TRIAL COURSE OR NEW COURSE PROPOSAL
(Attach copy of syllabus)

SUBMITTED BY:

<table>
<thead>
<tr>
<th>Department</th>
<th>Geosciences</th>
<th>College/School</th>
<th>CNSM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prepared by</td>
<td>Cary de Wit</td>
<td>Phone</td>
<td>x7141</td>
</tr>
<tr>
<td>Email Contact</td>
<td><a href="mailto:cwdewit@alaska.edu">cwdewit@alaska.edu</a></td>
<td>Faculty Contact</td>
<td>Daniel Mann</td>
</tr>
</tbody>
</table>

1. ACTION DESIRED (CHECK ONE):
   - Trial Course
   - New Course [X]

2. COURSE IDENTIFICATION:
   - Dept: GEOG
   - Course #: F478/678
   - No. of Credits: 3
   - This is a synthesis course that weaves together a diversity of "knowledge threads" from geography, geology, ecology, anthropology, and climatology that together describe the paleoenvironments of ice age Alaska. This is an upper division course because it relies on students having prior training in one or more of the above disciplines. Furthermore, it will require students to expand their interests and knowledge into fields they may know little about when the class starts. Students will be encouraged to synthesize diverse aspects of their previous knowledge and then add to it in creative ways.
   - In comparison to undergraduate students, graduate students in this course will be required to do substantially more reading and writing, and more thorough analysis in their assignments. They will also be required to complete a more substantial term paper, and present their results to the class.

3. PROPOSED COURSE TITLE:
   - Ice Age Alaska

4. To be CROSS LISTED?
   - Yes [X]
   - If yes, Dept: GEOS
   - Course #: F478
   - NOTE: Cross-listing requires approval of both departments and deans involved. Add lines at end of form for additional required signatures.

5. To be STACKED?*
   - Yes [X]
   - If yes, Dept: GEOG/GEOS
   - Course #: F678
   - In comparison to undergraduate students, graduate students in this course will be required to do substantially more reading and writing, and more thorough analysis in their assignments. They will also be required to complete a more substantial term paper, and present their results to the class.

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

7. SEMESTER & YEAR OF FIRST OFFERING (Effective AY2015-16 if approved by 3/31/2015; otherwise AY2016-17)
   - Fall 2016

RECEIVED

OCT 15 2015
Dean's Office
College of Natural Science & Mathematics
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.

<table>
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<tr>
<th>COURSE FORMAT:</th>
<th>1</th>
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<th>3</th>
<th>4</th>
<th>5</th>
<th>X 6 weeks to full semester</th>
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<td>(check all that apply)</td>
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<td>OTHER FORMAT (specify)</td>
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<tr>
<td>Mode of delivery (specify lecture, field trips, labs, etc)</td>
<td>Lecture, discussion, and field trips.</td>
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9. CONTACT HOURS PER 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/faculty-senate/curriculum/course-degree-procedures/guidelines-for-computing/ for more information on number of credits.

| OTHER HOURS (specify type) | Two weekend field trips occur at the beginning of the semester. This field-trip time equates to (2 days @ 10.5 hr contact) x 2 weekends = 42 contact hours in addition to the lectures on campus. |

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)

GEOG F478 Ice Age Alaska
3 Credits Offered Fall Even-numbered Years
An overview of the paleoenvironments of Alaska including climate, glacier, and biotic history including humans. Emphasis on events of the past that have left important legacies on present landscapes. The course starts with 2 weekend field trips and then surveys key literature describing Alaska’s ice-age history. Prerequisites: Senior standing in Anthropology, Biological Sciences, Earth Science, Geography, Geoscience, or Northern Studies; or permission of instructor. Cross-listed with GEOS F478. Stacked with GEOG F678; GEOS F678. (3+0)

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GEOG F478 Ice Age Alaska
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GEOS F678 Ice Age Alaska
3 Credits Offered Fall Even-numbered Years
An overview of the paleoenvironments of Alaska including climate, glacier, and biotic history including humans. Emphasis on events of the past that have left important legacies on present landscapes. The course starts with 2 weekend field trips and then surveys key literature describing Alaska’s ice-age history. Prerequisites: Graduate standing in Anthropology, Arctic and Northern Studies, Atmospheric Sciences, Biological Sciences, Geography, Geology, Oceanography; or permission of instructor. Cross-listed with GEOG F678. Stacked with GEOG F478; GEOS F478. (3+0)
11. **COURSE CLASSIFICATIONS:** Undergraduate courses only. Consult with CLA Curriculum Council to apply S or H classification appropriately; otherwise leave fields blank.

<table>
<thead>
<tr>
<th>H = Humanities</th>
<th>S = Social Sciences</th>
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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 | X = Baccalaureate Core |

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**

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). **N/A**

How many times may the course be repeated for credit? **N/A** TIMES CREDITS

If the course can be repeated for credit, what is the maximum number of credit hours that may be earned for this course? **N/A** CREDITS

If the course can be repeated with variable credit, what is the maximum number of credit hours that may be earned for this course? **N/A**

13. **GRADING SYSTEM:** Specify only one. Note: Changing the grading system for a course later on constitutes a Major Course Change - Format 2 form.

**LETTER:** ☐ **PASS/FAIL:** ☐

14. **PREREQUISITES**

| GEOG/GEOS F478: Senior standing in Anthropology, Biological Sciences, Earth Science, Geography, Geoscience, or Northern Studies; or permission of instructor. |

| GEOG/GEOS F678: Graduate standing in Anthropology, Arctic and Northern Studies, Atmospheric Sciences, Biological Sciences, Geography, Geology, Oceanography; or permission 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**

**$100/student to cover van rental from UAF and fuel cost.**

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

**Yes**

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.: **Fall 2014, GEOG/GEOS F493/693 Ice Age Alaska**

18. **ESTIMATED IMPACT**

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

**None. Uses existing faculty and facilities.**

19. **LIBRARY COLLECTIONS**

Have you contacted the library collection development officer (kfjensen@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** ☐

**This course will not impact library resources.**
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 has been developed through collaboration between the Geography and Geoscience programs within the Geosciences Department. The course will serve majors and graduate students in all of the Geosciences programs.

21. POSITIVE AND NEGATIVE IMPACTS
Please specify positive and negative impacts on other courses, programs and departments resulting from the proposed action.

This course will add to the Arctic/Alaska emphasis in the Geography and Geoscience programs, and will also contribute to the overall Arctic teaching and research focus at UAF. It will diversify course offerings in both programs, especially in the Landscape Analysis and Climate Change Studies concentration of the Geography B.S. degree.

No negative impacts anticipated.

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.

Alaska (Beringia) had a complex and fascinating history during the ice ages (the last 2 my). To understand these legacies, an interdisciplinary approach is needed. Ice Age Alaska will combine field trips with lecture- and discussion-based reviews of the foundational scientific literature concerning the glacial history, paleoclimate, archaeology, and paleontology of Beringia. It is designed as a capstone, synthesis course for seniors and graduate students in Geography, Geology, Anthropology, Atmospheric Sciences, and Biology.

Ice Age Alaska will fill a gap in existing course offerings. Because it is an overview/synthesis class, it incorporates subsets of the subject matter addressed in other courses. What is unique about this course is its temporal and spatial focus: it concerns the last 2 million years of paleoenvironmental changes in Alaska.

Below are existing courses with some degree of overlap with Ice Age Alaska. These existing courses either have a narrower subject focus, or cover a different period of Earth's history, or lack a hands-on field component.

GEOS F315 W Paleobiology and Paleontology: the entire history of life on Earth.
GEOS F330 The Dynamic Alaskan Coastline
GEOS F351 W Field Geology: collecting and presenting basic geologic field data:
GEOS F380 Geological Hazards
GEOS F452 / ANTHR 451 Quaternary Seminar (similar in concept to Ice Age Alaska but no field component. Also, this is solely an article-review course. Ice Age Alaska will be in part a lecture class in order to introduce and connect disparate scientific papers).
GEOS F453 Palynology and Paleopalynology
GEOS F456 Paleopedology
GEOS F463 Glacial and Periglacial Geology
GEOS F477 Ice in the Climate System
GEOS F485 Mass Extinctions, Neocatastropshism and the History of Life
GEOS F605 Geochronology
GEOS F612 Geologic Evolution of Alaska
GEOS F616 Permafrost
GEOS F617 Glaciers
GEOS F629 Geologic Hazards and Natural Disasters
ANTH F214 World Prehistory
ANTH F302 Siberia: Past, Present, Future
ANTH F309 Circumpolar Archaeology
ANTH F465 Geoarchaeology
<table>
<thead>
<tr>
<th>Signature, Chair, Program/Department of:</th>
<th>Geography</th>
<th>Date: 9-30-2015</th>
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<tr>
<td>Signature, Chair, Program/Department of:</td>
<td>Geosciences</td>
<td>Date: 10-15-15</td>
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<tr>
<td>Signature, Chair, College/School Curriculum Council for:</td>
<td>CNSM</td>
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<tr>
<td>Signature, Dean, College/School of:</td>
<td>CNSM</td>
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Offerings above the level of approved programs must be approved in advance by the Provost.

| Signature of Provost (if above level of approved programs) | Date |

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

<table>
<thead>
<tr>
<th>Signature, Chair</th>
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<tbody>
<tr>
<td>Faculty Senate Review Committee:</td>
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<tr>
<td>Core Review</td>
</tr>
</tbody>
</table>
MEMORANDUM

DATE: September 30, 2015

TO: Susan Henrichs, Provost
Through: Paul Layer, Dean CNSM
FROM: Cary de Wit, Geography Program Coordinator
RE: Course fee request for New Course: GEOG/GEOS 478/678 Ice Age Alaska

I am writing to request the inclusion of a course fee for a new course being proposed for Fall 2016: GEOG/GEOS 478/678 Ice Age Alaska, to be taught by Daniel Mann.

This is a 3-credit course that includes several weekend field trips that will require van rental, fuel purchases, and camping fees. I propose a course fee of $100 per student to cover these costs.
SYLLABUS  GEOG/GEOS 478:  ICE AGE ALASKA
Fall 2016  3 credits  MWF 9:15-10:15  204 Reichardt

Instructor: Dr. Daniel Mann
email: dhmann@alaska.edu
Office: 366 Reichardt Building
Phone: 474-6929
Office Hours:  MW 10:30-12:30

Course Description
This course provides an interdisciplinary overview of the paleoenvironments of ice age Alaska from 130,000 years ago to the present. It weaves together the diverse knowledge-threads from geography, geology, ecology, anthropology, and climatology that together describe the paleoenvironments of ice age Alaska. Emphasis is on events and processes in the past that have left continuing legacies on the present-day landscape. This is an upper division course because it relies on students having prior training in one or more of the above disciplines. Furthermore, it requires students to expand their interests and knowledge into fields they may know little about when the class begins. This class is intended for mature students who are ready to synthesize what they have learned so far and then add to it in creative ways.

Course Prerequisites:
Senior standing in Anthropology, Biological Sciences, Earth Science, Geography, Geoscience, or Northern Studies; or permission of instructor.

Course Objectives
To provide an interdisciplinary synthesis of what is known about biota, climate, glaciers, geomorphology, and archaeology during the last ice age including the last interglacial and the first few millennia of the Holocene, the present interglacial. The other main objective of this class is to explore the numerous unanswered questions that remain. Students will come away with a broadened perspective on how environments changed during the last ice age, the processes causing these changes, and the legacies of these changes in the present day. Although the focus is on Alaska and the Yukon, we will range more widely into other parts of the Arctic and its adjacent seas.

Instructional / Teaching Methods: This is a combined field, lecture, and discussion course that requires students to attend the field trips and keep up with assigned readings. Lectures and directed readings will give students a sound background in what we now know about ice age Alaska. There will be 3-5 guest lecturers over the course of the semester.

Field Trips: These are 2-day trips (Friday night through Sunday evening) that will depart Fairbanks in late afternoon on Fridays. In the field, we will collect data and test hypotheses. Attendance is mandatory for everyone. We will camp out in public campgrounds. Students should be comfortable scrambling over rough terrain and working in the rain.

Regarding the mandatory field trips: Please notify the instructor of any special needs that may require accommodation on the field trips. If you have any concerns about your ability to participate in the field trips, please notify the instructor before or on the first day of class.

Required Text: NONE. There is no upper division textbook that is relevant. Instead we will read a wide range of scientific papers: some old "classics" and others new developments in the fields of paleoecology, paleoclimatology, and Quaternary geology.
Attendance: attendance at lectures and on field trips is mandatory.

STUDENT ASSIGNMENTS
Field Trip Reports: Following each field trip, students will submit a report analyzing the data collected during the class field trips.

Readings: Undergraduate readings will ordinarily consist of two scientific articles every week. There will be weekly quizzes on the readings.

Term Paper: A 5-10 page term paper (including illustrations) is required. Topics vary according to individual students’ interests. Each student will also develop a proposal describing his/her topic prior to writing the term paper. Detailed guidelines for the term paper will be given in lecture.

Information on Exams and Assignments: Examination format will include a mixture of multiple choice, short answer / diagram / map, and essay.

Extra Credit: Extra credit is not an option in this course except under unusual circumstances.

Grading
Quizzes on readings: 20%
Midterm Exam: 20%
Final Exam: 20%
Class and Field Trip Participation (attendance + discussion: 20%)
Term Paper: 20%

Course grades will be assigned as indicated in the table below. Grade point values are indicated in the table as well. Please see “Academics and Regulations” section of UAF 2014-15 Catalog.

<table>
<thead>
<tr>
<th>Grade</th>
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<tbody>
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<tr>
<td>B-</td>
<td>81-80</td>
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<td>C+</td>
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<tr>
<td>D-</td>
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Course Grading Scale: All grades are determined on an absolute score (with no curve) according to the following scale:
A = 90-100 percent: outstanding work, mastery of topic
B = 80-89 percent: above average work, all assignments completed well
C = 70-79 percent: average, all or most assignments completed, most work satisfactory
D = 60-69 percent: pass, unsatisfactory or missing work
F = less than 60 percent: failure to meet requirements of course
Disabilities Services: The Office of Disability Services implements the Americans with Disabilities Act (ADA) and ensures that UAF students have equal access to the campus and course materials. I will work with the Office of Disability Services (474-7043) to provide reasonable accommodation to students with disabilities. Please let me know at the beginning of the course if accommodations should be provided.

Plagiarism/Academic Integrity: University Standards and Policies apply (see UAF Catalog).

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SCHEDULE OF LECTURES, EXAMINATIONS, AND TERM PAPER
(NOTE: The following schedule is based on the fall 2013 academic calendar)

Week 1: Friday Sept 6: What is this class about? Requirements, expectations.

Week 2: Sept 9, 11, 13: Basics of geochronology (radiocarbon, cosmogenic nuclides); Glacial history of Alaska

Field Trip #1: Delta Junction and Isabel Pass area. GOALS: 1) periglacial depositional environments (moraines, outwash, loess); 2) basic glaciology of debris-covered and surging glaciers; 3) field methods: relative age dating moraines, describing a stratigraphic section; 4) how to core a lake; 5) lake-sediment stratigraphy (tephras); 6) the Alaska Range glacial sequence as it is currently known.

Week 3: Sept 16, 18, 20: Permafrost geomorphology; Glacial geology with emphasis on field mapping

Field Trip #2: Parks Highway to Cantwell. GOALS: 1) vegetation zonation, treelines; 2) landslides; 3) glacial landforms; 4) stream planforms; 5) wildland fire; 6) method of multiple working hypotheses as applied to geomorphic mapping; 7) loess stratigraphy; 8) how to core a tree

Week 4: Sept 23, 25, 27: Basics of glaciology with emphasis on interpreting glacial geology

Week 5: Sept 30, Oct. 2, 4: Aeolian processes and depositional environments

Week 6: Oct 7, 9, 11: Alaska’s loess and sand dune records (remote sensing exercise)

Week 7: Oct 14, 16, 18: Fluvial processes and depositional environments

Week 8: Oct 21, 23, 25: Alaska’s fluvial record (remote sensing exercise); Sea-level history and processes

Week 9: Oct 28, 30: Vegetation history (exercise: interpreting a real data set in terms of paleoenvironment)

Friday Nov. 1 MIDTERM EXAM

Week 10: Guest Speakers TBA

Week 11: Nov 11, 13: Alaska’s Archaeological past
Week 12: Nov 18, 20, 22: Ice-age biogeography: dispersal, evolution, extinction

Week 13: Nov 25, 27: The Bering Land Bridge and the Ice-Free Corridor

Week 14: Dec. 2, 4, 6: Graduate student presentations

Week 15: Dec 9, 11, 13: Ongoing climate change: perspectives from the past

Week 16: Dec 16 Monday: final examination, term papers due

end
SYLLABUS  GEOG/GEOS 678: ICE AGE ALASKA
Fall 2016  3 credits  MWF 9:15-10:15  204 Reichardt

Instructor: Dr. Daniel Mann  
email: dhmann@alaska.edu  
Office: 366 Reichardt Building  
Phone: 474-6929  
Office Hours: MW 10:30-12:30

Course Description
This course provides an interdisciplinary overview of the paleoenvironments of ice age Alaska from 130,000 years ago to the present. It weaves together the diverse knowledge-threads from geography, geology, ecology, anthropology, and climatology that together describe the paleoenvironments of ice age Alaska. Emphasis is on events and processes in the past that have left continuing legacies on the present-day landscape. This is an upper division course because it relies on students having prior training in one or more of the above disciplines. Furthermore, it requires students to expand their interests and knowledge into fields they may know little about when the class begins. This class is intended for mature students who are ready to synthesize what they have learned so far and then add to it in creative ways.

Course Prerequisites:
Graduate standing in Anthropology, Arctic and Northern Studies, Atmospheric Sciences, Biological Sciences, Geography, Geology, Oceanography; or permission of instructor.

Course Objectives
To provide an interdisciplinary synthesis of what is known about biota, climate, glaciers, geomorphology, and archaeology during the last ice age including the last interglacial and the first few millennia of the Holocene, the present interglacial. The other main objective of this class is to explore the numerous unanswered questions that remain. Students will come away with a broadened perspective on how environments changed during the last ice age, the processes causing these changes, and the legacies of these changes in the present day. Although the focus is on Alaska and the Yukon, we will range more widely into other parts of the Arctic and its adjacent seas.

Instructional / Teaching Methods: This is a combined field, lecture, and discussion course that requires students to attend the field trips and keep up with assigned readings. Lectures and directed readings will give students a sound background in what we now know about ice age Alaska. There will be 3-5 guest lecturers over the course of the semester.

Field Trips: These are 2-day trips (Friday night through Sunday evening) that will depart Fairbanks in late afternoon on Fridays. In the field, we will collect data and test hypotheses. Attendance is mandatory for everyone. We will camp out in public campgrounds. Students should be comfortable scrambling over rough terrain and working in the rain.

Regarding the mandatory field trips: Please notify the instructor of any special needs that may require accommodation on the field trips. If you have any concerns about your ability to participate in the field trips, please notify the instructor before or on the first day of class.

Required Text: NONE. There is no upper division textbook that is relevant. Instead we will read a wide range of scientific papers: some old "classics" and others new developments in the fields of paleoecology, paleoclimatology, and Quaternary geology.
Attendance: attendance at lectures and on field trips is mandatory.

STUDENT ASSIGNMENTS
Field Trip Reports: Following each field trip, students will submit a report analyzing the data collected during the class field trips.

Readings: Graduate student readings will ordinarily consist of 3-4 scientific articles per week. There will be weekly quizzes on the readings.

Class Presentations: Graduate students will make a 1/2-hour presentation of their term paper topics.

Term Paper: A 10-20 page term paper (including illustrations) is required. Topics vary according to individual students' interests. Each student will also develop a proposal describing his/her topic prior to writing the term paper. Detailed guidelines for the term paper will be given in lecture.

Information on Exams and Assignments: Examination format will include a mixture of multiple choice, short answer / diagram / map, and essay.

Extra Credit: Extra credit is not an option in this course except under unusual circumstances.

Additional Expectations for Graduate-level Credit (GEOG/GEOS 678)
It is important that those enrolled for graduate credit understand the different standards (rubrics) for the different graduate and undergraduate levels of this course. Students who are enrolled for graduate credit will be graded at a significantly different and higher standard than those enrolled for undergraduate credit. I expect students who are enrolled for graduate credit to display a high degree of integration and creativity in the classroom, on field trips, as well as when answering examination questions and writing their term papers. The 600-level students are expected to take leading roles in classroom discussions and on the field trips. My expectation is that their enthusiasm, interest, and specialty knowledge will help guide the class and contribute to its overall success.

The 600-level students must complete substantially more assigned readings than the 400-level students. Undergraduate readings will ordinarily consist of two scientific articles every week, while graduate readings will be 3-4 articles per week, and these will typically be more complex and/or lengthy. Also, the term papers of the 600-level students will be approximately twice the length of the 400-level students and involve approximately twice the number of articles reviewed. Graduate students must make presentations of their term paper research in class. Finally, the midterm and final examinations will differ between the two levels of this course with the graduate students answering 5-10 additional questions on each examination.

Grading
Quizzes on readings: 20%
Midterm Exam: 20%
Final Exam: 20%
Class and Field Trip Participation (attendance + discussion + class presentation): 20%
Term Paper: 20%
Course grades will be assigned as indicated in the table below. Grade point values are indicated in the table as well. Please see “Academics and Regulations” section of UAF 2014-15 Catalog.

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<tr>
<td>A-</td>
<td>91-90</td>
<td>3.7</td>
</tr>
<tr>
<td>B+</td>
<td>89-87</td>
<td>3.3</td>
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<tr>
<td>B</td>
<td>86-82</td>
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<tr>
<td>B-</td>
<td>81-80</td>
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<tr>
<td>C+</td>
<td>79-77</td>
<td>2.3</td>
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<tr>
<td>D+</td>
<td>69-67</td>
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<tr>
<td>D</td>
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<tr>
<td>D-</td>
<td>61-60</td>
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</tr>
</tbody>
</table>

Course Grading Scale: All grades are determined on an absolute score (with no curve) according to the following scale:
A = 90-100 percent: outstanding work, mastery of topic
B = 80-89 percent: above average work, all assignments completed well
C = 70-79 percent: average, all or most assignments completed, most work satisfactory
D = 60-69 percent: pass, unsatisfactory or missing work
F = less than 60 percent: failure to meet requirements of course

Disabilities Services: The Office of Disability Services implements the Americans with Disabilities Act (ADA) and ensures that UAF students have equal access to the campus and course materials. I will work with the Office of Disability Services (474-7043) to provide reasonable accommodation to students with disabilities. Please let me know at the beginning of the course if accommodations should be provided.

Plagiarism/Academic Integrity: University Standards and Policies apply (see UAF Catalog).

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SCHEDULE OF LECTURES, EXAMINATIONS, AND TERM PAPER
(NOTE: The following schedule is based on the fall 2013 academic calendar)

Week 1: Friday Sept 6: What is this class about? Requirements, expectations.

Week 2: Sept 9, 11, 13: Basics of geochronology (radiocarbon, cosmogenic nuclides); Glacial history of Alaska

Field Trip #1: Delta Junction and Isabel Pass area. GOALS: 1) periglacial depositional environments (moraines, outwash, loess); 2) basic glaciology of debris-covered and surging glaciers; 3) field methods: relative age dating moraines, describing a stratigraphic section; 4) how to core a lake; 5) lake-sediment stratigraphy (tephras); 6) the Alaska Range glacial sequence as it is currently known.

Week 3: Sept 16, 18, 20: Permafrost geomorphology; Glacial geology with emphasis on field mapping
Field Trip #2: Parks Highway to Cantwell. GOALS: 1) vegetation zonation, treelines; 2) landslides; 3) glacial landforms; 4) stream planforms; 5) wildland fire; 6) method of multiple working hypotheses as applied to geomorphic mapping; 7) loess stratigraphy; 8) how to core a tree

Week 4: Sept 23, 25, 27: Basics of glaciology with emphasis on interpreting glacial geology

Week 5: Sept 30, Oct. 2, 4: Aeolian processes and depositional environments

Week 6: Oct 7, 9, 11: Alaska's loess and sand dune records (remote sensing exercise)

Week 7: Oct 14, 16, 18: Fluvial processes and depositional environments

Week 8: Oct 21, 23, 25: Alaska's fluvial record (remote sensing exercise); Sea-level history and processes

Week 9: Oct 28, 30: Vegetation history (exercise: interpreting a real data set in terms of paleoenvironment)

Friday Nov. 1 MIDTERM EXAM

Week 10: Guest Speakers TBA

Week 11: Nov 11, 13: Alaska's Archaeological past

Week 12: Nov 18, 20, 22: Ice-age biogeography: dispersal, evolution, extinction

Week 13: Nov 25, 27: The Bering Land Bridge and the Ice-Free Corridor

Week 14: Dec. 2, 4, 6: Graduate student presentations

Week 15: Dec 9, 11, 13: Ongoing climate change: perspectives from the past

Week 16: Dec 16 Monday: final examination, term papers due

end