GEOS120: Part B Glaciers

Lectures Tuesdays/Thursdays 11.30 pm – 1:00 pm, 04/05/12 through 05/09/12

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Course description:
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 ~2 days prior to class. All lectures will be made available on blackboard directly after class.

Text book:
There will be no textbook 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: 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.

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 for students with disabilities. Make sure to let the instructor know if there are concerns of this type. Students with disabilities must provide a written statement indicating any special requirements that will be necessary as early in the semester as possible.

Support Services
Student support services are available in computing through the Help Desk, mathematics through the Math Lab, and writing through the Writing Lab.

Course Policies
Plagiarism is a serious offense and will not be tolerated. Further discussion on this matter can be found at http://www.uaf.edu/library/instruction/handouts/Plagiarism.html.

COURSE OUTLINE

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

	Date	**Topic**
1	Th 5 April	a) Introduction, Glacier types b) Significance of glaciers
2	Tu 10 April	a) Basic concepts: accumulation/ablation area, equilibrium line etc, glacier features: crevasses, ogives, surges b) Glacier landforms
3	Th 12 April	a) Ice crystals **---- Quiz 1 -------** b) Glacier mass balance
4	Tu 17 April	a) Water movement through glaciers b) Glaciers as a water resource, Glacier hazards
5	Th 19 April	a) Ice flow **---- Quiz 2 -------** b) Fast glacier flow: ice streams, tidewater glaciers, surges
6	Tu 24 April	a) How cold are glaciers ? b) Antarctica: features and current research
7	Th 26 April	a) Climate information from ice cores, ice ages **---- Quiz 3 -------** b) Recent and future glacier fluctuations, permafrost, sea-ice
8	Tu 1 May	a) Recent and future glacier fluctuations, permafrost, sea-ice b) Greenland: features and current research
9	Th 3 May	Summary
10	Tu 8 May	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.*