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PROGRAM/DEGREE REQUIREMENT CHANGE (MAJOR)
SUBMITTED BY:

Department	Fisheries Division	College/School	SFOS
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See <http://www.uaf.edu/uafgov/faculty-senate/curriculum/course-degree-procedures/> for a complete description of the rules governing curriculum & course changes.

PROGRAM IDENTIFICATION:

DEGREE PROGRAM	Fisheries Science
Degree Level: (i.e., Certificate, A.A., A.A.S., B.A., B.S., M.A., M.S., Ph.D.)	B.S.

A. CHANGE IN DEGREE REQUIREMENTS: (Brief statement of program/degree changes and objectives)

We are making the following changes to the B.S. in Fisheries Science degree program: (1) changing the name of the program to B.S. in Fisheries and Ocean Sciences to reflect the broader emphasis on fisheries and ocean sciences in the School of Fisheries and Ocean Sciences; (2) removing the requirements to take BIOL F310 Animal Physiology (4 credits) and ENGL F414 Research Writing (3 credits) because these course components are currently being met by other courses in the degree program; (3) adding FISH F433 Pacific Salmon Life Histories (3 credits) as one of the fish ecology options (note that this change was previously approved but not included in the course catalog); (4) adding a requirement to take MSL F211 Introduction to Marine Science I (3 credits), MSL F212 Introduction to Marine Science II (3 credits), and MSL F213L Marine Science Laboratory (1 credit) to place a broader emphasis on ocean sciences within the core degree program; (5) adding MSL F450 Marine Biology and Ecology Field Course (4 credits) and MSL F456 Kelp Forest Ecology (4 credits) as additional options for the place-based techniques courses which are currently met by FISH F315 Freshwater Fisheries Techniques and FISH F414 Field Methods in Marine Ecology and Fisheries; and (6) converting the current degree program to two concentrations, with one focusing on Fisheries Science and the other focusing on Ocean Sciences.

B. CURRENT REQUIREMENTS AS IT APPEARS IN THE CATALOG:

Major -- B.S. Degree

Complete the general university requirements. (As part of the core curriculum requirements, complete MATH F232X or F251X.) To graduate, all students must complete 39 upper-division credits.

Complete the B.S. degree requirements. (As part of the B.S. degree requirements, complete STAT F401 or STAT F402.)

Complete the following:*

BIOL F115X--Fundamentals of Biology I**--4 credits
 BIOL F116X--Fundamentals of Biology II**--4 credits
 BIOL F260--Principles of Genetics--4 credits
 BIOL F310--Animal Physiology (4)
 or BIOL F213X--Human Anatomy and Physiology I (4)
 and BIOL F214X--Human Anatomy and Physiology II (4)--4-8 credits
 BIOL F371--Principles of Ecology--4 credits
 CHEM F105X--General Chemistry I**--4 credits
 CHEM F106X--General Chemistry II**--4 credits
 ECON F235--Introduction to Natural Resource Economics (3)
 or ECON F201--Principles of Economics I: Microeconomics (3)--3 credits
 ENGL F414W--Research Writing--3 credits
 FISH F102--Fact or Fishin': Case Studies in Fisheries--1 credit
 FISH F103--The Harvest of the Sea--2 credits
 FISH F110--Fish and Fisheries in a Changing World--3 credits
 FISH F261--Introduction to Fisheries Utilization--3 credits
 FISH F288--Fish and Fisheries of Alaska--3 credits
 FISH F427--Ichthyology(4)
 or BIOL F305--Invertebrate Zoology (4)
 FISH F315--Freshwater Fisheries Techniques (3)
 or FISH F414--Field Methods in Marine Ecology and Fisheries (3)--3 credits
 FISH F411--Human Dimensions of Environmental Systems (3)

or GEOG F312--People, Places, and Environment: Principles of Geography ****(3)
 or SOC F440--Environmental Sociology ****(3)--3 credits
 FISH F425--Fish Ecology (3)
 or FISH F426--Behavioral Ecology of Fishes (3)
 or FISH F428--Physiological Ecology of Fishes (3)--3 credits
 FISH F487W,O--Fisheries Management--3 credits
 FISH F490--Experiential Learning Internship--1 credit
 PHYS F103X--College Physics** (4)
 or PHYS F115X--Physical Science I** (4)
 or PHYS F211X--General Physics** (4)--4 credits
 STAT F200X--Elementary Probability and Statistics--3 credits
 STAT F401--Regression and Analysis of Variance*** (4)
 or STAT F402--Scientific Sampling*** (3)--3-4 credits
 Complete 9 credits of electives* from Fisheries, Biology, Marine Science and Limnology or Natural Resource Management (of which at least 5 credits must be upper-division).
 Complete 4 credits of electives* from Chemistry, Geology or Physics.
 Additional electives* to complete minimum credits required.
 Minimum credits required--120 credits
 * Students must earn a C- grade or better in each course.
 ** Courses completed in the fisheries core may be used to meet the core natural sciences or B.S. degree natural science requirements but not both.
 *** STAT F401 or STAT F402 may be used to meet the B.S. degree mathematics requirements.
 **** Students who take GEOG F312 or SOC F440 should be aware that these two courses require additional prerequisites that are not part of the Bachelor of Science in fisheries degree program.
 Note: Fisheries majors are encouraged to reinforce their fisheries qualifications by earning a minor in a program related to fisheries. Some examples are biology, business management, chemistry, economics, mathematics, natural resources management (animal science), northern studies, statistics or wildlife.

C. PROPOSED REQUIREMENTS AS IT WILL APPEAR IN THE CATALOG WITH THESE CHANGES:
 (Underline new wording ~~strike through old wording~~ and use complete catalog format)

Major -- B.S. Degree SEE CLEANED UP COPY -- after page 3

Complete the general university requirements. (As part of the core curriculum requirements, complete MATH F232X or F251X and ECON F201 or F235. As part of the core natural sciences requirements, complete BIOL 115X and BIOL 116X) To graduate, all students must complete 39 upper-division credits.
 Complete the B.S. degree requirements. (As part of the B.S. degree requirements, complete STAT F401 or STAT F402 (or MATH F252; Ocean Sciences concentration only), STAT F200X, CHEM F105X and CHEM F106X, and PHYS F103X or PHYS F115X or PHYS F211X.)
 Complete the following major requirements.*
~~BIOL F115X--Fundamentals of Biology I**--4 credits~~
~~BIOL F116X--Fundamentals of Biology II**--4 credits~~
 BIOL F260--Principles of Genetics--4 credits
~~BIOL F310--Animal Physiology (4)~~
~~— or BIOL F213X--Human Anatomy and Physiology I (4)~~
~~— and BIOL F214X--Human Anatomy and Physiology II (4) 4-8 credits~~
 BIOL F371--Principles of Ecology--4 credits
~~CHEM F105X--General Chemistry I**--4 credits~~
~~CHEM F106X--General Chemistry II**--4 credits~~
~~ECON F235--Introduction to Natural Resource Economics (3)~~
~~— or ECON F201--Principles of Economics I: Microeconomics (3)--3 credits~~
~~ENGL F414W--Research Writing--3 credits~~
 FISH F102--Fact or Fishin': Case Studies in Fisheries--1 credit
 FISH F103--The Harvest of the Sea--2 credits
 FISH F110--Fish and Fisheries in a Changing World--3 credits
~~FISH F261--Introduction to Fisheries Utilization--3 credits~~
~~FISH F288--Fish and Fisheries of Alaska--3 credits~~
~~FISH F427--Ichthyology(4)~~
~~— or BIOL F305--Invertebrate Zoology (4)~~
 FISH F315--Freshwater Fisheries Techniques (3)
 or FISH F414--Field Methods in Marine Ecology and Fisheries (3)--3 credits
or MSL F450 Marine Biology and Ecology Field Course (4)
or MSL F456 Kelp Forest Ecology (4)
~~FISH F411--Human Dimensions of Environmental Systems (3)~~
~~— or GEOG F312--People, Places, and Environment: Principles of Geography ****(3)~~
~~— or SOC F440--Environmental Sociology *****(3)--3 credits~~

FISH F490--Experiential Learning Internship--1 credit
MSL F211--Introduction to Marine Science I--3 credits
MSL F212--Introduction to Marine Science II--3 credits
MSL F213L--Marine Science Laboratory--1 credit
PHYS F103X--College Physics** (4)

— or PHYS F115X--Physical Science I** (4)
 — or PHYS F211X--General Physics** (4) 4 credits

STAT F200X--Elementary Probability and Statistics--3 credits

Complete 9 credits of electives* from Fisheries, Biology, Marine Science and Limnology or Natural Resource Management (of which at least 5 credits must be upper-division).

Complete one of the following concentrations:*

a. Fisheries Science

FISH F261--Introduction to Fisheries Utilization--3 credits

FISH F288--Fish and Fisheries of Alaska--3 credits

FISH F411--Human Dimensions of Environmental Systems (3)

— or GEOG F312--People, Places, and Environment: Principles of Geography *** (3)

— or SOC F440--Environmental Sociology *** (3)--3 credits

FISH F425--Fish Ecology (3)

— or FISH F426--Behavioral Ecology of Fishes (3)

— or FISH F428--Physiological Ecology of Fishes (3)--3 credits

— or FISH F433--Pacific Salmon Life Histories (3)--3 credits

FISH F427--Ichthyology(4)

— or BIOL F305--Invertebrate Zoology (4)

FISH F487W,O--Fisheries Management--3 credits****

STAT F401--Regression and Analysis of Variance*** (4)

— or STAT F402--Scientific Sampling*** (3) 3-4 credits

Complete 4 credits of electives* from Chemistry, Geology or Physics.

b. Ocean Sciences

MSL F499 Senior Thesis (3)****

Students enrolled in this concentration must complete 20 credits from the following list:

MSL F215 Marine Geological Drama and Undersea Catastrophe (3)

MSL F216 The Oceans and Global Change (3)

MSL F220 Scientific Diving (2)

MSL F317 Introduction to Marine Mammals (3)

MSL F403 Estuaries Oceanography (3)

MSL F411 Current Topics in Oceanographic Research (3)

MSL F412 Early Life Histories of Marine Invertebrates (3)

MSL F419 Concepts in Physical Oceanography (3)

MSL F421 Field Topics in Subtidal Studies (2)

MSL F431 Polar Marine Science (3)

MSL F440 Oceanography for Fisheries (3)

MSL F449 Biological Oceanography (3)

MSL F461 Chemical Oceanography (3)

MSL F463 Chemical Coastal Processes (3)

MSL F467 Introduction to Marine Macroalgae (3)

MSL F492 IMS Seminar (1)

Additional electives* to complete minimum credits required.

Minimum credits required--120 credits

* Students must earn a C- grade or better in each course.

**—— Courses completed in the fisheries core may be used to meet the core natural sciences or B.S. degree natural science requirements but not both.

***—— STAT F401 or STAT F402 may be used to meet the B.S. degree mathematics requirements.

**** Students who take GEOG F312 or SOC F440 should be aware that these two courses require additional prerequisites that are not part of the Bachelor of Science in fisheries Fisheries Science concentration degree program.

***** FISH F487 Fisheries Management (3 credits) and MSL F499 Senior Thesis (3 credits) will serve as the capstone course for Fisheries Science and Ocean Sciences concentrations, respectively.

Note: Fisheries and Ocean Sciences majors are encouraged to reinforce their fisheries qualifications by earning a minor in a program related to fisheries and ocean sciences. Some examples are biology, fisheries (Ocean Sciences concentration only), marine science (Fisheries Science concentration only), business management, chemistry, economics, mathematics, natural resources management (animal science), northern studies, statistics or wildlife.

Major -- B.S. Degree

Complete the general university requirements. (As part of the general education requirements, complete MATH F230X or MATH F251X and ECON F201 or ECON F235. As part of the core natural sciences requirements, complete BIOL 115X and BIOL 116X). To graduate, all students must complete 39 upper-division credits.

Complete the B.S. degree requirements. (As part of the B.S. degree requirements, complete STAT F200X, CHEM F105X and CHEM F106X)

Complete the following major requirements:*

BIOL F260--Principles of Genetics--4 credits

BIOL F371--Principles of Ecology--4 credits

PHYS F103X—College Physics—4 credits

or PHYS F115X—Physical Sciences—4 credits

or PHYS F211X—General Physics—4 credits

STAT F401—Regression and Analysis of Variance—4 credits

or STAT F402—Scientific Sampling—3 credits

or MATH F252X—Calculus II—4 credits (Ocean Sciences concentration only)

FISH F102--Fact or Fishin': Case Studies in Fisheries--1 credit

FISH F103--The Harvest of the Sea--2 credits

FISH F110--Fish and Fisheries in a Changing World--3 credits

FISH F315--Freshwater Fisheries Techniques --3 credits

or FISH F414--Field Methods in Marine Ecology and Fisheries--3 credits

or MSL F450 Marine Biology and Ecology Field Course—4 credits

or MSL F456 Kelp Forest Ecology—4 credits

FISH F490--Experiential Learning Internship--1 credit

MSL F211--Introduction to Marine Science I--3 credits

MSL F212--Introduction to Marine Science II--3 credits

MSL F213L--Marine Science Laboratory--1 credit

Complete 9 credits of electives* from Fisheries, Biology, Marine Science and Limnology or Natural Resource Management (of which at least 5 credits must be upper-division).

Complete one of the following concentrations:*

a. Fisheries Science

FISH F261--Introduction to Fisheries Utilization--3 credits

FISH F288--Fish and Fisheries of Alaska--3 credits

FISH F411--Human Dimensions of Environmental Systems (3)

or GEOG F312--People, Places, and Environment: Principles of Geography **(3)

or SOC F440--Environmental Sociology **(3)--3 credits

FISH F425--Fish Ecology (3)

or FISH F426--Behavioral Ecology of Fishes (3)

or FISH F428--Physiological Ecology of Fishes (3)

or FISH F433—Pacific Salmon Life Histories (3)—3 credits

FISH F427—Ichthyology (4)

FISH F487W,O--Fisheries Management--3 credits***

Complete 4 credits of electives* from Chemistry, Geology or Physics.

b. Ocean Sciences

MSL F499 Senior Thesis (3)***

Students enrolled in this concentration must complete 20 credits from the following list:

MSL F215 Marine Geological Drama and Undersea Catastrophe (3)

MSL F216 The Oceans and Global Change (3)

MSL F220 Scientific Diving (2)

MSL F317 Introduction to Marine Mammals (3)

MSL F403 Estuaries Oceanography (3)

MSL F411 Current Topics in Oceanographic Research (3)

MSL F412 Early Life Histories of Marine Invertebrates (3)

MSL F419 Concepts in Physical Oceanography (3)

MSL F421 Field Topics in Subtidal Studies (2)

MSL F431 Polar Marine Science (3)

MSL F440 Oceanography for Fisheries (3)

MSL F449 Biological Oceanography (3)

MSL F461 Chemical Oceanography (3)

MSL F463 Chemical Coastal Processes (3)

MSL F467 Introduction to Marine Macroalgae (3)

MSL F492 IMS Seminar (1)

Additional electives* to complete minimum credits required.

Minimum credits required--120 credits

* Students must earn a C- grade or better in each course.

** Students who take GEOG F312 or SOC F440 should be aware that these two courses require additional prerequisites that are not part of the Fisheries Science concentration.

*** FISH F487 Fisheries Management (3 credits) and MSL F499 Senior Thesis (3 credits) will serve as the capstone course for Fisheries Science and Ocean Sciences concentrations, respectively.

Note: Fisheries and Ocean Sciences majors are encouraged to reinforce their qualifications by earning a minor in a program related to fisheries and ocean sciences. Some examples are biology, fisheries (Ocean Sciences concentration only), marine science (Fisheries Science concentration only), business management, chemistry, economics, mathematics, natural resources management (animal science), northern studies, statistics or wildlife.

D. ESTIMATED IMPACT

WHAT IMPACT, IF ANY, WILL THIS HAVE ON BUDGET, FACILITIES/SPACE, FACULTY, ETC.

There is no significant anticipated impact of these changes on budgets, facilities, space, and faculty for the inclusion of the FISH and MSL courses. All of the FISH and MSL courses are currently approved as courses (no new courses are being developed), either in the existing B.S. in Fisheries Science curriculum (FISH courses) or the Minor in Marine Science (MSL courses). These courses are taught by current SFOS faculty as a component of their annual workload, and these courses can accommodate additional student enrollments without compromising the level of instruction. Further, SFOS has the necessary classrooms, laboratories, and video conference equipment necessary to delivery these courses. The SFOS also has the trained academic programs staff to accommodate the change of a B.S. in Fisheries Science to a B.S. in Fisheries and Ocean Sciences with two concentrations (Fisheries Science, Ocean Sciences). Removing BIOL F310 and ENGL F414 from the current B.S. in Fisheries Science degree program may (likely) reduce student enrollments in those courses (< 5 students per course per year).

E. IMPACTS ON PROGRAMS/DEPTS:

*What programs/departments will be affected by this proposed action?
Include information on the Programs/Departments contacted (e.g., email, memo)*

The inclusion of the FISH and MSL courses in the B.S. in Fisheries and Ocean Sciences degree program concentrations should not impact other programs at UAF. However, the removal of two required courses (BIOL F310, ENGL F414) may (likely) reduce student enrollments in those courses. However, students may still take those courses to fulfill elective requirements. Students will not lose out on the material covered in those courses as they will receive relevant information on animal physiology (BIOL F310) in FISH F427 Ichthyology and FISH F428 Physiological Ecology of Fishes and research writing (ENGL F414) in FISH F288 Fish and Fisheries in Alaska, FISH F425 Fish Ecology, FISH FF426 Behavioral Ecology of Fishes, FISH FF428 Physiological Ecology of Fishes, and FISH F487 Fisheries Management.

F. IF MAJOR CHANGE - ASSESSMENT OF THE PROGRAM:

Description of the student learning outcomes assessment process.)

The learning outcomes assessment that exists for the B.S. in Fisheries Science is still relevant to the proposed B.S. in Fisheries and Ocean Sciences, with concentrations in Fisheries Science and Ocean Sciences. The assessment criteria will be applied separately to each concentration for conducting outcomes assessment.

MISSION STATEMENT:

The School of Fisheries and Ocean Sciences will create a center of academic excellence in the fisheries and ocean sciences discipline that promotes lifelong learning for undergraduate students preparing to enter a career in fisheries and/or ocean sciences.

GOAL STATEMENT:

The goal of the B.S. in Fisheries and Ocean Sciences degree program is to educate undergraduate students in fisheries and ocean sciences, with a particular emphasis on the biology, assessment, and management of fish and invertebrate populations and their associated physical, chemical, geological, and biological marine and freshwater environments, in preparation for a career in the fisheries, marine biology, and/or the oceanography fields in Alaska and elsewhere.

INTENDED OBJECTIVES/OUTCOMES:

1. Have excellent oral and written communication skills.
2. Obtain knowledge of fishery and/or ocean sciences, with a particular emphasis on the biology, assessment, and management of fish, invertebrate, and marine mammal populations and their associated physical, chemical, geological, and biological marine and freshwater environments.
3. Achieve knowledge of the scientific tools of data collection in fisheries and/or ocean sciences and demonstrate competence in compiling and reporting of those data.
4. Earn a degree in a timely fashion.
5. Be prepared to compete successfully for admission to M.S. programs in Fisheries, Marine Biology, Oceanography, or related aquatic/marine science disciplines.
6. Be prepared to compete successfully for entry-level professional career positions in fisheries, marine biology, or oceanography research or management in Alaska and elsewhere

ASSESSMENT CRITERIA AND PROCEDURES:

1. Compare individual scores of students in similarly-scored evaluations of term papers in the

introductory and capstone courses; 80% of students who complete these courses with the concentrations will improve scores. (Objectives 1-3). Course Instructors will rate several aspects of the students' term papers on a scale of 1-4. Academics Office will track scores of individual students who complete term papers in both introductory and capstone courses.

2. Compile and summarize mentor evaluations from the experiential learning internships as evidence of readiness for a professional position. 80% of students will be judged by mentors to have performed at a satisfactory level for an entry-level fisheries or ocean science professional. (Objective 6). Each internship mentor will rate the student on a scale of 1-5 on whether he/she has achieved entry-level professional level performance in several areas.

3. Track retention rates and rate of graduation within 6 years as evidence of achievement. Eighty percent (80%) of undergraduates will be retained each year, and 50% of juniors will complete degrees in ≤ 3 years. (Objective 4). Fisheries and Ocean Sciences staff will monitor enrollment numbers annually.

4. Eighty percent (80%) of graduates seeking employment in fisheries or ocean sciences, or admission to a graduate program will succeed within one year of graduation. (Objectives 5-6). SFOS Academic Program Office staff and the faculty advisors will request that each graduate complete a short exit interview upon graduating and an alumni questionnaire three years after graduation, addressing their experiences seeking employment or continuing graduate studies.

5. Eighty percent (80%) of graduates will be "satisfied" or "very satisfied" overall, with the education they received in the Fisheries and Ocean Sciences Program at UAF. (All objectives). Upon graduation, SFOS Academic Program Office staff will give each graduate an exit interview assessing their satisfaction with the program. Three years after graduation, SFOS Academic Program Office staff and faculty advisors will request that each graduate complete a short alumni questionnaire, which will include similar questions.

JUSTIFICATION FOR ACTION REQUESTED

The purpose of the department and campus-wide curriculum committees is to scrutinize program/degree change applications to make sure that the quality of UAF education is not lowered as a result of the proposed change. Please address this in your response. This section needs to be self-explanatory. If you drop a course, is it because the material is covered elsewhere? Use as much space as needed to fully justify the proposed change and explain what has been done to ensure that the quality of the program is not compromised as a result.

The justification for each of the aforementioned changes is addressed below in the order that they are listed above in Part A: Change in Degree Requirements.

- (1) *Change the name of the program to B.S. in Fisheries and Ocean Science to reflect the broader emphasis on fisheries and ocean sciences.* Currently, the name of the degree program is the B.S. in Fisheries Science, which reflects the singular focus of the curriculum. With the expansion of the degree program to include a concentration in Fisheries Science and a separate concentration in Ocean Sciences, we propose to change the name of the degree program to B.S. in Fisheries and Ocean Sciences to better reflect the broader scope and integration of these disciplines within a singular curriculum. The development of two concentrations (Fisheries Science, Ocean Sciences) within a common degree program (B.S. in Fisheries and Ocean Sciences) also reflects the current emphasis on an integrated faculty and academic programs within the school across the three primary academic disciplines (e.g., Fisheries, Marine Biology, Oceanography).
- (2) *Remove the requirements to take BIOL F310 Animal Physiology (4 credits) and ENGL F414 Research Writing (3 credits) because these course components are currently being met by other courses in the degree program.* These two courses are being removed from the common core Fisheries and Ocean Sciences curriculum for two reasons. First, seven (7) credits needed to be removed to accommodate the addition of MSL F211 Introduction to Marine Science I (3 credits), MSL F212 Introduction to Marine Science II (3 credits), and MSL F213L Marine Science Laboratory (1 credit). Second, these two courses (BIOL F310, ENGL F414) were specifically chosen for removal because the material covered in each course is also covered by other current courses in the degree program. For example, relevant information on animal physiology (BIOL F310) is covered in FISH F427 Ichthyology and FISH F428 Physiological Ecology of Fishes which focus specifically on physiological adaptations of fishes for living in freshwater and marine environments. Material covered on research writing (ENGL F414) is also covered in FISH F288 Fish and Fisheries in Alaska, FISH F425 Fish Ecology, FISH F426 Behavioral Ecology of Fishes, FISH F428 Physiological Ecology of Fishes, and FISH F487 Fisheries Management, which provide a more relevant focus on the writing style and techniques required for fisheries and marine scientists that prepare manuscripts for research publications.

- (3) *Add FISH F433 Pacific Salmon Life Histories (3 credits) as one of the fish ecology options. This change/addition was previously approved but not included in the course catalog (we want to make sure that it gets included in this version). Adding this course to the options that includes FISH F425 Fish Ecology, FISH F426 Behavioral Ecology of Fishes, and FISH F428 Physiological Ecology of Fishes is consistent with that requirement (i.e. ecology of fishes) and provides additional flexibility of relevant course options.*
- (4) *Add a requirement to take MSL F211 Introduction to Marine Science I (3 credits), MSL F212 Introduction to Marine Science II (3 credits), and MSL F213L Marine Science Laboratory (1 credit) to place a broader emphasis on marine science within the degree program. The additions of these three courses (7 credits total), which are currently taught as part of the Minor in Marine Science program, will provide broad foundational information in the areas of physical, chemical, geological, and biological (which also includes marine biology and fisheries) oceanography. The incorporation of these courses into the common core Fisheries and Ocean Sciences degree program will couple with the current first-year (FISH F102 Fact or Fishin': Case Studies in Fisheries, FISH F103 The Harvest of the Sea, and FISH F110 Fish and Fisheries in a Changing World) sequence to provide a well-rounded overview of fisheries and ocean sciences concepts and issues relevant both in Alaska and on a global basis.*
- (5) *Add MSL F450 Marine Biology and Ecology Field Course (4 credits) and MSL F456 Kelp Forest Ecology (4 credits) as additional options for the place-based techniques courses FISH F315 Freshwater Fisheries Techniques and FISH F414 Field Methods in Marine Ecology and Fisheries. FISH F315 Freshwater Fisheries Techniques and FISH F414 Field Methods in Marine Ecology and Fisheries are only offered as an alternating sequence during the Maymester (FISH F315: even springs FISH F414: odd springs). As a result, students sometimes cannot take one of these two techniques classes which may delay their graduation by an additional year. For this requirement, we have identified and added alternative courses that offer similar content to alleviate this bottleneck in our B.S. in Fisheries and Ocean Sciences degree program (MSL F450 Marine Biology and Ecology Field Course [4 credits], and MSL F456 Kelp Forest Ecology [4 credits]).*
- (6) *Convert the current degree program to two concentrations, with one focusing on Fisheries Science and the other focusing on Ocean Sciences. The current enrollment in the B.S. in Fisheries Science degree program has increased from 22 students in fall 2007 to 51 students in fall 2015 (an additional 18 students are enrolled in the B.A. in Fisheries degree program). While enrollment in the B.S. has been stable for the past 2-3 years, there has been an increasing demand for an emphasis on ocean sciences. Currently, students interested in ocean sciences must complete a B.S. in Fisheries Science or B.A. in Fisheries and also complete a Minor in Marine Science. However, that approach does not prepare students well for ocean sciences fields, particularly students that may be particularly interested in marine biology and/or oceanography. According to the UAF Admissions Office, approximately 200 students interested in attending UAF for a four-year degree program expressed a specific interest in an ocean sciences degree. At the Fairbanks North Star Borough College Fair in fall 2015, 20 students from the greater Fairbanks area expressed interest in an ocean sciences degree program (they were not interested in a Fisheries B.S. or B.A. degree with a Minor in Marine Science). To capitalize on this interest in ocean sciences and to grow our undergraduate student body, we propose to the expand the current B.S. in Fisheries Science degree program (which we would now call a B.S. in Fisheries and Ocean Sciences) into two concentrations: (a) Fisheries Science which will still serve in the capacity as a broadly focused, interdisciplinary option for students interested in the biology, assessment, and management of freshwater and marine fish and invertebrate populations and (b) Ocean Sciences which can have a focus on the physical, chemical, geological, and/or biological environments of marine systems. For students in the Fisheries Science concentration, the primary emphasis will be on training them for positions within the fields of fisheries biology and management. Career opportunities will remain the same as before – graduate school, state, federal, and tribal/native natural resources management agencies, non-governmental agencies, and the seafood industry in the areas of fisheries and seafood science, human dimensions, stock assessment, and management. In essence, this concentration is similar to the existing B.S. in Fisheries Science degree program, with the exception of the inclusion of three MSL courses to give the program a broader ocean sciences emphasis through its common core curriculum. The Ocean Sciences concentration is a new focus that was identified through discussions with marine science faculty in SFOS given the interest in this focus from prospective undergraduate students. Given the importance of marine biology and oceanography in Alaska, the melding of these two foci into an ocean sciences emphasis is a natural union to bring together disparate yet related expertise in a synergistic fashion. The courses that students may select from in this concentration are broad so*

that students have the ability to focus on marine biology, oceanography, or a blend of the two, depending on their interest. It is highly anticipated that this concentration will be very popular with undergraduates that have some interest in fisheries (note that several existing fisheries courses will remain in the common core for both concentrations) but do not have a degree that specializes in fisheries. Students completing this concentration would be trained for graduate school, biologist positions with state (i.e., Alaska Department of Fish and Game) and federal (i.e., National Oceanic and Atmospheric Administration) agencies, research laboratories (i.e., Scripps Research Institute, Wood Hole Oceanographic Institution, UAF SFOS) and organizations focusing on marine science issues as well as K-12 education (i.e. Marine Advisory Program). The faculty in the School of Fisheries and Ocean Sciences will work closely together through the Academic Programs Office and Marine Advisory Program to broadly advertise the B.S. in Fisheries and Ocean Sciences degree program throughout Alaska, which is anticipated to have an enrollment of 30-50 students in addition to its current undergraduate Fisheries enrollment (60-70 students; total enrollment 90-120 students).

APPROVALS: SIGNATURES MUST BE OBTAINED PRIOR TO SUBMISSION TO THE GOVERNANCE OFFICE

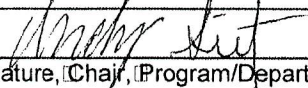
SEE NEXT PAGE FOR SIGNATURES		Date	
Signature, Chair, Program/Department of:			
		Date	
Signature, Chair, College/School Curriculum Council for:			
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Signature, Dean, College/School of:			

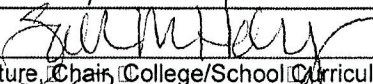
CHAIR SIGNATURE OBTAINED FOLLOWING APPROVAL BY FACULTY SENATE COMMITTEE

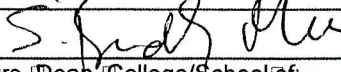
		Date	
Signature, Chair, UAF Faculty Senate ___Curriculum Review Committee ___Graduate Academic and Advisory Committee			

faculty in SFOS given the interest in this focus from prospective undergraduate students. Given the importance of marine biology and oceanography in Alaska, the melding of these two foci into an ocean sciences emphasis is a natural union to bring together disparate yet related expertise in a synergistic fashion. The courses that students may select from in this concentration are broad so that students have the ability to focus on marine biology, oceanography, or a blend of the two, depending on their interest. It is highly anticipated that this concentration will be very popular with undergraduates that have some interest in fisheries (note that several existing fisheries courses will remain in the common core for both concentrations) but do not have a degree that specializes in fisheries. Students completing this concentration would be trained for graduate school, biologist positions with state (i.e., Alaska Department of Fish and Game) and federal (i.e., National Oceanic and Atmospheric Administration) agencies, research laboratories (i.e., Scripps Research Institute, Wood Hole Oceanographic Institution, UAF SFOS) and organizations focusing on marine science issues as well as K-12 education (i.e. Marine Advisory Program). The faculty in the School of Fisheries and Ocean Sciences will work closely together through the Academic Programs Office and Marine Advisory Program to broadly advertise the B.S. in Fisheries and Ocean Sciences degree program throughout Alaska, which is anticipated to have an enrollment of 30-50 students in addition to its current undergraduate Fisheries enrollment (60-70 students; total enrollment 90-120 students).


APPROVALS: SIGNATURES MUST BE OBTAINED PRIOR TO SUBMISSION TO THE GOVERNANCE OFFICE

	Date	3/3/2016
Signature, Chair, Program/Department of: Fisheries		

	Date	3/3/16
Signature, Chair, College/School/Curriculum Council for: SFOS		

	Date	3/3/16
Signature, Dean, College/School of: SFOS		

CHAIR SIGNATURE OBTAINED FOLLOWING APPROVAL BY FACULTY SENATE COMMITTEE

	Date	
Signature, Chair, UAF Faculty Senate		
Curriculum Review Committee		
Graduate Academic and Advisory Committee		