



**SYLLABUS: GLY 5705 – QUANTITATIVE GEOMORPHOLOGY**  
**University of Florida, Department of Geological Sciences**

**Semester:** Fall 2024

**Credits:** 3

**Course Fee:** none

**Meeting Location:** 210 Williamson Hall

**Meeting Time:** Tuesdays & Thursdays, 12:50-2:45pm

**Canvas Site:** <https://elearning.ufl.edu>

**INSTRUCTOR**

**Lead Instructor:** Dr. Peter N. Adams

**Phone:** 352-846-0825

**Office:** 279 Williamson Hall

**e-mail:** [adamsp@ufl.edu](mailto:adamsp@ufl.edu)

**Zoom office hours:** TBD

**COURSE DESCRIPTION**

This course focuses on an advanced understanding of the origin and evolution of landforms and the physical processes responsible for their creation and modification. All topics will relate to the guiding principles for the course: laws of conservation, transport rules, and event magnitude/frequency. The course begins with the “big picture” view of geomorphology (whole-earth shape, large-scale details of the continents and ocean basins), then moves on to the construction of landscapes (mountain building, tectonics, isostasy, flexure), and follows with the surface processes responsible for sculpting the landscape (weathering/erosion, material transport through hillslope and fluvial systems, and deposition at the coastal/marine interface). ***Special emphasis will be placed on derivations of geomorphic concepts starting from first principles.***

**Course Goals:** It is the goal of this course that, by the end, students will:

- be able to derive the relationships between numerous Earth’s surface landforms and the processes responsible for creating and shaping them,

- develop the calculation skills to estimate geomorphic rates, landform size / shape, and timing, by employing the laws of conservation (mass, momentum, etc.),
- incorporate the frequency-magnitude distributions of geomorphic events throughout Earth's history into an understanding of the evolution of landscapes.

## COURSE STRUCTURE

### General Comments

This class will focus on three procedures to improve student understanding of Earth surface processes:

- (1) In-class derivations of geomorphic relationships from first principles
- (2) Quantitative assignments designed to better solidify the in-class derivations typically through simple computer programs (written in either MATLAB or Python)
- (3) Readings and student-led summaries of recent articles published in scientific journals

**There will be no quizzes or exams.**

**Office Hours:** Office hours will be arranged to suit the schedules of the students.

## COURSE WEBSITE and COMMUNICATION

### Course Website

The course will run via **Canvas** through the UF E-learning website (<http://lss.at.ufl.edu/>). The course site will be used to post relevant announcements, readings, lecture materials, links, and assignments. Students are responsible for checking this site for updates, announcements and to verify that your grades are recorded correctly. It is recommended that students adjust settings so that announcements are automatically sent to one's phone or email.

### Communication

Questions and comments on course logistics (e.g. assignments, grading etc.) and on content (e.g. science or policy questions) should be posted in the Course Questions Discussion Board on the Canvas site. If you know the answer to a classmate's question, you are welcome and encouraged to answer it. Questions of a personal nature (e.g. medical emergency, legal, documented disability accommodation, etc.) should be sent to the instructor via e-mail (or the Canvas messaging system) who will address the issue appropriately.

## COURSE MATERIALS

The primary material for this course is derived from:

Anderson, R.S. and S.P. Anderson, 2010, *Mechanics and Chemistry of Landscapes*, Cambridge University Press.

It is strongly recommended that the students obtain a copy of this textbook.

### Optional Resources:

Below I list several other textbooks that are good references for material covered in this course:

- 1) *Key Concepts in Geomorphology*, by Bierman, P.R. and D.R. Montgomery, 2<sup>nd</sup> edition, 2020, Freeman and Company/Macmillan
- 2) *Earth Surface Processes*, by Philip A. Allen, Blackwell Science

- 3) *Tectonic Geomorphology*, by Burbank and Anderson, Blackwell Science
- 4) *Process Geomorphology (4<sup>th</sup> ed.)*, by Ritter Kochel and Miller, McGraw Hill

## ASSESSMENTS AND GRADING

Your grade for this class will be the result of your performance on the: Assignments/Exercises (100%).

Assignments and problem sets must be turned in on time. Late assignments will be penalized by **5% per day late**.

### Final Grade Scale

A = ≥93%, A- = 90-92.99	D+ = 67-69.99, D = 63-66.99, D- = 60-62.99,
B+ = 87-89.99, B = 83-86.99, B- = 80-82.99,	E < 60
C+ = 77-79.99, C = 73-76.99, C- = 70-72.99,	

**\*Note 1:** “Raw” grades will be normalized and curved to a “final” grade that will coincide with the scale above. This cannot be pre-determined, however, periodic updates of grade distributions will be announced during the semester.

**\*Note 2:** An earned letter grade of ‘C-’ grade or below does not qualify for major, minor, Gen Ed, or college basic distribution credit.

For further information on UF's Grading Policy, consult:

<https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx>

## COURSE AND UNIVERSITY POLICIES

### Attendance and Absence

Students are expected to attend all class meetings. If there is a legitimate reason for missing class, it is the student’s responsibility to communicate with the instructor in a timely manner. Students are expected to complete all requirements on the specified dates and will not be granted an alternate due date unless they have an acceptable reason (e.g., medical emergency, observance of religious holidays, military obligation) or pre-arranged consent of the instructor. These requests must be timely and accompanied by all necessary written documentation.

Requirements for class attendance and make-up exams, assignments, and other work in this course are consistent with university policies that can be found in the online catalog at:

<https://catalog.ufl.edu/UGRD/academic-regulations/attendance-policies/>

### Academic Honesty Policy

Students must conform to UF’s academic honesty policy regarding plagiarism and other forms of cheating. This means that on all work submitted for credit by students at the University of Florida, the following pledge is either required or implied:

“On my honor, I have neither given nor received unauthorized aid in doing this assignment.”

The university specifically prohibits cheating, plagiarism, misrepresentation, bribery, conspiracy, and fabrication. For more information about the definition of these terms and other aspects of the Honesty Guidelines, see <https://sccr.dso.ufl.edu/policies/student-honor-code-student-conduct-code/>. All students found to have cheated, plagiarized, or otherwise violated

the Honor Code in any assignment for this course will be prosecuted to the full extent of the university honor policy, including judicial action and the sanctions listed in paragraph XI of the Student Conduct Code. For serious violations, you will fail this course.

### **Software Use**

All faculty, staff, and students of the University are required and expected to obey the laws and legal agreements governing software use. Failure to do so can lead to monetary damages and/or criminal penalties for the individual violator. Because such violations are also against University policies and rules, disciplinary action will be taken as appropriate.

### **Accommodations for Students with Disabilities**

Please do not hesitate to ask for accommodation for a documented disability. Students requesting classroom accommodation must first register with the Dean of Students Office (<https://disability.ufl.edu/>). The Dean of Students Office will provide documentation to the student, who must then provide this documentation to the Instructor when requesting accommodation. Please ask the instructor if you would like any assistance in this process. Please provide this information to your instructor within the first two weeks of the semester.

### **Instructor Evaluation**

Students are expected to provide feedback on the quality of instruction in this course by completing online evaluations at <https://evaluations.ufl.edu>. Evaluations are typically open during the last two or three weeks of the semester, but students will be given specific times when they are open. Summary results of these assessments are available to students at <https://evaluations.ufl.edu/results/>.

### **Drop/Add/Withdrawal**

A student can drop/add during the drop add period with no penalty. After drop/add, a student who drops will receive a W until the date listed in the academic calendar. After that date, the student may be assigned an "E" (fail). Note: it is the responsibility of the STUDENT to withdraw from a course, not the instructor. Failure to participate/complete the class is NOT a drop.

### **Additional Resources**

Students facing difficulties completing the course or who are in need of counseling or urgent help may contact the Counseling and Wellness Center: <http://www.counseling.ufl.edu>, 392-1575; or the University Police Department: 392-1111 or 9-1-1 for emergencies. Other Resources available on-campus for students include:

- a. Student Mental Health, Student Health Care Center, 392-1171, personal counseling;
- b. Interpersonal Violence Counseling, Student Health Care Center, 392-1161
- c. Career Resource Center, Reitz Union, 392-1601, career development assistance and counseling.