

MARINE SCIENCE, M.S.

Learning Outcomes

1. Students will conduct independent scientific research at the graduate level.
2. Students will demonstrate teaching skills.
3. Students will communicate orally to demonstrate their ability to present scientific results clearly, logically, and critically.
4. Students will communicate in writing to demonstrate their ability to present scientific results clearly, logically, and critically.
5. Students will apply scientific methodology, quantitative problem-solving, and experimental techniques within the core areas of marine science.

Admission

Applicants for a graduate degree in the School of Earth Ocean and Environment must have a baccalaureate degree from an approved and accredited college or university. Requirements for admission to all programs within the School of Earth Ocean and Environment conform with the general regulations of The Graduate School. Applicants whose native language is not English are also required to submit a satisfactory score on an English proficiency test according to The Graduate School guidelines.

Programs

- Master of Earth and Environmental Resources Management, M.E.E.R.M. (<https://academicbulletins.sc.edu/graduate/arts-sciences/earth-ocean-environment/earth-environmental-resources-management-meerm/>)
- Geological Sciences, M.S. (<https://academicbulletins.sc.edu/graduate/arts-sciences/earth-ocean-environment/geological-sciences-ms/>)
- Geological Sciences, Ph.D. (<https://academicbulletins.sc.edu/graduate/arts-sciences/earth-ocean-environment/geological-sciences-phd/>)
- Marine Science, M.S. (<https://academicbulletins.sc.edu/graduate/arts-sciences/earth-ocean-environment/marine-science-ms/>)
- Marine Science, Ph.D. (<https://academicbulletins.sc.edu/graduate/arts-sciences/earth-ocean-environment/marine-science-phd/>)

Applications Requirements

Requirements that are common to all programs:

1. Completion of an online Graduate School application;
2. A resume/CV
3. Transcripts from all institutions attended.
4. Three letters of recommendation from faculty or other professionals in the field
5. A Personal statement that includes your research interests and professional goals.
6. Submission by applicants whose native language is not English of a satisfactory English proficiency test score according to The Graduate School guidelines.

Questions concerning admission should be submitted to the director of graduate studies for the School of the Earth, Ocean and Environment (GradDir@seoe.sc.edu).

Degree Requirements (30 Hours)

General requirements for degrees in Marine Science are the same as those established by the Graduate School. The M.S. program of study and other specific degree requirements are planned in consultation with the graduate student, the graduate student's advisory committee, the Marine Science Graduate Studies Committee, and the Marine Science Program Director.

The M.S. degree requires the satisfactory completion of a minimum of 30 credit hours, including 12 hours of core courses and one additional course numbered 700 or above (other than 799, Thesis Preparation). The remaining credits may be earned in courses numbered above 500, including 6 hours of 799.

M.S. students must achieve and maintain an overall GPA of 3.00 on all courses taken for graduate credit and complete each of the core courses with a minimum grade of B.

A written thesis is required of all Masters students. Students must successfully defend their thesis in a final Comprehensive Examination according to the calendar approved by the Graduate School. As a portion of the comprehensive assessment of the thesis, the material will be presented in a public seminar. This presentation must take place no earlier than sixty (60) days after successful MS Thesis Research Plan presentation. The student's major professor must notify the Graduate Studies Director of an impending defense in writing (an email is sufficient) not less than 14 days prior to the scheduled defense date. This notification must include an abstract of the thesis. The defense must be publicly announced not less than seven days prior to the defense and is open to all faculty and students. At the end of the seminar, the audience will be excused and the defense will continue with only the candidate, the advisory committee and interested members of the faculty present. The thesis advisor must inform the Graduate Studies Director via appropriate form when the thesis is satisfactorily defended and accepted by the committee.

Required Courses for Marine Science Program

The following courses are required for students in the Marine Science Program unless they are specifically exempted:

Course	Title	Credits
MSCI 745	Geological Oceanography	3
MSCI 750	Advanced Biological Oceanography	3
MSCI 781	Physical Oceanography	3
MSCI 782	Chemical Oceanography	3
Total Credit Hours		12

Areas of Emphasis in Marine Science

A number of courses exist in various departments and colleges that enable students to specialize in a particular area of emphasis in marine science.

- Marine biology/Biological oceanography
- Marine chemistry/Chemical oceanography
- Marine geology/Geological oceanography
- Physical oceanography/Atmospheric dynamics

Non-MSCI Courses Acceptable for Major Credit

Course	Title	Credits
BIOL 534	Animal Behavior	3
BIOL 534L	Animal Behavior Laboratory	1
BIOL 543	Comparative Physiology	3
BIOL 543L	Comparative Physiology Laboratory	1
BIOL 570	Principles of Ecology	3
BIOL 570L	Principles of Ecology Laboratory	1
BIOL 651	Limnology	4
BIOL 722	Aquatic Bacteriology	3
BIOL 722L	Aquatic Bacteriology Laboratory	1
BIOL 727	Marine Phytoplankton	3
BIOL 728	Advanced Phycology	3
BIOL 729	The Biology of Fish	3
BIOL 730	The Biology of Fish	3
BIOL 731	Advanced Invertebrate Zoology I	3
BIOL 755	Quantitative Ecology	3
BIOL 759	Physiological Ecology	3
BIOL 760	Electron Microscopy	3
BIOL 760L	Electron Microscopy Laboratory	1
CHEM 511	Inorganic Chemistry	3
CHEM 541L	Physical Chemistry Laboratory	2
CHEM 542	Physical Chemistry	3
CHEM 542L	Physical Chemistry Laboratory	2
CHEM 729	Special Topics in Analytical Chemistry	3
CHEM 741	Chemical Thermodynamics	3
EMCH 501	Engineering Analysis I	3
EMCH 502	Engineering Analysis II	3
EMCH 741	Viscous and Turbulent Flow	3
EMCH 751	Advanced Heat Transfer	3
EMCH 794	Thermodynamics	3
ECIV 751	Water and Wastewater Treatment Theory I	3
ECIV 752	Water and Wastewater Treatment Theory II	3
ECIV 755	Industrial Wastewater Treatment	3
ECIV 765	Erosion and Sediment Control	3
GEOG 510	Special Topics in Geographic Research	3
GEOG 531	Quantitative Methods in Geographic Research	3
GEOG 541	Advanced Cartography	3
GEOG 545	Weather Analysis and Forecasting	4
GEOG 546	Applied Climatology	4
GEOG 551	Remote Sensing of the Environment	3
GEOG 554	Spatial Programming	3
GEOG 563	Advanced Geographic Information Systems	3
GEOG 763	Seminar in Geographic Information Systems	3
GEOL 516	Sedimentology	4
GEOL 518	Surface to Subsurface Stratigraphy	3
GEOL 520	Isotope Geology and Geochronology	3
GEOL 546	Marine Geophysics	3
GEOL 570	Environmental Hydrogeology	3
GEOL 722	Aqueous Geochemistry	3
GEOL 750	Basin Analysis Seminar	3
GEOL 751	Carbonate Petrology	3

MATH 520	Ordinary Differential Equations	3
MATH 521	Boundary Value Problems and Partial Differential Equations	3
MATH 526	Numerical Linear Algebra	4
MATH 527	Numerical Analysis	3
MATH 544	Linear Algebra	3
MATH 723	Differential Equations	3
MATH 726	Numerical Differential Equations I	3
PHYS 503	Mechanics	4
PHYS 506	Thermal Physics and Statistical Mechanics	3
POLI 760	American Government and Politics	3
POLI 774	The Public Policy Process	3
POLI 777	Policy Evaluation	3
STAT 515	Statistical Methods I	3
STAT 516	Statistical Methods II	3
STAT 518	Nonparametric Statistical Methods	3
STAT 519	Sampling	3
STAT 700	Applied Statistics I	3
STAT 701	Applied Statistics II	3