

GEOS120: Part B Glaciers

Lectures 2:00 pm ~ 3:30 pm, 10/11/07 through 11/08/07

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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.

Recommended text:

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 (8 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.

COURSE OUTLINE

	Date	Topic
1	Th 11 Oct	a) Introduction, Glacier types b) Significance of glaciers
2	Tu 16 Oct	a) Basic concepts: accumulation/ablation area, equilibrium line etc, glacier features: crevasses, ogives, surges b) Glacier landforms
3	Th 18 Oct	a) Ice crystals ---- Quiz 1 ----- b) Glacier mass balance
4	Tu 23 Oct	a) Water movement through glaciers b) Glaciers as a water resource
5	Th 25 Oct	a) Ice flow ---- Quiz 2 ----- b) Fast glacier flow: ice streams, tidewater glaciers, surges

6	Tu 30 Oct	a) How cold are glaciers ? b) Antarctica: features and current research
7	Th 1 Nov	a) Climate information from ice cores ---- Quiz 3 ----- b) Greenland: features and current research
8	Tu 6 Nov	a) Ice ages b) Recent and future glacier fluctuations
9	Th 8 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.*

Missed quizzes can be made up at the time of the final. However, the make-ups will be harder than the originally scheduled quiz.