**Syllabus**

**GEOG 4022 – Geomorphology**

**Fall 2024**

**Lecture/Lab: MWF 9:30 – 10:20 am**

**Classroom: 245 Howe-Russell**

**Instructor Contact:**

*Professor:* Dr. Kory Konsoer

*Office:* 119 Howe-Russell

*Office hours:* MW 10:30-11:00am; *or* *by appointment*

*Email:* kkonsoer@lsu.edu

*Phone:* 578-0891

**Required Textbook:**

Bierman, P.R., Montgomery, D.R., 2014, *Key Concepts in Geomorphology*, WH Freeman.

**Prerequisites:**

GEOG-2051, introductory Geology, or permission of Instructor

**Course Goals**

Geomorphology is the study of earth surface processes and landforms. The overall form of earth’s surface is the result of gravitational, tectonic, and volcanic forces that have created the ocean basins, the continents, mountain ranges, and rift basins. Modification of these features results from the interaction of geologic structure with gravity and climate. We will focus on how continental tectonic features are modified by weathering, fluvial, aeolian, karst, coastal, and glacial processes. We will use topographic maps, digital elevation models (DEMs), and remotely sensed images to understand the origin and age of terrestrial landforms. At the end of the semester, you should be able to:

* recognize and analyze earth surface landforms using topographic maps, DEMs, aerial photographs, and satellite images.
* identify and describe landforms and sediment in the field and collect geomorphic data in the field.
* explain how common earth surface landforms are formed by geomorphic processes.
* make predictions about how geomorphic systems will respond if modified by humans or natural events.

**Course Structure:**

There will be roughly 2 hours of lecture and discussion each week, and one hour of in-class computer/laboratory exercises. Some labs will require you turn in written work and other labs will be field work, hands-on projects and demonstrations.

**Course Evaluation:**

Grading for this course will be based on in-class participation during laboratory exercises, homework assignments, a semester project, and two section exams. Points will be awarded as follows:

|  |  |
| --- | --- |
| In-class participation | 100 pts. |
| Labs/Take-home Assignments | 100 pts. |
| Semester Project | 100 pts. |
| Exam 1 | 100 pts. |
| Exam 2 | 100 pts. |
| Exam 3 | 100 pts. |

**Grading:**

Letter grades for the course will be assigned using the standard percentage equivalents based on a plus/minus system (A+ >= 96%, A = 93 - 96%, A- = 90 – 93%, B+ = 86-89%, B = 83 – 86%, B- = 80 – 83%, C+ = 76-79%, C = 73 – 76%, C- = 70-73%, D+ = 66-69%, D = 63-66%, D- = 60-63%, F = <60%).

**Semester Project:**

Each student will work individually to complete a research project from a list of project ideas or your own project approved by the instructor. The project will be related to any of the topics covered in this course. The final product for this project will be a paper that will be due the last day of classes, and a brief 5 minute oral presentation during the last week of classes (\*note – presentations are tentative and final decisions will be made closer to end of semester). More details will be given during class.

**Field Trips:**

There will be two Saturday field trips, with the dates to be determined within the first two weeks of the semester. Please set aside these dates for the trips from 8am – 5 pm. These field trips will be local (within 2 hours drive) and transportation will be provided.

**Outline of Topics:**

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| --- | --- | --- | --- |
| Week | Monday Date | Topic | Readings |
| 1 | 8/26 | Introduction & Course Info; What is Geomorphology?; Tools for studying Geomorphology | Ch. 1, Ch. 2 |
| 2 | **9/2;** | **Monday: LABOR DAY**; Wednesday/Friday: Earth Basics Review; Endogenic Processes | Ch. 1 |
| 3 | 9/9; **9/11-13** | Geomorphic Hydrology; **Wed/Fri: NO CLASS** | Ch. 4 |
| 4 | 9/16 | Drainage Basins; Hydrology Lab; River Networks Lab | Ch. 6, Ch. 7 |
| 5 | 9/23 | Fluvial Geomorphology; Fluvial Lab | Ch. 3 |
| 6 | 9/30 | Physical and Chemical Weathering | Ch. 3 |
| 7 | 10/7 | Soils and Pedogenesis; Karst Landscapes | Ch. 3, suppl. |
| 8 | 10/14; **10/17-18** | Monday: Mid-term Exam; **Wed/Fri: FALL HOLIDAY** |  |
| 9 | 10/21 |  |  |
| 10 | 10/28 | Hillslopes; Mass Movements | Ch. 5 |
| 11 | **11/4** | Coastal and Submarine Geomorphology | Ch. 8 |
| 12 | 11/11 | Aeolian Geomorphology | Ch. 10 |
| 13 | 11/18 | Glacial and Periglacial Geomorphology | Ch. 9 |
| 14 | **11/25** | **NO CLASS – THANKSGIVING BREAK** |  |
| 15 | 12/2 | Volcanic and Tectonic Geomorphology; | Ch. 11; Ch. 12 |
| 16 | 12/9 | **Final Exam Scheduled; Take-Home Final** | Ch. 5 |