



Université d'Ottawa • University of Ottawa

Faculté des sciences Faculty of Science
Sciences de la Terre Earth Sciences

QUATERNARY GEOLOGY AND CLIMATE CHANGE GEO 2334 GEG 3601 Fall Term, 2008

INSTRUCTOR: Ian D. Clark, Department of Geology
Room MRN 218
e-mail: idclark@uottawa.ca

ASSISTANTS: Nick Utting, Steven Wickson
LECTURE: Monday, 11:30-1:00, FTX 361
LAB: Tuesday 5:30 -8:30 MRN 127
 Field Trips
 Section A: Tuesday, 4:00 – 7:00 PM
 Section B: Wednesday, 4:00 – 7:00 PM

LECTURES TOPICS:

- 1) Introduction to the Quaternary Period (It's more than just the ice ages).
- 2) Late Quaternary History: Ottawa Region, Great Lakes - St. Lawrence Lowlands.
- 3) Glacial geology: glacier growth and movement, glacial erosion and sedimentation, permafrost and periglacial environments.
- 4) Reconstructing the last great ice sheets, North America, Eurasia.
- 5) Marine Environment: sea level fluctuation and isostasy.
- 6) Low Latitude Regions: Pleistocene and Holocene climates in Africa and Arabia
- 7) Quaternary climate records: marine, speleothem, ice cores, palynology.
- 8) Quaternary chronology: stratigraphic correlation, radiometric and other methods.
- 9) Orbital climate forcing: the Croll/Milankovitch cycles and long-term climate change.
- 10) Holocene climate change, short term climate change, solar effects.
- 11) Forcing mechanisms for modern climate change.
- 12) Man in the Quaternary

TEXTBOOK:

Lowe, J.J. and Walker, M.J.C. 1997. *Reconstructing Quaternary Environments*. Second Edition, Longman Group Ltd., London and New York, 446 pp.

COURSE WEBSITE:

Source for overheads presented in class that are not necessarily in the textbook.
<http://www.science.uottawa.ca/~clark/courses/GEO2334.html>

SUPPLEMENTARY REFERENCES

Dawson, Alastair, 1992. *Ice Age Earth, Late Quaternary Geology and Climate*. Routledge, 293 pp.

Gadd, N.R. (ed.) The late Quaternary development of the Champlain sea basin. Geological Association of Canada Special Paper 35, 312 pp.

Geological Survey of Canada, 1989. *Quaternary Geology of Canada and Greenland*. Supply and Services Canada, 839 pp.

Flint, Richard Foster, 1971. *Glacial and Quaternary Geology*. John Wiley and Sons, Inc., 892 pp.

Fulton, R.J. (ed.), 1987. Quaternary of the Ottawa region and guides for day excursions. XII INQUA Congress, July 31-August 10, 1987. National Research Council of Canada, Ottawa (Bilingual, 125 pp. E; 137 pp. F).

Fulton, R.J. (ed.), 1987. Quaternary of the Ottawa Region, Ontario and Quebec. Geol. Survey of Canada, paper 86-23, 47 pp. (Also available at the GSC)

ASSESSMENT:

Midterm (25%). To be scheduled for Monday October 20.

Final Exam (50%). Scheduled during the exam period. Students will be responsible for material covered during the entire term, including classes, laboratories and field trips.

Field and Laboratory Exercises (25%). Unless specified on the lab handout, assignments are due on the Friday of the week of the laboratory period. Marks will be based on the student's understanding of the key features of the assignment, as well as the organization and clarity of the submitted lab reports.

CALVIN and HOBBS

