University of South Carolina
Carolina Core

GEOGRAPHY 201
LANDFORM GEOGRAPHY

BULLETIN INFORMATION
GEOG 201 - Landform Geography (4 credit hours)
Course Description:
Hydrology, soil science, and interpretation of physical features formed by water, wind, and ice, with emphasis on environmental change
Note: Three hours of lecture and one two-hour laboratory per week.
Instructor Contact Information:

SAMPLE COURSE OVERVIEW
This course is an introduction to landforms; that is, the physical features on the Earth's surface such as valleys, hill-slopes, beaches, sand dunes, and stream channels. Students will learn, from the study of landforms, of past environmental conditions, how they have changed, and the processes involved, including human actions and natural agents. Students also will learn about soils, hydrology, and processes of landform creation by water, wind, ice, and gravity.

ITEMIZED LEARNING OUTCOMES
Upon successful completion of Geography 201 students will be able to:

1. Explain scientific methods and terminology including hypothesis formulation and testing, experimental design, the method of multiple working hypotheses, and opposite concepts such as inductive vs. deductive reasoning and empirical vs. theoretical methods.
2. Interpret topographic maps and geospatial data such as remote sensing and Geographic Information Systems (GIS).
3. Collect and analyze laboratory and field measurement data to describe Earth materials, soil properties, sediment grain-size distributions, and landform features.
4. Evaluate the merits of various theories of landscape change, such as catastrophism, uniformitarianism, and neo-catastrophism, and to explain how landforms are created and change over various time scales.
5. Comprehend the environmental history of Earth's surface from the recent geologic past to present with an emphasis on Quaternary processes and changes (the Quaternary is the current geological period that began ~2 million years ago), and interactions between climate, humans, and environmental response during and after the Neolithic period of human culture.
6. Demonstrate their knowledge and skill by preparing a report that analyzes, describes, and interprets landforms using airborne and satellite imagery provided in a term project.

SAMPLE REQUIRED TEXTS/SUGGESTED READINGS/MATERIALS

1. Physical Geography: A Landscape Appreciation, by Tom L. McKnight; 10th ed., 2010; Upper Saddle River, NJ: Prentice Hall. Available in University book stores.
2. *Lab Manual:* Supplementary Lecture Materials and Laboratory Exercises for Landform Geography, by Allan James. Available from local copy shop to be announced in class.
3. *Materials on Internet:* Consult course web pages for information and periodic postings.

SAMPLE ASSIGNMENTS AND/OR EXAMS

1. **Two Midterms and a Final Exam**
2. **Laboratory:** Labs meet once a week for 110 minutes for applied experience with concepts and methods covered in lecture. The emphasis is on empirical observations, measurements, computations, and analytical reasoning. There is no separate letter grade for the lab itself; rather, final lab scores will be added to lecture scores and used to determine your course grade.
    a. Lab exercises, quizzes, participation, attendance, and a project described on a separate handout.

SAMPLE COURSE OUTLINE WITH TIMELINE OF TOPICS, READINGS/ASSIGNMENTS, EXAMS/PROJECTS

PHYSICAL GEOGRAPHY, SCIENCE and MAPS

Week 1	Class 1:	Introduction; Course mechanics (No reading)
	Class 2:	Metric system; Size & shape of the Earth; Earth grids, Maps; Scientific methods (App.I; Ch.1; Ch.2; Sup.*)
Week 2	Class 3:	Remote sensing; Air photos; Satellite imagery (Ch.2; Sup)
	Class 4:	Geographic Information Systems (GIS); Global Positioning Systems (GPS); Google Earth (Ch.2; Sup)

SOILS

Week 3	Class 5:	Weathering of Earth materials; (Ch.15) Soil and regolith; Soil components; Soil properties 1 (Ch.12; Sup)
	Class 6:	Soil properties 2; Soil chemistry; Profiles; Pedogenic regimes (Ch.12; Sup)
Week 4	Class 7:	Soil Classification: 12 Soil Orders; Global soil distribution (Ch.12; Sup)

GEOLOGY

	Class 8:	Earth's interior; Geologic time; Stratigraphy (Ch.13; Sup)
Week 5	Class 9:	✍ First Midterm Exam ✍
	Class 10:	Mineralogy & Petrology (Ch.13; Sup.; Lab Manual)
Week 6	Class 11:	Isostasy; Continental drift; Plate tectonic theory (Ch.14; Sup)
	Class 12:	Structures: Mesas and scarps; Folding (Sup; Chs. 14&18)
Week 7	Class 13:	Volcanism and associated landforms; Intrusive rock bodies (Sup; Ch.14)
	Class 14:	Faulting; Earthquakes (guest lecture) (Ch.18)
Week 8	Class 15:	TBA (guest lecture)

HYDROLOGY

	Class 16:	Hydrosphere; Hydrologic Cycle; Surface Water; Groundwater (Ch.9; Sup.)
Week 9	Class 17:	Fluvial Landform Fundamentals; Stream Systems; Channel Networks (Ch.16; Sup)
	Class 18:	Fluvial erosion & deposition; Channels; Valleys; Deltas; Floodplains & Terraces; Fluvial theories (Ch.16; Sup)

WIND & ARID LANDFORMS & PROCESSES

Week 10	Class 19:	Arid environments; Desert surfaces & landforms; Wind processes & landforms; (Ch.18)
	Class 20:	✍ Second Midterm exam ✍

COASTAL LANDFORMS & PROCESSES

Week 11	Class 21:	Tides, Waves, Tsunamis, and Sea Level; Coastal Processes and Landforms (sediment deposition features) (Ch.9; Ch.20)
	Class 22:	Coastal Processes and Landforms (continued): Erosion; Coastline Types; Coral Reefs; Salt Marshes (Ch.20)

GLACIOLOGY & GLACIAL LANDFORMS

Week 12	Class 23:	Glaciology: Glacial Types, and Glacial Processes (Ch.19; sup.)
	Class 24:	Landforms due to Glacial Deposition and Erosion
Week 13	Class 25:	Mass wasting; Karst processes and landforms (Ch.15; Ch.17)
	Class 26:	Periglacial processes & landforms; Evidence of climate/env. change (Ch.19; Sup)
Week 14	Class 27:	Quaternary History: Causes and Character of Environmental Changes (Ch.8; Ch.19; Sup)
	Class 28:	Quaternary History, Course Review (Sup)

Final exam according to university exam schedule