

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	College/School	SFOS
Prepared by	Andrés López	Phone	474-7828
Email Contact	jalopez2@alaska.edu , clneumann@alaska.edu	Faculty Contact	Andrés López

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: Course builds on concepts from introductory biology. BIOL F116X is a pre-requisite. Credits are from 3 hours of lecture and 3 hours of lab per week.

3. PROPOSED COURSE TITLE: Biology of Fishes

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 (Every year)

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

7. SEMESTER & YEAR OF FIRST OFFERING (if approved) Fall 2011

RECEIVED
SEP 27 2010

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) Lecture, lab and term project

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):

FISH F301 Biology of Fishes
4 Credits Offered Spring
 A broad overview of the biological diversity of fishes presented from the comparative and organismal perspectives. The course examines the relationship between physical and biological properties of aquatic environments and the anatomy, physiology, behavior and geographical distribution of living fish lineages. Topics include fish evolution, biogeography, classification, gross and fine anatomy, sensory biology, and form-function relationships. Topics are presented to highlight essential concepts generally relevant in biology. *Prerequisites: BIOL F116X or equivalent; Junior or Senior standing. Recommended: BIOL F317.* Cross-listed with BIOL F301.

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

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).

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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**

BIOL F116X; Junior or Senior standing.

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

RECOMMENDED

BIOL F317.

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

15. **SPECIAL RESTRICTIONS, CONDITIONS**

None

16. **PROPOSED COURSE FEES**

\$50

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

Memo enclosed

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.:

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18. **ESTIMATED IMPACT**

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

Minimal impact. Course will replace FISH F427, which will be taught as demand warrants with redesigned content. The new course will have the same impact on resources that FISH F427 currently has.

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

Library resource requirements for this course are equivalent to those needed for FISH F427, a course that has been offered regularly and that the library has served adequately.

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 Fisheries, Biology and Wildlife programs will benefit by increased course offerings for their upper level undergraduate students. Ichthyology (FISH F427) will be offered less frequently. This will not have an impact for undergraduate programs as the course content of the proposed new course will replace that currently available to undergraduates in FISH F427. Ichthyology (or an equivalent) is a pre-requisite for the M.S. program in Fisheries. Currently, students accepted into the program that do not meet the pre-requisite are able to use FISH F427 to satisfy that deficiency. In the future, students in this situation will be able to do the same by taking the proposed new course (F301). However, this means that the credits they earn with this pre-requisite course will not contribute to their graduate program credit requirements.

21. POSITIVE AND NEGATIVE IMPACTS

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

Positive: This new course offering will provide undergraduates in fisheries, biology and wildlife an early introduction to all the major aspects of the biology of the most species-rich group of vertebrates. It adds a course offering at the 300-level, which currently seems underrepresented among biology and fisheries course listings. In addition, this new offering will allow the redesign of the 400-level Ichthyology (FISH F427) course to cover more advanced/specialized topics and be offered as a stacked course for graduate credit.

Negative: Ichthyology (FISH F427) will only be taught as demands warrants (vs. every year). Fisheries graduate students that do not satisfy the ichthyology pre-requisite will have to include Biology of Fishes in their study plan (which does not earn credit toward their graduate degree) or perform independent study to meet the pre-requisite to the satisfaction of their supervisory committee.

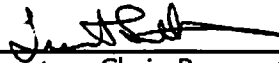
JUSTIFICATION FOR ACTION REQUESTED

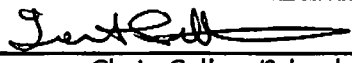
The purpose of the department and campus-wide curriculum committees is to scrutinize course change and new course applications to make sure that the quality of UAF education is not lowered as a result of the proposed change. Please address this in your response. This section needs to be self-explanatory. Use as much space as needed to fully justify the proposed course.


The standards of quality of UAF education will be maintained in the content and assessment of the proposed new course. The course will increase the options for undergraduate students that are pursuing or considering careers in science. The subject area is expected to have broad appeal and value for UAF undergraduate students.

This new course and a redesigned FISH F427 will increase the breadth and depth of training in fish, evolutionary and organismal biology available at UAF. The revised FISH F427 will be aimed at seniors and graduate students that are interested in advanced topics in fish evolution.

APPROVALS:

 Date 08/31/10
Signature, Chair, Program/Department of: Fisheries Division



 Date 08/31/10
Signature, Chair, College/School Curriculum Council for: SFOS

 Date 9/1/10
Signature, Dean, College/School of: STAS

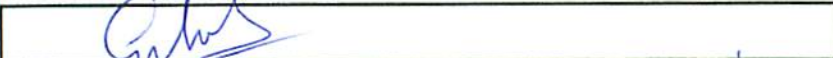
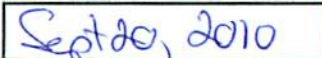
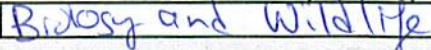
Signature of Provost (if applicable) Date


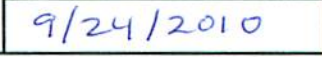

Offerings above the level of approved programs must be approved in advance by the Provost.

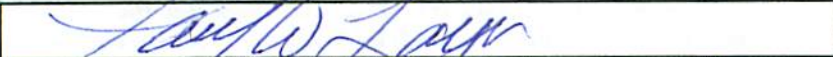
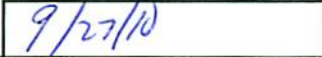

ALL SIGNATURES MUST BE OBTAINED PRIOR TO SUBMISSION TO THE GOVERNANCE OFFICE

 Date 
Signature, Chair, UAF Faculty Senate Curriculum Review Committee

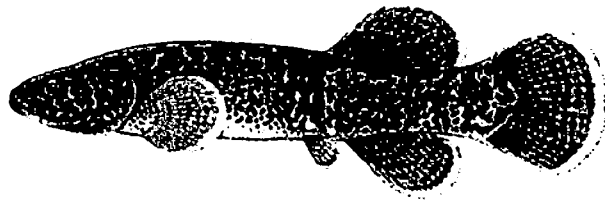
ADDITIONAL SIGNATURES: (As needed for cross-listing and/or stacking)

 Date 
Signature, Chair, Program/Department of:  *Biology and Wildlife*

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

 Date 
Signature, Dean, College/School of:  *CNSM*

Biology of Fishes
FISH/BIOL F301



Course information:

Credits: 4 (3 lecture +1 lab)

Pre-requisites: BIOL 116X; Junior or Senior standing.

Recommended: BIOL 317.

Instructor:

Andrés López

Office: 207A O'Neill Building / 44 Museum of the North

Office hours: TBA

Phone: 474-7828

E-mail: jalopez2@alaska.edu

Teaching Assistant:

TBA

Lecture:

Room: TBA

Time: TBA

Required Textbook:

Gene Helfman , Bruce B. Collette , Douglas E. Facey and Brian W. Bowen (2009). **The Diversity of Fishes: Biology, Evolution, and Ecology** (2nd edition). Wiley-Blackwell, 736 p.

Recommended books:

Peter Moyle and Joseph Cech Jr. (2004). **Fishes: An introduction to ichthyology**. 5th ed. (a helpful reference but there will be no assigned reading from this book).

Laboratory:

Room: TBA

Time: TBA

Supplies: Dissection kit (scalpel, forceps, probes, scissors)

Recommended Text:

Cailliet, G., Love, M., and Ebeling, A. 1986. **Fishes: A field and laboratory manual on their structure, identification and natural history**. Waveland Press, Inc.

Course description and goals:

This course consists of a broad overview of the biological diversity of fishes presented from the comparative and organismal perspectives. The course examines the relationship between physico-chemical properties of aquatic environments and the anatomy, physiology, behavior and geographical distribution of living fish lineages. Topics include fish evolution, biogeography, classification, gross and fine anatomy, sensory biology, and form-function relationships. Topics are presented to highlight essential concepts generally relevant in biology.

In lecture sessions, we will study classification, major living groups, morphology, behavior and physiology of fishes. The required reading for each lecture session is indicated on the schedule. It is important that the assigned chapters are read before the corresponding lecture period. Lab sessions provide “hands-on,” practical knowledge related to the material presented in lectures. The teaching assistant leads and supervises the lab sessions. Lecture and lab content are complementary and reinforce key concepts in the study of biology.

Satisfactory performance in the introductory biology series (BIOL F115X and BIOL F116X) and Junior or Senior standing are required. Working knowledge of vertebrate anatomy (BIOL F317) is helpful but not required.

Learning outcomes:

1. Be able to infer and explain how diverse aquatic environments shape all aspects of the biology of the fish species that inhabit them.
2. Know the concepts underlying modern biological classification and its application to living fish groups.
3. Have a general understanding of fish diversity, its classification and distribution across the landscape at local, regional and global scales.

Instructional methods:

Lectures, in-class discussions and lab activities.

Grading:**Lecture: (70% of course grade)**

Class participation:	10%
Term project:	10%
Midterm I:	15%
Midterm II:	15%
Final:	20%

Laboratory: (30% of course grade)

Exercises:	10%
Practical I:	10%
Practical II:	10%

Your course grade will be determined using the following scale with plus/minus (+/-) grades:

A+:	97.5 – 100%
A:	92.5 - 97.4%
A-:	90 - 92.4%
B+:	87.5 - 89.9%
B:	82.5 –87.4%
B-:	80 – 82.4%
C+:	77.5 - 79.9%
C:	72.5 – 77.4%
C-:	70 – 72.4%
D:	60–69.9%
F:	<60%

Class participation:

Class participation contributes a significant component (10%) of your course grade. This is the only component that you are able to continuously improve until the end of the semester. Asking and answering questions during class sessions and during class project presentations are the basis of the participation grade. You will have opportunities to answer and ask questions on reading assignments during all lecture sessions. Your participation grade depends on taking advantage of these opportunities.

Class project:

Student will select a well-defined topic in fish biology in consultation with the instructor. To complete the class project assignment, students will research current state of knowledge on the topic selected and produce the following deliverables: 1) A one paragraph general description of the topic and related issues of particular interest (include citations for four articles on the topic); 2) An outline of the final project report that lists project components and 10 citations that will provide information for those components; and 3) A final written project report (min. 5 pages of text, excluding references– 1.5 line spacing, 1 inch margins, 12 point Times font; and a 5 minute oral presentation. The class project will be evaluated based on the clarity and effectiveness of presentation (4 points); and the quality, clarity and organization of written report (6 points).

Course policies:

Attendance is critical to your success in this course. If you are not able to attend either lecture or lab, please talk to me BEFORE your planned absence. Frequent unexcused absences will result in a lower course grade.

All assignments are due at the beginning of the indicated class period. Ten percent of the total exercise point value will be deducted for each day late (including weekends) and missed exams will be assigned a zero score. If you cannot take an exam, turn in an assignment, or attend a class discussion period for a legitimate reason, it is your responsibility to contact me prior to the date in question to avoid a point penalty. With the

exception of emergencies, exam make-up or late assignment requests will only be honored if a legitimate reason is provided to me in writing at least one week prior to that date.

Please familiarize yourself with the UAF Student Code of Conduct: (<http://www.uaf.edu/catalog/current/academics/regs3.html>). The following are guidelines regarding academic integrity in FISH/BIOL 301:

1. Students will not collaborate on any quizzes, in-class exams, or take-home exams that contribute to their grade in a course, unless the course instructor grants permission. Only those materials permitted by the instructor may be used to assist in quizzes and examinations.
2. Students will not represent the work of others as their own. A student will attribute the source of information not original with himself or herself (direct quotes or paraphrases) in compositions, theses, and other reports.
3. No work submitted for one course may be submitted for credit in another course without the explicit approval of both instructors.

Any violations will result in automatic failure of the course.

Disability Services:

During the whole course the instructor and the laboratory teaching assistant will work with the Office of Disability Services to provide reasonable accommodations to students with disabilities. For questions or concerns, please contact the instructor or the UAF Office of Disability Services (www.uaf.edu/disability/index.html; 907-474-5655).

Lecture Schedule:

Class session	Date	Day	Lecture Topic(s)	Chapter(s)
1			Course overview / Syllabus review	
			Ecology: Fish, environment, energy	25
2			Road map: fish origins & major fish lineages	11
3			Gross fish anatomy	3, 4
4			Skin, scales, etc	3
5			Getting around in the water	8
6			Feeding anatomy & physiology	8
7			Circulation	5
8			Water, ions and gas regulation	7
9			Nervous system	7
			Exam I	
10			Senses: Vision	6
11			Senses: Hearing, mechanoreception	6
12			Senses: Chemoreception, electroreception	6
			Spring Break	
13			Senses: Electricity & dissolved chemicals	6
14			Behavior: Movement, foraging	19, 20
15			Behavior & Life history	9, 23
16			Behavior: Reproduction	21
17			Fishes & genomes: Evolutionary genetics	17
			Exam II	
19			Evolution and systematics	2
20			Biogeography	16
21			Jawless & cartilaginous vertebrates	12
22			Early rising bony fish lineages	13
23			Tropical freshwater fishes	14
24			Early rising euteleostean lineages I	14
25			Early rising euteleostean lineages II	15
26			The perch radiation	15
27			Conservation and management	26
			Term project presentations	
			Final exam	

Lab Schedule:

Lab session	Week	Date	Topic(s)
1	1		Tour of the research fish collection and lab introduction
2	2		External anatomy (diversity) & Fish fam.
3	3		Morphometrics and meristics
4	4		Dichotomous keys
5	5		Study fish families
6	6		Fish identification I
	7		Spring Break
7	8		Internal anatomy I
8	9		Lab Practical I
9	10		Internal anatomy II
10	11		Fish identification II
11	12		Systematics – building classifications
12	13		Study fish families
13	14		Adaptations
14	15		Lab Practical II

Curriculum Committee SFOS

Members: Trent Sutton (Chair)
Katrin Iken
Jeremy Mathis

20 August 2010

New Course

Course Number: FISH 301

Course Title: Biology of Fishes

Instructor: Andres Lopez

First Time of Offering: Yes

General Recommendations:

None

Faculty Senate Form:

Clarify and Address the following:

- Please add Christina Neumann's email address (cneumann@alaska.edu) to the email contact line in addition to your email address.
 - **DONE**
- The committee recommends that the course be offered during the fall semester for two reasons. First, there is an imbalance in course offerings, with significantly more courses offered during spring than in fall. As a consequence, there is a deficiency in lecture-room availability. Second, since Ichthyology will still be offered (albeit less frequently), offering Biology of Fishes during fall (Ichthyology is a spring course) will prevent lab conflicts.
 - **Agreed. Changed the form to reflect this.**
- Should FISH 101 and/or FISH 288 be listed as prerequisites?
 - **No, only basic biology is necessary.**
- Section 15, state "None" for special restrictions.
 - **DONE**
- Section 16, will need to charge lab fees. All lab-based courses need to charge lab fees to offset costs. This will also require writing a memo that must be approved by the Fisheries Division Program Head, SFOS Dean, and UAF Provost.
 - **Added fee (\$50) and enclose the memo requesting fee approval**
- For impacts (section 20), this course essentially replaces Ichthyology for undergraduates. Less frequent offering of Ichthyology will have an impact on other programs, so must discuss that here.
 - **Added explanation of expected impact of this change**

Syllabus:

- Looks great, no suggestions.



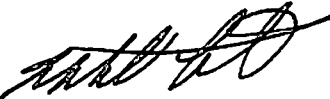
School of Fisheries and Ocean Sciences


245 O'Neill, University of Alaska Fairbanks, P.O. Box 757920, Fairbanks, Alaska 99775-7220
(907) 474-7824, FAX (907) 474-7204, www.sfos.uaf.edu

MEMORANDUM

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

FROM: Andres Lopez, Assistant Professor (474-7828, jalopez2@alaska.edu)
School of Fisheries and Ocean Science

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

Dr. Trent Sutton, Program Head 
School of Fisheries and Ocean Sciences

SUBJECT: Lab fees for new course (Biology of Fishes, FISH F301)

DATE: August 27, 2010

I request approval of a lab fee for the new course (Biology of Fishes, FISH F301).

Biology of Fishes will be a semester long (4 credit course) taught in Fairbanks and Juneau. The course includes a 3-hour per week lab section that requires the purchase of consumable samples and supplies. The proposed fee is:

\$50 lab fee. This fee will cover purchase of prepared specimens for dissection and of miscellaneous lab supplies (including dissecting trays, tools, paper towels, disposable latex gloves).

Please contact me with any questions regarding this request.