GEOS120: Part A Glaciers

Lectures 2 pm – 3:30 pm, 10/08/09 through 11/05/09

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Alaska is one of the most glacierized areas in the world outside Greenland and Antarctica. The course provides a descriptive overview of what glaciers are, their significance for water resources, global sea-level and climate, how they move, grow or retreat, how they have fluctuated in the recent and geological history of the Earth, what they can tell us about former climates and what topical issues are in Greenland, Antarctica and Alaska. The quizzes and final exam will be based entirely on lectures and lecture notes. Lecture notes will be available on blackboard ~3 days prior to class. All lectures will be made available on blackboard directly after class.

Text book:
There will be no text book for the class. The material covered in class will be made available through handouts and pdfs of the class presentations on blackboard. However, the following books are recommended as complementary reading:

Hambrey, M. and J. Alean (2004): Glaciers. Cambridge University Press. Cambridge, 375 pp.

Post and Chapelle (2000): Glacier ice, University of Washington Press, 145 pp.

Homepage: www.swisseduc.ch

Grading criteria:
Quizzes (Thursdays, 5 minutes each) 15%
Final exam (11 November): 50%
Labs*: 35%
*Attendance of labs is mandatory. Lab exercises are to be completed and handed in by the end of each lab session. TA's will not accept labs from students not attending lab.

Clickers:
i>Clickers will be checked out to students for a $20 deposit. You will get your deposit back when you return the i>clicker at the end of the semester. If you lose your clicker or fail to return it, the department will retain your deposit and put it toward the purchase of a replacement i>clicker. Go to the Geology Department office (308 Reichardt) to pay your deposit and check out an i>clicker.

Disability Services: The Office of Disability Services implements the Americans with Disabilities Act (ADA) and insures that UAF students have equal access to the campus and course materials. This class will work with the Office of Disabilities Services (203 WHIT, 474-7043) to provide reasonable accommodation to students with disabilities. Make sure to let the instructor know if there are concerns of this type.

COURSE OUTLINE

(Note, schedule may change slightly during the course of the class).

	Date	**Topic**
1	Th 8 Oct	a) Introduction, Glacier types b) Significance of glaciers
2	Tu 13 Oct	a) Basic concepts: accumulation/ablation area, equilibrium line etc, glacier features: crevasses, ogives, surges b) Glacier landforms
3	Th 15 Oct	a) Ice crystals **---- Quiz 1 -------** b) Glacier mass balance
4	Tu 20 Oct	a) Water movement through glaciers b) Glaciers as a water resource
5	Th 22 Oct	a) Ice flow **---- Quiz 2 -------** b) Fast glacier flow: ice streams, tidewater glaciers, surges
6	Tu 27 Oct	a) How cold are glaciers ? b) Antarctica: features and current research
7	Th 29 Oct	a) Climate information from ice cores, ice ages **---- Quiz 3 -------** b) Recent and future glacier fluctuations
8	Tu 3 Nov	a) Greenland: features and current research b) Summary
9	Th 5 Nov	Final exam*

**Note, a make-up for the final exam is only possible if the exam is missed for legitimate reasons and the instructor is notified prior to the beginning of the exam. The same is true for quizzes.*