FORMAT 1

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	**Fisheries Division**	**College/School**	**SFOS**
Prepared by	**Franz Mueter**	**Phone**	**907-796-5448**
Email Contact	**fmueter@alaska.edu** **clneumann@alaska.edu**	**Faculty Contact**	**Franz Mueter**

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

2. COURSE IDENTIFICATION: Dept **FISH** Course # **494** No. of Credits **3**

Justify upper/lower division status & number of credits: **This course will provide fisheries students interested in marine fisheries issues with a solid understanding of oceanography and requires an understanding of physical, geological, chemical, and biological principles. The course will consist of a total of 3 hours of lectures per week for a total of at least 2400 min.**

3. PROPOSED COURSE TITLE: **Oceanography for Fisheries**

4. To be CROSS LISTED? *YES/NO* **Yes** If yes, Dept: **MSL** Course # **494**

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

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

6. FREQUENCY OF OFFERING: **Spring 2014, then alternating falls, beginning fall 2016**

Fall, Spring, Summer (Every, or Even-numbered Years, or Odd-numbered Years) — or As Demand Warrants

7. SEMESTER & YEAR OF FIRST OFFERING (if approved) **Spring 2014**

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*	**X** *6 weeks to full semester*
OTHER FORMAT (specify)											
Mode of delivery (specify lecture, field trips, labs, etc)	**Lectures, online quizzes, in-class exercises (spreadsheet)**										

9. CONTACT HOURS PER WEEK: **3** 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):

FISH 494 / MSL 494: Oceanography for Fisheries (3 credits)
Students examine how understanding the oceanographic processes that determine the distribution, recruitment, and abundance of marine vertebrates and invertebrates from global to local scales and from evolutionary time scales to daily scales supports the sustainable management of marine fisheries resources. Prerequisites: CHEM 105, PHYS 103, FISH 288, STAT 200 or permission of instructor. Recommended: FISH 425. (3+0)

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 [ ] S = Social Sciences [ ]

Will this course be used to fulfill a requirement for the baccalaureate core? **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 [ ] Natural Science, Format 8 [ ]

12. *COURSE REPEATABILITY:*

Is this course repeatable for credit? **YES** [ ] **NO** [X]

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: [X] **PASS/FAIL:** [ ]

RESTRICTIONS ON ENROLLMENT (if any)

14. *PREREQUISITES* **CHEM 105, PHYS 103, FISH 288, STAT 200 or permission of instructor**

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* **None**

16. *PROPOSED COURSE FEES* **$ 0**

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

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*

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

This course will be offered to other SFOS sites in Alaska and will require video conferencing equipment. The instructor is tenure-track faculty with the Fisheries Division and will teach this course as part of his workload requirements at UAF.

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 [X]

E-mailed library collections (Karen Jensen) on September 17, 2013. No anticipated effects on library/media collections, equipment, and services. As per Karen Jensen, all recommended readings will be available for spring 2014. Several references available in hard copy form in Fairbanks only, relevant sections will be copied and scanned for use in Juneau.

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 course will have largely positive impacts on the Fisheries Division and on GPMSL.
I contacted Brenda Norcross (in person and by e-mail on 7/26/2010), who teaches a graduate level course in Fisheries Oceanography, to ensure that there is no excessive overlap with her graduate-level course. The outline for this class has been modified to reduce overlap and Fisheries Oceanography relies much more on primary literature. I previously contacted Katrin Iken, former academic head of GPMSL (E-mail of 7/26/2010), and she commented that the course would have "positive impacts for GPMSL students and for the minor in Marine Science". The current academic head, Brenda Konar, agreed that the course would be a useful addition,

especially for the minor. The course will increase the limited number of courses currently available to undergraduate students in Juneau.

21. POSITIVE AND NEGATIVE IMPACTS

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

Anticipated positive impacts on Fisheries and on the quality of research by Fisheries students:

The course will help undergraduate and graduate students in fisheries who are interested in or working on marine fisheries issues to understand the oceanographic basis for the patterns of variability and to assess the range of natural variability in exploited fish populations. Such an understanding is important for researchers and managers as management agencies increasingly adopt an ecosystem-based approach to fisheries management. Some basic understanding of oceanography is essential for anyone working on marine fisheries issues and this course will provide students a foundation that they can build on in other courses such as "Marine Ecosystems" (FISH 652), "Structure and Dynamics of Alaskan Marine Ecosystems" (MSL 693), "Management of Renewable Resources" (FISH 640), and "Fisheries Oceanography" (MSL 640). Through its focus on applied fisheries issues, the course is also relevant to current SELMR and MESAS students.

Anticipated negative impacts

No negative impacts on other courses, programs, departments are anticipated although there are some obvious overlaps with the graduate level course in Fisheries Oceanography (MSL 640).

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.

This course is aimed at both undergraduate and graduate students in Fisheries to fill a need that is not currently met by existing courses. Many of our fisheries students, particularly in Juneau, work on marine fisheries issues but have either no previous background or a minimal background in oceanography (MSL 111). There is currently no comparable course that addresses the fundamental importance of oceanographic processes to fish populations and fisheries. Many of our students get employment in fisheries research or management agencies that place increasing emphasis on ecosystem-based approaches to management and would greatly benefit from a better understanding of the geological, physical, chemical, and biological processes that have structured marine ecosystems and their fish populations over millennia and continue to influence the productivity of marine fisheries resources today.

While some of the material in this course is covered in greater detail in an existing graduate level course in 'Fisheries Oceanography', this does not meet the need of undergraduate students in fisheries and is not accessible to many of our graduate students that have not had any prior exposure to oceanography. Moreover, the emphasis of this course differs from Fisheries Oceanography in its focus on the relevance of all oceanographic disciplines in addressing contemporary problems in fisheries.

APPROVALS:

	Date	9/23/13	
Signature, Chair, Program/Department of:	Fisheries Division		
	Date	9/23/13	
Signature, Chair, College/School Curriculum Council for:	SFOS		
	Date	9/26/2013	
Signature, Dean, College/School of:	SFOS		
	Date		
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."

FISH 440: Oceanography for Fisheries

Course syllabus

1. Course information:

Title: Oceanography for Fisheries
Number: Fisheries (FISH) 440; Marine Science and Limnology (MSL) 440
Credits: 3
Prerequisites: CHEM 105, PHYS 103, FISH 288, STAT 200 or permission of instructor.
Location: Juneau, TBD; Fairbanks; TBD; other locations by demand
Meeting times: Lectures: twice weekly for 1.5 hours each (TBD)

2. Instructor:

Franz Mueter, office: 315 Lena Point; Office Hours: TBD or by appointment,
Phones: Office: 796-5448; email: fmueter@alaska.edu

3. Course readings:

There will not be a required textbook, but the course will draw on a variety of available literature including "Dynamics of marine ecosystems: biological-physical interactions in the oceans" by K.H. Mann & J.R.N. Lazier (available electronically through UAF library), "Patterns in the Ocean" by A. Bakun, "How the Ocean works" by M. Denny, and several Open University texts ("The Ocean Basins: Their Structure and Evolution" and "Ocean Circulation"). Other web-based materials and articles from the primary literature will be provided for required reading and a reference list will be provided for each topic. Students will have to select a case study from the literature for a term paper and presentation.

4. Course description:

This course will help students understand how oceanographic processes influence the distribution, recruitment, and abundance of marine vertebrate and invertebrate species from local to global spatial scales and from daily to evolutionary time scales. Geological, physical, chemical, and biological oceanographic processes are examined from a functional perspective to appreciate how they have shaped and continue to shape marine ecosystems. We will explore how fish and shellfish populations have adapted to key oceanographic features and how they respond to oceanographic variability. Students will examine how a better understanding of these adaptations and responses contributes to the sustainable management of marine fisheries resources.

5. Course goals:

- To develop an appreciation for the effects of oceanographic processes on the abundance, distribution, and productivity of marine fish and shellfish populations.
- To develop critical thinking and synthesis skills about the relevance of oceanographic processes in the context of fisheries research and management.
- To develop professional-level written and oral communication skills as marine scientists working on applied fisheries issues.

6. Student learning outcomes

- Familiarity with and understanding of key oceanographic processes affecting fish and shellfish populations and communities.
- Ability to recognize potential links between variability in fish populations and underlying oceanographic processes.
- Familiarity with field and analytical methods that are used by researchers studying such links.
- Ability to compute and appropriately apply commonly used oceanographic quantities.
- Understanding of how oceanography can contribute to the management of fisheries and familiarity with relevant case studies.

7. Instructional methods:

Most of the class will follow a lecture format with periodic group discussions pertaining to reading assignments. Short spreadsheet exercises will be used to illustrate basic oceanographic principles, analytical techniques, and computations of oceanographic quantities. Blackboard is used for class organization, reading assignments, and source of supplemental reading. Class materials (PowerPoint slides, videos, spreadsheets for calculations) will be made available through Blackboard prior to each class.

8. Course calendar:

Tentative topics (one week or two periods each), see detailed calendar below:

1. The geological history of the oceans and the evolutionary history of fishes
    a. Plate tectonics and species diversity across ocean basins
    b. Earth's magnetic field and homing of fishes: Salmon, sea turtles, elasmobranchs
    c. Sea mounts & coral reefs
2. Marine provinces and biogeography of the oceans
    a. Ocean bathymetry and major habitats
    b. Large Marine Ecosystems: Definition and classification, productivity, and fisheries catches
    c. Latitudinal clines in fishes
3. Seawater properties and the vertical structure of the ocean: Life in a 2-layered ocean
    a. Primary productivity in the ocean: the role of stratification and mixing
    b. Primary productivity and fisheries production
    c. Adaptations: the vertical distribution and migration of fishes
4. The pelagic environment
    a. Characteristics and challenges of the deep sea
    b. Pelagic food webs and adaptations of fishes to life in the pelagic
    c. The role of deep sea fishes, myctophids, squid, and salmon in pelagic ecosystems
    d. Assessment, fisheries, and management of pelagic fishes in international waters
5. The benthic environment
    a. Benthic food webs and adaptations of fishes to life on the sea floor

b. The role of gadids, crustaceans, and flatfishes in marine ecosystems
c. Assessment, fisheries, and management of demersal fishes on continental shelves

[Mid-term exam]

6. Large-scale circulation of the oceans 1: the large ocean gyres
    a. Physical basis: Coriolis and wind stress
    b. Adaptations: Eels, salmon, and tuna
7. Large-scale circulation of the oceans 2: Boundary currents & upwelling
    a. Boundary currents: Physical basis, adaptations, and case studies
    b. Upwelling systems: Ekman transport, dynamics of small pelagics
8. Turbulence, eddies, and rings
    a. Turbulence in the ocean and adaptations of fishes
    b. Mesoscale eddies, ocean productivity, and implications for fish
9. Fronts
    a. Convergence and divergence
    b. Shelf break fronts, tidal fronts
    c. Adaptations and responses of fishes to frontal structures
10. Tides and tidal currents
    a. The origin and nature of tides and tidal currents
    b. Adaptations: tides and larval transport, feeding, spawning activity
11. Climate, fish, and fisheries
12. Student presentations: selected case studies

Calendar (dates TBD)

Session	***Topic***	***Reading***	***Assignments***
1	Course Introduction	Syllabus & outline	
2	1. Geology & evolutionary history of fish	The Ocean Basins: Ch 2	
3	Case study: homing	Lohmann et al (2008)	
4	2. Marine provinces / biogeography	Helfman et al (2009) Ch 16 Briggs & Bowen (2012)	
5	Discussion: Large Marine Ecosystems, fish, and fisheries	www.lme.noaa.gov www.seaaroundus.org	Quizz 1
6	3. Two-layered ocean	Denny (2008) - Ch 5	
7	case study: vertical migration - larval cod	Hurst et al. (2009)	Quizz 2
8	4. Pelagic environment	Kaiser et al (2011) Ch. 6	
9	Case study: Deep-sea fish	Haedrich (1996)	
10	5. Benthic environment	Kaiser et al (2011) Ch. 7	
11	Discussion: habitat issues & MPAs	Caddy (2008)	Quizz 3
12	6. Large ocean gyres Case study: Salmon & eels	Mann & Lazier (2006) Ch 8 Myers et al (2007)	
13	Case studies: whiting, herring, tuna	Hátún et al (2009)	

14	case studies: whiting, herring, tuna		
15	**Mid-term Exam**		Mid-term
16	7. Boundary currents & upwelling case study: California Current	Bakun (1996) Ch 5; Mann & Lazier Ch 5.3.3, 5.5	
17	case study: sardine	Cury et al (2000)	Quizz 4
18	8. Turbulence, eddies, and rings	"Ocean Circulation" Ch 3.5	
19	case study: pollock in Shelikof Strait	Kendall et al. (1996)	
20	9. Fronts	Mann & Lazier (2006) Ch 6	
21	Case study: Bering Sea shelf fronts	TBD	Quizz 5
22	10. Tides and tidal currents Case study: tidal stream transport	Mann & Lazier (2006) Ch 7 Nichol et al (2009)	
23	Case study:	Skov et al (2005)	
24	11. Climate, fish, and fisheries	Lehodey et al (2006)	
25	Case study: Bering Sea, walleye pollock	Mueter & Litzow (2008)	Quizz 6
26	12. Student presentations		
27	Student presentations (con't)		
28	**Final Exam**		Final

References:

Bakun, A. 1996. Patterns in the Ocean: Ocean Processes and Marine Population Dynamics, California Sea Grant College System, University of California, La Jolla, CA in cooperation with Centro de Investigaciones Biologicas del Noroeste, La Paz, BCS Mexico.

Briggs, J. C., and Bowen, B. W. 2012. A realignment of marine biogeographic provinces with particular reference to fish distributions. Journal of Biogeography, 39: 12-30.

Caddy, J. F. 2008. The importance of "cover" in the life histories of demersal and benthic marine resources: a neglected issue in fisheries assessment and management. Bulletin of Marine Science, 83: 7–52.

Cury, P., Bakun, A., Crawford, R. J. M., Jarre, A., Quiñones, R. A., Shannon, L. J., and Verheye, H. M. 2000. Small pelagics in upwelling systems: patterns of interaction and structural changes in ''wasp-waist'' ecosystems. Ices Journal of Marine Science, 57: 603-618.

Denny, M. 2008. How the ocean works: An introduction to oceanography, Princeton University Press, Princeton and Oxford.

Haedrich, R. L. 1996. Deep-water fishes: evolution and adaptation in the earth's largest living spaces. Journal of Fish Biology, 49: 40-53.

Hátún, H., Payne, M. R., Beaugrand, G., Reid, P. C., Sandø, A. B., Drange, H., Hansen, B., et al. 2009. Large bio-geographical shifts in the north-eastern Atlantic Ocean: From the subpolar gyre, via plankton, to blue whiting and pilot whales. Progress In Oceanography, 80: 149-162.

Helfman, G., Collette, B. B., Facey, D. E., and Bowen, B. W. 2009. The Diversity of Fishes: Biology, Evolution, and Ecology.

Hurst, T. P., Cooper, D. W., Scheingross, J. S., Seale, E. M., Laurel, B. J., and Spencer, M. L. 2009. Effects of ontogeny, temperature, and light on vertical movements of larval Pacific cod (*Gadus macrocephalus*). Fisheries Oceanography, 18: 301-311.

Kaiser, M. J., Attrill, M. J., Jennings, S., Thomas, D. N., Barnes, D. K. A., Brierley, A. S., Hiddink, J. G., et al. 2011. Marine Ecology: Processes, Systems, and Impacts, Oxford University Press.

Kendall, A. W. J., Schumacher, J. D., and Kim, S. 1996. Walleye pollock recruitment in Shelikof Strait. Fisheries Oceanography, 5: 4-18.

Lehodey, P., Alheit, J., Barange, M., Baumgartner, T., Beaugrand, G., Drinkwater, K., Fromentin, J. M., et al. 2006. Climate variability, fish, and fisheries. Journal of Climate, 19: 5009-5030.

Lohmann, K. J., Putman, N. F., and Lohmann, C. M. 2008. Geomagnetic imprinting: A unifying hypothesis of long-distance natal homing in salmon and sea turtles. Proc Natl Acad Sci U S A, 105: 19096-19101.

Mann, K. H., and Lazier, J. R. N. 2006. Dynamics of Marine Ecosystems: Biological - Physical Interactions in the Oceans, Blackwell Scientific Publications.

Mueter, F. J., and Litzow, M. A. 2008. Sea ice retreat alters the biogeography of the Bering Sea continental shelf. Ecological Applications, 18: 309-320.

Myers, K. W., Klovach, N. V., Gritsenko, O. F., Urawa, S., and Royer, T. C. 2007. Stock-Specific Distributions of Asian and North American Salmon in the Open Ocean, Interannual Changes, and Oceanographic Conditions. North Pacific Anadromous Fish Commission Bulletin, 4: 159-177.

Nichol, D. G., and Somerton, D. A. 2009. Evidence of the selection of tidal streams by northern rock sole (Lepidopsetta polyxystra) for transport in the eastern Bering Sea. Fishery Bulletin, 107: 221-234.

Skov, M. W., Hartnoll, R. G., Ruwa, R. K., Shunula, J. P., Vannini, M., and Cannicci, S. 2005. Marching to a different drummer: Crabs synchronize reproduction to a 14-month lunar-tidal cycle. Ecology, 86: 1164-1171.

9. Course policies:

a. Class participation is encouraged and will be part of your grade. You are encouraged to ask questions and comment as you feel appropriate in class. You will be expected to engage during in-class discussions and make a short presentation during the semester.
b. Tardiness and unexcused absences will affect your grade for participation.
c. I will try to schedule exams to avoid conflicts. However, there are some unavoidable circumstances that may take precedence (such as field work or attendance at a scientific conference). If you inform me in a timely manner, I will arrange for makeup exams.
d. I expect high ethical standards and cheating, plagiarism, or other forms of academic dishonesty are unacceptable. Please adhere to the UAF Student Code of Conduct, see p. 83, 2008-2009 UAF Catalog Violations of the UAF Student Code of Conduct will result in an immediate "F". Additionally, violations of the Code of Conduct may result in disciplinary action initiated by UAF. If you use information from books, the scientific literature, the internet (including images), etc., they need to be properly cited!

Please also consult the Student Code of Conduct in the UAF Catalog: (http://www.uaf.edu/catalog/current/academics/regs3.html).

10. Evaluation

Final grades will be based on online quizzes, a mid-term exam, a term paper, a presentation in class, and class participation. Online quizzes will be worth 20 points each and consist of multiple choice, single-word answers, simple calculations, and brief essays. The mid-term will be an in-class exam with a similar structure covering topics 1-6 in the outline. Each student will select a case study from the literature covering the effect of oceanographic variability on one or more life history stages of a commercial fish species and how these effects impact management. Students will prepare a 10 min presentation (total: 15 points) describing the oceanographic mechanism, relevant life history characteristics, the biological response, and the management response. Presentations will be judged on overall structure (3 pts), scientific content (6 pts), quality of visuals (3 pts), and clarity (3 pts). In addition, students will prepare a final term paper (total: 20 points) in the form of a review paper that expands on the oral presentation and will be judged on overall structure (3 pts), clarity (3 pts) and content, including a brief description of the life history of the selected species (3 pts), the oceanographic mechanism affecting the species (3 pts), the response of the species to oceanographic variability (4 pts), the relevance to stock assessment and/or management (4 pts). Class participation will be based on contributions to class discussions of case study throughout the semester (frequency and quality). Grades will be assigned based on the following percentages.

Item	Date	Percent of Grade
1. Online quizzes (6)	Throughout semester	30
2. Mid-term exam	Mid-term	20

3. Student presentations	Last week of classes	15
4. Final (term paper)	Due on the last day of classes	20
5. Class participation	Throughout semester	15
TOTAL		100

Letter grades will be assigned based on the total number of points obtained as follows:

Percent	Grade
90 - 100 %	A (≤92.5: A-, ≥ 97: A+)
80 – 89.5 %	B (≤ 82.5: B-, ≥ 87: B+)
70 – 79.5 %	C (≤ 72.5: C-, ≥ 77: C+)
60 – 69.5 %	D (≤ 62.5: D-, ≥ 67: D+)
< 60 %	F

11. Support Services

Please see instructor if you have any special needs. Additional help, non-subject oriented, can be obtained through the SFOS Academic Coordinator's office:

Christina Neumann, Academic Program Manager
Phone: 907- 474-5840
email: clneumann@alaska.edu

12. Disabilities Services

The instructor will work with the Office of Disabilities Services (907-474-5655, TTY: 907-474-1827, uaf-disabilityservices@alaska.edu) to provide reasonable accommodation to students with disabilities to ensure equal access to campus and to course materials in accordance with UAF policy and the ADA.

Curriculum Committee SFOS

Members: Trent Sutton (Chair)
Ana Aguilar-Islas
Brenda Konar
Andres Lopez

21 August 2013

New/Trial Course
Course Number: FISH/MSL 440 and 494
Course Title: Oceanography for Fisheries
Instructor: Mueter
First Time of Offering: Yes

General Recommendations:

The comments below apply to both the FISH/MSL 494 Trial Course and FISH/MSL 440 New Course packets since they are essentially the same forms and syllabi.

Faculty Senate Form:

Clarify and Address the following:

- For Frequency of Offering and Semester/Year of First Offering, please resolve the discrepancy. Or, are you going to offer it the first time in Spring 2014 and then offer in the fall in the future? The Committee recommends offering it on a consistent basis (e.g., Even Falls, Odd Springs) and not to list as demand warrants (the University is going away from using that terminology because it is not clear what triggers demand).
- For the complete course description, the Committee recommends replacing graduate standing with "permission of instructor" (revise this as well for Section 14. Prerequisites). Also, given the problems in the past with prerequisites and this course, will the listed courses satisfy the concerns raised previously by the UAF Curriculum Review Committee?
- Since three years have elapsed since the Library was contacted and there were discussions with Brenda Norcross and Katrin Iken, the Committee recommends that you recontact the Library to make sure that the collections required are still available (the Library recently cut a number of periodical subscriptions). Also, please recontact Brenda Norcross to make sure that this course still does not overlap with her Fisheries Oceanography course and contact Brenda Konar since she is the new GPMSL Program Head. Also, for Impacts, the MSL Minor currently exists so please remove "future".

Syllabus:

- The prerequisites on the syllabus do not match the course description on the form. Please replace graduate standing with "permission of instructor" and remove the

two recommended courses (MSL 111, FISH 425); the university no longer wants recommended courses to be listed.

- The course description needs to be the same as the one on the course form.
- The course calendar was very vague. Please add dates for when the listed topics will be covered as well as the associated readings, assignments due dates, etc.
- The Committee felt that the course policies were rather harsh for a 400-level course (e.g., mandatory attendance).
- For course evaluation, a more in-depth description of the evaluation components is required (e.g., the term paper and its components, how participation points will be assigned, etc.).

FROM: Franz Mueter

TO: SFOS Curriculum Committee

DATE: 20 September 2013

Re: New/Trial Course
Course Number: FISH/MSL 440 and 494
Course Title: Oceanography for Fisheries

Response to SFOS Curriculum Committee Review

Committee comments are in italics, my responses follow:

1. Frequency of Offering

> *"For Frequency of Offering and Semester/Year of First Offering, please resolve the discrepancy. Or, are you going to offer it the first time in Spring 2014 and then offer in the fall in the future? The Committee recommends offering it on a consistent basis (e.g., Even Falls, Odd Springs) and not to list as demand warrants (the University is going away from using that terminology because it is not clear what triggers demand)"*

I am proposing to teach the course in spring 2014 and then every other fall semester, beginning Fall 2016. I am applying for a sabbatical in 2014/15, hence the first offering this coming spring; I am switching to fall after that because the committee originally requested to move the course to the fall because at least at that time there was an imbalance! I changed the frequency in the form to "Spring 2014, then alternating falls, beginning fall 2016". I deleted "as demand warrants".

2. Prerequisites

> *"For the complete course description, the Committee recommends replacing graduate standing with "permission of instructor" (revise this as well for Section 14. Prerequisites). Also, given the problems in the past with prerequisites and this course, will the listed courses satisfy the concerns raised previously by the UAF Curriculum Review Committee?"*

I replaced "graduate standing" with "permission of instructor" in the course descriptions, under 'Prerequisites' and in the syllabus. I addressed the concerns of the UAF Curriculum Review Committee by adding several pre-requisites (FISH 288, STAT 200). These requirements are more stringent than for some of the graduate level oceanography courses (e.g. Biological Oceanography). I did not add any oceanography courses as requirement because many/most of the fisheries students have no background in oceanography - a gap this course is intended to fill.

3. Contacts

"Since three years have elapsed since the Library was contacted and there were discussions with Brenda Norcross and Katrin Iken, the Committee recommends that you recontact the Library to make sure that the collections required are still available (the Library recently cut a number of periodical subscriptions). Also, please recontact Brenda Norcross to make sure that this course still does not overlap with her Fisheries Oceanography course and contact Brenda Konar since she is the new GPMSL Program Head. Also, for Impacts, the MSL Minor currently exists so please remove "future"."

I have not been able to contact Brenda Norcross, but the proposed course content has not changed much since her earlier review a few years ago. If anything, I have tried to reduce overlap by focusing on physical, chemical, and geological processes that are often not covered in a fisheries oceanography course. I did contact Gordon Kruse who teaches two marine science courses in Juneau that have potential overlap but he indicated that "... I think that this course fits a useful niche in our undergraduate program. There are bits of overlap scattered throughout your class schedule with MSL 652 Marine Ecosystems and some of the 2-credit special ecosystem topics that I teach. However, the total amount of overlap is relatively small and I don't see any particular concern in that regard." I also contacted Brenda Konar who thought that "...this class sounds like a great addition to our program, especially for our minor. We do need to make sure that there is no too much overlap with existing classes.". Finally, I contacted Karen Jensen at the library and worked out an approach to make reading material available electronically (e-books), by putting books on reserve for Fairbanks students, and copying relevant sections for Juneau students (while not violating any copyright laws).

Syllabus:

1. Pre-requisites and course description

The prerequisites on the syllabus do not match the course description on the form. Please replace graduate standing with "permission of instructor" and remove the two recommended courses (MSL 111, FISH 425); the university no longer wants recommended courses to be listed.

The course description needs to be the same as the one on the course form.

The pre-requisites and course descriptions are now consistent between the course form and syllabus. No 'recommended' courses are listed.

2. Course calendar

The course calendar was very vague. Please add dates for when the listed topics will be covered as well as the associated readings, assignments due dates, etc.

I added a separate course calendar in addition to the rather detailed list of topics for each week. I tried combining both in a single table but it was too cumbersome and difficult to read. Rather than shortening the detailed descriptions, I left them in place and added the separate calendar with a brief heading for each topic. I will add dates once the spring calendar is finalized.

3. Policies

"The Committee felt that the course policies were rather harsh for a 400-level course (e.g., mandatory attendance)"

I moderated the policies with respect to absences and tardiness (I was previously asked to make them more specific, so I tried to strike a balance).

4. Evaluation

For course evaluation, a more in-depth description of the evaluation components is required (e.g., the term paper and its components, how participation points will be assigned, etc.).

I added a paragraph to explain how the different components will be graded to the syllabus.