

COURSE INFORMATION AND OBJECTIVES
Principles of Geomorphology
GEOL 23100

Professor Frank Buonaiuto

CLASS MEETINGS:

LECTURES: Tuesday/Thursday, 3:35-5:25, Room 1028 Hunter North

PROFESSOR BUONAIUTO CONTACT INFORMATION:

Office Department of Geography, Room1049 Hunter North
E-mail fbuonaiu@hunter.cuny.edu (*)
Tel. 212-650-3092
Office Hours: Tuesday, 5:30 – 6:45, *and by appointment.*

* Note: the best way to contact me is through your Hunter College email – (1) You must include the course name or number in your subject line and (2) you must sign your name as it appears in CUNYfirst in your email. I try to answer all emails within 24 hours. Allow for a 48 hour delay on the weekends.

Except for changes that substantially affect implementation of the evaluation (grading) statement, this syllabus is a guide for the course and is subject to change with advance notice. Updates will be posted regularly on BlackBoard.

INFORMED REGISTRATION STATEMENT

This is a 3-credit lab science course that can be used to meet the GER 2/E or 3/B General Education Requirement.

COURSE DESCRIPTION, LEARNING OBJECTIVES AND OUTCOMES

Geomorphology is the study of the identification of landforms on the earth's surface, and of the processes that create and change them. In this class, we will focus on orogenic/thrust events, glacial, aeolian, marine and fluvial (river) processes as these dominate the landforms in our area. We will also discuss modern geomorphic dating techniques, interactions between topography, tectonics, and climate, and the role of humans and biologic agents in landscape evolution. As with all of the disciplines within geology, geomorphology requires a number of fundamental skills that are useful in many situations. First and foremost, geomorphology is a study of observation. Through observation, we can identify individual landforms ("that is a ridge"), understand their composition and relation to the surrounding landscape ("it is composed of glacial and fluvial sediment, and located near the margin of one of the large Pleistocene ice sheets"), and identify their origin ("that is an 'esker,' or a ridge of fluvial sediment left behind by a sub-glacial river") and evolution through time ("it is probably 18,000 years old and has been slowly eroding via diffusional hillslope processes since then"). We will also learn to use a number of tools and develop skills that are used in many other field science disciplines. These tools and skills may include: surveying, mapmaking, GIS (geographic information systems), GPS (Global Positioning Systems), spreadsheet analysis, simple numerical modeling, and topographic map interpretation. We may also be reading and analyzing a number of articles from

the scientific literature. In addition, you will work collaboratively on laboratory exercises, design and implement an independent research project and give a short oral presentation on your work. Those who choose to attend optional field trips will gain field research techniques and experience, learning how to use GPS, surveying and geologic mapping tools, field collection techniques and more.

The student who successfully completes this course can:

- appreciate the interdisciplinarity of landform analysis.
- recognize the methodologies, tools and data sources used by geomorphologists and physical geographers.
- identify basic landforms from tectonic, volcanic, fluvial, glacial, aeolian and coastal environments.
- determine the physical, chemical and biological processes controlling the modern evolution of identified landforms.
- apply basic landform analysis techniques to their own research interests.
- communicate the importance of fundamental geomorphic principles and findings to the wider academic community.
- apply for advanced courses in geomorphology, structural geology and geophysics.

RECOMMENDED TEXT BOOK

This course is based on material from the following two text books. It is recommended that students purchase one of the following for reference.

Physical Geography A Landscape Appreciation, 12th Edition, Darrel Hess, 2017. Pearson.

- ISBN-13: 978013419542
- 11th or 10th Editions are acceptable.

Surface Processes and Landforms, 2nd Edition, Don J. Easterbrook, 1999, Prentice Hall.

- ISBN-10: 0138609586

REQUIRED COURSE LAB MANUAL

Physical Geography Laboratory Manual, 12th edition, Darrel Hess, 2017. Pearson.

- ISBN-13: 9780134561011 (Price Ranges from \$58 - \$70)
- ***You must have your lab manual for the first day of class.***

GRADES

Grades will be based on class participation, laboratory assignments, student presentation, one mid-term exam, and one final exam.

Participation/Project:	20%
Lab Exercises:	30%
Mid-term Exam I:	25%
Exam II:	25%

RULES and POLICIES FOR LECTURE AND LAB

All students are expected to abide by the following policies when in lecture or lab in order to provide a more respectful and productive learning environment.

- Attendance in lecture and lab is mandatory.
- All cell phones must be turned off or switched to silent mode. If you must take a call please excuse yourself quietly from the room. Please refrain from texting.
- Laptops are not permitted.
- No electronic devices or reference materials will be permitted on the desk during exams.
- Lab exercises are due, in lab, at the next lab meeting.

Academic Dishonesty

Please be advised that plagiarism, dishonesty, or cheating in any portion of the work required for this course will be punished to the full extent allowed according to Hunter College regulations.

Hunter College regards acts of academic dishonesty (e.g., plagiarism, cheating on examinations, obtaining unfair advantage, and falsification of records and official documents) as serious offenses against the values of intellectual honesty. The College is committed to enforcing CUNY Policy on Academic Integrity and will pursue cases of academic dishonesty according to the Hunter College Academic Integrity Procedures.

See the following report by the Hunter College Senate for more details:

<http://www.hunter.cuny.edu/senate/assets/Documents/Hunter%20College%20Policy%20on%20Academic%20Integrity.pdf>

ADA Policy

In compliance with the American Disability Act of 1990 (ADA) and with Section 504 of the Rehabilitation Act of 1973, Hunter College is committed to ensuring educational parity and accommodations for all students with documented disabilities and/or medical conditions. It is recommended that all students with documented disabilities (Emotional, Medical, Physical, and/or Learning) consult the Office of AccessABILITY, located in Room E1214B, to secure necessary academic accommodations. For further information and assistance, please call: (212) 772- 4857 or (212) 650-3230. 5

Hunter College Policy on Sexual Misconduct

In compliance with the CUNY Policy on Sexual Misconduct, Hunter College affirms the prohibition of any sexual misconduct, which includes sexual violence, sexual harassment, and gender-based harassment retaliation against students, employees, or visitors, as well as certain intimate relationship. Students who have experienced any form of sexual violence on or off campus (including CUNY-sponsored trips and events) are entitled to the rights outlined in the Bill of Rights for Hunter College.

- a. Sexual Violence: Students are strongly encouraged to immediately report the incident by calling 911, contacting NYPD Special Victims Division Hotline (646-610-7272) or their local police precinct, on contacting the College's Public Safety Office (212-772-4444)
- b. All Other Forms of Sexual Misconduct: Students are also encouraged to contact the College's Title IX Campus Coordinator, Dean John Rose (jtrose@hunter.cuny.edu or 212-650-3262) of Colleen Barry (colleen.barry@hunter.cuny.edu or 212-772-4534)

and seek complimentary services through the Counseling and Wellness Services Office, Hunter East 1123.

CUNY Policy on Sexual Misconduct Link:

<http://www.cuny.edu/about/administration/offices/la/Policy-on-Sexual-Misconduct-12-1-14-with-links.pdf>

CLASS STRUCTURE

Schedule of Topics, Readings, Laboratory Exercises						
Month	Date	Day	Topic	Reading		Lab Exercises
				Easterbrook	Hess	
Jan	29	Tue	Intro-Landform Analysis, Basic Concepts	Ch 1,2	Ch 13	
	31	Thu	Lab 1			28, 29
Feb	05	Tue	Tectonic Landforms and Processes	Ch 8	Ch 14 p.416	
	07	Thu	Lab 2			30, 33
	12	Tue	College Closed			
	14	Thu	Volcanic Landforms and Processes	Ch 11	Ch 14 p.428	
	19	Tue	Lab 3			32,34
	21	Thu	Faulting/Folding; Topographic Expression of Folded Strata	Ch 9,10	Ch 14 p.441	
	26	Tue	Lab 4			35, 36
	28	Thu	Weathering and Mass Wasting	Ch 3	Ch 15	
Mar	05	Tue	Lab 5			37
	07	Thu	Weathering and Mass Wasting	Ch 4	Ch 15	
	12	Tue	Lab 6			38
	14	Thu	Exam I: Fun and Games			
	19	Tue	Fluvial Processes and Landforms	Ch 5, 6	Ch 16	
	21	Thu	Lab 7			39, 41
	26	Tue	Glacial Processes and Landforms	Ch 12, 13	Ch 19	
	28	Thu	Lab 8			40, 42
Apr	02	Tue	Quaternary Climate Change; Periglacial Landforms	Ch 14, 15		
	04	Thu	Lab 9			47, 48
	09	Tue	Groundwater, Karst and Hydrothermal Processes	Ch 7	Ch 17	
	11	Thu	Lab 10			44
	16	Tue	Desert Processes and Landforms	Ch 17	Ch 18	
	18	Thu	Lab 11			45, 46
	23	Tue	College Closed			
	25	Thu	College Closed			
	30	Tue	Coastal Processes and Landforms	Ch 16	Ch 20	
May	02	Thu	Lab 12			49
	07	Tue	Coastal Processes and Landforms	Ch 16	Ch 20	
	09	Thu	Lab 13			TBD
	14	Tue	Presentation Class Project			
	21	Tue	Exam II: More Fun and Games			