

**FORMAT 2**

Submit originals (including syllabus) and one copy and electronic copy to the **Faculty Senate Office**  
 See <http://www.uaf.edu/uafgov/faculty-senate/curriculum/course-degree-procedures/> for a complete description of the rules governing curriculum & course changes.

**CHANGE COURSE (MAJOR) and DROP COURSE PROPOSAL**

*Attach a syllabus, except if dropping a course.*

<b>SUBMITTED BY:</b>					
Department	Biology and Wildlife	College/ School	CNSM		
Prepared by	Jay Jones	Phone	x7972		
Email Contact	Jay.Jones@alaska.edu	Faculty Contact	Jay Jones		
<b>1. COURSE IDENTIFICATION: As the course now exists.</b>					
Dept	<b>BIOL</b>	Course #	<b>473W</b>	No. of Credits	<b>4</b>
<b>COURSE TITLE</b>			Limnology		
<b>2. ACTION DESIRED: Changes to be made to the existing course.</b>					
<b>CHANGE COURSE</b>					<b>X</b>
<b>DROP COURSE</b>					
<b>NUMBER</b>					
<b>TITLE</b>					
<b>DESCRIPTION</b>					<b>X</b>
<b>PREREQUISITES</b>					
<b>FREQUENCY OF OFFERING</b>					
<b>CREDITS (including credit distribution)</b>					<b>X</b>
<b>COURSE CLASSIFICATION</b>					
<b>CROSS LISTED</b>					
<i>Dept. (Requires approval of both departments and deans involved. Add lines at end of form for such signatures.)</i>					
<b>STACKED (400/600) Include syllabi.</b>					
<b>Dept. and Course #</b>					<b>RECEIVED</b>
<b>OTHER (please specify)</b>					<b>SEP 20 2012</b>
					<b>Dean's Office</b>
College of Natural Science & Mathematics					

**3. COURSE FORMAT**  
 NOTE: Course hours may not be compressed into fewer than three days per credit. Any course compressed into fewer than six weeks may be approved by the college or school's curriculum council and the appropriate Faculty Senate curriculum committee. Furthermore, any core course compressed to less than six weeks must be approved by the core review committee.

Leah Berman  
9/21/12 TJP

Governance  
10/3/12 TJP

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

**4. 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 <input checked="" type="checkbox"/> NO <input type="checkbox"/>
IF YES, check which core requirements it could be used to fulfill:		
O = Oral Intensive, Format 6 also submitted	W = Writing Intensive, Format 7 submitted	<input checked="" type="checkbox"/> Natural Science, Format 8 submitted

**5. 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		

**6. CURRENT CATALOG DESCRIPTION AS IT APPEARS IN THE CATALOG: including dept., number, title and credits**

<b>BIOL F473 W</b>	<b>Limnology</b>
<b>4 Credits</b>	Offered Fall
The ecology of inland waters emphasizing lakes and rivers. Lecture provides graphically oriented view of concepts. Workshops provide roleplaying exercises for integrating social, economic and ecological aspects of managing freshwater systems. Laboratory involves team-based original research from proposal to manuscript. Special fees apply. <b>Prerequisites:</b> <b>BIOL F115X; BIOL F116X; BIOL F271; CHEM F105X; CHEM F106X; ENGL F111X; ENGL F211X or F213X or permission of instructor.</b> (2+3+2)	

**7. COMPLETE CATALOG DESCRIPTION AS IT WILL APPEAR WITH THESE CHANGES:**  
(Underline new wording ~~strike-through old wording~~ and use complete catalog format including dept., number, title, credits and cross-listed and stacked.) PLEASE SUBMIT

**NEW COURSE SYLLABUS. For stacked courses the syllabus must clearly indicate differences in required work and evaluation for students at different levels.**

**BIOL F473 W**                      **Limnology**  
**3 Credits**                              Offered Fall  
 The ecology of inland waters emphasizing lakes and rivers. Lecture provides graphically oriented view of concepts. Workshops provide role playing exercises for integrating social, economic and ecological aspects of managing freshwater systems. Laboratory involves team-based original research from proposal to manuscript. This course satisfies capstone project degree requirements in the Biological Sciences. Special fees apply. **Prerequisites: BIOL F115X; BIOL F116X; BIOL F271; CHEM F105X; CHEM F106X; ENGL F111X; ENGL F211X or F213X or permission of instructor.** (2+3+2 2+3)

**8. IS THIS COURSE CURRENTLY CROSS-LISTED?**

YES/NO	X	If Yes, DEPT	NUMBER
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(Requires written notification of each department and dean involved. Attach a copy of written notification.)

**9. GRADING SYSTEM: Specify only one**

LETTER:	X	PASS/FAIL:
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**10. ESTIMATED IMPACT**

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

No anticipated impact to budget, facilities, or faculty workload.

**11. 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	X	Yes	Changes will not impact course use of library resources.
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**12. 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)

Limnology is one of several options that fulfill a requirement for the Fisheries B.S. Trent Sutton has been notified of the change.

**13. POSITIVE AND NEGATIVE IMPACTS**

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

The only substantive change to the course will be to require students to complete a mentored project within the course, and we anticipate only positive educational impacts to Fisheries students.

**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. If you ask for a change in # of credits, explain why; are you increasing the amount of material covered in the class? If you drop a prerequisite, is it because the material is


covered elsewhere? If course is changing to stacked (400/600), explain higher level of effort and performance required on part of students earning graduate credit. Use as much space as needed to fully justify the proposed change and explain what has been done to ensure that the quality of the course is not compromised as a result.


The addition of a capstone project to Limnology is part of a larger set of revision to the Biological Sciences B.A. and B.S. curricula. Both degrees will now require students to complete a capstone project before graduation. BIOL 473W will become one of several courses that satisfy the capstone requirement. The capstone project that must be chosen and completed by the student and presented in written form.

The current credit distribution of 2+3+2 (lecture+laboratory+workshop) is a legacy of the previous instructor. I propose to make two changes to the credit distribution. First, I propose to remove credit for workshops; this deletion of workshop hours reflects how I have taught the course over the past ten years. Second, I propose to change the number of credits for lecture from 3 to 2. This change in lecture hours fits with a change in course focus with greater emphasis on the laboratory section and the capstone experience, will reduce the overall number of credits and make the class more attractive as an elective course to students, and will bring the credit distribution in-line with other ecology courses in the Department of Biology and Wildlife (e.g., Ecosystems of Alaska, BIOL 467; Population Ecology, BIOL 471; Community Ecology, BIOL 472W). Moreover, I feel that the number of lecture hours can be reduced without impacting my ability to cover the key aspects of Limnology.

**APPROVALS: (Additional signature blocks may be added as necessary.)**

	Date	9/19, 2012
Signature, Chair, Program/Department of: <i>Biology and Wildlife</i>		

	Date	9/26/2012
Signature, Chair, College/School Curriculum Council for: <i>CNSM</i>		

	Date	10/1/12
Signature, Dean, College/School of: <i>CNSM</i>		

	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:		

**BIOL 473W**

**Limnology**

**Fall 2013**

**3 CREDITS (2 lecture credits + 1 laboratory credit)**

**PREREQUISITES:** BIOL 115, 116, 271; CHEM 105, 106; ENGL 111; ENGL 211 or 213

**LOCATION:** Lecture, IRVI 208 (MW, 9:15 – 10:15)  
Lab, IRVI 207 (R, 2:00 – 5:00)

**INSTRUCTOR:**

Dr. Jay Jones Arctic Health Research Building, room 154  
474-7972  
Jay.Jones@alaska.edu

Office hours: MW, 10:30 – 12:00  
And by appointment

**TEACHING ASSISTANT:**

**TEXT:** Limnology, by J. Kalff (2002) (required)

**COURSE DESCRIPTION:** The ecology of inland waters emphasizing lakes and rivers. Lecture provides graphically oriented view of concepts. Laboratory involves team-based original research from proposal to manuscript. This course satisfies capstone project degree requirements in the Biological Sciences

**COURSE GOALS AND LEARNING OUTCOMES:** Students who successfully complete BIOL 473 will be able to describe the major physical, chemical and biological features of lakes and related inland aquatic environments. Students will be familiar with principal techniques of limnological analysis. Students through the capstone experience will be able to successfully conduct research, data analysis, and produce a final report of the findings. The most successful students will be conversant in the major contemporary issues concerning lake ecology and will be able to access literature appropriate for completing their knowledge of subjects of particular interest to them.

**INSTRUCTIONAL METHODS:** Lectures will consist of a mixture of approaches including traditional lectures supplemented with graphs to illustrate concepts, discussions, and readings of papers from the primary literature. Laboratories are focused on conducting structured research projects that include both field and lab based data collection and observations, and that lead to the production of write-ups that are structured as scientific papers.

I strive to promote critical thinking and to teach students to teach themselves. Towards this goal I place a premium on students being engaged in the learning process and

active participants. I try to provide the basic principles and then work with students to develop the skills to integrate the concepts into a holistic understanding of Limnology.

**COURSE GRADING:** Grades in the course will be determined as follows:

Lecture Exams <sup>1</sup> (3 exams)	<u>Points</u>
10 October	100
7 November	100
14 December	100
Laboratory Reports (4)	
50 points each x 4 reports	200
Capstone Project	<u>200</u>
Total =	700

<sup>1</sup> Exams will tend to have short answer, problem solving, and essay-type questions rather than multiple-choice, fill-in-the-blank type questions.

Final grades will be determined from the percent of possible points earned with cutoffs of:

<u>Grade</u>	<u>% of Total Points</u>
A+	97-100
A	90-96
A-	88-89
B+	86-87
B	80-85
B-	78-79
C+	76-77
C	70-75
C-	68-69
D+	66-67
D	60-65
D-	58-59
F	0-57

**COURSE POLICIES:** If you have a conflict with an exam date, or you are ill on the day of an exam, you must inform the professor (Jones) BEFORE the exam. If you miss an exam without prior permission from the instructor, you will receive a zero. Late assignments will not be accepted without prior approval from the instructors. If you cannot attend class the day an assignment is due, you must arrange to turn in the assignment prior to its due date. Scores on late assignments will be penalized 10% per day. Attendance is not required in lecture but highly recommended. Notes from missed lectures will not be available from the instructor. Attendance is required for laboratory meetings.

**ACADEMIC DISHONESTY:** Examples of academic dishonesty include, but are not limited to, cheating on exams or assignments, helping others to cheat on exams or assignments, and plagiarizing (using someone else's ideas, words or graphics without giving them credit). Please read the UAF Honor Code in the UAF catalog. If you are caught cheating you will receive an F for the course and the case will be presented to the University Disciplinary and Honor Code Committee.

**LEARNING DISABILITIES:** If you have a learning disability of any kind, please inform the instructor in the first 2 weeks of class so I can accommodate your needs. Please do not wait until after an exam to make me aware of the issue. If you have not already done so, you should contact UAF's Center for Health and Counseling (474-7043).



<u>Week of</u>	<u>Topic</u>	<u>Chapters</u>
9 September	Introduction to Limnology Properties of water	1, 2, 3, 4
16 September	Global hydrology Lake basin origins and morphology Water residence time and nutrient loading	5, 6, 7, 9
23 September	Light, energy and lake hydrology	10
30 September	Light, energy and lake hydrology Introduction to aquatic chemistry	11, 12, 13
7 October	Dissolved oxygen CO <sub>2</sub> and pH	15, 14
14 October	<b>Exam I (Monday)</b> Nutrient cycling – Nitrogen	16
21 October	Nutrient cycling – Nitrogen Redox chemistry	16, 18
28 October	Nutrient cycling – phosphorus Nutrient cycling – other elements	17, 19, 20
4 November	Phytoplankton Bacteria	21, 22
11 November	<b>Exam II (Monday)</b> Zooplankton	23
18 November	Zoobenthos Macrophytes	24, 25
25 November	Stream Ecology	8
2 December	Stream Ecology Acidification	8, 27
9 December	Reservoirs	29

Final: Wednesday, 18 December 2011, 8 – 10 a.m.

<u>Week</u>	<u>Topic</u>
12 September	<b>Field</b> – Pelagic and littoral zones community sampling
19 September	Lab – Zooplankton and benthos invertebrate identification <ul style="list-style-type: none"> <li>• Capstone project discussion</li> </ul>
26 September	Student-Instructor meetings - Capstone project planning ( <i>Capstone project research question, project goals, and methods due</i> )
3 October	<b>Field</b> – Capstone project planning ( <i>Lab Report #1 – Lake community structure due</i> )
10 October	Lab – Capstone project lab analyses
17 October	Lab - Capstone project lab and data analyses ( <i>Capstone project raw data due</i> )
24 October	Lab - Capstone project lab and data analyses ( <i>Capstone project data results due</i> )
31 October	Lab – Lake stratification models ( <i>Capstone project draft #1 due</i> )
7 November	Lab – Lake stratification models data analysis ( <i>Student-Instructor meeting to discuss Capstone Projects</i> )
14 November	<b>Field</b> – Lake metabolism and zooplankton (sampling) ( <i>Lab Report #2 - Lake model experiment due</i> )
21 November	Lab – Whole lake metabolism data analysis
28 November	Thanksgiving – No class ( <i>Lab Report #3 – Whole lake metabolism due</i> )
5 December	Lab – Controls of primary production experiment – Initial set-up
12 December	Lab – Controls of primary production experiment continued ( <i>Lab Report #4 – Lake algal biomass and primary production due 12/16</i> )

## List of Lab Reports:

1. Lake invertebrate community structure
2. Physical structure of lakes (lake model experiment)
3. Algal biomass and primary production
4. Whole lake metabolism