

FORMAT 1

Submit original with signatures + 1 copy + electronic copy to Faculty Senate (Box 7500).
See <http://www.uaf.edu/uafgov/faculty-senate/curriculum/course-degree-procedures/> for a complete description of the rules governing curriculum & course changes.

TRIAL COURSE OR NEW COURSE PROPOSAL
(Attach copy of syllabus)

SUBMITTED BY:

Department	GPMSL	College/School	SFOS
Prepared by	Ana M. Aguilar-Islas	Phone	1524 / 7616
Email Contact	amaguilarislas@alaska.edu smhardy@alaska.edu	Faculty Contact	Aguilar-Islas and/or Hardy

1. ACTION DESIRED (CHECK ONE):		Trial Course	<input checked="" type="checkbox"/>	New Course	<input type="checkbox"/>		
2. COURSE IDENTIFICATION:		Dept	MSL	Course #	394	No. of Credits	3
Justify upper/lower division status & number of credits:		<p>This is an introductory course for Marine Science minors designed to give students intense hands-on introduction to field and analytical techniques used in the marine science. The course emphasizes learning through field work in a natural coastal Alaskan habitat. It requires successful completion of the 200 level Marine Science Minor core sequence (MSL 211 Introduction to Marine Science I, MSL 212 Introduction to Marine Science II, and MSL 213 Marine Science Lab). This MAYmester course will have 1200 lecture contact minutes, and 3600 lab/field practicum hours.</p>					
3. PROPOSED COURSE TITLE:		Field Techniques in Marine Science					
4. To be CROSS LISTED? YES/NO		No	If yes, Dept:	<input type="text"/>	Course #	<input type="text"/>	
NOTE: Cross-listing requires approval of both departments and deans involved. Add lines at end of form for additional required signatures.							
5. To be STACKED?* YES/NO		No	If yes, Dept.	<input type="text"/>	Course #	<input type="text"/>	
How will the two course levels differ from each other? How will each be taught at the appropriate level?:		<input type="text"/>					
* Use only one Format 1 form for the stacked course (not one for each level of the course!) and attach syllabi. Stacked course applications are reviewed by the (Undergraduate) Curricular Review Committee and by the Graduate Academic and Advising Committee. Creating two different syllabi (undergraduate and graduate versions) will help emphasize the different qualities of what are supposed to be two different courses. The committees will determine: 1) whether the two versions are sufficiently different (i.e. is there undergraduate and graduate level content being offered); 2) are undergraduates being overtaxed?; 3) are graduate students being undertaxed? In this context, the committees are looking out for the interests of the students taking the course. Typically, if either committee has qualms, they both do. More info online – see URL at top of this page.							
6. FREQUENCY OF OFFERING:		MAYmester					
Fall, Spring, Summer (Every, or Even-numbered Years, or Odd-numbered Years) — or As Demand Warrants							
7. SEMESTER & YEAR OF FIRST OFFERING (Effective AY2015-16 if approved by 3/31/2015; otherwise AY2016-17)		AY2016-2017					

8. COURSE FORMAT:

NOTE: Course hours may not be compressed into fewer than three days per credit. Any course compressed into fewer than six weeks must be approved by the college or school's curriculum council. Furthermore, **any core course compressed to less than six weeks must be approved by the Core Review Committee.**

COURSE FORMAT: (check all that apply)	<input type="checkbox"/> 1	<input checked="" type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6 weeks to full semester
OTHER FORMAT (specify)	MAYmester					
Mode of delivery (specify lecture, field trips, labs, etc)	Lecture, labs, field trip activities					

9. CONTACT HOURS PER WEEK:	<input type="text"/>	LECTURE	<input type="text"/>	LAB	<input type="text"/>	PRACTICUM
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OTHER HOURS (specify type)

MAYmester 20 total lecture hours, 32 total lab hours, 28 total practicum hours

10. COMPLETE CATALOG DESCRIPTION including dept., number, title, credits, credit distribution, cross-listings and/or stacking (50 words or less if possible):

Example of a complete description:

FISH F487 W, O Fisheries Management

3 Credits Offered Spring

Theory and practice of fisheries management, with an emphasis on strategies utilized for the management of freshwater and marine fisheries. *Prerequisites: COMM F131X or COMM F141X; ENGL F111X; ENGL F211X or ENGL F213X; ENGL F414; FISH F425; or permission of instructor.* Cross-listed with NRM F487. (3+0)

MSL 394 Field Techniques in Marine Science

3 Credits MAYmester

Introduction to principles and application of Marine Science field techniques. The course is a combination of lectures, labs, and a 4-day field trip to the Kasitsna Bay Marine Laboratory. Students work in teams to plan field activities, to collect and process samples, and to interpret the generated data. Final presentations are given in Fairbanks in poster format. Special fees apply. Prerequisites: MSL 212 and MSL 213. (10+16+14)

11. COURSE CLASSIFICATIONS: Undergraduate courses only. Consult with CLA Curriculum Council to apply S or H classification appropriately; otherwise leave fields blank.H = Humanities S = Social Sciences

Will this course be used to fulfill a requirement for the baccalaureate core? If YES, attach form.

YES: NO: X

IF YES, check which core requirements it could be used to fulfill:

O = Oral Intensive, Format 6 W = Writing Intensive, Format 7 X = Baccalaureate Core **11.A Is course content related to northern, arctic or circumpolar studies? If yes, a "snowflake" symbol will be added in the printed Catalog, and flagged in Banner.**YES NO **12. COURSE REPEATABILITY:**

Is this course repeatable for credit?

YES NO

Justification: Indicate why the course can be repeated (for example, the course follows a different theme each time).

How many times may the course be repeated for credit?

TIMES

If the course can be repeated for credit, what is the maximum number of credit hours that may be earned for this course?

CREDITS

If the course can be repeated with variable credit, what is the maximum number of credit hours that may be earned for this course?

CREDITS

13. GRADING SYSTEM: Specify only one. Note: Changing the grading system for a course later on constitutes a Major Course Change – Format 2 form.LETTER: PASS/FAIL: **RESTRICTIONS ON ENROLLMENT (if any)****14. PREREQUISITES**MSL 212 and MSL 213

These will be required before the student is allowed to enroll in the course.

Has a memo been submitted through your dean to the Provost for fee approval?
Yes/No

Yes

17. PREVIOUS HISTORY

Has the course been offered as special topics or trial course previously?
Yes/No

NO

If yes, give semester, year, course #, etc.:

18. ESTIMATED IMPACT

This course is intended to provide students in the Marine Sciences Minor with relevant field experience that will make graduates more attractive to potential employers or to potential post-baccalaureate programs. The laboratory facilities at Kasitsna Bay are ideal for this introductory course, and the course will generate additional revenue for continued support of this facility. A required teaching IACUC for the marine bird observation activity will be generated.

19. LIBRARY COLLECTIONS

Have you contacted the library collection development officer (kljensen@alaska.edu, 474-6695) with regard to the adequacy of library/media collections, equipment, and services available for the proposed course? If so, give date of contact and resolution. If not, explain why not.

No

Yes

The journal subscriptions at the library contain a broad range of marine science journals that can be easily accessed electronically from Fairbanks and the field location.

20. 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)

A 300 level field course with encompassing marine science content is not offered at UAF; therefore, the proposed action is not expected to compete with available course offerings. Undergraduate field courses offered with potential content overlap includes FISH 414 (Field Methods in Marine Ecology and Fisheries), MSL 421 (Field Course in Subtidal Studies), MSL 450 (Marine Biology and Ecology Field Course), and MSL 456 (Kelp Forest Ecology). These courses have a biological focus from a fisheries, ecology or marine biology perspective, and target different audiences including graduate students (stacked courses). The instructors for these courses were contacted via email, and it was determined that the proposed course would not have a negative impact existing offerings.

21. POSITIVE AND NEGATIVE IMPACTS

Please specify **positive and negative** impacts on other courses, programs and departments resulting from the proposed action.

The Minor in Marine Science program will be positively impacted in several ways:

- 1) Elective course offerings will be increased
- 2) The inclusion of a 300 level field course will enhance the appeal of the minor to students
- 3) A general marine science field course experience is likely to enhance student retention

There is no other field course being offered at UAF that targets undergraduates at the 300 level and introduces them to broad Marine Science field methodology and data interpretation.

JUSTIFICATION FOR ACTION REQUESTED

The purpose of the department and campus-wide curriculum committees is to scrutinize course change and new course 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. Use as much space as needed to fully justify the proposed course.

Marine science is in large a field-based science. GPMSL offers a minor in Marine Science, and currently there is no field course offering that spans the breath of disciplines that make up Marine Science. The MSL field courses offered to undergraduates (MSL 421, MSL 450 and MSL 456) have a marine biology/ecology focus. The proposed course is intended to provide field and data interpretation experience in a variety of

marine science subdisciplines and introduce students to marine science research in general. In particular techniques used in physical, chemical, geological and biological oceanography in addition to marine biology will be included in the course.

APPROVALS: Add additional signature lines as needed.

DocuSigned by: <i>Katrin Iken</i>	Date	August 14, 2015
Signature, Chair, Program/Department of: GPMSL		

DocuSigned by: J Andrés López	Date	August 14, 2015
Signature, Chair, College/School Curriculum Council for: SFOS (for Ana Aguilar-Islas)		

DocuSigned by: <i>Brenda Konar</i>	Date	August 14, 2015
Signature, Dean, College/School of: SFOS		

Offerings above the level of approved programs must be approved in advance by the Provost.

	Date	
Signature of Provost (if above level of approved programs)		

ALL SIGNATURES MUST BE OBTAINED PRIOR TO SUBMISSION TO THE GOVERNANCE OFFICE

	Date	
Signature, Chair Faculty Senate Review Committee: ___Curriculum Review ___GAAC ___Core Review ___SADAC		

ADDITIONAL SIGNATURES: (As needed for cross-listing and/or stacking)

	Date	
Signature, Chair, Program/Department of:		

	Date	
Signature, Chair, College/School Curriculum Council for:		

	Date	
Signature, Dean, College/School of:		

ATTACH COMPLETE SYLLABUS (as part of this application). This list is online at:
<http://www.uaf.edu/uafgov/faculty-senate/curriculum/course-degree-procedures-/uaf-syllabus-requirements/>

The Faculty Senate curriculum committees will review the syllabus to ensure that each of the items listed below are included. If items are missing or unclear, the proposed course (or changes to it) may be denied.

SYLLABUS CHECKLIST FOR ALL UAF COURSES

During the first week of class, instructors will distribute a course syllabus. Although modifications may be made throughout the semester, this document will contain the following information (as applicable to the discipline):

1. Course information:

Title, number, credits, prerequisites, location, meeting time
 (make sure that contact hours are in line with credits).

2. Instructor (and if applicable, Teaching Assistant) information:

Name, office location, office hours, telephone, email address.

3. Course readings/materials:

Course textbook title, author, edition/publisher.
 Supplementary readings (indicate whether required or recommended) and
 any supplies required.

4. Course description:

Content of the course and how it fits into the broader curriculum;
 Expected proficiencies required to undertake the course, if applicable.
 Inclusion of catalog description is *strongly* recommended, and
 Description in syllabus must be consistent with catalog course description.

5. Course Goals (general), and (see #6)

6. Student Learning Outcomes (more specific)

7. Instructional methods:

Describe the teaching techniques (eg: lecture, case study, small group discussion, private instruction, studio instruction, values clarification, games, journal writing, use of Blackboard, audio/video conferencing, etc.).

8. Course calendar:

A schedule of class topics and assignments must be included. Be specific so that it is clear that the instructor has thought this through and will not be making it up on the fly (e.g. it is not adequate to say "lab". Instead, give each lab a title that describes its content). You may call the outline Tentative or Work in Progress to allow for modifications during the semester.

9. Course policies:

Specify course rules, including your policies on attendance, tardiness, class participation, make-up exams, and plagiarism/academic integrity.

10. Evaluation:

Specify how students will be evaluated, what factors will be included, their relative value, and how they will be tabulated into grades (on a curve, absolute scores, etc.) Publicize UAF regulations with regard to the grades of "C" and below as applicable to this course. (Not required in the syllabus, but is a convenient way to publicize this.) Link to PDF summary of grading policy for "C":

http://www.uaf.edu/files/uafgov/Info-to-Publicize-C_Grading-Policy-UPDATED-May-2013.pdf

11. Support Services:

Describe the student support services such as tutoring (local and/or regional) appropriate for the course.

12. Disabilities Services: Note that the phone# and location have been **updated**. <http://www.uaf.edu/disability/> The Office of Disability Services implements the Americans with Disabilities Act (ADA), and ensures that UAF students have equal access to the campus and course materials.

State that you will work with the Office of Disabilities Services (208 WHITAKER BLDG, 474-5655) to provide reasonable accommodation to students with disabilities.

5/21/2013

Syllabus**Revised 8/4/2015****MSL 394: Field Techniques in Marine Science**

Class meeting times: Fairbanks 9:00-5:00 + field trip
 Location: TBD

Prerequisites: MSL 212, MSL 213
 3 credits

Instructors:

<p>Dr. Ana Aguilar-Islas School of Fisheries and Ocean Sciences 335A Irving II 474-1524 amaguiarisl@alaska.edu Office Hours: TBD</p>	<p>Dr. Sarah Hardy School of Fisheries and Ocean Sciences 233 Irving II 474-7616 smhardy@alaska.edu Office Hours: TBD</p>
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Course Description: Introduction to principles and application of Marine Science field techniques. The course is a combination of lectures, labs, and a 4-day field trip to the Kasitsna Bay Marine Laboratory. Students work in teams to plan field activities, to collect and process samples, and to interpret the generated data. Final presentations are given in Fairbanks in poster format. Special fees apply.
 Prerequisites: MSL 212 and MSL 213. (10+16+14)

Course Goals: The goal of the course is to provide hands-on introduction to marine field research by taking advantage of the rich and diverse environment of Kachemak Bay, and to raise awareness of the ocean's intrinsic role in the biogeochemical cycling of elements and in the climate system. Additional goals include development of skills necessary in: 1) executing successful field campaigns; 2) critical thinking for data interpretation; and 3) science communication.

Learning Objectives:

1. Become familiar with the physical, geological, chemical, and biological oceanography of the Gulf of Alaska and in particular Kachemak Bay.
2. Become familiar with equipment and instrumentation currently used in ocean sciences for marine sample collection and data acquisition.
3. Become familiar with oceanographic data visualization software and with approaches to data interpretation.
4. Develop an understanding and appreciation for interdisciplinary oceanographic research.

Expected preparation for the course: A background that includes introductory courses in marine science (e.g. MSL 211, 212, and 213) is necessary. Introductory general science courses in physics, chemistry and/or biology are helpful. Other necessary skills include: Competence in working with spread sheets, ability to work productively in a group setting.

Instructional Methods: MSL 394 is a comprehensive MAYmester course in which students have the opportunity to plan and conduct field work. Various instructional methods will be used during the course, including lectures, class discussion, demonstrations, hands-on practice in the lab and in the field, and student presentations. E-mail communication will be used to distribute class information, updates and changes.

Evaluation: Lecture participation	40 pts	10 %	91-100% = A
Lab/Field participation	160 pts	40 %	81-90% = B
Bookkeeping of generated data	100 pts	25 %	71-80% = C
Poster Presentation	80 pts	20 %	61-70% = D
Team Evaluation	20 pts	5 %	< 60% = F

Active participation during lectures, including on-time arrival accounts for 10% of the final grade. Active participation in the organization and execution of laboratory (65 pts) and field (65 pts) activities, including the ability to work well in a team (30 pts) accounts for 40% of the final grade. A well-organized notebook that includes protocols (30 pts), raw data (40 pts) and field location (30 pts) documentation accounts for 25% of the final grade. Poster presentations will be evaluated on visual (40 pts) and oral (40 pts) communication of results for a 20% of the final grade. Team members will have the opportunity to evaluate each other's contributions to the outcome of laboratory and field efforts.

Contribution to organization of lab activities	4pts
Contribution to execution of lab activities	4 pts
Contribution to organization of field activities	4 pts
Contribution to execution of field activities	4 pts
Contribution to data interpretation	4 pts

Readings: Instrument manuals, methods sections of published peer-reviewed research in marine science journals. Assigned readings will be posted in Blackboard

Course Policies: Attendance and active **participation** in activities prior to, during, and after the field trip are required. If you must be absent due to illness, or other important reasons, please notify the instructor in advance to make arrangements. Due to the short duration of the course more than one absence will result in being dropped from the course.

Lack of academic integrity including plagiarism is not acceptable and will result in a failing grade.

Field trip: The field trip will be based at the Kasitsna Bay Laboratory facility. Students will make their own arrangements to get to and from Homer, AK. Transportation between Homer and Kasitsna Bay Lab, lodging, and food during the field trip will be covered by the course fees. Students will live in shared dormitory rooms at the Lab, and prepare meals in a shared kitchen. Students must supply their own personal gear and clothing appropriate for field work in this area. Warm layers, rubber boots, and foul-weather gear are essential, and hip- or chest-waders may be desirable.

A typical field day will include a lecture, work in the field gathering samples and data, and time in the lab processing the samples and the field data. Some instrumentation will be available in the Kasitsna labs for sample analysis, but other instrumentation will be available at the Fairbanks labs, and analysis will take place upon return. The extensive field work during MSL 394 takes advantage of the diverse environment of Kachemak Bay to expose students to marine science. Activities include:

- Measuring beach profiles and distribution of sediment grain sizes
- Sampling physical parameters in the water column using a YSI sonde
- Collecting seawater and measuring the distribution of chemical parameters
- Obtaining phytoplankton levels using chlorophyll fluorescence
- Determining zooplankton abundance and composition from net tows
- Investigating the abundance and community structure of benthic organisms in a variety of settings
- Observing marine bird and mammal populations

Final Presentations. Teams will present their findings in a poster format in the afternoon the last day of the course.

Support and Disability Services: At UAF, the Office of Disability Services (203 WHIT; 474-5655; TTY 474-1827; fydso@uaf.edu) ensures that students with physical or learning disabilities have equal access to the campus and course materials. If you have specialized needs, please contact this office or the instructor to make arrangements.

Date (2017)	Lecture Topic	Lab/Field Activities	Times
Mon 5/8	Introduction and logistics Review of oceanography and its subdisciplines The oceanography of the Gulf of Alaska and Kachemak Bay	Ocean Data View lab	09:00-12:00 lecture 13:00-17:00 lab
Tue 5/9	Sampling methodology: Water samplers, in-situ sensors, remote sensing On-line oceanographic data sources	Sampling instrumentation lab On-line training and permitting lab	09:00-11:00 lecture 11:00-12:00 lab 13:00-17:00 lab
Wed 5/10	Marine organisms of Kachemak Bay Sampling methods in marine biology	Field preparation: Instrument calibration , pack gear and supplies	09:00-12:00 lecture 13:00-17:00 lab
Thurs 5/11	Planning field campaigns: Using marine charts Using tide predictions	Obtain tidal ranges and plan 5/13 and 5/16 activities Develop a station and transect plan for 5/14, 5/15 activities	09:00-11:00 lecture 11:00-12:00 lab 13:00-17:00 lab
Fri 5/12	Travel day	Make own arrangements to Homer (late evening arrival) Orientation and tour of facilities	
Sat 5/13	Beach morphology Sediment Benthic environments: Soft substrate communities	Soft Substrate: Obtain beach profiles, determine sediment, grain size ranges, relate grain size to beach slope Identify and enumerate benthic organisms Obtain water column measurements and samples	07:00-14:00 field 15:00-17:00 lecture 19:00- 20:00 lab
Sun 5/14	The pelagic environment Influence of glaciers on coasts	North Kachemak Bay Transects: Water column observations Bird and marine mammal observations Water processing and analysis Sediment processing Physical data processing	06:30-13:30 field 14:00-16:00 lecture 18:00-20:00 lab
Mon 5/15	Aquaculture	South Kachemak Bay Transects: Water column observations Bird and marine mammal observations Water processing and analysis Sediment processing Physical data processing Aquaculture farm visit Poster outline and layout	06:30-13:30 field 14:00-16:00 lecture 18:00-20:00 lab
Tues 5/16	Benthic environment: Rocky substrate communities	Intertidal environment Obtain beach profiles, determine sediment grain size ranges, relate grain size to beach slope Transect sampling benthic organisms across intertidal zone Pack up gear/ clean dormitory	07:00-14:00 field 15:00-17:00 lecture 19:00- 20:00 lab
Wed 5/17	Travel day	Make own arrangements to Fairbanks (night arrival)	
Thurs 5/18	Data interpretation	Finalize sample analysis Data visualization and discussion	13:00-17:00 lab
Fri 5/19	Student presentations	Finalize poster, present findings	9:00-13:00 lab 14:00-16:00 posters



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School of Fisheries and Ocean Sciences

245 O'Neill Building, University of Alaska Fairbanks, P.O. Box 757220, Fairbanks, Alaska 99775-7220

July 22, 2015

MEMORANDUM

TO: Susan Henrichs,
Provost

THROUGH: Joan Braddock
SFOS Interim Dean

FROM: Ana Aguilar-Islas
SFOS IMS Assistant Professor

SUBJECT: Proposed lab fees for New 300 level MSL Field Course

GPMSL is developing a Maymester field course at the 300 level to enhance the practical education of students in the Marine Sciences Minor. This is a request to charge fees for the trial course "Field Techniques in Marine Science", which will be held at Fairbanks and at the Kasitsna Bay Marine Laboratory.

We request approval to charge \$465 per student for this course. The fees will cover insurance, room and board, transportation by water taxi between Homer and the lab facility, use of Kasitsna Bay boats, truck, and laboratory space, as well as miscellaneous lab materials. Other field courses held at the Kasitsna Bay lab include similar expenses as part of course fees. A charge of \$35 per person per day applies for use of the facilities (dorm, lab, truck, and boat use), fuels costs are charged separately (estimated at \$75 per student). For a 4 day stay the facility fee comes to \$140. The course fees will also cover the round-trip water taxi \$150 charge between Homer and the labs, and \$50 for food (students and instructors cook their own meal in a communal kitchen, but food needs to be provided for the class). The remainder fees (\$50) will be used for insurance as well as lab supplies, such as filters, plastic ware, calibrating solutions, etc.

If additional information is needed, please contact the class instructors Ana Aguilar-Islas (x1524) and Sarah Hardy (x7616)