

School of Marine Science/Virginia Institute of Marine Science

PROFESSORS Wells (Dean), Allen, Anderson, Bauer, Bronk, Canuel, Diaz, Dickhut, Duffy, Friedrichs, Graves, Hale, Hershner, Hoening, Kaattari, Kirkley, Kuehl, Lipcius, Luckenbach, Maa, Mann, Milliman, Moore, Newman, Orth, Perry, Reece, Schaffner, Shields, Smith, Steinberg, Taylor and Vogelbein. ASSOCIATE PROFESSORS Brubaker, Fabrizio, Harris, Hobbs, Kator, Latour, McNinch, Patterson, Tang, Van Veld, and Wang. ASSISTANT PROFESSORS Beck, Brush, Hilton, and Sutton.

Facilities

School of Marine Science students participate in graduate studies at an active, year round research facility with approximately 450 scientists, support technicians and staff. The 35-acre main campus of the School of Marine Science/Virginia Institute of Marine Science (SMS/VIMS) is located in Gloucester Point at the mouth of the York River, a major tributary and natural passageway to the Chesapeake Bay and Atlantic Ocean. Various service centers and special programs complement and enhance the student's experience.

Graduate Study Programs

Research at SMS/VIMS emphasizes the study of marine environments from estuaries to the open ocean, with special emphasis on coastal systems. Interdisciplinary programs are encouraged. In addition to teaching and conducting basic research, many faculty members are engaged in applied research of concern to industry and management agencies. Students often find that their assistantship duties and/or research activities offer opportunities that bring them in close contact with other departments at SMS and William and Mary, marine related industries, and state, regional, and federal management agencies.

Based on the primary academic and research disciplines represented at SMS/VIMS, graduate studies are offered in four major areas.

Undergraduate Opportunities

The undergraduate minor in Marine Science, which is jointly offered and administered by the School of Marine Science (SMS)/Virginia Institute of Marine Sciences (VIMS) and Arts & Sciences, provides interested students a coherent experience in this interdisciplinary field. For additional information, as well as the requirements for this minor, please see the Marine Science Minor section of the this catalog. Though the courses offered by the School are primarily for graduate students, advanced undergraduates (juniors and seniors) may participate. For instance, Biology, Chemistry, Geology, and Physics majors may enroll in suitable 500- level courses with the permission of the instructor. Undergraduates majoring in Chemistry, Geology, Physics, or Biology may work on a marine problem in his or her field of specialization. Consent of the chair of the student's major department is required to take problems courses in marine science.

As in most marine institutions, field research activities are accelerated in the summer. An opportunity exists, for example, for qualified rising junior and seniors to experience the intellectual stimulations and challenges of marine research through the School's Research and Experience for Undergraduates (REU) program, which runs from June through early August. During that period, interns live in a William and Mary dormitory and conduct research at the Gloucester Point campus. Information on applying for the REU program or other summer opportunities at SMS/VIMS is available at the following web address: <http://www.vims.edu/education/interns.html>.

Undergraduate students can take MSCI 501-550 level courses with the permission of the instructor. The interested student is referred to the School of Marine Science catalog, available on our web site, <http://www.vims.edu/sms/catalogs.html>. In addition, the following courses are offered at the advanced undergraduate level.

330. Introduction to Oceanography.

Spring, odd years (3) Patterson, Bauer.

Description of physical, chemical, biological and geological processes operating in the world ocean. The interdisciplinary nature of oceanography is emphasized, providing an integrated view of factors, which control ocean history, circulation, chemistry, and biological productivity.

331. Field Studies in Coastal Marine Environments

Summer (3) Luckenbach and TBD Prerequisites: MSCI 330. Course will be offered at VIMS Eastern Shore Laboratory

This course focuses on fundamental processes in marine science through the examination of the near shore, barrier island, coastal lagoon, and salt marsh environments along Virginia's outer coast. Through a series of field trips, lectures, laboratory exercises and independent projects, students will examine the fauna and flora of the region and learn how natural and anthropogenic factors shape these coastal ecosystems. Housing is provided in dormitories at the VIMS Eastern Shore Laboratory. Meals are included. Lab fee required.

332. Coastal Marine Environments North Wales

Summer (3) Staff.

This is a field-based course to be conducted in north Wales, U.K. in association with the School of Ocean Sciences, Bangor University. The course will emphasize field-based instruction and student-led data collection in various coastal marine environments in northern Wales and the western Irish Sea. Lectures, laboratory exercises, and field trips will cover topics on the ecology of rocky shores and extensive mudflats, biological and physical processes affecting species distribution and ecology in high energy macrotidal coastal environments, paleoceanography, and biodiversity. The course will involve a 13-day trip to Bangor, Wales where the students will be housed in dormitories on the Bangor University campus and have access to laboratories and research facilities at the School of Ocean Sciences. Costs: Tuition + fees (lodging & transportation in Wales) + airfare

398. Marine Science Seminar

Fall and Spring (1) Staff

Seminar in interdisciplinary topics in Marine Science. The course topic, prerequisites, and instructors will vary from year to year. This course may be repeated for credit for different topics. Depending on the topic, a specific section may be cross-listed with GEOL 407 and/or ENSP 249.

460. Oceans and Climate

Spring (2) Tang Prerequisites: MSCI 330

This course will examine how physical, geological, chemical and biological processes in the oceans together affect the planet's climate in different time and spatial scales. Abrupt climate change caused by recent human activities will also be discussed.

497. Problems in Marine Science.

Fall, Spring and Summer (1-4) Staff.

Supervised projects selected to suit the need of the upper level undergraduate student. Projects are chosen in consultation with the student's supervising professor and the instructor. Credit hours depend upon the difficulty of the project and must be arranged with the instructor in advance of registration.

498. Special Topics in Marine Science.

Fall, Spring and Summer (1-3) Staff.

This is the avenue through which subjects not covered in other formal courses are offered. These courses are offered on an occasional basis as demand warrants. Subjects will be announced prior to registration. Hours to be arranged.

Preparatory Studies

Students who are interested in pursuing marine science as a profession should consult with their academic advisor or the Dean of Graduate Studies, School of Marine Science, early in their college careers to identify an academic program that will prepare them for graduate study in marine science. Students interested in Biological Sciences, Environmental and Aquatic Animal Health, or Fisheries Science should have a strong background in basic science, including a suite of contemporary biology courses, physics and chemistry (through organic), and mathematics through calculus and differential equations. The prospective Chemical, Geological or Physical Oceanography student should have an undergraduate degree with appropriate course work in chemistry, geology or related geophysical science, physics, meteorology, mathematics or engineering, and a solid quantitative background. Course work in statistics and competence with computers are particularly important.

Graduate Program Information

For graduate admission and degree requirements and a full description of courses in marine science, write for a graduate catalog to Dean of Graduate Studies, School of Marine Science, Gloucester Point, Virginia 23062, or review the electronic catalog at <http://www.vims.edu/sms/catalogs.html>.