source of funding. A student's source of funding may change, often several times, during their tenure. Some first-year students are supported by department fellowships, pooled resources (often in the case of lab rotations), or external fellowships. Other students are supported by their advisor's research grant as a Graduate Student Researcher. First-year students should refer to their offer letter or contact the department's funding coordinator, [Shelley Weisel](#), should they have any questions about the breakdown of their funding.

While students should be aware of their source of funding and may be asked to participate in the grant or fellowship-writing process, it is ultimately their advisor's responsibility to secure funding. Students should not be made to feel that it is their responsibility to secure funding or facilitate the information-sharing process between their advisor, business office, and the department. The department's funding coordinator works directly with the student's business office and advisor to coordinate logistics. Students are welcome to contact the department's funding coordinator, should they have any questions. Students should not be tasked with asking questions or gathering information on their advisor's behalf or facilitate communication between their advisor and the funding coordinator.

Should an advisor not have sufficient funding, the advisor can request bridge funding from the department. Students are eligible for bridge support through their sixth (6th) year, provided that the student is in good academic standing. The department will not provide support for students after six (6) years as this support is needed to sustain and help grow the size of the program. The department Chair will consider requests for one quarter of bridge support for students in their seventh year in the 2022-23 academic year for delays related to COVID-19.

Self-generated fellowships, such as the NSF GRFP, NDSEG, and the Nancy Foster fellowship are considered support, and count towards the five-year funding guarantee. In most cases, these fellowships do not provide total support, and the department provides supplemental support throughout the duration of these awards.

Therefore, the department's Five-Year Funding Guarantee considers the total number of years that one is a registered student, and not the number of years a student is supported by University of California, departmental, or advisor funds.

Should bridge support be necessary, the advisor is required to submit the *Advisor Request for Student Support Form* to the funding coordinator. Bridge support requests can only be made by the advisor. It is expected that the advisor will formally submit the bridge support requests as soon as it is determined that bridge support is needed. However, the funding coordinator does send out an annual announcement regarding bridge support to the faculty and teaching staff, in late spring.

Overall, UC San Diego support eligibility does not exceed seven years. This seven-year limitation on support may be waived only by exception and with the approval of the Department Chair and the UC San Diego Dean of GEPA.

## TYPES OF FUNDING

### Fellowships and Grants

Fellowships and grants provide funding for tuition/fees and stipends for living expenses and, depending on the source, vary in amount and duration of award. They are the most desirable arrangement for graduate student support from the point of view of the student. Information and tools to help students identify fellowships and grants may be found at: [Fellowships](#) and [Cost & Funding](#). Students are encouraged to obtain extramural support by applying directly to fellowship granting agencies.

### Graduate Student Researcher (GSR)

A GSR performs research support under the direction of a faculty supervisor on their research

grants/contracts. In the most desirable cases, the contract supports the student and provides other funds necessary for the work leading to the dissertation.

A GSR represents a form of salaried appointment, as well as a research opportunity. The Principal Investigator (P.I.) or grant recipient can ask for up to 20 hours a week of research work. In the most ideal situation, this research work will also form the basis of the doctoral dissertation, but this need not be so. Students may be required to work on projects, outside of their doctoral dissertation research, based on the grant that is providing financial support to the student.

## Instructional Assistants (IA)

IAs include Teaching Assistants (TAs), Readers, and Tutors. They assist in the instruction of lower and upper division courses under the supervision of the instructor. Applications for IA positions in Scripps Department courses can be submitted online:

<https://academicaffairs.ucsd.edu/Modules/ASES/Apply.aspx?cid=4647>

A list of hiring campaigns for IA positions in other university departments is available on GEPA's website.

<https://academicaffairs.ucsd.edu/Modules/ASES/OpenPositions.aspx>

In determining IA positions, priority is given to Ph.D. students whose advisor has submitted a request for funding. Ph.D. students in their first-year are not scheduled to serve as an IA so they can focus on coursework and preparation for the departmental exam. IA positions at Scripps are available primarily through the Scripps undergraduate courses, but are sometimes available to Scripps students through other departments. IA positions provide varying levels of support, depending on the appointment. Regardless of the appointment, all students will be supported at the standard funding level (\$2,833 - \$2,916 per month) for the quarter(s) they serve as an IA. If a supplement is required to raise the student's funding to the department standard, the supplement is first expected to be provided by the student's advisor, but will be provided by the Department if the IA position is part of a bridge support request. Teaching can be a valuable experience, and all Ph.D. students are encouraged to consider completing one quarter of as an Instructional Assistant, if it is not required of your curricular group.

## Other Campus Employment

On occasion, a student may seek employment through other departments or units on campus (e.g. Recreation, Teaching & Learning Commons). **Students must discuss additional employment with their advisor and the department's funding coordinator before accepting any offer of employment.** The department wants to ensure that additional employment will not negatively impact the student's academic progress and will address how this employment may impact the student's current funding.

## Department Travel & Research Grants

The Scripps department provides small research grants to its students, based on a short application. Priority will be given to doctoral students. Total funding for a PhD student will not exceed \$3,000 over the course of the student's career at SIO. (Note that this does not guarantee a total of \$3,000.)

Applications should include:

1. Scripps Department Travel/Research Application form (The link to the application goes out with the call email each quarter)
2. Abstract submission and/or invitation to present work (for a conference)  
or  
Project proposal using non-specialist language (for research funds)
3. Detailed budget, not to exceed \$3,000
4. Supporting documentation for costs

Allowable costs include:

- Conference travel transportation, hotel, and conference registration fees
- Page charges for publication of scholarly articles
- Supplies
- Fieldwork
- Travel for research, scholarly meetings or short courses
- Computer (some restrictions apply, contact [Maureen McGreevy](#))  
*\* Please note that salary will not be awarded.*

Submission deadlines:

- February 1
- May 1
- October 1

*\* If the date falls on a weekend, the deadline is the first business day after the deadline listed above.*

If awarded, research awards must be expended within 12 months of the award date. Conference travel awards must be used for the specific conference requested and cannot be transferred. Proposals with a contribution from other sources will be given higher priority, as will smaller grants (up to \$500).

Please contact [Maureen McGreevy](#) for more information and to submit a proposal.



## Ship Funds

The Scripps Department has some internal funds available to support ship time and related expenses. Made possible by support from UC San Diego, the Scripps Department, and donors, this program provides significant support to enable graduate and undergraduate students, postdoctoral researchers and early career faculty to pursue independent research and instruction at sea aboard Scripps ships. Awards are made through a competitive internal peer-reviewed proposal process, which itself exposes students to the important process of developing strong research proposals.

Since 1995, UC Ship Funds have supported an average of 55 days at sea per year on cruises ranging from one-day trips off San Diego to month-long expeditions from foreign ports.

The Ship Funds Policy can be read here:

<https://scripps.ucsd.edu/ships/uc-ship-funds-program>

# ADVISOR

## SELECTING OR CHANGING ADVISORS

All Ph.D. students are required to finalize their advisor by the end of spring quarter of their first year. This requires both an advisor that is willing to intellectually advise and financially support the student. Many students are financially supported by an advisor at the onset of the program and, if they do not want to change advisors, they will continue to work and receive financial support from that same advisor after year one.

Any student who enters the program without a defined advisor, or who wishes to change advisors, must find an advisor who has financial support for the student. Consulting with other students and faculty is useful but there is no substitute for meeting with the curricular group teaching staff and reading their papers and the dissertations of their students. If the student is a member of a curricular group that allows students to participate in rotations, or otherwise does not assign an advisor at the onset of the program, the curricular group leadership should provide guidance to students to help them identify potential advisors with funding. In addition, these curricular groups should provide opportunities to facilitate interaction between students and potential advisors.

Ultimately, it is the responsibility of the student to find an advisor who is willing to intellectually advise and financially support the student, but there are many individuals, at the curricular group and department level, who can help students navigate this process.

Once a student is beyond their first year, it becomes increasingly difficult to change advisors and adhere to the Ph.D. timeline. Students considering changing advisors are encouraged to meet with the department's Graduate Coordinator to discuss their concerns as early as possible. Whether a student ultimately changes advisors or not, early discussion is essential in order to identify possible solutions for the student.

While the department's policy requires students to select an advisor with available funding, the department also understands that there can be extenuating circumstances which make this impossible in certain situations. Exceptions to this policy can be made at the discretion of the Department Chair and Vice Chair. For this reason, it is important to discuss the situation with the department, as early as possible.

## ROLE OF THE ADVISOR

The advisor-advisee relationship is critical to the success of graduate students. The department and the Scripps Graduate Student Reps developed a list of advisor and student expectations. The list of expectations should serve as a foundational document, as advisors and students work together to develop a respectful and productive professional relationship. It can be found [here](#).

Students and their advisor are expected to meet and discuss the contents of the document. Students who enter the program without an advisor should review the document at the onset of the program, and again, once they have finalized their advisor. The document can also be helpful in directing conversations with potential advisors.

## Ph.D. TIMELINE

The following is a rough estimate of a graduate student's progress toward a Ph.D. at Scripps. The exact schedule of exams and the balance between classes and research is based on decisions made by you and your advisor as well as the department's requirements:

Year 1: Core Classes/Departmental Exam

Year 2: Classes/Research

Year 3: Research leading to Qualifying Examination/Advancement to Candidacy

Year 4: Research

Year 5: Research and/or Final Examination/Dissertation Defense

# PRE QUALIFYING GUIDANCE COMMITTEE

Program of study varies widely among the curricular groups, but first-year students are generally expected to enroll in core courses that cover physical, geological, chemical, and biological oceanography. Each first-year student is assigned a guidance committee. The guidance committee is charged with advising the student during the first year and until the student forms their doctoral committee. The intent is to provide individualized guidance to students, particularly regarding advice about a course of study that may reach beyond a single curricular group.

First-year students are expected to meet quarterly with their guidance committee to discuss coursework and, if applicable, research direction. First-year students are required to submit the [Quarterly Guidance Committee Meeting form](#) to the department's Graduate Coordinator. This form serves as a planning tool for the upcoming quarter. Starting in year two, students are expected to meet with their guidance committee annually until the student constitutes their doctoral committee. The student and their guidance committee should make every effort to hold a single, in-person meeting. However, if this is not possible, the student can meet separately with individual members of the committee.

# REGISTRATION AND SATISFACTORY PROGRESS REQUIREMENTS

## REGISTRATION

Graduate students may register for classes anytime during the official enrollment period for each quarter. Students enroll via [TritonLink](#).

The schedule of classes, available on [TritonLink](#), will contain the most recent scheduling information available for Scripps courses.

**You must be registered for at least 12 units of graduate and/or upper division courses every quarter to maintain full-time status and to remain eligible for funding.**

Deadlines are posted on the university [Registrar's website](#). Enrollment reminders will be sent via email and questions may be directed to the Graduate Coordinator, but it is the student's responsibility to adhere to all enrollment policies and deadlines. **Failure to enroll by the**

registration deadline will result in a \$100 late fee. If assessed a late fee, it is the student's responsibility to pay the fee.

**Schedule of Courses:** The Schedule of Courses lists course offerings and other pertinent information for a given quarter. The schedule of classes can be viewed online via [TritonLink](#).

**Add/Change/Drop:** For the first two weeks of the quarter, changes to your course schedule can be made via TritonLink.

After the second week of the quarter, students must submit an online request through UC San Diego's enrollment authorization system: [easy.ucsd.edu](http://easy.ucsd.edu) Instructor, departmental, and GEPA approval is required for changes submitted through the online enrollment system. Deadlines are as follows:

- Dropping a course, without receiving a W on transcript, Friday of 4th week
- Dropping a course and receiving a W on transcript, Friday of 9th week (failure to drop course by 9th week deadline will result in F on transcript)
- Adding a course = Friday of 10<sup>th</sup> week

## ACADEMIC STANDING

Students must remain in good academic standing by meeting departmental and university standards. This includes:

- 1) Maintaining a minimum cumulative GPA of 3.0 or above and enrolling in at least 12 units of graduate level (200 series) and/or upper division (100 series) courses each quarter. Students who do not maintain a cumulative GPA of 3.0 or above are placed on academic probation by GEPA and are subject to academic disqualification and removal from the program. The department will work with the student, student's advisor, and Curricular Group coordinator to develop a plan, with the goal of raising the student's cumulative GPA, and removing them from academic probation by the end of the following quarter.
- 2) Students must earn a grade of B or better in any required course. A required course is defined as any course taken to complete the curriculum requirements of the student's curricular group. Students must enroll for the letter grade option in all required courses, unless the course is only offered for satisfactory/unsatisfactory (S/U) grades. If a student does not earn a grade of B or better in any required core course, it is at the discretion of the instructor, in consultation with the curricular group advisor, the student's advisor, and the department, to determine any further action. This includes: retaking the course, auditing portions of the course, taking a substitute course, or completing an independent study section (298) to focus on deficiencies.

- 3) Having no more than a total of eight units of “F” and/or “U” grades.
- 4) Satisfactory completion of the Departmental Exam.
- 5) Satisfactory annual Spring Evaluation.
- 6) Adherence to department and UC San Diego time limits (see [Time Limits](#) section for more information).

Good academic standing is required to be eligible for funding, to advance to candidacy, to request a leave of absence, to continue registering for courses, and obtain a graduate degree from UC San Diego.

## Ph.D. ANNUAL EVALUATIONS

UC San Diego’s Graduate Council requires that doctoral students be evaluated every spring quarter. This annual evaluation is also known as the Spring Evaluation. A satisfactory evaluation is necessary for continued financial support in the following academic year. For those who have not constituted their doctoral committee, this review requires input and signature from both the advisor and student. Once the student constitutes their doctoral committee, this evaluation will require input and signatures from the advisor, (at least) two members of the student’s doctoral committee, and the student.

Spring Evaluations are a substantive progress review. Students are required to convene a yearly committee meeting with either their Guidance Committee or Doctoral Committee (if constituted). A committee meeting should be held prior to the submission of the Spring Evaluation. Students are encouraged to meet with their committee on a quarterly basis.

The evaluation process is initiated by the students submitting a self-evaluation. After the self-evaluation questions are completed the evaluation is routed to the student’s advisor and (if applicable) their doctoral committee members, for feedback. Once the student’s advisor and (if necessary) doctoral committee members have completed the evaluation, students must sign the evaluation, indicating that they have read it. The student's signature does not indicate agreement with comments made by the advisor or committee members and the student will be given additional space to comment on the evaluation. Finally, the Department Chair reviews and signs all annual evaluations before they are routed to GEPA.

The department requires an annual Spring Evaluation of all doctoral students.

## DEPARTMENTAL EXAM

At the end of the first year, Ph.D. students are required to take the Departmental Exam which is administered by their curricular group. The Departmental Exam is intended to test the general scientific background of the student, the ability to integrate material from specific courses in analyzing new problems, demonstration of a reasonable degree of originality and insight, and the ability to present clear verbal and/or written arguments. Expectations and format varies with the curricular group.

Failure to pass the examination may have these results, decided by the examination committee:

- An opportunity to retake the examination at a later date.
- An opportunity to take a focused examination on the areas in which the student did poorly.
- Recommendation that the student leave the program (possibly with a terminal MS degree)
- Recommendation to take additional coursework

Individual Curricular Group exam details will be provided to the first-year Ph.D. students at the beginning of fall quarter. For a better understanding of the exam format and structure, you can find more details on Departmental Exam [here](#).

## MASTER'S DEGREE POLICY

Students enrolled in the Ph.D. degree program may be eligible to obtain a Master of Science degree on the way to completing the Ph.D. program. Please note that only students who have not previously earned a Masters of Science (MS) Degree are eligible.

**Please also note that students in the Joint Doctoral Geophysics programs are not eligible to earn a Master's degree, regardless of previous graduate academic history.**

The Master's Degree is completed by either a thesis or comprehensive examination. Most Ph.D. students earn their M.S. by comprehensive exam, with the Departmental Exam serving as the comprehensive exam.

A minimum of 36 units are required, including all courses required by your curricular group. You must have a GPA of at least 3.0 in upper division and graduate coursework with no more than eight total units of F and/or U grades. Ph.D. students are required to complete all M.S. degree requirements. Please see the section on M.S. requirements, below.

The minimum residence requirement for a Master's Degree is three academic quarters. Most Ph.D. students become eligible for the Master's Degree in the Fall quarter of their second year.

However, it does vary based on curricular group and curriculum requirements.

Continuing Ph.D. students can receive an M.S. degree during the Fall, Winter, and Spring quarters. Students are eligible to earn a terminal Summer M.S. degree, if they will leave the program. These students are not required to pay the filing fee, as long as they were registered in the preceding Spring quarter.

Students must submit the Application for Candidacy Form. The form requires the signature of the advisor and the Department Chair. The form is due to the Division of Graduate Education and Postdoctoral Affairs (GEPA) at the end of the second week of each quarter. The department sends out an email reminder each quarter of the upcoming second week deadline. Students who have met all degree requirements and submit the paperwork by the necessary deadlines will have their MS degree conferred at the end of that quarter. A diploma will be mailed to the student's permanent address approximately 6-8 weeks after the conferral of their degree.

## UNIVERSITY POLICY ON SECOND MASTER'S DEGREE

UC San Diego will not award a master's degree to a student who already holds one, unless it is in a substantially different area of study (e.g. Literature and Oceanography). Please check with the Graduate Coordinator to discuss each individual situation.

## M.S. DEGREE REQUIREMENTS

### Plan I—Thesis

This course of study involves both coursework and research; culminating in the preparation of a thesis. A total of thirty-six units of credit is required: twenty-four units must be in coursework, including all required coursework within the appropriate curriculum and additional units in recommended electives; and twelve units must be in research work (SIO 299) leading to the thesis. Students interested in completing Plan I must have the approval from their Curricular Group Coordinator and Pre Candidacy Guidance Committee.

## Plan II—Comprehensive Exam

This course of study involves course work and requires students to pass a comprehensive final examination. A total of thirty-six (36) units of credit is required, including twenty-four (24) units in graduate course work. Please note that SIO 299 does not count toward the thirty-six (36) required units. Ph.D. students use the results from the Departmental Exam to satisfy the Comprehensive Exam requirement. Ph.D. students should review the section on Departmental Exam for the format and structure of their curricular group's Departmental Exam.

## CURRICULAR GROUP M.S. REQUIREMENTS

See Appendix for M.S. degree requirements by Curricular Group

## TIME LIMITS

### UC SAN DIEGO TIME LIMITS

All graduate students are subject to UC San Diego's policy on time limits to the Ph.D. GEPA has three time limits pertaining to students' academic progress toward the Ph.D. degree:

- Pre-Candidacy Time Limit (PCTL): Maximum registered time in which a student must advance to doctoral candidacy and may not exceed four years.
- Total Support Time Limit (SUTL): Maximum time during which a doctoral student is eligible for support may not exceed seven years (refer to Student Support).
- Total registered Time Limit (TRTL): Maximum registered time in which a student must complete all doctoral requirements and may not exceed eight years.

Additional information regarding leaves of absence, parenting leave, withdrawal, etc. can be found on [GEPA's website](#).

## DEPARTMENT POLICY ON DOCTORAL TIME TO CANDIDACY

Although UC San Diego's time limit for advancement to candidacy is the end of the fourth year, the department's policy is that all students must take their qualifying examination and advance to candidacy no later than the end of their third year. If a student is to receive meaningful guidance from the doctoral committee regarding their dissertation research, and if deficiencies in preparation are to be identified in time for them to be remedied, it is important that the qualifying examination be held by the end of the student's third year. Students who do not advance to candidacy by the end of their third year will not be considered in good academic standing by the department and will not be eligible for department funding, including: teaching assistantships, travel funds, and bridge funding.



## EXCEPTIONS TO POLICY ON DOCTORAL TIME LIMITS

If a student fails to meet one of UC San Diego's doctoral time limits, GEPA will consider exceptions to the [Doctoral Time Limits policy](#) only if the request is supported by the student's advisor and the Department Chair, and if a current, satisfactory Spring Evaluation is on file with GEPA. A department analysis of the circumstances needs to be included in the request and any extension may not result in support being diverted from students who are within their time limits.

## PRE-CANDIDACY REQUIREMENTS

### Pre-Candidacy Grade Requirements

Prior to advancing to candidacy, each Ph.D. student is required to successfully complete all academic requirements, as outlined by their curricular group. See each curricular group's academic requirements below. In addition, all Ph.D. students are required to complete one of the Responsible Conduct of Research courses. See "Ethics Requirement" below.

Successful completion entails taking all required coursework for a letter grade and earning a grade of B or better. Any coursework that is only offered for S/U grades must be completed with a grade of S.

In addition, students are required to fulfill any seminar requirements, as outlined by their curricular group. Any exception to this policy requires the approval of the student's curricular group Curriculum Advisor, in consultation with the student's advisor and any relevant instructors. Written approval must be submitted by the Curriculum Advisor to the Graduate Coordinator, to be added to the student's file.

Please note if a student is taking any required coursework in the quarter that they hold their qualifying exam, the student's advancement to candidacy will not be processed until final grades are issued for those courses.

### Pre-Candidacy Curricular Group Coursework Requirements

The following contains the Pre Candidacy Coursework Requirements of each curricular group.

Please note that while these requirements may, for some curricular groups, appear identical to the M.S. degree requirements, differences do exist. In addition to any specific required courses, please pay attention to any seminar requirements, as outlined by your curricular group.

# Climate, Oceans, and Atmosphere Program

## Applied Ocean Science

### Required Coursework:

- SIOC 202A and SIOC 202B. Fundamentals of Wave Physics (two-quarter sequence; 4 units each)
- Two of the following four courses which must be completed in the first year
  - SIOC 210 Physical Oceanography (4 units)
  - SIOG 240 Marine Geology (4 units)
  - SIOG 260 Marine Chemistry (4 units)
  - SIOB 280 Biological Oceanography (4 units)
- One math and one data analysis class must be taken in either the first or second year of study
  - SIOC 203A and SIOC 203B Introduction to Applied Mathematics (4 units each)
  - SIOC 207A and SIOC 207B (4 units each)
  - SIOC 221A and SIOC 221B (4 units each)
  - MAE 294A and MAE 294B (; 4 units each)
  - ECE275A Parameter Estimation (4 units)
  - MAE 208 Mathematics for Engineers (4 units)
- SIOC 208 Seminar in Applied Ocean Science (1 unit, required every quarter)

### Elective Coursework:

- Two additional technical courses must be taken prior to the doctoral qualifying exam, selected in consultation with the students' advising committee. Examples include: SIOC 200AB Computational Ocean Acoustics; SIOC 214A Introduction to Fluid Mechanics; SIOC 213 Turbulence and Mixing; MAE 210 AB Fluid Mechanics; MAE 224 A Environmental Fluid Mechanics; SIOC 237A Introduction to Ocean Optics; SIOC 237B Ocean Color Remote Sensing, SIOG 227A Introduction to Seismology, and SIOG 227B Advanced Seismology.

## Climate Science

### Required Coursework:

- SIOC 210 Physical Oceanography (4 units)
- SIOC 217A Atmospheric and Climate Sciences I (4 units)
- SIOC 217B Atmospheric and Climate Sciences II (4 units)

- SIOC 217C Atmospheric and Climate Sciences III (4 units)
- SIOC 217D Atmospheric and Climate Sciences IV ( 4 units)

#### Elective Coursework:

Students are also expected to supplement their backgrounds with five to seven additional courses, including, for most climate sciences students, at least one additional quarter of fluid dynamics. These additional course(s) will be chosen in consultation with the students' advisers. It is recommended that students participate actively in at least two quarters of seminar courses designed to complement and stimulate individual research.

*\*Students can petition to substitute any of these required courses with a higher-level course that covers similar material, if such a course is offered before the Departmental Exam. Students should first consult with the CS Curriculum Advisor. If the request is approved, formal documentation will be provided to the Graduate Coordinator to include in the student's file.*

## Physical Oceanography

#### Required Coursework:

- SIOC 210 Physical Oceanography (4 units)
- SIOC 203A Introduction of Applied Mathematics (4 units)
- SIOC 203B Introduction of Applied Mathematics (4 units)
- SIOC 211A Ocean Waves I (4 units)
- SIOC 212A Geophysical Fluid Dynamics I (4)
- SIOC 214A Introduction to Fluid Mechanics (4 units)
- SIOC 221A Analysis of Physical Oceanographic Data (4 units)
- SIOC 221B Analysis of Physical Oceanography Data (4 units)

Students normally take a total of twelve four-unit graduate courses in the first year (the eight required plus four additional four-unit courses) and at least four additional four-unit courses after the first year. For PhD students who apply to receive an MS, a total of nine four-unit courses are required (see MS requirements).

PhD course work should include a breadth component of two or more four-unit courses in other scientific disciplines. These might come from the Scripps Department core courses in other oceanographic disciplines (SIOG 240, SIOG 260, SIOB 280) or from related graduate-level courses taught at UC San Diego. Exceptions to the above requirements may be granted with written approval by the curricular group coordinator in consultation with the guidance committee and the PO curricular group coordinator.

The Scripps Department offers regular seminars in several areas of current interest. After the departmental exam, students in residence are encouraged to enroll for credit in at least one one-unit seminar each quarter.

## Geophysics

No single course of study is appropriate to every student in the geophysics curricular group: instead, there is a sequence of foundational classes that each student is expected to complete successfully during the first year, together with a three-quarter seminar sequence on Geophysical Research Skills. Additional graduate class electives or research units (SIO299) under the guidance of a specific instructor provide a minimum of 12 units/quarter required for full-time study.

### Elective Coursework:

Electives should be chosen from the broad range of available topics in consultation with the first-year guidance committee and the student's advisor to provide breadth of expertise and to support the individual interests of the student. Some students will find it useful to take courses offered by other curricular groups across Scripps or by other departments on UCSD General campus.

## Geosciences

### Required Coursework:

- SIOG 240 Marine Geology (4 units)
- One geophysics course, from the following:
  - SIO 103 Introduction to Geophysics (4 units)
  - SIOG 234 Geodynamics (4 units)
  - SIOG 247 Rock Magnetism and Paleomagnetism (4 units)
- One geochemistry course, from the following:
  - SIOG 251 Whole Earth Geochemistry (4 units)
  - SIOG 252A Introduction to Isotope Geochemistry (4 units)
- One geology course, from the following:
  - SIO 100 Geology core classes include Field Methods (4 units)
  - SIO 105 Stratigraphy and Sedimentology (4 units)
  - SIO 170 Introduction to Volcanology (4 units)
  - SIOC 201 Geological Record of Climate Change (4 units)
  - SIOG 244 Shape and Structure of the Ocean Floor (4 units)

- SIOG 253 Interactions of Oceanic Plates and the California Margin (4 units)

#### Elective Coursework:

Students are also encouraged to take Introduction to Computers at SIO (SIOG 233), Analysis for Physical Oceanographic Data (SIOC 221B), Physical Oceanography (SIOC 210), Marine Chemistry (SIOG 260), and Biological Oceanography (SIOB 280), but these may not be used to substitute for the geology, geophysics and geochemistry core requirements.

## Marine Chemistry and Geochemistry

#### Required Coursework:

- First Year
  - SIOC 210 Physical Oceanography (4 units)
  - SIOG 260 Marine Chemistry (4 units)
  - One of the following:
    - SIOB 280 Biological Oceanography (4 units)
    - SIOG 240 Marine Geology (4 units)
  - Three (3) additional four-unit graduate level courses
- Second Year
  - Three (3) additional four-unit graduate level courses
- Seminar Requirement
  - SIOG 268 - Seminar in Marine Chemistry and Geochemistry (2 units, required 1 quarter per year, unless excused by curricular group coordinator)

## Biological Oceanography

#### Required Coursework:

- SIOC 210 Physical Oceanography (4 units)
- SIOG 260 Marine Chemistry (4 units)
- SIOB 280 Biological Oceanography (4 units)
- One of the following marine ecosystems courses::
  - SIOB 270 Pelagic Ecology (4 units)
  - SIOB 270A Fisheries Oceanography (4 units)
  - SIOB 275A Benthic Ecology (4 units)
  - SIOB 277 Deep-Sea Biology (4 units)
- One of the following marine organisms courses:

- SIOB 271 Marine Zooplankton (5 units)
- SIOB 282 Phytoplankton Diversity (4 units)
- SIOB 283 Phycology: Marine Plant Biology (5 units)
- SIOB 284 Marine Invertebrates (6 units)
- SIOB 294 Biology of Fishes (5 units)
- One of the following statistical and quantitative courses:
  - SIOB 272 Advanced Statistical Techniques
  - SIOB 276 Quantitative Theory of Populations and Communities
  - SIOB 298 Applied Bayesian Data Analysis
- SIOB 278 Seminar in Biosciences (2 units) (annual after Y1)
- SIOB 296 Biological Oceanography Graduate Student Presentations (2 units) (annual in years 2-5)

In addition, participation in an oceanographic cruise (minimum of two weeks' duration) and service as a teaching assistant (one quarter) are required.

## Marine Biology (MB)

Required Coursework:

- SIOC 210 Physical Oceanography (4 units)
- SIOG 260 Marine Chemistry (4 units)
- SIOB 280 Biological Oceanography (4 units)

MB Ph.D. students also must take at least two graduate-level marine organismal courses or labs. A partial list of courses that fulfill this requirement include:

- SIOB 283. Phycology: Marine Plant Biology
- SIOB 287A. Marine Microbial Ecology
- SIOB 282. Phytoplankton Diversity
- SIOB 284. Marine Invertebrates
- SIOB 271. Marine Zooplankton
- SIOB 293. Applications of Phylogenetics
- SIOB 277. Deep Sea Biology
- SIOB 294. Biology of Fishes
- SIOB 296. Marine Tetrapods
- SIOB 281. Marine Physiology
- Seminar Requirement
  - SIOB 278, SIOB 296, or equivalent, once per year beginning in year two
  - SIOB 291, annual participation in years two through four

## Marine Chemical Biology (MCB)

### Required Coursework:

- SIOC 210 Physical Oceanography (4 units)
- SIOG 260 Marine Chemistry (4 units)
- SIOB 280 Biological Oceanography (4 units)
- SIOB 262 Marine Chemical Biology Seminar (2 units, every quarter)

### Elective Coursework:

Students may fulfill the remaining units of required course work through elective course offerings selected in consultation with the students' guidance committee. Typical recommended electives are below:

- Chem 257. Bioorganic and Natural Products Chemistry (4 units)
- SIOB 242 A-B. Marine Biotechnology I and II (8 units)
- SIOB 264. Special Topics in Marine Natural Products Chemistry (3 units)
- Chem 254. Mechanisms of Organic Reactions (4 units)
- Chem 258. Applied Spectroscopy (4 units)

## ETHICS REQUIREMENT

**Each Ph.D. student is required to complete one of the approved UC San Diego Responsible Conduct of Research courses before taking their Qualifying Exam.**

Scripps offers two ethics courses, SIOB 273A and SIOG 232. To see a listing of ethics courses offered through other UC San Diego departments, please review the following website: <http://ethics.ucsd.edu/courses/index.html>. Students must register and receive credit for one of these courses, in order to fulfill the Ethics Requirement.

## DOCTORAL COMMITTEES

Each Ph.D. student is required to constitute a doctoral committee. GEPA provides an [eligibility table](#) to reference, as students will work with individuals who hold a number of different instructional and research titles.

The Doctoral Committee will determine the student's qualifications for independent research by conducting a Qualifying Examination no later than the end of the student's third year of study.

The Doctoral Committee also supervises the preparation of the dissertation, and administers the Final Examination.

Doctoral Committees in the Scripps Department consist of a minimum of four (4) members who hold appropriate instructional titles at UC San Diego (see [eligibility table](#)). Committee members are chosen from at least two departments, and at least two members must represent academic specialties that differ from the student's specialty. This includes one member who is a tenured or Emeritus UC San Diego professor and one member from another UC San Diego department.

Generally, three (3) members of the committee are from the Scripps Department with at least one of those members in a curricular group different from the student. The member from another department can have a joint appointment with Scripps if the officially designated home department for their appointment is in a UC San Diego department other than Scripps. Each committee must have a Committee Chair. A Co-Chair may be appointed but is not required, unless the student is advised by an Adjunct Professor.

A fifth member can be appointed to a student's doctoral committee, at the discretion of the student's Committee Chair(s) and upon approval by the Department Chair and Dean of Graduate Division. A fifth member is typically a second Researcher with a Lecturer's Appointment or someone who is not eligible to serve as one of the required five members (e.g. Project Scientist or someone from outside of the UC system). A copy of the fifth member's CV is required, along with a justification of the individual's inclusion on the committee.

Once the committee membership is decided, the student should send the members' names to the [Graduate Coordinator](#). This must be done at least three weeks before the scheduled qualifying exam date. The Graduate Coordinator will ensure that the membership meets all Scripps Department and UC San Diego requirements. The Graduate Coordinator will also prepare the necessary forms and route the forms to GEPA for final approval.

It is the expectation of GEPA that all members, including fifth members, will physically attend the qualifying exam and final defense. Please note, the Graduate Council extended the temporary exception to permit virtual qualifying exams and final defenses through fall quarter. Please contact the department's Graduate Coordinator for the most current COVID-19 campus policy regarding in-person events. All required paperwork is now processed and electronically signed through DocuSign. The department's Graduate Coordinator will prepare and submit the Advancement to Candidacy form and Final Defense Report form.

If a graduate student is employed by a company outside of UC San Diego in which a faculty member has a fiduciary interest (e.g. owns, consults for), then that faculty member may not be



the thesis/dissertation advisor of the graduate student. The faculty member may be on the Doctoral Committee.

If the faculty member is on the Doctoral Committee then they must inform the University, through the appropriate offices, of the situation and any possible conflict of interest. Upon review, the Dean of GEPA may grant exceptions.

## COMMITTEE RECONSTITUTION

For a variety of reasons, a doctoral committee may need to be reconstituted. Should this be the case, email the Graduate Coordinator with the proposed changes and the reason(s) for requesting the change. The change must be submitted at least three weeks before a scheduled qualifying examination or final defense to allow sufficient time to prepare the necessary forms, obtain signatures, and route the form to GEPA for final approval.

Please remember, any changes to committee membership must continue to adhere to all UC San Diego committee policies, as outlined above.

## QUALIFYING EXAM AND ADVANCEMENT TO CANDIDACY

The purposes of the Qualifying Exam at SIO are: to lay out a research plan that the student will tackle for dissertation, to convince a five-person committee that it is worthy of a Ph.D., to demonstrate that the student has the background and tools to carry out the plan and to assess whether it can be completed within normative time. There are many approaches to the Qualifying Exam across the department but all should achieve these basic goals.

There should be some form of written proposal. This should lay out the problem that the student wishes to address, accompanied by a thorough review of the literature to provide context. A tentative outline with a list of proposed chapter titles for the dissertation is helpful, as is a timeline describing the current status and the expected date of completion of each part. Each proposal should have publication quality illustrations with captions and a complete bibliography. It should have the look of a 'real' proposal typical in the student's field (e.g. NSF). As a courtesy to the committee, the student should provide the proposal to the committee members at least three weeks prior to the exam. It is often helpful to discuss it with each committee member in advance.

It is SIO department policy that the Qualifying Exam be completed by the end of the third year. The reasons for this are many. One purpose for the exam is to uncover weaknesses in the student's background, which when discovered early enough could be remedied. The later the exam, the less input the committee has in the dissertation research itself. After the student advances to

candidacy, the cost to the department frequently goes down while the student's salary goes up. Finally, students who may have passed the Departmental Exam but do not have the capacity to complete a doctoral dissertation can be redirected sooner rather than later.

Given the wide disparity in Qualifying Exams across the department, there is some anxiety on the part of the students regarding the enforcement of the third-year rule. Some faculty members will have to re-examine expectations for the exam. It is not a mini defense and should not be held to the same standard. On the other hand, a formal proposal is good practice for students and does help to clarify their research strategy.

It is the student's responsibility to make arrangements for the Qualifying Exam to take place. Students are encouraged to contact all members of their committee a few months ahead of time to schedule the examination.

The Doctoral Committee administers the Qualifying Exam and authorizes the issuance of the *Report of the Qualifying Examination and Advancement to Candidacy for the Degree of Doctor of Philosophy*.

Please note that there must be three (3) quarters of academic residency between advancement to candidacy and the final defense of the Ph.D. dissertation.

## QUALIFYING EXAM PROCEDURES

When the examination date is scheduled, the student must contact the Graduate Coordinator, so that the examination is on the department calendar. Please contact the department's Graduate Coordinator for the most current COVID-19 campus policy regarding in-person events. The Graduate Coordinator will also assist with logistics.

Once the exam has concluded, the Committee Chair must contact the Graduate Coordinator with the result. If the student passes, the Graduate Coordinator will submit the paperwork through DocuSign and route it to the appropriate parties for electronic signature. Once the paperwork is processed by GEPA, a \$50 advancement to candidacy fee will be applied to the student's account. It is the student's responsibility to pay this fee.

## FINAL DEFENSE PROCEDURES

As soon as you schedule your defense, please contact the Scripps Department Office.

First contact the Funding Coordinator, [Shelley Weisel](#). Funding issues can take several weeks to resolve. Be sure to tell the Funding Coordinator if you have accepted a job, since there may be some employment and fee issues that must be handled before you leave. The Funding Coordinator will let you know if there is anything special you must do for your support, taxes, tuition and/or fees before you defend and file your thesis. It is your responsibility to make an appointment with the Funding Coordinator.

Notify the Graduate Coordinator, [Gilbert Bretado](#) at least three weeks prior to the defense. Send your title exactly as you would like it to appear in all notices. Also include in this e-mail the day, date, time and location of the defense. Please also discuss the most current COVID-19 campus policy regarding in-person events with the Graduate Coordinator.

If your defense title will be different than your dissertation title, let the Graduate Coordinator know at this time. The Graduate Coordinator will prepare the final defense report, as well as the public announcement of your defense. The Graduate Coordinator will also confirm the members of your doctoral committee, your major, and official spelling of your name (for diploma purposes). If any changes are needed, the Graduate Coordinator will help process the request.

Once the defense has concluded, the Committee Chair must contact the Graduate Coordinator with the result. If the student passes, the Graduate Coordinator will submit the paperwork through Docusign and route it to the appropriate parties for electronic signature.

## FINAL QUARTER REGISTRATION STATUS

To be awarded a graduate degree, all students must be in a fee-based relationship with the University the quarter they finish their degree requirements. Establishing a fee-based relationship with the University is done in one of two ways:

- Register the quarter of degree completion.
  - Payment of registration fees and tuition allows students to file their dissertation.
- Pay the Filing Fee in lieu of registering
  - The Filing Fee is for the use of unregistered students who have completed all degree requirements.
  - Students, who will pay the Filing Fee, are not eligible to serve as a TA, or for any other student employment
  - Students, who still need to the use of laboratory space or equipment, or are otherwise engaged in on-campus activities that would fall under the purview of SIO 299, are not eligible to pay the filing.

The Filing Fee is always half the amount of the registration fee:

- Currently, the Filing Fee is \$188, but is subject to change
- Students do not pay the Filing Fee until they have scheduled their Final Appointment at GEPA, and all other degree requirements, including the defense of the doctoral dissertation are completed.

Students should consult with the department to determine which course of action would be most appropriate.

## ORAL DEFENSE AND FINAL EXAM

A final defensible draft of the doctoral dissertation should be submitted to each member of the doctoral committee at least four weeks prior to the oral defense and final examination. The form of the final draft must conform to the procedures outlined in the "[Preparation and Submission Manual for Doctoral Dissertations and Master's Theses "Bluebook,"](#)".

Students are encouraged to publish appropriate parts of their theses in scientific literature. In many cases, individual chapters are published as research articles prior to completion of the entire dissertation.

The doctoral committee supervises and conducts the oral defense and final examination, which shall be publicly held and so announced. The oral defense must be scheduled during the standard work week, Monday-Friday, and must be held during normal business hours.

*The Report of the Final Examination and Filing of the Dissertation for the Degree of Doctor of Philosophy* form is initiated by the Graduate Coordinator, and signed by members of the Doctoral Committee and the Department Chair.

## APPOINTMENTS WITH GEPA

Students are required to schedule two appointments with the GEPA: the Preliminary Appointment and the Final Appointment. Students will schedule their appointments through GEPA's [Online Calendar](#). The purpose of the Preliminary Appointment is to review the formatting of the dissertation. For this reason, students should not schedule their Preliminary Appointment until they have a final draft of their dissertation to review with GEPA.

Appointments may be made at least one full day in advance, but not more than 60 days in advance. Given that students are expected to submit the final draft of the dissertation to their committee four weeks in advance of their final defense, it is recommended that students schedule their preliminary appointment approximately two weeks before their final defense.

When scheduling the Final Appointment, students should allocate sufficient time to incorporate any feedback or revisions, provided by the student's Doctoral Committee, following the Oral Defense and Final Examination. This could take only days but could also take a substantially longer period of time. In addition, the Final Report must be electronically signed by all committee members and the Department Chair, before it is routed to GEPA for final processing. Students should consider these factors when scheduling their Final Appointment.

The student electronically submits their dissertation to GEPA the day before their Final Appointment, and, upon approval by the Dean of GEPA, files their dissertation with the University Archivist, who accepts it on behalf of the Graduate Council. Dissertations are cataloged electronically and available through the UCSD Library website:

<http://ucsd.libguides.com/dissertations>.

Students will submit the *Report of the Final Examination and Filing of the Dissertation for the Doctoral Degree* form and any other required forms at their Final Appointment. GEPA will provide each student with a checklist at the Preliminary Appointment, which will indicate which forms the student must submit at the Final Appointment. Forms can vary based on registration status, inclusion of published material in the dissertation, and other factors.

## POST GRADUATION CONSIDERATIONS

### PROOF OF DEGREE COMPLETION AND DIPLOMA

The student's degree will be conferred and posted to their transcript after the conclusion of the quarter. Whether the student completes all degree requirements in Week Two or Week Ten, their degree will not be conferred until after the conclusion of that quarter.

It takes GEPA, in conjunction with the Registrar's Office, several weeks to process degree paperwork following the conclusion of the quarter. Each quarter hundreds of graduate degrees are conferred. For this reason, it may take up to two months after the conclusion of the quarter for the student's degree to be conferred.

Each student will receive a *Letter of Completion* following successful completion of their Final Appointment. This letter affirms that all degree requirements were satisfied. Students who need to provide proof of degree to a prospective employer, agency, academic institution, etc. should use the *Letter of Completion* until their degree appears on their transcript.

The student's diploma will be mailed to the permanent address, as listed in the student's record. Students can review their permanent address and make any changes through [MyTritonLink](#). More information on diplomas can be found on the [Registrar's Website](#).

## HEALTH INSURANCE

If the student is enrolled in the student health insurance plan (UC SHIP), they should be aware of their last date of coverage. Coverage dates do not mirror the first and last date of the academic quarter. Students can find coverage dates and information on other post graduation health insurance considerations on the [Student Health Website](#).

If the student will not be registered in their final quarter but instead choose to pay the Filing Fee, the student may purchase voluntary UC SHIP for that quarter. More information on optional coverage can be found on the [Student Health Website](#).

## DEFENSE CELEBRATION

Currently, students are permitted to reserve Surfside for a defense celebration based on the university's COVID-19 policy regarding in-person events. Students must submit the [Surfside Reservation form](#) at least three weeks in advance. The handbook will be updated to reflect any changes that may occur to this policy in the 2022-23 academic year.

## NON-ACADEMIC IMPORTANT TOPICS

### ELECTRONIC MAIL LISTS AT SCRIPPS

The following public email distribution lists have been created for your use. It is **mandatory** that you be subscribed to the [phd-students@sio](mailto:phd-students@sio) or [ms-students@sio.ucsd.edu](mailto:ms-students@sio.ucsd.edu) mailing list, and the student mailing list for your program and curricular group at all times. You are added automatically upon acceptance to SIO. Should you have any questions regarding public email distribution lists, please contact the [Graduate Coordinator](#)

[phd-students@sio.ucsd.edu](mailto:phd-students@sio.ucsd.edu) - All Ph.D. Students

[aos-students@sio.ucsd.edu](mailto:aos-students@sio.ucsd.edu) - AOS students

[bo-students@sio.ucsd.edu](mailto:bo-students@sio.ucsd.edu) - BO students

[coap-students@sio.ucsd.edu](mailto:coap-students@sio.ucsd.edu) - All COAP students (AOS, CS, and PO)

[cs-students@sio.ucsd.edu](mailto:cs-students@sio.ucsd.edu) - CS students

[geo-students@sio.ucsd.edu](mailto:geo-students@sio.ucsd.edu) - All GEO students (GP, GS, and MCG)

[gp-students@sio.ucsd.edu](mailto:gp-students@sio.ucsd.edu) - GP students

[gs-students@sio.ucsd.edu](mailto:gs-students@sio.ucsd.edu) - GS students

[mb-students@sio.ucsd.edu](mailto:mb-students@sio.ucsd.edu) - MB student

[mcg-students@sio.ucsd.edu](mailto:mcg-students@sio.ucsd.edu) - MCG students

[obp-students@sio.ucsd.edu](mailto:obp-students@sio.ucsd.edu) - All OBP students (BO and MB)  
[po-students@sio.ucsd.edu](mailto:po-students@sio.ucsd.edu) - PO students  
[ecology-seminar@sio.ucsd.edu](mailto:ecology-seminar@sio.ucsd.edu) - Ecology (BO) seminar notices  
[gsmcg-seminar@sio.ucsd.edu](mailto:gsmcg-seminar@sio.ucsd.edu) - GS/MCG shared seminar notices  
[gp-seminar@sio.ucsd.edu](mailto:gp-seminar@sio.ucsd.edu) - GP seminar notices  
[mb-seminar@sio.ucsd.edu](mailto:mb-seminar@sio.ucsd.edu) - MB seminar notices  
[students@sio.ucsd.edu](mailto:students@sio.ucsd.edu) - Unmoderated student list

You may subscribe or unsubscribe to these (and other) public mailing lists at <http://siomail.ucsd.edu/mailman/listinfo>

## SIGN-OUT

When you are leaving campus for more than a few days, be it for business, a cruise, or vacation, you MUST contact the department to sign out and provide your contact information. This is necessary in case we must notify you of an emergency.

Please contact the Graduate Coordinator, [Gilbert Bretado](#), and the Funding Coordinator, [Shelley Weisel](#), to make sure all academic and funding issues are resolved before you leave.

## SAFETY

Scripps Institution of Oceanography operates its safety program in conjunction with UC San Diego's [Environment, Health and Safety \(EH&S\) division](#), which manages a coordinated safety program for the entire UC San Diego campus. Safety at Scripps is a responsibility shared by everyone: students, volunteers, faculty, and staff.

A safe research environment begins with hazard awareness and risk management. Safety training is required for anyone who works in or uses a research lab, instrument development shop, test facility or other space at UC San Diego where workplace hazards exist. This includes researchers, faculty, post-docs, students (graduates and undergraduates), staff research associates, visiting scientists, and volunteers. The following listing will get you started.

For more information, please look at our [website](#) or contact [Dennis Brand](#).

## TRANSPORTATION AND PARKING

Students who wish to park on the Scripps campus or on the main UCSD campus at any time, must purchase a UC San Diego parking permit from the UC San Diego Parking Office. Graduate students can purchase a "B" (staff) or "S" (student) permit.

In addition, any Scripps student wishing to park in a Scripps lot, with a UC San Diego B or S parking permit, must obtain the Scripps supplemental permit. The supplemental permit has no additional charge. Current UC San Diego parking permit rates, instructions for purchasing a permit, and further information regarding parking and transportation services (free bus passes, rideshare options, Scripps/UC San Diego Shuttle, etc.), are available at <https://transportation.ucsd.edu/>.

**Shuttle Services and Public Transit:** UC San Diego Transportation offers a shuttle service between the Scripps campus and the main UC San Diego campus as well as shuttles around the La Jolla and Hillcrest area. More information can be found [here](#).

In addition, Triton U-Pass is a UC San Diego universal transit pass program that provides students unlimited rides on all regional MTS and NCTD mass transit bus and trolley/light rail routes during academic quarters. All current undergraduate and graduate students who have paid quarterly [registration fees](#) are eligible for U-Pass. Please note that students are not eligible for the U-Pass during the summer, unless they are registered for summer session. More information can be found [here](#).

## OFFICE SPACE AND KEYS

Please note that only students approved for on-campus research can access their office. This requires that the student be included on a PI's approved Research Plan. The handbook will be updated to reflect any future changes to office access. Below is a general description of how office space is managed at Scripps, under normal circumstances.

Office space is controlled by the Research Division Section Heads, with room assignments and facility maintenance being delegated to the Research Division business offices.

Ph.D. students will be assigned office space from the business office of their Research Division. Some units at SIO may require deposits ranging from \$15 per key. Upon leaving SIO, the key(s) must be returned to the unit from which the key(s) was checked out.

Please refer to the grid below to find the appropriate facilities contact for your business office. If you are unsure of which research division that you belong to, please ask your advisor. If you are an incoming student and do not have an advisor, please contact the department office, Gilbert Bretado [gbretado@ucsd.edu](mailto:gbretado@ucsd.edu), or Shelley Weisel [sweisel@ucsd.edu](mailto:sweisel@ucsd.edu)

| <b>Business Office</b> | <b>Staff Contact</b> | <b>Position</b>         | <b>Email</b>   | <b>Phone</b> |
|------------------------|----------------------|-------------------------|--|--------------|
| CASPO                  | Will Rivera          | Facilities/Offices/Keys | <a href="mailto:wrivera@ucsd.edu">wrivera@ucsd.edu</a> | 4-1875       |
| CMBB--MBRD             | Dejan Ristic         | Facilities/Offices/Keys | <a href="mailto:dristic@ucsd.edu">dristic@ucsd.edu</a> | 2-1229       |



|      |              |                         |  |        |
|------|--------------|-------------------------|--|--------|
| GRD  | Megan Smith  | Facilities/Offices/Keys | <a href="mailto:mas006@ucsd.edu">mas006@ucsd.edu</a>   | 4-6852 |
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\*These individuals are “mandatory reporters” and not a completely confidential resource.

# APPENDIX

## MS DEGREE REQUIREMENTS

### Applied Ocean Science Curriculum

#### *Required Coursework:*

- SIOC 202A and SIOC 202B. Fundamentals of Wave Physics (two-quarter sequence; 4 units each)

Any two of the following SIO introductory courses:

- SIOC 210. Physical Oceanography (4 units)
- SIOG 240. Marine Geology (4 units) or SIOG 227. Intro to Seismology
- SIOG 260. Marine Chemistry (4 units)
- SIOB 280. Biological Oceanography (4 units)

#### *Elective Coursework:*

Students may fulfill the remaining units of required course work through elective course offerings selected in consultation with the students' guidance committee.

In addition, enrollment in SIOC 208 (Seminar in Applied Ocean Sciences, one unit per quarter) is expected during the student's entire period of study. SIOC 208 serves as a communications bridge across the program.

### Climate Sciences Curriculum

#### *Required Coursework:*

- SIOC 210. Physical Oceanography (4 units)
- SIOC 217A, SIOC 217B, and SIOC 217C. Atmospheric and Climate Sciences I-III (4 units each)
- SIOG 260. Marine Chemistry (4 units)

### *Elective Coursework:*

Students may fulfill the remaining units of required course work through elective course offerings selected in consultation with the students' guidance committee. For most climate sciences students, this includes at least one additional quarter of fluid dynamics.

## Physical Oceanography Curriculum

*Required Coursework (20 units selected from the following designated courses):*

- SIOC 203A and SIOC 203B. Introduction to Applied Mathematics I-II (4 units each)
- SIOC 210. Physical Oceanography (4 units)
- SIOC 212A and SIOC 212B. Geophysical Fluid Dynamics I-II (4 units each)
- SIOC 214A. Introduction to Fluid Mechanics (4 units)
- SIOC 221A and SIOC 221B. Analysis of Physical Oceanographic Data A-B (4 units each)

### *Elective Coursework:*

Students may fulfill the remaining units of required course work through elective course offerings selected in consultation with the students' guidance committee. These might come from the Scripps Institution of Oceanography core courses in other oceanographic disciplines (SIOG 240, Marine Geology; SIOG 260, Marine Chemistry; SIOB 280, Biological Oceanography) or from related graduate-level courses taught at UC San Diego.

## Geophysics Curriculum

The geophysics master's degree provides a solid grounding in the fundamentals of geophysics for students intending to pursue professional positions in government, industry, or nonprofit organizations or to apply to Ph.D. programs. Two different degree options are available:

**Plan I—Thesis.** This involves both coursework and research, culminating in the preparation of a thesis. A total of thirty-six units of credit is required: twenty-four units must be from Category A courses (see below); and twelve units in research work leading to the thesis.

**Plan II—Comprehensive Exam.** At least twenty-four units must be from Category A and will be selected in consultation with the geophysics MS program director. The remaining twelve units are electives chosen from either Category A or B, or other courses taken with permission of the geophysics MS program director.

### *Category A courses:*

- SIOG 223A Geophysical Data Analysis I (4 units)
- SIOG 223B. Geophysical Data Analysis II (4 units)
- SIOG 225. Physics of Earth Materials (4 units)
- SIOG 227A. Introduction to Seismology (4 units)
- SIOG 229. Gravity and Geomagnetism (4 units)
- SIOG 230. Introduction to Inverse Theory (4 units)
- SIOG 231. Introduction to EM Methods in Geophysics (4 units)
- SIOG 234. Geodynamics (4 units)
- SIOG 236. Satellite Remote Sensing (4 units)
- SIOG 238. Numerical Methods (4 units)

*Category B courses:*

- SIO 105. Sedimentology and Stratigraphy (4 units)
- SIO 110. Introduction to GIS and GPS for Scientists (4 units)
- SIO 113. Introduction to Computational Earth Science (4 units)
- SIO 160. Introduction to Tectonics (4 units)
- SIO 162. Structural Geology (4 units)
- SIO 182A. Environmental and Exploration Geophysics (4 units)
- SIO 182B. Environmental and Exploration Geophysics (4 units)
- SIOG 224. Internal Constitution of the Earth (4 units)
- SIOG 226. Introduction to Marine Geophysics (4 units)
- SIOG 227B. Advanced Seismology I (4 units)
- SIOG 227C. Advanced Seismology II (4 units)
- SIOG 233. Introduction to Computing (4 units)
- SIOG 239. Special Topics in Geophysics (4 units)
- SIOG 247. Rock Magnetism and Paleomagnetism (4 units)

Students are encouraged to participate in SIOG 239, Special Topics in Geophysics, where students have a chance to practice their speaking skills before their peers.

## Geosciences Curriculum

*Required Coursework:*

- SIOG 240. Marine Geology (4 units)
- One geophysics course, from the following:
  - SIO 103. Introduction to Geophysics (4 units)
  - SIOG 226. Introduction to Marine Geophysics (4 units)

- SIOG 234. Geodynamics (4 units)
- SIOG 247. Rock Magnetism and Paleomagnetism (4 units)
- One geochemistry course, from the following:
  - SIOG 245. Marine Sediments-Paleo Proxies (4 units)
  - SIOG 251. Whole Earth Geochemistry (4 units)
  - SIOG 252A. Introduction to Isotope Geochemistry (4 units)
- One geology course, from the following:
  - SIO 105. Stratigraphy and Sedimentology (4 units)
  - SIO 160. Introduction to Tectonics (4 units)
  - SIO 170. Introduction to Volcanology (4 units)
  - SIOC 201. Geological Record of Climate Change (4 units)

*Elective Coursework:*

Students may fulfill the remaining units of required course work through elective course offerings selected in consultation with the students' guidance committee. Recommended course electives are below:

- SIOG 233. Introduction to Computers at SIO (4 units)
- SIOC 221B. Analysis for Physical Oceanographic Data (4 units)
- SIOC 210. Physical Oceanography (4 units)
- SIOG 260. Marine Chemistry (4 units)
- SIOB 280. Biological Oceanography (4 units)

## Marine Chemistry and Geochemistry Curriculum

*Required Coursework:*

- SIOC 210. Physical Oceanography (4 units)
- SIOG 260. Marine Chemistry (4 units)
- Select one of the following:
  - SIOG 240. Marine Geology (4 units)
  - SIOB 280. Biological Oceanography (4 units)

*Elective Coursework:*

Students may fulfill the remaining units of required course work through elective course offerings selected in consultation with the students' guidance committee.

## Biological Oceanography

*Required Coursework:*

- SIOC 210. Physical Oceanography (4 units)

- SIOG 260. Marine Chemistry (4 units)
- SIOB 280. Biological Oceanography (4 units)
- One of the following:
  - SIOG 240. Marine Geology (4 units)
  - SIOG 255. Paleobiology and History of Life (6 units)
  
- One of the following:
  - SIOB 270. Pelagic Ecology (4 units)
  - SIOB 270A. Fisheries Oceanography (4 units)
  - SIOB 275A. Benthic Ecology (4 units)
  - SIOB 277. Deep-Sea Biology (4 units)
  
- One of the following:
  - SIOB 271. Marine Zooplankton (5 units)
  - SIOB 282. Phytoplankton Diversity (4 units)
  - SIOB 283. Phycology: Marine Plant Biology (5 units)
  - SIOB 284. Marine Invertebrates (6 units)
  - SIOB 294. Biology of Fishes (5 units)
  - SIOB 296. Marine Tetrapods (4 units)

*Elective Coursework:*

Other coursework required for the Plan II (comprehensive exam) masters will be recommended by the student's guidance committee, usually including: one quarter of SIO 278, Seminar in Ocean Biosciences (or equivalent participatory seminar); a course in introductory parametric statistics; and at least one advanced-level course in physical, chemical, or geological oceanography.

## Marine Biology Curriculum

*Required Coursework:*

- SIOC 210. Physical Oceanography (4 units)
- SIOG 260. Marine Chemistry (4 units)
- SIOB 280. Biological Oceanography (4 units)

Students also must take at least two graduate-level marine organismal courses or labs. A partial list of courses that fulfill this requirement include:

- SIOB 283. Phycology: Marine Plant Biology
- SIOB 287A. Marine Microbial Ecology
- SIOB 282. Phytoplankton Diversity
- SIOB 284. Marine Invertebrates
- SIOB 271. Marine Zooplankton
- SIOB 293. Applications of Phylogenetics
- SIOB 277. Deep Sea Biology
- SIOB 294. Biology of Fishes
- SIOB 296. Marine Tetrapods
- SIOB 281. Marine Physiology

*Elective Coursework:*

Students may fulfill the remaining units of required course work through elective course offerings that may be recommended by the guidance committee.

### Marine Chemical Biology Track

*Required Coursework:*

- SIOC 210. Physical Oceanography (4 units)
- SIOG 260. Marine Chemistry (4 units)
- SIOB 280. Biological Oceanography (4 units)

*Elective Coursework:*

Students may fulfill the remaining units of required course work through elective course offerings selected in consultation with the students' guidance committee. Typical recommended electives are below:

- Chem 257. Bioorganic and Natural Products Chemistry (4 units)
- SIOB 232. Ethical and Professional Science (2 units) or equivalent
- SIOB 242 A-B. Marine Biotechnology I and II (8 units)
- SIOB 264. Special Topics in Marine Natural Products Chemistry (3 units)
- Chem 254. Mechanisms of Organic Reactions (4 units)
- Chem 258. Applied Spectroscopy (4 units)