

# MARINE STUDIES

## Career Opportunities

(Most careers require bachelors or graduate degree)

Lab Technician	Oceanographer
Marine Biologist	Marine Geologist
Aquaculture	Fisheries

## Faculty

### Full-Time

Michael Abram	Thomas O'Neil
Lorraine Buckley	

### Part-Time

Joe Frantz	Joseph Saenz
Michael Nicholson	Neil Ziegler

## ◆ Marine Studies

### Certificate of Achievement

A certificate will be awarded to a student of any major that completes an individualized curriculum including at least eighteen units in marine studies, coursework in other disciplines pertinent to the student's career goals, and three conservation activities.

Required Courses:	Units	
MST R190	Experiential Education in Marine Studies	3
MST R195	Field Applications of Marine Conservation	3
Complete a minimum of 12 units from the following:		
MST R100/R100L	Marine Biology (same as MST R116/R116L)	4
MST R103/R103L	Introduction to Oceanography	4
MST R120/R120L	Basic Scuba Diving	3
MST R122/R122L	Aquaculture	4
MST R175	Marine Sampling Techniques and Field Studies	3
MST R170/R178	Marine Resource Management	2
<b>Total Required Units</b>		<b>18</b>

## Marine Studies Courses

### MST R100—Marine Biology 3 units

3 hours lecture weekly

This survey course includes an introduction to ecology, organism identification, anatomy, physiology, and conservation of marine organisms. Applications of the scientific method in marine biology are emphasized. Field trips may be required. (Same as BIOL R100) (2)

Transfer credit: UC, CSU

### MST R100L—Marine Biology Laboratory 1 unit

Prerequisites: MST R100 or concurrent enrollment.

3 hours lab weekly

This survey course includes laboratory and field studies of marine organisms and their environment, the use of the scientific method, and basic biological skills. Optional field trips may be required. (Same as BIOL R100L) (2)

Transfer credit: UC, CSU

### MST R103—Introduction to Oceanography 3 units

3 hours lecture weekly

This course is a broad survey of the field of oceanography. Topics include geology and geography of ocean basins and coastlines, plate tectonics, waves, currents, tides, properties of seawater, methods of oceanographic exploration, and an introduction to Marine Biology. Physical oceanography is for those students who wish to complete a general education physical science course to transfer to a four-year university. Field trips may be required. (Same as GEOL R103) (2)

Transfer credit: UC, CSU

### MST R103L—Introduction to Oceanography Laboratory 1 unit

Prerequisites: MST R103 or concurrent enrollment.

3 hours lab weekly

Experimental studies of the basic methods of data collection and interpretation in physical oceanography in both the laboratory and field. Field trips and boat fees may be required. (Same as GEOL R103L)

Transfer credit: UC, CSU

### MST R120—Basic SCUBA Diving 2 units

2 hours lecture weekly

A basic course in skin and SCUBA diving that will cover the necessary knowledge for safe diving in Southern California. Topics will include the marine environment, equipment selection and maintenance, diving physics and physiology, and accident prevention. PADI SCUBA Diver Certification will be available to students who qualify after successful completion of both MST R120 and MST R120L. Fees will be required. Field trips may be required. Course may be taken four times. (2)

Transfer credit: CSU

### MST R120L—Basic SCUBA Diving Laboratory 1 unit

Prerequisites: Ability to pass swim test, including underwater swimming recovering a ten-pound weight; medical history required of all students; parental release if student is under 18 years of age.

Corequisites: MST R120.

3 hours lab weekly

An experimental course that will develop the necessary knowledge and skills for safe skin and SCUBA diving in Southern California. Equipment and transportation for off-campus lab sessions must be furnished by the student. Mask, snorkel, and fins required after third lesson. PADI SCUBA Diver Certification available to students who qualify after the successful completion of both MST R120 and MST R120L. Completion of or concurrent enrolment in MST R120 is required. Fees will be required. Field trips are required. Course may be taken four times. (2)

Transfer credit: CSU

### MST R122—Aquaculture 3 units

Advisory: College or high school biology and chemistry are recommended.

3 hours lecture weekly

The basic scientific principles underlying the culture of organisms in aquatic habitats will be studied through lecture, outside reading, demonstrations, and field trips. Application of basic biological and ecological concepts and theories to the selection, planning and design of aquaculture systems. Field trips will be required. Course may be taken four times.

Transfer credit: CSU

### MST R122L—Aquaculture Laboratory 1 unit

Advisory: Completion or concurrent enrollment in MST R122 is recommended.

3 hours lab weekly

The basic methods, equipment and technology utilized in the aquaculture will be studied through experimental laboratory exercises, demonstrations, and field trips. Field trips will be required. Fees may be required. Course may be taken four times.

Transfer credit: CSU

### MST R170—Biological Marine Resource Management 1 unit

Corequisites: MST R178.

3 hours lab weekly

Topics in related areas in marine biology related to current resource management issues in this region. Study of requirements and applications of federal, state, and local laws and regulations related to marine resource management. Field trips will be to natural areas where geological, biological, and oceanographic interactions can be observed. Course may be taken four times. (Same as BIOL R170) (2)

Transfer credit: CSU

**MST R175—Marine Sampling Techniques and Field Studies** **3 units**

*Advisory: Completion of another MST course is recommended prior to enrollment.*

*3 hours lecture weekly*

Experimental study of ocean resources in natural settings aboard research vessels or in remote coastal locations. Oceanographic sampling and field techniques will be demonstrated. Travel off-campus is required. Some field trips will be extensive (more than two days). Fees may be required. Course may be taken four times. (2)

*Transfer credit: CSU*

**MST R178—Geological Marine Resource Management** **1 unit**

*Corequisites: MST R170.*

*3 hours lab weekly*

Topics in related areas in marine geology related to current resource management issues in this region. Study of requirements and applications of federal, state, and local laws and regulations related to marine resource management. Field trips will be to natural areas where geological, biological, and oceanographic interactions can be observed. Course may be taken four times. (Same as GEOL R178) (2)

*Transfer credit: CSU*

**MST R190—Experiential Education in Marine Studies** **1-6 units**

*Advisory: Completion or concurrent enrollment in MST R103/R103L (GEOL R103/R103L) or MST R108/R108L (BIOL R108/R108L) is recommended.*

*1-6 hours lecture weekly*

Experiential learning on a marine-related project developed by the student and the supervising instructor or the director of the marine studies program (ORCA). Project topics will be chosen according to the student's individual educational interests but must include development of specific skills and techniques through hands-on learning. Projects may be based on campus and supervised by a faculty member or off-campus as internship work experiences. A list of suggested project topics and internship opportunities is available in the ocean studies program office. Instructor/program director consent required prior to registration. Course may be taken four times.

*Transfer credit: CSU*

**MST R195—Field Applications of Ocean Resource Conservation** **3 units**

*Advisory: Completion or concurrent enrollment in MST R108 or MST R103.*

*3 hours lecture weekly*

Discussion and review of topics selected by each student on local ocean resources and their conservation. Student presentations of information gathered from library, professional and computer-accessed sources will be shared with community groups such as school classes, preschools, and senior centers. Course may be taken four times. (2)

*Transfer credit: CSU*

**MST R199—Directed Studies in Marine-Related Topics** **1-3 units**

*Prerequisites: A course in the specific field.*

*Lecture and/or lab hours as required by unit formula*

Designed for students interested in furthering their knowledge of the marine environment and ocean resources on an independent study basis. All studies will require laboratory and library research, as well as written reports. Field trips may be required. Course may be taken two times.

*Transfer credit: CSU*