

COASTAL & MARINE SCIENCES (BS IN COASTAL & MARINE SCIENCES)

William & Mary's Batten School of Coastal & Marine Sciences & VIMS are unique among coastal and marine science institutions. As a state agency, VIMS has a legal mandate to provide research, education and advisory service to government, citizens and industry. In the Batten School, students have an unparalleled opportunity to conduct research that matters. Research at the Batten School & VIMS extends from inland watersheds to the open ocean, with an emphasis on coastal and estuarine science.

The Batten School ranks among the top coastal and marine science institutions in the U.S. and currently offers two graduate research degrees (Ph.D. and M.S.), a professional master's degree (M.A.), and an undergraduate degree (B.S.). Additionally, an undergraduate minor is offered in collaboration with W&M College of Arts & Sciences.

The Coastal & Marine Sciences major offers undergraduate students a robust interdisciplinary foundation in the science of estuaries and coasts, with student engagement across biological, physical, and social dimensions. The program combines rigorous scientific training with applied learning in coastal systems, public policy, and sustainability.

The program prepares graduates for careers and further study in marine and environmental science, public policy, education, conservation, and related fields. All undergraduate Coastal & Marine Sciences majors take a common core curriculum. Typically, in the fall semester of their junior year, newly admitted majors participate in an immersive semester at the Batten School & VIMS Gloucester Point campus. Round trip daily transportation is provided from the Williamsburg campus to the Gloucester Point campus during the immersion semester.

Admission to the Major Program

Current W&M students wanting to declare a major in Coastal & Marine Sciences will be required to apply for competitive admission to the program. Students should apply to the major program prior to the start of the spring semester of their sophomore year, with the intention of entering the major program in the fall semester of their junior year.

Students admitted to the Coastal & Marine Sciences major will be required to participate in our fall semester immersion experience at the Batten School & VIMS Gloucester Point campus during their first semester in the major program (generally fall of junior year). The immersion semester provides majors with a fully engaged, cohort-based, learning environment which incorporates numerous field and laboratory experiences across their integrated courses.

Freshmen, sophomores, and transfer students are strongly encouraged to review the curriculum to ensure

1. the necessary marine science proficiency courses (those courses that are prerequisite courses for required immersion semester courses) will be completed prior to the start of their fall immersion semester experience, and
2. junior academic standing (54 earned credit hours) is attained prior to the start of the immersion semester.

Details on the major program admission process, including application deadlines, can be found on the Batten School website: <https://www.vims.edu/academics/>

Contact our Undergraduate Program Director, Prof. Christopher Hein, for more information.

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The major curriculum is designed to provide students with an understanding of the processes and functions of coastal, estuarine, and marine environments. Core coursework will educate students in the natural sciences subfields of geology, biology, chemistry, and physics as they relate to the interdisciplinary field of coastal and marine sciences. Students will also explore the effects of marine systems processes on human populations, economies, and societies, and learn how natural and anthropogenic factors shape coastal ecosystems.

Courses for the Coastal & Marine Sciences major will be held in-person at the Williamsburg campus, with the exception of the required immersion semester experience. All immersion semester courses will be taken in-person at the nearby Batten School & VIMS Gloucester Point campus. Opportunities to participate in elective field courses at the Batten School & VIMS Eastern Shore campus and on international study abroad programs are also available.

Total Credit Hours for Major: 36 credits

Proficiency Courses: 18-20 credits (not counted toward the major)

Of the 120 credit hours required for a B.S. degree in Coastal & Marine Sciences, a minimum of 60 credit hours must be earned in a subject field offered outside the Batten School. A maximum of 6 credits of 300-level marine science research and 3 credits of advanced 400-level marine science research may count towards the major. A maximum of 3 credits of marine science internship may count toward the major elective requirement.

Code	Title	Hours
Natural Science Courses		
BIOL 204 & 204L	Introduction to Organisms, Ecology, Evolution and Introduction to Organisms, Ecology, Evolution Laboratory	4
CHEM 103	General Chemistry I	3
or CHEM 205	Advanced General Chemistry	
Select one of the following:		3
PHYS 101	General Physics-Lecture	
PHYS 101H	General Physics I - Honors	
PHYS 107	Physics for the Life Sciences I	
Disciplinary Perspectives Course		
Select one of the following:		3-4
ANTH 315	Environ Archaeology	
BIOL 203 & 203L	Introduction to Molecules, Cells, Development and Introduction to Molecules, Cells, Development Laboratory	
CONS 201	Introduction to Integrative Conservation	
CONS 210	Introduction to Conservation GIS	
CONS 370	Environmental Justice	
ECON 101	Principles: Microeconomics	
ENSP 101	Introduction to Environment and Sustainability	

GEOL 101	The Dynamic Earth: Physical Geology
GEOL 110 & GEOL 160	Earth's Environmental Systems: Physical Geography and Investigating the Earth: Introductory Geology Laboratory
GEOL 250	Geologic Evolution of VA
GIS 201	Introduction to Geographic Information Systems and Spatial Analysis
PHYS 102	Gen Physics-Lecture
PHYS 102H	General Physics II - Honors
PHYS 108	Physics for the Life Sciences II
PUBP 201	Intro to Public Policy

Quantitative Skills Course

Select one of the following: 3-4

BUAD 231	Business Statistics
CSCI 141 & 141L	Modern Programming Fundamentals and Modern Prog. Fundamentals Lab
ECON 307	Principles and Methods of Statistics
MATH 111	Calculus I
MATH 131	Calculus I for Life Sciences

Major Common Core

MSCI 230	Introduction to Marine Science	3
MSCI 250	People, Society, and the Coast	3
MSCI 305	Coastal and Marine Geology	3
MSCI 310	Motion of the Ocean	3
MSCI 315	Biological Oceanography	3
MSCI 320	Coastal and Marine Chemistry	3
MSCI 360	Field and Research Methods in Marine Science	4
MSCI 365	Quantitative Methods in Marine Science	3

Major Electives

Select nine credits from the following: 9

Elective offerings available through the Batten School:

MSCI 201	Marine Science Mash-Up
MSCI 331	Field Studies in Coastal Marine Environments
MSCI 332	Coastal Environments in North Wales: Geology, Ecology, and Human Dimensions
MSCI 333	Coastal Environments – Topics
MSCI 340	Marine Biology
MSCI 390	Research in Marine Science
MSCI 398	Marine Science Seminar
MSCI 404	Microbial Processes in a Changing Coastal Environment
MSCI 411	Coastal and Marine Pollution

Elective offerings available through the College of Arts & Sciences:

ANTH 350	Special Topics in Anthropology (with title "Voices in Conservation")
BIOL 404	Special Topics in Biology (with title "Parasitology")
BIOL 427	Wetland Ecosystems
BIOL 457	Marine Invertebrate Biology
BIOL 460	Advanced Seminar in Biology (with title "Marine Ecology")
BIOL 461	Marine Ecology and Conservation
ECON 322	Environmental and Natural Resource Economics

GEOL 310	Regional Field Geology (with title "Coastal Environment Bahamas")
GEOL 324	Paleoclimatology & Paleoceanography
GEOL 324	Paleoclimatology & Paleoceanography
GEOL 325	Paleontology
GIS 420	Advanced GIS Analysis & Programming
Major Capstone Course	
Select one of the following:	
MSCI 460	Senior Seminar
MSCI 491	Senior Research in Coastal & Marine Sciences
MSCI 495 & MSCI 496	Honors Research in Coastal & Marine Sciences and Honors

Total Hours 53-55