### TRIAL COURSE OR NEW COURSE PROPOSAL

**SUBMITTED BY:**

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<tr>
<th>Department</th>
<th>SFOS</th>
<th>SFSOS</th>
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<tbody>
<tr>
<td>Prepared by</td>
<td>Sam VanLaningham</td>
<td>Sam VanLaningham</td>
</tr>
<tr>
<td>Email Contact</td>
<td><a href="mailto:samvan@sfos.uaf.edu">samvan@sfos.uaf.edu</a></td>
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**College/School**

| Phone | 907-474-6991 |

**Faculty Contact**

| Phone | 907-474-6991 |

### 1. ACTION DESIRED

(CHECK ONE):

- [ ] Trial Course
- [x] New Course

### 2. COURSE IDENTIFICATION:

| Dept | MSL | Course # | 394 | No. of Credits | 3 |

Justify upper/lower division status & number of credits:

Interdisciplinary, term paper, advanced critical thinking

### 3. PROPOSED COURSE TITLE:

The Dynamic Alaskan Coastline

### 4. CROSS LISTED?

Yes

If yes, Dept: GEOS

Course # 244

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

### 5. STACKED?

Yes

If yes, Dept. GEOS

Course # 244

### 6. FREQUENCY OF OFFERING:

Alternate fall – or as demand warrants. (Every or Alternate) Fall, Spring, Summer — or As Demand Warrants

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

Fall 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 one)

- [ ] 1
- [ ] 2
- [ ] 3
- [ ] 4
- [ ] 5
- [x] 6 weeks to full semester

**OTHER FORMAT (specify)**

Lectures and one weekend field trip.

### 9. CONTACT HOURS PER WEEK:

| 2 | LECTURE hours/week |
| 1 | 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](http://www.uaf.edu/uafgov/faculty/cd/credits.html) for more information on number of credits.

**OTHER HOURS (specify type)** 1800 minutes of “lab” during fieldtrip.

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

**The Alaskan Coastline**

**MSL/GEOS F394**

Mountains, rivers, glaciers, fjords, estuaries, deltas, tidal zones, sediments, nutrients, habitats, fish. This class will provide an interdisciplinary perspective on the dynamic Alaskan coastal landscape, from Glacier Bay to the Arctic. The emphasis is on geological and oceanographic processes and linkages between landscapes and ecosystems. Students will learn the fundamental physical processes in the coastal zone using the various locations in Alaska as examples.
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.)

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<tr>
<td>H = Humanities</td>
<td>N = Natural Science</td>
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Will this course be used to fulfill a requirement for the baccalaureate core? **YES** X **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**:

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<td>YES</td>
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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? **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**:

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<th>LETTER</th>
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14. **PREREQUISITES**

Must be Junior in standing. MSL111X; CHEM F105X; PHYS F103X or PHYS F211X.

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

**RECOMMENDED**

GEOS F101X; FISH F288.

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

15. **SPECIAL RESTRICTIONS, CONDITIONS**

Field trip required.

16. **PROPOSED COURSE FEES**

$150

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.:

18. **ESTIMATED IMPACT**

What impact, if any, will this have on budget, facilities/space, faculty, etc.

One classroom is needed. Nominal additional budget considerations. One faculty member for lectures except for fieldtrip, where two will be accompanying the students.

19. **LIBRARY COLLECTIONS**

Have you contacted the library collection development officer (ffki@uaf.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.

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Conversation on 12/1/09. The discussion with Anne Christie at the library concluded that the library has the appropriate resources for this course and that the chapter excerpts taken from several texts are within the allowable limit (<15% of total text) set by copyright law.

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 trial course will benefit SFOS/MSL by providing depth to the soon-to-be proposed minor in marine science. In discussions with GEOS faculty (Beget and Coakley), this course will provide new avenues for geology majors interested in coastal geology and environmental science, as well as depth to their geomorphic offerings.

21. **POSITIVE AND NEGATIVE IMPACTS**

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

The course will fill a void in coastal geology, and complement existing courses such as geomorphology.
(GEOS 304) and Marine and Freshwater Fishes of Alaska (FISH F288). It will also foster interdisciplinary learning and collaboration, as I expect fisheries and coastal- and ecologically-minded geology students to come together in this course. The fieldtrip early in the semester will build relationships among students from different disciplines and get them to think together in the field with their combined strengths.

**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.

Considering that Alaska makes up ~50% of the United States coastline, it is important that we develop students who understand the large-scale processes at the land-ocean interface. It is dually important that future scientists, policy makers, Alaskans realize the linkages between, and sensitivity of, the landscape and ecosystems living in it. Because the content of the class is interdisciplinary, it needs to be offered at the 300 level. Junior status should be when our students begin to think critically and understand intertwined processes. This is also the time when they should be developing writing skills to communicate their ideas.

**APPROVALS:**

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<tr>
<th>Signature, Chair, Program/Department of:</th>
<th>Date</th>
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<tr>
<th>Signature, Chair, College/School Curriculum Council for:</th>
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<td>01 Mar 10</td>
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<tr>
<th>Signature, Dean, College/School of:</th>
<th>Date</th>
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Signature of Provost (if applicable)

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

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

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<tr>
<th>Signature, Chair, UAF Faculty Senate Curriculum Review Committee</th>
<th>Date</th>
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**ADDITIONAL SIGNATURES: (If required)**

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<th>Signature, Chair, Program/Department of:</th>
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<th>Signature, Dean, College/School of:</th>
<th>Date</th>
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ATTACH COMPLETE SYLLABUS (as part of this application).

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

The department and campus wide curriculum committees will review the syllabus to ensure that each of the items listed below are included. If items are missing or unclear, the proposed course change will be denied.

SYLLABUS CHECKLIST FOR ALL UAF COURSES

During the first week of class, instructors will distribute a course syllabus. Although modifications may be made throughout the semester, this document will contain the following information (as applicable to the discipline):

1. Course information:
   - Title, □ number, □ credits, □ prerequisites, □ location, □ meeting time
   (make sure that contact hours are in line with credits).

2. Instructor (and if applicable, Teaching Assistant) information:
   - Name, □ office location, □ office hours, □ telephone, □ email address.

3. Course readings/materials:
   - Course textbook title, □ author, □ edition/publisher.
   - Supplementary readings (indicate whether □ required or □ recommended) and
   - any supplies required.

4. Course description:
   - Content of the course and how it fits into the broader curriculum;
   - Expected proficiencies required to undertake the course, if applicable.
   - Inclusion of catalog description is strongly recommended, and
   - Description in syllabus must be consistent with catalog course description.

5. □ Course Goals (general), and (see #6)

6. □ Student Learning Outcomes (more specific)

7. Instructional methods:
   - Describe the teaching techniques (eg: lecture, case study, small group discussion, private instruction, studio instruction, values clarification, games, journal writing, use of Blackboard, audio/video conferencing, etc.).

8. Course calendar:
   - A schedule of class topics and assignments must be included. Be specific so that it is clear that the instructor has thought this through and will not be making it up on the fly (e.g. it is not adequate to say “lab”. Instead, give each lab a title that describes its content). You may call the outline Tentative or Work in Progress to allow for modifications during the semester.

9. Course policies:
   - Specify course rules, including your policies on attendance, tardiness, class participation, make-up exams, and plagiarism/academic integrity.

10. Evaluation:
    - Specify how students will be evaluated, □ what factors will be included, □ their relative value, and
    - how they will be tabulated into grades (on a curve, absolute scores, etc.)

11. Support Services:
    - Describe the student support services such as tutoring (local and/or regional) appropriate for the course.

12. Disabilities Services:
    - The Office of Disability Services implements the Americans with Disabilities Act (ADA), and insures that UAF students have equal access to the campus and course materials.
    - State that you will work with the Office of Disabilities Services (208 WHIT, 474-5655) to provide reasonable accommodation to students with disabilities.”
MSL/GEOS 394 – The Dynamic Alaskan Coastline

Instructor: Dr. Sam VanLaningham  
Office: 209C O’Neill Bldg  
Phone: 474-6991  
Email: samvan@sfos.uaf.edu  
Class Time: T-Th 10:00 – 11:00 am  
Location: TBA  
Office Hours: TBA

Course Description:
Mountains, rivers, glaciers, fjords, estuaries, deltas, tidal zones, sediments, nutrients, habitats, fish. This class will provide an interdisciplinary perspective on the dynamic Alaskan coastal landscape, from Glacier Bay to the Arctic. The emphasis is on geological and oceanographic processes and linkages between landscapes and ecosystems. Students will learn the fundamental physical processes in the coastal zone using the various locations in Alaska as examples.

Prerequisites:
Must be at least a junior in standing; MSL111X; CHEM F105X; PHYS F103X or PHYS F211X.

Course Overview:
This course is a combination of lectures, 4 homeworks, a fieldtrip, a midterm, final, and term paper.

Weekend Field Trip Required (Friday afternoon to Sunday Night).
  Fri. – To Talkeetna (overnight).
  Sat.– Day trip to Talkeetna Delta/Cook Inlet. Back to Talkeetna (overnight).
  Sun.– Group exercise at Talkeetna River. Drive home to Fairbanks.

Term paper
Four well–written pages regarding a recent or past change in the physiographic setting, climate, and/or geology of a region of Alaska/the Arctic and the effects/response of the ecosystems to these natural or human-related perturbations.

Course Learning Objectives:
The goals of this course are to appreciate the scope of coastal variability in Alaska, the fundamental processes occurring at the coast and develop skills in thinking across traditional fields of science.

Course policies:
Field trip is mandatory. You are expected to attend lectures, take notes, ask questions. Grades will be based on a term paper (40%, or 80 pts), midterm (20%, or 40 pts), final (20%, or 40 pts), 4 homework assignments (20%, or 40 pts total). Make-up work is available only for serious illness or family emergencies. Please contact instructor as
soon as possible if you have these circumstances so that we can plan accordingly. Special accommodations for disability are available and if you contact instructor we will make the course work for you. Contact the Office of Disabled Services as well (907-474-5655; TTY 907-474-1827; Email = fydso@uaf.edu).

Academic integrity is important to the University of Alaska and to you as a student. There is a zero tolerance policy for cheating and/or plagiarism.

There is no required text. Blackboard readings will be from *Our changing coastlines* by Francis P. Shepard and Harold R. Wanless, *Coastal Geomorphology* by Eric Bird, *Principles of Terrestrial Ecosystem Ecology* by Chapin, Matson, and Mooney, *Tectonic Geomorphology* by Burbank and Anderson, and other miscellaneous sources.

Grading scale is:

- 93-100% = A
- 90-92% = A-
- 87-89% = B+
- 83-86% = B
- 80-82% = B-
- 77-79% = C+
- 73-76% = C
- 70-72% = C-
- 67-69% = D+
- 63-66% = D
- 60-62% = D-
- 59% and below = Fail

Schedule (tentative)

<table>
<thead>
<tr>
<th>WEEK</th>
<th>THEME</th>
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<tbody>
<tr>
<td>1</td>
<td>Overview of coastal Alaskan geologic, oceanographic/climate, ecosystem</td>
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| 2 | Overview of coastal Alaskan geologic, oceanographic/climate, ecosystem setting, cont.  
*Blackboard Readings: Coastal Geomorphology, Ch. 2; Climate/ocean circulation system handout, Ecosystems Ecology Ch. 1, 2, 4.* |
*Blackboard Readings: Our Changing Coastline Ch. 13. Coastal Geomorphology Ch. 10. Long-term Ecological Change in the Northern Gulf of Alaska handout.*  
**Homework 1** |
*Blackboard Readings: Our Changing Coastline Ch. 13. Tectonic Geomorphology Ch. 1,3,7.* |
| 5 | Copper River - glacial-fed delta, eolian processes, migratory birds, fish populations/variety, ecosystem diversity.  
*Blackboard Readings: Our Changing Coastline Ch. 13.* |
*Blackboard Readings: Our Changing Coastline Ch. 13.*  
**Homework 2** |
| 7 | Cook Inlet. Tidal processes, estuaries, surface circulation, sediment routing paths and the controls on nearshore ecosystems.  
*Blackboard Readings: Our Changing Coastline Ch. 13. Coastal Geomorphology, Ch. 11.* |
| 8 | Katmai – Volcanic processes, Aleutian volcanoes, 1912 eruption, rivers/lake chemical and physical changes, red salmon.  
*Blackboard Readings: Our Changing Coastline Ch. 13. Volcanoes handout.*  
**Paper Topic Outline Due** |
| 9 | Katmai – Volcanic processes, Aleutian volcanoes, 1912 eruption, rivers/lake chemical and physical changes, red salmon.  
*Blackboard Readings: Our Changing Coastline Ch. 13. Volcanoes handout.*  
**MIDTERM** |
| 10 | Bristol Bay - Continental shelf processes, physical oceanographic setting. Physical processes driving rich fish habitat, river inputs, volcanic nutrients,  
| 11 | Bristol Bay - Continental shelf processes, physical oceanographic setting. Physical processes driving rich fish habitat, river inputs, volcanic nutrients,  
**Homework 3** |
<p>| 12 | Yukon River/Delta - deltaic processes, sea level change, drainage |</p>
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<td><strong>Homework 4</strong></td>
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<td>14</td>
<td><strong>Bering Land Bridge</strong> - archaeology, sea level, physical oceanography (oceanic gateways), Northern Hemisphere climate. <strong>Blackboard Readings:</strong> <em>Our Changing Coastline</em> Ch. 14.</td>
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<tr>
<td>15</td>
<td><strong>Arctic coast/Brooks Range</strong> - permafrost, sea ice, rapid coastal erosion, deltas, grayling. <strong>Blackboard Readings:</strong> <em>Our Changing Coastline</em> Ch. 14.</td>
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<tr>
<td>16</td>
<td><strong>FINAL. Term paper due.</strong></td>
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MEMORANDUM

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

FROM: Sam VanLaningham, Assistant Professor
       School of Fisheries and Ocean Science

THROUGH: Dr. Katrin Iken, GPMSL Program Head
         School of Fisheries and Ocean Sciences
         Dr. Michael Castellini, Associate Dean
         School of Fisheries and Ocean Sciences

SUBJECT: Additional Fees (3 Day Field Trip)

DATE: December 1, 2009

I am asking for approval of the following fees for the new trial course, The Alaskan Coast: Interactions Between Geological, Oceanographic and Ecological Systems (MSL/GEOS 394).

The field trip for this course will give hands-on experiences in river/coastal environments. It will provide a natural laboratory for students to think together and independently across disciplines, and develop strategies on how to combine their collective knowledge to solve important environmental problems.

I would like the following fees charged:

Total: $150.00

This covers van rentals, fuel, lodging and food for the three-day endeavor. This includes staying in cabins at Susitna Lodge in Talkeetna for two nights. Breakfast is included in the lodging costs. Lunch and dinners will be prepared by the students and faculty in the cabin kitchens.

If you have any questions, please contact me at 474-6991 or samvan@sfos.uaf.edu.