

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

TRIAL COURSE OR NEW COURSE PROPOSAL

SUBMITTED BY:

Department	Environmental Studies	College/School	CRCO
Prepared by	Tara Borland	Phone	907-842-5109
Email Contact	taborland@alaska.edu	Faculty Contact	Dr. Todd Radenbaugh

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:

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 additional required signatures.)

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

Stacked course applications are reviewed by the (Undergraduate) Curricular Review Committee and by the Graduate Academic and Advising Committee. Creating two different syllabi—undergraduate and graduate versions—will help emphasize the different qualities of what are supposed to be two different courses. The committees will determine: 1) whether the two versions are sufficiently different (i.e. is there undergraduate and graduate level content being offered); 2) are undergraduates being overtaxed?; 3) are graduate students being undertaxed? In this context, the committees are looking out for the interests of the students taking the course. Typically, if either committee has qualms, they both do. More info online – see URL at top of this page.

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

7. SEMESTER & YEAR OF FIRST OFFERING (AY2013-14 if approved by 3/1/2013; otherwise AY2014-15)

8. COURSE FORMAT:

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

COURSE FORMAT: (check all that apply)	<input checked="" type="checkbox"/> 1	<input checked="" type="checkbox"/> 2	<input checked="" type="checkbox"/> 3	<input checked="" type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6 weeks to full semester
OTHER FORMAT (specify)						
Mode of delivery (specify lecture, field trips, labs, etc)	<input type="text" value="This course will use a combination of lecture, laboratory and field experiences."/>					

9. CONTACT HOURS PER WEEK:

13. 5	LECTURE hours/weeks	3	LAB hours /week		PRACTICUM hours /week
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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-senate/curriculum/course-degree-procedures-/guidelines-for-computing/> for more information on number of credits.

OTHER HOURS (specify type)

To accommodate as many students and community needs as possible this course can be offered as an intensive over a period of 3 days or throughout the entire semester.

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

Example of a **complete** description:

FISH F487 W, O Fisheries Management

3 Credits Offered Spring

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

ENVI F111 Introduction to Water Quality II: Monitoring and Assessment

1 credit Offered as demand warrants

Course builds upon methods learned in ENVI 110 with emphasis placed upon data quality objectives, electronic storage of data, and information analysis and reporting. Methods and equipment used for surface water monitoring will be introduced. Students start the process of developing an EPA approved Quality Assurance Project Plan (QAPP) for surface water quality monitoring. *Prerequisites: ENVI 110 Letter graded (1+0).*

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

H = Humanities		S = Social Sciences	
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Will this course be used to fulfill a requirement for the baccalaureate core? If YES, attach form.

YES:		NO:	X
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IF YES, check which core requirements it could be used to fulfill:

O = Oral Intensive, Format 6		W = Writing Intensive, Format 7		Natural Science, ("X" for Core) Format 8	
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11.A Is course content related to northern, arctic or circumpolar studies? If yes, a "snowflake" symbol will be added in the printed Catalog, and flagged in Banner.

YES		NO	X
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12. COURSE REPEATABILITY:

Is this course repeatable for credit?

YES		NO	X
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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?

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

	CREDITS
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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
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13. **GRADING SYSTEM:** Specify only one. Note: Later changing the grading system for a course constitutes a Major Course Change.

LETTER: PASS/FAIL:

RESTRICTIONS ON ENROLLMENT (if any)

14. **PREREQUISITES**

ENVI 110 or consent of instructor

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

15. **SPECIAL RESTRICTIONS, CONDITIONS**

none

16. **PROPOSED COURSE FEES**

none

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

17. **PREVIOUS HISTORY**

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

Yes

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

The course was piloted as ENVI 193 in May 2013 and 2014 --
taught by Dan Bogan

18. **ESTIMATED IMPACT**

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

Minimal impact on budget, facilities, and classroom space. Classes will be taught by UAA ANHP Faculty, Daniel Bogan or approved adjunct instructors. The course may be offered through UAF CRCD campuses. Water quality sampling equipment will be provided by UAF but participants are encouraged to bring the equipment that they need to be certified on.

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

no additional library resources needed for this 100 level 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)

This course is supported by Kevin Illingworth, the coordinator of the UAF Tribal Management Program as it will have a positive impact for students enrolled in the Tribal Management Program. Their Natural Resources Management program has been left without any environmental courses due to limited resources. Tribal Management students will benefit from the availability of such courses, boosting the Environmental Studies program student numbers.

21. POSITIVE AND NEGATIVE IMPACTS

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

The Directors of the Northwest Campus, Bristol Bay Campus and the Kuskokwim Campus have indicated that this course will have a positive influence on their respective rural communities by allowing increased educational opportunities in water quality testing and management, especially for rural tribes applying for funding from the EPA Indian General Assistance Program. Bob Metcalf, Director of the Northwest Campus believes that this course will improve education at UAF by creating an opportunity for students to receive training for positions that are crucial for their communities' health and safety.

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 UAF CRCD Surface Water Quality OE is offered in partnership with UAA, EPA Indian General Assistance Program (IGAP), Alaska Department of Environmental Conservation as well as several watershed councils, native associations and other local, regional entities.

This course is part of a proposed Surface Water Quality Monitoring Occupational Endorsement (OE) offered through UAF CRCD. This OE is designed to provide an entry level education that promotes workforce development in rural regions. Graduates will receive the training necessary to become a rural water quality technician. Previously these positions have often been filled by consultants or under-trained individuals. All municipalities and villages in AK are now required to show 'competency' when collecting and reporting local water quality data to state and federal officials such as the EPA or DEC. The EPA Region 10 has stated that this OE does prove 'competency.' Regulating organizations such as the DEC and EPA are very interested in the creation of a standardized training program for rural water quality technicians. Key personnel from EPA Region 10 who attended the Alaska Forum on the Environment in February 2015, voiced support for the Surface Water Quality OE and classes as they promote the proper collection and management of defensible data. Further, the OE will allow community members to take courses that help them gain a job locally.

Surface water quality monitoring is done across Alaska so that communities can develop a water quality database to serve as a baseline that may measure future changes. By developing a program that puts in place a standardized training regime for rural water quality technicians, this helps to ensure that the tests will be done so they are accurate and defensible. The Yukon River Inter-Tribal Watershed Council, Southwest Alaska Municipal Conference, and Bristol Bay Native Association all endorse this course and the surface water quality OE as they believe it will help communities gain defensible water quality testing and reporting programs. Further each of these partners are required to employ environmental program staff with the proper water quality sampling and collection training. Upon completion of the surface water quality OE students will have a solid foundation of skills applicable to other technical positions available in the community or tribe.

APPROVALS: Add additional signature lines as needed.

	Date	4-7-15
Signature, Chair, Program/Department of:		

	Date	9 Apr 2015
Signature, Chair, College/School Curriculum Council for: CRCD		

	Date	4/13/15
Signature, Dean, College/School of:		

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

<input type="text"/>	Date	<input type="text"/>
Signature of Provost (if above level of approved programs)		

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

<input type="text"/>	Date	<input type="text"/>
Signature, Chair Faculty Senate Review Committee: <input type="checkbox"/> Curriculum Review <input type="checkbox"/> GAAC <input type="checkbox"/> Core Review <input type="checkbox"/> SADAC		

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

<input type="text"/>	Date	<input type="text"/>
Signature, Chair, Program/Department of: <input type="text"/>		

<input type="text"/>	Date	<input type="text"/>
Signature, Chair, College/School Curriculum Council for: <input type="text"/>		

<input type="text"/>	Date	<input type="text"/>
Signature, Dean, College/School of: <input type="text"/>		

University of Alaska Fairbanks
Bristol Bay Campus

Course Syllabus

Term: Spring 2016
Course Title: Introduction to Water Quality II: Monitoring and Assessment
Dept. & Num: ENVI 111
Credits: 1 (1+0)
Grading: Letter Grade
Prerequisites: ENVI 110 or consent of instructor
Dates: TBD
Days - times: Monday thru Thursday, 8:00 am to 4:30 pm
Location: Face to face in needed location
Instructor: Daniel Bogan, Research Associate
Position: Aquatic Ecology Program
Alaska Natural Heritage Program
University of Alaska Anchorage
Phone: 907.786.4964
Fax: 907.786.4958
Email: bogan@uaa.alaska.edu
Hours Available: TBA
Text: United States. Environmental Protection Agency. *Volunteer Stream Monitoring: A Methods Manual*. 1997. Print.
<http://www.epa.gov/owow/monitoring/volunteer/stream>.

Supplemental readings - Murdoch, Tom, Martha Cheo, and Kate O'Laughlin. *The streamkeepers field guide*. 5. Adopt-a-Stream Foundation, 1996. Print.
- Hafele, Rick, and Steve Hinton. *Guide to Pacific Northwest Invertebrates*. 2. Oregon Trout, 2003. Print.

Supplies Water quality sampling equipment and performance evaluation standards will be provided by UAF but participants are encouraged to bring the equipment that they need to be certified on.

Course Description:

ENVI F111 Introduction to Water Quality II: Monitoring and Assessment
1 credit Offered as demand warrants

Course builds upon methods learned in ENVI 110 with emphasis placed upon data quality objectives, electronic storage of data, and information analysis and reporting. Methods and equipment used for surface water monitoring will be introduced. Students start the process of developing an EPA approved Quality Assurance Project Plan (QAPP) for surface water quality monitoring. **Prerequisites:** ENVI 110 Letter graded (1+0).

Goals:

The goal of the class is to reinforce proper use and maintenance of standard surface water quality testing equipment so that defensible data can be collected and recorded. Students will also be able to review and manage a water quality database, conduct quality assurance checks on data, and demonstrate a working knowledge of equipment and techniques necessary for recertification for surface water quality monitoring.

Learning Objectives:

By participating in this class, students will be able to:

- follow guidelines prescribed by kit/meter manufactures on the operation maintenance, and storage of their water quality testing equipment.
- record reagent status and order new reagents for their water quality testing kits.

- describe safety procedures while testing water quality.
- calibrate their Hanna and/or YSI water quality meter(s).
- pass performance standards for precision and accuracy for all the water quality tests.
- perform the SOP for macroinvertebrate collection, sample processing, and data analysis.
- describe proper collection, storage, evaluation, correction, database archiving, and reporting of water quality data collected.
- work with an outside lab to obtain water quality data.
- access information on water quality standards in Alaska.
- deploy and retrieve temperature data loggers, and download and store temperature data.
- electronically store and manage their data.
- begin work on drafting their own QAPP using a template

Instructional Methods

The course will use a combination of lecture, laboratory, and field experiences. Laboratory and field sessions are intended to provide opportunity for students to conduct water quality sampling, testing, and data recording to satisfy the requirements of a QAPP. Lectures will include supplemental topics to assist students in data quality assurance, along with special topics dealing with water quality standards and report information.

Course Schedule

The course will meet over four days for a total of 16.5 hours. Lectures are every morning, lab, fieldwork, data entry and analysis every afternoon.

- Day 1 (4 hours lecture, 1 hour field/lab)
 Discuss summer 2013 data collection
 Review of meter and kit SOPs
 Review water temperature logger operation, deployment
 Introduction of stream flow and discharge measurements
 Field – Review of water quality tests; deploy temperature loggers; stream flow and discharge
- Day 2 (3 hours lecture, 1 hour field/lab)
 Recalibration of Hanna Combo meter
 Review bio-assessment using benthic macro-invertebrates
 Field – conduct volunteer level bio-assessment in a near-by stream; collect temperature loggers
 Lab – sort, identify, and count macro-invertebrates
 Lab – data entry and analysis using Excel and on-line database
- Day 3 (2.5 hours lecture, 1 hour field/lab)
 Recalibration of Hanna Combo meter
 Calibration, maintenance, and operation of the YSI 556 Meter and LaMotte 2020 Turbidimeter
 Working with an outside lab
 Lab – data entry and analysis
 Lab – downloading and plotting water temperature data
 Writing water quality reports
- Day 4 (4 hours lecture)
 Recalibration of Hanna Combo meter
 Lab – Performance Evaluation Standards for pH, SpC, temp, DO
 Lab – Data management
 Introduction to QAPP and QAPP template
 QAPP assignment

Total hours: Lecture = 13.5; Lab = 3

Schedule subject to change to meet instructor's calendar

Course Policies

Students are expected to conduct themselves in a responsible and courteous manner. Attendance is mandatory. Late assignments are accepted only when pre-arranged with the instructor. UAF requires all students to conduct themselves according to the UAF Honor Code. Cheating, copying, and other forms of academic dishonesty may result in disciplinary action and other sanctions. It is expected that tolerance of others with different gender, race, and ethnic backgrounds be shown in class discussions and writings. The instructor reserves the right to amend this syllabus as needed.

Assignments and Quizzes

Assignments

1. Students will be tested on safety measures, calibration and proper disposal of solutions.
2. Students will be tested on what is required in a QAPP.
3. Students will show proficiency in using provided water quality instruments.

Quizzes

Each morning a pop quiz will be given on the previous day topics.

Evaluation/Grading

This is a letter-graded course

- A (90-100%)
- B (80-89%)
- C (70-79%)
- D (60-69%)
- F (59% or lower)

Students will participate in lectures, contribute to class discussions, take part in field and laboratory activities and enter and review data in an Excel spreadsheet.

- 10% Students are responsible to attend all class sessions
- 30% Pass the performance evaluation standards for water quality testing and demonstrate field sampling techniques using standard operating procedures.
- 30% Class assignments and discussions. Students will be evaluated on their participation and outcomes of various data management assignments.
- 30% Field and lab activities. Students will be evaluated on their ability to follow standard operating procedures for: calibrating their water quality instrument, collecting water quality information in the field and evaluating macroinvertebrates in the lab.

Student Support Disability Services:

University of Alaska Fairbanks Bristol Bay Campus Student Services at:
PO Box 1070
Dillingham, Alaska 99576
907-842-5109, 800-478-5109, Fax: 907-842-5692

Support and Tutoring is available to eligible students through UAF Student Support Services or Bristol Bay Campus. Contact UAF via the Internet at <http://www.uaf.edu/sssp/> or BBC by calling the toll free number at 1.800.478.5109.

Library services are available at <http://www.uaf.edu/library/> or call the toll free library information number at 1.800.478.5348 and ask for the off-campus librarian.

UAF has a Disability Services office that operates in conjunction with the College of Rural and Community Development (CRCD) campuses and UAF's Center for Distance Education (CDE). Disability Services provides academic accommodations to enrolled students who are identified as being eligible for these services and insures that UAF students have equal access to the campus and course materials. If you have specific physical, psychiatric or learning disabilities and require reasonable accommodations, please let the instructor know as soon as possible so that your learning needs may be appropriately met. You will need to provide documentation of your disability to Disability Services and request a letter of accommodation.

Disability Services is located in room **208 of the Whitaker Building** on the UAF Fairbanks Campus and can be reached weekdays between 8:00 am and 5:00 pm at:

Phone - (907) 474-5655

TTY - (907) 474-1827

Email - uaf-disabilityservices@alaska.edu

Federal reporting obligations under Title IX:

University of Alaska Board of Regents have clearly stated in BOR Policy that discrimination, harassment and violence will not be tolerated on any campus of the University of Alaska. If you believe you are experiencing discrimination or any form of harassment including sexual harassment/misconduct/assault, you are encouraged to report that behavior. If you report to a faculty member or any university employee, they must notify the UAF Title IX Coordinator about the basic facts of the incident. Your choices for reporting include:

- 1) You may access confidential counseling by contacting the UAF Health & Counseling Center at 474-7043;
- 2) You may access support and file a Title IX report by contacting the UAF Title IX Coordinator at 474-6600;
- 3) You may file a criminal complaint by contacting the University Police Department at 474-7721.