

ORIGINAL

The UAF Faculty Senate passed the following at Meeting #176 on September 12, 2011:

MOTION:

The UAF Faculty Senate moves to approve a Minor in Marine Science.

EFFECTIVE: Fall 2011 and/or
Upon Chancellor's approval.

RATIONALE: See the program proposal #129-UNP on file in the
Governance Office, 312B Signers' Hall.

 9/12/11

President, UAF Faculty Senate Date

APPROVAL:  _____ DATE: 9/12/11
Chancellor's Office

DISAPPROVED: _____ DATE: _____
Chancellor's Office

Overview:

The minor in Marine Science will be administered by the Graduate Program in Marine Science and Limnology (GPMSL) in the School of Fisheries and Ocean Sciences. The minor outlined in this proposal will be available to undergraduate students in all degree programs. It will consist of three new introductory courses that will form the "core" requirement (2 lecture courses + 1 lab course, 7 credits total) and 6 credits in electives in other marine science courses. In addition, students will choose a minimum of 2 credits of additional electives from among selected courses in Marine Science, Fisheries, Biology and Wildlife, and Economics, for a total of 15 credits required for the minor. This program was created in response to numerous requests from Fisheries, Biology and Wildlife, and Natural Resource Management students who, after taking the single undergraduate Marine Science course currently offered (MSL 111X: The Oceans), were interested in continued coursework in the field. Unfortunately, no additional options currently exist. Fisheries students are thus expected to benefit from the breadth this

program will offer to their curriculum. In addition, we anticipate this program will appeal to students from other disciplines (e.g., Political Science, Earth Sciences, Biology & Wildlife, Environmental Science, Resource Management, Education) in which possible career paths may require and/or benefit from training in marine science (policy-making, resource management, education, seafood industry, etc.).

Objective and relationship to courses proposed:

This program will provide students with a marine-science knowledge base, skill set, and hands-on experience, which will augment their educational experience at UAF. This minor will strengthen the abilities of UAF graduates to address essential issues in research, education, management, administration or industry related to Alaska's marine resources. To address these objectives, the program will include a required two-semester core course with associated lab that will introduce students to the interdisciplinary field of marine science, including study of the unique physical, chemical and biological aspects of the marine environment, and the organisms that inhabit this environment. Building on this core foundation, students will be able to choose from a variety of more focused courses depending on their specific area of interest. The elective courses will provide more detailed study of marine biology and ecology, and the physics and chemistry of the oceans. Available electives will include field courses that will be taught at the UAF marine lab facility, the Kasitsna Bay Laboratory near Homer, AK, and will emphasize hands-on learning and student-centered research projects. Several elective options (e.g., Polar Marine Science, Dynamic Alaskan Coastline, Marine Biology and Ecology Field Course) will also emphasize polar regions, and Alaskan marine ecosystems in particular.

Undergraduates that have completed the minor in Marine Science will possess a knowledge base and skill set that will make them more competitive for a wide variety of agency and organization positions, particularly within the state of Alaska. Training provided here will be applicable in jobs with government management agencies (e.g., Alaska Department of Fish and Game, U.S. Fish and Wildlife Service), Alaska Native Organizations, non-profit conservation organizations, seafood industry, or in other policy-development, fisheries, education, or outreach capacities.

Proposed Minor Requirements:

1. Students *must* complete the following (7 credits):

- MSL 211 – Introduction to Marine Science I (3 credits)
- MSL 212 – Introduction to Marine Science II (3 credits)
- MSL 213L—Marine Science Laboratory (1 credit)

2. Students *must* complete 6 credits from the following:

- MSL 317 – Introduction to Marine Mammal Biology (3 credits)
- MSL 330 —The Dynamic Alaskan Coastline (3 credits)
- MSL 403— Estuaries (2 credits)
- MSL 412 —Early Life Histories of Marine Invertebrates (3 credits)
- MSL 431 – Polar Marine Science (3 credits)
- MSL 449 – Biological Oceanography (3 credits)
- MSL 463 – Chemical Coastal Processes (3 credits)

3. Students *must* complete 2 additional credits from the following:

Marine Science and Limnology

- MSL 220 – Scientific Diving (2 credits)
- MSL 317 – Introduction to Marine Mammal Biology (3 credits)
- MSL 330 —The Dynamic Alaskan Coastline (3 credits)
- MSL 403— Estuaries (2 credits)
- MSL 412 —Early Life Histories of Marine Invertebrates (3 credits)
- MSL 421 – Field Course in Subtidal Studies (2 credits)
- MSL 431 – Polar Marine Science (3 credits)
- MSL 449 – Biological Oceanography (3 credits)
- MSL 450 – Marine Biology and Ecology Field Course (4 credits)
- MSL 456 – Kelp Forest Ecology
- MSL 463 – Chemical Coastal Processes (3 credits)
- MSL 497 – Marine Field Experience (Independent Study) (1-2 credits)

Fisheries

- FISH 288/BIOL 288 – Marine and Freshwater Fishes of Alaska (3 credits)
- FISH 301—Biology of Fishes (3 credits)
- FISH 425 – Fish Ecology (3 credits)
- FISH 440—Oceanography for Fisheries (3 credits)

Biology and Wildlife

- BIOL 305 – Invertebrate Zoology (5 credits)
- BIOL 473 – Limnology (4 credits)

Economics

- ECON 235 – Introduction to Natural Resource Economics (3 credits)

Relationship to the “Purposes of the University”:

The objectives of the minor in Marine Science coincide with the UAF academic mission of providing high-quality education to undergraduates, because the minor will offer a suite of courses to augment student expertise in the natural sciences and resource management, and enable students seeking a career in fisheries or oceanographic research. Thus, the program addresses three core mission areas identified in the UAF strategic plan: Serve students; Provide quality educational opportunities and experiences; Be responsive to the needs of the state of Alaska.

Fisheries majors are expected to receive immediate benefits from this program, and many have expressed interest in additional MSL course offerings being made available to them. The Fisheries program has been growing rapidly over the last several years, with 68 students currently enrolled and numbers projected to increase to 70-80 in the next year. We also expect the program will serve students in other disciplines such as resource management and political science, as described in the sections above, and we intend to advertise the program to draw in students from these other fields.