

Submit original with signatures + 1 copy + electronic copy to UAF Governance.
 See <http://www.uaf.edu/uafgov/faculty/cd> for a complete description of the rules governing curriculum & course changes.

TRIAL COURSE OR NEW COURSE PROPOSAL

SUBMITTED BY:

Department	MSL	College/School	SFOS
Prepared by	Ana M. Aguilar-Islas	Phone	907 474 1524
Email Contact	amaguilarislas@alaska.edu clneumann@alaska.edu	Faculty Contact	Ana M. Aguilar-Islas

1. ACTION DESIRED (CHECK ONE): Trial Course New Course

2. COURSE IDENTIFICATION: Dept Course # No. of Credits

Justify upper/lower division status & number of credits: This laboratory course is the practical portion of the MSL Introduction to Marine Science series (MSL 211-213; paperwork submitted concurrently). This series is intended for students enrolled in the Marine Science minor (paperwork submitted concurrently), or majors/minors in related fields (e.g., fisheries, biology, chemistry, environmental science, natural resource management). There will be one 3hr-long laboratory per week. Pre-lab and post-lab reports will be required.

3. PROPOSED COURSE TITLE:

4. To be CROSS LISTED? YES/NO If yes, Dept: Course #

(Requires approval of both departments and deans involved. Add lines at end of form for such signatures.)

5. To be STACKED? YES/NO If yes, Dept: Course #

6. FREQUENCY OF OFFERING:
 Fall, Spring, Summer (Every, or Even-numbered Years, or Odd-numbered Years) — or As Demand Warrants

7. SEMESTER & YEAR OF FIRST OFFERING (if approved) Per Registrar: .

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) 1 2 3 4 5 6 weeks to full semester

OTHER FORMAT (specify)

Mode of delivery (specify lecture, field trips, labs, etc)

9. CONTACT HOURS PER WEEK: LECTURE hours/weeks LAB hours/week PRACTICUM hours/week

Note: # of credits are based on contact hours. 800 minutes of lecture=1 credit. 2400 minutes of lab in a science course=1 credit. 1600 minutes in non-science lab=1 credit. 2400-4800 minutes of practicum=1 credit. 2400-8000 minutes of internship=1 credit. This must match with the syllabus. See <http://www.uaf.edu/uafgov/faculty/cd/credits.html> for more information on number of credits.

OTHER HOURS (specify type)

10. COMPLETE CATALOG DESCRIPTION including dept., number, title and credits (50 words or less, if possible):

MSL 213L Marine Science Laboratory
1 credits Offered Spring
 Introductory laboratory course designed to accompany MSL 211-212 series. Laboratory activities will provide students with hands-on experience to cement topics covered in lectures (MSL 211-212). Activities include exploration of physical and chemical properties of seawater; geologic and biological classification and introduction to tools for oceanographic data visualization.
 Prerequisite: MSL 212 (or concurrent enrolment). (0 + 3)

to BOR COUNCIL 12/16/10

11. **COURSE CLASSIFICATIONS:** (undergraduate courses only. Use approved criteria found on Page 10 & 17 of the manual. If justification is needed, attach on separate sheet.)

H = Humanities N = Natural Science S = Social Sciences

Will this course be used to fulfill a requirement for the baccalaureate core? YES NO

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

O = Oral Intensive, Format 6 W = Writing Intensive, Format 7 Natural Science, Format 8

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 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.

LETTER: PASS/FAIL:

RESTRICTIONS ON ENROLLMENT (if any)

14. **PREREQUISITES**

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

RECOMMENDED

Classes, etc. that student is strongly encouraged to complete prior to this course.

15. **SPECIAL RESTRICTIONS, CONDITIONS**

16. **PROPOSED COURSE FEES**

Has a memo been submitted through your dean to the Provost & VCAS for fee approval?

17. **PREVIOUS HISTORY**

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

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

18. **ESTIMATED IMPACT**

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

This course will require a teaching assistant, teaching laboratory space, and lab supplies. Currently, the GPMSL has four TAs which are used to support the lab portion of MSL 111. This course has experienced a drop in enrollment the past few years as a result of a distance learning option. One of the TAs from MSL 111 can be allocated to MSL 213 without creating an unreasonable workload for the 3 TAs left to teach the lab component of MSL 111. In addition, sections for MSL 111 lab can be reduced (from 4 to 3) with the additional section time to be used by MSL 213. Space and equipment needs for MSL 213 will be very similar to the needs of the existing MSL 111 lab. We thus anticipate that MSL 213 will be taught in the same space as the MSL 111 lab. Currently the MSL 111 lab is taught in a recently-renovated Fisheries teaching lab in the Arctic Health Research Building. However, the growing enrollment in the Fisheries BA and BA programs has led to increased demand for this space. Thus, SFOS staff and administrators are currently seeking to relocate the MSL 111 lab to a new space, still TBD. Equipment currently used for MSL 111 lab will be relocated to the new space and made available for use by MSL 213. Course fees will be used to provide needed lab supplies.

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

Communication with Anne Christie (Biosciences Library) determined Library collections and services to be suitable for the needs of this course.

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)

The MSL program will be impacted positively by offering a laboratory course as a companion to MSL 211 and 212. Other programs are unlikely to be significantly impacted, other than through the broadening of course offerings made available to undergraduate students.

21. POSITIVE AND NEGATIVE IMPACTS

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

This course will provide students with practical experience, and along with its companion courses, MSL 211 & 212, it should greatly benefit students in the natural or social sciences who are interested in obtaining a minor in marine science or in applying their degrees in a marine-related field (e.g., resource management, fisheries, environmental chemistry, etc.). No negative impacts are expected. The paperwork for the minor in Marine Science is being submitted concurrently

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.

Currently, The Oceans (MSL 111X) is the only introduction to Marine Science course offered to undergraduate students. MSL 111X includes a laboratory, but because the course is part of the core curriculum, the labs are designed for non-science majors. MSL 213L and the other 200-level courses in this series (MSL 211 & 212) are designed for lower-division undergraduate students in the natural and/or social sciences, and are intended as an alternative for students wanting a more rigorous introduction to the field of marine science. Other science disciplines currently offer multiple options for introductory courses to address the needs of both majors and non-majors in the fields (e.g., BIOL 100X or 103X vs. 115/116 series), yet marine science currently has no such alternative to MSL 111X. This new 200-level series is intended to fill that need. This series would also serve as the "core" foundation for the Minor in Marine Science (paperwork submitted concurrently), and as such, would prepare MSL minors for additional 300- and 400-level coursework. While the topics of some labs planned for MSL 213 overlap with MSL 111 lab topics, three additional labs have been created for the new course. Unlike MSL 111 lab students, students in MSL 213 will be required to pass written exams on material covered in labs. In addition, a greater level of sophistication and understanding will be expected from students taking the 200-level series, and should be demonstrated in students' written lab reports.

APPROVALS:

	Date	12/15/10
Signature, Chair, Program/Department of: GPNL		

	Date	12/15/10
Signature, Chair, College/School Curriculum Council for: SFOS		

	Date	12/15/10
Signature, Dean, College/School of: SFOS		

	Date	
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Signature of Provost (if applicable)

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

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

	Date	
Signature, Chair, UAF Faculty Senate Curriculum Review Committee		

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).

Note: The guidelines are online: <http://www.uaf.edu/uafgov/faculty/cd/syllabus.html>

The department and campus wide 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 change will 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.)

11. Support Services:

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

12. Disabilities Services:

The Office of Disability Services implements the Americans with Disabilities Act (ADA), and insures that UAF students have equal access to the campus and course materials.

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

MSL 213L: Marine Science Laboratory

Instructor: Sarah Hardy/Ana Aguilar-Islas
IRVII 233/35A
907-474-7616 /907-474-1524
smhardy@alaska.edu/amaguilarislas@alaska.edu

Class meeting times: TBA
Location: TBA
Office Hours: After lab (1 hour)
or by appointment

Course Description

Introductory laboratory course designed to accompany MSL 211-212 series. Laboratory activities will provide students with hands-on experience to cement topics covered in lectures (MSL 211-212). Activities include exploration of physical and chemical properties of seawater; geologic and biological classification and introduction to tools for oceanographic data visualization.

Prerequisite: MSL 212 (or concurrent enrolment). (0 + 3). 1 credit

Course Goals

Provide practical experience in oceanography techniques that include physical, geological, chemical, and biological sub-disciplines.

Learning Outcomes

1. Identify the effect of oceanographic processes on physical, geological, chemical, and biological variables.
2. Identify selected rocks and marine organisms
3. Acquire skills in computer techniques commonly used to visualize oceanographic data.
4. Solidify concepts learned in MSL 211 and 212 through hands-on experiments.

Course Policies and Requirements

Email communication will be used to distribute updates and/or changes to syllabus and class logistics.

Attendance and active **participation** in labs is expected from all students. Advance arrangements should be made with the TA to make up a lab. Make-up labs can only take place the same week as the scheduled lab.

Lab Reports. Collaboration among students is encouraged. You will be working in the lab with partners, but students are expected to submit their own work. Lab reports will not be accepted after the due date, unless arrangements have been made in advance with the TA. A 1-page pre-lab write-up should be completed before the beginning of the lab period and given to the TA to sign acknowledging receipt. For any given lab the pre-lab write-up will include a brief description of the subject matter of the lab, the materials and procedures that will be used, identification of possible safety concerns, and a hypothesis of expected results. Written record of laboratory work is to be kept during the laboratory exercises. After the completion of the lab, a report must be written as follows:

- 1) **Headings:** Date, lab number and title, your name, your lab partners' names
- 2) Signed pre-lab

- 3) **Introduction:** Describe the background for the experimental procedure used. Explain the oceanographic, scientific or mathematical principle demonstrated by the lab by answering questions such as: Why is this subject important? What is the relevance of the experiment to real-world phenomena? How do oceanographers study this topic? Some of this information will come from the brief lecture given by the TA at the beginning of the lab. Any outside information should be cited appropriately (http://www.chicagomanualofstyle.org/tools_citationguide.html T and R bullet points).
 - 4) **Materials and Methods:** Include a list of all materials used during the lab, and a brief method statement. This statement could simply be a single sentence such as: "The procedure described in the MSL213 lab manual was followed exactly"
 - 5) **Results:** Include all necessary tables and drawings (with titles and captions) of the data obtained during the lab exercise. Organize these numerically.
 - 6) **Discussion and Conclusion:** Include the hypothesis you had postulated in the pre-lab and discuss it. Provide evidence in support of your prediction. Discuss how your experimental technique resulted in the data. Document and explain any errors or factors that might have impacted the results. Relate your results to the principles that were the focus of the lab exercise. Include relevant graphs generated with the obtained data. Include a summary statement
 - 7) **Calculations Appendix:** Show a copy of any mathematical formulae used during the lab, including definition of the variables, units and values for all constants. Include a copy of the unit balance shown during the lab. Provide all calculations made during the lab including mean, standard deviation, and confidence interval calculations
- Keep all labs in a binder, and bring the binder to all labs as reference.

Exams. There will be one midterm and one final which are to be completed during the regular lab period. The exams will be closed-book, and will require calculations, short-essay and diagramed answers. The final exam will be comprehensive with an emphasis on material covered after the midterm.

Background Readings. There is no required textbook. A lab manual will be provided

Lack of **academic integrity** including plagiarism is not acceptable and will not be tolerated.

Points and grading scale

	Possible points	% of Total
Attendance and active lab participation	60	10
Lab Reports (12 assignments)	240	40
Midterm	150	25
Final	150	25
Total	600	100

A+ 98-100%	A 93-97%	A- 90-92%
B+ 87-89%	B 83-86%	B- 80-82%
C+ 77-79%	C 73-76%	C- 70-72%
D+ 67-69%	D 63-66%	D- 60-62%
	F < 60%	

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.

Lecture Schedule (Subject to change)

Week	Laboratory Topic	Assignment
1	Introductions, overview, logistics, safety issues	
2	Lab 1. Computer Techniques: Microsoft Excel for Science	
3	Lab 2: Geological Oceanography: Stratigraphy, sedimentation and entrainment rates	Lab 1 Report due
4	Lab 3: Physical Oceanography: Density and thermohaline circulation	Lab 2 Report due Lab 1 returned
5	Lab 4: Physical Oceanography: Waves and Tides	Lab 3 Report due Lab 2 returned
6	Lab 5: Chemical Oceanography: Total Alkalinity	Lab 4 Report due Lab 3 returned
7	Lab 6: Chemical Oceanography: Nutrient abundance	Lab 5 Report due Lab 4 returned
8	Midterm	Lab 6 Report due Lab 5 returned
9	Lab 7: Biological Oceanography: Chlorophyll concentrations in algae	Lab 6 returned
10	Lab 8: Biological Oceanography: Zooplankton identification	Lab 7 Report due Midterm returned
11	Lab 9: Marine Biology: The benthos	Lab 8 Report due Lab 7 returned
12	Lab 10. Geological Oceanography: Marine sediments and plate tectonics	Lab 9 Report due Lab 8 returned
13	Lab 11. Computer Techniques: Ocean Data View	Lab 10 Report due Lab 9 returned
14	Lab 12: Remote Sensing: Global oceanographic climatology	Lab 11 Report due Lab 10 returned
15	Review	Lab 12 Report due Lab 11 returned
16	Final Exam	Lab 12 returned prior to exam



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School of Fisheries and Ocean Sciences

335A Irving II Building, University of Alaska Fairbanks, P.O. Box 757220, Fairbanks, Alaska 99775-7220

MEMORANDUM

TO: Dr. Susan Hendrichs, Provost
University of Alaska Fairbanks

FROM: Ana Aguilar-Islas, Assistant Professor
School of Fisheries and Ocean Sciences

THROUGH: Dr. Michael Castellini, Interim Dean
School of Fisheries and Ocean Sciences

Dr. Katrin Iken, Program Head
School of Fisheries and Ocean Sciences

SUBJECT: Laboratory fees for new course (Marine Science Laboratory, MSL 213)

DATE: November 24, 2010

I request approval of a lab fee for the new course "Marine Science Laboratory" (MSL 213)

This introductory laboratory course (1 credit) will be a semester long, and will meet three hours per week. The course will be taught in Fairbanks as the practical portion of the "Introduction to Marine Science" series (MSL 211-213), which are intended as requirement for a minor in Marine Science now in the planning stages.

The proposed \$50.00 fee will cover miscellaneous lab supplies (disposable pipettes, disposable gloves, filters, glass slides, chemicals, standards, paper towels, detergent, etc), and purchase of specimens (rocks, plankton).

Please contact me with any questions regarding this request.

Curriculum Committee SFOS

Members: Trent Sutton (Chair)
Katrin Iken
Jeremy Mathis
Andre Lopez

08 December 2010

New Course

Course Number: MSL 213L

Course Title: Marine Science Laboratory

Instructor: Not clear

First Time of Offering: Yes

General Recommendations:

On the last page of the course proposal form is a checklist of components to be included in the syllabus. Be sure to go through this checklist to make sure all components are addressed. Failure to do so could result in the delay of getting this course proposal through the UAF Curriculum Review Committee. Also, this course needs an instructor of record. In the syllabus, listing TBA as the instructor will result in the rejection of the course. Committee member Iken recommended that Sarah Hardy be the instructor of record for this course.

Faculty Senate Form:

Clarify and Address the following:

- For course identification section, need to state that the proposed Marine Science minor has been submitted concurrently.
- Not clear how often this course will be offered each year. The committee cannot imagine a need for the course more than once per year and recommends offering it just during the spring semester.
- The catalog description (section 10) must appear as it will in the actual catalog; you must include the prerequisites and course format (e.g., 0+3); you only had the title, credits, and course description. Your course description must match the syllabus. In its current form, the course description text is not very descriptive.
- Not a natural science course so do not check that box.
- Estimated impact. A teaching assistant must be allocated for the class which is a significant impact. Also, what teaching lab space is available for this course?
- Section 21. Need to state that the paperwork for the minor has been submitted concurrently.

Syllabus:

- Need an instructor of record
- Office hours have to be provided and posted, cannot be just by appointment.

- The course description on the syllabus must match the course description on the form (UAF requirement).
- Not clear how the course links to MSL 211 and 212.
- For the lab report section on introduction (page 1 of syllabus), several grammatical errors that need to be cleaned up. Same section, page 2, discussion and conclusion. It says discuss your hypothesis, but must develop a hypothesis first, so the statement should reflect that. For the next sentence, cannot prove a hypothesis, but you can provide evidence to support a hypothesis.
- There was a question on whether the labs were the same as in MSL 111. Is this the case or are they different?



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