Undergraduate Academic Board
Agenda

August 23, 2013
2:00-5:00
ADM 204

I. Roll
( ) Alberta Harder (FS)
( ) Soren Orely (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)

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

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)
Chg HIST A390 Themes in World History (GER)(3 cr)(3+0)(pg. 62-67)
Chg BA, History (pg. 68-74)
Chg ENGL A214 Persuasive Writing (GER)(3 cr)(3+0)(pg. 75-83)
<table>
<thead>
<tr>
<th>Add/Chg</th>
<th>Course Code</th>
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<td>Add</td>
<td>GEOG A375</td>
<td>Environmental Applications of Geographic Information Systems (GIS)</td>
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<td>(3 cr)(2+3)(pg. 84-88)</td>
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<td>Add</td>
<td>SWK A405</td>
<td>Children’s Mental Health Interdisciplinary Seminar</td>
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<td>(Cross listed with HUMS/PSY A405) (1 cr)(1+0)(pg. 89-95)</td>
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<tr>
<td>Add</td>
<td>Minor</td>
<td>Minor, Children’s Mental Health (pg. 111-119)</td>
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<td>GEOL A111</td>
<td>Physical Geology (GER)</td>
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<td>(3 cr)(3+0)(pg. 120-123)</td>
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<td>(4 cr)(3+3)(pg. 128-131)</td>
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<td>(3 cr)(0+9)(pg. 137-141)</td>
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<td>(3 cr)(0+9)(pg. 142-146)</td>
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<td>Glacial and Quaternary Geology (Stacked with GEOL A654)</td>
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<td>Geoarchaeology (Stacked with GEOL A656)</td>
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<td>(3 cr)(3+0)(pg. 163-171)</td>
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<td>Environmental Geochemistry (Stacked with GEOL A660)</td>
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<td>(3 cr)(3+0)(pg. 172-181)</td>
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<td>(3 cr)(0+9)(pg. 182-185)</td>
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<td>(1-4 cr)(1-4+0)(pg. 190-199)</td>
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<tr>
<td>Chg</td>
<td>BS</td>
<td>BS, Geological Sciences (pg. 200-211)</td>
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VIII. Old Business

IX. New Business

X. Informational Items and Adjournment
April 26, 2013
2:00-5:00
ADM 204

I. Roll
(x) Dave Fitzgerald (CBPP)  ( ) Ira Ortega (COE)  (x) Christina Stuive (SA)  ( ) Adjunct vacancy
(x) Paola Banchero (CAS)  (x) Jeffrey Callahan (CTC)  (x) Francisco Miranda (FS CAS)  ( ) USUAA vacancy
(x) Mari Ippolito (CAS)  (x) Upal Dutta (SOE)  (x) Alberta Harder (FSAL)  Ex-Officio Members:
( ) Barbara Harville (CAS)  (x) Michael Hawfield (KPC)  (x) Soren Orley (FSAL)  ( ) Susan Kalina
( ) Len Smiley (CAS)  (x) Kevin Keating (LIB)  ( ) FS at large vacancy  (x) Lora Volden
(x) Lynn Senette (COH)  (x) Joan O’Leary (Mat-su)  (x) Kathrynn Hollis Buchanan (Kodiak)  (x) S&P
(x) Eileen Weatherby (COH)  ( ) Vacant (Adjunct)

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

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
   Change ‘B or better’ to ‘B or higher’ in the catalog
   Currently there is no definition for half time graduate students; the GAB approved 5 credits as being half time
   Electronic catalog software has been purchased

V. Chair’s Report
A. UAB Chair- Dave Fitzgerald
B. GERC
   Did not meet this week

VI. Program/Course Action Request- Second Readings

VII. Program/Course Action Request- First Readings
Chg  ECON A321  Intermediate Microeconomics (3 cr)(3+0)(pg. 5-9)
Waive first reading, approve for second

Del  CIS A360  Object-Oriented Programming in .Net (3 cr)(3+0)(pg. 10-11)
Waive first reading, approve for second

Chg  CIS A460  Web Development in the .Net Environment (3 cr)(3+0)(pg. 12-16)
Waive first reading, approve for second

Chg  BA A427  International Finance (3 cr)(3+0)(pg. 17-20)
Waive first reading, approve for second

Chg  BBA, Marketing (pg. 21-31)
Waive first reading, approve for second

Chg  PRT A101  Introduction to Process Technology (3 cr)(3+0)(pg. 32-35)
Waive first reading, approve for second
VIII. Old Business

IX. New Business

A. Election of New Chair

Francisco Miranda is the 2013-2014 Chair

B. Policy on Returning Students / Re Enrollment (pg. 75)

Approved

C. Review Goals (pg. 76)

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>
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<tbody>
<tr>
<td>AS CAS</td>
<td>AMSC Division of Math Science</td>
<td>Chemistry</td>
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<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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<td>CHEM</td>
<td>A411</td>
<td>A311</td>
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6. Complete Course Title  
Biophysical Chemistry

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

9. Repeat Status No  #: Repeats  0  Max Credits

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

11. Implementation Date  
From: Fall/2013  To: 9999

12. ☐ Cross Listed with  
☑ Stacked with CHEM A611  
Cross-Listed Coordination

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>
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<td>1. See attached table.</td>
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</table>

Initiator Name (typed): Holmberg  
Initiator Signed Initials:  
Date:  

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

13c. Coordination with Library Liaison  
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)

Introduction to Biophysical Chemistry through the principles of thermodynamics, kinetic concepts and spectroscopic analysis. Study of principles of thermodynamics, chemical kinetics, molecular kinetic theory and spectroscopy as applied to biochemical systems. Applications to solutions, phase equilibria, bio-chemical reactions, transport properties, and spectroscopic techniques for bio-molecular characterization. Introduction to computational techniques in physical chemistry.

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

CHEM A106 with minimum grade of C and MATH A201 with minimum grade of C and PHYS A124 with minimum grade of C.

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

n/a

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

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

17. ☐ Mark if course has fees  

18. ☐ Mark course is a selected topic course

19. Justification for Action  
Updating course level to appropriate numbering considering course depth and breadth and title as a required course for Chemistry/Biochemistry option and CHEM minor as an elective class for science majors due to student demand.
<table>
<thead>
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<th>Date</th>
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<th>Disapproved</th>
<th>Dean/Director of School/College</th>
<th>Date</th>
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Provost or Designee

Date
Course Content Guide for **CHEM A411**  
University of Alaska Anchorage  
College of Arts and Sciences

I. **Date of Initiation:** February 22, 2013

II. **Course information:**

A. **College:** College of Arts and Sciences

B. **Course Subject:** CHEM

C. **Course Number:** A411

D. **Number of Credits:** 3

E. **Contact Hours:** 3+0

F. **Course Title:** Biophysical Chemistry

G. **Grading Basis:** A – F

H. **Implementation Date:** Fall 2013

I. **Course Description:** Introduction to Biophysical Chemistry through the principles of thermodynamics, kinetic concepts and spectroscopic analysis. Study of principles of thermodynamics, chemical kinetics, molecular kinetic theory and spectroscopy as applied to biochemical systems. Applications to solutions, phase equilibria, bio-chemical reactions, transport properties, and spectroscopic techniques for bio-molecular characterization. Introduction to computational techniques in physical chemistry.

J. **Course Attributes:** N/A

K. **Prerequisites:** CHEM A106 with minimum grade of C and MATH A201 with minimum grade of C and PHYS A124 with minimum grade of C.

L. **Test Scores:** N/A

M. **Corequisites:** N/A
N. Registration Restrictions: N/A

O. Course Fee: No

P. Stacked With: CHEM A611

III. Instructional Goals and Student Learning Outcomes

A. Instructional Goals:

Instructor will:

1. Present principles of thermodynamics with applications to biochemical systems.
2. Introduce molecular kinetic theory with applications to transport properties of macromolecules.
3. Introduce chemical kinetics with heavy accent on enzymatic catalysis.
4. Demonstrate spectroscopic techniques for bio-molecular characterization as well as modern computational techniques.

B. Student Learning Outcomes:

<table>
<thead>
<tr>
<th>Student Learning Outcomes</th>
<th>Assessment Methods</th>
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<tbody>
<tr>
<td>Demonstrate critical thinking skills for explanation and prediction of biophysical/bio-chemical phenomena using thermodynamics and chemical kinetics.</td>
<td>Quizzes, Exams, Class Activities</td>
</tr>
<tr>
<td>Integrate mathematical skills and concepts learned in MATH 200-201 classes with applications in physical chemistry.</td>
<td>Quizzes, Exams, Class Activities</td>
</tr>
<tr>
<td>Demonstrate knowledge of spectroscopic and computational techniques for bio-molecular characterization.</td>
<td>Quizzes, Exams</td>
</tr>
<tr>
<td>Apply the knowledge of kinetics to design methods for determination of reactions’ mechanisms.</td>
<td>Quizzes, Exams</td>
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</table>
IV. **Course Activities**

A. Lecture  
B. Assignments  
C. Critical Thinking Questions  
D. Quizzes  
E. Exams  

V. **Guidelines for Evaluation**

The students will be evaluated based on their performance on quizzes, in-class exams and comprehensive final. The grades A – F will be assigned based on a curve that is deemed reasonable by the instructor.

VI. **Course Level Justification**

This course requires a background in the principles of chemistry, calculus and basic concepts in physics. It also requires a great deal of analytical thinking, critical analysis, medium to advanced level mathematics and attention to detail.

VII. **Course Outline**

A. Principles of Thermodynamics: laws of thermodynamics, application to biochemical systems. Application topics discussed can include thermodynamic basis of protein stability, ligand binding equilibria, Scatchard’s and Hill’s models, differential scanning calorimetry, transport across membranes, phase transition in lipid bilayers, equilibria in double stranded helices of complementary oligonucleotides.  
B. Molecular Kinetic Theory and Transport Properties, applications to Fick’s Laws, viscosity and sedimentation as applied to bio-molecular measurements.  
C. Chemical Kinetics as applied to enzymatic catalysis.  
D. Introduction to spectroscopy and computational techniques as applied to characterization of secondary and tertiary structure of proteins, as well as structural characterization of RNA/DNA molecules.

VIII. **Suggested Texts**


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<th>1a. School or College</th>
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<th>1c. Department</th>
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<th>5b. Contact Hours (Lecture + Lab)</th>
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6. Complete Course Title
Advanced Biophysical Chemistry
Adv Biophysical Chemistry
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
Name (please specify)
Course Number
Contact Hours
Title
Repeat Status
Grading Basis
Cross-Listed/Stacked
Course Description
Course Prerequisites
Test Score Prerequisites
Co-requisites
Registration Restrictions
Other Restrictions

9. Repeat Status No
# of Repeats
0
Max Credits

10. Grading Basis
A-F
P/NP
NG

11. Implementation Date
From: Fall/2013
To: /9999

12. Cross Listed with
Stacked with CHEM A411
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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<th>Date of Coordination</th>
<th>Chair/Coordinator Contacted</th>
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Initiator Name (typed): Holmberg
Initiator Signed Initials: ________ Date: __________

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

13c. Coordination with Library Liaison
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)
Advanced study of Biophysical Chemistry through the principles of thermodynamics, kinetic concepts and spectroscopic analysis. Introduction to computational techniques in physical chemistry. Examination of the current literature in Biophysical Chemistry.

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

17. Mark if course has fees

18. Mark if course is a selected topic course

19. Justification for Action
Addition of graduate level course stacked with CHEM A411 for inclusion in the Interdisciplinary Masters Program.

Initiator (faculty only): Holmberg
Initiator Signed Initials: ________ Date: __________

____ Approved
____ Disapproved
Dean/Director of School/College
Date

____ Approved
____ Disapproved
Department Chair
Date

____ Approved
____ Disapproved
Undergraduate/Graduate Academic Board Chair
Date

____ Approved
____ Disapproved
Provost or Designee
Date
Course Content Guide for **CHEM A611**  
University of Alaska Anchorage  
College of Arts and Sciences

I. **Date of Initiation:** February 22, 2013

II. **Course information**

A. **College:** College of Arts and Sciences

B. **Course Subject:** CHEM

C. **Course Number:** A611

D. **Number of Credits:** 3

E. **Contact Hours:** 3+0

F. **Course Title:** Advanced Biophysical Chemistry

G. **Grading Basis:** A – F

H. **Implementation Date:** Fall 2013

I. **Course Description:** Advanced study of Biophysical Chemistry through the principles of thermodynamics, kinetic concepts and spectroscopic analysis. Introduction to computational techniques in physical chemistry. Examination of the current literature in Biophysical Chemistry.

J. **Course Attributes:** N/A

K. **Prerequisites:** N/A

L. **Test Scores:** N/A

M. **Corequisites:** N/A

N. **Registration Restrictions:** Instructor permission and graduate standing.

O. **Course Fee:** No

P. **Stacked With:** CHEM A411
III. Instructional Goals and Student Learning Outcomes

A. Instructional Goals:

The instructor will:

1. Present advanced principles of thermodynamics with applications to biochemical systems.
2. Detail advanced concepts in molecular kinetic theory with applications to transport properties of macromolecules.
3. Present chemical kinetics with heavy accent on enzymatic catalysis and biological system modeling.
4. Utilize spectroscopic techniques for bio-molecular characterization as well as modern computational techniques.
5. Derivation of pertinent expressions from basic principles using theoretical modeling techniques.

B. Student Learning Outcomes:

<table>
<thead>
<tr>
<th>Student Learning Outcomes Students will:</th>
<th>Assessment Methods</th>
</tr>
</thead>
<tbody>
<tr>
<td>Demonstrate critical thinking skills for explanation and prediction of biophysical/bio-chemical phenomena using thermodynamics and chemical kinetics.</td>
<td>Quizzes, Exams, Class Activities</td>
</tr>
<tr>
<td>Integrate mathematical skills such as calculus, differential equations, and linear algebra and chemical concepts with applications in physical chemistry. Proficiency in derivation of advanced concepts from fundamental principles.</td>
<td>Quizzes, Exams, Class Activities</td>
</tr>
<tr>
<td>Apply a range of spectroscopic and computational techniques for bio-molecular characterization and applications to biochemical problems.</td>
<td>Quizzes, Exams, Research Paper</td>
</tr>
<tr>
<td>Apply the knowledge of kinetics to design methods for determination of reactions’ mechanisms. Mechanistic modeling.</td>
<td>Quizzes, Exams, Research Paper</td>
</tr>
</tbody>
</table>
IV. Course Activities

A. Lecture
B. Assignments
C. Critical Thinking Questions
D. Quizzes
E. Exams
F. Research Paper

V. Guidelines for Evaluation

The students will be evaluated based on their performance on quizzes, in-class exams, research papers and comprehensive final. The grades A – F will be assigned based on a curve that is deemed reasonable by the instructor.

VI. Course Level Justification

This course requires a background in the principles of chemistry, advanced calculus and mathematical techniques such as differential equations and linear algebra, and concepts in physics. It also requires analytical thinking, critical analysis, and attention to detail. Students will be required to assimilate a number of concepts while clearly describing complex biological phenomenon.

VII. Course Outline

A. Principles of Thermodynamics: laws of thermodynamics, application to biochemical systems. Applications topics discussed can include thermodynamic basis of protein stability, ligand binding equilibria, Scatchard’s and Hill’s models, differential scanning calorimetry, transport across membranes, phase transition in lipid bilayers, equilibria in double stranded helices of complementary oligonucleotides.
B. Molecular Kinetic Theory and Transport Properties, applications to Fick’s Laws, viscosity and sedimentation as applied to bio-molecular measurements.
C. Chemical Kinetics as applied to enzymatic catalysis.
D. Introduction to spectroscopy and computational techniques as applied to characterization of secondary and tertiary structure of proteins, as well as structural characterization of RNA/DNA molecules.
VIII. Suggested Texts


**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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<tr>
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<td>AMSC Division of Math Science</td>
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<th>2. Course Prefix</th>
<th>3. Course Number</th>
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<th>5a. Credits/CEUs</th>
<th>5b. Contact Hours</th>
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<tbody>
<tr>
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<td>(Lecture + Lab)</td>
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<tr>
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<tbody>
<tr>
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<table>
<thead>
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<th>7. Type of Course</th>
<th>8. Type of Action:</th>
<th>9. Repeat Status No</th>
<th>10. Grading Basis</th>
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<td># of Repeats</td>
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<th>11. Implementation Date</th>
<th>12. Cross Listed with</th>
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<tr>
<td>From: Fall/2013</td>
<td>CHEM A650</td>
</tr>
<tr>
<td>To: /9999</td>
<td></td>
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</table>

13a. Impact 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>
<th>Catalog Page(s)</th>
<th>Impacted</th>
<th>Date of Coordination</th>
<th>Chair/Coordinator Contacted</th>
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<tr>
<td>1. B.S. Chemistry</td>
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<td>2/22/2013</td>
<td>Eric Holmberg</td>
</tr>
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<td>2. CHEM 450 course listing</td>
<td>p. 369</td>
<td></td>
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<td>Eric Holmberg</td>
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Initiator Name (typed): John M. Kennish

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<td></td>
<td>Fine Arts</td>
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</table>

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

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

This course examines the origin and evolution of the environment, energy, mineral resources, solid wastes, recycling, air and water pollution, and the effects of foreign substances on living systems. The relationships among these problems will be demonstrated and quantitative chemical principles applied. Special Note: This course is an introduction to environmental chemistry for all science majors.

16a. Course Prerequisite(s) (list prefix and number) CHEM A106 with grade of C or better.

16b. Test Score(s)

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

16d. Other Restriction(s)

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

Instructor approval required.

17. Mark if course has fees

18. Mark if course is a selected topic course

19. Justification for Action

Course now stacked with the newly created CHEM A650.

<table>
<thead>
<tr>
<th>Initiator (faculty only)</th>
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<tbody>
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<td>Date</td>
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<tr>
<td>Undergraduate/Graduate Academic Board Chairperson</td>
<td>Date</td>
</tr>
<tr>
<td>Provost or Designee</td>
<td>Date</td>
</tr>
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</table>
I. Date of Initiation: February 22, 2013

II. Course Information:

A. College: College of Arts & Sciences

B. Course Subject: CHEM

C. Course Number: A450

D. Number of Credits: 3

E. Contact Hours: 3 + 0

F. Course Title: Environmental Chemistry

G. Grading Basis: A – F

H. Implementation Date: Fall 2013

I. Course Description: This course examines the origin and evolution of the environment, energy, mineral resources, solid wastes, recycling, air and water pollution, and the effects of foreign substances on living systems. The relationships among these problems will be demonstrated and quantitative chemical principles applied. Special Note: This course is an introduction to environmental chemistry for all science majors.

J. Course Attributes: N/A

K. Prerequisites: CHEM A106 with grade of C or better.

L. Test Scores: N/A

M. Co-requisites: N/A

N. Registration Restrictions: Instructor approval required.
O. **Course Fee:** No

P. **Stacked With:** CHEM A650

III. **Instructional Goals and Student Learning Outcomes**

A. **Instructional Goals:**

The instructor will:

1. Present chemical models for investigation and develop problem solving and observational skills on problems relevant to current issues and topics in environmental chemistry.
2. Present convergent and divergent questions to initiate discussion on the relevance of current environmental models to observe and understand natural phenomena, help students differentiate, link and integrate ideas and develop their own concepts, to articulate their thinking and explain models and solutions.
3. Provide multiple historical, cultural, environmental and socially relevant contexts for applying concepts and quantitative skills and invite students to defend and verify their models and their solutions to problems relevant to these contexts.

B. **Student Learning Outcomes:**

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<th>Assessment Methods</th>
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<td>Solve problems relevant to the origin and evolution of the earth’s environment, about man’s impacts on this environment resulting from energy production and use of the atmosphere, hydrosphere and the biosphere.</td>
<td>Assigned problems and Exam</td>
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<td>Research Proposal</td>
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IV. Course Activities

A. Lecture
B. Assigned problems
C. Exams
D. Research Proposal

V. Guidelines for Evaluation

Students will be evaluated based on their performance on assigned problems, in-class exams, and a research proposal. The grades A – F will be assigned based on a curve that is deemed reasonable by the instructor.

VI. Course Level Justification

This course requires extensive multidisciplinary knowledge from biology, chemistry, engineering, mathematics, and physics. It requires the integration of this knowledge to solve multidimensional problems and understand complex concepts.

VII. Course Outline

1. Energy
   a. Energy Flows and Supplies
   b. Fossil Fuels
   c. Nuclear Energy
   d. Renewable Energy
   e. Energy Utilization

2. Atmosphere
   a. Climate
   b. Oxygen Chemistry
   c. Stratospheric Ozone
   d. Air Pollution

3. Hydrosphere / Lithosphere
   a. Water Resources
   b. Water as Solvent
   c. Water and the Lithosphere
   d. Oxygen and Life
   e. Water Pollution and Water Treatment

4. Biosphere
VIII. **Suggested Texts**


IX. **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
- **CHEM**

### 3. Course Number
- **A650**

### 4. Previous Course Prefix & Number

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

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

### 6. Complete Course Title
- **Advanced Environmental Chemistry**

### 7. Type of Course
- ** Academic**
- **Non-credit**
- **Professional Development**

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

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

### 10. Grading Basis
- **A-F**
- **P/NC**
- **NG**

### 11. Implementation Date
- **From:** Fall/2013  **To:** 99/9999

### 12. Cross Listed with
- **Stacked with CHEM A450**

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

### 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)*

This course will examine the structure and function of planet earth as a living chemical system as constructed around the atmosphere, hydrosphere, lithosphere and biosphere. The system will be examined as driven energetically by solar energy and energy provided by human technology. Chemical models will be detailed along with the mathematical models required to understand the integration of the global system with resource utilization by humans. Special Note: Not available for credit to students who have taken CHEM A450.

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

### 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
- Addition of graduate level course stacked with CHEM A450 for inclusion into the Interdisciplinary Masters Program.

---

**Initiator Name (typed): John M. Kennish**

**Initiator Signed Initials:** __________

**Date:** __________

**Signature:**

---

**Department Chairperson**

**Date:** __________

**Dean/Director of School/College**

**Date:** __________

**Undergraduate/Graduate Academic**

**Date:** __________

**Provost or Designee**

**Date:** __________

---

21
Course Content Guide for **CHEM A650**

University of Alaska Anchorage

College of Arts & Sciences

I. **Date of Initiation:** February 22, 2013

II. **Course Information:**

A. **College:** College of Arts & Sciences

B. **Course Subject:** CHEM

C. **Course Number:** A650

D. **Number of Credits:** 3

E. **Contact Hours:** 3 + 0

F. **Course Title:** Advanced Environmental Chemistry

G. **Grading Basis:** A – F

H. **Implementation Date:** Fall 2013

I. **Course Description:** This course will exam in detail the structure and function of planet earth as a living chemical system as constructed around the atmosphere, hydrosphere, lithosphere and biosphere. The system will be examined as driven energetically by solar energy and energy provided by human technology. Chemical models will be detailed along with the mathematical models required to understand the integration of the global system with resource utilization by humans. Special Note: Not available for credit to students who have taken CHEM A450.

J. **Course Attributes:** N/A

K. **Prerequisites:** N/A

L. **Test Scores:** N/A

M. **Co-requisites:** N/A
N. **Registration Restrictions**: Graduate standing.

O. **Course Fee**: No

P. **Stacked With**: CHEM A450

III. **Instructional Goals and Student Learning Outcomes**

A. **Instructional Goals**:

The instructor will:

1. Present chemical models for investigation and develop problem solving and observational skills on problems relevant to current issues and topics in environmental chemistry.
2. Present convergent and divergent questions to initiate discussion on the relevance of current environmental models to observe and understand natural phenomena, help students differentiate, link and integrate ideas and develop their own concepts, to articulate their thinking and explain models and solutions.
3. Provide multiple historical, cultural, environmental and socially relevant contexts for applying concepts and quantitative skills and invite students to defend and verify their models and their solutions to problems relevant to these contexts.

B. **Student Learning Outcomes**:

<table>
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<tr>
<th>Student Learning Outcomes</th>
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<tr>
<td>Solve problems relevant to the origin and evolution of the earth’s environment, about man’s impacts on this environment resulting from energy production and use of the atmosphere, hydrosphere and the biosphere.</td>
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<td>Research Proposal</td>
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</table>
IV. Course Activities

A. Lecture
B. Assigned problems
C. Exams
D. Research Proposal

V. Guidelines for Evaluation

Students will be evaluated based on their performance on assigned problems, in-class exams, a research proposal, and presentation. The grades A – F will be assigned based on a curve that is deemed reasonable by the instructor.

VI. Course Level Justification

This is a graduate level course which may be taken without prerequisite by Biology Chemistry, Engineering, Geology and Physics students who have graduate status. This course requires extensive multidisciplinary knowledge from biology, chemistry, engineering, mathematics, and physics. It requires the integration of this knowledge to solve multidimensional problems and understand complex concepts.

VII. Course Outline

1. Energy
   a. Energy Flows and Supplies
   b. Fossil Fuels
   c. Nuclear Energy
   d. Renewable Energy
   e. Energy Utilization
2. Atmosphere
   a. Climate
   b. Oxygen Chemistry
   c. Stratospheric Ozone
   d. Air Pollution
3. Hydrosphere / Lithosphere
   a. Water Resources
   b. Water as Solvent
   c. Water and the Lithosphere
d. Oxygen and Life  
e. Water Pollution and Water Treatment

4. Biosphere

VIII. Suggested Texts


IX. Bibliography


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: Chemistry

2. Course Prefix: CHEM
3. Course Number: A477
4. Previous Course Prefix & Number: N/A
5a. Credits/CEUs: 5
5b. Contact Hours (Lecture + Lab): (3+6)

6. Complete Course Title: Bioanalytical Chemistry
   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
   □ Class □ Level □ College □ Major □ Other

9. Repeat Status No: □ No □ # of Repeats: □ □ Max Credits: □

10. Grading Basis: □ A-F □ P/NP □ NG

11. Implementation Date: semester/year
    From: Fall/2013 To: /

12. □ Cross Listed with CHEM A677
    □ Stacked with CHEM A677
    Cross-Listed Coordination: □
    Signature: ____________________

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

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<th>Chair/Coordinator Contacted</th>
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<td>1. B.S. Chemistry</td>
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<td>Eric Holmberg</td>
</tr>
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<td>2.</td>
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<td>3.</td>
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Initiator Name (typed): Mark McCoy  Initiator Signed Initials: ____________ Date: ____________

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

13c. Coordination with Library Liaison 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)
    Techniques in operating instrumentation and laboratory methods for the analysis of biomolecules. For students in biology, chemistry, and allied fields.

16a. Course Prerequisite(s) (list prefix and number or test code and score)
    CHEM A312 with minimum grade of C or CHEM A441 with a 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)

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

19. Justification for Action
    Creating an elective course for science majors by student demand. New junior faculty adding an elective course in his field.

Initiator (faculty only) Date
Mark McCoy
Initiator (TYPE NAME)

Approved □ □ □ □ □ □ □ □
Disapproved □ □ □ □ □ □ □ □
Dean/Director of School/College Date

Approved □ □ □ □ □ □ □ □
Disapproved □ □ □ □ □ □ □ □
Undergraduate/Graduate Academic Board Chair Date

Approved □ □ □ □ □ □ □ □
Disapproved □ □ □ □ □ □ □ □
Provost or Designee Date
Course Content Guide for CHEM A477
University of Alaska Anchorage
College of Arts & Sciences

I. Date of Initiation: February 22, 2013

II. Course Information:
A. College: College of Arts & Sciences
B. Course Subject: CHEM
C. Course Number: A477
D. Number of Credits: 5
E. Contact Hours: 3 + 6
F. Course Title: Bioanalytical Chemistry
G. Grading Basis: A-F
H. Implementation Date: Fall 2013
I. Course Description: Techniques in operating instrumentation and laboratory methods for the analysis of biomolecules. For students in biology, chemistry, and allied fields.
J. Course Attributes: N/A
K. Prerequisites: CHEM A312 with minimum grade of C or CHEM A441 with minimum grade of C.
L. Test Scores: N/A
M. Co-requisites: N/A
N. Registration Restrictions: N/A
O. Course Fee: Yes
P. Stacked with: CHEM A677
III. Instructional Goals and Student Learning Outcomes:

A. Course Activities:

Students will explore concepts and solve problems relevant to the latest bioanalytical techniques. Activities will provide students with models or data followed by questions to guide the students through learning. Understanding will be gained through a process emulating the scientific method. In the lecture portion of the course the instructor will guide the students through understanding the fundamental science behind modern and historical bioanalytical methods. Teaching methods may include: lectures, facilitation of class discussions, facilitation of real-time problem solving, and use of the Socratic Method. Laboratory activities will include method development, use of modern analytical equipment, computer assisted data collection, data analysis, statistical analysis, and interpretation of results.

B. Instructional Goals:

This course is designed as an advanced laboratory techniques course; it will provide a training base in bioanalytical techniques, which emulates conditions found in research laboratories and industry.

The instructor will:

1. Present models of molecular interactions between biomolecules with chemicals, substrates, and instrumentation and guide students in learning how these interactions can be applied to modern bioanalytical techniques.
2. Present convergent and divergent questions to initiate discussion on relevant scientific problems and how our current discussions could be applied in these cases.
3. Provide multiple historical, cultural, environmental and socially relevant contexts for applying concepts and analytical skills. Invite students to defend or verify their solutions to these problems.
4. Provide students with recent scientific breakthroughs in bioanalytical techniques. Facilitate classroom discussion for understanding of methods.
5. Demonstrate modern bioanalytical techniques in the laboratory. Facilitate student exploration in the laboratory to develop an understanding of the techniques as well as a scientific understanding of the fundamental concepts.

C. Student Learning Outcomes:

Students will solve complex problems related to bioanalytical methods. They will develop an understanding of the fundamental science behind the techniques and gain a basic understanding of how to apply it in the laboratory.

The student will:
1. Apply observation, investigative and problem solving skills to problems relevant to current issues and topics in bioanalytical chemistry.
2. Model laboratory processes as part of the lecture curriculum, after which the student will perform representative processes in the laboratory.
3. Demonstrate skills in science methodology such as exploring and selecting appropriate models.
4. Apply quality control to the student’s own performance in the laboratory with the goal of excellence in performance.
5. Create, communicate, and defend solutions to problems across multiple contexts.
6. Utilize a wide range of laboratory equipment and instrumentation and perform extensive data analysis and interpretation of their results.
7. Identify potential methods that could be used for particular analyses and weigh the strengths and weaknesses of each approach.

D. Assessment Measures:

Various assessment tools can be used at the discretion of the instructor, including but not limited to homework, lab reports, take-home exams, in-class exams, quizzes, and student discussion participation.

E. Guidelines for Evaluation:

Evaluation can be based on a variety of instruments such as: homework, lab reports, take-home exams, in-class exams, quizzes, and student discussion participation.

IV. Course Level Justification:

This course provides students with a more in-depth look at bioanalytical laboratory techniques and methods of analysis. Students learn skills in applied research and verification of research results. Verification for comprehension and retention of concepts are performed using appropriate evaluation tools.

V. Topical Course Outline:

1. Biomolecules

2. Chromatography
   a. Basic principals
   b. Chromatographic techniques of protein separation
   c. Protein isolation and separation in the laboratory

3. Electrophoresis
   a. Gel electrophoresis in the laboratory
   b. Capillary electrophoresis in the laboratory
4. **Mass Spectrometry**  
   a. Peptide analysis and sequencing in the laboratory

5. **Molecular Recognition**  
   a. Antibody based bioassays  
   b. ELISA techniques and flow cytometry in the laboratory  
   c. Biosensors  
   d. DNA arrays

6. **Nucleic Acids**  
   a. PCR (RT-PCR in the laboratory)  
   b. DNA sequencing  
   c. RNA/DNA isolation techniques

7. **Protein Sequencing**

VI. **Suggested Texts:**


VII. **Bibliography:**


## Course Action Request

**University of Alaska Anchorage**

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

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<thead>
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<td>Chemistry</td>
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<td>A677</td>
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<td>5</td>
<td>(3+6)</td>
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</tbody>
</table>

**6. Complete Course Title**

Advanced Bioanalytical Chemistry

Adv Bioanalytical Chemistry

Abbreviated Title for Transcript (30 character): Adv Bioanalytical Chemistry

**7. Type of Course**

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

**8. Type of Action:**

- [X] Add
- [ ] Change
- [ ] Delete

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<th>Co-requisites</th>
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**10. Grading Basis**

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

**11. Implementation Date**

- From: Fall/2013
- To: /

**12. Cross Listed with**

- [ ] CHEM A477

**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): Mark McCoy

Initiator Signed Initials: _________

Date: __________________

**13b. Coordination Email**

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

**13c. Coordination with Library Liaison**

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)

Advanced techniques in operating instrumentation and laboratory methods for the analysis of biomolecules. Graduate students will be required to develop a bioanalytical technique in the lab and give a seminar on their findings. Special Note: Not available for credit to students who have completed CHEM A477.

**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
- [X] Level

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

(non-codable)

Graduate standing and instructor approval.

**17. Mark if course has fees**

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

**19. Justification for Action**

Addition of graduate level course stacked with CHEM A477 for inclusion in the Interdisciplinary Masters Program.

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**Initiator (TYPE NAME)**

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Dean/Director of School/College

Date: ________

**19. Undergraduate/Graduate Academic Board Chair**

Date: ________

**19. Provost or Designee**

Date: ________
Course Content Guide for **CHEM A677**
University of Alaska Anchorage
College of Arts & Sciences

I. **Date of Initiation:** February 22, 2013

II. **Course Information:**

A. **College:** College of Arts & Sciences

B. **Course Subject:** CHEM

C. **Course Number:** A677

D. **Number of Credits:** 5

E. **Contact Hours:** 3 + 6

F. **Course Title:** Advanced Bioanalytical Chemistry

G. **Grading Basis:** A-F

H. **Implementation Date:** Fall 2013

I. **Course Description:** Advanced techniques in operating instrumentation and laboratory methods for the analysis of biomolecules. Graduate students will be required to develop a bioanalytical technique in the lab and give a seminar on their findings. Special Note: Not available for credit to students who have completed CHEM A477.

J. **Course Attributes:** N/A

K. **Prerequisites:** None.

L. **Test Scores:** N/A

M. **Co-requisites:** N/A

N. **Registration Restrictions:** Graduate standing and instructor approval.

O. **Course Fee:** Yes

P. **Stacked with:** CHEM A477
III. Instructional Goals and Student Learning Outcomes:

A. Course Activities:

Students will explore concepts and solve problems relevant to the latest bioanalytical techniques. Activities will provide students with models or data followed by questions to guide the students through learning. Understanding will be gained through a process emulating the scientific method. In the lecture portion of the course the instructor will guide the students through understanding the fundamental science behind modern and historical bioanalytical methods. Teaching methods may include: lectures, facilitation of class discussions, facilitation of real-time problem solving, and use of the Socratic Method. Laboratory activities will include method development, use of modern analytical equipment, computer assisted data collection, data analysis, statistical analysis, and interpretation of results. Students will also research, develop, and implement a bioanalytical strategy in the laboratory, which will be presented as a short in-class seminar.

B. Instructional Goals:

This course is designed as an advanced laboratory techniques course; it will provide a training base in bioanalytical techniques, which emulates conditions found in research laboratories and industry.

The instructor will:

1. Present models of molecular interactions between biomolecules with chemicals, substrates, and instrumentation and guide students in learning how these interactions can be applied to modern bioanalytical techniques.
2. Present convergent and divergent questions to initiate discussion on relevant scientific problems and how our current discussions could be applied in these cases.
3. Provide multiple historical, cultural, environmental and socially relevant contexts for applying concepts and analytical skills. Invite students to defend or verify their solutions to these problems.
4. Provide students with recent scientific breakthroughs in bioanalytical techniques. Facilitate classroom discussion for understanding of methods.
5. Demonstrate modern bioanalytical techniques in the laboratory. Facilitate student exploration in the laboratory to develop an understanding of the techniques as well as a scientific understanding of the fundamental concepts.
6. Facilitate the student’s exploration into a modern bioanalytical technique that is relevant to their research.
C. **Student Learning Outcomes:**

Students will solve complex problems related to bioanalytical methods. They will develop an understanding of the fundamental science behind the techniques and gain advanced understanding of how to apply it in the laboratory.

The student will:

1. Apply observation, investigative and problem solving skills to problems relevant to current issues and topics in bioanalytical chemistry.
2. Model laboratory processes as part of the lecture curriculum, after which they perform representative processes in the laboratory.
3. Demonstrate skills in science methodology such as exploring and selecting appropriate models.
4. Apply quality control to the student’s own performance in the laboratory with the goal of excellence in performance.
5. Create, communicate, and defend solutions to problems across multiple contexts.
6. Utilize a wide range of laboratory equipment and instrumentation and perform extensive data analysis and interpretation of results.
7. Identify potential methods that could be used for particular analyses and weigh the strengths and weaknesses of each approach.
8. Research a bioanalytical method, develop an experiment, and implement the experiment in the lab.
9. Give a short topic seminar about the developed bioanalytical method including background, methods, and results of laboratory experiments.

D. **Assessment Measures:**

Various assessment tools can be used at the discretion of the instructor, including but not limited to homework, lab reports, take-home exams, in-class exams, quizzes, student discussion participation, and evaluation of independent research and seminar.

E. **Guidelines for Evaluation:**

Evaluation can be based on a variety of instruments such as: evaluation of independent research and seminar, homework, lab reports, take-home exams, in-class exams, quizzes, and student discussion participation.

IV. **Course Level Justification:**

This course provides students with a more in-depth look at bioanalytical laboratory techniques and advanced methods of analysis. Students learn skills in applied research, verification of research results, and researching and developing
new bioanalytical techniques. Verification for comprehension and retention of concepts are performed using appropriate evaluation tools.

V. **Topical Course Outline:**

1. **Biomolecules**

2. **Chromatography**
   a. Basic principals
   b. Chromatographic techniques of protein separation
   c. Protein isolation and separation in the laboratory

3. **Electrophoresis**
   a. Gel electrophoresis in the laboratory
   b. Capillary electrophoresis in the laboratory

4. **Mass Spectrometry**
   a. Peptide analysis and sequencing in the laboratory

5. **Molecular Recognition**
   a. Antibody based bioassays
   b. ELISA techniques and flow cytometry in the laboratory
   c. Biosensors
   d. DNA arrays

6. **Nucleic Acids**
   a. PCR (RT-PCR in the laboratory)
   b. DNA sequencing
   c. RNA/DNA isolation techniques

7. **Protein Sequencing**

VI. **Suggested Texts:**


VII. **Bibliography:**


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
   Chemistry

2. Course Prefix
   CHEM
3. Course Number
   A480
4. Previous Course Prefix & Number
5. Credits/CEUs
   3
5b. Contact Hours
   (Lecture + Lab)
   (3+0)

6. Complete Course Title
   Nuclear Magnetic Resonance
   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
   ☐ Level
   ☐ College
   ☐ Major
   ☐ Other

9. Repeat Status No
   # of Repeats
   Max Credits
   ☐ A-F
   ☐ P/NP
   ☐ NG

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

11. Implementation Date
    semester/year
    From: Fall/2013
    To: /9999

12. ☐ Cross Listed with
    Stack with
    CHEM A680
    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.

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<td>Sam Thiru</td>
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<td>2. CHEM A411</td>
<td>2/22/2013</td>
<td>Eric Holmberg</td>
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<td>3. PHYS A212</td>
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<td>Jim Pantaleone</td>
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   Initiator Signed Initials: ___________ Date: ___________

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

13c. Coordination with Library Liaison
    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)
    Introduction to Nuclear Magnetic Resonance spectroscopy and basic application to problems in biology and earth sciences.

16a. Course Prerequisite(s) (list prefix and number or test code and score)
    [MATH A201 and (CHEM A411 or PHYS A212)] with a grade of C or better.

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

16c. Other Restriction(s)

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

17. ☐ Mark if course has fees

18. ☐ Mark if course is a selected topic course

19. Justification for Action
    Creating an elective class for science majors by student demand. Junior faculty adding an elective course in her field.

Initiator (faculty only)
Vugmeyster
Initiator (TYPE NAME)

☑ Approved
☐ Disapproved

Dean/Director of School/College
Date

Undergraduate/Graduate Academic
Date

Board Chair
Date

Provost or Designee
Date

Approved
Disapproved
Course Content Guide for **CHEM A480**
University of Alaska Anchorage
College of Arts and Sciences

I. **Date of Initiation:** February 22, 2013

II. **Course information**

A. **College:** College of Arts and Sciences

B. **Course Subject:** CHEM

C. **Course Number:** A480

D. **Number of Credits:** 3

E. **Contact Hours:** 3+0

F. **Course Title:** Nuclear Magnetic Resonance

G. **Grading Basis:** A – F

H. **Implementation Date:** Fall 2013

I. **Course Description:** Introduction to Nuclear Magnetic Resonance spectroscopy and basic application to problems in biology and earth sciences.

J. **Course Attributes:** N/A

K. **Prerequisites:** [MATH A201 and (CHEM A411 or PHYS A212)] with a grade of C or better.

L. **Test Scores:** N/A

M. **Corequisites:** N/A

N. **Registration Restriction:** N/A

O. **Course Fee:** No

P. **Stacked With:** CHEM A680
III. Instructional Goals and Student Learning Outcomes

A. Instructional Goals:

The instructor will:

1. Present theoretical principles of nuclear magnetic resonance.
2. Describe main experimental approaches.
3. Introduce applications to problems in biological and earth sciences.

B. Student Learning Outcomes:

<table>
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<th>Student Learning Outcomes</th>
<th>Assessment Methods</th>
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<td>Demonstrate understanding of principles of nuclear magnetic resonance spectroscopy.</td>
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<td>Demonstrate knowledge of main experimental approaches.</td>
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<td>Demonstrate critical thinking in applying spectroscopic principles to problems in biological and earth sciences.</td>
<td>Oral presentations, quizzes</td>
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IV. Course Activities

A. Lecture
B. Assignments
C. Quizzes
D. Exams

V. Guidelines for Evaluation

Students will be evaluated based on their performance on quizzes, in-class exams and presentations. The grades A – F will be assigned based on a curve that is deemed reasonable by the instructor.

VI. Course Level Justification

This course requires a background in calculus, physical chemistry, and physics. It also requires analytical thinking and attention to detail.
VII. **Course Outline**

A. Principles of nuclear magnetic resonance spectroscopy.
B. Modern experimental techniques in solution and solid state NMR and metabolomics.
C. Applications to problems in biological and earth sciences. Examples include biomolecular structure and function, protein folding, metabolomics, and advanced analysis of soil matrix.

VIII. **Suggested Text**


IX. **Bibliography**


**Course Action Request**

University of Alaska Anchorage

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

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| 8. Type of Action: | ☑ Add |

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| CHEM A480            |

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Initiator Signed Initials: _________  
Date: ________________

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<td>Advanced Nuclear Magnetic Resonance theory and principles for elucidation of one- and multi-dimensional pulse sequences for structural analysis. Literature will be reviewed with regards to recent applications to biomolecules and soil analysis. Special Note: Not available for credit to students who completed CHEM A480.</td>
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| 16a. Course Prerequisite(s) (list prefix and number or test code and score) |
| 16b. Co-requisite(s) (concurrent enrollment required) |
| 16c. Other Restriction(s) |
| 16d. Registration Restriction(s) (non-codable) |
| Graduate standing and instructor approval. |

| 17. | ☑ Mark if course has fees |

| 18. | ☑ Mark if course is a selected topic course |

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<tr>
<th>College/School Curriculum Committee Chair</th>
<th>Date:</th>
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</table>

41
Course Content Guide for **CHEM A680**  
University of Alaska Anchorage  
College of Arts and Sciences

I. **Date of Initiation:** February 22, 2013

II. **Course Information**

   A. **College:** College of Arts and Sciences
   
   B. **Course Subject:** CHEM
   
   C. **Course Number:** A680
   
   D. **Number of Credits:** 3
   
   E. **Contact Hours:** 3 + 0
   
   F. **Course Title:** Advanced Nuclear Magnetic Resonance
   
   G. **Grading Basis:** A – F
   
   H. **Implementation Date:** Fall 2013
   
   I. **Course Description:** Advanced Nuclear Magnetic Resonance theory and principles for elucidation of one- and multi-dimensional pulse sequences for structural analysis. Literature will be reviewed with regards to recent applications to biomolecules and soil analysis. Special Note: Not available for credit to students who completed CHEM A480.

   J. **Course Attributes:** N/A
   
   K. **Prerequisites:** N/A
   
   L. **Test Scores:** N/A
   
   M. **Corequisites:** N/A

   N. **Registration Restrictions:** Graduate standing and instructor approval.
O. **Course Fee:** No

P. **Stacked With:** CHEM A480

III. **Instructional Goals and Student Learning Outcomes**

A. **Instructional Goals:**

The Instructor will:

1. Present theoretical principles of nuclear magnetic resonance.
2. Describe main experimental approaches.
3. Introduce applications to problems in biological and earth sciences.
4. Challenge students with modern applications of the literature in the field.

B. **Student Learning Outcomes:**

<table>
<thead>
<tr>
<th>Student Learning Outcomes</th>
<th>Assessment Methods</th>
</tr>
</thead>
<tbody>
<tr>
<td>Demonstrate understanding of principles of nuclear magnetic resonance spectroscopy.</td>
<td>Quizzes, Exams</td>
</tr>
<tr>
<td>Demonstrate knowledge of main experimental approaches.</td>
<td>Quizzes, Exams</td>
</tr>
<tr>
<td>Demonstrate key applications to problems in biological and earth sciences through a critical review of literature.</td>
<td>Presentations of research articles</td>
</tr>
</tbody>
</table>

IV. **Course Activities**

A. Lecture
B. Assignments
C. Analysis of research articles
D. Quizzes
E. Exams
V. **Guidelines for Evaluation**

Students will be evaluated based on their performance on quizzes, in-class exams and presentations. The grades A – F will be assigned based on a curve that is deemed reasonable by the instructor.

VI. **Course Level Justification**

This course requires a background in calculus, physical chemistry, and physics. It also requires a great deal of analytical thinking and attention to detail. Additional knowledge of literature database is expected of graduate students.

VII. **Course Outline**

A. Principles of nuclear magnetic resonance spectroscopy.
B. Modern experimental techniques in solution and solid state NMR and metabolomics.
C. Applications to problems in biological and earth sciences. Examples include biomolecular structure and function, protein folding, metabolomics, and advanced analysis of soil matrix.

VIII. **Suggested Text**


IX. **Bibliography**


Recommended search engines for literature searches: ISI Web of Knowledge and PubMed.
### 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>AS CAS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1b. Division</td>
<td>AMSC Division of Math Science</td>
</tr>
<tr>
<td>1c. Department</td>
<td>CHEMISTRY</td>
</tr>
</tbody>
</table>

| 2. Course Prefix      | CHEM |
| 3. Course Number      | A490 |
| 4. Previous Course Prefix & Number | N/A |
| 5a. Credits/CEUs      | 1-3 |
| 5b. Contact Hours     | (Lecture + Lab) (1-3+0) |

##### 6. Complete Course Title

**Selected Lecture Topics in Chemistry**

**Selected Lect Topics Chemistry**

Abbreviated Title for Transcript (30 character): Selected Lecture Topics in Chemistry

##### 7. Type of Course

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

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

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

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<th>A-F</th>
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<th>12. Cross Listed with</th>
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<tbody>
<tr>
<td>[ ] Stacked</td>
</tr>
<tr>
<td>with CHEM A690</td>
</tr>
</tbody>
</table>

### 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)</th>
<th>Date of Coordination</th>
<th>Chair/Coordinator Contacted</th>
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<td></td>
<td></td>
<td>Eric Holmberg</td>
</tr>
<tr>
<td>2.</td>
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<td>3.</td>
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<td></td>
<td></td>
</tr>
</tbody>
</table>

Initiator Name (typed): **Colin McGill**

Initiator Signed Initials: __________ Date: __________

### 13b. Coordination Email

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

### 13c. Coordination with Library Liaison

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)

Detailed coverage of a selected lecture topic in chemistry presented at a breadth and depth appropriate for undergraduate studies. Activities will vary according to the topic. Exposure to the topic will rely principally on text, lecture, and directed review of selected articles in the literature. For students in chemistry and allied fields. Special Notes: See schedules for specific subtitles to be offered. With changes in subtitles, course may be repeated for credit although course prerequisites and corequisites may vary with topic.

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

### 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)

Junior or senior standing and instructor approval.

### 17. Mark if course has fees

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

### 19. Justification for Action

Provide additional upper division elective opportunities for undergraduate chemistry students, by student demand.

| Initiator (faculty only) | Date | Approved
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46
Course Content Guide for **CHEM A490**
University of Alaska Anchorage
College of Arts & Sciences

I. **Date of Initiation:** February 22, 2013

II. **Course Information**

A. **College:** College of Arts & Sciences

B. **Course Subject:** CHEM

C. **Course Number:** A490

D. **Number of Credits:** 1-3

E. **Contact Hours:** 1-3 + 0

F. **Course Title:** Selected Lecture Topics in Chemistry

G. **Grading Basis:** A-F

H. **Implementation Date:** Fall 2013

I. **Course Description:** Detailed coverage of a selected lecture topic in chemistry presented at a breadth and depth appropriate for undergraduate studies. Activities will vary according to the topic. Exposure to the topic will rely principally on text, lecture, and directed review of selected articles in the literature. For students in chemistry and allied fields. Special Notes: See schedules for specific subtitles to be offered. With changes in subtitles, course may be repeated for credit although course prerequisites and corequisites may vary with topic.

J. **Course Attributes:** N/A

K. **Prerequisites:** N/A

L. **Test Scores:** N/A

M. **Corequisites:** N/A

N. **Registration Restrictions:** Junior or senior standing and instructor approval.

O. **Course Fee:** No
III. Instructional Goals and Student Learning Outcomes

A. Instructional Goals:

Instructional goals will vary according to topic. An example is provided below for course subtitled “Bioorganic Chemistry and Chemical Biology”.

The instructor will:

1. Introduce students to the fundamental topics of the chemical origins of biology emphasizing regulation at the chemical level.
2. Encourage knowledge integration by presenting bioorganic chemistry in an integrated context that relates knowledge from biology, chemistry and modeling to understand macromolecular structure and function.
3. Encourage critical thinking by providing reading assignments from primary literature, and leading in-class discussion that requires critical assessments of the articles by the students.

B. Student Learning Outcomes:

Student learning outcomes will vary according to topic. An example is provided below for course subtitled “Bioorganic Chemistry and Chemical Biology”.

<table>
<thead>
<tr>
<th>Student Learning Outcomes – Students will:</th>
<th>Assessment Strategies and Student Artifacts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Be able to demonstrate a working knowledge of the chemical basis for the production and function of classic biological macromolecules.</td>
<td>Written reports, In-Class Discussion, Exams</td>
</tr>
<tr>
<td>Be able to integrate mechanistic arrow pushing in the study of biochemistry and molecular biology.</td>
<td>Written reports, In-Class Discussion, Exams</td>
</tr>
<tr>
<td>Be able to describe enzyme function and regulation by integrating crystal structure data, NMR data, and classical organic chemistry.</td>
<td>Written reports, In-Class Discussion, Exams</td>
</tr>
<tr>
<td>Actively participate in and contribute to in-class discussion of primary research literature.</td>
<td>Oral (or written) presentations and in-class discussion work facilitated by the instructor.</td>
</tr>
</tbody>
</table>

IV. **Course Activities:**

A. Lecture  
B. Critical reading, analysis and discussion of primary research literature with written (or oral) reports  
C. Assigned problems to be worked outside of class  
D. Exams  
E. Research and/or papers reviewing literature on a current theoretical or practical topic in biochemistry

V. **Guidelines for Evaluation**

A. At least 3 written exams, one of which is a comprehensive final exam  
B. Reports (written or oral) on primary literature  
C. Research paper  
D. Grades will be assigned based primarily on exam performance with no more than 30% of the grade based on reports and a research paper. The grading scale is defined in the syllabus or assigned after a normal curve distribution.

VI. **Course Level Justification**

This course builds upon a foundation of knowledge established in 300-level chemistry and biology courses.

VII. **Topic Course Outline**

A. Chemical origins of biology  
B. DNA and RNA  
C. Peptide and protein structure  
D. Protein function and regulation at the chemical level  
E. Glycobiology  
F. Terpenes  
G. Chemical control of signal transduction

VIII. **Suggested Texts**


IX. Bibliography

3. Scientific Journals such as (not a comprehensive list):
   - Biological Chemistry
   - Biochemistry
   - Biophysical Journal
   - Cell
   - European Journal of Molecular Biology
   - Journal of Biological Chemistry
   - Journal of molecular Biology
   - Molecular Biology
   - Molecular Cell
   - Nature
   - Nature Structure
   - Proceedings of the National Academy of Sciences
   - Science
### 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
CHEMISTRY

#### 2. Course Prefix
CHEM

#### 3. Course Number
A690

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

#### 5a. Credits/CEUs
1-3

#### 5b. Contact Hours
Lecture + Lab (1-3+0)

#### 6. Complete Course Title
Advanced Lecture Topics in Chemistry
Adv Lecture Topics Chemistry

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

#### 8. Type of Action:
- [x] Add
- [ ] Change
- [ ] Delete

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

#### 9. Repeat Status
- [ ] Yes
- [ ] No

# of Repeats 11
Max Credits 12

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

#### 11. Implementation Date
- From: Fall/2013
- To: 9999

#### 12. Cross Listed with
- [ ] CHEM A490

Cross-Listed Coordination
Signature

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

- Interdisciplinary Masters Program

Initiator Name (typed): Colin McGill
Initiator Signed Initials: 
Date: 

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

Date:

#### 13c. Coordination with Library Liaison
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)
Advanced coverage of a selected lecture topic in chemistry presented at a breadth and depth appropriate for graduate studies. Activities vary according to topic. Exposure to the topic will rely extensively on independent review of the literature supplemented with text and lecture for reference. Students will be required to integrate and apply knowledge from multiple sources to address topical questions and discuss their interpretations, and they will be required to conduct a research project on an advanced topic relevant to the course. For students in chemistry and allied fields. Special Notes: See schedules for specific subtitles to be offered. With changes in subtitles, course may be repeated for credit although course prerequisites and corequisites may vary with topic.

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

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

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

#### 16d. Other Restriction(s)
- [ ] College
- [ ] Major
- [ ] 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
Provide a flexible graduate level curriculum for Interdisciplinary Graduate Students addressing material not taught on a regular basis.
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<thead>
<tr>
<th>Role</th>
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<tbody>
<tr>
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<td>Colin McGill</td>
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Course Content Guide for **CHEM A690**  
University of Alaska Anchorage  
College of Arts & Sciences

I. **Date of Initiation:** February 22, 2013

II. **Course Information**

A. **College:** College of Arts & Sciences

B. **Course Subject:** CHEM

C. **Course Number:** A690

D. **Number of Credits:** 1-3

E. **Contact Hours:** 1-3 + 0

F. **Course Title:** Advanced Lecture Topics in Chemistry

G. **Grading Basis:** A-F

H. **Implementation Date:** Fall 2013

I. **Course Description:** Advanced coverage of a selected lecture topic in chemistry presented at a breadth and depth appropriate for graduate studies. Activities vary according to topic. Exposure to the topic will rely extensively on independent review of the literature supplemented with text and lecture for reference. Students will be required to integrate and apply knowledge from multiple sources to address topical questions and discuss their interpretations, and they will be required to conduct a research project on an advanced topic relevant to the course. For students in chemistry and allied fields. Special Notes: See schedules for specific subtitles to be offered. With changes in subtitles, course may be repeated for credit although course prerequisites and corequisites may vary with topic.

J. **Course Attributes:** N/A

K. **Prerequisites:** N/A

L. **Test Scores:** N/A

M. **Corequisites:** N/A

N. **Registration Restrictions:** Graduate standing.
O. **Course Fee:** No

P. **Stacked With:** CHEM A490

III. **Instructional Goals and Student Learning Outcomes**

A. **Instructional Goals:**

Instructional goals will vary according to topic. An example is provided below for course subtitled “Bioorganic Chemistry and Chemical Biology”.

The instructor will:

1. Introduce students to advanced topics concerning the chemical origins of biology emphasizing regulation at the chemical level.
2. Encourage knowledge integration by presenting bioorganic chemistry in an integrated context that relates knowledge from biology, chemistry and modeling to understand macromolecular structure and function.
3. Encourage critical thinking by providing reading assignments from primary literature, and leading in-class discussion that requires critical assessments of the articles by the students.

B. **Student Learning Outcomes:**

Student learning outcomes will vary according to topic. An example is provided below for course subtitled “Bioorganic Chemistry and Chemical Biology”.

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<tr>
<td>Be able to integrate mechanistic arrow pushing in the study of biochemistry and molecular biology.</td>
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<tr>
<td>Be able to describe enzyme function and regulation by integrating crystal structure data, NMR data, and classical organic chemistry.</td>
<td>Written reports, In-Class Discussion, Exams</td>
</tr>
</tbody>
</table>
Independently integrate information from the literature to address specific questions concerning the function of classic enzyme systems.

Oral (or written) presentations and in-class discussion work facilitated by the instructor.

IV. **Course Activities:**

A. Lecture  
B. Critical reading, analysis and discussion of primary research literature with written (or oral) reports  
C. Assigned problems to be worked outside of class  
D. Exams  
E. Research and/or papers reviewing literature on a current theoretical or practical topic in biochemistry

V. **Guidelines for Evaluation**

A. At least 3 written exams, one of which is a comprehensive final exam  
B. Reports (written or oral) on primary literature  
C. Research paper  
D. Grades will be assigned based primarily on exam performance with no more than 30% of the grade based on reports and a research paper. The grading scale is defined in the syllabus or assigned after a normal curve distribution.

VI. **Course Level Justification**

This is an advanced lecture course in the principles and processes of biochemistry topics emphasizing the mechanistic aspects of function and regulation at the chemical level. Success in the course requires functional knowledge in multiple 300- and 400-level chemistry and biology courses and the ability to integrate this knowledge with data in the literature.

VII. **Topic Course Outline**

A. Chemical origins of biology  
B. DNA and RNA  
C. Peptide and protein structure  
D. Protein function and regulation at the chemical level  
E. Glycobiology  
F. Terpenes  
G. Chemical control of signal transduction

VIII. **Suggested Texts**


IX. Bibliography

3. Scientific Journals such as (not a comprehensive list):
   - Biological Chemistry
   - Biochemistry
   - Biophysical Journal
   - Cell
   - European Journal of Molecular Biology
   - Journal of Biological Chemistry
   - Journal of Molecular Biology
   - Molecular Biology
   - Molecular Cell
   - Nature
   - Nature Structure
   - Proceedings of the National Academy of Sciences
   - Science
### Course Action Request

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

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<th>3. Course Number</th>
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**6. Complete Course Title**  
Chemistry Internship

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

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**9. Repeat Status**  
Yes  
# of Repeats 1  
Max Credits 6

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<th>11. Implementation Date</th>
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**13a. Impacted Courses or Programs**:
List any programs or college requirements that require this course.

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<td>2/22/2013</td>
<td>Eric Holmberg</td>
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<tr>
<td>3.</td>
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</table>

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

**13c. Coordination with Library Liaison**
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)*

Work experience in an approved position with supervision and training in various agencies and businesses. Exposes student to work environment beyond the campus setting, to acquire essential practical skills and enhance self-confidence and career direction. Special Note: May be repeated once for credit.

**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)*

Junior or senior standing and Department Chair approval.

**17. Mark if course has fees**

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

**19. Justification for Action**

Addition of an elective course for chemistry majors, by student demand.

---

**Initiator Name (typed): John M. Kennish**  
Initiator Signed Initials: ________  
Date:________________

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

**13c. Coordination with Library Liaison**
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)*

Work experience in an approved position with supervision and training in various agencies and businesses. Exposes student to work environment beyond the campus setting, to acquire essential practical skills and enhance self-confidence and career direction. Special Note: May be repeated once for credit.

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- Major
- Class
- Level

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

Junior or senior standing and Department Chair approval.

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

**19. Justification for Action**

Addition of an elective course for chemistry majors, by student demand.

---

**Initiator (faculty only)**  
John M. Kennish  
Initiator (TYPE NAME)  
Date

**Approved**  
Disapproved

Dean/Director of School/College  
Date

**Approved**  
Disapproved

Undergraduate/Graduate Academic  
Date

Board Chair

**Approved**  
Disapproved

Provost or Designee  
Date
Course Content Guide for **CHEM A495**

University of Alaska Anchorage
College of Arts and Sciences

I. **Date of Initiation:** February 22, 2013

II. **Course Information**

   A. **College:** College of Arts and Sciences
   
   B. **Course Subject:** CHEM
   
   C. **Course Number:** A495
   
   D. **Number of Credits:** 3
   
   E. **Contact Hours:** 0+9
   
   F. **Course Title:** Chemistry Internship
   
   G. **Grading Basis:** A – F
   
   H. **Implementation Date:** Fall 2013

   I. **Course Description:** Work experience in an approved position with supervision and training in various agencies and businesses. Exposes student to work environment beyond the campus setting, to acquire essential practical skills and enhance self-confidence and career direction. Special Note: May be repeated once for credit.

   J. **Course Attributes:** N/A
   
   K. **Prerequisites:** None.
   
   L. **Test Scores:** N/A
   
   M. **Corequisites:** N/A

   N. **Registration Restrictions:** Junior or senior standing and Department Chair approval.

   O. **Course Fee:** No
III. Instructional Goals and Defined Student Outcomes

A. The instructor will clarify the student’s occupational interests and gain insight into various Career Services Center (CSC) Program positions and job requirements.

The Student will:
- Obtain approval from the CSC and the Chemistry Faculty Internship Coordinator and Department Chair by demonstrating academic and employment readiness.
- Interview with a CSC program representative.
- Discuss placement opportunities with the CSC.
- Determine whether there’s a match between student’s interests and employer’s needs.
- Provide a copy of college transcript(s).
- Obtain the Faculty Internship Coordinator’s signature on the CSC recommendation form.

B. The instructor will help the student develop an updated resume.

The Student will:
- Produce a resume that reflects the student’s current academic and employment history.
- Meet with the CSC representative and with the Chemistry Faculty Internship Coordinator.

C. The internship will provide a program orientation.

The Student will:
- Meet with the CSC representative and with the Chemistry Faculty Internship Coordinator.
- Discuss special requirements of the course.
- Discuss the placement process.
- Learn interviewing skills.

D. The internship will provide for a Student-Employer Interview.

The Student will:
- Prepare for the interview by researching the firm and practicing interview skills.
- Attend the interview.

E. The internship will develop learning objectives with specific academic content.

The Student will:
- Gain clear understanding of his/her employment responsibilities.
- Help define his/her course/employment objectives.
- Gain understanding of the employer’s role in this process.
- Gain approval from the Chemistry Faculty Internship Coordinator underwriting the academic value of the proposed internship objectives.

F. The internship will provide practical learning experience.

The Student will:
- Learn work skills relevant to the academic major.
- Augment job readiness skills.
- Demonstrate a better understanding of human relations through working with other employees.
- Demonstrate attitudes and work habits for job competency.
- Demonstrate skills that may increase the student’s marketability in his/her program of study.
- Prepare a final paper (Technical Report) describing academic achievements and learning experiences.
- Obtain from the employer: an (1) “Employer’s Survey”, and (2) two “Employer Evaluation Forms” one at the mid-point of the placement and one at its completion.

IV. Evaluation

Evaluation will be based on the student’s final Technical Report and the Employer Evaluations. Students must work 75 hours on the job for each credit hour earned.

Criteria for Grading:

A. To receive a grade of A:
- Job performance as evaluated by the on-the-job review and Technical Report as evaluated by the Faculty Coordinator must both be scored as excellent.
- Individual improvement - must demonstrate exceptional mastery of on-the-job techniques.
- Individual improvement in writing skills - must demonstrate exceptional mastery of report writing.

B. To receive a grade of B:
- Job performance as evaluated by the on-the-job review and Technical Report as evaluated by the Faculty Coordinator must both be scored as above-average.
- Individual improvement - must demonstrate above-average mastery of on-the-job techniques.
- Individual improvement in writing skills - must demonstrate above-average mastery of report writing.

C. To receive a grade of C:
- Job performance as evaluated by the on-the-job review and Technical Report as evaluated by the Faculty Coordinator must both be scored as average.
- Individual improvement - must demonstrate average mastery of on-the-job techniques.
- Individual improvement in writing skills - must demonstrate average mastery of report writing.

D. To receive a grade of D:
- Job performance as evaluated by the on-the-job review and Technical Report as evaluated by the Faculty Coordinator must both be scored as below-average.
- Individual improvement - must demonstrate below average mastery of on the job techniques.
- Individual improvement in writing skills - must demonstrate below-average mastery of report writing.

E. To receive a grade of F:
- Majority of work and/or the final Technical Report are unacceptable or missing.

V. Course Level Justification

This course requires junior or senior standing. It is considered an important stepping stone from academia to the professional community.

VI. Outline

A. Overview of the Internship
   - Clarify the student’s occupational interest.
   - Produce an updated resume.
   - Meet with faculty and a Career Services Center (CSC) representative.
   - Program Orientation.

B. Interview Process and Selection
   - Student interview.

C. Training Goals and Objectives
   - Proficiency of the learning objectives.

D. Student’s Participation in Program Placement
   - Practical learning experience.

E. Meeting Schedule
   - Variable 10-20 hours per week depending on employer’s needs and student’s class schedule. Summer hours may vary.

VII. Suggested Text and Bibliography

Not applicable.
### 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>
</tr>
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</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>
</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>
<tbody>
<tr>
<td>Themes in World History</td>
<td>Academic</td>
<td>Add/Change/Delete</td>
<td>Yes</td>
<td>A-F</td>
<td>From: Spring/2014 To: 9999</td>
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<tr>
<th>12. Cross Listed with</th>
<th>13a. Impacted Courses or Programs:</th>
<th>13b. Coordination Email</th>
<th>13c. Coordination with Library Liaison</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>List any programs or college requirements that require this course.</td>
<td>Date: 3/29/13</td>
<td>Date: 3/29/13</td>
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<tr>
<th>14. General Education Requirement</th>
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<tr>
<td>Mark appropriate box:</td>
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<tr>
<td>Oral Communication</td>
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<tr>
<td>Written Communication</td>
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<tr>
<td>Quantitative Skills</td>
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<tr>
<td>Humanities</td>
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<th>16b. Co-requisite(s) (concurrent enrollment required)</th>
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<tbody>
<tr>
<td>Two of the following with minimum grade of C; HIST A102 or HIST A122 or HIST A132</td>
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<tr>
<th>16c. Other Restriction(s)</th>
<th>16d. Registration Restriction(s) (non-codable)</th>
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<tbody>
<tr>
<td></td>
<td>Junior standing. Completion of GER Tier 1 (Basic college level skills) courses.</td>
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<th>17. Mark if course has fees</th>
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<tr>
<th>19. Justification for Action</th>
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<tbody>
<tr>
<td>Streamlining of prerequisites to ensure necessary skills and background.</td>
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<tr>
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<th>Initiator Signed Initials:</th>
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<th>24. General Education Requirement</th>
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<tr>
<td>Streamlining of prerequisites to ensure necessary skills and background.</td>
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</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: Two of the following with minimum grade of C; HIST A102: or HIST A122 or HIST A132
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. To use the study of said theme 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. To develop the student’s ability to read, think and write critically through the examination and analysis of primary and secondary sources on said theme.
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>Student Outcomes: 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>
</tr>
<tr>
<td>1. Describe the key developments and consequences of significant global events or universal human processes over time.</td>
<td>Content exams and analytical essays</td>
</tr>
<tr>
<td>2. Identify, place in proper historical context and evaluate for historical significance primary documents and texts on various themes in world history.</td>
<td>Analytical essays and/or research paper</td>
</tr>
<tr>
<td>3. Discuss and analyze the causes and consequences of key historical developments in the said theme.</td>
<td>Analytical essays and exams, and/or research paper, oral presentations and discussion</td>
</tr>
<tr>
<td>4. Recognize and analyze patterns of change and continuity globally and over time.</td>
<td>Analytical essays and exams, and/or research paper</td>
</tr>
<tr>
<td>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).</td>
<td>Analytical essays and exams, and/or research paper</td>
</tr>
<tr>
<td>6. Communicate effectively orally and in writing at an advanced undergraduate level.</td>
<td>Analytical essays and exams, and/or research paper, oral presentations and discussion</td>
</tr>
</tbody>
</table>

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.


Dear John:

Attached please find the following documents to be considered by the CAS Course and Curriculum Committee; one CAR proposing changed pre-requisites for HIST A390A Themes in World History, one PAR proposing changes to the UAA catalogue (details below), and a copy of the proposed changes.

Changes in the department have made much information in the UAA catalogue out of date. This is an attempt to correct those issues. Among the changes made are the following.

- The note recommending GEOG A101 under section B has been deleted.
- HIST A336 Latin America to 1800 and HIST A338 Modern Latin America have been added to the list of courses meeting the non-Western history requirement.
- The note indicating only one section of HIST A444 may count to the major has been deleted as this course has been deleted from the catalogue.
- The note indicated GEOG/HIST A345 and GEOG A415 may count towards the major has been deleted.
- The list of faculty for the department has been updated to reflect personnel changes and new e-mail addresses.

As required by curriculum guidelines coordination e-mails have gone out to the INTL Chair, the Library liaison and the Faculty Listserve.

Please let me know if there is anything further I can do for you.

Thank you very much for your time and consideration.

Paul Dunscomb
Professor
Dept. of History
### Program/Prefix Action Request

**University of Alaska Anchorage**

Proposal to Initiate, Add, Change, or Delete a Program of Study or Prefix

<table>
<thead>
<tr>
<th>1a. School or College</th>
<th>1b. Department</th>
</tr>
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<tbody>
<tr>
<td>AS CAS</td>
<td>History</td>
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<table>
<thead>
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<th>2. Complete Program Title/Prefix</th>
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<tbody>
<tr>
<td>Bachelor of Arts, History</td>
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<th>3. Type of Program</th>
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<tr>
<td>Choose one from the appropriate drop down menu:</td>
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<tr>
<td>Undergraduate: or Graduate:</td>
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<tr>
<td>Bachelor of Arts or CHOOSE ONE</td>
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This program is a Gainful Employment Program: [ ] Yes or [ ] No

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<th>5. Implementation Date (semester/year)</th>
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<td>From: Fall/2013 To: 9999</td>
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<th>6a. Coordination with Affected Units</th>
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Initiator Name (typed): Paul Dunscomb

Initiator Signed Initials: ________

Date:________________

<table>
<thead>
<tr>
<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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<tr>
<th>6c. Coordination with Library Liaison</th>
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<tr>
<td>Date: 3/29/13 e-mail to Kevin Keating</td>
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<th>8. Justification for Action</th>
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<tr>
<td>See attached memo</td>
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---

Initiator (faculty only)            Date

Paul Dunscomb                          Date

Initiator (TYPE NAME)

[ ] Approved     [ ] Disapproved

Dean/Director of School/College        Date

[ ] Approved     [ ] Disapproved

Undergraduate/Graduate Academic Board Chair        Date

[ ] Approved     [ ] Disapproved

Provost or Designee                  Date

[ ] Approved     [ ] Disapproved

Department Chair            Date

[ ] Approved     [ ] Disapproved

Board Chair

[ ] Approved     [ ] Disapproved

College/School Curriculum Committee Chair Date

[ ] Approved     [ ] Disapproved

Provost or Designee
Bachelor of Arts, History

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

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 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  

5. Complete HIST A477 Senior Seminar.  

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) 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*  

3. History elective, any level

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, pedunscomb@uaa.alaska.edu  
Songho Ha, Associate Professor, sha4@uaa.alaska.edu  
Ian Hartman, Assistant Professor, ichartman@uaa.alaska.edu  
Steve Haycox, Professor Emeritus, swhaycox@uaa.alaska.edu  
W.A. Jacobs, Professor Emeritus, wajacobs@uaa.alaska.edu  
Caedmon Liburd, Associate Professor (retired), caliburd@uaa.alaska.edu  
Don Mohr, Professor Emeritus, demohr@uaa.alaska.edu  
Curtis Murphy, Term Instructor, cgmurphy@uaa.alaska.edu  
Bill Myers, Associate Professor, wlmymers@uaa.alaska.edu  
Kelly Shannon, Assistant Professor, kjshannon2@uaa.alaska.edu
Bachelor of Arts, History

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

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
   
   Note: Only 3 credits of HIST A444 may be applied to a major in History.
   
   ————  Note: GEOG/HIST A345 Across This Land and GEOG A415 Anglo-Saxons and Vikings are cross-listed with History and may be counted toward the upper division electives requirement for majors.

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
   
   *Note: Only 3 credits of HIST A444 may be applied to a minor in History.

FACULTY
Caedmon Liburd, Associate Professor (retired), AFCAL@uaa.alaska.edu
Ray Ball, Assistant Professor, rball11@uaa.alaska.edu
Ronald Crawford, Professor Emeritus, rmcrawford4FRMC@uaa.alaska.edu
Elizabeth Dennison, Professor/Chair, ejdennison4FED@uaa.alaska.edu
Paul Dunscomb, Professor, pedunscomb4FPED@uaa.alaska.edu
Scott Gavorsky, Term Instructor, AFSG2@uaa.alaska.edu
Songho Ha, Associate Professor, sha4AFSH2@uaa.alaska.edu
Ian Hartman, Assistant Professor, ichtartman@uaa.alaska.edu
Steve Haycox, Professor Emeritus, swhaycox4FSWH9@uaa.alaska.edu
W.A. Jacobs, Professor Emeritus, wajacobs4FJWJ@uaa.alaska.edu
Elizabeth James, Assistant Professor, AFEJ@uaa.alaska.edu
Caedmon Liburd, Associate Professor (retired), caliburd@uaa.alaska.edu
Don Mohr, Professor Emeritus, demohrAFDEM@uaa.alaska.edu
Curtis Murphy, Term Instructor, cgmurphy@uaa.alaska.edu
Bill Myers, Associate Professor, wlmversAFWLM@uaa.alaska.edu
Kelly Shannon, Assistant Professor, kjshannon2@uaa.alaska.edu
# Course Action Request

## University of Alaska Anchorage

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

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<th>1b. Division</th>
<th>1c. Department</th>
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<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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<td>☐ Non-credit</td>
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<td></td>
<td>☐ CEU</td>
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<td></td>
<td>☐ Professional Development</td>
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| 8. Type of Action:        | ☐ Add or ☒ Change or ☐ Delete |

If a change, mark appropriate boxes:

- ☐ Prefix
- ☐ Credits
- ☐ Title
- ☐ Grading Basis
- ☐ Course Description
- ☐ Test Score Prerequisites
- ☐ Co-requisites
- ☐ Other Restrictions
- ☐ Registration Restrictions
- ☒ Other Change to CCG (please specify)

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<th>9. Repeat Status No</th>
<th># of Repeats</th>
<th>Max Credits</th>
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</table>

10. Grading Basis

- ☒ A-F
- ☐ P/NP
- ☐ NG

11. Implementation Date

- Semester/year: Fall 2013 to 9999/9999

12. ☐ Cross Listed with N/A

13. Cross Listed with N/A

14. General Education Requirement

Mark appropriate box:

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

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

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.

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

- ENGL A111 with minimum grade of C or ENGL A1W with minimum grade of C or ENGL A2W with minimum grade of C

16b. Test Score(s)

- Minimum of EAEN 30; SATC 620; SATV 620; ACTE 30

16c. Co-requisite(s) (concurent enrollment required) N/A

16d. Other Restriction(s)

- ☐ College  ☐ Major  ☐ Class  ☐ Level

16e. Registration Restriction(s) (non-codable) N/A

17. ☒ Mark if course has fees

18. ☐ Mark if course is a selected topic course

19. Justification for Action

Updated course offerings for students at a 200 level.
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<thead>
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<th>Initiative (faculty only)</th>
<th>Date</th>
<th>Dean/Director of School/College</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jessie Nixon</td>
<td></td>
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<tr>
<td>Initiator (TYPE NAME)</td>
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<td>Department Chairperson</td>
<td>Date</td>
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<td>Date</td>
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<tr>
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<td>358</td>
<td>Biology – Fred Rainey, 6-4987 <a href="mailto:faraine@uaa.alaska.edu">faraine@uaa.alaska.edu</a> 1/24</td>
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<tr>
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<td>Culinary Arts – Tim Doebler, 6-4728 <a href="mailto:twdoebler@uaa.alaska.edu">twdoebler@uaa.alaska.edu</a> 1/24</td>
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<tr>
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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> 1/24</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> 1/24</td>
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<td>Communications – Shauna Lee Whitney 6-4393 <a href="mailto:sawhitney@uaa.alaska.edu">sawhitney@uaa.alaska.edu</a> 1/24</td>
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<td>CHEM A441</td>
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<td>Education – Early Childhood – Robert Capuozzo 6-4327 <a href="mailto:rmcapuozzo@uaa.alaska.edu">rmcapuozzo@uaa.alaska.edu</a> 1/24</td>
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<td>PHIL A301</td>
<td>John Mouracade</td>
<td><a href="mailto:Afjmm2@uaa.alaska.edu">Afjmm2@uaa.alaska.edu</a></td>
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<td>Claudia Lampman</td>
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<td><a href="mailto:ttskore@uaa.alaska.edu">ttskore@uaa.alaska.edu</a></td>
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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>
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<tr>
<th>Instructional Goals</th>
<th>Student Outcomes</th>
<th>Assessment Methods</th>
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<td><strong>Instructional Goals</strong>&lt;br&gt;<em>The instructor will:</em></td>
<td><strong>Student Outcomes</strong>&lt;br&gt;<em>Students will be able to:</em></td>
<td><strong>Assessment Methods</strong></td>
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<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>
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<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>
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<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  
ASSC Division of Social Science  
1c. Department  
GES

2. Course Prefix  
GEOG  
3. Course Number  
A375  
4. Previous Course Prefix & Number  
NA  
5a. Credits/CEUs  
3  
5b. Contact Hours  
(2+3)

6. Complete Course Title  
Environmental Applications of Geographic Information Systems (GIS)  
Env. App. of GIS  
Abbreviated Title for Transcript (30 character)  
Env. App. of GIS

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  
[ ] Title  
[ ] Grading Basis  
[ ] Course Description  
[ ] Test Score Prerequisites  
[ ] Other Restrictions  
[ ] Class  
[ ] College  
[ ] Major  
[ ] Level  
[ ] Other

9. Repeat Status No  
# of Repeats 0  
Max Credits 3

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

11. Implementation Date  
From: Spring/2014  
To: Spring/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.

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):  
E. Jamie Trammell  
Initiator Signed Initials:  
Date:  

13b. Coordination Email  
Date: 4/8/13  
submitted to Faculty Listserv:  (uaa-faculty@lists.uaa.alaska.edu)

13c. Coordination with Library Liaison  
Date: 4/8/13

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)

Concepts in Geographic Information Systems (GIS), with specific focus on environmental applications. Investigation into the need and popularity of using GIS to address complex environmental issues. Integration of both biophysical and socioeconomic spatial data as it relates to environmental issues. Spatial analysis, cartographic design and map compilation principles are placed in the context of environmental studies.

16a. Course Prerequisite(s)  
(list prefix and number)  
ENVI A211L with a minimum grade of C

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 Yes  
18. [ ] Mark if course is a selected topic course

19. Justification for Action

This course will provide a necessary introduction to Geographic Information Systems for Environment and Society majors, with a focus on the biophysical and socioeconomic factors that create environmental studies.

Initiator (faculty only)  
E. Jamie Trammell  
Initiator (TYPE NAME)  
Date

[ ] Approved  
[ ] Disapproved

Dean/Director of School/College  
Date

[ ] Approved  
[ ] Disapproved

Undergraduate/Graduate Academic  
Date

[ ] Approved  
[ ] Disapproved

Board Chairperson  
Date

[ ] Approved  
[ ] Disapproved

Provost or Designee  
Date
GEOG A375
Environmental Applications of Geographic Information Systems
(GIS)
Course Content Guide

Date: 8 April 2013

I. Course Information

A. College: Arts and Sciences
B. Course Subject: GEOG
C. Course Number: A375
D. Credits/Contact: 3 credits, 2 + 3 contact
E. Title: Environmental Applications of GIS
F. Grading Basis: A-F
G. Prerequisites: ENVI A211L or equivalent with a minimum grade of C
H. Restrictions: Completion of GER Tier 1 (basic college-level skills) courses and junior standing.
I. GER Status: None
J. Course Fees: Yes
K. Description: Concepts in Geographic Information Systems (GIS), with specific focus on environmental applications. Investigation into the need and popularity of using GIS to address complex environmental issues. Integration of both biophysical and socioeconomic spatial data as it relates to environmental issues. Spatial analysis, cartographic design and map compilation principles are placed in the context of environmental studies.

II. Course Level Justification

This course is designed for students who want to explore the use of GIS in environmental studies and applications. This course is designed for junior and senior-level students to provide a specific skillset required by many environmental jobs and careers.

III. Instructional Goals and Student Learning Outcomes

A. Instructional Goals

• Review and reinforce basic concepts in GIS.
• Enable students to find answers to software questions using the ArcMap Help function and ESRI software support website.
• Demonstrate how GIS can be used to address environmental questions.
• Build skills in identifying and acquiring sources of publically available datasets relevant to current environmental issues.
• Help students to create relevant and scientifically useful metadata.
• Model appropriate use of common GIS software and data formats.
• Provide students the skills to customize data and perform analysis using ArcGIS.
• Provide students the opportunity to design and conduct a workflow using spatial analyst and other GIS tools to address specific environmental questions.
• Encourage students to present results of GIS analysis in a clear and professional format such as maps and graphics.

B. Student Learning Outcomes

Students will be able to:

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<td>Explain terminology, concepts and issues in environmental GIS</td>
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<td>Demonstrate use of software help and support websites</td>
<td>Quizzes, Laboratory Assignments, Class Discussion</td>
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<td>Describe data formats, appropriate document data</td>
<td>Case Study, Poster Presentation, Class Discussion</td>
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<tr>
<td>Demonstrate how GIS can be used to address environmental questions</td>
<td>Case Study, Poster Presentation, Model Documentation</td>
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<tr>
<td>Present results of GIS analysis in a clear and professional format</td>
<td>Poster Presentation, Model Documentation</td>
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IV. Course Outline

1. Introduction to GIS
   a. What is GIS
   b. The world in spatial terms
   c. Position on the earth
   d. Mapping the earth
   e. Spatial relationships
2. Coordinate systems and map projections
   a. Datums, spheroids and scale
3. Types of GIS Data
   a. Vector data
   b. Raster data
   c. 3D data
   d. Formats (shapefiles, geodatabases, etc)
4. Kinds of Environmental GIS Data
   a. Physical earth data
   b. Biological data
   c. Socioeconomic data
   d. Remotely sensed data
5. Data Acquisition
   a. Data types
   b. Error checking
   c. Data conversion
   d. Projecting data
6. Data Creation
   a. GPS
   b. Digitization
   c. Georeferencing
d. Database and spreadsheets
e. Metadata documentation

7. Vector GIS Analysis
   a. Query and analysis
   b. Combining data
   c. Pattern recognition
   d. Spatial statistics
   e. Interpolation

8. Raster GIS Analysis
   a. Surface analysis
   b. Map algebra
   c. Generalization
   d. Spatial statistics
   e. Distance modeling

9. Earth Science applications of GIS
   a. Terrain
   b. Hydrography
   c. Soils

10. Environmental science applications of GIS
    a. Water quality
    b. Air quality
    c. Wetlands
    d. Climate change

11. Socioeconomic applications of GIS
    a. Land use
    b. Demographics
    c. Health
    d. Administrative
    e. Policy and regulation
    f. Participatory GIS

12. Conservation applications of GIS
    a. Landcover
    b. Species habitat
    c. Ecological integrity
    d. Urban ecology

13. Individual GIS Project

V. Suggested Text

VI. Bibliography

Lang, L. 1998. Managing Natural Resources with GIS. ESRI Press; Redlands, CA.
Springer; New York.
Hoboken, New Jersey.
Wing, M. G. and Bettinger, P. 2008. Geographic Information Systems: Applications in Natural
### Course Action Request

**University of Alaska Anchorage**

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

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<th>1b. Division</th>
<th>1c. Department</th>
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<td>ASWK Division of Social Work</td>
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**6. Complete Course Title**

Children's Mental Health Interdisciplinary Seminar
Child Mental Health Inter Sem

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

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**11. Implementation Date**

From: Fall/2013  
To: Fall/9999

**12. Cross Listed with**

HUMS/PSY A405

**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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</table>

Initiator Name (typed): Kathi Trawver  
Initiator Signed Initials:  
Date:________________

**13b. Coordination Email**

Date: 2/11/13  
submitted to Faculty Listserv: (uaa-faculty@lists.uaa.alaska.edu)

**13c. Coordination with Library Liaison**

Date: 2/11/13

**14. General Education Requirement**

Mark appropriate box:

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

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

Examines strategies for optimal interdisciplinary collaboration by mental health professionals working with children and their families, including techniques for building successful teams, strengthening family-professional partnerships, and effective communication/conflict management. Cultural competence and the promotion of professional resilience are also covered.

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

[PSY A442 and SWK A410] with a grade of C or higher

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

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

- College
- Major
- Class
- Level

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

**17. Mark if course has fees**

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

**19. Justification for Action**

Provides an interdisciplinary capstone experience for students seeking to earn the Children's Mental Health Minor.

Initiator (faculty only)  
Kathi Trawver  
Initiator (TYPE NAME)

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

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UNIVERSITY OF ALASKA ANCHORAGE
COURSE CONTENT GUIDE

I. Initiation Date
   January, 2013

II. Course Information
   A. Colleges: College of Health
   B. Course Title: Children’s Mental Health Interdisciplinary Seminar
   C. Course Subject/Number: SWK A405
   D. Cross-Listed With: HUMS/PSY A405
   E. No. of Credit Hours: 1.0
   F. No. of Contact Hours: 1 + 0 (lecture + laboratory)
   G. Grading Basis: A-F
   H. Implementation Date: Fall 2013
   I. Course Description: Examines strategies for optimal interdisciplinary collaboration by mental health professionals working with children and their families, including techniques for building successful teams, strengthening family-professional partnerships, and effective communication/conflict management. Cultural competence and the promotion of professional resilience are also covered.
   J. Status of Course Relative to Degree Programs: Required course for the Children’s Mental Health Minor
   J. Course Prerequisites: [PSY A442 and SWK A410] with a grade of C or higher
   K. Course Fee: No

III. Course Level Justification
   This course is designed to serve as a capstone experience for students completing the Children’s Mental Health Minor. Students taking this course will have completed upper-division courses in child psychopathology and child trauma.
IV. Instructional Goals and Student Learning Outcomes

<table>
<thead>
<tr>
<th>Instructor Goals: The instructor will</th>
<th>Student Learning Outcomes: Students will</th>
<th>Assessment:*</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Provide an overview of the roles of helping professionals who work with children and familiarize students with the current Alaska State guidelines for helping professionals</td>
<td>1. Demonstrate knowledge of the differing roles of mental health professionals and the guidelines for direct care workers in children’s mental health</td>
<td>1. Exams, quizzes, written reflections, and class discussions or blogs</td>
</tr>
<tr>
<td>2. Explain the importance of interdisciplinary collaboration among mental health professionals, including discussions and demonstrations of the principles of team-building, conflict management, and effective communication</td>
<td>2. Describe the characteristics of successful interdisciplinary teams and strategies interdisciplinary team members can utilize to be productive in assisting children experiencing psychological difficulties and their families Demonstrate familiarity with team-building exercises, conflict management, and effective communication techniques</td>
<td>2. Exams, short papers, individual and group presentations, class discussions or blogs, and completion of team-building, conflict management, and effective communication exercises</td>
</tr>
<tr>
<td>3. Describe research-based strategies for coping with professional stress, building resilience, and avoiding burnout, and mindfulness</td>
<td>3. Demonstrate familiarity with research-based strategies for being a resilient helping professional and coping with professional stress Describe the signs of caregiver burnout and strategies for the prevention of burnout and the principles of mindfulness</td>
<td>3. Exams, short papers, written reflections, and class discussions or blogs</td>
</tr>
</tbody>
</table>

*Types of assessment will vary at the instructor’s discretion.*
V. **Topical Course Outline**

The course will focus on the topics that follow with reference to children’s mental health issues.

A. The differing roles of helping professionals in addressing children’s mental health needs
   1. Psychiatrists
   2. Psychologists
   3. Social Workers
   4. Human Services Professionals
   5. Applied Behavior Analysts
   6. Members of other helping professions, including paraprofessional human service and direct care workers

B. An overview of current professional guidelines including principles of ethical practice
   1. *Alaskan Core Competencies for Direct Care Workers in Health and Human Services*

C. Interdisciplinary Teams
   1. Optimal functioning of interdisciplinary teams of helping professionals
      a. The importance of cross-training
      b. Building a balanced team
      c. Defining team members’ roles and setting team goals
   2. Principles of effective communication and successful conflict management
      a. Effective communication techniques
      b. Active listening
      c. The emotional and cognitive features of conflict
      d. Using conflict constructively
      e. Team conflict competence
   3. Team-building, effective communication, and conflict-management exercises
   4. Strengthening family-professional partnerships

D. Principles of cultural competence
   1. Historical factors relevant to primary cultural groups
   2. Barriers to effective communication and relationships across cultures
   3. Culturally appropriate approaches to problem identification and referral
   4. Culturally competent practices within organizations

E. Self-care for helping professionals
   1. Mindful health
      a. Disabling mindsets
      b. Taking control over context
      c. Cultivating positivity and self-compassion
2. Coping with stress
   a. The elevated stressors of the novice practitioner
   b. The distinction between self-care and caring for others and the importance of self-care for helping professionals
3. Symptoms of and prevention of caregiver burnout
4. Techniques for building resilience

VI. **Suggested Text(s)**
A course pack of readings will be assigned by the course instructors. Foundational readings are contained in the bibliography that follows.

VII. **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>CH College of Health</th>
<th>1b. Division</th>
<th>ADHS Div of Human Svs Health Sci</th>
<th>1c. Department</th>
<th>HUMS</th>
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</thead>
<tbody>
<tr>
<td>2. Course Prefix</td>
<td>HUMS</td>
<td>3. Course Number</td>
<td>A405</td>
<td>4. Previous Course Prefix &amp; Number</td>
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<tr>
<td>5a. Credits/CEUs</td>
<td>1.0</td>
<td>5b. Contact Hours</td>
<td>(Lecture + Lab) (1+0)</td>
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<td></td>
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</tbody>
</table>

6. Complete Course Title  
Children's Mental Health Interdisciplinary Seminar  
Child Mental Health Inter Sem  
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  ☐ Course Number  ☐ Credits  ☐ Contact Hours  ☐ Title  ☐ Repeat Status  ☐ Grading Basis  ☐ Cross-Listed/Stacked  ☐ Course Description  ☐ Course Prerequisites  ☐ Test Score Prerequisites  ☐ Co-requisites  ☐ Other Restrictions  ☐ Registration Restrictions  
☐ Class  ☐ Level  ☐ College  ☐ Major  ☐ Other  ☐ (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/2013  To: Fall/9999  

12. ☒ Cross Listed with  PSY/SWK A405  
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>
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<th>Chair/Coordinator Contacted</th>
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<tr>
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<td></td>
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</tbody>
</table>

Initiator Name (typed): Laura Kelley  
Initiator Signed Initials: ________  
Date: __________

13b. Coordination Email  
Date: 2/11/13  
submitted to Faculty Listserv: (uaa-faculty@lists.ualaska.edu)  

13c. Coordination with Library Liaison  
Date: 2/11/13  

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 strategies for optimal interdisciplinary collaboration by mental health professionals working with children and their families, including techniques for building successful teams, strengthening family-professional partnerships, and effective communication/conflict management. Cultural competence and the promotion of professional resilience are also covered.  

16a. Course Prerequisite(s) (list prefix and number or test code and score)  
[PSY A442 and SWK A410] with a grade of C or higher  

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

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

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

17. ☐ Mark if course has fees  

18. ☐ Mark if course is a selected topic course  

19. Justification for Action  
Provides an interdisciplinary capstone experience for students seeking to earn the Children's Mental Health Minor.  

Initiator (faculty only)  
Kaura Kelley  
Initiator (TYPE NAME)  

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  

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UNIVERSITY OF ALASKA ANCHORAGE  
COURSE CONTENT GUIDE  

I. Initiation Date  
January, 2013  

II. Course Information  
A. Colleges:  
   College of Health  
B. Course Title:  
   Children’s Mental Health Interdisciplinary Seminar  
C. Course Subject/Number:  
   HUMS A405  
D. Cross-Listed With:  
   PSY/SWK A405  
E. No. of Credit Hours:  
   1.0  
F. No. of Contact Hours:  
   1 + 0 (lecture + laboratory)  
G. Grading Basis:  
   A-F  
H. Implementation Date:  
   Fall 2013  
I. Course Description:  
   Examines strategies for optimal interdisciplinary collaboration by mental health professionals working with children and their families, including techniques for building successful teams, strengthening family-professional partnerships, and effective communication/conflict management. Cultural competence and the promotion of professional resilience are also covered.  
J. Status of Course Relative to Degree Programs:  
   Required course for the Children’s Mental Health Minor  
J. Course Prerequisites:  
   [PSY A442 and SWK A410] with a grade of C or higher  
K. Course Fee:  
   No  

III. Course Level Justification  
This course is designed to serve as a capstone experience for students completing the Children’s Mental Health Minor. Students taking this course will have completed upper-division courses in child psychopathology and child trauma.
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*Types of assessment will vary at the instructor’s discretion.
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The course will focus on the topics that follow with reference to children’s mental health issues.

A. The differing roles of helping professionals in addressing children’s mental health needs
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VI. Suggested Text(s)
A course pack of readings will be assigned by the course instructors. Foundational readings are contained in the bibliography that follows.

VII. Bibliography


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

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<tr>
<th>1a. School or College</th>
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<td>AS CAS</td>
<td>ASSC Division of Social Science</td>
<td>Psychology</td>
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<th>2. Course Prefix</th>
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<th>5b. Contact Hours (Lecture + Lab)</th>
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<tr>
<td>PSY</td>
<td>A405</td>
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<td>1.0</td>
<td>(1+0)</td>
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### 6. Complete Course Title
Children's Mental Health Interdisciplinary Seminar
Child Mental Health Inter Sem

### Abbreviated Title for Transcript (30 character)
Child Mental Health Inter Sem

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

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

If a change, mark appropriate boxes:
- [ ] Prefix
- [ ] Credits
- [ ] Course Number
- [ ] Contact Hours
- [ ] Title
- [ ] Repeat Status
- [ ] Grading Basis
- [ ] Cross-Listed/Stacked
- [ ] Course Description
- [ ] Co-requisites
- [ ] Test Score Prerequisites
- [ ] Registration Restrictions
- [ ] Other Restrictions  
  - [ ] Class
  - [ ] Level
  - [ ] College
  - [ ] Major
- [ ] Other

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

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

### 11. Implementation Date
- From: Fall/2013
- To: Fall/9999

### 12. Cross Listed with
- [X] HUMS/SWK A405

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

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13b. Coordination Email
- Date: 2/11/13

13c. Coordination with Library Liaison
- Date: 2/11/13

14. General Education Requirement

Mark appropriate box:
- [ ] Oral Communication
- [ ] Written Communication
- [ ] Social Sciences
- [ ] Quantitative Skills
- [ ] Natural Sciences
- [ ] Humanities
- [ ] Fine Arts
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15. Course Description (suggested length 20 to 50 words)
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16c. Other Restriction(s)
- [ ] College
- [ ] Major
- [ ] Class
- [ ] Level

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

17. Mark if course has fees

18. [ ] Mark if course is a selected topic course

19. Justification for Action
Provides an interdisciplinary, integrative experience for students seeking to earn the Children's Mental Health Minor.

---

Initiator (faculty only)
Maria F. Ippolito
Initiator Signature: ___________________________
Initiator Signed Initials: _________
Date: __________

Approved Disapproved
Dean/Director of School/College
Date: __________

Approved Disapproved
Undergraduate/Graduate Academic
Board Chair
Date: __________

Approved Disapproved
Provost or Designee
Date: __________

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**Impacted Courses and Programs**  
HUMS/PSY/SWK A405

<table>
<thead>
<tr>
<th>Impacted Program/Course</th>
<th>Date of Coordination</th>
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<tr>
<td>courtesy</td>
<td>2/11/13</td>
<td>Keith Cates, Chair Counseling and Special Education</td>
</tr>
<tr>
<td>courtesy (Human Services, BHS)</td>
<td>2/11/13</td>
<td>Laura Kelley, Chair Human Services</td>
</tr>
<tr>
<td>courtesy (Psychology, BA)</td>
<td>2/11/13</td>
<td>Claudia Lampman, Chair Psychology</td>
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<td>courtesy (Psychology, BS)</td>
<td>2/11/13</td>
<td>Claudia Lampman, Chair Psychology</td>
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<tr>
<td>courtesy (Social Work, BSW)</td>
<td>2/11/13</td>
<td>Elizabeth Sirles, Director Social Work</td>
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UNIVERSITY OF ALASKA ANCHORAGE
COURSE CONTENT GUIDE

I. **Initiation Date**
   January, 2013

II. **Course Information**
    A. **Colleges:** College of Arts and Sciences
    B. **Course Title:** Children’s Mental Health Interdisciplinary Seminar
    C. **Course Subject/Number:** PSY A405
    D. **Cross-Listed With:** HUMS/SWK A405
    E. **No. of Credit Hours:** 1.0
    F. **No. of Contact Hours:** 1 + 0 (lecture + laboratory)
    G. **Grading Basis:** A-F
    H. **Implementation Date:** Fall 2013

I. **Course Description:**
   Examines strategies for optimal interdisciplinary collaboration by mental health professionals working with children and their families, including techniques for building successful teams, strengthening family-professional partnerships, and effective communication/conflict management. Cultural competence and the promotion of professional resilience are also covered.

J. **Status of Course Relative to Degree Programs:**
   Required course for the Children’s Mental Health Minor

J. **Course Prerequisites:** (PSY A442 and SWK A410) with a grade of C or higher

K. **Course Fee:** No

III. **Course Level Justification**
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</tr>
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<td>3. Describe research-based strategies for coping with professional stress, building resilience, and avoiding burnout, and mindfulness</td>
<td>3a. Apply research-based strategies for being a resilient helping professional and coping with professional stress</td>
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V. **Topical Course Outline**
The course will focus on the topics that follow with reference to children’s mental health issues.

A. The differing roles of helping professionals in addressing children’s mental health needs
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3. Symptoms of and prevention of caregiver burnout
4. Techniques for building resilience

VI. **Suggested Text(s)**
A course pack of readings will be assigned by the course instructors. Foundational readings are contained in the bibliography that follows.

VII. **Bibliography**


To: Dave Fitzgerald  
Chair, Undergraduate Academic Board, Faculty Senate

From: Associate Professor Mari Ippolito, AS CAS/Psychology Department

Subject: Minor, Children’s Mental Health

Date: January 15, 2013

This memorandum is with regard to the proposed addition of an undergraduate minor in Children’s Mental Health – the result of a joint, grant-supported effort by representatives from the College of Arts and Sciences and College of Health under the direction of Dr. Elizabeth A. Sirles, Director of the School of Social Work. A completed Program Action Request (PAR) and proposed catalog copy revisions are being submitted with this memo.

This minor is proposed in response to 1) an ongoing crisis in children’s mental health and 2) the absence of appropriate curriculum to prepare University of Alaska Anchorage (UAA) students seeking degrees in Early Childhood Education, Elementary Education, Human Services, Justice, Nursing, Psychology, and Social Work for work with children at risk for or experiencing mental health issues.

The structure of the proposed Children’s Mental Health minor meets the requirements for undergraduate minors at UAA as detailed on page 76 of the University of Alaska Anchorage Catalog: 2010-2011. Elizabeth Sirles and the author of this letter, Mari Ippolito, have consulted with and obtained guidance from Megan Carlson of the Office of Academic Affairs on the proposal for this minor.

The content of this minor is in accordance with the Alaskan Core Competencies for Direct Care Workers in Health and Human Services (2010), the MI-AIMH [Michigan Association for Infant Mental Health] Endorsement for Culturally Sensitive, Relationship-Focused Practice Promoting Infant Mental Health: Competency Guidelines (2002), which Guidelines have been adopted by the State of Alaska, and the Technical Assistance Center on Social Emotional Intervention for Young Children (TACSEI) Pyramid Model for Promoting the Social and Emotional Development of Infants and Young Children (Technical Assistance Center on Social Intervention for Young

A number of efforts to arrive at incidence levels of psychological disorders among children and adolescents have yielded figures in the 15-20% range. In addition to the potential for 1-2 children and adolescents in 10 to receive psychological diagnoses and be in need of treatment, there is increasing evidence that many preschool children can also benefit from psychological intervention (Wicks-Nelson & Israel, 2009). Furthermore, multiple authors point to the value of intervention programs to assist children in dealing with stressors (Feldman, 2004).

Professionals in these areas are often the individuals positioned to note that children are experiencing psychological difficulties. However, exploration of UAA’s ability to provide appropriate curriculum – in the January 8, 2009, report by Mary Dallas Allen and Meg Loomis entitled “University of Alaska” Capacity to Teach Children’s Mental Health Content,” Kathi Trawver’s follow-up report on children’s mental health content in BSW classes completed during the summer of 2010, and Maria F. Ippolito’s October 30, 2010, “Prospectus: Children’s Mental Health inor” – led to the conclusion that the University of Alaska was not providing appropriate coursework focused on children’s mental health.
In addition, the design of this undergraduate minor took into consideration relevant, existing UAA certificates, undergraduate majors, and graduate programs.

References

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3 This Pyramid Model is “a tiered intervention framework of evidence-based interventions for promoting the social, emotional, and behavioral development of young children” and “more intensive intervention for children who have social-emotional delays or behavioral challenges” (Fox, Carta, Strain, Dunlap, & Hemmeter, 2009, p. 3).
1a. School or College  
AS CAS 

1b. Department  
PSY 

2. Complete Program Title/PREFIX
Children's Mental Health, Minor 

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

Minor

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/2013  
To: Fall/9999 

6a. Coordination with Affected Units 
Department, School, or College: College of Arts and Sciences, College of Health and PSY, SWK, and HUMS Departments 
Initiator Name (typed): Maria F. Ippolito  
Initiator Signed Initials: _________ 
Date:________________ 

6b. Coordination Email submitted to Faculty Listserv (uaa-faculty@lists.uaa.alaska.edu)  
Date: 2/11/13 

6c. Coordination with Library Liaison  
Date: 2/11/13 

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

8. Justification for Action 
This minor is proposed in response to significant evidence of a national and an Alaskan need for increased knowledge of children's mental health. Many students in the process of completing various UAA academic majors (such as Early Childhood Education, Elementary Education, Human Services, Justice, Psychology, Nursing, and Social Work) in advance of entering professional settings (i.e., employment and/or graduate school) would benefit from knowledge of children's mental health as would the children and families they serve.
<table>
<thead>
<tr>
<th>Initiator (faculty only)</th>
<th>Date</th>
<th>Approved</th>
<th>Disapproved</th>
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</thead>
<tbody>
<tr>
<td>Maria F. Ippolito</td>
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Initiator (TYPE NAME)

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<th>College/School Curriculum Committee Chair</th>
<th>Date</th>
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# COORDINATION: Children’s Mental Health, Minor

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<thead>
<tr>
<th>Impacted Program/Course</th>
<th>Date of Coordination</th>
<th>Chair/Coordinator Contacted</th>
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<tbody>
<tr>
<td>Human Services, BHS</td>
<td>2/11/13</td>
<td>Laura Kelley, Chair</td>
</tr>
<tr>
<td>Psychology, BA</td>
<td>2/11/13</td>
<td>Claudia Lampman, Chair</td>
</tr>
<tr>
<td>Psychology, BS</td>
<td>2/11/13</td>
<td>Claudia Lampman, Chair</td>
</tr>
<tr>
<td>Social Work, BSW</td>
<td>2/11/13</td>
<td>Elizabeth Sirles, Director</td>
</tr>
</tbody>
</table>

Coordination with Library Liaison for Human Services, Psychology, and Social Work:

Library Liaison: Ralph Courtney  
Date: 2/11/13
PSYCHOLOGY

The undergraduate Psychology program offers mentorship and high-quality training in the science of behavior and mental processes and, in so doing, enriches the lives of our students, citizens of Alaska, and the field of psychology. In service of this mission, the faculty provides effective instruction, academic and career advising, research training, professional skill development, service opportunities, preparation for graduate school, and employment in the human service field.

The Psychology major requirements are flexible and are designed to serve a variety of career goals. Both the Bachelor of Arts and the Bachelor of Science degrees are available. The student majoring in psychology pursuing a general interest in human nature will probably take a different sequence of Psychology courses than a student who is preparing for advanced work in psychology. All students are encouraged to plan undergraduate work carefully. Early and frequent consultation with an advisor is helpful in selecting courses which will provide a solid foundation in psychology and a good general education.

Honors in Psychology

The Department of Psychology recognizes exceptional undergraduate students by awarding them Departmental Honors in Psychology. To graduate with departmental honors, the student must be a declared Psychology major and meet the following requirements:

1. Satisfy all requirements for a BA or BS degree in Psychology.
3. Take PSY A412 Foundations of Modern Psychology.
4. Take PSY A420 Conducting Research in Psychology.
5. Complete PSY A499 Senior Thesis. The thesis project must be approved in advance by the Undergraduate Studies Committee and carried out by following applicable departmental guidelines.
6. 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.

Occupational Endorsement Certificate, Community Mental-Health Services

Students can earn on their transcript an Occupational Endorsement Certificate in Community Mental-Health Services. This transcripted certificate is available to any student – not just Psychology majors – who receive grades of C or higher in the following five courses designed to provide some of the knowledge and skills appropriate for a variety of entry-level jobs in community mental-health settings. Taken together, the five courses (and their two prerequisites) introduce students to mental-health problems, communication skills, consumer empowerment, assessment, professional networking, service facilitation, behavior change processes, advocacy, crisis intervention, organizational settings, documentation, ethics, and professional behavior. Mental health problems common to Alaska receive special emphasis. Two semesters of community placement allow skills to be practiced in mental health settings.
Occupational Endorsement Certificate Requirements

**Admission**
Complete the admission requirements for Occupational Endorsement Certificates found in Chapter 7, Academic Standards and Regulations.

**Graduation Requirements**
1. Satisfy General University Requirements for Occupational Endorsement Certificates found in the beginning of this chapter.
2. Complete PSY A327 with a grade of B or higher.
3. Complete each of the following courses with a grade of C or higher (12 credits)
   - PSY A372 Community Psychology* 3
   - PSY A427 Field Experience in Psychology II 3
   - PSY A445 Strategies of Behavior Change 3
   - PSY A455 Mental Health Services in Alaska** 3

   * Prerequisite: PSY A111 (General Psychology)
   ** Prerequisite: PSY A345 (Abnormal Psychology)

4. In addition to the prerequisite courses, a total of 15 credits is required for the Occupational Endorsement Certificate in Community Mental-Health Services.

Bachelor of Arts, Psychology
Bachelor of Science, Psychology

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

**Graduation Requirements**
Students must complete the following graduation requirements:

A. **General University Requirements**
   Complete the General University Requirements for All Baccalaureate Degrees listed at the beginning of this chapter.

B. **General Education Requirements**
   Complete the General Education Requirements 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 this chapter.

D. **Major Requirements**
1. Psychology Core Requirements (30 Credits)
   - PSY A111 General Psychology 3
   - PSY A150 Lifespan Development 3
   - PSY A260 Statistics for Psychology 3
   - PSY A260L Statistics for Psychology Lab 1
   - PSY A261 Research Methods in Psychology 4
   - PSY A345 Abnormal Psychology 3
   - PSY A355 Learning and Cognition 4
   - PSY A368 Personality 3
   - PSY A370 Behavioral Neuroscience 3
   - PSY A375 Social Psychology 3
2. Psychology Capstone Requirement (3 Credits)

A capstone course is required of all Psychology majors (BA or BS). Each capstone option is designed to synthesize and apply material from the Psychology major. Choice of a capstone should be based, at least in part, on the student’s future career plans. Students planning to work in human service jobs following their baccalaureate degree should consider taking PSY A427. Students planning on graduate work in Psychology should consider taking PSY A412, PSY A420 or PSY A499. Students may elect to take all of these courses as upper division electives.

- PSY A412 Foundations of Modern Psychology (3)
  
  or

- PSY A420 Conducting Research in Psychology (3)
  
  or

- PSY A427 Field Experience in Psychology II (3)
  
  or

- PSY A428 Evolutionary Psychology (3)
  
  or

- PSY A499 Senior Thesis (3)

Note: All of the above psychology capstone courses have rigorous prerequisites, including grades of C or higher in six credits of English composition, and grades of C or higher in PSY A111, PSY A150, PSY A260, PSY A260L, and PSY A261. Although Ds are passing grades for capstone prerequisites, Cs or higher in these prerequisites are required for admission into psychology’s capstone courses. Additional prerequisites may apply to each capstone course. See course descriptions of each capstone course for more details.

3. Psychology Electives (9 Credits)

Take an additional 9 credits of Psychology, 6 of which must be upper division.

4. Psychology Exit Examination

All Psychology majors are required to take the exit examination, a standardized test of knowledge of psychology approved by the Psychology Department. There is no minimum score required for graduation.

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

**Minor, Psychology**

Students majoring in another subject who wish to minor in Psychology must complete a total of 18 credits of Psychology, of which 6 must be upper division.

Requirements include the following:

1. PSY A111 General Psychology

2. Three additional courses required in the core above (see list D.1).

3. Two additional Psychology courses

**Minor, Children’s Mental Health**

The field of children’s mental health encompasses numerous disciplines including early childhood, elementary, secondary, and special education; human services; juvenile justice; pediatric nursing; child psychology; and social work. Due to the multidisciplinary nature of this field of study, all of the listed disciplines are appropriate major emphases for students seeking the Children’s Mental Health undergraduate minor.

The Children’s Mental Health minor requires a total of 19 credits, of which a minimum of 6 must be upper division. Requirements include the following:
1. Complete the following:  
- EDSE A212 Human Development and Learning (3)  
- or  
- PSY A365 Child and Adolescent Development (3)  
- PSY A442 Psychopathology of Childhood and Adolescence (3)  
- SWK A410 Trauma in Childhood (3)  
- HUMS/PSY/SWK A405 Children’s Mental Health Interdisciplinary Seminar (1)  

2. Complete 0-6 credits of a relevant practicum or research experience*  
* Practica and research coursework (e.g., independent studies, honors or other undergraduate theses) can consist of offerings by various programs but must provide experiences focused on children’s mental health and be approved in advance by the Children’s Mental Health Minor Committee.  

3. Complete 6-12 credits of electives focused on children approved by the Children’s Mental Health Minor Committee  
* Practica and research coursework (e.g., independent studies, honors or other undergraduate theses) can consist of offerings by various programs but must provide experiences focused on children’s mental health and be approved in advance by the Children’s Mental Health Minor Committee.  

FACULTY  
Robert Beekmann, Associate Professor, rbeekmann@uaa.alaska.edu  
Rebecca Bosek, Term Assistant Professor, rbosek@uaa.alaska.edu  
Christiane Brems, Professor, cbrems@uaa.alaska.edu  
Eric John David, Assistant Professor, edavid8@uaa.alaska.edu  
Patrick Dulin, Assistant Professor, afpld@uaa.alaska.edu  
Gloria Eldridge, Associate Professor/CTC Coordinator, geldridge@uaa.alaska.edu  
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Claudia Lampman, Chair/Professor, cllampman@uaa.alaska.edu  
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Rosellen Rosich, Professor, rmrosich@uaa.alaska.edu  
Patricia Sandberg, Associate Professor/PSC Director, pwsandberg@uaa.alaska.edu  
Joshua Swift, Assistant Professor/Intern Coordinator, jkswe@uaa.alaska.edu  
Karen Ward, Professor/Director CHD, kmw@uaa.alaska.edu  
Vickie Wesolowski, Term Instructor, vwesolowski@uaa.alaska.edu
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>
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<th>3. Course Number</th>
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<th>5b. Contact Hours (Lecture + Lab)</th>
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<th>8. Type of Action: Add or Change or Delete</th>
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<th># of Repeats</th>
<th>Max Credits</th>
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| 10. Grading Basis | 11. Implementation Date |
|                   | semester/year |
| ☑ A-F             | From: Fall/2014 |
| ☑ P/NP            | To: 9999/     |

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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.ualaska.edu/governance.

**Impacted Program/Course** | **Date of Coordination** | **Chair/Coordinator Contacted**
-------------------------------|---------------------------|-----------------------------|
1. BS and minor in Geological Sciences | 2/28/13 | L. Munk |
2. BA in Biological Sciences | 2/28/13 | F. Rainey |
3. BS in Natural Sciences | 2/28/13 | F. Rainey |

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

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

13c. Coordination with Library Liaison  
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)  
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)  
☐ College  
☐ Major  
☐ Class  
☐ Level

16d. Registration Restriction(s) (non-codable)  
Math A055 or higher

17. ☑ Mark if course has fees

18. ☑ Mark if course is a selected topic course

19. Justification for Action  
Splitting lecture + lab course into separate courses

Initiator (faculty only)  
Kristine J Crossen  
Initiator (TYPE NAME)  
Date: ______________

Approved  
Disapproved  
Dean/Director of School/College  
Date: ______________

Approved  
Disapproved  
Undergraduate/Graduate Academic  
Board Chair  
Date: ______________

Approved  
Disapproved  
Provost or Designee  
Date: ______________
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


1a. School or College
AS CAS
1b. Division
AMSC Division of Math Science
1c. Department
Geological Sciences

2. Course Prefix
GEOL
3. Course Number
A111L
4. Previous Course Prefix & Number
N/A
5a. Credits/CEUs
1
5b. Contact Hours
(Lecture + Lab)
(0+3)

6. Complete Course Title
Physical Geology Laboratory
Physical Geology Lab

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 ☐ Course Number ☐ Contact Hours ☐ Repeat Status ☐ Grading Basis ☐ Cross-Listed/Stacked ☐ Test Score Prerequisites ☐ Co-requisites ☐ Other Restrictions ☐ Registration Restrictions
☐ Class ☐ Level ☐ College ☐ Major ☐ Other (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.

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<td>F. Rainey</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)
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.

16a. Course Prerequisite(s) (list prefix and number or test code and score)
GEOL A111 or concurrent enrollment
16b. Co-requisite(s) (concurrent enrollment required)

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

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

19. Justification for Action
Splitting lecture + lab course into separate courses

Initiator (faculty only) Kristine J Crossen Date

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

☐ Approved ☐ Disapproved
Department Chair Date

☐ Approved ☐ Disapproved
Undergraduate/Graduate Academic Board Chair Date

☐ Approved ☐ Disapproved
Provost or Designee Date
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

<table>
<thead>
<tr>
<th>1a. School or College</th>
<th>1b. Division</th>
<th>1c. Department</th>
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<th>5b. Contact Hours</th>
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### 6. Complete Course Title

**Applied Physical Geology**

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

### 7. Type of Course

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

### 8. Type of Action: ☒ Add

If a change, mark appropriate boxes:

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

### 9. Repeat Status

- □ No
- □ # of Repeats: [Select a number]
- □ Max Credits: [Select a number]

### 10. Grading Basis

- ☒ A-F
- □ P/NP
- □ NG

### 11. Implementation Date

- Semester/year: [Select a semester/year]
- From: Fall/2014
- To: 1999/1999

### 12. Cross Listed

- □ with
- □ Stacked with

### 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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<td>L. Munk</td>
</tr>
<tr>
<td>2. BS in Natural Sciences</td>
<td>2/28/13</td>
<td>F. Rainey</td>
</tr>
<tr>
<td>3.</td>
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Initiator Name (typed): Kristine J Crossen
Initiator Signed Initials: [Insert initials]
Date: [Insert date]

### 13b. Coordination Email

- Date: 2/28/13
- Submitted to Faculty Listserv: [ued-faculty@lists.uaa.alaska.edu](mailto:ued-faculty@lists.uaa.alaska.edu)

### 13c. Coordination with Library Liaison

- Date: 4/1/13
- Chair/Coordinator Contacted: [Insert name]

### 14. General Education Requirement

- □ Oral Communication
- □ Written Communication
- □ Quantitative Skills
- □ Fine Arts
- □ Social Sciences
- □ Humanities
- □ 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
Date: [Insert date]

Approved Disapproved
Dean/Director of School/College Date: [Insert date]

Approved Disapproved
Undergraduate/Graduate Academic Board Chair Date: [Insert date]

Approved Disapproved
Provost or Designee Date: [Insert date]

Approved Disapproved
Department Chair Date: [Insert date]

Approved Disapproved
College/School Curriculum Committee Chair Date: [Insert date]
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


## Course Action Request

**University of Alaska Anchorage**

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

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<thead>
<tr>
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<th>5b. Contact Hours (Lecture + Lab)</th>
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### 6. Complete Course Title

**Historical Geology**

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

### 7. Type of Course

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

### 8. Type of Action:

- [ ] Add
- [X] Change
- [ ] Delete

#### If a change, mark appropriate boxes:

- [ ] Prefix
- [ ] Credits
- [ ] Title
- [ ] Grading Basis
- [ ] Course Description
- [ ] Test Score Prerequisites
- [ ] Other Restrictions
- [ ] Course Number
- [ ] Contact Hours
- [ ] Repeat Status
- [ ] Cross-Listed/Stacked
- [ ] Course Prerequisites
- [ ] Co-requisites
- [ ] Registration Restrictions

### 9. Repeat Status No

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### 10. Grading Basis

- [X] 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:

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: _________  Date:_____________

### 13b. Coordination Email

Date: 2/28/13

submitted to Faculty Listserv: [uaa-faculty@lists.uaa.alaska.edu](mailto: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
- [X] 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.
<table>
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<th>Date</th>
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Course Content Guide
University of Alaska Anchorage

GEOL A221
Historical Geology

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, rifting

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

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If a change, mark appropriate boxes:

- Prefix
- Credits
- Title
- Grading Basis
- Course Description
- Test Score Prerequisites
- Other Restrictions

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<td>To: 1999</td>
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- Stacked |

Cross-Listed Coordination Signature

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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).

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

Initiator Signed Initials: _________ Date:________________

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<tr>
<th>14. General Education Requirement</th>
<th>Oral Communication</th>
<th>Written Communication</th>
<th>Quantitative Skills</th>
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<td>Natural Sciences</td>
<td>Integrative Capstone</td>
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<table>
<thead>
<tr>
<th>15. Course Description (suggested length 20 to 50 words)</th>
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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.

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<td>18. Mark if course is a selected topic course</td>
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<th>19. Justification for Action</th>
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<td>Addition of information concerning student transportation and gear.</td>
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137
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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 Fjords 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.

### 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>
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<th>3. Course Number</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
- [ ] Title
- [ ] Grading Basis
- [ ] Course Description
- [ ] Test Score Prerequisites
- [ ] Other Restrictions
- [ ] Class
- [ ] Level
- [ ] College
- [ ] Major
- [ ] Other CCG (please specify)

9. **Repeat Status**  
- [ ] Yes  
- [ ] No  
- [ ] N/A

**# of Repeats**  
- [ ] 2

**Max Credits**  
- [ ] 9

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

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

12. **Cross Listed with**  
- [ ] Yes  
- [ ] No

**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).

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<tr>
<th>Impacted Program/Course</th>
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</table>

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

**Initiator Signed Initials:** __________

**Date:** __________________

13b. **Coordination Email**  
submitted to Faculty Listserv: [uaa-faculty@lists.uaa.alaska.edu](mailto: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.
<table>
<thead>
<tr>
<th>Initiator (faculty only)</th>
<th>Date</th>
<th>Dean/Director of School/College</th>
<th>Date</th>
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Initiator (TYPE NAME)

- [ ] Approved
- [ ] Disapproved

- [ ] Approved
- [ ] Disapproved

- [ ] Approved
- [ ] Disapproved

- [ ] Approved
- [ ] Disapproved

- [ ] Approved
- [ ] Disapproved

- [ ] Approved
- [ ] Disapproved
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

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

### 2. Course Prefix
- GEOL

### 3. Course Number
- A454

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

### 5. Credits/CEUs
- 3

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

### 7. Type of Course
- Academic

### 8. Type of Action
- Change

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

### 10. Grading Basis
- A-F
- P/NC
- NG

### 11. Implementation Date
- From: Fall/2014
- To: /

### 12. Cross Listed
- Stacked with GEOL A654

### 13a. Impacted Courses or Programs

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<th>Course Action Request</th>
<th>Department</th>
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<th>Course Number</th>
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### 13b. Coordination Email
- Date: 2-28-13

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

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

### 15. 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.

### 16. Course Prerequisite(s)
- GEOL A221

### 17. Other Restriction(s)
- College
- Major
- Level

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

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

### Date:______________

### Date of Coordination
- 2-28-13

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

### Date of Implementation
- 2014

### Special Note
- Students are required to provide their own transportation to field locales.

### Date of Coordination
- 2-28-13

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

### Date of Implementation
- 2014

### Special Note
- Students are required to provide their own transportation to field locales.
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
   H. Fee: Yes

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.
      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**  
**AMSC Division of Math Science**  
**Geological Sciences**

### 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**

**Abbreviated Title for Transcript (30 character)**  
**Glacial and Quaternary Geology**

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

### 8. Type of Action:  
- [x] Add  
- [ ] Change  
- [ ] Delete

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

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

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

### 11. Implementation Date  
- [ ] semester/year
  - From: Spring 2013  
  - To: /

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

### 13. Impacted Courses or Programs:  
List any programs or college requirements that require this course.  
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<td>AAEST - COE</td>
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<td>A. Dotson</td>
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Initiator Name (typed): **Kristine J Crossen**  
Initiator Signed Initials: _________  
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.

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

### 17. Other Restriction(s)  
- [x] Level

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

### 19. Justification for Action

Designed as 600-level graduate course requiring independent research.

Initiator (TYPE NAME)  
**Kristine J Crossen**  
Date: __________________

- [x] Approved  
- [ ] Disapproved  

Approved  
Dean/Director of School/College  
Date: __________________

- [ ] Approved  
- [x] Disapproved  

Approved  
Undergraduate/Graduate Academic  
Date: __________________

- [ ] Approved  
- [ ] Disapproved  

Approved  
Board Chairperson  
Date: __________________

- [x] Approved  
- [ ] Disapproved  

Approved  
Provost or Designee  
Date: __________________

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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


### 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>3. Course Number</th>
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<th>5b. Contact Hours (Lecture + Lab)</th>
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| 6. Complete Course Title | | |
|--------------------------| | |
| Permafrost | | |

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

| 7. Type of Course | | |
|------------------| | |
| Academic | | |

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- 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)

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<tr>
<th>9. Repeat Status No</th>
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| 10. Grading Basis | | |
|-------------------| | |
| A-F | | |

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<td>GEOL A655</td>
<td>Cross-Listed Coordination</td>
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</table>

| 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>
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<tr>
<th>Impacted Program/Course</th>
<th>Catalog Page(s)</th>
<th>Impacted</th>
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<td>Environment and Society - BA, BS</td>
<td>2/26/13</td>
<td>D. VanDommelen</td>
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**Initiator Name (typed):** Kristine J Crossen  
**Initiator Signed Initials:** ______________  
**Date:** ______________

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<th>13b. Coordination Email</th>
<th>Date: 2/28/13</th>
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<tbody>
<tr>
<td>submitted to Faculty Listserv: <a href="mailto:uaa-faculty@lists.uaa.alaska.edu">uaa-faculty@lists.uaa.alaska.edu</a></td>
<td></td>
</tr>
</tbody>
</table>

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

**14. General Education Requirement**

Mark appropriate boxes:

- 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 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)**

**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) Name:** Kristine J Crossen  
**Date:** ______________

<table>
<thead>
<tr>
<th>20. Approved</th>
<th>Disapproved</th>
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<td>Date</td>
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**Initiator (TYPE NAME)**

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<td>Undergraduate/Graduate Academic</td>
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<td>Date</td>
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<tbody>
<tr>
<td>Provost or Designee</td>
<td>Date</td>
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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: 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, 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
   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

<table>
<thead>
<tr>
<th>1a. School or College</th>
<th>AS CAS</th>
<th>1b. Division</th>
<th>AMSC Division of Math Science</th>
<th>1c. Department</th>
<th>Geological Sciences</th>
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<tbody>
<tr>
<td>2. Course Prefix</td>
<td>GEOL</td>
<td>3. Course Number</td>
<td>A655</td>
<td>4. Previous Course Prefix &amp; Number</td>
<td>N/A</td>
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<tr>
<td>5b. Contact Hours</td>
<td>(Lecture + Lab)</td>
<td>(3+0)</td>
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<td></td>
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**Complete Course Title**  
Permafrost  

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

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

**7. 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)

**8. Type of Course:**  
- [X] Academic  
- [ ] Preparatory/Development  
- [ ] Non-credit  
- [ ] CEU  
- [ ] Professional Development

**Repeat Status No**  
- [X] # of Repeats
- [ ] Max Credits

**9. Repeat Status**  
- [ ] A-F
- [ ] P/NP
- [ ] NG

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

**11. Implementation Date**  
- [ ] semester/year

From: Fall/2014  
To:  

**12. Cross Listed with**  
- [ ] Stacked 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](http://www.uaa.alaska.edu/governance).

**13b. Coordination Email**  
Date: 2/28/13  
submitted to Faculty Listserv:  
[uaa-faculty@lists.uaa.alaska.edu](mailto: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)
Examine permafrost geomorph 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)**  
- [ ] Graduate Standing

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

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

**17. Mark if course has fees**  
- [ ] Mark if course is a selected topic course

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

**19. Justification for Action**

Designed as 600-level graduate course requiring independent research.

---

**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](mailto:uaa-faculty@lists.uaa.alaska.edu)

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

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

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

**16c. Co-requisite(s) (concurrent enrollment required)**
- [ ] Graduate Standing

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

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

---

**19. Justification for Action**

Designed as 600-level graduate course requiring independent research.

---

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

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

**Approved**

**Disapproved**

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

**Approved**

**Disapproved**

**Undergraduate/Graduate Academic**  
Date:________________

---

**Approved**

**Disapproved**

**Board Chairperson**  
Date:________________

**Approved**

**Disapproved**

**Provost or Designee**  
Date:________________
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:
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      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
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      iii. Polygonal ground patterns and processes
   d. Thermokarst processes and landforms
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   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
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   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


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

## 1. School or College

**AS CAS**

## 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

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

## 8. Type of Action:

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

**If a change, mark appropriate boxes:**

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

## 9. Repeat Status No

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

## 10. Grading Basis

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

## 11. Implementation Date

**From:** Fall/2014  
**To:** /999

## 12. Cross Listed with

- [x] Stacked  with **GEOL A656**

## 13a. Impacted Courses or Programs

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

**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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<th>Chair/Coordinator Contacted</th>
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<td>2/28/13</td>
<td>L. Munk</td>
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<tr>
<td>2. Anthropology - BS, BA</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: [uac-faculty@lists.uaa.alaska.edu](mailto:uac-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
- [x] 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)

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

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

## 17. Mark if course has fees

- [x] 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)**

**Kristine J Crossen**

**Initiator (TYPE NAME)**

**Initiator Signed Initials:** _________  
**Date:** ________________

**Approved**  
**Disapproved**

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

**Approved**  
**Disapproved**

**Undergraduate/Graduate Academic**  
**Board Chairperson**  
**Date:** ________________

**Approved**  
**Disapproved**

**Provost or Designee**  
**Date:** ________________
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


## 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
- **A656**

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

### 5. Credits/CEUs
- 3

### 6. Complete Course Title
- Geoarchaeology

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

### 8. Type of Action: Add or Change or Delete
- Add

#### If a change, mark appropriate boxes:
- ☐ Prefix
- ☐ Credits
- ☐ Title
- ☐ Grading Basis
- ☐ Course Description
- ☐ Test Score Prerequisites
- ☐ Co-requisites
- ☐ Registration Restrictions

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

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

### 11. Implementation Date
- From: Fall/2014  
- To: /999

### 12. Cross Listed with
- ☐ Stacked  
- ☐ with GEOL A456

### 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: _________  
Date: _______________________

### 13b. Coordination Email
- Date: 2/28/13
- submitted to Faculty Listserv: [uaa-faculty@lists.uaa.alaska.edu](mailto: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. Independent research project required. 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)
- 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. Stacked with GEOL A456.

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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

## 1. School or College  
AS CAS

## 2. Course Prefix  
GEOL

## 3. Course Number  
A460

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

## 5. Credits/CEUs  
3

## 6. Complete Course Title  
Environmental Geochemistry

## 7. Type of Course  
- Academic

## 8. Type of Action:  
- Add

## 9. Repeat Status No  
- Max Credits

## 10. Grading Basis  
- A-F

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

## 12. Cross Listed with  
- GEOL A660

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

<table>
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<tr>
<th>Impacted Program/Course</th>
<th>Catalog Page(s) Impacted</th>
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<th>Chair/Coordinator Contacted</th>
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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
- Fine Arts
- Social Sciences
- Humanities
- Natural Sciences
- 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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173
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
B. Student Learning Outcomes and Evaluation

<table>
<thead>
<tr>
<th>Student Outcomes</th>
<th>Evaluation Metrics</th>
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<tbody>
<tr>
<td>1) Model the distribution of chemical elements between geochemical reservoirs on Earth</td>
<td>Homework assignments, quizzes and exams</td>
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<td>2) Utilize geochemical models to understand the composition of natural waters and the effects of pollution</td>
<td>Homework assignments, quizzes and exams</td>
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<tr>
<td>3) Derive the principles of isotope fractionation and applications to environmental problems</td>
<td>Analysis, discussion, and synthesis of relevant professional literature, complete an original research project</td>
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<tr>
<td>4) Use a dataset to apply to the understanding of a local, regional, national or international environmental problem</td>
<td>Analysis of data set, discussion, and synthesis of relevant professional literature, presentation</td>
</tr>
</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>1b. Division</th>
<th>1c. Department</th>
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| 17. ☒ Mark if course has fees  |

| 18. ☐ Mark if course is a selected topic course  |

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<th>19. Justification for Action</th>
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<td>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.</td>
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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>
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<th>Evaluation Metrics</th>
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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>
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</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
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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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<tr>
<th>1a. School or College</th>
<th>1b. Division</th>
<th>1c. Department</th>
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<tbody>
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<td>AMSC Division of Math Science</td>
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<th>3. Course Number</th>
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6. Complete Course Title  
Geologic Field Methods

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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: /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>
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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)  
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.
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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: 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


## Geologic Field Investigations

### Abbreviated Title for Transcript (30 characters)

- **Type of Course**: Academic
- **Repeat Status**: Yes # of Repeats 2 Max Credits 9
- **Grading Basis**: A-F, P/NP, NG
- **Implementation Date**: From: Fall/2014 To: /9999
- **Cross Listed with Stacked with**: Cross-Listed Coordination Signature

### 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.

### Course Prerequisite(s) (list prefix and number)

- GEOL A480

### Other Restriction(s)

- College
- Major
- Class
- Level

### Registration Restriction(s) (non-codable)

- GEOL A480

### 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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Course Content Guide
University of Alaska Anchorage
GEOL A482
Geologic Field Investigations

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**

### 1a. School or College

**AS CAS**

### 1b. Division

**AMSC Division of Math Science**

### 1c. Department

**Geological Sciences**

### 2. Course Prefix

**GEOL**

### 3. Course Number

**A490**

### 4. Previous Course Prefix & Number

None

### 5a. Credits/CEUs

1-4

### 5b. Contact Hours

(Lecture + Lab)

### 6. Complete Course Title

**Advanced Topics in Geology**

### 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

- [ ] Yes
- [ ] # of Repeats: 2
- [ ] Max Credits: 12

### 10. Grading Basis

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

### 11. Implementation Date

From: Spring/2013
To: /

### 12. Cross Listed with

- [ ] Stacked with GEOL A690

### 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: __________
Date: ______________

### 13b. Coordination Email

Date: 10-8-12

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

### 13c. Coordination with Library Liaison

Date: 10-8-12

### 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)

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

### 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

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.

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

### 20. Approval

- [ ] Approved
- [ ] Disapproved

Dean/Director of School/College
Date: ______________

### 21. Approval

- [ ] Approved
- [ ] Disapproved

Undergraduate/Graduate Academic Board Chairperson
Date: ______________

### 22. Approval

- [ ] Approved
- [ ] Disapproved

Provost or Designee
Date: ______________

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190
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.**


### Course Action Request

**University of Alaska Anchorage**

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

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<td>2.</td>
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**Initiator (typed): Kristine J Crossen**  **Initiator Signed Initials: __________ Date: __________**

<table>
<thead>
<tr>
<th>13b. Coordination Email</th>
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<tbody>
<tr>
<td>Date: 10-8-12</td>
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<table>
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<tr>
<th>14. General Education Requirement</th>
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<tr>
<td>Mark appropriate box:</td>
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<tr>
<td>☑ Oral Communication</td>
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<table>
<thead>
<tr>
<th>15. Course Description (suggested length 20 to 50 words)</th>
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<tbody>
<tr>
<td>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.</td>
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<table>
<thead>
<tr>
<th>16a. Course Prerequisite(s) (list prefix and number)</th>
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<tbody>
<tr>
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<th>16c. Co-requisite(s) (concurrent enrollment required)</th>
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<th>16d. Other Restriction(s)</th>
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<th>16e. Registration Restriction(s) (non-codable)</th>
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<tr>
<td>Graduate Standing</td>
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<tr>
<th>17. ☑ Mark if course has fees</th>
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<table>
<thead>
<tr>
<th>18. ☑ Mark if course is a selected topic course</th>
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<table>
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<tr>
<th>19. Justification for Action</th>
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</thead>
<tbody>
<tr>
<td>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.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Initiator (faculty only)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kristine J Crossen</td>
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<table>
<thead>
<tr>
<th>Initiator (TYPE NAME)</th>
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<tr>
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<table>
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<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Approved</td>
<td>Dean/Director of School/College</td>
<td>Date</td>
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</table>

<table>
<thead>
<tr>
<th>Approve</th>
<th>Disapprove</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Approved</td>
<td>Undergraduate/Graduate Academic</td>
<td>Date</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>Approve</th>
<th>Disapprove</th>
<th>Date</th>
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</thead>
<tbody>
<tr>
<td>Approved</td>
<td>Board Chairperson</td>
<td>Date</td>
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</table>

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<tr>
<th>Approve</th>
<th>Date</th>
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</thead>
<tbody>
<tr>
<td>Approved</td>
<td>Provost or Designee</td>
</tr>
</tbody>
</table>
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.


<table>
<thead>
<tr>
<th>1a. School or College</th>
<th>AS CAS</th>
</tr>
</thead>
<tbody>
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<td>1b. Department</td>
<td>Geological Sciences</td>
</tr>
<tr>
<td>2. Complete Program Title/Prefix</td>
<td>Geological Sciences - B.S./GEOL</td>
</tr>
<tr>
<td>3. Type of Program</td>
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<td>Undergraduate: or Graduate:</td>
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<td>□ Yes or ☒ No</td>
</tr>
<tr>
<td>4. Type of Action:</td>
<td>PROGRAM or PREFIX</td>
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<td>☐ Add</td>
<td>☐ Add</td>
</tr>
<tr>
<td>☒ Change</td>
<td>☐ Change</td>
</tr>
<tr>
<td>☐ Delete</td>
<td>☐ Inactivate</td>
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<tr>
<td>5. Implementation Date (semester/year)</td>
<td>From: Fall 2014 To: 9999</td>
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<td>6a. Coordination with Affected Units</td>
<td>Department, School, or College: CAS</td>
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<td>Kristine J Crossen</td>
</tr>
<tr>
<td>Initiator Signed Initials:</td>
<td></td>
</tr>
<tr>
<td>Date:________________</td>
<td></td>
</tr>
<tr>
<td>6b. Coordination Email submitted to Faculty Listserv (<a href="mailto:uaa-faculty@lists.uaa.alaska.edu">uaa-faculty@lists.uaa.alaska.edu</a>)</td>
<td>Date: 2/28/13</td>
</tr>
<tr>
<td>6c. Coordination with Library Liaison</td>
<td>Date: 4/1/13</td>
</tr>
<tr>
<td>7. Title and Program Description - Please attach the following:</td>
<td>☐ Cover Memo ☒ Catalog Copy in Word using the track changes function</td>
</tr>
<tr>
<td>8. Justification for Action</td>
<td></td>
</tr>
<tr>
<td>1. Addition of introductory course for majors (GEOL A121)</td>
<td></td>
</tr>
<tr>
<td>2. Separation of GEOL A111 (lecture/lab) into GEOL A111 and A111L.</td>
<td></td>
</tr>
<tr>
<td>3. Additional information on field trips (GEOL A221, GEOL A381, GEOL A382, GEOL A480, GEOL A482).</td>
<td></td>
</tr>
<tr>
<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>
<td></td>
</tr>
<tr>
<td>Initiative (faculty only)</td>
<td>Date</td>
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</tr>
<tr>
<td>Kristine J Crossen</td>
<td></td>
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<tr>
<td>Initiator (TYPE NAME)</td>
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<td>Approved</td>
<td>Date</td>
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<tr>
<td>Disapproved</td>
<td>Date</td>
</tr>
<tr>
<td>College/School Curriculum Committee Chair</td>
<td>Date</td>
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GEOLOGICAL SCIENCES

ConocoPhillips Integrated Sciences Building (CPSB), Room 101R,
(907) 786-4940
www.uaa.alaska.edu/geology

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):
   - 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  34

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>GEOL A121</td>
<td>Applied Physical Geology</td>
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<tr>
<td>GEOL A221</td>
<td>Historical Geology</td>
<td>4</td>
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<tr>
<td>GEOL A321</td>
<td>Mineralogy</td>
<td>4</td>
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<tr>
<td>GEOL A322</td>
<td>Igneous and Metamorphic Petrology</td>
<td>4</td>
</tr>
<tr>
<td>GEOL A335</td>
<td>Structural Geology</td>
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<tr>
<td>GEOL A350</td>
<td>Geomorphology</td>
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<td>GEOL A360</td>
<td>Geochemistry</td>
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<tr>
<td>GEOL A310</td>
<td>Professional Practices in Geology</td>
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<tr>
<td>GEOL A452</td>
<td>Sedimentology and Stratigraphy</td>
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b. Complete a minimum of 6 credits of the following required field courses  6

<table>
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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>GEOL A480*</td>
<td>Geologic Field Methods</td>
<td>3</td>
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<tr>
<td>GEOL A481*</td>
<td>Alaskan Field Investigations</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Geology Field Camp (3-6)</td>
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*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

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>GEOL A320</td>
<td>Volcanology</td>
<td>3</td>
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<tr>
<td>GEOL A325</td>
<td>Geology of Ore Deposits</td>
<td>3</td>
</tr>
<tr>
<td>GEOL A340</td>
<td>Hydrogeology</td>
<td>3</td>
</tr>
<tr>
<td>GEOL A380</td>
<td>Anchorage Field Studies</td>
<td>3</td>
</tr>
<tr>
<td>GEOL A381</td>
<td>Kenai Peninsula Field Studies</td>
<td>3</td>
</tr>
<tr>
<td>GEOL A382</td>
<td>Geologic Field Studies</td>
<td>3</td>
</tr>
<tr>
<td>GEOL A421</td>
<td>Invertebrate Paleontology</td>
<td>4</td>
</tr>
<tr>
<td>GEOL A454</td>
<td>Glacial and Quaternary Geology</td>
<td>3</td>
</tr>
<tr>
<td>GEOL A455</td>
<td>Permafrost</td>
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</tr>
<tr>
<td>GEOL A456</td>
<td>Geoarchaeology</td>
<td>3</td>
</tr>
<tr>
<td>GEOL A457</td>
<td>Soil Genesis and Classification</td>
<td>4</td>
</tr>
<tr>
<td>GEOL A460</td>
<td>Environmental Geochemistry</td>
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<tr>
<td>GEOL A475</td>
<td>Environmental Geophysics</td>
<td>3</td>
</tr>
<tr>
<td>GEOL A480**</td>
<td>Geologic Field Methods</td>
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<tr>
<td>GEOL A481**</td>
<td>Alaska Geologic Field Investigations</td>
<td>3</td>
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<tr>
<td>GEOL A482</td>
<td>Geologic Field Investigations</td>
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</tr>
<tr>
<td>GEOL A490</td>
<td>Advanced Topics in Geology</td>
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<tr>
<td>GEOL A492</td>
<td>Geology Seminar</td>
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<tr>
<td>GEOL A495</td>
<td>Geology Internship</td>
<td>1-3</td>
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<tr>
<td>GEOL A498</td>
<td>Student Research</td>
<td>1-6</td>
</tr>
<tr>
<td>GEOL A499</td>
<td>Senior Thesis</td>
<td>3</td>
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</tbody>
</table>

**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 Geoarchaeology (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
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GEOLOGICAL SCIENCES

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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 A496 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):
   - 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  
   GEOL A1211  Applied Advanced 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  
   GEOL A480* Geologic Field Methods (3)
   GEOL A481* Alaskan Field Investigations (3)
   *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:  
   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 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:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GEOL A340</td>
<td>Hydrogeology</td>
<td>3</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GEOL A454</td>
<td>Glacial and Quaternary Geology</td>
<td>3</td>
</tr>
<tr>
<td>GEOL A455</td>
<td>Permafrost</td>
<td>3</td>
</tr>
<tr>
<td>GEOL A457</td>
<td>Soil Genesis and Classification</td>
<td>4</td>
</tr>
<tr>
<td>GEOL A460</td>
<td>Environmental Geochemistry</td>
<td>3</td>
</tr>
<tr>
<td>GEOL A475</td>
<td>Environmental Geophysics</td>
<td>3</td>
</tr>
<tr>
<td>GEOL A495</td>
<td>Geology Internship (1-3)</td>
<td></td>
</tr>
</tbody>
</table>

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

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

* 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 4
- 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

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