

Marine Science Department

May 2002 Draft

General Mission

The mission of the undergraduate degree program in marine science is to provide students with a comprehensive understanding of the world oceans and an appreciation of the importance of marine ecosystems to the global environment and human life, through a combination of hands-on laboratory and field experience, inquiry-based teaching, and direct interactive learning. This is supported by a broad background in the marine sciences including basic knowledge of the natural science disciplines of biology, chemistry, physics, geology, and mathematics. With this degree students are prepared to seek entry level positions in government or the private sector in areas related to marine science such as environmental monitoring, ecotourism, and science education, or to enter graduate school programs in marine biology or oceanography.

Curricular Program

The BA in marine science requires a total of 46 semester hours in the marine sciences and 32 hours in biology, chemistry, physics, mathematics and computer science. This program provides students with a broad background in marine sciences by covering chemical, physical, geological and biological areas of ocean study. Students also gain valuable hands-on experience through field and laboratory courses in marine biological and oceanographic techniques, and marine monitoring techniques, culminating in a two-semester senior thesis research project, a senior internship project, or a two-semester senior seminar course.

Program Goals – Bachelor of Arts in Marine Science

Content Goals:

1. Provide students with a basic background knowledge of the primary sciences and mathematics
2. Proficiency in chemistry and basic laboratory techniques
3. Proficiency in physics and basic laboratory techniques
4. Proficiency in mathematics through calculus
5. Proficiency in computer applications related to the natural sciences
6. Provide students with a comprehensive background knowledge in marine science
7. Proficiency in marine biology
8. Proficiency in oceanography
9. Proficiency in marine ecology
10. Proficiency in chemical oceanography

11. Proficiency in physical oceanography
12. Provide students with advanced multidisciplinary undergraduate training in their choice of a variety of focal areas, including but not limited to geography, geology, biology, fisheries and aquaculture. 3.

General Goals:

Scientific method/ critical thinking:

1. Ability to design and carry out an enquiry-based research or internship project
2. Ability to analyze primary scientific literature or presentations
3. Ability to write a scientific proposal
4. Ability to write a research paper
5. Scientific speech/ discussion
6. Ability to formally present a science project
7. Ability to formally discuss scientific issues

Technical Goals: (this one likely needs expanding; perhaps experimental design, break out by different types of techniques, etc.)

1. Basic understanding of laboratory safety
2. Proficiency with oceanographic and advanced oceanographic laboratory methods and field techniques
3. Proficiency with basic marine biological laboratory and field techniques
4. Proficiency in the use and applications of biostatistical techniques
5. Proficiency in the use and applications of marine monitoring techniques
6. Proficiency in the environmental analysis and interpretation of the results of marine science laboratory based and field based exercises