GEOMORPHIC PROCESSES
15-040-504

Fall Quarter, 2000

Instructor:

David Nash
603 Geology/Physics Building
556-2834
David.Nash@UC.edu
Office hours MWF 9:30-10:30 and by appointment

Barbara Markley
630 Geology/Physics Building
geogal33@hotmail.com

Text


Grading

5-8 quizzes on reading randomly distributed throughout the quarter 15%
Midterm examination on October 30 (?) 25%
Final examination on Thursday - December 7, 8-10 AM 35%
5-8 exercises and laboratories 25%

Tentative Laboratory Schedule

Week 1: Introduction to leveling and plane table mapping
Week 2: Stream gaging laboratory I (probably during lab on Wednesday - September 29 1:00-5:00 PM)
Week 3: Stream gaging laboratory II (probably during lab on Wednesday - October 6, 1:00-5:00 PM)
Week 4: Mammoth Cave Field Trip Saturday and Sunday - October 28 & 29
Week 5: Landscape evolution and analysis laboratory or trip to Adams County Saturday and Sunday - November TBA
Week 6: Soil laboratory
Week 7: Mass movement laboratory
Week 8: Flooding frequency laboratory
Week 9: Drainage Basin Analysis laboratory
September 20

Introduction and orientation

Thornbury's ten "Fundamental Concepts" of geomorphology

Uniformitarianism, gradualism, catastrophism, and the tempo of geomorphic change

**Readings**

RKM p. 1-23

September 25 - September 27

The Spokane flood

The Bonneville Flood

The *Chimu* flood and *El Ninos*

Apollo objects and astroblems

Magnitude and frequency analysis

**Readings**

RKM p. 25-46.


Nash, D.B.,

Nials; Deeds; Moseley; Pozorski, T.; Pozorski, G.; Feldman, R.A., 1979, El Nino: The catastrophic flooding of coastal Peru. *Field Museum of Natural History Bulletin*, 50(7):4-14 (Part I) and 50(8):4-10 (Part II).


Wolman and Miller, 1960, Magnitude and frequency of forces in geomorphic processes, J. of Geology, 68:54-74.

October 2 - October 4

Evolution of Landscapes

Readings

Bloom, p. 297-326.

CSS, p. 17-40.

CSS, p. 43-72.

Easterbrook, p. 165-183.


Selby, p. 513-529.
October 9 - October 11

Physical Weathering

Readings

RKM, p. 85-96
Bloom, p. 117-127.
CSS, p. 203-207.


Ollier, C.D., 1984, Physical Weathering, Chapter 2, Weathering, p. 4-29.

Selby, p. 189-209.


October 11

Chemical Weathering

Readings

RKM, p. 49-63.
Bloom, p. 127-134.
CSS, p. 207-224.
Easterbrook, p. 21-46.


Ollier, Chapter 3, p. 30-51.

October 16 - October 18
Karst

Readings

RKM, p. 401-427.
Easterbrook, p. 185-213.


Selby, p. 303-323.


October 18 - October 25

Soil

Readings

RKM, p. 63-82.
Bloom, p. 134-144.
CSS, p. 224-228.
Easterbrook, p. 46-52.


October 30
Midterm examination

November 1 - November 6

Mass Movement

Readings

Bloom, 175-1204.
Easterbrook, p. 59-89.
Mollard, J.D., 19??, Chapter 11, *Landforms and surface materials of Canada*, p. 11.0-11.34d.
Selby, p. 172-180; 219-238.

November 8

Surface hydrology and erosion

Readings

RKM, 137-175.
RKM, 176-190.
Bloom, p. 246-288.
CSS, p. 258-266.


November 15 - November 27

Fluvial Processes

Readings

RKM, p. 193-228.


CSS, p. 278-314; 341-368.

Easterbrook, p. 94-131.


Selby, p. 239-259; 260-282.


Wolman, M. Gordon; Church, Michael; Newbury, Robert; Lapointe, Michel; Frenette, Marcel; Andrews, E.D.; Lisle, Thomas E.; Buchanan, John P.; Schumm, Stanley A.; Winkley, Brien

November 29

Fluvial Landscapes and Drainage Basin Analysis

Readings

RKM, p. 231-269.

CSS, p. 316-338.


Easterbrook, p. 138-164.


Selby, p. 283-302.

November 29

Glaciers and the Pleistocene

Readings

RKM, p. 321-352.

CSS, p. 536-547.


Flint, R.F., 1971, Late-Wisconsin glaciers in North America, Chapter, 18, Glacial and Quaternary Geology, p. 463-497.

Easterbrook, p. 379-405.


Selby, p. 468-494; 494-512.
December 4 - December 6

Glaciers, Glacial Landforms, and Periglacial Processes

Readings

RKM, p. 355-399.


CSS, 508-532.

CSS, p. 431-462.


Mollard, J.D., Chapter 3, *Landforms and Surface Materials of Canada*, p. 3.1-3.27.

Selby, p. 417-447; 447-467.

Final examination  (Thursday - December 7, 8-10 AM)