FRESHWATER MARINE SCIENCE, M.S.

The Freshwater and Marine Sciences (FMS) Graduate Program offers curricula leading to the master of science and doctor of philosophy degrees or a doctoral minor in freshwater and marine sciences. Interdisciplinary in nature, each individualized program of study provides graduate training in aquatic sciences and integrates related sciences. Students enrolled in the program are advised by faculty in several departments in the College of Letters & Science, the College of Engineering, the College of Agricultural and Life Sciences, and the School of Veterinary Medicine.

UW–Madison is recognized worldwide as a leader in the field of limnology and aquatic ecology. The FMS Program began in 1962 as the oceanography and limnology program. The program combines research and teaching from several fields and departments to develop a greater understanding of aquatic systems—their origins, inhabitants, phenomena, and impact on human life.

The FMS Program emphasizes limnological studies and is based on the premise that limnology and marine sciences are integrated fields requiring a broad base in the fundamental disciplines. Students may specialize in limnology or in marine sciences, or they may focus on processes common to both environments.

Study plans are individually tailored for each student by a guidance and evaluation committee composed of at least three faculty members including the major professor, another professor from the major field of interest, and a third from another discipline. At least two must be from the limnology and marine sciences faculty, one from the biological sciences, and one from the physical sciences. The committee guides the student in developing study plans, research, and career goals.

FACILITIES
Facilities for freshwater and marine research and instruction in the biological, chemical, and physical areas of limnology and marine sciences are available at UW–Madison through the Center for Limnology, the Water Science & Engineering Laboratory, and the departments of faculty participating in the program. The Center for Limnology also maintains a year-round laboratory at Trout Lake. This facility is a well-equipped biological field station in the Northern Highlands lake district of Wisconsin. Several research vessels are available for research on the Great Lakes. Ships belonging to other institutions are used for oceanographic field research.

ADMISSIONS

Please consult the table below for key information about this degree program’s admissions requirements. The program may have more detailed admissions requirements, which can be found below the table or on the program’s website. Graduate admissions is a two-step process between academic programs and the Graduate School. Applicants must meet the minimum requirements (https://grad.wisc.edu/apply/requirements) of the Graduate School as well as the program(s). Once you have researched the graduate program(s) you are interested in, apply online (https://grad.wisc.edu/apply).

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Detail</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fall Deadline</td>
<td>January 1</td>
</tr>
<tr>
<td>Spring Deadline</td>
<td>October 1</td>
</tr>
<tr>
<td>Summer Deadline</td>
<td>May 1</td>
</tr>
<tr>
<td>GRE (Graduate Record Examinations)</td>
<td>Required.</td>
</tr>
<tr>
<td>English Proficiency Test</td>
<td>Either applicant whose native language is not English or whose undergraduate instruction was not in English must provide an English proficiency test score and meet the Graduate School minimum requirements (<a href="https://grad.wisc.edu/apply/requirements/#english-proficiency">https://grad.wisc.edu/apply/requirements/#english-proficiency</a>).</td>
</tr>
<tr>
<td>Other Test(s) (e.g., GMAT, MCAT)</td>
<td>n/a</td>
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<tr>
<td>Letters of Recommendation</td>
<td>3</td>
</tr>
</tbody>
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ADMISSIONS
Applicants to the program typically have at least one year of college-level biology, chemistry, physics, and calculus. In addition, applicants should highlight their substantive experiences and career goals in freshwater and marine sciences. Prospective students make direct contact with potential faculty advisors. Admission depends upon finding a match between the skills and interests of the applicant and the needs of a suitable faculty mentor.

FUNDING

GRADUATE SCHOOL RESOURCES

Resources to help you afford graduate study might include assistantships, fellowships, traineeships, and financial aid. Further funding information (https://grad.wisc.edu/funding) is available from the Graduate School. Be sure to check with your program for individual policies and processes related to funding.

PROGRAM RESOURCES

Various types of financial-assistance programs are available to qualified students in the form of research assistantships, teaching assistantships, fellowships, and special grants. Decisions regarding financial support are based on letters of recommendation, grades, Graduate Record Exam (GRE) scores, and, for research assistantships, the matching of interests or experience of the applicant to the research program. For research assistantships, the applicant’s interests and experience must match the needs of the funding project. Students are encouraged to seek outside funding.

REQUIREMENTS

MINIMUM GRADUATE SCHOOL REQUIREMENTS

Review the Graduate School minimum academic progress and degree requirements (http://guide.wisc.edu/graduate/...
#policiesandrequirementstext), in addition to the program requirements listed below.

## MAJOR REQUIREMENTS

### MODE OF INSTRUCTION

<table>
<thead>
<tr>
<th>Mode of Instruction</th>
<th>Evening/Weekend</th>
<th>Online</th>
<th>Hybrid</th>
<th>Accelerated</th>
</tr>
</thead>
<tbody>
<tr>
<td>Face to Face</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Evening/Weekend</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Online</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

### Mode of Instruction Definitions

- **Evening/Weekend**: These programs are offered in an evening and/or weekend format to accommodate working schedules. Enjoy the advantages of on-campus courses and personal connections, while keeping your day job. For more information about the meeting schedule of a specific program, contact the program.

- **Online**: These programs are offered primarily online. Many available online programs can be completed almost entirely online with all online programs offering at least 50 percent or more of the program work online. Some online programs have an on-campus component that is often designed to accommodate working schedules. Take advantage of the convenience of online learning while participating in a rich, interactive learning environment. For more information about the online nature of a specific program, contact the program.

- **Hybrid**: These programs have innovative curricula that combine on-campus and online formats. Most hybrid programs are completed on-campus with a partial or completely online semester. For more information about the hybrid schedule of a specific program, contact the program.

- **Accelerated**: These on-campus programs are offered in an accelerated format that allows you to complete your program in a condensed time-frame. Enjoy the advantages of on-campus courses with minimal disruption to your career. For more information about the accelerated nature of a specific program, contact the program.

## CURRICULAR REQUIREMENTS

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Detail</th>
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</thead>
<tbody>
<tr>
<td>Minimum Credits</td>
<td>30 credits</td>
</tr>
<tr>
<td>Minimum Residence Credits</td>
<td>16 credits</td>
</tr>
</tbody>
</table>

### Minimum Graduate Coursework Requirement

Half of degree coursework (15 credits out of 30 total credits) must be completed graduate-level coursework; courses with the Graduate Level Coursework attribute are identified and searchable in the university's Course Guide (https://registrar.wisc.edu/course-guide/).

### Overall Requirement

3.00 GPA required.

### Other Grade Requirements

Students must earn a B or above in all courses counting toward degree requirements.

### Assessments

A formal thesis is required.

### Language Requirements

No language requirements.

## REQUIRED COURSES

The degree has a flexible curriculum. Students are required to develop a plan of courses with their advisor. Most students take ATM OCN/
CREDENTIALS PER TERM ALLOWED
15 credits

TIME CONSTRAINTS
Master’s degree students who have been absent for five or more consecutive years lose all credits that they have earned before their absence. Individual programs may count the coursework students completed prior to their absence for meeting program requirements; that coursework may not count toward Graduate School credit requirements.

OTHER
Graduate students in the FMS Program are typically supported through research assistantships, teaching assistantships, fellowships, and special grants. Students are encouraged to seek outside funding and should talk with prospective faculty members regarding funding options.

PROFESSIONAL DEVELOPMENT

GRADUATE SCHOOL RESOURCES
Take advantage of the Graduate School’s professional development resources (https://grad.wisc.edu/pd) to build skills, thrive academically, and launch your career.

LEARNING OUTCOMES
1. Articulate, critique, or elaborate the theories, research methods, and approaches to inquiry or practice in the relevant area of freshwater and/or marine sciences.
2. Identify sources and assemble evidence pertaining to questions or challenges in the relevant research field(s).
3. Understand the historical or global context of freshwater and/or marine sciences.
4. Select and/or use appropriate methodologies and practices.
5. Evaluate or synthesize information pertaining to questions or challenges in the students’ area of specialization within the freshwater and marine sciences.
6. Communicate clearly in ways appropriate to the field of study.
7. Recognize and apply principles of ethical conduct.

PEOPLE

FACULTY
Stanley (chair, ehstanley@wisc.edu) (Integrative Biology), Anantharaman (Bacteriology), Bahr (Geoscience), Block (Civil and Environmental Engineering), Cardiff (Geoscience), Desai (Atmospheric and Oceanic Sciences), Dugan (Integrative Biology), Ginder-Vogel (Civil and Environmental Engineering), Goldberg (Pathobiological Sciences), Gottschalk Druschke (English), Graham (Botany), Hicks (Civil and Environmental Engineering), Hotchkiss (Botany), Hurley (Civil and Environmental Engineering), Krysan (Horticulture), Kucharik (Agronomy), Lee (Integrative Biology), Loheide (Civil and Environmental Engineering), McMahon (Civil and Environmental Engineering), Noguera (Civil and Environmental Engineering), Remucal (Civil and Environmental Engineering), Vander Zanden (Integrative Biology), Wright (Civil and Environmental Engineering), Wu (Civil and Environmental Engineering)