

Submit originals and one copy and electronic copy to **Governance/Faculty Senate Office**  
 See <http://www.uaf.edu/uafgov/faculty/cd> for a complete description of the rules governing curriculum & course changes.

**CHANGE COURSE (MAJOR) and DROP COURSE PROPOSAL**

**SUBMITTED BY:**

Department	<b>Mining &amp; Geological Engineering</b>	College/School	<b>CEM</b>
Prepared by	<b>Margaret Darrow</b>	Phone	<b>474-7303</b>
Email Contact	<b>margaret.darrow@alaska.edu</b>	Faculty Contact	<b>Margaret Darrow</b>

**1. COURSE IDENTIFICATION:**

Dept  Course #  No. of Credits

COURSE TITLE

**2. ACTION DESIRED:**

Change Course  If Change, indicate below what change. Drop Course

NUMBER	<input type="text"/>	TITLE	<input type="text"/>	DESCRIPTION	<input type="text"/>
PREQUISITES	<input type="text"/>			FREQUENCY OF OFFERING	<input type="text"/>
CREDITS (including credit distribution)	<input type="text"/>	<input checked="" type="checkbox"/>		COURSE CLASSIFICATION	<input type="text"/>
CROSS-LISTED	<input type="text"/>	Dept.	<input type="text"/>	(Requires approval of both departments and deans involved. Add lines at end of form for such signatures.)	
STACKED (400/600)	<input type="text"/>	Dept.	<input type="text"/>	Course #	<input type="text"/>
OTHER (please specify)	<input type="text" value="Change of credit distribution"/>				

**3. COURSE FORMAT**

NOTE: Course hours may not be compressed into fewer than three days per credit. Any course compressed into fewer than six weeks must be approved by the college or school's curriculum council. Furthermore, any core course compressed to less than six weeks must be approved by the core review committee.

COURSE FORMAT: (check one)  1  2  3  4  5  6 weeks to full semester

OTHER FORMAT (specify)

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

**4. COURSE CLASSIFICATIONS:** (undergraduate courses only. Use approved criteria found on Page 10 & 17 of the manual. If justification is needed, attach on separate sheet.)

H = Humanities  N = Natural Science  S = Social Sciences

Will this course be used to fulfill a requirement for the baccalaureate core?  YES  NO

IF YES, check which core requirements it could be used to fulfill:

O = Oral Intensive, Format 6  W = Writing Intensive, Format 7  Natural Science, Format 8

5. COURSE REPEATABILITY:

Is this course repeatable for credit?  YES  NO

Justification: Indicate why the course can be repeated (for example, the course follows a different theme each time).

How many times may the course be repeated for credit?  TIMES

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

6. CURRENT CATALOG DESCRIPTION AS IT APPEARS IN THE CATALOG: including dept., number, title and credits

**GE F375 Principles of Engineering Geology and Terrain Analysis**

3 Credits

Offered Fall

Evaluation of terrain characteristics using basic geomorphic and engineering principles. Alaskan applications are provided due consideration. Prerequisites: GE F261. (3+0)

7. COMPLETE CATALOG DESCRIPTION AS IT WILL APPEAR WITH THESE CHANGES: (Underline new wording ~~strike through old wording~~ and use complete catalog format including dept., number, title, credits and cross-listed and stacked.) PLEASE SUBMIT NEW COURSE SYLLABUS. For stacked courses the syllabus must clearly indicate differences in required work and evaluation for students at different levels.

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8. IS THIS COURSE CURRENTLY CROSS-LISTED?

YES/NO  NO If Yes, DEPT  NUMBER

(Requires written notification of each department and dean involved. Attach a copy of written notification.)

9. GRADING SYSTEM:

LETTER:  PASS/FAIL:

10. ESTIMATED IMPACT

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

NONE.

11. LIBRARY COLLECTIONS

Have you contacted the library collection development officer (ffklj@uaf.edu, 474-6695) with regard to the adequacy of library/media collections, equipment, and services available for the proposed course? If so, give date of contact and resolution. If not, explain why not.

No  Yes  N/A

12. IMPACTS ON PROGRAMS/DEPTS:

What programs/departments will be affected by this proposed action? Include information on the Programs/Departments contacted (e.g., email, memo)

There will be no negative impacts to the department. The impact to the program will be minor, as it is reallocating student time for one course.

13. POSITIVE AND NEGATIVE IMPACTS

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

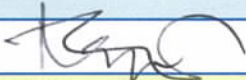
No impact to other courses.

**JUSTIFICATION FOR ACTION REQUESTED**


The purpose of the department and campus-wide curriculum committees is to scrutinize course change and new course applications to make sure that the quality of UAF education is not lowered as a result of the proposed change. Please address this in your response. This section needs to be self-explanatory. If you ask for a change in # of credits, explain why; are you increasing the amount of material covered in the class? If you drop a prerequisite, is it because the material is covered elsewhere? If course is changing to stacked (400/600), explain higher level of effort and performance required on part of students earning graduate credit. Use as much space as needed to fully justify the proposed change and explain what has been done to ensure that the quality of the course is not compromised as a result.

**The Principles of Engineering Geology and Terrain Analysis course is required for GE majors. Currently this course does not officially have a laboratory component. To successfully understand the material and develop skills needed to analyze terrain, the students need to view aerial photography, satellite imagery, and topographic and geologic maps for their assignments. The course currently requires the students to use stereo viewers, a GIS program (ESRI's ArcMap), and other computer programs such as Google Earth. In a 3+0 format, there is not enough time available for the students to receive adequate instruction or supervision with these tools to ensure adequate skill development. Through post-course student surveys for the last three years, students have suggested to change the course format to include a laboratory component. This change will enhance the quality of the education that the student receive, as they will be familiar with the tools that they will need to conduct terrain analysis in their professional careers.**

**APPROVALS:**

	Date	10/28/11
Signature, Chair, Program/Department of:		

	Date	11/18/2011
Signature, Chair, College/School Curriculum Council for:		

	Date	11/30/11
Signature, Dean, College/School of: CEM		

	Date	
Signature of Provost (if applicable)		

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

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

	Date	
Signature, Chair, UAF Faculty Senate Curriculum Review Committee		

**ADDITIONAL SIGNATURES: (If required)**

	Date	
Signature, Chair, Program/Department of:		

	Date	
Signature, Chair, College/School Curriculum Council for:		

	Date	
Signature, Dean, College/School of:		

**Department of Mining and Geological Engineering  
Geological Engineering Program**

**GE375, 3.0 credits (Required)**

**Principles of Engineering  
Geology and Terrain Analysis**

**Fall 2012**

**2010-11 Catalog Description:** Evaluation of terrain characteristics using basic geomorphic and engineering principles. Alaskan applications are provided due consideration. (Prerequisite: GE261) (3+0) (BUT...with extra time on Fridays for lab work).

**Text:** Gorr, W. L., and Kurland, K. S. (2008). *GIS Tutorial: Workbook for ArcView 9 (updated for ArcGIS 9.3)*, 3<sup>rd</sup> Ed.: ESRI Press, Redlands, California.

Also, handouts will be provided by the instructor.

**Additional References:**

Bloom, A. L. (1991). *Geomorphology: A Systematic Analysis of Late Cenozoic Landforms*, 2<sup>nd</sup> Ed.: Prentice Hall, Englewood Cliffs, New Jersey.

Easterbrook, D. J. (1993). *Surface Processes and Landforms*: MacMillan Publishing Company, New York, New York.

Fookes, P. G., Lee, E. M., Milligan, G., eds. (2005). *Geomorphology for Engineers*: Whittles Publishing, Boca Raton, Florida. Ritter, D. F., Kochel, R. C., Miller, J. R. (2002). *Process Geomorphology*, 4<sup>th</sup> ed.: Waveland Press, Long Grove, Illinois.

Huggett, R. J. (2007). *Fundamentals of Geomorphology*: 2<sup>nd</sup> ed: Routledge, New York, NY.

**Course Objectives:** 1) To understand the basic processes of geomorphology and relationships between regional and local geomorphologic conditions to engineering site selection, evaluation, and design; 2) To develop skills required in terrain analysis, including familiarity with ArcGIS; 3) To apply knowledge and skills to a terrain analysis project in Alaska.

**Schedule: Lecture** Monday, Wednesday 10:30 – 11:30 pm, DUCK 341  
Friday 2:15 – 5:15 pm, DUCK 316 (we will also meet in DUCK 310)

**Instructor:** Dr. Darrow (Office: 309 DUCK; [margaret.darrow@alaska.edu](mailto:margaret.darrow@alaska.edu); 474-7303)

**Office Hours:** Monday 11:45 am – 12:45 pm, Wednesday 8:00 am – 9:00 am (or by appointment)

**Grading Policy:**

- Grades will NOT be curved. Grades will be based on the final percentage earned in the course, and grades will be rounded to the nearest whole percent, following standard mathematical rules. The grading system follows the plus/minus system in the UAF catalog, and is as follows:

Letter Grade	Percentage Range	Grade Point Per Credit	Letter Grade	Percentage Range
A+	97-100	4.0	C+	76-79
A	94-96	4.0	C	70-75
A-	90-93	3.7	C-	68-69
B+	87-89	3.3	D+	66-67
B	84-86	3.0	D	63-65
B-	80-83	2.7	D-	60-62
			F	<60

- Weighting of course components:

Assignments	30%	(Objectives 1 & 2)
Case Study Presentations	15%	(Objectives 1 & 2)
Case Study Abstracts	5%	
Terrain Analysis Project		
Report	40%	(Objectives 2 & 3)
Presentation	10%	(Objectives 2 & 3)

**Computer Use:** ArcGIS, Google Earth, MS Word, MS Excel, MS PowerPoint, and Blackboard.

**Student Support Services:** CEM computer technicians are located in the Duckering building room 248 (contact phone: 474-5216). They can help with issues related to software and hardware problems in the computer lab (310 and 318 Duckering). Blackboard support is available through UAF OIT helpdesk. The instructor is available for any other support required during the offering of this course. Ms. Judy Johnson, Office Manager of Mining and Geological Engineering Department is available for departmental support in Room 301 Duckering (474-7338).

**Physical and Learning Disabilities:** If you have a physical or learning disability, please advise the course instructor of any special consideration necessary by the beginning of the second class so that attempts to accommodate you according to the American Disabilities Act can be made. Your request for accommodation must be accompanied by a written statement of your disability from an appropriate authority. For information on the disability services on campus, please visit the following web site: <http://www.uaf.edu/chc/disability.html>.

**Tentative Class Schedule:**

<u>Date</u>	<u>Topics</u>	<u>Assignments</u>
	LL = Lecture topics LAB = Corresponding lab component	Lab = weekly homework assignment CS = case study abstract
<i>September</i>		
1	Class Overview	
4, 6, 8	(no class Monday) LL: Driving Forces LAB: Intro to GIS	Lab 1
11, 13, 15	LL: Tectonics, Volcanism LAB: Map design, Stereopairs	Lab 2; CS 1
18, 20, 22	LL: Bx mapping LAB: Map design and layout	Lab 3; CS 2
25, 27, 29	LL: Bx mapping cont. LAB: ArcCatalog and importing data	Lab 4; CS 3; Proj. proposals
<i>October</i>		
2, 4, 6	LL: Slope Processes LAB: Working with topographic maps	Lab 5; CS 4
9, 11, 13	LL: Slopes (cont) LAB: Introduction to Spatial Analysis	Lab 6; CS 5; Resubmit proposals
16, 18, 20	LL: Fluvial Processes LAB: Spatial Analysis (cont)	Lab 7; CS 6
23, 25, 27	LL: Fluvial Processes (cont) LAB: Annotations	Lab 8; CS 7; Proj. overview pres.
<i>November</i>		
Oct. 30, 1, 3	LL: Glacial Processes LAB: Digitizing	Lab 9; CS 8
6, 8, 10	LL: Glacial Processes (cont) LAB: 3-D Analysis	Lab 10; CS 9
13, 15, 17	LL: Periglacial Processes & Permafrost LAB: Help with individual projects	Lab 11; CS 10; Proj. update pres.
20, 22, 24	LL: Wind Processes, THANKSGIVING BREAK	(no homework due)
27, 29, Dec. 1	LL: Coastal Processes LAB: Help with individual projects	Lab 12; CS 11
<i>December</i>		
4, 6, 8	LL: Urban Geomorphology LAB: Help with individual projects	CS 12; Final report drafts due
11, 13, 15	Review, Final Presentations	Final reports/presentations

### Course Policies:

- 1) You are expected to follow the University of Alaska Fairbanks Student Code of Conduct. You may find this code at:  
[http://www.uaf.edu/catalog/current/academics/regs3.html#Student\\_Conduct](http://www.uaf.edu/catalog/current/academics/regs3.html#Student_Conduct).  
**CHEATING AND/OR PLAGARISM WILL NOT BE TOLERATED IN ANY SHAPE OR FORM.**
- 2) Assignments must be typed, and sketches or calculations done by hand must be scanned. Assignments must be submitted as PDF files via email to [margaret.darrow@alaska.edu](mailto:margaret.darrow@alaska.edu) prior to the beginning of class on the following Friday (one week) after they are assigned (unless otherwise specified). **LATE WORK WILL NOT BE ACCEPTED.**
- 3) Each student will be responsible for presenting a case study, using PowerPoint. More details will be provided separately. All students should read the paper, and actively participate in case study discussions.
- 4) Each student will be responsible for the material covered during each class. Please notify Dr. Darrow ahead of time if you must miss a class. Please be on time for classes.
- 5) Dr. Darrow's office hours and contact information are shown on the first page of this syllabus. If you cannot make the posted office hours, please contact her to set up another time.
- 6) Cell phones and portable electronic devices should remain OFF and STOWED during lectures, class discussions, and exams. Please be polite to your professor and fellow students; do not answer your phone during class. During exams, all portable electronic devices must remain stowed, or may be placed in the front of the room in a designated spot for the duration of the test. Use of any electronics during an exam will be considered as a form of cheating (see #1 above).

**Contribution to Professional Component:** The course emphasizes engineering site selection and analysis. In lecture, the instructor presents geomorphologic processes that influence site selection and evaluation. Students present case studies related to the methodology of site selection and evaluation, and geohazard analysis.

**Course Outcomes:** This course is arranged towards meeting the educational outcomes set forth by the Department of Mining and Geological Engineering.

Learning Outcomes and Performance Indicators	Course Objective	Objective Evidence
<b>(g) An ability to communicate effectively.</b>		
1) Uses correct grammar, spelling, and punctuation in written reports, and pronunciation in verbal communication	1, 3	Case study presentation and discussion Terrain analysis project
2) Understands the background knowledge of the readers or audience, and organizes the information to meet their needs	1, 3	
3) Assesses readers' or audience response	1, 3	
4) Provides factual statements supported with evidence	1, 3	
<b>(l) A knowledge of engineering applications as related to geological resources and geohazards in Alaska and an ability to practice engineering in arctic-related projects</b>		
1) Recognizes geological characteristics of geohazards and geological resources in Alaska	1, 3	Laboratory exercises Terrain analysis project
2) Identifies engineering issues associated with arctic and subarctic environments	1, 3	
3) Uses skills and techniques to solve engineering problems related to frozen ground	2, 3	