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GPHY 317.01: Geomorphology

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GEOMORPHOLOGY

(GPHY 317)

- Fall 2016 -

Class Meets: MWF 10:00–10:50 am; Stone Hall 217

Professor Ulrich Kamp, Ph.D.

Department of Geography

Stone Hall, Room 205

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Office Hours: W 1:30 – 2:30 pm, F 11 am – 12 pm; and by appointment via email

Course Description

This course will study and discuss landscapes and the processes that shape them. The topic requires some understanding of tectonics, volcanism, structural geology, climate, hydrology, glaciology, and others; thus, you should already have taken GPHY111N “Introduction to Physical Geography”. We systematically consider fluvial, eolian, coastal, glacial, slope, weathering, and karst processes; the resulting landforms and deposits. The course will explore the influence of landforms and landscapes on human activities and about humans’ impact on landscapes through history.

Course Objectives

By the end of this course, you should be able to:

1. Locate and describe the features of landscapes, including geologic origin, major vegetation communities, and human impacts.
2. Describe the hierarchy of processes controlling the physical patterns we see in landscapes, locally and globally, and how these processes are affected by global change.
3. Access and evaluate primary scientific literature.
4. Identify a research question, collect and analyze data to address the question, and summarize findings in standard scientific formats (text and presentations).
5. Evaluate the work of your peers in a constructive and respectful manner.

Course Policies

Class Attendance and On-time Appearance

Attendance will be noted. Attendance during the lectures is essential to your general success in class. Excessive lateness disturbs everyone else – please appear on time. You should have your lunch before or after class.

Readings

The course textbook (see below) is available in the University Center’s bookstore. Additional material dealing with interesting aspects of geomorphology will be made available on Moodle. The scheduled topics will be discussed in class, so please read the assigned text before class in order to be prepared. Attendance is recorded. Class attendance is essential to your success in class. Excessive lateness disturbs everyone else – please appear on time. You should have your lunch before or after class.

Additional Course Material

All additional course material will be made available online through Moodle after the lectures in class. Download and use these resources for your studies in preparation for assignments and exams.

Open Door & Discussion

Please feel free to stop by during office hours or when my door is open to ask any questions you may have regarding the class. Please use this opportunity WHEN NEEDED.

Accommodations

Students with disabilities who need assistance should contact the instructor immediately so that necessary forms and procedures can be completed. Please review the university's website if there are any questions: <http://www.umt.edu/dss/default.htm>.

Research Paper and Presentation

You will write a research paper on a specialized topic that matches the main topics of the course (see "Tentative Schedule"). The main body (text) of this research paper is approximately 8-10 pages long (double-spaced, Times Roman 12, including cover page, table of content, and references) **plus** appendix including figures and tables. **This must be submitted by the due date.** If you decide to work with one or two peers, the paper length doubles accordingly to the team size. You (and your peer/s) will develop your paper in steps by submitting five "Preparation" assignments: 1 – Reference List 1; 2 – Table of Content; 3 – Reference List 2; 4 – Abstract; 5 – Draft.

You (and your peer/s) will give a class presentation at the end of the term about your topic. The presentation is 15 minutes long *including* a brief discussion. All work has to be submitted in the two following ways (one submission per person or team, respectively). **Documents that do not have such file names will be deleted and not counted as submitted documents.**

1. Hard copy of **Microsoft Word, Excel, and/or Powerpoint** documents including all names.
2. Electronic version, uploaded to Moodle. The **document file name** has to follow this structure:
 - "referencelist1_yourlastname_yourtopic.docx"
 - "tableofcontent_yourlastname_yourtopic.docx"
 - "referencelist2_yourlastname_yourtopic.docx"
 - "abstract_yourlastname_yourtopic.docx"
 - "finalpaper_yourlastname_yourtopic.docx"
 - "presentation_yourlastname_yourtopic.pptx"

An excellent reading for preparing a research paper is: Turabian KL (2007): A manual for writers of term papers, theses, and dissertations. The University of Chicago Press, Chicago, 436 pages.

Examinations

All three exams will take place in the classroom. They are subjective, not comprehensive; this means that the exam will encompass only the material that is covered in lectures and discussions between exams. In general, each examination will be a combination of multiple choice or, if the class size is small enough, essay questions may be included. The rules for the examinations are as follows:

1. You will take each exam as scheduled. Make-up exams are not allowed—except as listed in the Make-up exam policy below.
2. Material for the exam will be from the required textbook and other readings and all other distributed material. Attendance for each lecture is recommended (and taken) in order that you take notes for each exam.
3. Make-up Exam Policy:
 - All Students must take the final exam as scheduled. Conflicts must be settled with the Dean. This is University Policy and there are no exceptions.
 - All Students must take each exam as scheduled. If an exam is missed, the student will receive a zero (0) on the exam.
 - These are the only exceptions that will warrant a make-up exam: university events—such as sporting or music events; military obligations; religious holidays; serious family emergency; medical emergencies or serious illness; court-imposed legal obligations such as subpoenas or jury duty; serious weather conditions; special curricular requirements such as judging trips or field trips.
 - Any student requiring an exception under this policy must do so **prior** to the scheduled exam—unless in the case of an actual emergency (sudden hospitalization). A student must provide official documentation of the reason for absence **in advance**.
 - If a make-up exam is approved. It must be completed within one week of the original exam and scheduled with the Teaching Assistant.

Academic Integrity

All students must practice academic honesty. Academic misconduct is subject to an academic penalty by the course instructor and/or a disciplinary sanction by the University. All students need to be familiar with the Student Conduct Code (http://www.umt.edu/vpsa/policies/student_conduct.php).

Readings

Course Textbook

Huggett, R.J. (2011): Fundamentals of Geomorphology. Routledge, London, 536 pages.
 Authors Webpage: http://www.sed.manchester.ac.uk/geography/staff/huggett_richard.htm

Other Books of Interest

Ahnert, F. (1998): Introduction to Geomorphology. Arnold, London, 352 pages.
 Bloom, A.L. (2004): Geomorphology. A Systematic Analysis of Late Cenozoic Landforms. Waveland Press, 494 pages.
 Easterbrook, D.J. (1999): Surface Processes and Landforms. – Prentice Hall, New York, 546 pages.
 Menzies, J. (Ed.) (2002): Modern and Past Glacial Environments. Butterworth-Heinemann, Oxford, 543 pages.
 Ritter, D.F., Kochel, R.C. & Miller, J.R. (2002): Process Geomorphology. McGraw Hill, New York, 559 pages.
 Summerfield, M.A. (1991): Global Geomorphology. Prentice Hall, New York, 537 pages.

Work Evaluation and Final Grading

Three exams (50 points each)	150 points
Six Research Paper Preparation Assignments (25 points each)	150 points
Research Paper (Final Version)	100 points
Presentation	100 points
Class Attendance	100 points
Total Points	600 points

UNEXCUSED Missed Classes

0-1	A	2	B	3	C	4	D	>4	F
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Grading Scheme

93-100	A	87-89	B+	77-79	C+	67-69	D+	<60	F
		83-86	B	73-76	C	63-66	D		
90-92	A-	80-82	B-	70-72	C-	60-62	D-		

Late assignments will be penalized. An assignment that is turned in one day late will have 10% of the available points deducted from the score. An assignment that is turned in two days late will have 20% of the available points deducted from the score. No credit will be awarded for assignments that are more than two days late. "Day" denotes a business day (Monday through Friday) not the time interval between class meetings. For example, an assignment that is due on Thursday but turned in on Monday will be counted two days late.

Tentative Schedule

Date	Topic	Readings	Other
WEEK 1 29-Aug 31-Aug 02-Sep	Introduction to the Course Introducing Geomorphology Form and Process	Syllabus 3-18 13-43	Submit Paper Topic
WEEK 2 05-Sep 07-Sep 09-Sep	Holiday: Labor Day History Dating Techniques	--- 44-53 462-467	No Class
WEEK 3 12-Sep 14-Sep 16-Sep	Rock Cycle Tectonic Landforms Movie: Nanga Parbat – Naked Mountain	54-60, 68-71 87-107 ---	Submit Reference List 1
WEEK 4 19-Sep 21-Sep 23-Sep	Volcanic and Plutonic Landforms Movie: In the Path of a Killer Volcano Folds and Landforms	108-122 --- 123-127	
WEEK 5 26-Sep 28-Sep 30-Sep	Faults and Landforms Weathering Hillslope Forms and Processes	127-134 137-163 164-186	Submit Table of Content
WEEK 6 03-Oct 05-Oct 07-Oct	Exam 1 Hillslope Forms and Processes Research Project: Landsliding related to the 2005 Kashmir Earthquake	--- 176-186 Moodle	
WEEK 7 10-Oct 12-Oct 14-Oct	Fluvial Forms and Processes Movie: Sculpted by Floods Guest Lecture by Andrew Wilcox, Geosciences: Dam Removal	187-230 --- ---	Submit Reference List 2
WEEK 8 17-Oct 19-Oct 21-Oct	Glacial Forms and Processes Movie: Glaciers Shape Our World Research Project: Glacial Monitoring using GIScience Technologies	247-289 --- Moodle	
WEEK 9 24-Oct 26-Oct 28-Oct	Guest Lecture by Caleb Pan, Geography: Lakes in the Mongolian Altai Periglacial Processes and Landforms Eolian Processes and Landforms	--- 290-313 314-343	Submit Abstract
WEEK 10 31-Oct 02-Nov 04-Nov	Coastal Forms and Processes Karst Processes and Forms Movie: Journey into Amazing Caves	345-375 389-424 ---	
WEEK 11 07-Nov 09-Nov 11-Nov	Exam 2 Polygenetic Landscapes I: System and Equilibrium Models Holiday: Veterans Day	--- 433-455, Moodle ---	No Class
WEEK 12 14-Nov 16-Nov 18-Nov	Polygenetic Landscapes II: Feedback between Climate and Tectonics Polygenetic Landscapes III: Relief Production Polygenetic Landscapes IV: Landscape Evolution and Scale	433-455, Moodle 433-455, Moodle ---	Submit Draft
WEEK 13 21-Nov 23-Nov 25-Nov	Research Project: Landscape Evolution in the Hindu Kush, Pakistan Holiday: Thanksgiving Holiday: Thanksgiving	433-455, Moodle --- ---	No Class No Class
WEEK 14 28-Nov 30-Nov 02-Dec	Student Presentations Student Presentations Student Presentations	--- --- ---	
WEEK 15 05-Dec 07-Dec 09-Dec	Student Presentations Student Presentations Course Review	--- --- ---	Submit Paper & PPT
WEEK 16 20-Dec	Exam 3, 8:00-10:00	---	