Undergraduate Academic Board
Agenda

August 30, 2013
2:00-5:00
ADM 204

I. Roll
( ) Alberta Harder (FS)
( ) Soren Orley (FS)
( ) Francisco Miranda (CAS, Chair)
( ) Barbara Harville (CAS)
( ) Mari Ippolito (CAS)
( ) Len Smiley (CAS)
( ) Dave Fitzgerald (CBPP)
( ) Eileen Weatherby (COH)
( ) Irasema Ortega (COE)
( ) Jeffrey Callahan (CTC)
( ) Utpal Dutta (SOE)
( ) Michael Hawfield (KPC)
( ) Sheri Denison (Mat-su)
( ) Kathryn Hollis Buchanan (Kod)
( ) Christina Stuive (ADV)
( ) Susan Kalina
( ) Lora Volden
( ) Michael Worth

Ex-Officio Members
( ) Susan Kalina
( ) Lora Volden
( ) Michael Worth

II. Approval of the Agenda (pg.1-2)

III. Approval of Meeting Summary (pg. 3-4)

IV. Administrative Report
A. Vice Provost for Undergraduate Academic Affairs Susan Kalina
B. University Registrar Lora Volden

V. Chair’s Report
A. UAB Chair- Francisco Miranda
B. GERC

VI. Program/Course Action Request- Second Readings
Chg HIST A390 Themes in World History (GER)(3 cr)(3+0)(pg. 4-10)
Chg ENGL A214 Persuasive Writing (GER)(3 cr)(3+0)(pg. 18-27)

VII. Program/Course Action Request- First Readings
Chg GEOL A111 Physical Geology (GER) (3 cr)(3+0)(pg. 28-31)
Add GEOL A111L Physical Geology Laboratory (GER) (1 cr)(0+3)(pg. 32-35)
Add GEOL A121 Applied Physical Geology (GER) (4 cr)(3+3)(pg. 36-39)
Chg GEOL A221 Historical Geology (GER)(4 cr)(3+3)(pg. 40-44)
Chg GEOL A381 Kenai Peninsula Field Studies (3 cr)(0+9)(pg. 45-49)
Chg GEOL A382 Geologic Field Studies (3 cr)(0+9)(pg. 50-54)
Chg GEOL A454 Glacial and Quaternary Geology (Stacked with GEOL A654) (3 cr)(3+0)(pg. 55-62)
Chg  GEOL A455  Permafrost (Stacked with GEOL A655)(3 cr)(3+0)(pg. 63-70)
Chg  GEOL A456  Geoarchaeology (Stacked with GEOL A656)(3 cr)(3+0)(pg. 71-79)
Chg  GEOL A460  Environmental Geochemistry (Stacked with GEOL A660) (3 cr)(3+0)(pg. 80-89)
Chg  GEOL A480  Geologic Field Methods (3 cr)(0+9)(pg. 90-93)
Chg  GEOL A482  Geologic Field Investigations (3 cr)(0+9)(pg. 94-97)
Chg  GEOL A490  Advanced Topics in Geology (stacked with GEOL A690) (1-4 cr)(1-4+0)(pg. 98-107)
Chg  BS, Geological Sciences (pg. 108-119)

VIII.  Old Business

IX.  New Business
A.  Draft of Tentative Goals for UAB for 2013-2014 (pg. 120)

X.  Informational Items and Adjournment
August 23, 2013
2:00-5:00
ADM 204

Undergraduate Academic Board

Summary

I. Roll
(x) Alberta Harder (FS)
(x) Soren Orley (FS)
(x) Francisco Miranda (CAS, Chair)
(x) Barbara Harville (CAS)
(x) Mari Ippolito (CAS)
 ) Len Smiley (CAS)
(x) Dave Fitzgerald (CBPP)
(x) Eileen Weatherby (COH)
(e) Irasema Ortega (COE)
(x) Jeffrey Callahan (CTC)
(x) Upal Dutta (SOE)
(x) Michael Hawfield (KPC)
(x) Sheri Denison (Mat-su)
(x) Kathryn Hollis Buchanan(Kod)
(x) Kevin Keating (LIB)

Ex-Officio Members
(x) Susan Kalina
(x) Lora Volden
(x) Michael Worth

II. Approval of the Agenda (pg.1-2)
Approved

III. Approval of Meeting Summary (pg. 3-4)
Approved

IV. Administrative Report
A. Vice Provost for Undergraduate Academic Affairs Susan Kalina
   Written report is attached to UAB agenda website
   Discussed program Student Learning Outcomes (SLOs), program assessment, course fees, and GER
   Task Force open forums

B. University Registrar Lora Volden
   Add/drop deadline is September 6th
   Transfer evaluations are occurring within 3 days of the transcript being received
   Secured funding to purchase a student scheduling software; will be implemented for summer 2014
   registration
   Discussed the DegreeWorks update
   A memo will be sent out to the departments in mid-September regarding testing
   eCatalog kickoff meeting took place in July and identified several inconsistencies within the current
   catalog. Would like the board to develop language regarding special notes and other items that are
   repeated throughout the catalog so consistency can occur.

V. Chair’s Report
A. UAB Chair- Francisco Miranda

B. GERC
   No meeting

VI. Program/Course Action Request- Second Readings

VII. Program/Course Action Request- First Readings

Chg CHEM A411 Biophysical Chemistry (Stacked with CHEM A611) (3 cr)(3+0)(pg. 5-15)
Chg CHEM A450 Environmental Chemistry (Stacked with (CHEM A650)(3 cr)(3+0)(pg. 16-25)
Chg CHEM A477 Bioanalytical Chemistry (Stacked with CHEM A677)(3 cr)(3+6)(pg. 26-36)
Add CHEM A480 Nuclear Magnetic Resonance (stacked with CHEM A680)(3 cr)(3+0)(pg. 37-45)
Add CHEM A490 Selected Lecture Topics in Chemistry (Stacked with CHEM A690)
(1-3 cr)(1-3+0)(pg. 46-56)
Add CHEM A495 Chemistry Internship (3 cr)(0+9)(pg. 57-61)

All CHEM courses are Accepted for first reading

Chg HIST A390 Themes in World History (GER)(3 cr)(3+0)(pg. 62-67)
Accepted for first reading (going to GERC)

Chg BA, History (pg. 68-74)
Accepted for first reading

Chg ENGL A214 Persuasive Writing (GER)(3 cr)(3+0)(pg. 75-83)
Accepted for first reading (going to GERC)

Add GEOG A375 Environmental Applications of Geographic Information Systems (GIS)
(3 cr)(2+3)(pg. 84-88)
Waive first reading, approve for second

Add SWK A405 Children’s Mental Health Interdisciplinary Seminar
(Cross listed with HUMS/PSY A405) (1 cr)(1+0)(pg. 89-95)
Waive first reading, approve for second

Add HUMS A405 Children’s Mental Health Interdisciplinary Seminar
(Cross listed with SWK/PSY A405) (1 cr)(1+0)(pg. 96-102)
Waive first reading, approve for second

Add PSY A405 Children’s Mental Health Interdisciplinary Seminar
(Cross listed with HUMS/SWK A405) (1 cr)(1+0)(pg. 103-110)
Waive first reading, approve for second

Add Minor, Children’s Mental Health (pg. 111-119)
Waive first reading, approve for second

Chg GEOL A111 Physical Geology (GER) (3 cr)(3+0)(pg. 120-123)
Add GEOL A111L Physical Geology Laboratory (GER) (1 cr)(0+3)(pg. 124-127)
Add GEOL A121 Applied Physical Geology (GER) (4 cr)(3+3)(pg. 128-131)
Chg GEOL A221 Historical Geology (GER)(4 cr)(3+3)(pg. 132-136)
Chg GEOL A381 Kenai Peninsula Field Studies (3 cr)(0+9)(pg. 137-141)
Chg GEOL A382 Geologic Field Studies (3 cr)(0+9)(pg. 142-146)
Chg GEOL A454 Glacial and Quaternary Geology (Stacked with GEOL A654)
(3 cr)(3+0)(pg. 148-154)
Chg GEOL A455 Permafrost (Stacked with GEOL A655)(3 cr)(3+0)(pg. 155-162)
Chg GEOL A456 Geoarchaeology (Stacked with GEOL A656)(3 cr)(3+0)(pg. 163-171)
Chg GEOL A460 Environmental Geochemistry (Stacked with GEOL A660)
(3 cr)(3+0)(pg. 172-181)
Chg GEOL A480 Geologic Field Methods (3 cr)(0+9)(pg. 182-185)
Chg GEOL A482 Geologic Field Investigations (3 cr)(0+9)(pg. 186-189)
Chg GEOL A490 Advanced Topics in Geology (stacked with GEOL A690)
(1-4 cr)(1-4+0)(pg. 190-199)
Chg BS, Geological Sciences (pg. 200-211)

No initiator present

VIII. Old Business

IX. New Business

X. Informational Items and Adjournment
**Course Action Request**  
University of Alaska Anchorage  
Proposal to Initiate, Add, Change, or Delete a Course

<table>
<thead>
<tr>
<th>1a. School or College</th>
<th>1b. Division</th>
<th>1c. Department</th>
</tr>
</thead>
<tbody>
<tr>
<td>AS CAS</td>
<td>AHUM Division of Humanities</td>
<td>History</td>
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<table>
<thead>
<tr>
<th>2. Course Prefix</th>
<th>3. Course Number</th>
<th>4. Previous Course Prefix &amp; Number</th>
<th>5a. Credits/CEUs</th>
<th>5b. Contact Hours (Lecture + Lab)</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIST</td>
<td>A390</td>
<td>HIST A390A</td>
<td>3.0</td>
<td>(3+0)</td>
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<thead>
<tr>
<th>6. Complete Course Title</th>
<th>Abbreviated Title for Transcript (30 character)</th>
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<tbody>
<tr>
<td>Themes in World History</td>
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<thead>
<tr>
<th>7. Type of Course</th>
<th>8. Type of Action:</th>
<th>9. Repeat Status</th>
<th># of Repeats</th>
<th>Max Credits</th>
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<tbody>
<tr>
<td>Academic</td>
<td>Add or Change</td>
<td>Yes</td>
<td>1</td>
<td>6</td>
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<tr>
<th>10. Grading Basis</th>
<th>11. Implementation Date</th>
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<tr>
<td>A-F</td>
<td>Spring/2014 To: /9999</td>
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<tr>
<th>12.</th>
<th>Cross Listed with</th>
<th>Stacked with</th>
</tr>
</thead>
</table>

13a. Impacted Courses or Programs: List any programs or college requirements that require this course.

<table>
<thead>
<tr>
<th>Impacted Program/Course</th>
<th>Date of Coordination</th>
<th>Chair/Coordinator Contacted</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. INTL BA</td>
<td>3/29/2013</td>
<td>Dorn VanDommelen</td>
</tr>
<tr>
<td>2. Elementary Education BA</td>
<td>5/14/2013</td>
<td>Robert Capuzzo, Claudia Dybbahl</td>
</tr>
<tr>
<td>3. History</td>
<td>3/29/2013</td>
<td>Elizabeth Dennison</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Initiator Name (typed):</th>
<th>Initiator Signed Initials:</th>
<th>Date:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paul Dunscomb</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

13b. Coordination Email: Date: 3/29/13  
submitted to Faculty Listserv: (uaa-faculty@lists.uaa.alaska.edu)

13c. Coordination with Library Liaison: Date: 3/29/13

14. General Education Requirement  
Mark appropriate box:  
- Oral Communication  
- Written Communication  
- Quantitative Skills  
- Humanities  
- Fine Arts  
- Social Sciences  
- Natural Sciences  
- Integrative Capstone

15. Course Description (suggested length 20 to 50 words)  
A broadly comparative and interdisciplinary analysis of fundamental or universal aspects of the human experience from prehistory to the present. Special Note: May be repeated once for credit with a change of subtitle

16a. Course Prerequisite(s) (list prefix and number or test code and score)  
HIST A102 and HIST A122 or HIST A132 with minimum grade of C.

16b. Co-requisite(s) (concurrent enrollment required)

16c. Other Restriction(s)  
- College  
- Major  
- Class  
- Level

16d. Registration Restriction(s) (non-codable)  
Junior or higher standing.

17. Mark if course has fees

18. Mark if course is a selected topic course

19. Justification for Action  
Streamlining of prerequisites to ensure necessary skills and background.

<table>
<thead>
<tr>
<th>Initiator (faculty only)</th>
<th>Date</th>
<th>Approve</th>
<th>Disapprove</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paul E. Dunscomb</td>
<td></td>
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<thead>
<tr>
<th>Initiator (TYPE NAME)</th>
<th>Date</th>
<th>Approve</th>
<th>Disapprove</th>
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<tr>
<th>Department Chair</th>
<th>Date</th>
<th>Approve</th>
<th>Disapprove</th>
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</thead>
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<thead>
<tr>
<th>College/School Curriculum Committee Chair</th>
<th>Date</th>
<th>Approve</th>
<th>Disapprove</th>
</tr>
</thead>
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<thead>
<tr>
<th>Dean/Director of School/College</th>
<th>Date</th>
<th>Approve</th>
<th>Disapprove</th>
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</thead>
</table>

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<thead>
<tr>
<th>Undergraduate/Graduate Academic</th>
<th>Date</th>
<th>Approve</th>
<th>Disapprove</th>
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<table>
<thead>
<tr>
<th>Board Chair</th>
<th>Date</th>
<th>Approve</th>
<th>Disapprove</th>
</tr>
</thead>
</table>

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<thead>
<tr>
<th>Provost or Designee</th>
<th>Date</th>
<th>Approve</th>
<th>Disapprove</th>
</tr>
</thead>
</table>
Course Content Guide
University of Alaska Anchorage
Department of History: HIST A390 Themes in World History

I. Initiation Date: March 2013

II. Course Information:
A. College: College of Arts and Sciences
B. Department: History
C. Course Title: Themes in World History
D. Course Subject/Number: HIST A390
E. Credit Hours: 3.0 Credits
F. Contact Time: 3+0 Contact Time
G. Grading Information: A-F
H. Course Description: A broadly comparative and interdisciplinary analysis of fundamental or universal aspects of the human experience from prehistory to the present. Special Note: May be repeated once for credit with a change of subtitle
I. Course Prerequisites: HIST A102 and HIST A122 or HIST A132 with minimum grade of C.
J. Course Fees: None
K. Status of Course: Non-Western Requirement for History BA, GER Integrative Capstone Course, International Studies Major Capstone Course

III. Instructional Goals and Student Learning Outcomes:
A. Instructional Goals:

1. To provide a broadly comparative examination of a fundamental or universal aspect of human affairs over time (the theme).

2. Through thematic study to develop the student’s ability to think historically, that is,
   -- to place ideas, events, objects and texts in proper historical context;
   -- to examine causation and consequences (e.g., genocide or urban living)
   -- to analyze patterns of change and continuity (e.g., revolutions, encounters with modernity)
   -- to assess possibilities of contingency (e.g., The First World War in global perspective, natural disaster)
   -- and to recognize and evaluate the complexity of the historical process.

3. Through thematic study to develop the student’s ability to read, think and write critically through the examination and analysis of primary and secondary sources.
4. To develop the student’s ability to communicate effectively orally and in writing at an advanced undergraduate level.

B. Student Learning Outcomes and Assessment Procedures.

<table>
<thead>
<tr>
<th>Students will be able to:</th>
<th>Assessment Procedures:</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Note: This is a writing intensive course, as virtually all student assessment will be based upon written assignments</em></td>
<td></td>
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</tbody>
</table>

1. Describe the key developments and consequences of significant global events or universal human processes over time.
   - Content exams and analytical essays

2. Identify, place in proper historical context and evaluate for historical significance primary documents and texts on various themes in world history.
   - Analytical essays and/or research paper

3. Discuss and analyze the causes and consequences of key historical developments in the said theme.
   - Analytical essays and exams, and/or research paper, oral presentations and discussion

4. Recognize and analyze patterns of change and continuity globally and over time.
   - Analytical essays and exams, and/or research paper

5. Integrate knowledge and employ skills gained to synthesize and make critical judgments in assessing the role of complexity and contingency in global events and processes through study and analysis of specific examples (living in cities, revolutions, intellectual and cultural movements).
   - Analytical essays and exams, and/or research paper

6. Communicate effectively orally and in writing at an advanced undergraduate level.
   - Analytical essays and exams, and/or research paper, oral presentations and discussion

IV. Guidelines for Evaluation:

Students will be evaluated on the above outcomes through participation in classroom discussions and presentations, content and essay exams, analytical essays based on assigned readings of both primary and secondary sources, and research papers. The specific number, type and weighting of assignments will vary by individual instructor. All assignments will emphasize reading, writing and historical thinking and research skills.

V. Course Level Justification:

This course requires students to analyze, to evaluate and to synthesize historical data, and
to demonstrate upper division written and oral skills. To be able to complete this course successfully, students will need a base of knowledge and skills available through introductory level courses. The amount of student work, stress on analysis, critical thinking and careful evaluation of contrasting historical arguments and sources makes this course an upper division offering.

VI. **Topical Course Outlines:**

Each section of the course will examine an individual theme of the instructor’s design. As such there is no model course outline, but all courses must be broadly comparative, examining aspects of the human experience or global events from Western and non-Western perspectives. Potential themes include; Comparative Revolutions, The Holocaust and Genocide, The First World War, Anarchy, Identity and Modernity, and Natural Disaster. Below is a course outline on the theme of The City in History.

- **Week One:** Urbanity as Universal Experience
- **Week Two:** Urban Geography Part 1, what makes a city a city?
- **Week Three:** The City and the Advent of Civilization
- **Week Four:** Urban Design and Social Values Athens to Rome, Chang’an to Seoul
- **Week Five:** “Power” in the City (Edo and Paris)
- **Week Six:** Urban Amusements
- **Week Seven:** Defending the City: from Jericho to Star Wars
- **Week Eight:** Midterm Exam
- **Week Nine:** Pre-Modern, Modern and Post-Modern Cities
- **Week Ten:** City as Revolutionary Site and Object
- **Week Eleven:** The City and the Environment
- **Week Twelve:** Urban Geography Part II, field trip (Yokohama, Seoul, Anchorage)
- **Week Thirteen:** Student Presentations Part I
- **Week Fourteen:** Student Presentations Part II
- **Week Fifteen:** Final Exam
VII. Suggested Text and Readings (Urbanity! The City in History):


VIII. Select Bibliography: Urbanity! The City in History.


1a. School or College  
AS CAS

1b. Department  
History

2. Complete Program Title/Prefix  
Bachelor of Arts, History

3. Type of Program  
Choose one from the appropriate drop down menu:  
Undergraduate: or Graduate:  
Bachelor of Arts  or  CHOOSE ONE

This program is a Gainful Employment Program:  
☑ Yes  or  ☐ No

4. Type of Action:  
PROGRAM  
☐ Add  
☒ Change  
☐ Delete

PREFIX  
☐ Add  
☐ Change  
☐ Inactivate

5. Implementation Date (semester/year)  
From: Fall/2014  
To: 9999

6a. Coordination with Affected Units  
Department, School, or College: CAS  
Initiator Name (typed): Paul Dunscomb  
Initiator Signed Initials: _________  
Date:________________

6b. Coordination Email submitted to Faculty Listserv (uaa-faculty@lists.uaa.alaska.edu)  
Date: 3/29/13

6c. Coordination with Library Liaison  
Date: 3/29/13 e-mail to Kevin Keating

7. Title and Program Description - Please attach the following:  
☒ Cover Memo  
☒ Catalog Copy in Word using the track changes function

8. Justification for Action  
See attached memo

Initiator (faculty only)  
Date  
☐ Approved  
☐ Disapproved  
Initiator (TYPE NAME)

☑ Approved  
☐ Disapproved  
Dean/Director of School/College  
Date

☐ Approved  
☐ Disapproved  
Department Chair  
Date

☐ Approved  
☐ Disapproved  
Undergraduate/Graduate Academic Board Chair  
Date

☐ Approved  
☐ Disapproved  
College/School Curriculum Committee Chair  
Date

☐ Approved  
☐ Disapproved  
Provost or Designee  
Date
History as a subject in its broadest sense is all that human beings have thought and done. Knowledge of history is the principal means by which humans discover and preserve their collective identity, for through such knowledge we gain a clear view of our limitations and a glimpse of our potential.

History as an intellectual discipline examines and interprets the documentary records of human activity, records that are often fragmentary and incomplete. As a discipline, history is both a science and an art; it requires an intricate balance of scientific technique and creative imagination to weave fragments of evidence into an intelligent account of human experience.

**Program Student Learning Outcomes**

The desired student learning outcomes for the Department of History are:

1. Demonstrate the ability to write clear and precise English
2. Demonstrate advanced level historical research skills (proper use of historical citation style, critical use of primary and secondary sources, adequate research base, ability to frame a good historical question)
3. Demonstrate advanced historical skills (recognition of significance, cause and effect, continuity v. discontinuity, historiographical conversancy and perspective, critical and integrative thinking)

**Honors in History**

The award of honors in History recognizes distinguished achievement by undergraduate majors in the study and writing of history. To be eligible for departmental honors a student must satisfy the following requirements:

1. Be a declared History major.
2. Satisfy all the requirements for a BA degree in History.
3. Meet the requirements for Graduation with Honors as listed in Chapter 7.
4. Maintain a grade point average of 3.50 or above in courses specific to the History major.
5. Complete HIST A377 Historiography with a grade of A.
6. Complete HIST A477 Senior Seminar paper with a grade of A.

Honors designees in History must submit a typographically correct, formal copy of their senior paper to the department for deposit in the departmental archives. This must be done before graduation day of the year in which the paper is completed.

**Bachelor of Arts, History**

**Admission Requirements**

Complete the Admission to Baccalaureate Programs Requirements in Chapter 7.

**Graduation Requirements**

Students must complete the following graduation requirements:

**A. General University Requirements**

Complete the General University Requirements for All Baccalaureate Degrees located at the beginning of this chapter.

**B. General Education Requirements**

Complete the General Education Requirements for Baccalaureate Degrees listed at the beginning of this chapter.

**C. College of Arts and Sciences Requirements**

Complete the College of Arts and Sciences Requirements listed at the beginning of the CAS section.
D. Major Requirements

1. Complete the following survey courses:
   - HIST A101 Western Civilization I (3)
   - HIST A102 Western Civilization II (3)
   - HIST A131 History of United States I (3)
   - HIST A132 History of United States II (3)

2. Complete 6 credits of non-Western History courses:
   - HIST A121 East Asian Civilization I (3)
   - HIST A122 East Asian Civilization II (3)
   - HIST A320 The Rise, Fall, and Reinvention of the Samurai (3)
   - HIST A321 Modern China (3)
   - HIST A322 Modern Japan (3)
   - HIST A323 Communist China (3)
   - HIST/INTL/PS A325 Northeast Asia in 21st Century (3)
   - HIST A330 Russia in East Asia (3)
   - HIST A336 Latin America to 1800 (3)
   - HIST A338 Modern Latin America (3)
   - HIST A390 Themes in World History*(3)
   * May be repeated once with a change in subtitle.

3. Complete 15 credits of upper division History electives 15

4. Complete HIST A377 Historiography: The Uses and Abuses of History 3

5. Complete HIST A477 Senior Seminar 3

6. A total of 120 credits is required for the degree, of which 42 credits must be upper division.

Minor, History

A total of 18 credits is required for the minor, 9 of which must be upper division.

1. HIST A101 Western Civilization I (3) 6
   and
   HIST A102 Western Civilization II (3)
   or
   HIST A131 History of United States I (3)
   and
   HIST A132 History of United States II (3)

2. Upper division History electives* 9

3. History elective, any level 3

FACULTY

Ray Ball, Assistant Professor, rball11@uaa.alaska.edu
Ronald Crawford, Professor Emeritus, rmcrawford@uaa.alaska.edu
Elizabeth Dennison, Professor/Chair, ejdennison@uaa.alaska.edu
Paul Dunscomb, Professor, pdunscomb@uaa.alaska.edu
Songho Ha, Associate Professor, sha4@uaa.alaska.edu
Ian Hartman, Assistant Professor, ichartman@uaa.alaska.edu
Steve Haycox, Professor Emeritus, shhaycox@uaa.alaska.edu
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Bachelor of Arts, History
Admission Requirements
Complete the Admission to Baccalaureate Programs Requirements in Chapter 7.

Graduation Requirements
Students must complete the following graduation requirements:
A. General University Requirements
   Complete the General University Requirements for All Baccalaureate Degrees located at the beginning of this chapter.

B. General Education Requirements
   Complete the General Education Requirements for Baccalaureate Degrees listed at the beginning of this chapter.
   *The department recommends that its majors complete GEOG A101 to satisfy part of the CAS social science requirement.

C. College of Arts and Sciences Requirements
   Complete the College of Arts and Sciences Requirements listed at the beginning of the CAS section.
D. Major Requirements

1. Complete the following survey courses:
   - HIST A101 Western Civilization I 3
   - HIST A102 Western Civilization II 3
   - HIST A131 History of United States I 3
   - HIST A132 History of United States II 3

2. Complete 6 credits of non-Western History courses: 6
   - HIST A121 East Asian Civilization I (3)
   - HIST A122 East Asian Civilization II (3)
   - HIST A320 The Rise, Fall, and Reinvention of the Samurai (3)
   - HIST A321 Modern China (3)
   - HIST A322 Modern Japan (3)
   - HIST A323 Communist China (3)
   - HIST/INTL/PS A325 Northeast Asia in 21st Century (3)
   - HIST A330 Russia in East Asia (3)
   - HIST A336 Latin America to 1800 (3)
   - HIST A338 Modern Latin America (3)
   - HIST A390A Themes in World History* (3)
   * May be repeated once with a change in subtitle.

3. Complete 15 credits of upper division History electives 15
4. Complete HIST A377 Historiography: The Uses and Abuses of History 3
5. Complete HIST A477 Senior Seminar. 3
6. A total of 120 credits is required for the degree, of which 42 credits must be upper division.

Minor, History

A total of 18 credits is required for the minor, 9 of which must be upper division.

1. HIST A101 Western Civilization I (3) 6
   and
   - HIST A102 Western Civilization II (3)
   or
   - HIST A131 History of United States I (3)
   and
   - HIST A132 History of United States II (3)

2. Upper division History electives* 9
3. History elective, any level 3

FACULTY

David Liburd, Associate Professor (retired)
Ray Ball, Assistant Professor, rball11@uaa.alaska.edu
Ronald Crawford, Professor Emeritus, rmcrawford@uaa.alaska.edu
Elizabeth Dennison, Professor/Chair, ejdennison@uaa.alaska.edu
Paul Dunscomb, Professor retdcomb@uaa.alaska.edu
Songho Ha, Associate Professor, shah@uaa.alaska.edu
Ian Hartman, Assistant Professor, ihartman@uaa.alaska.edu
Steve Haycox, Professor Emeritus, shhaycox@uaa.alaska.edu
Course Action Request  
University of Alaska Anchorage  
Proposal to Initiate, Add, Change, or Delete a Course

<table>
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<th>1a. School or College</th>
<th>1b. Division</th>
<th>1c. Department</th>
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<td>Please type into fields provided in table. If more than three entries, submit a separate table. A template is available at <a href="http://www.uaa.alaska.edu/governance">www.uaa.alaska.edu/governance</a>.</td>
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<th>15. Course Description (suggested length 20 to 50 words)</th>
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<td>Instruction in writing based on theories of persuasion and argument practiced in disciplines across the curriculum. Focuses on elements of the writing process, rhetorical situations, and persuasive strategies. Develops a broad range of analytical, persuasive, and research skills with special attention to their application in a variety of academic and civic environments. Research-supported papers required.</td>
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<td>ENGL A111 with a minimum grade of C or ENGL A1W with a minimum grade of C or ENGL A2W with a minimum grade of C or ENGL A3W with a minimum grade of C or minimum or EAEN 30; SATC 620; SATV 620; ACTE 30.</td>
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<tr>
<td>Dean/Director of School/College</td>
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<td>Undergraduate/Graduate Academic Board Chair</td>
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<td>Provost or Designee</td>
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<td>College/School Curriculum Committee Chair</td>
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<tr>
<td>Impacted Program/Course</td>
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<td>ANTH A354</td>
<td>Courtesy Coordination</td>
<td>Anthropology – Stephen Langdon 6-6848 <a href="mailto:sjlangdon@uaa.alaska.edu">sjlangdon@uaa.alaska.edu</a></td>
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<tr>
<td>ATA A492</td>
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<td>Aviation - Rocky Capozzi 6-7200 <a href="mailto:afroc@uaa.alaska.edu">afroc@uaa.alaska.edu</a></td>
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<td>ATP A100</td>
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<td>Aviation - Rocky Capozzi 6-7200 <a href="mailto:afroc@uaa.alaska.edu">afroc@uaa.alaska.edu</a></td>
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<td>BIOL A489</td>
<td>Courtesy Coordination</td>
<td>Biology – Fred Rainey, 6-4987 <a href="mailto:farainey@uaa.alaska.edu">farainey@uaa.alaska.edu</a></td>
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<tr>
<td>CA A495</td>
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<td>Culinary Arts – Tim Doebler, 6-4728 <a href="mailto:twdoebler@uaa.alaska.edu">twdoebler@uaa.alaska.edu</a></td>
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<tr>
<td>CEL A390</td>
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<td>Civic Engagement &amp; Learning – Judith Owens-Manley 6-4087 <a href="mailto:afjo@uaa.alaska.edu">afjo@uaa.alaska.edu</a></td>
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<td>Computer Information Systems – Minnie Yen 6-4117 <a href="mailto:ylyen@uaa.alaska.edu">ylyen@uaa.alaska.edu</a></td>
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<tr>
<td>CIS A376</td>
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<td>Computer Information Systems – Minnie Yen 6-4117 <a href="mailto:ylyen@uaa.alaska.edu">ylyen@uaa.alaska.edu</a></td>
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<td>Construction Management – Donn Ketner Jr 6-6467 <a href="mailto:dmketner@uaa.alaska.edu">dmketner@uaa.alaska.edu</a></td>
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<td>Communications – Shauna Lee Whitney 6-4393 <a href="mailto:sawhitney@uaa.alaska.edu">sawhitney@uaa.alaska.edu</a></td>
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<td>COMM A237</td>
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<td>Barbara Harville <a href="mailto:baharville@uaa.alaska.edu">baharville@uaa.alaska.edu</a></td>
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<td>Chemistry – Eric Holmberg 6-1289 <a href="mailto:egholmberg@uaa.alaska.edu">egholmberg@uaa.alaska.edu</a></td>
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<td>Laura Kelly</td>
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<td>432</td>
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<td>432</td>
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<td>JPC A201</td>
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<td>Paulo Banchero <a href="mailto:pbbanchero@uaa.alaska.edu">pbbanchero@uaa.alaska.edu</a></td>
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<tr>
<td>JUST A463</td>
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<td>Justice – Allan Barnes 6-1819 <a href="mailto:arbarnes@uaa.alaska.edu">arbarnes@uaa.alaska.edu</a></td>
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<tr>
<td>LEGL A356</td>
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<td>Liberal Studies Integrated Core - Sarah Kerken 6-6886 <a href="mailto:sarah.gerken@uaa.alaska.edu">sarah.gerken@uaa.alaska.edu</a></td>
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<tr>
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<td>Music – Christopher Sweeney 6-1699 <a href="mailto:crsweeney@uaa.alaska.edu">crsweeney@uaa.alaska.edu</a></td>
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<td>PARL A456</td>
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<td>Physical Education Professional – Sandra Carroll-Cobb 6-4083 <a href="mailto:slcarrollcobb@uaa.alaska.edu">slcarrollcobb@uaa.alaska.edu</a> (out of state); TJ Miller 6-4072 <a href="mailto:tjmiller@uaa.alaska.edu">tjmiller@uaa.alaska.edu</a></td>
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<td>John Mouracade <a href="mailto:Afjmm2@uaa.alaska.edu">Afjmm2@uaa.alaska.edu</a></td>
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<tr>
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<td>Claudia Lampman</td>
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<td>495</td>
<td>John Riley</td>
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<td>Statistics – Kanapathi Thiru 6-1958</td>
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<td>Social Work – Beth Sirles 6-6907</td>
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<td>Technology – Angela Dirks 6-6942</td>
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<tr>
<td>Associate of Arts</td>
<td>91</td>
<td>Suzanne Forster, 6-4365, <a href="mailto:smforster@uaa.alaska.edu">smforster@uaa.alaska.edu</a></td>
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<tr>
<td>Minor, English</td>
<td>105</td>
<td>Dan Kline</td>
</tr>
<tr>
<td>Bachelor of Liberal Studies</td>
<td>115</td>
<td>Liberal Studies - Martha Hatch, <a href="mailto:afmah@uaa.alaska.edu">afmah@uaa.alaska.edu</a></td>
</tr>
<tr>
<td>Undergraduate Certificate, Small Business Management</td>
<td>137</td>
<td>Business Administration - Ed Forrest, 6-4161, <a href="mailto:ejforrest@uaa.alaska.edu">ejforrest@uaa.alaska.edu</a></td>
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<tr>
<td>AAS, Early Childhood Development</td>
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<td>Robert Capuozzo, 6-4327, <a href="mailto:rmcapuozzo@uaa.alaska.edu">rmcapuozzo@uaa.alaska.edu</a></td>
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<tr>
<td>Undergraduate Certificate, Paralegal Studies</td>
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<td>Deborah Perimen, 6-1125, <a href="mailto:dkperimen@uaa.alaska.edu">dkperimen@uaa.alaska.edu</a></td>
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<tr>
<td>Occupational Endorsement Certificate, Corrections</td>
<td>212</td>
<td>KPC - Thomas Dalrymple, 262-0295, <a href="mailto:tdalrymple@kpc.alaska.edu">tdalrymple@kpc.alaska.edu</a></td>
</tr>
<tr>
<td>AAS, Occupational Safety and Health</td>
<td>224</td>
<td>KPC - Don Weber, 6-6447, <a href="mailto:ifdgw@kpc.alaska.edu">ifdgw@kpc.alaska.edu</a></td>
</tr>
<tr>
<td>AAS, Process Technology</td>
<td>228</td>
<td>KPC - Henry Haney, 262-0341, <a href="mailto:hwhaney@kpc.alaska.edu">hwhaney@kpc.alaska.edu</a></td>
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</tbody>
</table>
I. Initiation Date: April 2, 2013

II. Course Information

A. College: College of Arts and Sciences
B. Course Title: Persuasive Writing
C. Course Number: ENGL A214
D. Credit Hours: 3.0 Credits
E. Contact Time: 3 hours per week
F. Grading Information: A-F

G. Course Description: Instruction in writing based on theories of persuasion and argument practiced in disciplines across the curriculum. Focuses on elements of the writing process, rhetorical situations, and persuasive strategies. Develops a broad range of analytical, persuasive, and research skills with special attention to their application in a variety of academic and civic environments. Research-supported papers required.

H. Course Attributes: UAA GER Written Communication
I. Status of Course: This course fulfills 3 credits of the written communication requirement for Associate and Baccalaureate degrees.
J. Lab Fees: Yes

K. Coordination: UAA Faculty Listserv
L. Course Prerequisites: ENGL A111 with minimum grade of C or ENGL A1W with minimum grade of C or ENGL A2W with minimum grade of C or ENGL A3W with minimum grade of C.

M. Test Prerequisites: SAT Critical Reading Score with score of 620 or SAT Verbal Score with score of 620 or Enhanced ACT English with score of 30 or Original ACT English with score of 30.

N. Registration Restrictions: N/A

III. Course Level Justification

As a general education requirement, this course is best suited to students in their freshman or sophomore years directly after passing English A111. It provides students with the skills necessary to continue with their academic career.
IV. Instructional Goals and Student Learning Outcomes

<table>
<thead>
<tr>
<th>Instructional Goals</th>
<th>Student Outcomes</th>
<th>Assessment Methods</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Instructional Goals</strong>&lt;br&gt;The instructor will:</td>
<td><strong>Student Outcomes</strong>&lt;br&gt;Students will be able to:</td>
<td><strong>Assessment Methods</strong></td>
</tr>
<tr>
<td>Address rhetorical issues by presenting terms, concepts, and models pertinent to formal structures of argument.</td>
<td>Analyze and create arguments according to classical and contemporary rhetorical models.</td>
<td>Informal writing&lt;br&gt;Textual analysis&lt;br&gt;Class discussion</td>
</tr>
<tr>
<td>Emphasize conventions of style used in academic texts.</td>
<td>Apply conventions of genre and style in arguments.</td>
<td>Textual analysis&lt;br&gt;Critical essay&lt;br&gt;Multimodal presentation</td>
</tr>
<tr>
<td>Demonstrate research skills of acquiring, evaluating, synthesizing, and documenting sources.</td>
<td>Locate sources; synthesize, arrange, and document information; build a coherent argument.</td>
<td>Class discussion&lt;br&gt;Informal writing&lt;br&gt;Source analysis&lt;br&gt;Research project</td>
</tr>
</tbody>
</table>

V. Topical Course Outline

A. Writing Process
   1. Stylistics and Conventions
   2. Drafting and Revising
   3. Collaboration and Peer Editing

B. Rhetorical Situation
   1. Audience and Rhetorical Appeals
   2. Topic and Purpose
   3. Author and Context
   4. Kairos

C. Audience Consideration
   1. One-Sided Argument
   2. Multisided Argument
   3. Dialogic Argument
   4. Refutation Strategies
D. Argument Structure

1. Classical Approaches (e.g. Sophists, Plato, Aristotle)
2. Contemporary Approaches (e.g. Burke, Rogers, Toulmin)
3. Multimodal Arguments

E. Claim Types

1. Definitional Arguments
2. Causal Arguments
3. Evaluative Arguments
4. Ethical Arguments
5. Resemblance Arguments
6. Proposal Arguments

F. Research Methods

1. Source Location
2. Source Evaluation
3. Source Integration
4. Source Documentation

VI. Suggested Texts


VII. Bibliography

Note: This is a selective list of references for teaching. Includes classics in the field.


# Course Action Request

**University of Alaska Anchorage**

Proposal to Initiate, Add, Change, or Delete a Course

---

### 1a. School or College

**AS CAS**

### 1b. Division

**AMSC Division of Math Science**

### 1c. Department

**Geological Sciences**

### 2. Course Prefix

**GEOL**

### 3. Course Number

**A111**

### 4. Previous Course Prefix & Number

**N/A**

### 5a. Credits/CEUs

**3**

### 5b. Contact Hours (Lecture + Lab)

**(3+0)**

---

### 6. Complete Course Title

**Physical Geology**

### Abbreviated Title for Transcript (30 character)

**Physical Geology**

---

### 7. Type of Course

- [x] Academic
- [ ] Preparatory/Development
- [ ] Non-credit
- [ ] CEU
- [ ] Professional Development

### 8. Type of Action:

- [ ] Add
- [x] Change
- [ ] Delete

---

### 9. Repeat Status No

- [ ] # of Repeats
- [ ] Max Credits

### 10. Grading Basis

- [x] A-F
- [ ] P/NP
- [ ] NG

---

### 11. Implementation Date

- **semester/year**
- **From:** Fall/2014
- **To:** 9999/

---

### 12. Cross Listed with

- [ ] Stack with
- [ ] Cross-Listed Coordination Signature

---

### 13a. Impacted Courses or Programs:

List any programs or college requirements that require this course.

- [ ] BS and minor in Geological Sciences
- [ ] BA in Biological Sciences
- [ ] BS in Natural Sciences

---

### 13b. Coordination Email

Date: 2/28/13

submitted to Faculty Listserv: (uaa-faculty@lists.uaa.alaska.edu)

---

### 13c. Coordination with Library Liaison

Date:

---

### 14. General Education Requirement

Mark appropriate box:

- [x] Oral Communication
- [ ] Written Communication
- [ ] Quantitative Skills
- [ ] Humanities
- [ ] Social Sciences
- [x] Natural Sciences
- [ ] Integrative Capstone

---

### 15. Course Description (suggested length 20 to 50 words)

Introduction to physical geology. Study of earth, its materials, and processes affecting changes on and within. Study of the formation of common rocks and minerals and the basics of mineral and rock identification and classification.

---

### 16a. Course Prerequisite(s) (list prefix and number or test code and score)

---

### 16b. Co-requisite(s) (concurrent enrollment required)

---

### 16c. Other Restriction(s)

- [ ] Mark if course has fees

---

### 16d. Registration Restriction(s) (non-codable)

- Math A055 or higher

---

### 17. Mark if course is a selected topic course

---

### 18. Justification for Action

Splitting lecture + lab course into separate courses

---

### Initiator Name (typed):

Kristine J Crossen

Initiator Signed Initials: _________

Date: __________

---

### 19. Approval

- [ ] Approved
- [ ] Disapproved

---

**Initiator (TYPE NAME)**

Initiator (faculty only)

Date

---

**Dean/Director of School/College**

Date

---

**Undergraduate/Graduate Academic Board Chair**

Date

---

**Provost or Designee**

Date

---

28
I. Date of Initiation: Spring 2013

II. Course Information:
   A) College or School: College of Arts and Sciences
   B) Course Title: Physical Geology
   C) Course Subject/Number: GEOL A111
   D) Credit Hours: 3
   E) Contact Time: (3 + 0)
   F) Grading Information: A-F
   G) Course Description: Introduction to physical geology. Study of earth, its materials, and processes affecting changes on and within. Study of the formation of common rocks and minerals and the basics of mineral and rock identification and classification.
   H) Lab Fees: No
   I) Course Attributes: GER Natural Sciences

III. Instructional Goals and Student Learning Outcomes
   A) Instructional Goals: The instructor will:
      1) Summarize the study of the Earth including formation and structure
      2) Discuss the unifying theory of plate tectonics and present models that assess geologic processes using plate tectonic theory
      3) Discuss atomic structure and the formation of Earth materials (minerals and rocks)
      4) Identify the internal and external processes that have shaped the Earth and apply the relevant information in order to make appropriate personal and professional decisions
      5) Adopt critical perspectives for understanding geologic processes in the context of geologic time
   
   B) Student Learning Outcomes: The students will:
      1) Identify the ways in which theory of plate tectonics has advanced the overall understanding of Earth’s processes. Assessment: Exams, Assignments, quizzes
      2) Demonstrate an understanding of the formation of minerals and rocks, and how minerals and rocks are identified and classified. Assessment: Exams, Assignments, Quizzes
      3) Demonstrate what is currently known about Earth processes and the factors that affect them and develop hypotheses related to these systems. Assessment: Exams, Assignments, Quizzes
IV. Course Activities
The course will consist of lectures, discussions, in-class activities and assignments

V. Methods of Assessment
A) Mid-term and Final Exams may consist of short answer and/or essay questions, interpreting and/or drawing diagrams, multiple choice questions
B) Quizzes may consist of multiple choice questions, short answer questions, or interpreting diagrams, photographs or other visual media
C) Assignments consist of answering questions based on provided reading materials or other media, such as images, animations or video clips.

VI. Course Level Justification
This course requires little to no knowledge of geological sciences, however it does require some basic math skills

VII. Topical Course Outline
A) Map Skills
B) Earth Formation and Structure
C) Minerals
D) Plate Tectonics
E) Igneous Rocks
F) Weathering and Sedimentary Rocks
G) Metamorphic Rocks
H) Economic Minerals
I) Fossil Fuels and Alternative Energy
J) Streams and Groundwater
K) Glaciers
L) Coastal Processes
M) Geologic Time
N) Crustal Deformation
O) Structural Geology
P) Earthquakes and Earthquake Hazards
Q) Mass Wasting

VIII. Suggested Texts

IX. Bibliography


### Course Action Request

**University of Alaska Anchorage**

**Proposal to Initiate, Add, Change, or Delete a Course**

<table>
<thead>
<tr>
<th>1a. School or College</th>
<th>1b. Division</th>
<th>1c. Department</th>
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<td>AMSC Division of Math Science</td>
<td>Geological Sciences</td>
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<th>4. Previous Course Prefix &amp; Number</th>
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<th>5b. Contact Hours (Lecture + Lab)</th>
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<td></td>
<td>List any programs or college requirements that require this course. Please type into fields provided in table. If more than three entries, submit a separate table. A template is available at <a href="http://www.uaa.alaska.edu/governance">www.uaa.alaska.edu/governance</a>.</td>
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<tr>
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<td>Initiated Name (typed): Kristine J Crossen Initiator Signed Initials: __________________ Date: ______________</td>
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<td></td>
<td>13b. Coordination Email Date: 2/28/13 submitted to Faculty Listserv: (<a href="mailto:uaa-faculty@lists.uaa.alaska.edu">uaa-faculty@lists.uaa.alaska.edu</a>)</td>
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<td>13c. Coordination with Library Liaison Date: 4/1/13</td>
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<th>15. Course Description (suggested length 20 to 50 words)</th>
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<tr>
<td>Applied skills in physical geology. The identification and classification of minerals and rocks. The use and interpretation of maps and remote sensing techniques, and application of lab skills to interpret evidence of geologic processes. Includes a field trip lead by the instructor.</td>
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<th>18. Mark if course is a selected topic course</th>
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<th>19. Justification for Action</th>
<th>Splitting lecture + lab course into separate courses</th>
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</tbody>
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---

Initiator (faculty only) Kristine J Crossen Initiator Signed Initials: __________________ Date: ______________

---

Approved

Disapproved

Dean/Director of School/College Date

Approved

Disapproved

Undergraduate/Graduate Academic Date

Approved

Disapproved

Board Chair Date

Approved

Disapproved

Provost or Designee Date

---

32
Course Content Guide  
University of Alaska Anchorage  
Department of Geological Sciences  

GEOL A111L  
Physical Geology Laboratory  

I. Date of Initiation: Spring 2013  

II. Course Information:  
A) College or School: College of Arts and Sciences  
B) Course Title: Physical Geology Laboratory  
C) Course Subject/Number: GEOL A111L  
D) Credit Hours: 1  
E) Contact Time: (0 + 3)  
F) Grading Information: A-F  
G) Course Description: Applied skills in physical geology. The identification and classification of minerals and rocks. The use and interpretation of maps and remote sensing techniques, and application of lab skills to interpret evidence of geologic processes. Includes a field trip lead by the instructor.  
H) Course Prerequisites: GEOL A111 or concurrent enrollment  
I) Lab Fees: Yes  
J) Course Attributes: GER Natural Sciences  

III. Instructional Goals and Student Learning Outcomes  
A) Instructional Goals: The instructor will:  
1) Demonstrate how to identify rocks and minerals in hand sample.  
2) Provide opportunities for students to practice identification and interpretation of rocks and minerals in hand sample.  
3) Instruct students in the necessary skills for using and interpreting topographic and geologic maps, remote sensing, and for making and interpreting geologic cross-sections.  
4) Provide opportunities for students to use rock identification and map skills to interpret evidence of geologic processes.  

B) Student Learning Outcomes: The students will:  
1) Identify hand samples of minerals and rocks by using physical properties. Assessment: Laboratory Assignments, Practical Exams  
2) Interpret texture and composition of rocks to infer the conditions of formation of sedimentary, igneous, and metamorphic rocks. Assessment: Laboratory Assignments  
3) Interpret topographic and geologic maps and remote sensing data; extract quantitative information from maps; construct and interpret topographic and geologic cross-sections. Assessment: Laboratory Assignments, Practical Exams, Final Project
IV. Course Activities
The course will consist of short lectures, demonstrations, laboratory exercises, and a field trip lead by the instructor.

V. Methods of Assessment
A) Practical Exams consist of identifying unknown minerals and rocks in hand sample, interpreting maps and diagrams, constructing and interpreting a geologic cross-section
B) Laboratory Assignments consist of recording observations, interpreting maps or diagrams, constructing topographic profiles and/or geologic cross-sections, answering questions based on provided reading materials or other media, such as images, animations or video clips.
C) Final Project consists of interpreting maps to infer portions of the geologic history of Alaska

VI. Course Level Justification
This course requires little to no knowledge of geological sciences, however it does require some basic math skills.

VII. Topical Course Outline
A) Map Skills
B) Minerals
C) Igneous Rocks
D) Sedimentary Rocks
E) Metamorphic Rocks
F) Streams and Groundwater
G) Glaciers
H) Coastal Processes
I) Geologic Time
J) Structural Geology
K) Final Project

VIII. Suggested Texts

IX. Bibliography

Course Action Request  
University of Alaska Anchorage  
Proposal to Initiate, Add, Change, or Delete a Course

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<th>1a. School or College</th>
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<td>L. Munk</td>
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<td>BS in Natural Sciences</td>
<td>2/28/13</td>
<td>F. Rainey</td>
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Initiator Name (typed): Kristine J Crossen  
Initiator Signed Initials: _________  
Date: __________________

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14. General Education Requirement  
Mark appropriate box:  
- Oral Communication  
- Written Communication  
- Quantitative Skills  
- Humanities  
- Fine Arts  
- Social Sciences  
- Natural Sciences  
- Integrative Capstone

15. Course Description (suggested length 20 to 50 words)  
Development of applied geology skills through the study of earth, its materials, and processes affecting changes on and within. Laboratory training in geologic maps and identification and interpretation of minerals and rocks. Special Note: Physical Geology for Geological Science majors, and other science and engineering students seeking GER Natural Science course.

16a. Course Prerequisite(s) (list prefix and number or test code and score)  
16b. Co-requisite(s) (concurrent enrollment required)

16c. Other Restriction(s)  
- College  
- Major  
- Class  
- Level

16d. Registration Restriction(s) (non-codable)  
Math A055 or higher. Declared major in geology, biology, chemistry or engineering.

17. ☑ Mark if course has fees

18. ☐ Mark if course is a selected topic course

19. Justification for Action  
New course to develop applied skills for geology majors that will also serve as a Natural Sciences GER.

Initiator (faculty only)  
Kristine J Crossen  
Initiator (TYPE NAME)

☑ Approved  
☑ Disapproved

☑ Approved  
Disapproved

☑ Approved  
Disapproved

☑ Approved  
Disapproved

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☑ Approved  
Disapproved
Course Content Guide
University of Alaska Anchorage
Department of Geological Sciences

GEOL A121
Applied Physical Geology

I. Date of Initiation: Spring 2013

II. Course Information:
   A) College or School: College of Arts and Sciences
   B) Course Title: Applied Physical Geology
   C) Course Subject/Number: GEOL A121
   D) Credit Hours: 4
   E) Contact Time: (3+3)
   F) Grading Information: A-F
   G) Course Description: Development of applied geology skills through the study of earth, its materials, and processes affecting changes on and within. Laboratory training in geologic maps and identification and interpretation of minerals and rocks.
   Special Note: Physical Geology for Geological Science majors and other science and engineering students seeking GER Natural Science course.
   H) Status of course relative to degree program: This is a required lower division course to satisfy BS Geological Sciences program.
   I) Lab Fees: Yes
   J) Course attributes: GER Natural Sciences

III. Instructional Goals and Student Learning Outcomes
   A) Instructional Goals: The instructor will:
      1) Present the background of the study of the Earth and Earth materials, plate tectonic theory and Earth’s internal and surface processes.
      2) Provide opportunities for students to investigate geology career options through industry mentoring.
      3) Provide opportunities for students to integrate geologic knowledge and skills by working with peers on applied geologic problems.
      4) In laboratory, (i) instruct students in the necessary skills for specimen identification, the use and interpretation of maps and construction of cross-sections, (ii) provide specimens, maps, and opportunities for students to apply rock identification and map skills to interpret evidence of geologic processes, (iii) give students access to geological sciences professionals from fields such as environmental, minerals, and oil and gas, and (iv) provide an opportunity for students to conduct a geologic exercise in the field lead by the instructor.
   B) Student Learning Outcomes: The students will:
      1) Demonstrate an understanding of plate tectonics as the unifying theory in geology. Assessment: Exams
2) Demonstrate an understanding of Earth processes and the factors that affect them. 
Assessment: Exams, Laboratory Assignments, Laboratory Projects.

3) Develop skills required by professionals in the discipline by (i) working with peers on applied geologic problems, and (ii) investigating career options through industry mentoring. Assessment: Laboratory and Field Projects.

4) In laboratory, students will (i) identify hand samples of minerals and rocks using physical properties; interpret texture and composition of rocks to infer conditions of their formation, (ii) interpret topographic and geologic maps; construct and interpret geologic cross-sections and stratigraphic columns, (iii) investigate geologic problems encountered by professionals in the discipline, and (iv) participate in a field-based geologic exercise with the instructor. Assessment: Laboratory practical quizzes, Laboratory Assignments, Laboratory and Field Projects.

IV. Course Activities
The course will consist of lectures, discussions, laboratory work, a field trip, and small group collaboration facilitated by the instructor.

V. Methods of Assessment
A) Exams consist of short answer and/or essay questions, interpreting and/or drawing diagrams, multiple choice questions.
B) Laboratory practical quizzes consist of identifying unknown minerals and rocks in hand sample, interpreting maps, constructing and interpreting a geologic cross-section.
C) Laboratory assignments consist of recording observations, interpreting maps or diagrams, constructing topographic profiles and/or geologic cross-sections.
D) Laboratory projects consist of working in small groups to interpret maps and other geologic data to assess an authentic geologic problem.
E) Field Trip Projects consist of questions and reflections based on field experiences.

VI. Course Level Justification
This course requires little to no knowledge of geological sciences, but is intended for geology majors.

VII. Topical Course Outline
A) Map Skills
B) Earth Formation and Structure
C) Minerals
D) Plate Tectonics
E) Igneous Rocks
F) Weathering and Sedimentary Rocks
G) Metamorphic Rocks
H) Economic Minerals
I) Fossil Fuels and Alternative Energy
J) Streams and Groundwater
K) Glaciers
L) Coastal Processes
M) Geologic Time
N) Crustal Deformation
O) Structural Geology
P) Earthquakes and Earthquake Hazards
Q) Mass Wasting

VIII. Suggested Texts


IX. Bibliography


1a. School or College  
AS CAS  

1b. Division  
AMSC Division of Math Science  

1c. Department  
Geological Sciences  

2. Course Prefix  
GEOL  

3. Course Number  
A221  

4. Previous Course Prefix & Number  
N/A  

5a. Credits/CEUs  
4  

5b. Contact Hours  
(Lecture + Lab)  
(3+3)  

6. Complete Course Title  
Historical Geology  

7. Type of Course  
☐ Academic  
☐ Preparatory/Development  
☐ Non-credit  
☐ CEU  
☐ Professional Development  

8. Type of Action:  
☐ Add  or  ☒ Change  or  ☐ Delete  

If a change, mark appropriate boxes:  
☐ Prefix  
☐ Credits  
☐ Grade Basis  
☐ Title  
☐ Course Number  
☐ Contact Hours  
☐ Repeat Status  
☐ Grading Basis  
☐ Cross-Listed/Stacked  
☐ Course Description  
☐ Course Prerequisites  
☐ Test Score Prerequisites  
☐ Co-requisites  
☐ Other Restrictions  
☐ College  
☐ Major  
☐ Other CCG (please specify)  

9. Repeat Status No  
# of Repeats  
Max Credits  

10. Grading Basis  
☒ A-F  
☐ P/NC  
☐ NG  

11. Implementation Date  
semester/year  
From:  Fall/2014  
To:  /9999  

12. ☐ Cross Listed with  
Stacked with  
Cross-Listed Coordination Signature  

13a. Impacted Courses or Programs:  
List any programs or college requirements that require this course.  

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<td>LeeAnn Munk</td>
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Initiator Name (typed): Kristine J Crossen  
Initiator Signed Initials: _________  
Date: ____________  

13b. Coordination Email  
Date: 2/28/13  
submitted to Faculty Listserv:  (uaa-faculty@lists.uaa.alaska.edu)  

13c. Coordination with Library Liaison  
Date: 4/1/13  

14. General Education Requirement  
Mark appropriate box:  
☐ Oral Communication  
☐ Written Communication  
☐ Quantitative Skills  
☐ Humanities  
☐ Fine Arts  
☐ Social Sciences  
☒ Natural Sciences  
☐ Integrative Capstone  

15. Course Description  
(suggested length 20 to 50 words)  
History of earth through geologic time, emphasizing North America. Major events in plate tectonics, evolution of life forms, and interpretation of the rock record. Lab includes invertebrate fossil identification, geologic map interpretation, stratigraphic principles, and field trip.  

Special Note: Course meets the GER natural science with lab requirement  

16a. Course Prerequisite(s)  
(list prefix and number)  
GEOL A111L or GEOL A121  

16b. Test Score(s)  

16c. Co-requisite(s) (concurrent enrollment required)  

16d. Other Restriction(s)  
☐ College  
☐ Major  
☐ Class  
☐ Level  

16e. Registration Restriction(s)  
(non-codable)  

17. ☒ Mark if course has fees  

18. ☐ Mark if course is a selected topic course  

19. Justification for Action  
The Department is making a curriculum change for the course prerequisite.
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I. **Date of Initiation:** Spring 2013

II. **Course Information:**
   A. College: CAS
   B. Course Subject: Geological Sciences
   C. Course Number: A221
   D. Number of Credits: 4.0 (3+3)
   E. Course Title: Historical Geology
   F. Grading Basis: A-F
   G. Course Description: History of earth through geologic time, emphasizing North America. Major events in plate tectonics, evolution of life forms, and interpretation of the rock record. Lab includes invertebrate fossil identification, geologic map interpretation, stratigraphic principles, and field trip.
   Special Note: Course meets the GER natural science with lab requirement.
   H. Course Prerequisites: GEOL A111L or GEOL A121
   I. Lab Fees: Yes
   J. Course Attributes: GER Natural Sciences

III. **Instructional Goals and Student Learning Outcomes:**
   A. Instructional Goals: The instructor will:
      1. Help students understand the sequence in earth's history based on evidence from rocks and fossils.
      2. Explain how geologic maps and stratigraphic sections are used to reconstruct past depositional and plate tectonic environments.
   
   B. Student Learning Outcomes. The students will be able to:
      1. Apply basic geologic principles and facts to new geologic data. Assessment: Exams and exercises.
      2. Identify major types of invertebrate fossils. Assessment: Lab handbook and exams.
      3. Interpret geologic maps and construct geologic cross-sections. Assessment: Exams and lab exercises.
      4. Examine the changes in North American geology through time and explain evolution and demonstrate how it affects life forms over long periods of time. Assessment: Exams
IV. Course Evaluations
Written and practical exams, quizzes, written exercises and problems, lab exercises, class discussion and special projects.

V. Course Level Justification
Requires GEOL A111 or A121 as prerequisite. Builds on skills acquired in these classes.

VI. Topical Course Outline
A. Introduction
1. Historical development of ideas
2. Historic figures in geologic ideas

B. General principles
1. Stratigraphy
2. Sedimentary rocks and structures
3. Transgressions and regressions
4. Depositional environments
5. Geologic dating
6. Evolution

C. Precambrian
1. Origin of the universe, solar system, and earth
2. Origin of life
3. Evolution of the atmosphere
4. Life Forms – bacteria, prokaryotes, eukaryotes
5. Plate Tectonics – shield building, rifing

D. Paleozoic Geology and Life
1. Early Paleozoic Life – trilobites, brachiopods, graptolites, bryozoa
2. Early Paleozoic Geology – Taconic orogeny, transgressions
3. Mid Paleozoic Life – Coral reefs, fish, echinoderms, cephalopods
4. Mid Paleozoic Geology – Acadian orogeny, transgressions
5. Late Paleozoic Life – terrestrial amphibians, reptiles, and insects
6. Late Paleozoic Geology – Appalachian orogeny, regressions
7. Permian Extinction Event – “Mother of all extinctions”

E. Mesozoic Geology and Life
1. Mesozoic Geology - Laramide orogeny, Tethys Seaway
2. Mesozoic Life – dinosaurs, marine reptiles, aerial reptiles, mammals
3. Cretaceous Extinction Event

F. Cenozoic Geology and Life
1. Early Cenozoic Geology – Cordilleran orogeny, regressions
2. Early Cenozoic Life – early mammals, mammalian radiation
3. Late Cenozoic Geology – glaciation, climate change
VII. Suggested Text(s)


VIII. Bibliography


**Course Action Request**  
University of Alaska Anchorage  
Proposal to Initiate, Add, Change, or Delete a Course

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6. Complete Course Title  
Kenai Peninsula Field Studies  
Abbreviated Title for Transcript (30 character)

7. Type of Course  
☐ Academic  ☐ Preparatory/Development  ☐ Non-credit  ☐ CEU  ☐ Professional Development

8. Type of Action:  
☐ Add  ☐ Change  ☐ Delete

If a change, mark appropriate boxes:
- Prefix
- Credits
- Title
- Grading Basis
- Cross-Listed/Stacked
- Course Description
- Course Prerequisites
- Test Score Prerequisites
- Co-requisites
- Registration Restrictions
- Other Restrictions
- College
- Major
- Level
- Other CCG (please specify)

9. Repeat Status No  # of Repeats  Max Credits

10. Grading Basis  
☐ A-F  ☐ P/NP  ☐ NG

11. Implementation Date  
From: Fall/2014  To: 9999

12. Cross Listed with  Stacked with  Cross-Listed Coordination Signature

13a. Impacted Courses or Programs:  
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Initiator Signed Initials: _________  
Date:________________

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Date: 2-28-13  
submitted to Faculty Listserv: (uaa-faculty@lists.uaa.alaska.edu)

13c. Coordination with Library Liaison  
Date: 4-1-13

14. General Education Requirement  
Mark appropriate box:
- Oral Communication
- Written Communication
- Quantitative Skills
- Humanities
- Fine Arts
- Social Sciences
- Natural Sciences
- Integrative Capstone

15. Course Description (suggested length 20 to 50 words)  
Nine day field excursion from Anchorage to Portage, Kenai, Nikiski, Homer, and Seward, Alaska, to explore gold mining; oil and gas exploration and production; Tertiary coal, fossils, and paleoenvironments; coastal geomorphology; glacial history; and plate tectonics of the Kenai Peninsula. Includes a full day boat excursion in Kenai Fiords National Park.

Special Note: Students are required to provide their own food, transportation, field and camping gear.

16a. Course Prerequisite(s) (list prefix and number)  
GEOL A221 with minimum grade o

16b. Test Score(s)

16c. Co-requisite(s) (concurrent enrollment required)

16d. Other Restriction(s)
- College
- Major
- Class
- Level

16e. Registration Restriction(s) (non-codable)

17. ☒ Mark if course has fees

18. ☐ Mark if course is a selected topic course

19. Justification for Action  
Addition of information concerning student transportation and gear.
<table>
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<th>Initiator (faculty only)</th>
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<th>Dean/Director of School/College</th>
<th>Date</th>
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Course Content Guide
University of Alaska Anchorage

GEOL A381
Kenai Peninsula Field Studies

I. Date of Initiation: Spring 2013

II. Course Information:
A. College: CAS
B. Course Subject: Geological Sciences
C. Course Number: GEOL A381
D. Number of Credits: 3.0 (0+9)
E. Course Title: Kenai Peninsula Field Studies
F. Grading Basis: A-F
G. Course Description:
   Nine day field excursion from Anchorage to Portage, Kenai, Nikiski, Homer, and Seward, Alaska, to explore gold mining; oil and gas exploration and production; Tertiary coal, fossils, and paleoenvironments; coastal geomorphology; glacial history; and plate tectonics of the Kenai Peninsula. Includes a full day boat excursion in Kenai Fiords National Park.
   Special Note: Students are required to provide their own food, transportation, field and camping gear.
H. Course Prerequisites: GEOL A221 with minimum grade of C
I. Fees: Yes

III. Instructional Goals and Student Learning Outcomes
A. Instructional Goals:
   The instructor will show students how to assess the geologic history, resource potential, and environmental hazards of the Kenai Peninsula, and to interpret geologic maps and sections.

B. Student Learning Outcomes.

   Turnagain Area –
   Students will identify and map glacial features from topographic maps and aerial photography. Students will assess different techniques used for lode and placer mining, and investigate both types of mines. Students will appraise the geologic structures of the Chugach Terrane, and reconstruct the depositional and tectonic environments of the geologic formations.
   Assessment: Field notes and exercises.
Kenai Area -
Students will determine the extent of Chugach Mt. and Mt. Spurr glacial deposits to ascertain flow directions and glacial processes. Students will measure and describe stratigraphic sections to determine glacial history. Students will learn the stratigraphy of the Cook Inlet Forearc Basin and integrate the stratigraphy and depositional environments into the understanding of oil and gas formation on the Kenai. Students will investigate both primary production fields for oil and natural gas, as well as refineries and liquid natural gas plants that prepare the petroleum products for market. Assessment: Field notes and exercises.

Cook Inlet Coastline-
Students will investigate the stratigraphic sections of the Tertiary sediments that produce gas, oil, and coal on the Kenai. Students will map the sections, interpret the depositional environments, and reconstruct the tectonic history of the forearc basin. Students will identify shoreline features to assess tidal influence, longshore drift, and coastal processes. Assessment: Field notes and exercises.

Kenai Fiords National Park-
Students will assess the coastal landforms in comparison with Cook Inlet coastlines. Students will investigate tidewater glaciers and evaluate similarities and differences with Portage Glacier and other Chugach Mt. Pleistocene glaciers. Students will examine the ophiolite suite and reconstruct the tectonic history of the Prince William Sound terrane. Assessment: Field notes and exercises.

IV. Course Evaluations
Based on field exercises, field note books, attendance, discussions, constructed geologic maps and sections, and written reports.

V. Course Level Justification
Builds on skills learned in GEOL A221 and applies them to the Kenai Peninsula.
VI. **Topical Course Outline**

Turnagain Area – Lode and Placer Gold Mining
- Chugach Terrane, Valdez Formation, turbidite sequences
- Portage Glacier – dynamics, moraine mapping, dating
- Girdwood – 1964 earthquake subsidence

Kenai, Hidden, and Skilak Lakes – Chugach Mt. Glacial history, moraines

Kenai and Soldotna – Kenai River evolution, Bootlegger Cove Formation

Kenai and Nikiski – Oil and gas production – Swanson River, Kenai Fields
- Tesoro refinery
- Unocal LNG plant

Cook Inlet Beaches – Longshore Drift, landforms
- Tidal ranges and incursion

Deep Creek to Homer – Tertiary Stratigraphy – coal, sediments
- Forearc Basin tectonics and Tertiary paleoenvironments

Homer – Cook Inlet Glacial History

Seward – Ophiolite Suite, glaciated coastline, coastal landforms. tidewater glaciers

VII. **Suggested Text(s)**


VIII. **Bibliography**


Hayes, M. O., 1989, Modern Clastic Depositional Systems of South-Central Alaska, American Geophysical Union, 42 p.

<table>
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<th>1c. Department</th>
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6. Complete Course Title
Geologic Field Studies

Abbreviated Title for Transcript (30 character)

7. Type of Course
☒ Academic
☐ Preparatory/Development
☐ Non-credit
☐ CEU
☐ Professional Development

8. Type of Action:
☐ Add
☒ Change
☐ Delete

If a change, mark appropriate boxes:
☐ Prefix
☐ Credits
☐ Contact Hours
☐ Title
☐ Repeat Status
☐ Grading Basis
☐ Cross-Listed/Stacked
☐ Course Description
☒ Course Prerequisites
☐ Co-requisites
☐ Test Score Prerequisites
☐ Registration Restrictions
☐ Other Restrictions
☐ College
☐ Major
☐ Level
☒ Other CCG (please specify)

9. Repeat Status
☐ Yes
☐ No

# of Repeats
2

Max Credits
9

10. Grading Basis
☒ A-F
☐ P/NP
☐ NG

11. Implementation Date
semester/year
From: Fall/2014
To: /9999

12. Cross Listed with
☐ Yes
☐ No

13a. Impacted Courses or Programs: List any programs or college requirements that require this course.

Please type into fields provided in table. If more than three entries, submit a separate table. A template is available at www.uaa.alaska.edu/governance.

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Initiator Name (typed): Kristine J Crossen
Initiator Signed Initials: ____________
Date: __________________

13b. Coordination Email
submitted to Faculty Listserv: (uaa-faculty@lists.uaa.alaska.edu)

13c. Coordination with Library Liaison
Date: 4/1/13

14. General Education Requirement
Mark appropriate box:
☐ Oral Communication
☐ Written Communication
☐ Quantitative Skills
☐ Humanities
☐ Fine Arts
☐ Social Sciences
☐ Natural Sciences
☐ Integrative Capstone

15. Course Description (suggested length 20 to 50 words)
Field excursion within the United States or another country to study the local and regional geology. Field notes, rock and outcrop descriptions, mapping and field exercises required. Special note: course may be repeated with change of subtitle for a maximum of 9 credits. Students may be required to provide their own transportation depending on location of field trip.

16a. Course Prerequisite(s) (list prefix and number)
GEOL A221

16b. Test Score(s)

16c. Co-requisite(s) (concurrent enrollment required)

16d. Other Restriction(s)
☐ College
☐ Major
☐ Class
☐ Level

16e. Registration Restriction(s) (non-codable)

17. ☒ Mark if course has fees

18. ☐ Mark if course is a selected topic course

19. Justification for Action
The special note in the course description was updated to include the possibility that students may have to provide their own transportation depending on the location of the field trip. Assessment items were also added to the Student Outcomes.
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I. Date of Initiation: Spring 2013

II. Course Information:
A. College or School: CAS
B. Course Subject: Geological Sciences
C. Course Number: GEOL A382
D. Number of Credits: 3.0 (0+9)
E. Course Title: Geologic Field Studies
F. Grading Basis: A-F
G. Course Description: Field excursion within the United States or another country to study the local and regional geology. Field notes, rock and outcrop descriptions, mapping and field exercises required. Special note: course may be repeated with change of subtitle for a maximum of 9 credits. Students may be required to provide their own transportation depending on location of field trip.
H. Prerequisites: GEOL A221
I. Fees: yes

III. Instructional Goals and Student Learning Outcomes:
A. Instructional Goals.

The instructor will:
1) Guide students in a field setting to observe, record and investigate geologic environments.
2) Introduce the regional geology and tectonic setting of specific field areas.
3) Design projects that require students to synthesize their geologic skills and knowledge.

B. Student Learning Outcomes. The students will:
1) Diagram the basic geology of a particular region. Assessment: Field notes and exercises.
2) Identify and describe various geologic features of the chosen field sites. Assessment: Field notes and quizzes.
3) Develop a detailed notebook with descriptions of the daily excursions and activities. Assessment: Field notes.
4) Perform field exercises. Assessment: Field notes, maps, cross-sections, or other assignments.
5) Construct a final report on the geology observed during the trip. Assessment: Final report and field notes.
IV. Course Evaluation
Students will be evaluated on the basis of their field notebooks, field exercises and final written report.

V. Course Level Justification
This course has a 200-level prerequisite and builds upon concepts from earlier courses.

VI. Topical Course Outline
This is an example from GEOL 382 Geologic Field Studies: Colorado Plateau/Basin and Range Field Studies

Day 1  -  Las Vegas region to St George, UT
         Virgin River Gorge

Day 2 -  St George to Grand Canyon, AZ
         Toroweap, North Rim

Day 3  - Grand Canyon to Zion NP
         Sedimentary Environments, Tectonics

Day 4 -  Zion NP

Day 5  - Zion NP to Reveille Range, NV
         Basin and Range Geology

Day 6 -  Reveille Range to Mammoth Lakes, CA
         Mono Craters, Lava Flows, Obsidian Domes

Day 7 -  Mammoth Lakes area

Day 8 -  Mammoth Lakes to Lone Pine area, CA
         Sierra Nevada granites and glaciers

Day 9– Lone Pine to Las Vegas via Death Valley
         Evaporites, Tectonics

VII. Suggested Text(s)


VIII. Bibliography


Hintze, L.F., 2005, Utah’s Spectacular Geology, Brigham Young University, Provo, 203 p.


# Proposal to Initiate, Add, Change, or Delete a Course

## Proposal Details

- **Initiator (faculty only):** Kristine J Crossen
- **Date:**
- **School or College:** AS CAS
- **Division:** AMSC Division of Math Science
- **Department:** Geological Sciences

## Course Information

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## Course Title

**Glacial and Quaternary Geology**

**Abbreviated Title for Transcript (30 character):**

## Type of Course

- Academic
- Preparatory/Development
- Non-credit
- CEU
- Professional Development

## Type of Action

- Add
- Change
- Delete

- Prefix
- Credits
- Title
- Grading Basis
- Course Description
- Test Score Prerequisites
- Other Restrictions
- Class
- Level
- College
- Major
- Other CCG (please specify)

## Implementation Details

- **Implementation Date:** Semester/year
  - From: Fall/2014
  - To: /

## Course Descriptions

Examines glacial processes of erosion and deposition, and the modern and ancient landforms produced by ice. Topics include: Quaternary history of glaciers, climate fluctuation, changes in terrestrial and marine environments, and evidence and techniques used to reconstruct past environments. Weekend field trip required. Special note: Students are required to provide their own transportation to field locales.

## Co-requisites

- GEOL A654
- Cross-Listed Coordination

## Other Restriction(s)

- Stacked with GEOL A654

## General Education Requirement

- Oral Communication
- Written Communication
- Quantitative Skills
- Humanities
- Fine Arts
- Social Sciences
- Natural Sciences
- Integrative Capstone

## Course Prerequisites

- GEOL A221

## Test Score(s)

- A-F
- P/NP
- NG

## Repeat Status

- No
- # of Repeats
- Max Credits

## Grading Basis

- A-F

## Date of Coordination

- Chair/Coordinator Contacted
- L. Munk
- A. Dotson

## Coordination with Library Liaison

- Date: 4-1-13

## Justification for Action

Course stacking to allow graduate students access to the course offering. Additional information concerning field trips.

## Approval Process

- Initiator (faculty only): Kristine J Crossen
- Date: ___________
- Approved
- Disapproved

- Dean/Director of School/College
- Date: ___________
- Approved
- Disapproved

- Undergraduate/Graduate Academic
- Date: ___________
- Approved
- Disapproved

- Provost or Designee
- Date: ___________
- Approved
- Disapproved

- Department Chairperson
- Date: ___________
- Approved
- Disapproved

- Curriculum Committee Chairperson
- Date: ___________
- Approved
- Disapproved
Course Content Guide
University of Alaska Anchorage

GEOL A454
Glacial and Quaternary Geology

I. Date of Initiation: Spring 2013

II. Course Information:
   A. College: CAS
   B. Course Subject: Geological Sciences
   C. Course Number: GEOL A454
   D. Number of Credits: 3.0 (3+0)
   E. Course Title: Glacial and Quaternary Geology
   F. Grading Basis: A-F
   G. Course Description: Examines glacial processes of erosion and deposition, and
      the modern and ancient landforms produced by ice. Topics include: Quaternary
      history of glaciers, climate fluctuation, changes in terrestrial and marine
      environments, and evidence and techniques used to reconstruct past environments.
      Weekend field trip required. Special note: Students are required to provide their
      own transportation to field locales.
   H. Course Prerequisites: GEOL A221

III. Instructional Goals and Student Learning Outcomes
   A. Instructional Goals
      The instructor will:
      1. Present information concerning formation of, and the processes associated
         with, a variety of glaciers and their landforms.
      2. Present evidence for and reconstructions of the past Ice Ages.
      3. Teach students to analyze and critically evaluate the professional literature
         concerning glaciers and climate change.

   B. Student Learning Outcomes.
      The students will:
      1. Determine changes in environments based on glacial features and landforms.
         Assessment: Exams and exercises.
      2. Reconstruct past environments based on evidence from pollen cores,
         invertebrates and vertebrate fossils, deep sea cores, stable isotopes, and
         radiometric dating. Assessment: Exams and exercises.
      3. Critique the relevant professional literature considering both the techniques
         used to gather data and the resulting interpretations made by the authors.
         Assessment: Written summaries and discussion.
IV. Course Evaluations

Based on grades received on exams, class exercises, field trip attendance and report.

V. Course Level Justification

Refines skills students have learned in earlier courses and requires students to analyze and critique the professional literature.

VI. Topical Course Outline

Glaciology – Modern Glacial Processes
  Subglacial Processes
  Meltwater Processes

Glacial Geology – Glacial Processes and Landforms
  Erosional Processes and Landforms
  Debris Transport
  Glacial Depositional Processes and Landforms
  Glacial Marine and Glacial Lacustrine Processes and Landforms
  Glacial Reconstructions

Quaternary Geology- Reconstructing past Ice Ages
  Isostacy and Eustacy
  Palynological Evidence and Paleoenvironmental Reconstructions
  Vertebrate and Invertebrate Evidence and Paleoenvironments
  Dating Techniques
  Deep Sea Cores and Oxygen Isotopes
  Ice Cores and Interpretations

Professional Papers – Summaries and Discussions
  Beringian Paleoecology
  Cook Inlet Quaternary Geology
  Little Ice Age Reconstructions
  Mammoths
  Ice Man of the Alps
VII. Suggested Text(s)


VIII. Bibliography


## Course Action Request

**University of Alaska Anchorage**  
Proposal to Initiate, Add, Change, or Delete a Course

### 1. School or College
- **AS CAS**

### 2. Course Prefix
- **GEOL**

### 3. Course Number
- **A654**

### 4. Previous Course Prefix & Number
- **N/A**

### 5. Credits/CEUs
- **3**

### 6. Complete Course Title
- **Glacial and Quaternary Geology**

### 7. Type of Course
- [ ] Academic  
- [ ] Preparatory/Development  
- [ ] Non-credit  
- [X] CEU  
- [ ] Professional Development

### 8. Type of Action: [X] Add  
Or [ ] Change  
Or [ ] Delete

#### If a change, mark appropriate boxes:
- [x] Prefix  
- [x] Course Number  
- [ ] Title  
- [ ] Grading Basis  
- [ ] Cross-Listed/Stacked  
- [ ] Test Score Prerequisites  
- [ ] Co-requisites  
- [ ] Registration Restrictions  
- [ ] Class  
- [ ] Level  
- [x] College  
- [x] Major  
- [ ] Other Restrictions  
- [ ] Other CCG (please specify)

### 9. Repeat Status No
- [ ] # of Repeats
- [ ] Max Credits

### 10. Grading Basis
- [X] A-F  
- [ ] P/NP  
- [ ] NG

### 11. Implementation Date
- Semester/year: Spring/2013  
- To: /  

### 12. Cross Listed with
- [X] Stacked with **GEOL A454**  
- Cross-Listed Coordination

### 13a. Impacted Courses or Programs: List any programs or college requirements that require this course.

#### Please type into fields provided in table. If more than three entries, submit a separate table. A template is available at [www.uaa.alaska.edu/governance](http://www.uaa.alaska.edu/governance).

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**Initiator Name (typed): Kristine J Crossen**  
**Initiator Signed Initials:** [X]  
**Date:** ______________________

### 14. General Education Requirement

Mark appropriate box:
- [ ] Oral Communication  
- [ ] Written Communication  
- [ ] Quantitative Skills  
- [ ] Humanities  
- [ ] Fine Arts  
- [ ] Social Sciences  
- [ ] Natural Sciences  
- [ ] Integrative Capstone

### 15. Course Description (suggested length 20 to 50 words)

Examines glacial processes of erosion and deposition, and the modern and ancient landforms produced by ice. Topics include: Quaternary history of glaciers, climate fluctuation, changes in terrestrial and marine environments, and evidence and techniques used to reconstruct past environments. Independent research project and weekend field trip required. Special note: Students are required to provide their own transportation to field locales.

### 16a. Course Prerequisite(s) (list prefix and number)

### 16b. Test Score(s)

### 16c. Co-requisite(s) (concurrent enrollment required)

### 16d. Other Restriction(s)

- [X] College  
- [ ] Major  
- [X] Class  
- [X] Level

### 16e. Registration Restriction(s) (non-codable)

- Graduate Standing

### 17. Mark if course has fees

### 18. Mark if course is a selected topic course

### 19. Justification for Action

Designed as 600-level graduate course requiring independent research.

**Initiator (faculty only) / Date:**

**Kristine J Crossen**

**Initiator (TYPE NAME) / Date:**

- [X] Approved  
- [ ] Disapproved

**Initiator Signature:**

- [X] Approved  
- [ ] Disapproved

**Dean/Director of School/College / Date:**

- [X] Approved  
- [ ] Disapproved

**Undergraduate/Graduate Academic / Date:**

- [ ] Approved  
- [ ] Disapproved

**Board Chairperson / Date:**

- [X] Approved  
- [ ] Disapproved

**Provost or Designee / Date:**

- [ ] Approved  
- [ ] Disapproved
Course Content Guide
University of Alaska Anchorage

GEOL A654
Glacial and Quaternary Geology

I. Date of Initiation: Spring 2013

II. Course Information:
A. College: CAS
B. Course Subject: Geological Sciences
C. Course Number: GEOL A654
D. Number of Credits: 3.0 (3+0)
E. Course Title: Glacial and Quaternary Geology
F. Grading Basis: A-F
G. Course Description: Examines glacial processes of erosion and deposition, and the modern and ancient landforms produced by ice. Topics include: Quaternary history of glaciers, climate fluctuation, changes in terrestrial and marine environments, and evidence and techniques used to reconstruct past environments. Independent research project and weekend field trip required. Special note: Students are required to provide their own transportation to field locales.
H. Course Prerequisites: GEOL A221
I. Restrictions: Graduate Standing
J. Fee: Yes

III. Instructional Goals and Student Outcomes
A. Instructional Goals
The instructor will:
1. Present information concerning formation of, and the processes associated with, a variety of glaciers and their landforms.
2. Present evidence for and reconstructions of the past Ice Ages.
3. Teach students to analyze and critically evaluate the professional literature concerning glaciers and climate change.

B. Student Outcomes.
The students will:
1. Determine changes in environments based on glacial features and landforms. Assessment: Exams and exercises.
3. Critique the relevant professional literature considering both the techniques used to gather data and the resulting interpretations made by the authors. Assessment: Written summaries and discussion.
IV. Course Evaluations

Based on grades received on exams, class exercises, field trip attendance and independent research project report.

V. Course Level Justification

Requires students to analyze and critique the professional literature. Graduate students must select and complete an appropriate research topic, and make a professional presentation on their topic.

VI. Topical Course Outline

Glaciology – Modern Glacial Processes
  Subglacial Processes
  Meltwater Processes

Glacial Geology – Glacial Processes and Landforms
  Erosional Processes and Landforms
  Debris Transport
  Glacial Depositional Processes and Landforms
  Glacial Marine and Glacial Lacustrine Processes and Landforms
  Glacial Reconstructions

Quaternary Geology- Reconstructing past Ice Ages
  Isostacy and Eustacy
  Palynological Evidence and Paleoenvironmental Reconstructions
  Vertebrate and Invertebrate Evidence and Paleoenvironments
  Dating Techniques
  Deep Sea Cores and Oxygen Isotopes
  Ice Cores and Interpretations

Professional Papers – Summaries and Discussions
  Beringian Paleoecology
  Cook Inlet Quaternary Geology
  Little Ice Age Reconstructions
  Mammoths
  Ice Man of the Alps

Professional Quality Presentation
  Selection of appropriate topic
  Topic research
  Professional presentation
VII. Suggested Text(s)


VIII. Bibliography


null
Course Content Guide  
University of Alaska Anchorage  

GEOL A455  
Permafrost

I. Date of Initiation: Spring 2013

II. Course Information:  
A. College or School: CAS  
B. Course Subject: Geological Sciences  
C. Course Number: GEOL A455  
D. Number of Credits: 3.0 (3+0)  
E. Course Title: Permafrost  
F. Grading Basis: A-F  
G. Course Description: Examines permafrost geomorphic processes, environments and landforms. Topics include properties of ground ice and patterned ground, permafrost landscape dynamics, engineering and environmental problems, and impacts of climate change on permafrost systems. One weekend field trip required. Special note: Students are required to provide their own transportation to field locales.  
H. Prerequisites: GEOL A221  
I. Fee: yes

III. Instructional Goals and Student Outcomes:  
A. Instructional Goals.  
The instructor will:  
1) Present concepts, methods, and problems important to the study of permafrost and periglacial geomorphology.  
2) Guide students toward an understanding of the linkages between cryosphere processes and resulting patterns in landforms, surface features, and ecosystems.  
3) Design lectures and class exercises that will focus on aspects of theoretical and applied methods of describing and investigating frozen ground phenomena.

B. Student Learning Outcomes. The students will:  
1) Demonstrate knowledge of permafrost geomorphic processes, physical principles, and the factors affecting these processes. Assessment: Exams and exercises.  
2) Combine knowledge gained about cryogenic processes with both predicted and observed patterns in landform and sediments. Assessment: Exams and exercises.  
3) Integrate observational and conceptual information to interpret field data.
Assessment: Projects.
4) Assess and critique current literature, formulate, justify, and adequately communicate educated opinions. Assessment: summaries and projects.

IV. Course Evaluation
Students will be evaluated through exams focused on basic concepts, methods, and terminology. Essay components will be used to evaluate student ability to synthesize and communicate information. Exercises will be graded for quality of work, degree of understanding, and integration of outside knowledge. Students will discuss professional quality papers and make presentations.

V. Course Level Justification
This course uses both the conceptual and intellectual skills obtained in previous geology courses to apply to the study of permafrost geology. Students will not only learn new material, but will continue to develop and apply critical thinking skills, practice in scientific method, and synthesize the professional literature as characteristic of upper division courses.

VI. Topical Course Outline
A. Introduction / Concepts
   a. Laws of Thermodynamics / Heat flow
   b. Physical properties of ice / ice mechanics
B. Cold regions weathering processes
   a. Frost cracking, riving, weathering
   b. Frost action: heaving, frost mounds, needle ice
   c. Slope processes: creep, solifluction, rock glaciers, nivation, aliplanation
C. Permafrost
   a. Definitions, distribution, current research
   b. Permafrost processes
      i. Ice aggradation: sygenetic and epigenetic wedges
      ii. Lens ice, reticulated ice, remnant ice
   c. Active layer processes and landforms
      i. Frost heave, frost boils, sorted circles, stripes
      ii. Pingos and palsas
      iii. Polygonal ground patterns and processes
   d. Thermokarst processes and landforms
D. Cold Regions Hydrology / Fluvial Geomorphology
   a. Fluvial processes and problems
      i. Freeze-up / break-up, channel scour
      ii. Aufeis, overflow, channel morphology of frozen rivers
   b. Ground water in permafrost environments
   c. Cold regions lake dynamics / limnology
   d. Sea ice processes, current issues, and remote sensing
E. Engineering / Environmental issues in Permafrost environments
   a. Methods in mapping and detecting permafrost hazards
   b. Infrastructure, contaminants, hydrologic issues
F. Permafrost Landscape Dynamics
   a. Associated processes (aeolian, glacial, coastal) & landscape assemblage
   b. Cold region ecosystems and transitions (boreal, sub arctic, artic, high
      arctic tundra / vegetations assemblages)
   c. Plant and animal adaptations to periglacial environments
   d. Periglacial and permafrost soils
G. Climate Change
   a. Pleistocene Environments (permafrost taphonomy, paleoenvironmental
      reconstruction)
   b. Changing landscapes of the present – land use, climate change
   c. Global warming in permafrost environments

VII. Suggested Text(s)


VIII. Bibliography


Institute of Northern Engineering, Fairbanks, 2100 p..

Knight, J. and Harrison, S., eds. (2009) Periglacial and Paraglacial Processes and


Vandenberghe, J. (2001) Typology of Pleistocene cold-based rivers: The response of
river systems to climate change. Quaternary International 79, 111-121.
Course Action Request
University of Alaska Anchorage
Proposal to Initiate, Add, Change, or Delete a Course

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6. Complete Course Title
Permafrost

7. Type of Course
- Academic
- Preparatory/Development
- Non-credit
- CEU
- Professional Development

8. Type of Action: ☑ Add  
Change  
Delete

If a change, mark appropriate boxes:
- Prefix
- Credits
- Title
- Grading Basis
- Course Description
- Test Score Prerequisites
- Other Restrictions
- Class
- Level
- College
- Major
- Other CCG (please specify)

9. Repeat Status No  
# of Repeats  
Max Credits

10. Grading Basis  
- A-F
- P/NP
- NG

11. Implementation Date  
Semester/year
From: Fall/2014  
To: /  

12. ☑ Cross Listed with
GEOL A455  
Cross-Listed Coordination

13a. Impacted Courses or Programs: List any programs or college requirements that require this course.
Please type into fields provided in table. If more than three entries, submit a separate table. A template is available at www.uaa.alaska.edu/governance.

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Initiator Name (typed): Kristine J Crossen  
Initiator Signed Initials: _______  
Date: __________

13b. Coordination Email  
Date: 2/28/13
submitted to Faculty Listserv: (uaa-faculty@lists.uaa.alaska.edu)

13c. Coordination with Library Liaison  
Date: 4/1/13

14. General Education Requirement
Mark appropriate box:
- Oral Communication
- Written Communication
- Quantitative Skills
- Humanities
- Fine Arts
- Social Sciences
- Natural Sciences
- Integrative Capstone

15. Course Description (suggested length 20 to 50 words)
Examines permafrost geomorphic processes, environments and landforms. Topics include: properties of ground ice and patterned ground, permafrost landscape dynamics, engineering and environmental problems, and impacts of climate change on permafrost systems. One weekend field trip and independent research required. Special note: Students are required to provide their own transportation to field locales.

16a. Course Prerequisite(s) (list prefix and number)
GEOL A221

16b. Test Score(s)

16c. Co-requisite(s) (concurrent enrollment required)

16d. Other Restriction(s)
- College  
- Major  
- Class  
- Level

16e. Registration Restriction(s) (non-codable)
Graduate Standing

17. ☑ Mark if course has fees

18. ☑ Mark if course is a selected topic course

19. Justification for Action
Designed as 600-level graduate course requiring independent research.

Initiator (faculty only)  
Date: __________

Initiator (TYPE NAME)

Disapproved  
Approved

Dean/Director of School/College  
Date: __________

Undergraduate/Graduate Academic  
Board Chairperson  
Date: __________

Provost or Designee  
Date: __________

Approved  
Disapproved

Department Chairperson  
Date: __________

Curriculum Committee Chairperson  
Date: __________

Approved  
Disapproved

Approved  
Disapproved

Approved  
Disapproved
Course Content Guide
University of Alaska Anchorage

GEOL A655
Permafrost

I. Date of Initiation: Spring 2013

II. Course Information:
   A. College or School: CAS
   B. Course Subject: Geological Sciences
   C. Course Number: GEOL A655
   D. Number of Credits: 3.0 (3+0)
   E. Course Title: Permafrost
   F. Grading Basis: A-F
   G. Course Description: Examines permafrost geomorphic processes, environments and landforms. Topics include properties of ground ice and patterned ground, permafrost landscape dynamics, engineering and environmental problems, and impacts of climate change on permafrost systems. One weekend field trip and independent research required. Special note: Students are required to provide their own transportation to field locales.
   H. Prerequisites: GEOL A221
   I. Restrictions: Graduate standing
   J. Fee: yes

III. Instructional Goals and Student Outcomes:
   A. Instructional Goals.
      The instructor will:
      1) Present concepts, methods, and problems important to the study of permafrost and periglacial geomorphology.
      2) Guide students toward an understanding of the linkages between cryosphere processes and resulting patterns in landforms, surface features, and ecosystems.
      3) Design lectures and class exercises that will focus on aspects of theoretical and applied methods of describing and investigating frozen ground phenomena.
   B. Student Learning Outcomes. The students will:
      1) Demonstrate knowledge of permafrost geomorphic processes, physical principles, and the factors affecting these processes. Assessment: Exams and exercises.
      2) Combine knowledge gained about cryogenic processes with both predicted and observed patterns in landform and sediments. Assessment: Exams and exercises.
3) Integrate observational and conceptual information to interpret field data. Assessment: Projects.

4) Assess and critique current literature, formulate, justify, and adequately communicate educated opinions. Assessment: Summaries and projects.

5) Develop, investigate, and give a professional presentation of an independent research project. Assessment: Project.

IV. Course Evaluation
Students will be evaluated through exams focused on basic concepts, methods, and terminology. Essay components will be used to evaluate student ability to synthesize and communicate information. Exercises will be graded for quality of work, degree of understanding, and integration of outside knowledge. Students will discuss professional quality papers and make presentations.

V. Course Level Justification
This course uses both the conceptual and intellectual skills obtained in previous geology courses to apply to the study of permafrost geology. Students will not only learn new material, but will continue to develop and apply critical thinking skills, practice in scientific method, and synthesize the professional literature as characteristic of upper division courses. Independent research of appropriate topic is required.

VI. Topical Course Outline
A. Introduction / Concepts
   a. Laws of Thermodynamics / Heat flow
   b. Physical properties of ice / ice mechanics

B. Cold regions weathering processes
   a. Frost cracking, riving, weathering
   b. Frost action: heaving, frost mounds, needle ice
   c. Slope processes: creep, solifluction, rock glaciers, nivation, altiplanation

C. Permafrost
   a. Definitions, distribution, current research
   b. Permafrost processes
      i. Ice aggradation: sygenetic and epigenetic wedges
      ii. Lens ice, reticulated ice, remnant ice
   c. Active layer processes and landforms
      i. Frost heave, frost boils, sorted circles, stripes
      ii. Pingos and palsas
      iii. Polygonal ground patterns and processes
   d. Thermokarst processes and landforms

D. Cold Regions Hydrology / Fluvial Geomorphology
   a. Fluvial processes and problems
      i. Freeze-up / break-up, channel scour
      ii. Aufeis, overflow, channel morphology of frozen rivers
   b. Ground water in permafrost environments
   c. Cold regions lake dynamics / limnology
E. Engineering / Environmental issues in Permafrost environments
   a. Methods in mapping and detecting permafrost hazards
   b. Infrastructure, contaminants, hydrologic issues

F. Permafrost Landscape Dynamics
   a. Associated processes (aeolian, glacial, coastal) & landscape assemblage
   b. Cold region ecosystems and transitions (boreal, sub arctic, artic, high
      arctic tundra / vegetations assemblages)
   c. Plant and animal adaptations to periglacial environments
   d. Periglacial and permafrost soils

G. Climate Change
   a. Pleistocene Environments (permafrost taphonomy, paleoenvironmental
      reconstruction)
   b. Changing landscapes of the present – land use, climate change
   c. Global warming in permafrost environments

H. Student Research
   a. Research of appropriate topic
   b. Professional quality presentation

VII. Suggested Text(s)


VIII. Bibliography


Institute of Northern Engineering, Fairbanks, 2100 p.

Knight, J. and Harrison, S., eds. (2009) Periglacial and Paraglacial Processes and


of river systems to climate change. Quaternary International 79, 111-121.
Course Action Request
University of Alaska Anchorage
Proposal to Initiate, Add, Change, or Delete a Course

1a. School or College
AS CAS

1b. Division
AMSC Division of Math Science

1c. Department
Geological Sciences

2. Course Prefix
GEOL

3. Course Number
A456

4. Previous Course Prefix & Number
N/A

5a. Credits/CEUs
3

5b. Contact Hours
(Lecture + Lab)
(3+0)

6. Complete Course Title
Geoarchaeology

7. Type of Course
☑ Academic ☐ Preparatory/Development ☐ Non-credit ☐ CEU ☐ Professional Development

8. Type of Action:
☐ Add ☑ Change ☐ Delete

If a change, mark appropriate boxes:
☐ Prefix ☐ Credits ☐ Course Number ☑ Repeat Status ☒ Cross-Listed/Stacked
☐ Title ☐ Contact Hours ☐ Repeat Status ☐ Course Prerequisites
☐ Grading Basis ☐ Co-requisites ☐ Registration Restrictions
☐ Test Score Prerequisites ☐ Other Restrictions ☐ Class/Level
☐ Course Description ☐ Other Restrictions ☐ College/Major
☐ Other CCG (please specify)

9. Repeat Status
☑# of Repeats ☐ Max Credits

10. Grading Basis
☑ A-F ☐ P/NP ☐ NG

11. Implementation Date
From: Fall/2014 To: 9/999

12. ☐ Cross Listed with
☑ Stacked with GEOL A656 Cross-Listed Coordination

13a. Impacted Courses or Programs: List any programs or college requirements that require this course.

Please type into fields provided in table. If more than three entries, submit a separate table. A template is available at www.uaa.alaska.edu/governance.

Impact Program/Course
Catalog Page(s) Impacted
Date of Coordination
Chair/Coordinator Contacted
1. Geological Sciences - BS
2. Anthropology - BS, BA
3. 

Initiator Name (typed): Kristine J Crossen
Initiator Signed Initials: _________
Date: __________________

13b. Coordination Email
Date: 2/28/13
submitted to Faculty Listserv: (uaa-faculty@lists.uaa.alaska.edu)

13c. Coordination with Library Liaison
Date: 4/1/13

14. General Education Requirement
Mark appropriate box:
☐ Oral Communication ☐ Written Communication ☐ Quantitative Skills ☐ Humanities
☐ Fine Arts ☐ Social Sciences ☐ Natural Sciences ☐ Integrative Capstone

15. Course Description (suggested length 20 to 50 words)
Integration of geology and archaeology. Rock identification of lithic sources, sediment analysis of site deposits, paleolandscape reconstruction, geochronology, and environmental change. Response to changes in resources and climate by past societies and application to contemporary problems and issues. Special Note: Students are required to provide their own transportation to field locales.

16a. Course Prerequisite(s) (list prefix and number)
ANTH A211 and GEOL A221

16b. Test Score(s)

16c. Co-requisite(s) (concurrent enrollment required)

16d. Other Restriction(s)
☐ College ☐ Major ☐ Class ☐ Level

16e. Registration Restriction(s) (non-codable)

17. ☐ Mark if course has fees
18. ☐ Mark if course is a selected topic course

19. Justification for Action
Course stacking to allow graduate students access to the course offering. Additional information concerning field trips.

Initiator (faculty only)
Date

Initiator (TYPE NAME)

Disapproved

Approved

Dean/Director of School/College
Date

Provisional/Graduate Academic
Date

Board Chairperson

Approved

Disapproved

Provost or Designee
Date

13c. Coordination with Library Liaison
Date: 4/1/13

14. General Education Requirement
Mark appropriate box:

15. Course Description (suggested length 20 to 50 words)
Integration of geology and archaeology. Rock identification of lithic sources, sediment analysis of site deposits, paleolandscape reconstruction, geochronology, and environmental change. Response to changes in resources and climate by past societies and application to contemporary problems and issues. Special Note: Students are required to provide their own transportation to field locales.

16a. Course Prerequisite(s) (list prefix and number)
ANTH A211 and GEOL A221

16b. Test Score(s)

16c. Co-requisite(s) (concurrent enrollment required)

16d. Other Restriction(s)
☐ College ☐ Major ☐ Class ☐ Level

16e. Registration Restriction(s) (non-codable)

17. ☐ Mark if course has fees
18. ☐ Mark if course is a selected topic course

19. Justification for Action
Course stacking to allow graduate students access to the course offering. Additional information concerning field trips.

Initiator (faculty only)
Date

Initiator (TYPE NAME)

Disapproved

Approved

Dean/Director of School/College
Date

Provisional/Graduate Academic
Date

Board Chairperson

Approved

Disapproved

Provost or Designee
Date
Course Content Guide  
University of Alaska Anchorage  

GEOL A456  
Geoarchaeology  

I. Date of Initiation: Spring 2013  

II. Course Information:  
A. College: CAS  
B. Course Subject: Geological Sciences  
C. Course Number: GEOL A456  
D. Number of Credits: 3.0 (3+0)  
E. Course Title: Geoarchaeology  
F. Grading Basis: A-F  
G. Course Description: Integration of geology and archaeology. Rock identification of lithic sources, sediment analysis of site deposits, paleolandscape reconstruction, geochronology, and environmental change. Response to changes in resources and climate by past societies and application to contemporary problems and issues. Special Note: Students are required to provide their own transportation to field locales.  
H. Course Prerequisites: ANTH A211 and GEOL A221  
I. Restrictions: Junior Standing  
J. Fees: None  

III. Instructional Goals and Student Learning Outcomes  

A. Instructional Goals: The instructor will:  
1) Present the use of geologic concepts and methods to solve archaeological problems.  
2) Apply earth science approaches of chronology, sedimentology, and environmental reconstructions to archaeological situations.  
3) Assign reading and writing exercises that incorporate quantitative and critical thinking skills applied to investigate past societies and their links to modern environmental and climatic problems.  

B. Student Learning Outcomes. The students will be able to:  
1) Identify different lithologies used in tool making, determine Alaskan lithic sources, and analyze sediments and soils. Assessment: Exams and exercises.  
2) Assess the processes that produce different types of landforms, and evaluate landforms using aerial photography. Assessment: Exams.  
3) Critique the different dating techniques used in archaeological sites. Assessment: Exams and exercises.  
4) Assess the major climate sequences over the past 4 million years, and judge the effect on site formation processes. Assessment: Exercises.
5) Demonstrate the ability to think critically about problems associated with partial data, discrepancies in dating techniques, and differences in data from a variety of sources. Assessment: Discussion.
6) Judge problems logically and resolve them reasonably using scientific methods. Assessment: Exercises and exams.
7) Assess past environmental changes and their impacts of human society and relate these to contemporary issues facing modern societies. Assessment: Exercises and discussion.

IV. Course Evaluations

The course will assess each student's ability to communicate effectively in both the written and oral formats through individual and group oral projects and through written synthesis of the professional literature. Projects will require students to locate and appropriately use a variety of library and web resources to complete their projects. The assignments will require quantitative and critical thinking skills to apply the lessons learned from past societies to understand and critically judge the responses of modern societies to problems of resource utilization, shortages, and climate change. The outcome will be evaluated using essay exams, research papers and/or oral presentations, class exercises, annotated bibliographies, and class discussions.

V. Course Level Justification

This interdisciplinary capstone course incorporates both archaeology (anthropology) and geology and satisfies the general education requirement. This course enables students to apply their background skills in GER basic college level courses (Tier 1) with geology and archeology disciplinary areas (Tier 2). Students must meet the criteria of Junior standing and have taken two 200-level courses as prerequisites. This course is part of the geology curriculum, requires prerequisites from two different disciplines, and requires the students to have the ability to read, analyze and synthesize the professional literature.

VI. Integrated Capstone Justification

1. Knowledge Integration/Interrelationships and synergy among GER disciplines: The course strives to integrate geology (natural science) and archaeology/anthropology (social science).

2. Effective Communication Skills: The course demands successful communication skills through essay examinations, individual and group classroom presentations, and discussions of current problems including climate change.

3. Critical Thinking: Students are required to integrate information across disciplines and to critically evaluate data, positions and arguments. They will be
required to demonstrate their critical thinking in writing assignments, class presentations and examinations.

4. Information Literacy: Students will use computer and internet skills to acquire information, research scientific literature for information, and show that they can organize and analyze information from diverse sources. Discussions and presentations will test these skills.

5. Quantitative Perspectives: Students will use statistical analyses, graphical data, and tables of scientific data to investigate concepts and conclusions, and will generate graphical displays of their own results. Examinations and presentations will test these skills.

6. Evolving Realities of the 21st century: Understanding modern and past climate change as well as the human influences on climate change (and other processes occurring on the earth’s surface) help illustrate the connections between science, policy and social attitudes. This course strives to help students understand the impact of climate change on human societies (and vice versa) and understand the effects geologic processes on human societies (and vice versa) both in the past and present times.

VII. Topical Course Outline

Section 1 – Lithics
Identification of rocks and minerals
Lithics used for tools and Alaskan lithic sources

Section 2 – Sediments
Depositional Environments
Soil formation

Section 3 – Paleolandscape reconstruction
Processes of landscape formation
Interpretation of aerial photography

Section 4 - Geochronology
Dating techniques used in archaeology

Section 5 - Quaternary Climate Change
Effect of climate change on site formation and preservation
Human response to past climate change
Modern climate change and its effect on human societies

Section 6 - Professional literature on important sites
Reading professional papers, writing annotated bibliographies, class discussion.

Section 7 – Preparation of a final project and class presentation
VIII. Suggested Text(s)


IX. Bibliography


# Proposal to Initiate, Add, Change, or Delete a Course

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<th>1a. School or College</th>
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<td>Date: 4/1/13</td>
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<th>16b. Test Score(s)</th>
<th>16c. Co-requisite(s) (concurrent enrollment required)</th>
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<tr>
<td>Integration of geology and archaeology. Rock identification of lithic sources, sediment analysis of site deposits, paleolandscape reconstruction, geochronology, and environmental change. Response to changes in resources and climate by past societies and application to contemporary problems and issues. Independent research project required. Special Note: Students are required to provide their own transportation to field locales.</td>
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<th>16e. Registration Restriction(s) (non-codable)</th>
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<td>Graduate Standing</td>
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<th>18. Mark if course is a selected topic course</th>
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<td>Kristine J Crossen</td>
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Course Content Guide
University of Alaska Anchorage

GEOL A656
Geoarchaeology

I. Date of Initiation: Spring 2013

II. Course Information:
A. College: CAS
B. Course Subject: Geological Sciences
C. Course Number: GEOL A656
D. Number of Credits: 3.0 (3+0)
E. Course Title: Geoarchaeology
F. Grading Basis: A-F
G. Course Description: Integration of geology and archaeology. Rock identification of lithic sources, sediment analysis of site deposits, paleolandscape reconstruction, geochronology, and environmental change. Response to changes in resources and climate by past societies and application to contemporary problems and issues. Independent research project required. Special Note: Students are required to provide their own transportation to field locales.
H. Course Prerequisites: ANTH A211 and GEOL A221
I. Restrictions: Graduate Standing
J. Fees: Yes

III. Instructional Goals and Student Learning Outcomes

A. Instructional Goals: The instructor will:
   1) Present the use of geologic concepts and methods to solve archaeological problems.
   2) Apply earth science approaches of chronology, sedimentology, and environmental reconstructions to archaeological situations.
   3) Assign reading and writing exercises that incorporate quantitative and critical thinking skills applied to investigate past societies and their links to modern environmental and climatic problems.

B. Student Learning Outcomes. The students will be able to:
   1) Identify different lithologies used in tool making, determine Alaskan lithic sources, and analyze sediments and soils. Assessment: Exams and exercises.
   2) Assess the processes that produce different types of landforms, and evaluate landforms using aerial photography. Assessment: Exams.
   3) Critique the different dating techniques used in archaeological sites. Assessment: Exams and exercises.
   4) Assess the major climate sequences over the past 4 million years, and judge the effect on site formation processes. Assessment: Exercises and discussion.
5) Demonstrate the ability to think critically about problems associated with partial data, discrepancies in dating techniques, and differences in data from a variety of sources. Assessment: Discussion.

6) Judge problems logically and resolve them reasonably using scientific methods. Assessment: Exercises and exams.

7) Assess past environmental changes and their impacts of human society and relate these to contemporary issues facing modern societies. Assessment: Discussion.

8) Investigate an appropriate research topic, complete independent research and make a professional quality presentation to the class. Assessment: Presentation.

IV. Course Evaluations

The course will assess each student's ability to communicate effectively in both the written and oral formats through individual and group oral projects and through written synthesis of the professional literature. Projects will require students to locate and appropriately use a variety of library and web resources to complete their projects. The assignments will require quantitative and critical thinking skills to apply the lessons learned from past societies to understand and critically judge the responses of modern societies to problems of resource utilization, shortages, and climate change. The outcome will be evaluated using essay exams, research papers and/or oral presentations, class exercises, annotated bibliographies, and class discussions. Graduate students are required to complete an independent research topic and make a professional quality presentation.

V. Course Level Justification

This interdisciplinary capstone course incorporates both archaeology (anthropology) and geology. This course requires prerequisites from two different disciplines, and requires the students to have the ability to read, analyze and synthesize the professional literature. The course requires graduate standing and independent research.

VI. Topical Course Outline

Section 1 – Lithics
Identification of rocks and minerals
Lithics used for tools and Alaskan lithic sources

Section 2 – Sediments
Depositional Environments
Soil formation

Section 3 – Paleolandscape reconstruction
Processes of landscape formation
Interpretation of aerial photography
Section 4 - Geochronology
Dating techniques used in archaeology

Section 5 - Quaternary Climate Change
Effect of climate change on site formation and preservation
Human response to past climate change
Modern climate change and its effect on human societies

Section 6 - Professional literature on important sites
Reading professional papers, writing annotated bibliographies, class discussion.

Section 7 – Independent research project and class presentation

VII. Suggested Text(s)


VIII. Bibliography


### Course Action Request

**University of Alaska Anchorage**

**Proposal to Initiate, Add, Change, or Delete a Course**

<table>
<thead>
<tr>
<th>1a. School or College</th>
<th>1b. Division</th>
<th>1c. Department</th>
</tr>
</thead>
<tbody>
<tr>
<td>AS CAS</td>
<td>AMSC Division of Math Science</td>
<td>Geological Sciences</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>2. Course Prefix</th>
<th>3. Course Number</th>
<th>4. Previous Course Prefix &amp; Number</th>
<th>5a. Credits/CEUs</th>
<th>5b. Contact Hours (Lecture + Lab)</th>
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<tr>
<td>GEOL</td>
<td>A460</td>
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<td>3</td>
<td>(3+0)</td>
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**6. Complete Course Title**

**Environmental Geochemistry**

**Abbreviated Title for Transcript (30 character)**

**7. Type of Course**

- [X] Academic
- [ ] Preparatory/Development
- [ ] Non-credit
- [ ] CEU
- [ ] Professional Development

**8. Type of Action: Add or Change or Delete**

If a change, mark appropriate boxes:

- [ ] Prefix
- [ ] Credits
- [ ] Title
- [ ] Grading Basis
- [X] Course Description
- [ ] Test Score Prerequisites
- [ ] Co-requisites
- [ ] Registration Restrictions
- [ ] Class
- [ ] Level
- [ ] College
- [ ] Major
- [X] Other CCG (please specify)

**9. Repeat Status No # of Repeats Max Credits**

**10. Grading Basis**

- [X] A-F
- [ ] P/NP
- [ ] NG

**11. Implementation Date**

- From: Fall/2014
- To: 9/999

**12. Cross Listed with**

- [X] Stacked with GEOL A660

**Cross-Listed Coordination**

**Signature**

**13a. Impacted Courses or Programs:** List any programs or college requirements that require this course.

Please type into fields provided in table. If more than three entries, submit a separate table. A template is available at [www.uaa.alaska.edu/governance](http://www.uaa.alaska.edu/governance).

<table>
<thead>
<tr>
<th>Impacted Program/Course</th>
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<th>Chair/Coordinator Contacted</th>
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<tr>
<td>2. Chemistry BS</td>
<td>101-103</td>
<td>2/28/13</td>
<td>Eric Holmberg</td>
</tr>
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<td>3. Applied Environmental Science Technology MS</td>
<td>2/28/13</td>
<td>A. Dotson</td>
<td></td>
</tr>
</tbody>
</table>

**Initiator Name (typed): Kristine J Crossen**

**Initiator Signed Initials: ___________ Date: ___________**

**13b. Coordination Email**

Date: 2/28/13

submitted to Faculty Listser: [uas-faculty@lists.uaa.alaska.edu](mailto:uas-faculty@lists.uaa.alaska.edu)

**13c. Coordination with Library Liaison**

Date: 4/1/13

**14. General Education Requirement**

Mark appropriate box:

- [ ] Oral Communication
- [ ] Written Communication
- [ ] Quantitative Skills
- [ ] Social Sciences
- [ ] Natural Sciences
- [ ] Fine Arts
- [ ] Humanities
- [ ] Integrative Capstone

**15. Course Description** (suggested length 20 to 50 words)


**16a. Course Prerequisite(s) (list prefix and number)**

- GEOL A360

**16b. Test Score(s)**

**16c. Co-requisite(s) (concurrent enrollment required)**

**16d. Other Restriction(s)**

- [ ] College
- [ ] Major
- [ ] Class
- [ ] Level

**16e. Registration Restriction(s) (non-codable)**

**17. Mark if course has fees**

**18. Mark if course is a selected topic course**

**19. Justification for Action**

The course description, student outcomes, course outline, and course evaluation have been updated and/or condensed, the bibliography and suggested texts have been updated and this course will be stacked at the 600 level to allow graduate students to take it for graduate credit.
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<td>Curriculum Committee Chairperson</td>
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<td>Provost or Designee</td>
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</table>
I. Date of Initiation: Spring 2013

II. Course Information:
   A. College or School: CAS
   B. Course Subject: Geological Sciences
   C. Course Number: A460
   D. Number of Credits: 3.0 (3+0)
   E. Course Title: Environmental Geochemistry
   F. Grading Basis: A-F
   G. Course Description: Principles and applications of environmental geochemistry on a global scale. Geochemical cycles and chemical mass balance of elements. Chemical weathering and the composition of natural waters. Processes affecting the distribution of trace elements in geologic environments. Stable isotope fractionation and applications to modeling environmental systems. Review of specific cases of modern environmental geochemistry problems.
   H. Course Prerequisites: GEOL A360
   I. Fees: yes

III. Instructional Goals and Student Learning Outcomes:
   A. Instructional Goals. The instructor will:
      1) present the concepts important in the study of environmental geochemistry
      2) guide students to an understanding of the principles and applications of geochemistry to various environmental problems
      3) demonstrate how to utilize geochemical data to understand the geochemical cycles of metals
      4) provide novel and challenging assignments that require students to take their knowledge beyond the classroom instruction to solve “real world” problems
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<td>Analysis of data set, discussion, and synthesis of relevant professional literature, presentation</td>
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</tbody>
</table>

IV. Course Evaluation

Students are evaluated based on homework assignments, quizzes, exams, class project, and oral presentation.

V. Course Level Justification
This course has a 300-level prerequisite.

VI. Topical Course Outline

1. Global water cycle and origin of water on Earth
2. Atmospheric and oceanic circulation and chemical composition
3. Chemical composition of natural waters
4. Sulfur, nitrogen, carbon and oxygen cycles
5. Trace element cycles
6. Chemical weathering of rocks and soil formation
7. Stable isotope fractionation and environmental applications
8. Mixing models
9. Weathering of metallic mineral deposits
10. Geochemical exploration for ore deposits
VII. Suggested Text(s)


VIII. Example Bibliography


Lyons, W.B., Harmon, R.S., eds., 2012. Urban Geochemistry, Elements, vol. 8, no. 6, ISSN 1811-5209, 401-480.

### Course Action Request

**University of Alaska Anchorage**

**Proposal to Initiate, Add, Change, or Delete a Course**

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<th>13a. Impacted Courses or Programs: List any programs or college requirements that require this course.</th>
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Initiator Name (typed): Kristine J Crossen

Initiator Signed Initials: __________ Date: _______________

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19. Justification for Action

The course description, instructional goals, student outcomes, course outline, and course evaluation have been updated and/or condensed, the bibliography and suggested texts have been updated and this course will be stacked with GEOL A460.
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<th>Dean/Director of School/College</th>
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<th>Date</th>
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<th>Undergraduate/Graduate Academic Board Chairperson</th>
<th>Date</th>
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86
I. Date of Initiation: Spring 2013

II. Course Information:
   A. College or School: CAS
   B. Course Subject: Geological Sciences
   C. Course Number: A660
   D. Number of Credits: 3.0 (3+0)
   E. Course Title: Environmental Geochemistry
   F. Grading Basis: A-F
   G. Course Description: Principles and applications of environmental geochemistry on a global scale. Geochemical cycles and chemical mass balance of elements. Chemical weathering and the composition of natural waters. Processes affecting the distribution of trace elements in geologic environments. Stable isotope fractionation and applications to modeling environmental systems. Review of specific cases of modern environmental geochemistry problems. Independent research project required.
   H. Course Prerequisites: GEOL A360
   I. Restrictions: Graduate standing
   J. Fees: yes

III. Instructional Goals and Student Learning Outcomes:
   A. Instructional Goals. The instructor will:

   1) present the concepts important in the study of environmental geochemistry
   2) guide students to an understanding of the principles and applications of geochemistry to various environmental problems
   3) demonstrate how to utilize geochemical data to understand the geochemical cycles of metals
   4) provide novel and challenging assignments that require students to take their knowledge beyond the classroom instruction to solve “real world” problems
   5) Provide additional opportunities for graduate level students to develop their critical thinking skills through the analysis of professional literature in environmental geochemistry and the design and completion of independent research projects.
B. Student Learning Outcomes and Evaluation

<table>
<thead>
<tr>
<th>Student Outcomes</th>
<th>Evaluation Metrics</th>
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<tbody>
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</tr>
<tr>
<td>5) Apply course content to thesis research or an environmental problem of interest</td>
<td>Research paper and presentation</td>
</tr>
</tbody>
</table>

IV. Course Evaluation

Students are evaluated based on homework assignments, quizzes, exams, class project, research paper and oral presentation.

V. Course Level Justification

This course requires graduate level standing.

VI. Topical Course Outline

1. Global water cycle and origin of water on Earth
2. Atmospheric and oceanic circulation and chemical composition
3. Chemical composition of natural waters
4. Sulfur, nitrogen, carbon and oxygen cycles
5. Trace element cycles
6. Chemical weathering of rocks and soil formation
7. Stable isotope fractionation and environmental applications
8. Mixing models
9. Weathering of metallic mineral deposits
10. Geochemical exploration for ore deposits
VII. Suggested Text(s)


VIII. Example Bibliography

Chakhmouradian, A.R., Wall, F., eds., 2012. Rare Earth Elements, Elements, vol. 8, no. 5, ISSN 1811-5209, 321-400


Lyons, W.B., Harmon, R.S., eds., 2012. Urban Geochemistry, Elements, vol.8, no.6, ISSN 1811-5209, 401-480.

Course Action Request
University of Alaska Anchorage
Proposal to Initiate, Add, Change, or Delete a Course

1a. School or College  
AS CAS

1b. Division  
AMSC Division of Math Science

1c. Department  
Geological Sciences

2. Course Prefix  
GEOL

3. Course Number  
A480

4. Previous Course Prefix & Number  
N/A

5a. Credits/CEUs  
3

5b. Contact Hours  
(Lecture + Lab)  
\((0+9)\)

6. Complete Course Title  
Geologic Field Methods

Abbreviated Title for Transcript (30 character)

7. Type of Course  
☒ Academic  ☐ Preparatory/Development  ☐ Non-credit  ☐ CEU  ☐ Professional Development

8. Type of Action:  
☐ Add  ☒ Change  ☐ Delete

If a change, mark appropriate boxes:

- Prefix
- Credits
- Title
- Grading Basis
- Course Description
- Test Score Prerequisites
- Other Restrictions
- Other CCG (please specify)

9. Repeat Status No  
# of Repeats  
Max Credits

10. Grading Basis  
☒ A-F  ☐ P/NP  ☐ NG

11. Implementation Date  
semester/year  
From:  Fall/2014  
To:  /9999

12. ☐ Cross Listed with  
☒ Stacked with  
☐ Cross-Listed Coordination Signature

13a. Impacted Courses or Programs: List any programs or college requirements that require this course.

Please type into fields provided in table. If more than three entries, submit a separate table. A template is available at www.uaa.alaska.edu/governance.

<table>
<thead>
<tr>
<th>Impacted Program/Course</th>
<th>Catalog Page(s) Impacted</th>
<th>Date of Coordination</th>
<th>Chair/Coordinator Contacted</th>
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<td>1. Geological Sciences BS</td>
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</table>

Initiator Name (typed): Kristine J Crossen  
Initiator Signed Initials:  
Date:  

13b. Coordination Email  
Date: 2/28/13  
submitted to Faculty Listserv: (uaa-faculty@lists.uaa.alaska.edu)

13c. Coordination with Library Liaison  
Date: 4/1/13

14. General Education Requirement  
Mark appropriate box:

- Oral Communication
- Written Communication
- Quantitative Skills
- Humanities
- Fine Arts
- Social Sciences
- Natural Sciences
- Integrative Capstone

15. Course Description (suggested length 20 to 50 words)

Introduction to principles and applications of basic geologic field methods including construction of bedrock geologic maps and cross-sections. Emphasis on field note taking, geologic mapping, stratigraphic section measurement and construction. Students required to complete several field projects including written summary reports. Special notes: students are required to provide their own transportation to and from field sites.

16a. Course Prerequisite(s) (list prefix and number)  
GEOL A322, GEOL A335, GEOL A452

16b. Test Score(s)

16c. Co-requisite(s) (concurrent enrollment required)

16d. Other Restriction(s)  
☐ College  ☐ Major  ☐ Class  ☐ Level

16e. Registration Restriction(s) (non-codable)

17. ☒ Mark if course has fees

18. ☐ Mark if course is a selected topic course

19. Justification for Action

The course description was modified with a special note advising students that they need to provide their own transportation to and from field sites.
<table>
<thead>
<tr>
<th>Initiator (faculty only)</th>
<th>Date</th>
<th>Approved</th>
<th>Disapproved</th>
<th>Dean/Director of School/College</th>
<th>Date</th>
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<tr>
<td>Kristine J Crossen</td>
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<th>Date</th>
<th>Approved</th>
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<th>Undergraduate/Graduate Academic Board Chairperson</th>
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<tr>
<th>Curriculum Committee Chairperson</th>
<th>Date</th>
<th>Approved</th>
<th>Disapproved</th>
<th>Provost or Designee</th>
<th>Date</th>
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</tbody>
</table>
I. Date of Initiation: Spring 2013

II. Course Information:
A. College or School: CAS
B. Course Subject: Geological Sciences
C. Course Number: A480
D. Number of Credits: 3.0 (0+9)
E. Course Title: Geologic Field Methods
F. Grading Basis: A-F
G. Course Description: Introduction to principles and applications of basic geologic field methods including construction of bedrock geologic maps and cross-sections. Emphasis on field note taking, geologic mapping, stratigraphic section measurement and construction. Students are required to complete several field projects including written summary reports. Special notes: Students are required to provide their own transportation to and from field sites.
H. Course Prerequisites: GEOL A322, GEOL A335, and GEOL A452
I. Fees: yes

III. Instructional Goals and Student Learning Outcomes:
A. Instructional Goals. The instructor will:
   1) Demonstrate basic geologic field techniques through a combination of classroom and field laboratory exercises.
   2) Provide students with the basic tools necessary to go into the “real world” to document the geologic environment through standard techniques of geologic mapping, rock descriptions, construction of stratigraphic columns, and interpretation of the geology of given field sites.
   3) Develop final projects to serve as independent mapping exercises.

B. Student Learning Outcomes. The students will:
   1) Utilize the tools of a field geologist. Assessment: Field Exercises
   2) Demonstrate the ability to interpret geologic environments through investigation of field sites. Assessment: Field notes and final report.
   3) Synthesize explanations for the origin and formation of various geologic settings in the Anchorage and surrounding region. Assessment: Field notes and final report.
   4) Demonstrate knowledge drawn from scientific journals and USGS publications can be synthesized in the field projects. Assessment: Final report.
   5) Produce professional quality reports for each assigned project. Assessment: Final report.
IV. Course Evaluation

The students will be evaluated through completion of several field exercises and a final project.

V. Course Level Justification

This course requires three 300-level prerequisites.

VI. Topical Course Outline

1) Observing and Collecting Data and Samples
2) Using basic geologic field tools
3) Describing sedimentary, volcanic, igneous, and metamorphic rocks in the field
4) Planning a compass traverse
5) Plotting geologic features on a base map
6) Triangulation
7) Constructing a geologic map
8) Drawing geologic cross-sections
9) Measuring stratigraphic sections
10) Preparing geologic reports

VII. Suggested Text(s)


VIII. Bibliography


### Course Action Request

**University of Alaska Anchorage**  
Proposal to Initiate, Add, Change, or Delete a Course

<table>
<thead>
<tr>
<th>1a. School or College</th>
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<th>5b. Contact Hours (Lecture + Lab)</th>
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### 13a. Impacted Courses or Programs:
List any programs or college requirements that require this course.

<table>
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<th>Impacted Program/Course</th>
<th>Catalog Page(s)</th>
<th>Date of Coordination</th>
<th>Chair/Coordinator Contacted</th>
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**Initiator Name (typed): Kristine J Crossen**  
Initiator Signed Initials: ______________  
Date: ______________

**13b. Coordination Email**  
submitted to Faculty Listserv: (uaa-faculty@lists.uaa.alaska.edu)

**13c. Coordination with Library Liaison**  
Date: 4/1/13

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<tr>
<td>Integrative Capstone</td>
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**15. Course Description (suggested length 20 to 50 words)**

Field excursion within the United States or another country to conduct field exercises on bedrock and/or surficial mapping, generate cross-sections from maps, measure and draw stratigraphic sections, and learn regional geology and tectonic settings. Special notes: course counts as credit towards the major if field camp taken elsewhere. This course may be repeated with a change of subtitle for a maximum of 9 credits. Students may be required to provide their own transportation depending on location of field trip.

**16a. Course Prerequisite(s) (list prefix and number)**  
GEOL A480

**16b. Test Score(s)**  

**16c. Co-requisite(s) (concurrent enrollment required)**

**16d. Other Restriction(s)**  

**16e. Registration Restriction(s) (non-codable)**

**17. Mark if course has fees**

**18. Mark if course is a selected topic course**

**19. Justification for Action**

The special note in the course description was updated to include the possibility that students may have to provide their own transportation depending on the location of the field trip. Assessment items were also added to the Student Learning Outcomes.
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<td>Provost or Designee</td>
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<td>Date</td>
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</table>
I. Date of Initiation: Spring 2013

II. Course Information:
   A. College or School: CAS
   B. Course Subject: Geological Sciences
   C. Course Number: A482
   D. Number of Credits: 3.0 (0+9)
   E. Course Title: Geologic Field Investigations
   F. Grading Basis: A-F
   G. Course Description: Field excursion within the United States or another country to conduct field exercises on bedrock and/or surficial mapping, generate cross-sections from maps, measure and draw stratigraphic sections, and learn regional geology and tectonic settings. Special notes: course counts as credit towards the major if field camp taken elsewhere. This course may be repeated with a change of subtitle for a maximum of 9 credits. Students may be required to provide their own transportation depending on location of field trip.
   H. Prerequisites: GEOL A480
   I. Fees: yes

III. Instructional Goals and Student Learning Outcomes:
   A. Instructional Goals. The instructor will:
      1) Provide field locations and projects in which the students will construct bedrock geologic maps and/or surficial geologic maps, geologic cross-sections, and measure and draw stratigraphic sections
      2) Teach the regional geology and tectonic setting of specific field areas
      3) Design a final project that requires students to combine all their geologic skills and knowledge

   B. Student Learning Outcomes. The students will:
      1) Identify and map various geologic features of the chosen field sites. Assessment: Field notes and assignments.
      2) Construct geologic cross-sections to better understand the geologic environments that they have mapped. Assessment: Maps, cross-sections and field notes.
      3) Measure and interpret stratigraphic sections to determine depositional environments of rocks. Assessment: stratigraphic column.
      4) Synthesize all information gained during the field exercises in written reports that describe the geologic evolution of each site. Assessment: Final reports that include maps, cross-sections, field notes and interpretation of the geologic environment.
IV. Course Evaluation
Students will be evaluated on the basis of their field notebook descriptions, each field exercise and project that is assigned along with the written geologic interpretation and history of each site.

V. Course Level Justification
This course has a 400-level prerequisite. The students are expected to take what they have learned in GEOL A480 and to work independently in order to simulate the experience of a practicing professional geologist.

VI. Topical Course Outline
1) Field note taking  
2) Hand sample description of rocks  
3) Geologic mapping  
4) Construction of cross-sections and stratigraphic columns  
5) Writing geology histories and reports  
6) Regional geology of field sites

VII. Suggested Text(s)


VIII. Bibliography

### Course Action Request

**University of Alaska Anchorage**  
**Proposal to Initiate, Add, Change, or Delete a Course**

1. **School or College**  
   AS CAS

2. **Division**  
   AMSC Division of Math Science

3. **Department**  
   Geological Sciences

4. **Course Prefix**  
   GEOL

5. **Course Number**  
   A490

6. **Previous Course Prefix & Number**  
   None

7. **Credits/CEUs**  
   1-4

8. **Contact Hours**  
   (Lecture + Lab) (1-4+0)

9. **Complete Course Title**  
   Advanced Topics in Geology

10. **Abbreviated Title for Transcript (30 character)**  

11. **Type of Course**  
   Academic

12. **Type of Action:**  
   Add or Change

13. **Repeat Status**  
   Yes  
   # of Repeats: 2  
   Max Credits: 12

14. **Grading Basis**  
   A-F  
   P/NP

15. **Implementation Date**  
   Semester/year  
   From: Spring/2013  
   To:  

16. **Cross Listed with**  
   GEOL A690

17. **Cross-Listed Coordination**

18. **Initiator Name (typed):**  
   Kristine J Crossen

19. **Course Description**  
   Detailed study of selected topics in geology. Special note: May be repeated twice for a maximum of 12 credits with change of topic.

20. **Course Prerequisite(s) (list prefix and number)**  
   GEOL A221

21. **Test Score(s)**

22. **Co-requisite(s) (concurrent enrollment required)**

23. **Other Restriction(s)**  
   College  
   Level

24. **Registration Restrictions**

25. **Mark if course has fees**

26. **Mark if course is a selected topic course**

27. **Justification for Action**  
   Designed as 400-level undergraduate course. Course takes advantage of the expertise of resident faculty, visiting faculty and community professionals. Current issues and topics not normally taught on a scheduled basis will be offered under this heading.

28. **Initiator (faculty only) Signed Initials:**  
   Kristine J Crossen

29. **Date:**  
   ____________________

30. **Dean/Director of School/College Signed:**  
   Approved  
   Disapproved

31. **Date:**  
   ____________________

32. **Undergraduate/Graduate Academic Board Chairperson Signed:**  
   Approved  
   Disapproved

33. **Date:**  
   ____________________

34. **Provost or Designee Signed:**  
   Approved  
   Disapproved

35. **Date:**  
   ____________________

---

### Additional Information

- **Impacted Programs or Courses**
- **Catalog Page(s) Impacted**
- **Date of Coordination**
- **Chair/Coordinator Contacted**

- **General Education Requirement**

- **Mark appropriate boxes:**
  - Oral Communication
  - Written Communication
  - Quantitative Skills
  - Humanities
  - Fine Arts
  - Social Sciences
  - Natural Sciences
  - Integrative Capstone

---

**Note:**

- Please type into fields provided in table. If more than three entries, submit a separate table. A template is available at [www.uaa.alaska.edu/governance](http://www.uaa.alaska.edu/governance).

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**Course Action Request Form**

University of Alaska Anchorage  
Proposal to Initiate, Add, Change, or Delete a Course  

---

**Initiator Name (typed):**  
Kristine J Crossen

**Initiator Signed Initials:**  
____________________

**Date:**  
____________________

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**Dean/Director of School/College Signed:**  
Approved  
Disapproved

**Date:**  
____________________

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**Undergraduate/Graduate Academic Board Chairperson Signed:**  
Approved  
Disapproved

**Date:**  
____________________

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**Provost or Designee Signed:**  
Approved  
Disapproved

**Date:**  
____________________

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**Course Action Request Form**

University of Alaska Anchorage  
Proposal to Initiate, Add, Change, or Delete a Course  

---

**Initiator Name (typed):**  
Kristine J Crossen

**Initiator Signed Initials:**  
____________________

**Date:**  
____________________

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**Dean/Director of School/College Signed:**  
Approved  
Disapproved

**Date:**  
____________________

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**Undergraduate/Graduate Academic Board Chairperson Signed:**  
Approved  
Disapproved

**Date:**  
____________________

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**Provost or Designee Signed:**  
Approved  
Disapproved

**Date:**  
____________________
I. Date of Initiation: Spring 2013

II. Course Information:
A. College or School: College of Arts and Sciences
B. Course Title: Advanced Topics in Geology
C. Course Subject/Number: GEOL A490
D. Credit Hours: 1-4
E. Contact time: (1-4 + 0)
F. Grading Information: A-F
G. Course Description: Detailed study of selected topics in geology. Special note: May be repeated twice for a maximum of 12 credits with change of topic.
H. Status of course relative to degree program: May be used as upper-division elective to satisfy Geological Sciences major or minor.
I. Course Attributes: Applies toward upper division requirement for Geological Sciences major or minor.
J. Lab fees: yes
K. Coordination: UAA faculty list serve
L. Course Prerequisites: GEOL A221

III. Instructional Goals and Student Learning Outcomes:
A. Instructional Goals. The instructor will:
   1) Convey the geological concepts to the study of the particular topic.
   2) Demonstrate the applications of the selected topic to solving geologic problems and problems related to environmental sciences or other areas of interest.
   3) Guide students to utilize their problem solving skills to understand both the principles and applications of the selected geologic topic.

B. Student Learning Outcomes. The students will:
   1) Apply the principles of the selected topic to geologic, environmental, and other appropriate fields of study. Assessment: exams.
   2) Analyze recent literature and examples of modern applications of geological studies. Assessment: literature reviews.
   3) Develop research skills by participating in original research projects with their peers. Assessment: professional presentation.
IV. Course Activities

The course consists of lectures, discussions, and small group collaboration facilitated by the instructor.

V. Methods of Assessment:

Students will be evaluated based on homework assignments, exams, presentations, reports, and analysis, discussion, and synthesis of professional literature and the design and completion of research projects. Grades will be determined according to the syllabus of the individual instructor.

VI. Course Level Justification

Designed for Geological Science majors as an elective undergraduate course comparable to 400-level offerings at other universities. Designed to provide flexibility to offer and teach innovative senior-level lecture courses on a developmental basis. Such courses are essential to the student’s ability to succeed and integrate content with other 400-level courses in geological sciences.

VII. Topical Course Outline

Course outline will vary by topics selected.

Example from existing course - GEOL A465 - Isotope Geochemistry

1. Law of Radioactivity
2. Radioactive Decay Modes
3. Isotope geochronometers
4. Methods of Dating
5. Applications of Radioactive Isotopes to Environmental Problems
6. Principles of stable isotope geochemistry
7. Isotope fractionation
8. Equilibrium effects
9. Kinetic effects
10. Biological fractionation
11. Trace metal isotopes
12. Isotopes of other elements
VIII. Suggested Text(s)

Texts will vary depending on the topic of the course.

**Example from Isotope Geochemistry above:**  


IX. Bibliography

References will vary depending on the selected topic.

**Example from Isotope Geochemistry above.**  


### Proposal to Initiate, Add, Change, or Delete a Course

**Course Prefix & Number:**

- **Prefix:** GEOL
- **Number:** A690

**Prev. Prefix & Number:**

- **Prefix:** none
- **Number:** none

**Course Description:**

- Intensive study of narrowly defined topic in geology with emphasis on current problems. Independent research project required.

**Other Restrictions:**

- Class Level
- College Major
- Other CCG (please specify)

**Repeat Status & Max Credits:**

- **Repeat Status:** Yes
- **# of Repeats:** 2
- **Max Credits:** 12

**Grading Basis:**

- **Grading Basis:** A-F
- **Credit/CEU:** none
- **Test Score(s):**
  - **A:** none
  - **P/NP:** none
  - **NG:** none

**Implementation Date:**

- **From:** Spring/2013
- **To:** /

**Cross Listed with:**

- **Stacked with:** GEOL A490
- **Cross Listed Coordination:**

**Course Prerequisites:**

- **Required Level:** none
- **Concurrent Enrollment:** required

**Other CCG:** (please specify)

- **Non-credit:** none
- **Professional Development:** none

**General Education Requirement:**

- **Oral Communication:** none
- **Written Communication:** none
- **Quantitative Skills:** none
- **Humanities:** none
- **Social Sciences:** none
- **Natural Sciences:** none
- **Integrative Capstone:** no

**Registration Restrictions:**

- **Graduate Standing:** required

**Mark if course is selected topic course:**

**Determine if course is fees:**

- **Yes:** none
- **No:** none

**Justification for Action:**

- Designed as 600-level graduate course requiring independent research. Course takes advantage of the expertise of resident faculty, visiting faculty and community professionals. Current issues and topics not normally taught on a scheduled basis will be offered under this heading.

---

**Initiator Name:** Kristine J Crossen

**Initiator Signed Initials:**

- **Date:**

**Coordination Email:**

- **Date:** 10-8-12
- **To:**
- **From:** Spring/2013

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**Department Chairperson:**

- **Date:**

**Curriculum Committee Chairperson:**

- **Date:**

---

**Dean/Director of School/College:**

- **Date:**

---

**Provost or Designee:**

- **Date:**

---

**Proposed Title:**

- **Abbreviated Title for Transcript:** Graduate Topics in Geology

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**Proposal to Initiate, Add, Change, or Delete a Course**
I. Date of Initiation: Spring 2013

II. Course Information:
   A. College or School: College of Arts and Sciences
   B. Course Title: Graduate Topics in Geology
   C. Course Subject/Number: GEOL A690
   D. Credit Hours: 1-4
   E. Contact time: (1-4 + 0)
   F. Grading Information: A-F
   G. Course Description: Intensive study of narrowly defined topic in geology with emphasis on current problems. Independent research project required. Special note: May be repeated twice for a maximum of 12 credits with change of topic.
   H. Status of course relative to degree program: Graduate level course to serve students in interdisciplinary studies, the AEST joint CAS/SOE master’s program, and other M.S. degree programs.
   I. Course Attributes: Applies toward graduate level degree programs in interdisciplinary studies, AEST and other M.S. programs.
   J. Lab fees: yes
   K. Coordination: UAA faculty list serve
   L. Registration restrictions: Graduate standing

III. Instructional Goals and Student Learning Outcomes:
   A. Instructional Goals. The instructor will:
      1) Convey the geological concepts to the study of the particular topic.
      2) Demonstrate the applications of the selected topic to solving geologic problems and problems related to environmental sciences or other areas of interest.
      3) Guide students to utilize their problem solving skills to understand both the principles and applications of the selected geologic topic.
      4) Guide students in choosing a research topic and completing it in a professional manner.

   B. Student Learning Outcomes. The students will:
      1) Apply the principles of the selected topic to geologic, environmental, and other appropriate fields of study. Assessment: exams.
      2) Analyze recent literature and examples of modern applications of geological studies. Assessment: literature reviews and discussions.
3) Demonstrate research skills by participating in original research projects. Assessment: presentations and written papers.

4) Produce a professional quality presentation and a professional quality report at the conclusion of an individual research project. Improve their critical thinking skills through the analysis, discussion and synthesis of relevant professional literature. Assessment: professional quality presentations and written reports.

IV. Course Activities

The course consists of lectures, discussions, and small group collaboration facilitated by the instructor. Each student will initiate and complete a research project under the direction of the instructor.

VI Methods of Assessment:

Students will be evaluated based on homework assignments, exams, presentations, reports, and analysis, discussion, and synthesis of professional literature and the design and completion of professional quality research projects. Grades will be determined according to the syllabus of the individual instructor.

VI. Course Level Justification

Designed to be used as graduate level course to serve students in interdisciplinary studies, the AEST joint CAS/SOE master’s program, and other M.S. degree programs. Independent research, professional quality presentations and written reports required.

VII. Topical Course Outline

Course outline will vary by topics selected.

Example from existing course - GEOL A665 - Isotope Geochemistry

1. Law of Radioactivity
2. Radioactive Decay Modes
3. Isotope geochronometers
4. Methods of Dating
5. Applications of Radioactive Isotopes to Environmental Problems
6. Principles of stable isotope geochemistry
7. Isotope fractionation
8. Equilibrium effects
9. Kinetic effects
10. Biological fractionation
11. Trace metal isotopes
12. Isotopes of other elements

VII. Suggested Text(s)

Texts will vary depending on the topic of the course.

Example from Isotope Geochemistry above:


IX. Bibliography

References will vary depending on the selected topic.

Example from Isotope Geochemistry above.


Program/Prefix Action Request  
University of Alaska Anchorage  
Proposal to Initiate, Add, Change, or Delete a Program of Study or Prefix

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<td>Initiator Name (typed): Kristine J Crossen</td>
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<td>Date: ____________________________</td>
<td>Initiator Signed Initials: _________</td>
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<th>6b. Coordination Email submitted to Faculty Listserv (<a href="mailto:uaa-faculty@lists.uaa.alaska.edu">uaa-faculty@lists.uaa.alaska.edu</a>)</th>
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<td>1. Addition of introductory course for majors (GEOL A121)</td>
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<td>2. Separation of GEOL A111 (lecture/lab) into GEOL A111 and A111L.</td>
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<td>3. Additional information on field trips (GEOL A221, GEOL A381, GEOL A382, GEOL A480, GEOL A482).</td>
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<td>4. Stacking of upper division courses with newly developed graduate courses (GEOL A454 and A654, GEOL A455 and A655, GEOL A456 and A656, GEOL A460 and A660, and GEOL A490 and A690).</td>
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Geology is the science that studies planet Earth. The geological sciences incorporate areas of study in:

1. Earth materials including mineralogy, petrology, sedimentology and stratigraphy, volcanology, ore deposits, and structure;
2. Geologic Earth history including historical geology and paleontology;
3. Earth surface processes including geomorphology, soils, paleoclimatology, glacial geology, and permafrost; and
4. Earth’s environmental systems including hydrogeology, environmental geochemistry and geophysics. The curriculum is designed to provide students with a solid understanding of the geological sciences to prepare them for graduate studies, government and industry employment, and teaching. A Bachelor of Science degree in Geological Sciences is available for undergraduates.

The Geological Sciences faculty is highly motivated to transmit their knowledge and passion for the geological sciences and focus on combining classroom education with laboratory and field work. Students who enjoy working outdoors, have a strong scientific background, and are interested in earth processes will find the geological sciences a rewarding area of study.

The program in Geological Sciences requires completion of a basic science curriculum in chemical, physical, and mathematical sciences in addition to core and elective courses in geological sciences. The undergraduate degree in geology offers two tracks: general geology or environmental geology. The general geology track includes core geology courses with upper division course electives. The environmental geology track requires core geology courses plus upper division electives that focus on environmental topics including environmental geochemistry, hydrogeology, and soils. Students are strongly encouraged to consult with Geologic Sciences faculty to choose the direction of study suiting their goals.

The Bachelor of Science in Geological Sciences program requires a minimum of 120 credits for graduation. It can be completed in four years by students who have adequate high school preparation in the sciences and math. Consult the College of Arts and Sciences list of recommended preparatory courses in all disciplines.

Program Objectives and Student Learning Outcomes
The curriculum of the UAA Geological Sciences program is designed to produce graduates who:

1. Have a basic knowledge of the principles related to the geological sciences with either an emphasis in environmental geology or general geology;
2. Have an understanding of how to think scientifically and apply their knowledge to solve geologic problems;
3. Have sufficient competence to obtain employment as an entry-level geologist or environmental geologist, and be able to progress professionally within the discipline and are prepared for advanced study;
4. Have a fundamental understanding of Alaskan geology and environmental problems in Alaska;
5. Are able to communicate their ideas; and
6. Are prepared for and understand the need for continued professional development throughout their careers.

In keeping with the objectives, it is expected that graduates of the UAA Geological Sciences program will have:

1. An ability to apply their knowledge of general geology and/or environmental geology;
2. An ability to accept challenges and think through problems until they are solved;
3. An ability to design and conduct projects that include field work, laboratory analyses and interpretation in their area of emphasis;
4. Experience in field geology in Alaska;
5. An ability to communicate effectively; and
6. A recognition of the need for, and ability to pursue, lifelong learning.
Honors in Geological Sciences

The Department of Geological Sciences offers recognition to students who demonstrate exceptional promise in the science by awarding them with departmental honors in Geological Sciences. To graduate with departmental honors, the student must be a declared Geological Sciences major and meet the following requirements:

1. Satisfy all requirements for a BS degree in Geological Sciences.
3. Complete 6 credits of GEOL A499 Senior Thesis or 3 credits of GEOL A498 Directed Research and 3 credits of GEOL A499 Senior Thesis in Geological Sciences with a grade of B or better.
4. Students intending to graduate with departmental honors must notify the Departmental Honors Committee, in writing, on or before the date they file their Application for Graduation with the Office of the Registrar.

Bachelor of Science, Geological Sciences

Admission Requirements

Complete the Admission to Baccalaureate Programs Requirements in Chapter 7, Academic Standards and Regulations.

Academic Progress

In order to graduate with a BS in Geological Sciences, all courses covered under Major Requirements for a BS in Geological Sciences must be completed with a grade of C or better. Students who audit a course in Geological Sciences or who are unable to earn a grade of C or better in the course may repeat the course for a maximum of two times. All prerequisites for Geological Sciences courses must be completed with a grade of C or better.

Please consult the undergraduate academic advisor in the Department of Geological Sciences to obtain a student handbook for the Geological Sciences major.

Graduation Requirements

Students must complete the following graduation requirements:

A. General University Requirements

Complete the General University Requirements for All Baccalaureate Degrees located at the beginning of this chapter.

B. General Education Requirements

Complete the General Education Requirements for Baccalaureate Degrees located at the beginning of this chapter.

C. College of Arts and Sciences Requirements

Complete the College of Arts and Sciences Requirements listed at the beginning of the CAS section of this catalog.

D. Major Requirements

1. Some major requirements may also be used to satisfy the College of Arts and Sciences BS requirements.
2. Complete these required support courses (24 credits):
   
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<tr>
<td>or STAT A307</td>
<td>Probability and Statistics (4)</td>
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</table>

   Note: Math A201 Calculus II is highly recommended for students majoring in Geological Sciences.

3. Complete Geological Sciences core curriculum courses (40 credits):
a. Complete the following required courses  34
GEOL A121  Applied Physical Geology  4
GEOL A221  Historical Geology  4
GEOL A321  Mineralogy  4
GEOL A322  Igneous and Metamorphic Petrology  4
GEOL A335  Structural Geology  4
GEOL A350  Geomorphology  4
GEOL A360  Geochemistry  3
GEOL A310  Professional Practices in Geology  3
GEOL A452  Sedimentology and Stratigraphy  4

b. Complete a minimum of 6 credits of the following required field courses  6
GEOL A480*  Geologic Field Methods (3)
GEOL A481*  Alaskan Field Investigations (3)
Geology Field Camp (3-6)

*GEOL A480 and GEOL A481 are offered through UAA. Geology Field Camps are offered through other accredited academic institutions and must be approved by the Department of Geological Sciences. Credits must be transferable to UAA from the academic institution that is offering the course and must be completed with at least a minimum grade of 2.00.

4. Students must select one of the following tracks in the Geological Sciences. Students may complete both tracks, but may not use the same courses to fulfill the requirements in each track.

a. **General Geological Sciences Track (13-14 credits)**
Complete 13-14 credits of the following:  13-14
GEOL A320  Volcanology (3)
GEOL A325  Geology of Ore Deposits (3)
GEOL A340  Hydrogeology (3)
GEOL A380  Anchorage Field Studies (3)
GEOL A381  Kenai Peninsula Field Studies (3)
GEOL A382  Geologic Field Studies (3)
GEOL A421  Invertebrate Paleontology (4)
GEOL A454  Glacial and Quaternary Geology (3)
GEOL A455  Permafrost (3)
GEOL A456  Geoarcheology (3)
GEOL A457  Soil Genesis and Classification (4)
GEOL A460  Environmental Geochemistry (3)
GEOL A475  Environmental Geophysics (3)
GEOL A480**  Geologic Field Methods (3)
GEOL A481**  Alaska Geologic Field Investigations (3)

GEOL A482  Geologic Field Investigations (3)
GEOL A490  Advanced Topics in Geology (1-4)
GEOL A492  Geology Seminar (1)
GEOL A495  Geology Internship (1-3)
GEOL A498  Student Research (1-6)
GEOL A499  Senior Thesis (3)

**GEOL A480 and GEOL A481 may be applied toward recommended electives if they are not being applied to satisfy the core curriculum credits.

b. **Environmental Geological Sciences Track (13-14 credits)**
1.a Complete the following 3 required credits:
   GEOL A340 Hydrogeology 3
1.b Complete at least 6 additional credits from the following:
   GEOL A454 Glacial and Quaternary Geology (3)
   GEOL A455 Permafrost (3)
   GEOL A457 Soil Genesis and Classification (4)
   GEOL A460 Environmental Geochemistry (3)
   GEOL A475 Environmental Geophysics (3)
   GEOL A495 Geology Internship (1-3)
2.a Complete at least 4 elective credits from the following:
   GEOL A320 Volcanology (3)
   GEOL A325 Geology of Ore Deposits (3)
   GEOL A380 Anchorage Field Studies (3)
   GEOL A381 Kenai Peninsula Field Studies (3)
   GEOL A382 Geologic Field Studies (3)
   GEOL A421 Invertebrate Paleontology (4)
   GEOL A454 Glacial and Quaternary Geology (3)
   GEOL A455 Permafrost (3)
   GEOL A456 Geoarcheology (3)
   GEOL A457 Soil Genesis and Classification (4)
   GEOL A460 Environmental Geochemistry (3)
   GEOL A475 Environmental Geophysics (3)
   GEOL A480 Geologic Field Methods (3)
   GEOL A481^ Alaska Geologic Field Investigations (3)
   GEOL A482 Geologic Field Investigations (3)
   GEOL A490 Advanced Topics in Geology (1-4)
   GEOL A492 Geology Seminar (1)
   GEOL A495 Geology Internship (1-3)
   GEOL A498 Student Research (1-6)
   GEOL A499 Senior Thesis (3)

^ GEOL A480 and GEOL A481 may be applied toward recommended electives if they are not being applied to satisfy the core curriculum credits.

* GEOL A455, GEOL A457, GEOL A460, GEOL A475, and GEOL A495 may be applied toward the recommended electives if they are not being applied to satisfy the requirements under B.1.a. and B.1.b. for the Environmental Geosciences Track.

5. A minimum of 120 credits is required for the degree, of which 42 must be upper division credits.

**Minor, Geological Sciences**

Students majoring in another subject who wish to minor in Geological Sciences must complete the following requirements. Completion of a minimum of 18 credits is required for the minor, 8 of which must be upper division.
GEOL A111  Physical Geology 3
GEOL A111L  Physical Geology Lab 1
GEOL A221  Historical Geology 4
Upper division Geological Sciences electives 8
Other Geological Sciences electives 2 or more

FACULTY

LeeAnn Munk, Professor/Chair, lamunk@uaa.alaska.edu
Kristine J. Crossen, Professor, kjcrossen@uaa.alaska.edu
Terry R. Naumann, Associate Professor, trnaumann@uaa.alaska.edu
Anne Pasch, Emeritus Professor, AHADP@uaa.alaska.edu
Mark Rivera, Term Instructor, marivera@uaa.alaska.edu
Jennifer Witter, Term Assistant Professor, jpwitter@uaa.alaska.edu
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The Bachelor of Science in Geological Sciences program requires a minimum of 120 credits for graduation. It can be completed in four years by students who have adequate high school preparation in the sciences and math. Consult the College of Arts and Sciences list of recommended preparatory courses in all disciplines.

**Program Objectives and Student Learning Outcomes**

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Bachelor of Science, Geological Sciences
Admission Requirements
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B. General Education Requirements
Complete the General Education Requirements for Baccalaureate Degrees located at the beginning of this chapter.

C. College of Arts and Sciences Requirements
Complete the College of Arts and Sciences Requirements listed at the beginning of the CAS section of this catalog.

D. Major Requirements
1. Some major requirements may also be used to satisfy the College of Arts and Sciences BS requirements.
2. Complete these required support courses (24 credits):
   - CHEM A105/L General Chemistry I 4
   - CHEM A106/L General Chemistry II 4
   - PHYS A123/L Basic Physics I 4
   - PHYS A124/L Basic Physics II 4
   - MATH A200 Calculus I 4
   - STAT A253 Applied Statistics for the Sciences (4) 4
      or
   - STAT A307 Probability and Statistics (4)
   Note: Math A201 Calculus II is highly recommended for students majoring in Geological Sciences.
3. Complete Geological Sciences core curriculum courses (40 credits):
a. Complete the following required courses  

<table>
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<th>Credits</th>
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<td>GEOL A121 Applied Advanced Physical Geology</td>
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<tr>
<td>GEOL A221 Historical Geology</td>
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<tr>
<td>GEOL A321 Mineralogy</td>
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<td>GEOL A322 Igneous and Metamorphic Petrology</td>
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<td>GEOL A335 Structural Geology</td>
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<td>GEOL A350 Geomorphology</td>
<td>4</td>
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<tr>
<td>GEOL A360 Geochemistry</td>
<td>3</td>
</tr>
<tr>
<td>GEOL A310 Professional Practices in Geology</td>
<td>3</td>
</tr>
<tr>
<td>GEOL A452 Sedimentology and Stratigraphy</td>
<td>4</td>
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</table>

b. Complete a minimum of 6 credits of the following required field courses  

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<th>Course</th>
<th>Credits</th>
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<tr>
<td>GEOL A481* Alaskan Field Investigations</td>
<td>3</td>
</tr>
<tr>
<td>GEOL A480 Geology Field Camp</td>
<td>3-6</td>
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</table>

*GEOL A480 and GEOL A481 are offered through UAA. Geology Field Camps are offered through other accredited academic institutions and must be approved by the Department of Geological Sciences. Credits must be transferable to UAA from the academic institution that is offering the course and must be completed with at least a minimum grade of 2.00.

4. Students must select one of the following tracks in the Geological Sciences. Students may complete both tracks, but may not use the same courses to fulfill the requirements in each track.

a. **General Geological Sciences Track (13-14 credits)**

Complete 13-14 credits of the following:  

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<thead>
<tr>
<th>Course</th>
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<tbody>
<tr>
<td>GEOL A320 Volcanology</td>
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<td>GEOL A382 Kenai Peninsula Field Studies</td>
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<td>GEOL A421 Invertebrate Paleontology</td>
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<tr>
<td>GEOL A454 Glacial and Quaternary Geology</td>
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<td>GEOL A455 Permafrost</td>
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<td>GEOL A456 Geoarcheology</td>
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<tr>
<td>GEOL A475 Soil Genesis and Classification</td>
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<td>GEOL A460 Environmental Geochemistry</td>
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<tr>
<td>GEOL A475 Environmental Geophysics</td>
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<tr>
<td>GEOL A480 Geologic Field Methods</td>
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<tr>
<td>GEOL A481 Alaska Geologic Field Investigations</td>
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<td>GEOL A482 Geologic Field Investigations</td>
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<tr>
<td>GEOL A490 Advanced Topics in Geology</td>
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<td>GEOL A492 Geology Seminar</td>
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<td>GEOL A495 Geology Internship</td>
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<tr>
<td>GEOL A498 Student Research</td>
<td>1-6</td>
</tr>
<tr>
<td>GEOL A499 Senior Thesis</td>
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</table>

**GEOL A480 and GEOL 481 may be applied toward recommended electives if they are not being applied to satisfy the core curriculum credits.**
b. Environmental Geological Sciences Track (13-14 credits)

1.a Complete the following 3 required credits:

- GEOL A340 Hydrogeology 3

1.b Complete at least 6 additional credits from the following:

- GEOL A454 Glacial and Quaternary Geology (3)
- GEOL A455 Permafrost (3)
- GEOL A457 Soil Genesis and Classification (4)
- GEOL A460 Environmental Geochemistry (3)
- GEOL A475 Environmental Geophysics (3)
- GEOL A495 Geology Internship (1-3)

2.a Complete at least 4 elective credits from the following:

- GEOL A320 Volcanology (3)
- GEOL A325 Geology of Ore Deposits (3)
- GEOL A380 Anchorage Field Studies (3)
- GEOL A381 Kenai Peninsula Field Studies (3)
- GEOL A382 Geologic Field Studies (3)
- GEOL A421 Invertebrate Paleontology (4)
- GEOL A454 Glacial and Quaternary Geology (3)
- GEOL A455 Permafrost (3)
- GEOL A456 Geoarcheology (3)
- GEOL A457 Soil Genesis and Classification (4)
- GEOL A460 Environmental Geochemistry (3)
- GEOL A475 Environmental Geophysics (3)
- GEOL A480 Geologic Field Methods (3)
- GEOL A481 Alaska Geologic Field Investigations (3)
- GEOL A482 Geologic Field Investigations (3)
- GEOL A490 Advanced Topics in Geology (1-4)
- GEOL A492 Geology Seminar (1)
- GEOL A495 Geology Internship (1-3)
- GEOL A498 Student Research (1-6)
- GEOL A499 Senior Thesis (3)

^ GEOL A480 and GEOL A481 may be applied toward recommended electives if they are not being applied to satisfy the core curriculum credits.

* GEOL A455, GEOL A457, GEOL A460, GEOL A475, and GEOL A495 may be applied toward the recommended electives if they are not being applied to satisfy the requirements under B.1.a. and B.1.b. for the Environmental Geosciences Track.

5. A minimum of 120 credits is required for the degree, of which 42 must be upper division credits.
Minor, Geological Sciences

Students majoring in another subject who wish to minor in Geological Sciences must complete the following requirements.

Completion of a minimum of 18 credits is required for the minor, 8 of which must be upper division.

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<tr>
<th>Course</th>
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<th>Credits</th>
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<tr>
<td>GEOL A111</td>
<td>Physical Geology</td>
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<td>GEOL A111L</td>
<td>Physical Geology Lab</td>
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<tr>
<td>GEOL A221</td>
<td>Historical Geology</td>
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<td>Upper division Geological Sciences electives</td>
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<td>Other Geological Sciences electives</td>
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</table>

FACULTY

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Draft of Tentative Goals for UAB for 2013-2014

**Goal 1:** Improve the efficiency and maintain the quality of curriculum review by adopting new procedures and by incorporating the use of new technologies in the review process.

**Goal 2:** Work in conjunction with the Office of Academic Affairs and with the Office of the Registrar to ensure appropriate faculty input when reviewing academic policies and procedures that impact undergraduate education.

**Goal 3:** Coordinate curriculum update plans with the Vice Provost for Undergraduate Academic Affairs, the Graduate Academic Board Chair, and the Academic Assessment Chair.

**Goal 4:** Continue the coordination of curricular affairs with college/school committee chairs, department chairs, and faculty initiators.

**Goal 5:** Update the *Curriculum Handbook* as needed.