Cover Sheet: Request 9817

GLY 4705 Geomorphology

Info

Process	Course|New|Ugrad/Pro
Status	Pending
Submitter	Adams, Peter N adamsp@ufl.edu
Created	11/21/2014 3:13:25 PM
Updated	2/20/2015 1:48:00 PM
Description	Introduces undergraduates to the processes responsible for the formation and evolution of Earth surface features and landscapes. Emphasis is placed on understanding of how first principles of physics and chemistry can be used to explain landform shaping.

Actions

Step	Status	Group	User	Comment	Updated
Department	Approved	CLAS - Geological Sciences 011610000	Foster, David A		1/29/2015
College	Approved	CLAS - College of Liberal Arts and Sciences	Pharies, David A		2/20/2015
University Curriculum Committee	Pending	PV - University Curriculum Committee (UCC)			2/20/2015
Statewide Course Numbering System					
Office of the Registrar					
Student Academic Support System					
Catalog					
College Notified					

UCC1: New Course Transmittal Form

Recommended SCNS Course Identification

1. Prefix GLY 2. Level 4 3. Number 705 4. Lab Code None

5. Course Title Geomorphology

6. Transcript Title (21 character maximum) Geomorphology

7. Effective Term Fall 8. Effective Year 2015 9. Rotating Topic? No

10. Amount of Credit 3 11. If variable, # minimum and # maximum credits per semester.

12. Repeatable credit? No 13. If yes, total repeatable credit allowed #

14. S/U Only? No 15. Contact Type Regularly Scheduled [base hr]

16. Degree Type Baccalaureate 17. If other, please specify: Click here to enter text.

18. Category of Instruction Advanced

19. Course Description (50 words maximum)

Introduces undergraduates to the processes responsible for the formation and evolution of Earth surface features and landscapes. Emphasis is placed on understanding of how first principles of physics and chemistry can be used to explain landform shaping.

20. Prerequisites

Introductory GLY course (GLY 2010 or GLY 2030) plus an additional 3 credits of GLY.

21. Co-requisites

Click here to enter text.

22. Rationale and Placement in Curriculum

This course integrates some of the cornerstone subjects in the geological sciences to exhibit how tectonics, fluid mechanics, and material properties interplay to shape the landscape we live upon. The course is applied, in that the origins and evolution of the features of the Earth's surface, and their societal relevance, are targeted for investigation and explanation.

23. Complete the syllabus checklist on the next page of this form.

Syllabus Requirements Checklist

The University's complete Syllabus Policy can be found at:
http://www.aa.ufl.edu/Data/Sites/18/media/policies/syllabi_policy.pdf

The syllabus of the proposed course **must** include the following:

- ☒ Course title
- ☒ Instructor contact information (if applicable, TA information may be listed as TBA)
- ☒ Office hours during which students may meet with the instructor and TA (if applicable)
- ☒ Course objectives and/or goals
- ☒ A weekly course schedule of topics and assignments.
- ☒ Methods by which students will be evaluated and their grades determined
- ☒ Information on current UF grading policies for assigning grade points. This may be achieved by including a link to the appropriate undergraduate catalog web page: https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx.
- ☒ List of all required and recommended textbooks
- ☒ Materials and Supplies Fees, if any
- ☒ A statement related to class attendance, make-up exams and other work such as: *"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/ugrad/current/regulations/info/attendance.aspx."*
- ☒ A statement related to accommodations for students with disabilities such as: *"Students requesting classroom accommodation must first register with the Dean of Students Office. The Dean of Students Office will provide documentation to the student who must then provide this documentation to the Instructor when requesting accommodation."*
- ☒ A statement informing students of the online course evaluation process such as: *"Students are expected to provide feedback on the quality of instruction in this course based on 10 criteria. These evaluations are conducted online 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."*

It is **recommended** that the syllabus contain the following:

- ☒ Critical dates for exams or other work
- ☒ Class demeanor expected by the professor (e.g. tardiness, cell phone usage)
- ☒ The university's honesty policy regarding cheating, plagiarism, etc.

  Suggested wording: UF students are bound by The Honor Pledge which states, "We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honor and integrity by abiding by the Honor Code. 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 Honor Code (http://www.dso.ufl.edu/sccr/process/student-conduct-honor-code/) specifies a number of behaviors that are in violation of this code and the possible sanctions. Furthermore, you are obligated to report any condition that facilitates academic misconduct to appropriate personnel. If you have any questions or concerns, please consult with the instructor or TAs in this class.

- ☒ Contact information for the Counseling and Wellness Center: http://www.counseling.ufl.edu/cwc/, 392-1575; and the University Police Department: 392-1111 or 9-1-1 for emergencies

SYLLABUS: GLY 4705 – GEOMORPHOLOGY
University of Florida, Department of Geological Sciences

Semester: Fall 2015 **Credits:** 3 **Course Fee:** none
Meeting Location:
Meeting Time: Tuesdays and Thursdays, Periods 3-4, 09:35 am-11:30 am
Prerequisites: Intro-level geology course plus 3 additional GLY credits

INSTRUCTORS

Lead Instructor: Dr. Peter N. Adams
Office: 279 Williamson Hall
Office hours: by appointment
Phone: 352-846-0835
e-mail: adamsp@ufl.edu

TA: TBA
Office: TBA
Office Hours: TBA
Phone: TBA
e-mail: TBA

COURSE DESCRIPTION

This course focuses on the origin/evolution of landforms and the physical processes responsible for their creation and modification. Each topic will relate to the following recurring themes that we use as guiding principles for the course: laws of conservation, transport rules, and event magnitude/frequency. The course is structured to begin with the "big picture" view of geomorphology (whole-earth shape and the large-scale details of the continents and ocean basins), then move on to the tectonic construction of landscapes, thermally-driven processes including glacial/periglacial systems, transport of material through fluvial and hillslope systems, sediment entrainment and deposition, and landscapes at the coastal/marine interface. The course concludes with some examples of notable geomorphic events and the legacy of surface processes in the landscape.

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

- understand the relationship between numerous Earth's surface landforms and the processes responsible for creating and shaping them.
- develop "back of the envelope" calculation skills to estimate geomorphic rates, landform size / shape, and timing, by employing the laws of conservation (mass, momentum, etc.).
- gain an appreciation for the frequency-magnitude distributions of geomorphic events throughout Earth history and how those distributions influence the landscape we see.
- be able to predict where on Earth particular geomorphic processes should be operating.

COURSE STRUCTURE

General Comments

To succeed in this class, students should do four things:

1) perform the assigned **readings** prior to **lecture**,
2) take your own notes on the **lectures**, which are a highlight of the content provided in the textbook and assigned **readings**,

3) work through the **problem sets** very soon after digesting the readings and the **lecture** material, and
4) participate in weekly group **discussions** that will focus on a question derived from the **lectures** and **readings**.

The **readings** will make students familiar with concepts ahead of time, making it much easier to understand concepts presented in lecture. I provide a list of reading assignments to go with the topic coverage list below. During **lectures**, I will emphasize key concepts and work through examples. Students will get extra practice integrating these concepts via **problem sets**. Through group **discussions**, students will exercise critical thinking and communication skills, by demonstrating an understanding of the material in depth. Note that the **readings** should not be considered a suitable substitute for the lecture material, and conversely the **lectures** are an incomplete advertisement for the **readings**, **problems sets**, and **discussions**.

Specifics of 'On-line' and 'Classroom' versions

This course will be offered both as an **on-line** and as a **classroom** version. The learning objectives and work load for the two versions are virtually identical.

Students will begin each module by participating in a group discussion on-line to be completed by Monday at 11:59pm. The objective of the discussion is to have students share and relate their personal experiences and/or prior knowledge of the module topic.

For both versions, students will explore content provided (1-2 hours total) that will include readings and on-line lectures. The reading assignment schedule is provided at the end of this syllabus and on-line lectures will be made available every Monday morning at 8:00am.

A homework assignment, usually in the form of 2-4 problems to be worked, will be distributed at the beginning of the week as well - every Monday morning at 8:00am. For the on-line version of the course, these problems will be worked through individually and will be due at 11:59pm on Thursday of each week. For the in-class version of the course, these problems will be worked on in-class on Tuesday (periods 3-4) and Thursday (period 3).

There will be a weekly quiz to assess the students' understanding of the material. The on-line version of the quiz will be released on Friday at 8:00am, whereas the classroom version of the quiz will be conducted in class Thursday period 4.

COURSE WEBSITE and COMMUNICATION

Course Website

The course will run via **Canvas** through the UF e-learning website; go to http://lss.at.ufl.edu/ and click on the Canvas Login button. The course site will be used to post relevant announcements, reading, lecture materials, links, assignments and quizzes, etc. You 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 sent to phone or email.

Questions and Comments on course logistics (e.g. assignments, grading etc.) and on content (e.g. science or policy questions directed toward any of the course instructors) should be posted in two respective discussion boards within the course website. Questions of a personal nature (e.g. medical emergency, legal, documented disability accommodation, etc.) should be sent to the instructor via e-mail who will address the issue appropriately.

COURSE MATERIALS

Required Textbook(s)

1) Anderson, R.S. & S.P. Anderson, 2010, *Mechanics and Chemistry of Landscapes,* Cambridge University Press.
2) Anderson, R.S., *The Little Book of Geomorphology* - available as a ~15MB download from: http://instaar.colorado.edu/~andersrs/The_little_book_010708_print.pdf

In addition, there will be selected readings posted or linked through the course website.

Optional Resources:

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

1) *Earth Surface Processes*, by Philip A. Allen, Blackwell Science
2) *Tectonic Geomorphology*, by Burbank and Anderson, Blackwell Science
3) *Mechanics in the Earth and Environmental Sciences*, by Middleton and Wilcock, Cambridge University Press
4) *Process Geomorphology (4th ed.)*, by Ritter Kochel and Miller, McGraw Hill
5) *Earth's Changing Surface*, by Selby, Clarendon Press
6) Geomorphology*(2nd ed.)*, by Bloom, Prentice Hall
7) *Surface Processes and Landforms (2nd ed.)*, by Easterbrook, Prentice Hall
8) *Tectonics and Topography*, reprints from JGR-Solid Earth, 1994
9) *World Geomorphology*, by Bridges, Cambridge University Press

ASSESSMENTS AND GRADING

Your grade for this class will be the result of your performance on the
Homework problems (40%)
Module quizzes (40%), and
Discussion participation (20%).
Homework problems must be turned in on time. There will be no extra-credit assignments.

Final Grade Scale

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

***Note:** An earned 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 complete all requirements (quizzes, exams, presentation) on the specified dates and will not be granted an alternate date unless they have an acceptable reason for their absence (e.g., absences due to medical emergency, observance of religious holidays, military obligation) or pre-arranged consent of the instructor. However, you may receive an extension on an assignment by pre-arranged consent of the instructor or in extraordinary circumstances. These requests must be timely and accompanied by all necessary written documentation.

'In-class activities' must be turned in by the end of each class period. They can be turned in only up to 1 week after the class they are due but will receive half credit.

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/ugrad/current/regulations/info/attendance.aspx

Classroom policy

Students are required to bring to each class meeting a laptop or similar device for use in taking notes, summarizing in-class activities, and accessing the internet. However, use of mobile devices and computers during class for purposes other than viewing readings or conducting sanctioned research is not allowed. Cell phones must be put on "vibrate" during class. Students who receive or make calls or text messages or engage in other disruptive behavior during class will be asked to leave and will not be allowed to turn in the assignment due on that day. Students should also bring pen/pencil and paper to each class.

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 http://www.dso.ufl.edu/sccr/process/student---conduct---honor---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 (http://www.dso.ufl.edu/drp/). 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/cwc/Default.aspx, 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. Sexual Assault Recovery Services (SARS), Student Health Care Center, 392-1161, sexual counseling;
c. Career Resource Center, Reitz Union, 392-1601, career development assistance and counseling.

COURSE SCHEDULE

Module 1/Week 1: Whole Earth Shape - Introductory Concepts and Guiding Principles; Whole Earth Shape and Global Hypsometry, ***Reading: Anderson and Anderson, Chp. 1: pp. 2-15 and Chp. 2: pp. 16-25***

Module 2/Week 2: Shape of the Oceans and Plate Motions - Ocean Basin Shape: Heat Conduction; Ocean Basin Shape: Contraction and Isostasy; Tectonic Plate Motion: Origin and Speed, ***Reading: Anderson and Anderson, Chp. 3: pp. 26-38***

Module 3/Week 3: Tectonic Geomorphology 1 - Crustal Thickening, Erosion, and Mantle Response; Fault-Scale Tectonic Deformation; ***Reading: Anderson and Anderson, Chp. 3: pp. 38-48 and Chp. 4: pp. 60-71***

Module 4/Week 4: Tectonic Geomorphology 2 - Paleoseismology; Geomorphic Evidence of Long-term Deformation; Flexure of the Lithoshpere, ***Reading: Anderson and Anderson, Chp. 4: pp. 71-95***

Module 5/Week 5: The Atmosphere - Sun, Radiation, Weather, and Climate; Atmospheric Structure and Circulation, ***Reading: Anderson and Anderson, Chp. 5: pp. 96-117***

Module 6/Week 6: Tools of Geomorphology - Measuring Landforms; Absolute Dating Methods; Geothermometry and Exhumation, ***Reading: Anderson and Anderson, Chp. 6: pp. TBD***

Module 7/Week 7: Weathering/Rock Breakdown - Weathering, the Critical Zone, and Denudation; Mechanical Weathering Processes; Chemical Weathering Processes; Global Carbon Cycle and Regolith Production, ***Reading: Anderson and Anderson, Chp. 7: pp. 161-211***

Module 8/Week 8: Cold Processes: Glacial & Periglacial - Glacial Basics and Mass Balance; Ice Motion: Deformation, Sliding, and Surging; Glacial Erosional Processes and Landforms; Depositional Glacial Landforms, ***Reading: Anderson and Anderson, Chp. 8 & 9***

Module 9/Week 9: Hillslopes - Hillslope Diffusion; Specific Diffusive Hillslope Processes; Saturated Granular Materials and Landslides; Debris Flows, ***Reading: Anderson and Anderson, Chp. 10***

Module 10/Week 10: Water in/on the Landscape - Subsurface Water in the Landscape; Runoff and Drainage Density, ***Reading: Anderson and Anderson, Chp. 11***

Module 11/Week 11: Rivers 1 - Open Channel Flow in Rivers; Hydraulic Geometry and Flooding; River Channel Plan Views; River Longitudinal Profiles, ***Reading: Anderson and Anderson, Chp. 12***

Module 12/Week 12: Rivers 2 - Measuring Bedrock River Incision; Bedrock River Erosional Processes; Bedrock River Profiles and Widths, ***Reading: Anderson and Anderson, Chp. 13***

Module 13/Week 13: Rivers 3 - Grain Entrainment Mechanics; Sediment Transport Modes and "Laws"; Suspended Sediment Transport, ***Reading: Anderson and Anderson, Chp. 14***

Module 14/Week 14: Coasts - Coastal Processes: Tides, Waves, Currents; Sandy, Rocky, and Icy Coasts, ***Reading: Anderson and Anderson, Chp. 16***

Module 15/Week 15: Extreme Geomorphology - Large Floods; Volcanic Events, ***Reading: Anderson and Anderson, Chp. 17***