

Fall 2025

# GEOL 317

## Geomorphology

Tuesday/Thursday 12:00-1:15 pm Horizon 4000

Friday 9:00-11:40 am Exploratory 1005

Instructor: Dr. Andrew Hoxey, ahoxey@gmu.edu

Office hours: Monday, 3:00-4:30 pm

Office: 3412 Exploratory Hall

### Course Description

“Geo” – Earth or Land

“morph” – shape

“ology” – study

This course will examine the shape of the Earth’s landscape, the processes that form landscapes, and how to use observations of the landscape to constrain the history of surface processes. The course will expand your available vocabulary and abilities to discuss and analyze surficial processes and resulting landforms (i.e., geomorphic features) on Earth. Labs encourage building skills in recognition and interpretation of landforms through practical experience using data like geologic maps, topographic analysis, and imagery.

This course is part of the **Mason Core** curriculum and fulfills **Writing Intensive Major** category

### Course Goals

*Student Learning Outcomes of the class:*

- Gain the vocabulary necessary to describe and understand surficial processes and the resulting geomorphic features.
- Participate in scientific inquiry and communicate the elements of the process, specifically by making use of modern analytical methods to quantify natural surficial features.
- Gain deep understanding of surface processes through quantitative assessments of measurable attributes.
- Practice critical examination and synthesis of original, peer-reviewed literature
- Develop skills necessary for effective oral and written communication of geological sciences

*Methods for achieving our goals:*

- Lectures covering fundamental phenomena of geomorphology
- Lab activities that include interpretation and collection of data from maps, imagery, and other data types.
- Reading, evaluating, and re-disseminating, scientific information through writing and presenting of peer-reviewed literature relevant to a specific feature of phenomena
- Exams covering lecture material

## Required Materials

Bierman and Montgomery., 2019. Key Concepts in Geomorphology, Second Edition; Required

Hess, D., 2017. Modified Mastering Geography with Pearson e-Text -- Instant Access -- for Physical Geography Laboratory Manual; Required

[https://media.pearsoncmg.com/ph/esm/esm\\_mcknight\\_physgeo\\_13\\_lab/media/](https://media.pearsoncmg.com/ph/esm/esm_mcknight_physgeo_13_lab/media/)

## Course Grades

Grading in the course will be on a 100-point scale, with points earned the following way:

Item	Points
Exams (3 total)	45
Lab Exercises	20
Presentation	15
Research Paper	20
Total	100

### *Exams*

Attendance for exams is required. Exams will consist of a series of short answer questions and essay questions. Expect to reproduce figures and/or sketches to fully answer all the questions.

### *Lab Exercises*

Most labs will be sourced from the lab manual

### *Research Paper*

This course is designated as **Writing Intensive** and all students are required to complete this aspect of the class.

There are *six REQUIRED stages* to the “writing intensive” process and each stage is worth a certain percentage of your grade:

- 1) detailed paper outline, references, and primary figures & figure captions
- 2) submit complete 1<sup>st</sup> version
- 3) peer review of your paper by a classmate
- 4) submit fully revised 2<sup>nd</sup> version
- 5) instructor review of 2<sup>nd</sup> draft (*my responsibility*)
- 6) submit final, fully revised copy (3<sup>rd</sup> version)

Grading of the paper will be based on adherence to the guidelines and overall scholarly quality. Ten percentage points will be subtracted for each day the above-mentioned items are late.

### *Research Presentation*

The term papers will be presented using PowerPoint during the last weeks of class. Each person will prepare a 14-minute oral presentation with graphics (e.g., PowerPoint slides, video clips, multimedia, etc.).

### **Communication**

Email is the most efficient way to communicate with me. Writing professional emails is a requirement in all workplaces and this course. Emails should include the course number in the subject line, a salutation, and a by-line.

I am happy to meet with you outside of class and/or normal office hours. If you are unavailable during office hours and need to make an appointment, please contact me with two proposed times you are available to meet.

### **Other class policies**

You may work in groups during the lab, however, you must hand in individual work.

You are not permitted to use AI in lab or for writing assignments unless otherwise stipulated by the assignment.

### **GMU POLICY GUIDELINES**

These university and class policies are important to understand:

- Integrity: GMU has academic standards with guidelines regarding academic integrity; please see [academicstandards.gmu.edu/](http://academicstandards.gmu.edu/) for more information.
- Disability: If you are a student with a disability and you need academic accommodations, please contact me and also contact the Office of Disability Services (ODS) at 703-993-2474 of [ds.gmu.edu](http://ds.gmu.edu) All academic accommodations must be arranged through the ODS.
- Diversity: Diversity is a core value at GMU; please see <https://oacc.gmu.edu/> for more information.
- Privacy: Students must use their MasonLive email account to receive important University information, including messages related to this class. Please see <http://masonlive.gmu.edu> for more information.
- Electronics: Please be respectful of our time together and do not engage in activities that are unrelated to class. Cell phones may be left on but muted and used for emergencies only.

## Course Schedule

Date	Topic	Readings	Lab	Term Paper Due Dates
<b>26-Aug</b>	Introduction			
<b>28-Aug</b>	Whole Earth Morphology	1		
<b>29-Aug</b>				
<b>2-Sep</b>	Geomorphology Tools	3		
<b>4-Sep</b>	Research Methods			
<b>5-Sep</b>			Isostasy Lab	
<b>9-Sep</b>	Hydrology	4		
<b>11-Sep</b>				
<b>12-Sep</b>			Topographic Maps (4-7; 28-30)	
<b>16-Sep</b>	Weathering	5		Executive Summary
<b>18-Sep</b>	Soils	6		
<b>19-Sep</b>			Adobe Illustrator Lab	
<b>23-Sep</b>	Scientific Writing			
<b>25-Sep</b>	<b>EXAM 1 - Foundations</b>			
<b>26-Sep</b>			Mass Wasting (38); Soils (27)	
<b>30-Sep</b>	Hillslopes	7		
<b>2-Oct</b>				
<b>3-Oct</b>			Big Floods (Google Earth)	
<b>7-Oct</b>	Channels	8		
<b>9-Oct</b>				
<b>10-Oct</b>			Fluvial (40)	Version 1
<b>14-Oct</b>	FALL BREAK			
<b>16-Oct</b>	Drainage Basins	9		
<b>17-Oct</b>			Drainage networks (39, 41)	
<b>21-Oct</b>	Coastal Geomorphology	10		Peer Review
<b>23-Oct</b>				
<b>24-Oct</b>			Coastal Landforms (49)	
<b>28-Oct</b>	<b>EXAM 2 - Source to Sink</b>			
<b>30-Oct</b>	Wind	11		
<b>31-Oct</b>			Aeolian (45-46)	Version 2
<b>4-Nov</b>	Volcanoes	12		

<b>6-Nov</b>	Glaciers	13		
<b>7-Nov</b>			Aerial Photos and Volcanoes (50-56)	Pass back V2
<b>11-Nov</b>	Science Communication			
<b>13-Nov</b>	Climate*	14		
<b>14-Nov</b>			Glacial Lab (47-48)	
<b>18-Nov</b>	Tectonics	15		
<b>20-Nov</b>				
<b>21-Nov</b>			Tectonics (33, 36, 37)	Version 3
<b>25-Nov</b>	Landscape Evolution	16		
<b>27-Nov</b>	THANKSGIVING BREAK			
<b>28-Nov</b>	THANKSGIVING BREAK			
<b>2-Dec</b>	Oral Presentations			
<b>4-Dec</b>	Oral Presentations			
<b>5-Dec</b>	Oral Presentations			
<b>9-Dec</b>	Review			