Marine Biology, MS

Program Description

The Marine Biology Program is designed for students with an interest in one or more of the subdisciplines of marine biology who wish to pursue careers in higher education, government, or private industry. This unique, interdisciplinary degree program (IDP) combines the strengths of various departments at three universities within the Texas A&M University System: Life Sciences at Texas A&M-Corpus Christi, Marine Biology and Marine Sciences at Texas A&M University at Galveston (TAMU-G), and Wildlife and Fisheries Sciences, Oceanography and Biology at Texas A&M University (TAMU). Students can choose courses from any campus and form committees with any participating faculty. Advantages of the interdisciplinary degree format for Marine Biology students include a diverse, internationally recognized faculty with high scholarly productivity and extramural funding, as well as two campuses strategically located on the Gulf of Mexico. A student in the IDP receives his or her degree from both Texas A&M University and Texas A&M University-Corpus Christi.

The Marine Biology program offers the Master of Science and the Doctor of Philosophy degrees in Marine Biology. A personalized graduate advisory committee guides each student through the conception, design, construction, and execution of marine biology-based inquiry.

Student Learning Outcomes

As part of their progression through the Marine Biology Program, Master of Science students will:

- Gain an in-depth of knowledge of essential and emerging concepts in the field of marine biology.
- Perform scholarly hypothesis-driven research grounded in marine biological principles and concepts.
- Demonstrate advanced communication skills through either presentation of research results at professional scientific meetings and/or through peer-reviewed publication.
- Develop a skill set and research record such that they can secure employment in academia, state/federal agencies, private companies, or non-governmental organizations.

Admission Requirements

Those seeking admission to the Marine Biology Program should apply online through the Office of Recruitment and Admissions. In addition to the documents required by that office, applicants must submit an essay of no more than 1,000 words describing their educational and career goals, and interests as they relate to the faculty in the Marine Biology Program; a list of names of program faculty members contacted; three letters of recommendation from people familiar with their potential for graduate studies; transcripts of all previous undergraduate/graduate work; Graduate Record Examination (GRE) scores that are not more than 5 years old; and a résumé. Additional requirements exist for international students, including TOEFL or IELTS scores from ETS taken within the last two years for students from countries where English is not the native language, and a course by course foreign transcript evaluation through an approved service (refer to the Admission section of this catalog). All relevant supplemental materials (such as publications or other documents that include information about relevant experiences) that are submitted with the application will be considered. Persons seeking admission to the M.S. Program in Marine Biology should first contact the program faculty and identify a faculty member willing to serve as the graduate advisor. Applicants will not be admitted to the program without a graduate advisor.

Completed applications must be received by the Office of Recruitment and Admissions by the specified priority deadlines:

- Fall Semester - December 1
- Spring Semester - June 1

Incomplete applications will not be considered. The applicant will be notified of acceptance or rejection by letter.

Teaching assistantships, graduate research assistantships, and fellowships may be available to admitted degree-seeking students who maintain full-time graduate student status (9 hours/fall and spring semester, and 3 hours/summer). The completed Teaching Assistant Application (http://www.sci.tamucc.edu/students/gradfunding.html) and all other materials requested for evaluation should be submitted as per instructions on that form. For full consideration, the deadline for submitting applications is December 1 for the following academic year. A limited number of fellowships are available, and faculty members conducting funded research projects often
The MS in Marine Biology is designed for graduate students who wish to become knowledgeable leaders and professionals with an in-depth education and specialized skills in the field. Students will develop a sense of creative independence that will allow them to practice in and contribute to a variety of professions and fields of scholarship. For MS students, the program offers a thesis and a non-thesis degree option (see below). Thesis students may change between the Thesis and Non-Thesis option at any time with the approval of the student's GAC.

Specialized and Elective Coursework

Depending on the emphasis area, elective and specialized coursework selections may be chosen from biology, biomedical sciences, chemistry, coastal and marine system science, computer science, environmental science, geographic information science, geospatial surveying engineering, geology, fisheries and mariculture, mathematics, or other course offerings as stipulated and approved by the student's advisor(s) and TAMUG. Recognized scholars who are not a member of the TAMU-CC graduate faculty may serve on a student's committee by submitting a letter of request from the advisor, through the TAMU-CC Marine Biology Program Coordinator, with the individual's resume attached as well as a completed "Form 2" from CGS (Graduate Faculty Status Application). The scholar may serve upon approval of the TAMU-CC CGS. Only one CGS appointed scholar may be counted toward the minimum committee member composition. For Masters of Science in Marine Biology degrees, the committee shall consist of no fewer than three members, two of which must belong to the MARB IDP Graduate Faculty, including the advisor(s). The Chair (and/or Co-Chair) must be a member of the MARB IDP Graduate Faculty.

Enrollment Requirements

All students are required to maintain continuous registration until completion of all requirements for graduation unless a specific leave of absence is granted in writing by the department. Students funded through scholarships, fellowships and assistantships are required to maintain a minimum of 9 hours/fall and spring semester, and 3 hours/summer. To meet enrollment requirements after completing all formal coursework on the degree plan, a student may register for MARB 5940 - Master's Project Research.
GAC. Classes or research projects designated as part of the specialized coursework requirement must receive the approval of a student’s GAC.

B. **Coursework Requirements and Limitations**

The program specifies the minimum number of semester credit hours (SCH) that must be earned from regular, graded (non-research, non-variable credit) coursework: for students in the MS non-thesis option, 33 of 36 total hours; for students in the MS thesis option, 23 of 32 total hours. A student earns SCH credit for **MARB 6596 - Directed Independent Study**, but may apply only 3 SCH toward the degree without prior approval of the student’s GAC and the Marine Biology Program Coordinator.

### 1. Non-Thesis Option

The non-thesis Master’s Degree is designed to provide a broad understanding of marine biology. The curriculum will especially benefit those individuals in professional employment who seek advancement or additional training to enhance their knowledge and skills. The student is required to write a professional paper based on research conducted in **MARB 5397 - Directed Research**. The paper will be on a topic approved by the student’s GAC and will demonstrate the student’s abilities in organization, data collection, and scientific writing. To graduate under the non-thesis degree plan, a student must complete a minimum of 36 graduate semester credit hours. The student will complete:

- **MARB 5397 - Directed Research** 3 sem. hrs.
- **MARB 6102 - Graduate Research Seminar** 1 sem. hrs.
- **MATH 6315 - Statistical Methods in Research I** 3 sem. hrs.
- **MARB 6340 - Marine Organisms and Processes** 3 sem. hrs.
- **MARB 6341 - Evolution and Genomics of Marine Organisms** 3 sem. hrs.
- Elective, specialized, and topical coursework 23 sem. hrs.

**Total: 36**

### 2. Thesis Option

The thesis Master’s Degree requires a thesis based upon original research conducted during the period that the student is enrolled at Texas A&M University-Corpus Christi. The research must include a review of relevant literature, a description of the results from original research on a topic approved by the GAC, statistical analysis when appropriate, and an appropriate discussion of the results. To graduate under the thesis degree plan, a student must complete a minimum of 32 graduate semester credit hours. Three courses form the required research component of the degree for the MS (thesis): **MARB 5392 - Thesis Proposal, MARB 5393 - Thesis Research**, and **MARB 5394 - Thesis Submission**. Students must enroll in **MARB 5394 - Thesis Submission** during their last semester when their theses will be completed. The student will complete:

- **MARB 5392 - Thesis Proposal** 3 sem. hrs.
- **MARB 5393 - Thesis Research** 3 sem. hrs.
- **MARB 5394 - Thesis Submission** 3 sem. hrs.
- **MARB 6102 - Graduate Research Seminar** 1 sem. hrs.
- **MARB 6340 - Marine Organisms and Processes** 3 sem. hrs.
- **MARB 6341 - Evolution and Genomics of Marine Organisms** 3 sem. hrs.
- **MATH 6315 - Statistical Methods in Research I** 3 sem. hrs.
- Elective, specialized, and topical coursework 13 sem. hrs.

**Total: 32**

### Format and Style of Thesis or Professional Paper

The thesis or non-thesis professional paper must follow style requirements established in the Marine Biology Graduate Handbook and must be approved and signed by the members of the student’s GAC, the Chair of the Department of Life Sciences, and the Dean of Graduate Studies. Guidance can be found in the Marine Biology Student Handbook (www.marinebiology.tamucc.edu). For more
information on formatting requirements, consult the College of Graduate Studies Master's Student information page (https://gradschool.tamucc.edu/current_students/masters_students.html).

Once the thesis/professional paper is completed and approved by the GAC, the results of the research must be presented orally and publicly. The final defense/oral examination usually takes place immediately following the seminar. Graduate students are encouraged to present their research at a scientific meeting (other than their graduate seminar) prior to graduation.

Upon approval by a student's GAC, a copy of the thesis/professional paper will be sent to the Dean of Graduate Studies. At the time of successful completion of the final defense/oral examination, committee members will sign the thesis/professional paper and return it to the Dean of Graduate Studies for final approval and signature.

**Final Oral Defense Examination**

Each student must pass a final oral defense examination during the last semester before graduation. Students should enroll in MARB 5394 - Thesis Submission during the semester in which they are planning to defend their thesis and/or graduate. The student's GAC administers this examination which covers topics related to: (1) all graduate coursework undertaken for the Marine Biology program, (2) the student's specific research area, and (3) broad concepts of general and marine biology including familiarity with the literature. The student is responsible for scheduling the defense with the faculty involved. A student who fails the defense may repeat it once after an interval of four months or more. If a student fails the second defense, he or she will be terminated from the program. Both MS options require a final examination: students pursuing the thesis option may schedule the final examination after completion of all course work and after at least the first draft of the thesis has been submitted to their GAC for review; non-thesis students may schedule the final examination after completion of all course work.

**For Additional Information**

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