

Revised 01/13/16

25-GINC/22-UNC Stacked

FORMAT 1

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**
(Attach copy of syllabus)**SUBMITTED BY:**

Department	Geosciences	College/School	CNSM
Prepared by	Cary de Wit	Phone	x7141
Email Contact	cwdewit@alaska.edu	Faculty Contact	Daniel Mann

1. ACTION DESIRED (CHECK ONE):

Trial Course

New Course

X

2. COURSE IDENTIFICATION:

Dept

GEOG

Course #

F478/678

No. of Credits

3

Justify upper/lower division status & number of credits:

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/NO

Yes

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/NO

Yes

If yes, Dept:

GEOG/GEOS

Course #

F678

How will the two course levels differ from each other? How will each be taught at the appropriate level?:

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.

* Use only one Format 1 form for the stacked course (not one for each level of the course!) and attach syllabi. 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 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

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

X

6 weeks to full semester

OTHER FORMAT (specify)

Mode of delivery (specify lecture, field trips, labs, etc)

Lecture, discussion, and field trips.

9. CONTACT HOURS PER WEEK:

2.5

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-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 21 lab hours in addition to the lectures on campus: (2.5+1.5)

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

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 begins with two weekend field trips and then surveys key literature describing Alaska's ice-age history. The focus is on Alaska and the Yukon, but topics will range more widely into other parts of the Arctic and its adjacent seas. 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. (2.5+1.5)

GEOS 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 begins with two weekend field trips and then surveys key literature describing Alaska's ice-age history. The focus is on Alaska and the Yukon, but topics will range more widely into other parts of the Arctic and its adjacent seas. Prerequisites: Senior standing in Anthropology, Biological Sciences, Earth Science, Geography, Geoscience, or Northern Studies; or permission of instructor. Cross-listed with GEOG F478. Stacked with GEOG F678; GEOS F678. (2.5+1.5)

GEOG 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 begins with two weekend field trips and then surveys key literature describing Alaska's ice-age history. The focus is on Alaska and the Yukon, but topics will range more widely into other parts of the Arctic and its adjacent seas. Prerequisites: Graduate standing in Anthropology, Arctic and Northern Studies, Atmospheric Sciences, Biological Sciences, Geography, Geology, Oceanography; or permission of instructor. Cross-listed with GEOS F678. Stacked with GEOG F478; GEOS F478. (2.5+1.5)

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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

Will this course be used to fulfill a requirement for the baccalaureate core? If YES, attach form.

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 ☐

NO ☐

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).

N/A

How many times may the course be repeated for credit?

N/A

TIMES

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

CREDITS

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: ☐

RESTRICTIONS ON ENROLLMENT (if any)

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 (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

☐

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.

AS PER ATTACHED—

APPROVALS: Add additional signature lines as needed.

	Date	
Signature, Chair, Program/Department of:	<u>Geography</u>	

	Date	
Signature, Chair, Program/Department of:	<u>Geosciences</u>	

	Date	
Signature, Chair, College/School Curriculum Council for:	<u>CNSM</u>	

	Date	
Signature, Dean, College/School of:	<u>CNSM</u>	

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

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

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

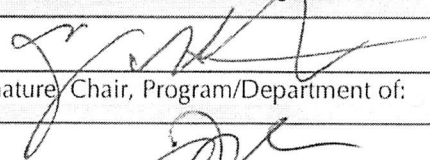
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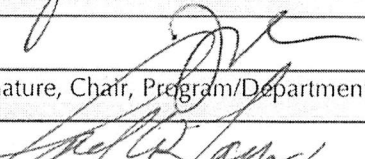
Signature, Chair

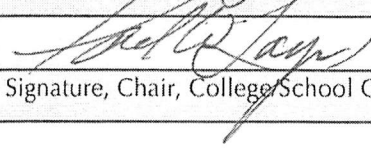
Faculty Senate Review Committee: ___Curriculum Review ___GAAC

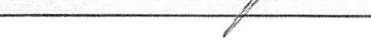
___Core Review ___SADAC

APPROVALS: Add additional signature lines as needed.

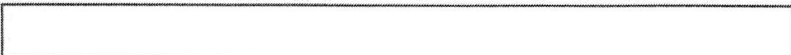
 Date 9-30-2015
Signature, Chair, Program/Department of: Geography

 Date 10-13-15
Signature, Chair, Program/Department of: Geosciences


 Date 10/15/15
Signature, Chair, College/School Curriculum Council for: CNSM

 Date
Signature, Dean, College/School of: CNSM

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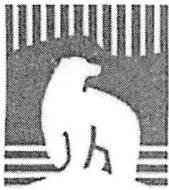
 Date
Signature of Provost (if above level of approved programs)

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

 Date
Signature, Chair

Faculty Senate Review Committee: ☐ Curriculum Review ☐ GAAC

☐ Core Review ☐ SADAC



DEPARTMENT OF GEOLOGY AND GEOPHYSICS
University of Alaska Fairbanks
900 Yukon Drive
PO Box 755780
Fairbanks, Alaska 99775-5780

Phone: (907) 474-7565
Fax: (907) 474-5163

<http://www.uaf.edu/geology>
E-mail: geology@www.uaf.edu

MEMORANDUM

DATE: September 30, 2015

TO: Susan Henrichs, Provost

Approved: [Signature] Date: 10/1/15

Through: Paul Layer, Dean CNSM

Approved: [Signature] Date: 10/1/15

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

Revised
1/13/16

Instructor: Dr. Daniel Mann

email: dhmann@alaska.edu

Office: 366 Reichardt Building

Phone: 474-6929

Office Hours: MW 10:30-12:30

Course Description

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 begins with two weekend field trips and then surveys key literature describing Alaska's ice-age history. The focus is on Alaska and the Yukon, but topics will range more widely into other parts of the Arctic and its adjacent seas.

Course Prerequisites:

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

Course Goals

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.

Student Learning Outcomes

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.

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. Reading material will be distributed in class, or available through BlackBoard.

Attendance: Attendance at lectures and on field trips is mandatory. Missing a lecture will result

in a reduction of your final grade by one letter grade. Missing either of the field trips will result in a failing grade for the course.

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.

Grade	%	GP
A+	100-97	4.0
A	96-92	4.0
A-	91-90	3.7
B+	89-87	3.3
B	86-82	3.0
B-	81-80	2.7
C+	79-77	2.3
C	76-72	2.0
C-	71-70	1.7
D+	69-67	1.3
D	66-62	1.0
D-	61-60	0.7

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 (474-5655) 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).

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

*Revised
1/13/16*

Instructor: Dr. Daniel Mann
email: dhmann@alaska.edu
Office: 366 Reichardt Building
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Course Description

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Course Prerequisites:

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

Course Goals

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.

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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.

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. Reading material will be distributed in class, or available through BlackBoard.

Attendance: Attendance at lectures and on field trips is mandatory. Missing a lecture will result

in a reduction of your final grade by one letter grade. Missing either of the field trips will result in a failing grade for the course.

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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D+	69-67	1.3
D	66-62	1.0
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(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