APPLIED OCEAN SCIENCE AND TECHNOLOGY, ASSOCIATE IN SCIENCE DEGREE

Banner Code: 1_AS_AOST
Financial Aid Eligible

Applied Ocean Science & Technology is an interdisciplinary field that requires a broad base of practical skills working in the field and laboratory. This applied degree is designed to strengthen and complement the background of students planning to obtain a Bachelor's degree in a marine-related science discipline. In addition, students will be qualified to hold positions in the workforce ranging from deckhands to naturalist and environmental education positions. They can assist with research and monitoring surveys.

The Applied Ocean Science & Technology major requires completion of a minimum of 28 to 30 program major units, 26 of which are required core units. A minimum of at least 2 additional specialization units must be taken from a list of restricted electives that will add to student's technical background. The department strongly recommends that all declared Applied Ocean Science & Technology majors work with counseling to help prepare them for their intended transfer institution.

Program Outcomes

1. Utilize scientific equipment and monitoring studies to illustrate the influence and interactions between the geologic, physical, chemical and biological processes and characteristics of the world ocean.
2. Demonstrate the ability to safely operate a vessel and identify potential hazards when working on the water.
3. Demonstrate the ability to design, construct and maintain aquarium systems intended to support a variety of marine life.
4. Demonstrate a basic understanding of data collection methods and analysis as well as the role that monitoring programs contribute to our understanding of marine characteristics and processes.

Review Graduation Requirements (https://catalog.cccd.edu/orange-coast/graduation-requirements/associate-degree/) and General Education (https://catalog.cccd.edu/orange-coast/general-education-patterns/).

Course	Title	Units
Required Courses		
MARA A150	Coastal Navigation	3
MARA A152	Boat Handling and Seamanship	3
MARA A153	Marine Basic Safety Training	4
MARA A156	Maritime Environment	2
MRSC A100 or MRSC A100H	Oceanography Oceanography Honors	3
MRSC A100L or MRSC A100M	Oceanography Laboratory Oceanography Laboratory Honors	1
MRSC A120	Marine Aquarium Science	2
MRSC A140	Aquarium Life Support Operation and Maintenance	2
MRSC A190	Marine Research and Monitoring Techniques	3
GEOG A190	Digital Mapping: Introduction to GIS	3
Subtotal		26
Restricted Electives		
Select two-four units of the following:		2-4
CS A131	Python Programming I	
ELEC A100	Electronic Problem Solving	
ELEC A121	Robotics 1- Mechanics & Design	
ELEC A140	Technical Electronics	
EMS A100	Emergency Medical Responder	
ENGR A110	Introduction to Engineering and Design	
ENGR A220	Programming and Problem-Solving in MATLAB	
ESEC A210	Wetlands Ecology and Management	
HVAC A100	Air Conditioning and Refrigeration Principles	
ITRN A392	Internship Experience - Level 1	
KIN A232	Swimming Level 2	
MARA A154	Vessel and Engine Maintenance	
MARA A200 & MARA A201	Professional Mariner Internship and Professional Mariner Internship Lecture	
MRSC A135	Aquarium Water Quality	
MRSC A195	Marine Policy and Conservation	
WELD A100	Arc & Oxy-acetylene Welding	
Program Major Units		*28-30*
AS General Education Option 1, 2, or 3		*Varies*
Transferable electives as needed to satisfy unit requirement		*Varies*
Total Units		**60**

These sequences at Orange Coast College are curriculum maps for students to finish all requirements for the certificate. There may be advisories, prerequisites, or time requirements that students need to consider before following these maps. **Students are advised to meet with an Orange Coast College Counselor for alternate sequencing.**

Course	Title	Units
Year 1		
Semester 1		
MRSC A100 or MRSC A100H	Oceanography or Oceanography Honors	3
MRSC A100L or MRSC A100M	Oceanography Laboratory or Oceanography Laboratory Honors	1
MARA A152	Boat Handling and Seamanship	3
OCC AS GE AREA A1-	CHOOSE ONE	3
OCC AS GE AREA C1-	CHOOSE ONE	3
OCC AS GE AREA C2-	CHOOSE ONE	3
	Units	**16**
Semester 2		
MRSC A120	Marine Aquarium Science	2

Course	Title	Units
MRSC A190	Marine Research and Monitoring Techniques	3
MARA A153	Marine Basic Safety Training	4
Select one of the following or satisfy Math competency (completion of High School Algebra 2 with a "C" or better): [1]		3-4
MATH A030 or MATH A045	Intermediate Algebra or Combined Elementary and Intermediate Algebra	
ELECTIVES (DEGREE APPLICABLE) [2]		2
	Units	**14-15**
Year 2		
Semester 1		
MARA A150	Coastal Navigation	3
MARA A156	Maritime Environment	2
OCC AS GE AREA D - CHOOSE ONE		3
Restricted Elective (See requirements tab) [3]		2-4
ELECTIVES (DEGREE APPLICABLE) [2]		6
	Units	**16-18**
Semester 2		
MRSC A140	Aquarium Life Support Operation and Maintenance	2
GEOG A190	Digital Mapping: Introduction to GIS	3
OCC AS GE AREA A2- CHOOSE ONE [4]		3
ELECTIVES (DEGREE APPLICABLE) [2]		6
	Units	**14**
	Total Units	**60-63**

1. Math A030 or higher OR take 3-4 degree applicable elective units if math competency was met through completion of High School Algebra 2 with a "C" or better; *100-level Math courses satisfy AS Math Requirement and OCC AS GE AREA A2
2. VARIES TO REACH MINIMUM 60 DEGREE APPLICABLE UNITS
3. A restrictive elective course can be taken in Fall year 2 or Spring year 2.
4. OCC AS GE AREA A2 - Required if 100-level MATH will not be taken to meet Math competency. If MATH A100 or higher will be taken, then needs to take 3-4 degree applicable elective units