

Submit originals (including syllabus) and one copy and electronic copy to the **Faculty Senate Office**  
 See <http://www.uaf.edu/uafgov/faculty-senate/curriculum/course-degree-procedures/> for a complete description of the rules governing curriculum & course changes.

**CHANGE COURSE (MAJOR) and DROP COURSE PROPOSAL**  
 Attach a syllabus, except if dropping a course.

**SUBMITTED BY:**

Department	Mining & Geological Engr	College/School	CEM
Prepared by	Margaret Darrow	Phone	x7303
Email Contact	<a href="mailto:mmdarrow@alaska.edu">mmdarrow@alaska.edu</a>	Faculty Contact	Margaret Darrow

**1. COURSE IDENTIFICATION: As the course now exists.**

Dept	GE	Course #	430	No. of Credits	3
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COURSE TITLE	Geomechanical Instrumentation
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**2. ACTION DESIRED:**  Check the changes to be made to the existing course.

Change Course	<input checked="" type="checkbox"/>	If Change, indicate below what is changing.	Drop Course	<input type="checkbox"/>
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NUMBER	TITLE	DESCRIPTION	FREQUENCY OF OFFERING
PREREQUISITES*			

\*Prerequisites will be required before a student is allowed to enroll in the course.

CREDITS (including credit distribution)	<input checked="" type="checkbox"/>	COURSE CLASSIFICATION	
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ADD A STACKED LEVEL (400/600) Include syllabi.		Dept.		Course #	
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**How will the two course levels differ from each other? How will each be taught at the appropriate level?:**

Stacked course applications are reviewed by the (Undergraduate) Curricular Review Committee and by the Graduate Academic and Advising Committee. Creating two different syllabi—undergraduate and graduate versions—will help emphasize the different qualities of what are supposed to be two different courses. The committees will determine: 1) whether the two versions are sufficiently different (i.e. is there undergraduate and graduate level content being offered); 2) are undergraduates being overtaxed?; 3) are graduate students being undertaxed? In this context, the committees are looking out for the interests of the students taking the course. Typically, if either committee has qualms, they both do. More info online - see URL at top of this page.

ADD NEW CROSS-LISTING		Dept. & No.		Requires approval of both departments and deans involved. Add lines at end of form for additional signatures.
STOP EXISTING CROSS-LISTING		Dept. & No.		Requires notification of other department(s) and mutual agreement. Attach copy of email or memo.
OTHER (specify)				

**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 and the appropriate Faculty Senate curriculum committee. Furthermore, any core course compressed to less than six weeks must be approved by the Core Review Committee.

COURSE FORMAT: (check <u>all</u> that apply)	<input type="checkbox"/>	1	<input type="checkbox"/>	2	<input type="checkbox"/>	3	<input type="checkbox"/>	4	<input type="checkbox"/>	5	<input checked="" type="checkbox"/>	6	6 weeks to full semester
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OTHER FORMAT (specify all that apply)	
Mode of delivery (specify lecture, field trips, labs, etc.)	lecture, labs (including field trips during lab time)

4. **COURSE CLASSIFICATIONS:** (undergraduate courses only. Use approved criteria found in Chapter 12 of the curriculum manual. If justification is needed, attach separate sheet.)

H = Humanities  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,  W = Writing Intensive,  X = Baccalaureate Core   
\*Format 6 also submitted  \*Format 7 submitted

- 4.A *Is course content related to northern, arctic or circumpolar studies? If yes, a "snowflake" symbol will be added in the printed Catalog, and flagged in Banner.*

YES  NO

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. **COMPLETE CATALOG DESCRIPTION** including dept., number, title, credits, credit distribution, cross-listings and/or stacking, clearly showing the changes you want made. (Underline new wording ~~strike through old wording~~ and use complete catalog format including dept., number, title, credits and cross-listed and stacked.)

Example of a complete description:

PS F450 Comparative ~~Aberiginal~~ Indigenous Rights and Policies (s)  
3 Credits

Offered As Demand Warrants

~~Case-study~~ Comparative approach in ~~assessing Aberiginal~~ analyzing Indigenous rights and policies in different nation-state systems. ~~Seven Aberiginal situations~~ Multiple countries and specific policy developments examined for factors promoting or limiting self-determination. Prerequisites: Upper division standing or permission of instructor. (Cross-listed with ANS F450.) (3+0)

**GE F430 Geomechanical Instrumentation**

3 Credits

Measurement of groundwater pressure, ground deformation, stress and temperature as well as the planning of monitoring programs, instrument calibration, maintenance and installation, data collection, interpretation, and reporting. Case histories are used. Prerequisites: ES F331; GE F261 or GEOS F101X. (3+0)

7. **COMPLETE CATALOG DESCRIPTION AS IT SHOULD APPEAR AFTER ALL CHANGES ARE MADE:**

**GE F430 Geomechanical Instrumentation**

3 Credits

Measurement of groundwater pressure, ground deformation, stress and temperature as well as the planning of monitoring programs, instrument calibration, maintenance and installation, data collection, interpretation, and reporting. Case histories are used. Prerequisites: ES F331; GE F261 or GEOS F101X. ~~(3+0)~~ (2+3)

8. **GRADING SYSTEM:** Specify only one.

LETTER:  PASS/FAIL:

9. **ESTIMATED IMPACT**

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

Adding a laboratory session will have a minor impact on facilities. The laboratory exercises will be conducted in existing laboratory space dedicated to the GE program.

**10. LIBRARY COLLECTIONS**

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

No	<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	This is an existing course, requiring only a format change. As the previous instructor, I have talked with Karen Jensen previously regarding this course content.
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**11. 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)

None.

**12. POSITIVE AND NEGATIVE IMPACTS**

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

There will be negligible negative impact on other courses, programs, and departments by adding a laboratory session. The laboratory session will take place in a GE laboratory space. The lab time will be scheduled so as to avoid time conflicts with other classes as much as possible (currently, the morning is considered). There will be positive impact as the course will become more meaningful to the students to have a hands-on component. While the course has a soil/rock instrumentation focus for GE students, its content is applicable to other disciplines, including CEE, MIN, and PETE.

**13. 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.

Currently, GE430 is a 3+0 course. It was taught in 2012 in this format. The topic includes the discussion of calibration of instruments, field measurement of temperature, pressure, and ground movement (for example), and designing systems to make such measurements. While the theoretical discussion of these elements can occur within the classroom environment, it is more meaningful to the students to perform these calibrations, measurements, or designs themselves. Changing one of the class meeting times to a laboratory session will provide the opportunity for hands-on work with geomechanical instrumentation and for short field trips to perform relevant measurements. This class also serves as a technical elective for the GE program, and includes a design component. The laboratory time will allow students to design more effective monitoring systems by troubleshooting various instrumentation components in a laboratory setting with an instructor's guidance.

**APPROVALS:** (Forms with missing signatures will be returned. Additional signature blocks may be added as necessary.)

	Date	9/24/14
Signature, Chair, Program/Department of:		

	Date	9-25-14
Signature, Chair, College/School Curriculum Council for:	CEM	

	Date	10/3/14
Signature, Dean, College/School of:	CEM	

Offerings above the level of approved programs must be approved in advance by the Provost (e.g., non-graduate level program offering of a 600-level course):

	Date	
Signature of Provost (if applicable)		

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

	Date	
Signature, Chair		
Faculty Senate Review Committee:   __ Curriculum Review           __ GAAC		
__ Core Review                   __ SADAC		

**ADDITIONAL SIGNATURES:** *(As needed for cross-listing and/or stacking; add more blocks as necessary.)*

	Date	
Signature, Chair,		
Program/Department of:		

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

	Date	
Signature, Dean, College/School		
of:		

Note: If removing a cross-listing, you may attach copy of email or memo to indicate mutual agreement of this action by the affected department(s).

If degree programs are affected, a Format 5 program change form must also be submitted.

**ATTACH COMPLETE SYLLABUS (as part of this application).** This list is online at: <http://www.uaf.edu/uafgov/faculty-senate/curriculum/course-degree-procedures/uaf-syllabus-requirements/>  
The Faculty Senate curriculum committees will review the syllabus to ensure that each of the items listed below are included. If items are missing or unclear, the proposed course (or changes to it) may be denied.

**SYLLABUS CHECKLIST FOR ALL UAF COURSES**

During the first week of class, instructors will distribute a course syllabus. Although modifications may be made throughout the semester, this document will contain the following information (as applicable to the discipline):

**1. Course information:**

Title,  number,  credits,  prerequisites,  location,  meeting time (make sure that contact hours are in line with credits).

**2. Instructor (and if applicable, Teaching Assistant) information:**

Name,  office location,  office hours,  telephone,  email address.

**3. Course readings/materials:**

Course textbook title,  author,  edition/publisher.  
 Supplementary readings (indicate whether  required or  recommended) and  
 any supplies required.

**4. Course description:**

Content of the course and how it fits into the broader curriculum;  
 Expected proficiencies required to undertake the course, if applicable.  
 Inclusion of catalog description is *strongly* recommended, and  
 Description in syllabus must be consistent with catalog course description.

**5.  Course Goals (general), and (see #6)**

**6.  Student Learning Outcomes (more specific)**

**7. Instructional methods:**

Describe the teaching techniques (eg: lecture, case study, small group discussion, private instruction, studio instruction, values clarification, games, journal writing, use of Blackboard, audio/video conferencing, etc.).

**8. Course calendar:**

A schedule of class topics and assignments must be included. Be specific so that it is clear that the instructor has thought this through and will not be making it up on the fly (e.g. it is not adequate to say "lab". Instead, give each lab a title that describes its content). You may call the outline Tentative or Work in Progress to allow for modifications during the semester.

**9. Course policies:**

Specify course rules, including your policies on attendance, tardiness, class participation, make-up exams, and plagiarism/academic integrity.

**10. Evaluation:**

Specify how students will be evaluated,  what factors will be included,  their relative value, and  how they will be tabulated into grades (on a curve, absolute scores, etc.)  Publicize UAF regulations with regard to the grades of "C" and below as applicable to this course. (Not required in the syllabus, but is a convenient way to publicize this.) Link to PDF summary of grading policy for "C":

[http://www.uaf.edu/files/uafgov/Info-to-Publicize-C\\_Grading-Policy-UPDATED-May-2013.pdf](http://www.uaf.edu/files/uafgov/Info-to-Publicize-C_Grading-Policy-UPDATED-May-2013.pdf)

**11. Support Services:**

Describe the student support services such as tutoring (local and/or regional) appropriate for the course.

**12. Disabilities Services:** Note that the phone# and location have been **updated**.

<http://www.uaf.edu/disability/> The Office of Disability Services implements the Americans with Disabilities Act (ADA), and ensures that UAF students have equal access to the campus and course materials.

State that you will work with the Office of Disabilities Services (208 WHITAKER BLDG, 474-5655) to provide reasonable accommodation to students with disabilities.

5/21/2013

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

**GE430, 3.0 credits**

**Geomechanical Instrumentation**

**Spring 2012**

**Schedule / Instructional Methods:** **Lecture** Monday, Wednesday 11:45 am – 12:45 pm, DUCK 354  
**Lab** Friday 9:15 am – 12:15 pm, DUCK 122

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

**Office Hours:** Monday 10:30 am – 11:30 am; 2:15 pm – 3:15 pm (or by appointment)

**Recommended References (no text required):**

- Dunncliff, J. (1993). *Geotechnical Instrumentation for Monitoring Field Performance*: John Wiley and Sons, Inc., New York, NY.  
Fritschen, L. J., and Gay, L. W. (1979). *Environmental Instrumentation*: Springer-Verlag, New York, NY.

**Catalog Description:** Measurement of groundwater pressure, ground deformation, stress and temperature as well as the planning of monitoring programs, instrument calibration, maintenance and installation, data collection, interpretation, and reporting. Case histories are used. (Prerequisites: ES F331, GE F261 or GEOS F101) (2+3)

**Course Goal:** To provide a broad overview to the field of geomechanical instrumentation and its applicability to the industry.

**Student Learning Outcomes:** 1) To understand the fundamental principles of different types of transducers; 2) To obtain a broad knowledge of typical instrumentation used for monitoring in geotechnical engineering; 3) To develop skills in calibrating instruments, collecting data, and analyzing the results.

**Course calendar:**

<u>Week</u>	<u>Topics</u>
1	Class overview
2	Introduction, Observational Method, uncertainty and errors; L: Error analysis
3	Transducers, temperature considerations, temperature transducers; L: thermocouples
4	Temperature transducer calibration, case studies; L: thermistors
5	Groundwater overview, transducers; L: temp programming, calibration
6	Groundwater transducer calibration, case studies; L: piezometer programming
7	Stress in soil, stress change in rock, case studies; L: piezometer calibration
8	Load and strain in structural members, case studies; L: inclinometer usage
9	Deformation / Displacement, field trip prep, <u>Rich Hwy Field Trip</u>
10	Field data analysis, def/displ. continued, case studies; L: inclinometer software
11	ADAS components Monitoring uses, <u>Dalton Hwy Field Trip</u>
12	Data analysis, <u>Field trip to CCHRC</u>
13	Execution of monitoring programs, designing an installation; L: project - programming
14	Monitoring uses, case studies; L: project - calibration
15	Monitoring uses, case studies; L: project – final troubleshooting FINAL PROJECT/PRESENTATION

**Course Policies:**

- 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 PLAGIARISM WILL NOT BE TOLERATED IN ANY SHAPE OR FORM.**
- This course is designed, in part, to provide you with some tools you will need in the work place. One invaluable tool is submitting your work in a timely fashion to your supervisor. As such, **late work will not be accepted**. Additionally, please be on time to class and inform Dr. Darrow ahead of time if you cannot make a class meeting.
- 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.
- Please refrain from using your cell phone during class.

**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 Per Credit	Percentage Range	Grade Point Per Credit	Letter Grade	Percentage Range	Grade Point
A+	97-100	4.0	C+	76-79	2.3
A	94-96	4.0	C	70-75	2.0
A-	90-93	3.7	C-	68-69	1.7
B+	87-89	3.3	D+	66-67	1.3
B	84-86	3.0	D	63-65	1.0
B-	80-83	2.7	D-	60-62	0.7
			F	<60	0.0

- Weighting of course components:

Homework	30%
Laboratory Exercises	30%
Case Study Presentations and Summaries	20%
Term Project and Presentation	20%

**Computer Use:** MS Word, MS Excel, MS PowerPoint, LoggerNet, and Blackboard.

**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>.