

PANT_ BIOGLACIAR
GLACIAL SEDIMENTS AND ENVIRONMENTS
Huaraz, 2019

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PURPOSE OF THE COURSE

To review, at an advanced level, current ideas about: (1) the formation, growth and decay of glaciers and ice sheets; (2) glacial environments and processes including those active in subglacial, proglacial, glaciolacustrine, and glaciomarine settings; (3) modes of glacial erosion and resultant landforms; (4) differentiation of sediments and landforms created by various subglacial processes; (5) analysis of glacial landscapes and reconstruction of past glacial depositional processes. Glacial deposits ranging in age from Precambrian to recent will be examined.

The course aims to provide students with the intellectual skills and background required to understand modern glacial processes and to reconstruct glacial environments and depositional histories from the rock and sediment record. Students will develop skills in the areas of map and data analysis, problem solving, teamwork, critical reading and evaluation, inquiry-based learning, report writing and oral presentation. The course introduces students to research and information retrieval, data analysis and synthesis, core logging and recording techniques, and field report preparation.

OPTIONAL TEXT

Benn, D.I. and Evans, D.J.A. 2010. **Glaciers and Glaciation**. 2nd edition. London: Arnold, 816 pp.
An in-depth coverage of glacial processes, environments and sediments.
Both the first and second editions are on reserve at Thode Library

You will also be directed to locate and read relevant articles in online scholarly journals through Avenue.

WEB SOURCES

Excellent images of glaciers and a great 'Photoglossary' can be found at:
<http://www.swisseduc.ch/glaciers/index-en.html>

The 'downloadable' version of Hambrey, M. J. & Harland, W. B., 1981. Earth's pre-Pleistocene glacial record. Cambridge University Press, 1004 + xv pp. is available at:
<http://www.aber.ac.uk/glaciology/epgr.htm>

Data sets, glacier images and information can be obtained at: <http://nsidc.org/>

COURSE MARKING SCHEME

Assignment #1 Land System Analysis	10
Assignment #2 Core Logging and Analysis	25
Assignment #3 Discussion	15
Assignment #4 Class Discussion	15
Class participation	5
Final examination (essay type)	<u>30</u>

Place of evaluation in the field: Quillcayhuanca, Parón, Llaca.

Place of development and evaluation of the theory, facilities of the INAIGEM (Library).

Course content: Introduction and the Glacier System, Subglacial environments & processes, Subglacial Sedimentation, Supraglacial Sedimentation, Glaciolacustrine Sedimentation, Glaciofluvial Sedimentation, Sedimentary Architecture, Landystem Analysis.

Course Guidelines and Regulations

1. **Contacting the instructor** –With respect to email, it is checked regularly, however, if you are emailing outside of regular business hours (i.e., Monday to Friday 8:30 am – 4:30 pm), please do not expect a response until the next business day. *Waiting for an email response does not constitute a valid reason for a late submission.*
2. **Course preparation** – Be advised that in general you will be required to dedicate **at least 2** hours of preparation/study per hour of class/lab time. More preparation will help you make the most out of the course, and will undoubtedly lead to a higher grade. If for any reason you are having trouble with the course, see a member of the instructional team as soon as possible. Problems that are identified early can often be rectified.
3. **The role of TAs in this course** – The TAs in this course are there to assist you in your lab slot. If you choose to not attend your lab, you have forfeited your opportunity to get help from your TA until you come to your next lab session. Should the TA need to be contacted, email is the preferred method. In the event that lab sessions are cancelled, your TA will be available via email for that week to assist you.
4. **Handing in assignments** – You need to complete all course assignments, which are collectively worth 65% of your final grade. Paper copies of your assignments must be handed. Late assignments are penalized at the rate of 20% for the first day and 20% for each subsequent day they are overdue, including weekends. Late assignments will only be graded if they are handed in no later than five days after the original submission deadline. After this time, you will receive a grade of zero. If you are late in submitting an assignment, you must send a digital copy to your TA so that we will know when the assignment was completed. Please ensure that a paper copy is then submitted immediately to the drop box for grading. This copy cannot be different in any way to the digital submission.
5. **Mark appeals** – The TAs and I will make every effort to provide you with a grade that best reflects the quality of your work, and re-marking will be conducted at discretion. If you wish to have your work (assignment) re-marked, you will be asked to explain in writing.
7. **Academic dishonesty** – All students are reminded of the seriousness of academic dishonesty. Academic dishonesty consists of misrepresentation by deception or by other fraudulent means and can result in serious consequences, e.g. the grade of zero on an assignment, loss of credit with a notation on the transcript (notation reads: “Grade of F assigned for academic dishonesty”), and/or suspension or expulsion from the university. It is your responsibility to understand what constitutes academic dishonesty. For information on the various kinds of academic dishonesty please refer to the Academic Integrity Policy (specifically Appendix 3, located at <http://www.mcmaster.ca/policy/Students-AcademicStudies/AcademicIntegrity.pdf>). Plagiarism (e.g., the submission of work that is not one’s own or for which other credit has been obtained), improper collaboration in group work, and copying or using unauthorized aids, tests, and examinations are examples of academic dishonesty.