

MARINE SCIENCES (BA OR BS)

Students in the Marine Sciences major receive multidisciplinary training in the biological, chemical, physical, and geological processes of the ocean with emphasis on how humans impact the coastal environment. In addition to receiving a strong foundation in mathematics and natural sciences, students engage in experiential learning, fieldwork, internships, study abroad and senior-year capstone courses that foster interdisciplinary training. The Marine Sciences major at UConn prepares graduates for employment in environmental consulting, regulatory agencies and research institutions, and for graduate studies (see the Accelerated 4+1 B.S./M.S. program in the UConn Graduate Catalog under "Oceanography (<https://gradcatalog.uconn.edu/academic-programs/oceanography/>)").

Requirements

Bachelor of Science in Marine Sciences

The B.S. in Marine Sciences requires a foundation of courses including at least 30 credits of Marine Sciences courses (27 at 2000-level and above), and 12 credits of Related Area courses.

Marine Sciences majors in the B.S. must pass the following courses:

I. Required Courses in Basic Sciences and Math

Course	Title	Credits
BIOL 1107 & BIOL 1108	Principles of Biology I and Principles of Biology II	8
Select one of the following sequences:		8-10
CHEM 1124Q & CHEM 1125Q & CHEM 1126Q	Fundamentals of General Chemistry I and Fundamentals of General Chemistry II and Fundamentals of General Chemistry III	
CHEM 1127Q & CHEM 1128Q	General Chemistry I and General Chemistry II	
MATH 1131Q & MATH 1132Q	Calculus I and Calculus II	8
Select one of the following sequences:		8
PHYS 1201Q & PHYS 1202Q	General Physics I and General Physics II	
PHYS 1401Q & PHYS 1402Q	General Physics with Calculus I and General Physics with Calculus II	
Select one of the following introductory statistics or data analysis courses:		3-4
STAT 1000Q	Introduction to Statistics I	
STAT 1100Q	Elementary Concepts of Statistics	
STAT 3025Q	Statistical Methods	
CSE 1010	Introduction to Computing for Engineers	
PHYS 2200	Computational Physics	
PHYS 2400	Mathematical Methods for the Physical Sciences	
PHYS 2501W	Advanced Undergraduate Laboratory	
CHEM 3332	Quantitative Analytical Chemistry	
GEOG 2500	Introduction to Geographic Information Systems	

ERTH 4150	Applied Data Analysis in Earth Science	
Total Credits		35-38

II. Marine Sciences B.S. Major Requirements

Course	Title	Credits
Required Courses		
MARN 1002E or MARN 1003E	Introduction to Oceanography Introduction to Oceanography with Laboratory	3
MARN 2801WE	Marine Sciences and Society	3
MARN 3001	Foundations of Marine Sciences	4
MARN 3002	Foundations of Marine Sciences	3
MARN 4001	Measurement and Analysis in Coastal Ecosystems	4
Select one of the following:		3
MARN 4002	Science and the Coastal Environment	
MARN 4897W	Senior Research Thesis ¹	

Electives

Four MARN electives must be completed with at least one course from each group: 12

Group 1 (Physical, Chemical, Geological)

MARN 3000E	The Oceans and Global Climate	
MARN 3060	Coastal Circulation and Sediment Transport	
MARN 3230	Beaches and Coasts	
MARN 3505	Remote Sensing of Marine Geography	
MARN 4030W	Chemical Oceanography	
MARN 4050	Geological Oceanography	
MARN 4052	Paleoceanography	
MARN 4060	Physical Oceanography	
MARN 4066	River Influences on the Marine Environment	

Group 2 (Biological)

MARN 3012	Marine Invertebrate Biology	
MARN 3014	Marine Biology	
MARN 3015	Techniques in Marine Molecular Biology	
MARN 3017	Plankton Ecology	
MARN 3030	Coastal Pollution and Bioremediation	
MARN 3811	Seminar on Marine Mammals	
MARN 3812	Seminar in Marine Biodiversity and Conservation	
MARN 4010	Biological Oceanography	
MARN 4018	Ecology of Fishes	
MARN 4130	Geomicrobiology	

Group 3 (Quantitative)

MARN 4202Q	Models of the Ocean Carbon Cycle	
MARN 4210Q	Experimental Design in Marine Ecology	

Total Credits 32

¹ With prior consent of the Department Head.

A maximum of four MARN 5000+ graduate level courses may be used to fulfill some of these requirements. Students may be able to use MARN 3893 International Study, MARN 4893 International Study, MARN 4895 Special Topics, MARN 4898 Variable Topics or other MARN

courses towards one or more of these electives with prior approval of the Department Head.

III. Marine Sciences B.S. Related Area

In consultation with an advisor, four Related Area courses are taken in different fields or a single field of interest leading to a minor.

Bachelor of Arts in Marine Sciences

Students who choose the B.A. in Marine Sciences are typically more interested in marine and environmental policy, management, and/or education. The B.A. in Marine Sciences requires a foundation of courses including at least 30 credits of Marine Sciences courses (27 at 2000-level and above), and 12 credits constituting the Related Area.

Marine Sciences majors in the B.A. must pass the following courses:

I. Required Courses in Basic Sciences and Math

Course	Title	Credits
BIOL 1107 & BIOL 1108	Principles of Biology I and Principles of Biology II	8
Select one of the following sequences:		8-10
CHEM 1124Q & CHEM 1125Q & CHEM 1126Q	Fundamentals of General Chemistry I and Fundamentals of General Chemistry II and Fundamentals of General Chemistry III	
CHEM 1124Q & CHEM 1128Q	Fundamentals of General Chemistry I and General Chemistry II	
Select one of the following:		4-6
MATH 1060Q & MATH 1071Q	Precalculus and Calculus for Business and Economics	
MATH 1131Q	Calculus I	
PHYS 1201Q or PHYS 1401Q	General Physics I General Physics with Calculus I	4
Select one of the following introductory statistics or data analysis courses:		3-4
STAT 1000Q	Introduction to Statistics I	
STAT 1100Q	Elementary Concepts of Statistics	
STAT 3025Q	Statistical Methods	
CSE 1010	Introduction to Computing for Engineers	
PHYS 2200	Computational Physics	
PHYS 2400	Mathematical Methods for the Physical Sciences	
PHYS 2501W	Advanced Undergraduate Laboratory	
CHEM 3332	Quantitative Analytical Chemistry	
GEOG 2500	Introduction to Geographic Information Systems	
ERTH 4150	Applied Data Analysis in Earth Science	
Total Credits		27-32

II. Marine Sciences B.A. Major Requirements

The following courses constitute the major requirements:

Course	Title	Credits
Required Courses		
MARN 1002E or MARN 1003E	Introduction to Oceanography Introduction to Oceanography with Laboratory	3
MARN 2801WE	Marine Sciences and Society	3
MARN 3001	Foundations of Marine Sciences	4
MARN 3002	Foundations of Marine Sciences	3

MARN 4001	Measurement and Analysis in Coastal Ecosystems	4
Select one of the following:		3
MARN 4002	Science and the Coastal Environment	
MARN 4897W	Senior Research Thesis	
Electives		
Four MARN electives must be completed from any group listed under the Marine Sciences B.S. electives		12
Total Credits		32

¹ With prior consent of the Department Head.

A maximum of four MARN 5000+ graduate level courses may be used to fulfill elective requirements. Students may be able to use MARN 3893 International Study, MARN 4893 International Study, MARN 4895 Special Topics, MARN 4898 Variable Topics or other MARN courses towards one or more of these electives with prior approval of the Department Head.

III. Marine Sciences B.A. Related Area

In consultation with an advisor, four Related Area courses are taken in different fields or a single field of interest leading to a minor.

Competency Requirements (B.S. and B.A. Programs)

The University's competency requirements for information literacy will be satisfied by completing the requirements above, in particular MARN 3001 Foundations of Marine Sciences, MARN 2801WE Marine Sciences and Society and MARN 4002 Science and the Coastal Environment. The writing in the major requirement will be satisfied by MARN 2801WE Marine Sciences and Society. In addition to the introductory Quantitative (Q) courses, additional upper-division Marine Sciences Q courses are included in the Group 3 elective.

Note: Some Marine Sciences courses may be offered only at the Avery Point campus. Others may be available through Distance Learning.

University General Education Requirements

Every student must meet a set of core requirements to earn a baccalaureate degree, in addition to those required by the student's major course of study and other requirements set by the student's school or college. For more information about these requirements, please see General Education Requirements (<https://catalog.uconn.edu/undergraduate/gen-ed-requirements/>).

College of Liberal Arts and Sciences Degree Requirements

Students must meet a set of requirements established by the college in addition to the University's General Education requirements. For more information, see the College of Liberal Arts and Sciences (<https://catalog.uconn.edu/undergraduate/liberal-arts-sciences/#requirementstext>) section of this catalog.

Minors in Marine Biology and Marine Sciences are described in the *Minors* section.

The Statistical Data Science major has a Marine Science concentration that includes many of the required and elective courses above that facilitates a double major.

Marine Science and Oceanography 4+1 BS/MS

Students pursuing a UConn undergraduate Bachelor of Science degree in Marine Sciences can apply to use up to 12 credits of graduate coursework taken as an undergraduate towards both their B.S. and their M.S. For students in the accelerated program, the Master of Science Plan B degree can be earned in a single year after finishing the B.S.

For more information, see the Marine Sciences Departmental website (<https://marinesciences.uconn.edu/academic/graduate-studies-in-physical-oceanography/>).