

116-UCCh. (sig)

Submit originals (including syllabus) and one copy of electronic

FORMAT 2

Is this course repeatable for  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 F422 Unsaturated Soil Geoengineering  
3 Credits  
Offered As Demand Warrants

**12. IMPACTS ON PROGRAMS/DEPTS:**

What programs/departments will be affected by this proposed action?  
Include information on the Program/Department

**13. POSITIVE AND NEGATIVE IMPACTS**

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

**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 the

Note: The guidelines are online:

<http://www.uaf.edu/uafgov/faculty-senate/curriculum/course-degree-procedures-/uaf-syllabus-requirements/>

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

**GE F422, 3.0 credits**

**Soil Physics**

**Fall 2012**

**2012-13 Catalog Description:** Fundamentals of soil physics, including: soil texture, structure, size distribution, and water retention characteristics; flow of water through saturated and unsaturated soil; soil temperature and heat flow; infiltration, runoff, and evaporation. Processes relevant to active layer dynamics and permafrost are given due consideration. (Prerequisites: CHEM F105, CHEM F106, or permission of instructor) (2+2)

---

**Texts:** Hillel, D. (2004). *Introduction to Environmental Soil Physics*: Elsevier Academic Press, New York, New York.  
Das, B. M. (2009). *Soil Mechanics Laboratory Manual*, 7<sup>th</sup> Ed.: Oxford University Press, New York, New York.

**Course Objectives:** 1) To understand the fundamental principles of soil, liquid, and gaseous phases of a soil, and their interactions; 2) To develop skills in solving typical soil physics problems, including heat flow and infiltration; 3) To develop skills in conducting laboratory testing on soils; 4) To develop technical writing skills.

**Schedule:** **Lecture** Monday and Wednesday, 11:45 am – 12:45 pm, DUCK 347  
**Lab** Friday, 2:15 pm – 5:15 pm, DUCK 122

**Office Hours:** Monday, Wednesday 10:30 am – 11:30 am (or by appointment)

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

**Grading Policy:**

- Grades will NOT be curved. Grades will be based on the final percentage earned in the course, and grades will be

**Course Policies:**

**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**

- 1) *Specifies necessary instruments to conduct an experiment*
- 2) *Develops and/or follows experimental procedure*
- 3) *Uses appropriate graphs or tables to display and interpret*

3

3

2

Laboratory

quizzes and

results

summaries

- 4) *Analyzes results to form a conclusion about the experiment*

3, 4

**(k) An ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.**