

FRESHWATER SCIENCES AND TECHNOLOGY, MS: PROFESSIONAL SCIENCE TRACK

The School of Freshwater Sciences offers a graduate program of studies providing students with advanced training and education in four areas:

- Freshwater System Dynamics
- Human and Ecosystem Health
- Freshwater Technology
- Freshwater Policy and Economics

Each of these focus areas is interrelated with the others, and includes biologic, physical, technologic and policy aspects of freshwater.

The Master of Science program has two tracks designed to provide a strong foundation necessary for the training of graduates that will utilize novel approaches to the sustainable and equitable use and management of freshwater systems worldwide. The Doctor of Philosophy program is a research degree designed to explore and discover novel approaches to the sustainable and equitable use and management of freshwater systems worldwide. These programs will create an interdisciplinary atmosphere for training the next generation of scientists armed with the knowledge, skills and experience to anticipate and address the freshwater issues of the future.

Timely application is encouraged for students seeking financial support. When applying for admission, applicants should describe as completely as possible their specific research interests within freshwater sciences. Applicants are strongly encouraged to establish contact, before or during the application process, with Freshwater Sciences faculty members whose research interests are closest to their own, regarding the likelihood of one serving as the student's major professor.

Admission Requirement

Application Deadlines

Application deadlines vary by program, please review the application deadline chart (<http://uwm.edu/graduateschool/program-deadlines>) for specific programs. Other important dates and deadlines can be found by using the One Stop calendars (<https://uwm.edu/onestop/dates-and-deadlines>).

Prerequisite Coursework

The following prerequisites are strongly recommended:

1. At least one semester coursework in three of the following at the college level: chemistry, biological sciences, physics, and calculus.
2. One additional semester of chemistry, biological sciences, or physics.

Admission will be considered based upon the applicant's academic and/or professional background, proposed course of study, and possible additional coursework once in the degree program, should important preparatory gaps be identified.

Other Admission Requirements

An applicant must meet Graduate School requirements (<http://uwm.edu/graduateschool/admission>) plus these departmental requirements to be considered for admission to the program:

1. A bachelor's degree in biology, chemistry, economics, geosciences, mathematics, physics, public policy, or other appropriate natural science, social science or engineering discipline.
2. A minimum GPA of 3.0.
3. Submission of scores on the General Test of the Graduate Record Examination (<http://uwm.edu/graduateschool/admission/#gre>) (This requirement is optional for Professional Track applicants.).
4. Three letters of recommendation from persons familiar with the applicant's scholarship and/or research potential.

The student must indicate in the Statement of Purpose (part of the formalized application process) the track to which they are applying and the intended focus of their MS studies. The statement must also indicate how their previous education has prepared them for graduate studies.

Critical skills required for the successful completion of the MS program include research design, data analysis, and effective communication of research results.

Credits and Courses

For students admitted Spring 2018 and after

Minimum degree requirement is 32 graduate credits.

Code	Title	Credits
Required		
FRSHWTR 502	Aquatic Ecosystem Dynamics	3
FRSHWTR 504	Quantitative Freshwater Analysis	3
FRSHWTR 513	Field Experimentation and Analysis in Freshwater Sciences	3
FRSHWTR 514	Analytical Techniques in Freshwater Sciences	3
FRSHWTR 900	Colloquium in Freshwater Sciences	1
FRSHWTR 810	Professional Development for Water Leaders	3
ENGLISH 890	Science, Communications, & Public Engagement	3
Select one of the following:		3
FRSHWTR 506	Environmental Health of Freshwater Ecosystems	
FRSHWTR 508	Aquatic Technologies	
FRSHWTR 510	Economics, Policy and Management of Water	
Electives		
Select 9 credits in consultation with the students major advisor		9
Graduate Internship		
FRSHWTR 980	Graduate Internship	1
Total Credits		32

For students admitted Fall 2017 and before

Minimum degree requirement is 36 graduate credits.

Code	Title	Credits
Required Science Core		
FRSHWTR 502	Aquatic Ecosystem Dynamics	3

FRSHWTR 504	Quantitative Freshwater Analysis	3
Select two of the following:		6
FRSHWTR 506	Environmental Health of Freshwater Ecosystems	
FRSHWTR 508	Aquatic Technologies	
FRSHWTR 510	Economics, Policy and Management of Water	
Required Professional Core		
Select three of the following: ¹		9
FRSHWTR 810	Professional Development for Water Leaders	
BUSMGMT 706	Managing in a Dynamic Environment	
BUSMGMT 723	Managing and Negotiating Across Cultures	
BUSMGMT 715	Leadership, Team Building, and Effective Management	
PHILOS 337	Environmental Ethics	
Electives		
Select 12 credits in consultation with the students major professor		12
Graduate Internship		
FRSHWTR 980	Graduate Internship	3
Total Credits		36

¹ Substitute courses (<http://uwm.edu/freshwater/professional-core-courses>) as approved by program director.

Time Limit

The student must complete all degree requirements within seven years of initial enrollment.

Program Requirements

Major Professor as Advisor

Upon admission to the program, each student in the professional track will be assigned an initial advisor based on their background. The initial advisor will provide counseling to the students and help to identify goals and objectives of their graduate education. Students should identify their permanent advisor during the first semester in the program. The advisor will oversee the student's internship.

A plan of study is required and planned by the student in consultation with his or her advisor and the internship coordinators of the program. The plan of study identifies the planned courses and timeline for completion of the degree coursework and internship.

Internship

All students in the professional science track are required to participate in an internship research experience, generally between the first and second years of the program. Internship experiences focus on complex regional, national, and global water problems and often involve authentic, practical problems in the field. The program coordinators provide resources and internship opportunities with industry, government, and non-profit organizations. It is the responsibility of the student and advisor to identify the internship and the direct supervisor within a specific organization and submit a proposal that identifies goals and objectives of the internship. Proposals will be reviewed and approved by the advisor. Alternatively, a group project may occur in lieu of an internship and should provide students with training and experience in performing professional-level work that involves managing group dynamics and applying technical expertise to solve complex, multidisciplinary water-related problems.