GEOL/GEOG450: Geomorphology (3 credit hours)
Spring 2018, MW 11:15 – 12:05, F 11:15 – 1:10, Strong Hall 126
Prof. Devon Burr
Office: SH705. Office phone: 974-6010. dburr1@utk.edu
Office hours: immediately after class and by appointment
TA: Keenan Golder, kgolder@vols.utk.edu
Textbook: Key Concepts in Geomorphology, by Bierman and Montgomery (required)
Annotated Definitions of Selected Geomorphic Terms (course Canvas site)
Laboratory Exercises: available at course Canvas site,
https://utk.instructure.com/courses/46676

Course objectives:

I. To learn to love to look at landscapes!
II. To understand the basic physics of geomorphic processes
III. To be able to interpret the natural and (in some cases) anthropomorphic signatures of landforms

Geomorphology = Earth (*geo*-) + shape (-*morph*-) + study (-*ology*), or the study of landforms. Landscapes form in various ways, and this course is designed to help you engage with Earth's landforms – to see them, interpret them, and understand the processes by which they formed. These processes can be both natural and anthropogenic, and we will discuss some of both.

Course description and policies:

This is an advance undergraduate and beginning graduate course in geology, and an understanding of basic geologic concepts will be assumed. Prerequisites are two 100-level courses in geology and high-school physics. Gaps in background knowledge can be addressed through reviewing an introductory geology textbook, Ch 1 of our textbook, and studying the vocabulary terms available at the course Canvas site).

A student can be successful in this course by

- Attending every class with engagement, taking notes, contribution to class discussion
- Reviewing the Knowledge Assessment questions from the book that are answered in class before the following class, and reviewing these questions again before each test
- Engaging in each laboratory exercise with independent work and team effort, and completing those assignments promptly while the material is still fresh and easily accessible mentally
- Developing a class project of sincere interest to you with regard to geomorphology and working on it consistently through the course
- Working with classmates or other friends on oral presentation skills, taking advantage of the Writing Center http://writingcenter.utk.edu/ for help with effective writing
- Staying curious!

Reading: The assigned reading is due *before* each class. In class, I will review this material, emphasize salient aspects, strive to clarify confusing parts, but we'll then quickly move into questions and discussion. The amount of reading varies (from

moderate to significant) so please plan ahead and *bring your book to class*. Reviewing any lecture slides before or during your reading will help focus your efforts.

Attendance and participation: Research shows a *strongly negative correlation between absences and grade*. A student who misses class assumes responsibility for gaining an understanding of the material for that day, unless the absence is excused. Acceptable reasons for missing class are listed UT's Student Handbook Hilltopics (http://hilltopics.utk.edu/files/Hilltopics%202015-16.pdf). Unexpected absences must be *documented before the next class with an email directly to me from the Dean of Students, 413 Student Services Building, 974-3179, dos@utk.edu*. For known conflicts (i.e. conferences, student-athlete travel), documentation must be provided in advance. Every two (2) unexcused absences will result in a 10% reduction in the overall course grade.

***Standards of Conduct*:** Throughout this course, we each are expected to foster integrity and respect for all. Showing up late, texting, or doing non-class activities in class is disrespectful to everyone and to our joint endeavor together. Students unable to abide by these general rules of conduct will be asked to leave.

University Civility Statement: Civility is genuine respect and regard for others: politeness, consideration, tact, good manners, graciousness, cordiality, affability, amiability and courteousness. Civility enhances academic freedom and integrity, and is a prerequisite to the free exchange of ideas and knowledge in the learning community. Our community consists of students, faculty, staff, alumni, and campus visitors. Community members affect each other's well-being and have a shared interest in creating and sustaining an environment where all community members and their points of view are valued and respected. Affirming the value of each member of the university community, the campus asks that all its members adhere to the principles of civility and community adopted by the campus: http://civility.utk.edu/.

Grading: The opportunities to show your grasp of the material are varied, as follows:

A. **In-class and Final Exams**: These exams will be based on the readings and discussion. Studying the 'Knowledge Assessment' for each chapter will help tremendously, as will understanding of the material in the labs. *The final exam is cumulative since the in-class exam* and will take place during the course final exam period. Make-up exams will be given only under *extreme and unavoidable* circumstances, with an email to me directly from the Office of the Dean of Students (413 Student Services Building, 974-3179, dos@utk.edu)

B. **Exercises**: There are 9 exercises (available on our Canvas website) consisting of:
   a. 8 labs.
   b. 1 Factor of Safety homework.

   These assignments are *due by **11:10*** am on the due date given in the schedule. Late assignments will be accepted up to 24 hours after the due date and time for 50% credit. No assignments will be accepted more than 24 hours late. ***All assignments are due electronically to your TA**, who is your point of contact for all questions regarding these assignments*.

C. **Class project**: Individual class projects provide experience in formulating and testing a scientific hypothesis through *original data analysis*. GIS will not be taught in this class, but in-class assistance in ArcGIS is available from your TA. You will present your original research to the class in three sequential formats:

a. A first presentation describing the intended work.
b. A second presentation describing the findings of the completed work.
c. A final paper summarizing the project and findings. (~6-10 pages of text)

Details on all these presentations will be provided in class.

In addition, you will be required to provide evaluations of the presentations of your classmates. I will post a form to guide both your evaluations of your classmates and your preparation for your own presentations.

D. **Field trips:** There is 1 field trip planned. Attendance is required and no make-up will be offered. Details will be provided in class…

E. **Poetry:** Each student will be required to write and read to the class one poem based on any geomorphologic concept of her/his choosing. These poems must: 1) be scientifically accurate, 2) be didactic, and 3) be poetic. *These poems can be presented to the class at any time. It is the responsibility of the student to schedule reading of his/her poem with the instructor.*

F. **Participation**: Modern science is fundamentally and necessarily interactive. To encourage practice of this indispensible skill, articulate and on-topic questions are strongly encouraged, as are responses to others' questions.

***Course grade**:*

In-class Exam	10%
Labs (8) + Factor of Safety exercise	40% total (equally weighted)
Final Exam	20%
Class project	20% (5% each presentation, 10% paper)
Participation	10% (field trip, presentation evaluations, poem [grad student presentations])

Final course grades will be based on the standard scheme of: A = >90.0%, B = 80% to 89.9%, etc. Pluses and minuses will be used within 3% of a letter grade break.

Graduate Students: As per the University Graduate Catalog, http://catalog.utk.edu/content.php?catoid=17&navoid=1763, "course requirements for graduate credit will be more rigorous and will exceed expectations for undergraduates." In this course, the additional requirement is a class presentation on a topic that is both of interest to the student and relevant to the subject of the class. *Each graduate student is required to meet with me during the first week of class to discuss this presentation*.

Honor code: Do your own work and allow others to do theirs. There are opportunities to collaborate on laboratory exercises and in studying for exams. However, *all work submitted for grading must represent your own thought and efforts*.

If you need course adaptations or accommodations because of a documented disability, please contact the Office of Disability Services at 100 Dunford Hall (telephone/TTY 865-974-6087; e-mail ods@utk.edu) to ensure that you are properly registered for services. Any student who feels s/he may need an accommodation should also contact me privately to discuss specific needs. ***I welcome speaking with anyone about how to maximize your learning, enjoyment and participation in this class.***

Notification of any adjustments will be given in class and on-line NLT 2 days before the adjustment.
Knowledge Assessment (KA) questions for each chapter will be assigned before each class.

D	Date	Subject	Reading *due*	Assignments / For discussion / Notes
W	Jan 10	Course Intro, What is Geomorphology	Ch 1, p. 5-6	Review syllabus, Canvas site. Example poems. Schedule field trip
F	Jan 12	" "	" " p. 6-28	Ch 1 KA:
M	Jan 15	**MARTIN LUTHER KING, JR. HOLIDAY**		
W	Jan 17	Geomorphologist's Tool Kit	Ch 2, p. 43-52	Discuss class projects, presentations. Ch 2 KA:
F	Jan 19	**LAB 1: Isostasy**		
M	Jan 22	Weathering and Soils	Ch 3, p. 77-83	Ch 3 KA:
W	Jan 24	" "	" " p. 83-89	" " "
F	Jan 26	**LAB 2: Gravestone Weathering Rate** → Data due on course Canvas site NLT ***SUNDAY***		***Isostasy lab due***
M	Jan 29	Geomorphic Hydrology	Ch 4, p. 118-126	Ch 4 KA:
W	Jan 31	" "	p. 126-137	" " "
F	Feb 2	**LAB 3: Geomorphic Hydrology**		***Gravestone Wxing Lab due***
M	Feb 5	**In-class EXAM: Chs 1-4**		Ch 5 KA:
W	Feb 7	Review exam; Hillslopes / Factor of Safety "	Ch 5, p. 159-163	" " "
F	Feb 9	**Discuss class projects** **[1-slide ppt on Canvas site by 11am]**		***Geomorphic Hydrology Lab due***
SAT'DAY		**FIELD TRIP TO LOCAL CAVES**		
M	Feb 12	Channels	Ch 6, p. 180-193	Ch 6 KA:
W	Feb 14	" "	" " p. 194-202	" " "
F	Feb 16	**LAB 4: Fluvial Morphologies**		***Factor of Safety hmwrk due***
M	Feb 19	" "	" " p. 202-208	Ch 7 KA:
W	Feb 21	Drainage Basins	Ch 7, p. 218-227	" " "
F	Feb 23	**LAB 5: Drainage Basin modeling (STELLA)**		***Fluvial Morphologies Lab due***
M	Feb 26	" "	" " p. 227-240	Ch 9 KA:
W	Feb 28	Glacial Geomorphology	Ch. 9, p. 291-305	" " "
F	Mar 2	**LAB 6: Glacial Mechanics**		***Drainage Basin Lab due***
M	Mar 5	" "	" " p. 305-316	Ch 9 KA:
W	Mar 7	*In-class preparation for presentation*		
F	Mar 9	**FIRST Class Project presentations** **[5-slide ppts on Canvas site by 11am]**		***Glacial Mechanics Lab due*** *bring evaluation forms*
M	Mar 12	**SPRING BREAK**		
W	Mar 14	**SPRING BREAK**		
F	Mar 16	**SPRING BREAK**		
M	Mar 19	***work on class projects***		
W	Mar 21	***work on class projects***		
F	Mar 23	***work on class projects (. . progress to be reviewed on Monday, March 26!)***		
M	Mar 26	***Review progress on presentations*** Periglacial Geomorphology	Ch 9 (p. 316-end)	Ch 9 KA:
W	Mar 28	**LAB 7: Glacial and Periglacial Landforms**		
F	Mar 30	**SPRING RECESS**		
M	Apr 2	Wind as a Geomorphic Agent	Ch 10, p. 329-342	" "
W	Apr 4	" "	" " p. 342-350	
F	Apr 6	**LAB 8: Aeolian Processes and Landforms**		***Glacial+Periglacial lab due***
M	Apr 9	Geomorphology and Climate	Ch 13	Ch 13 KA:
W	Apr 11	" "	" "	
F	Apr 13	**In-class documentary movie**		***Aeolian lab due***
M	Apr 15	**SECOND Class Project presentations** **[*all* 5-slide ppts on Canvas site by 11am]**		*bring evaluation forms*

W	Apr 18	**Class Project presentations**		*bring evaluation forms*
F	Apr 20	**Class Project presentations**		*bring evaluation forms*
M	Apr 23	Students' choice	Ch 11 / 12 / 14	KA for chosen chapter
W	Apr 25	" "	" " " "	
F	Apr 27	Wrap-up, discuss final exam, **Class Project papers due 6pm**		**All poems due by this date**
R	May 3, 10:15	**FINAL EXAM on material since in-class EXAM**		

Dear Student,

The purpose of this **Campus Syllabus** is to provide you with important information that is common across courses at UT. Please observe the following policies and familiarize yourself with the university resources listed below. At UT, we are committed to providing you with a high-quality learning experience. I want to wish you the best for a successful and productive semester.

Interim Provost John Zomchick

UNIVERSITY CIVILITY STATEMENT -- http://civility.utk.edu/

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EMERGENCY ALERT SYSTEM -- http://safety.utk.edu/

The University of Tennessee is committed to providing a safe environment to learn and work. When you are alerted to an emergency, please take appropriate action. Learn more about what to do in an emergency and sign up for UT Alerts. Check the emergency posters near exits and elevators for building specific information. In the event of an emergency, the course schedule and assignments may be subject to change. If changes to graded activities are required, reasonable adjustments will be made, and you will be responsible for meeting revised deadlines.

ACADEMIC INTEGRITY

"An essential feature of the University of Tennessee, Knoxville is a commitment to maintaining an atmosphere of intellectual integrity and academic honesty. As a student of the university, I pledge that I will neither knowingly give nor receive any inappropriate assistance in academic work, thus affirming my own personal commitment to honor and integrity."

YOUR ROLE IN IMPROVING TEACHING AND LEARNING THROUGH COURSE ASSESSMENT

At UT, it is our collective responsibility to improve the state of teaching and learning. During the semester you may be requested to assess aspects of this course either during class or at the completion of the class. You are encouraged to respond to these various forms of assessment as a means of continuing to improve the quality of the UT learning experience.

DISABILITIES THAT CONSTRAIN LEARNING

"Any student who feels he or she may need an accommodation based on the impact of a disability should contact the Student Disability Services (SDS) at 865-974-6087 in 100 Dunford Hall to document their eligibility for services. Student Disability Services will work with students and faculty to coordinate reasonable accommodations for students with documented disabilities."

Accessible Information, Materials, & Technology -- http://accessibility.utk.edu/

WELLNESS -- http://counselingcenter.utk.edu/ and http://wellness.utk.edu/

The *Student Counseling Center* is the university's primary facility for personal counseling, psychotherapy, and psychological outreach and consultation services. The *Center for Health Education and Wellness* is dedicated to a community model that is embodied in the **"VOLS HELP VOLS"** commitment: *We are all Volunteers. We look out for each other.* The Center manages 974-HELP, the distressed student protocol, case management, the Sexual Assault Response Team, and the Threat Assessment Task Force.