

Course Syllabus – The Global Environment

Course Information

Course number –GEOG - 2302

Course title – THE GLOBAL ENVIRONMENT

Term –Fall 2012

Section – 001

Classroom – FN 2.104

Time – Tuesday/Thursday 2:30-3:45 pm

Professor Contact Information

Name – Dr. Irina Vakulenko

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Email – ivakulenko@utdallas.edu (best way to contact me)

Office location – GR 3.213

Office hours – Tuesday/ Thursday 1:00 pm -2:00 pm; by appointment

Course Pre-requisites, Co-requisites, and/or Other Restrictions

There are no formal prerequisites for this course. General academic skills of analytical thinking, comparison, essay writing, working with statistical material, map reading will be helpful.

Course Description

This course is designed to provide students with an overview of men's physical environment and the processes that shape it as well as to promote environment-oriented thinking and attitude. It is a survey course, which explores fundamental concepts related to the Earth crust and landforms; ocean, surface and underground waters; atmosphere and climate; biosphere and the interaction of natural components in natural complexes as life habitats across the Earth.

Student Learning Objectives/Outcomes

Upon completing this class students will be able to:

- Have a fresh understanding of a landscape, greater sensitivity to the difference between places and the explanation for those differences
- To explain how various Earth processes are interconnected and together shape the physical environment
- Identify the conditions that cause natural hazards and explain their impact on humans
- Analyze the impact of humans on natural environment
- Analyze geographic data and maps
- Geographically explain earth science processes.

Required Textbooks and Materials

Introducing Physical Geography, 5th Edition by Alan Strahler, Wiley, 2011. ISBN 978-0-470-13486-3. Any World Atlas will be helpful.

Suggested Course Materials

Students are expected to take notes during PowerPoint presentations and complete exercises posted on e-learning.

Assignments & Academic Calendar

#	Date	Topic	Chapter
1	8/28/12	Introduction to Physical Geography. Earth as a planet in the Solar System. Size and Shape of the Earth. Geographic Grid.	Introduction, Chapter 1. Practice Packet 1.
2	8/30/12	Earth Movements: Rotation and Revolution. Environmental Effects. Global Time.	Introduction, Chapter 1.
3	9/4/12	Portraying Earth. Maps and Cartography: Classifications, Attributes, and Scales. Map Projections. Presenting Data on Maps: Isopleths. Absolute and Relative Elevation above the Sea Level. Main Difference of Plan and Map. GPS and Imaging.	Introduction, Chapter 1.
4	9/6/12	The Environmental Spheres. Atmosphere: Composition, Vertical Structure. Weather and Climate.	HW 1 is due. Chapter 2 Practice Packet 2.
5	9/11/12	Electromagnetic Radiation and Basic Processes in Heating and Cooling. The Heating of Atmosphere. Energy Balance: Spatial and Seasonal Variations in Heating.	Chapter 2
6	9/13/12	<u>Temperature</u> as Measurement of Heat. Mechanisms of Heat Transfer. Vertical Temperature Patterns. World Temperature Patterns. Global Warming.	Chapter 3
7	9/18/12	<u>Atmospheric Pressure</u> and <u>Wind</u> . Nature of Atmospheric Pressure. The Nature of Wind. Cyclones and Anticyclones. Vertical Variations of Pressure and Wind. Coriolis Effect.	Chapter 5
8	9/20/12	Global Winds and Pressure Patterns. Modifications. Localized Wind Systems.	Chapter 5
9	9/25/12	Test 1	
10	9/27/12	<u>Atmospheric Moisture</u> . Water Vapor and Hydrologic Cycle. Measures of Humidity. Evaporation and Condensation. Clouds, Fog, Dew. Air Buoyancy. Wind Chill and Heat Index.	Chapter 4 Practice Packet 3.
11	10/2/12	Forms and Types of Precipitation. Global Distribution of Precipitation. Air Quality. <u>Weather Systems</u> . Air Masses.	Chapter 4, 6
12	10/4/12	Air Fronts. Atmospheric Disturbances: Mid-latitude Anticyclones and Cyclones, Thunderstorms, Tornadoes, and Tropical Hurricanes.	Chapter 4, 6
13	10/9/12	Global Climates: Climate Controls and Climate Classification.	Chapter 7
14	10/11/12	Test 2	HW 2 is due.
15	10/16/12	Lithosphere: Introduction to Landform Study. Earth Interior. Minerals and Rocks. Continental and Oceanic Crust and Relief. Geologic Time. Internal and External Geomorphic Processes.	Chapter 11 Practice Packet 4.
16	10/18/12	The Internal Processes. Plate Tectonics. Volcanism	Chapter 11, 12

		and Volcanic Landforms.	
17	10/23/12	Tectonic Landforms. Diastrophism Processes: Folding and Faulting. Landforms and Rock Structure. Earthquakes.	Chapter 12
18	10/25/12	Denudation: Weathering, Mass Wasting, and Erosion.	HW 3 is due. Chapter 13, 16
19	10/30/12	Test 3	
20	11/1/12	Hydrosphere : Nature of Water. Hydrologic Cycle. The World Ocean and its Parts. Structure of the Ocean Floor. Bottom Sediments. Characteristics of the Ocean Waters: Temperature, Salinity, Density.	Chapter 14, 16 Practice Packet 5.
21	11/6/12	Movement of Water in the Ocean: Waves, Tides, Currents. Coastal Processes and Coastal Landforms. Study of the Ocean.	Chapter 16, 5
22	11/8/12	Surface Waters. Sources of River Water and Regimes of Flow. Drainage System: Basin, Interfluves.	Chapter 14
23	11/13/12	Landforms Formed by Running Water. Fluvial Processes: Work of Streams. Origin of Lakes. Swamps and Marshes.	Chapter 14, 15
24	11/15/12	Ice Age and Glacial Landforms. Permafrost. Continental, Mountain Glaciations, Sea Ice. Glacial Modification of Terrain.	HW 4 is due. Chapter 13, 17
25	11/27/12	Ground Water. Karst.	Chapter 14
26	11/29/12	Test 4	
27	12/4/12	Biosphere : Geographic Approach to Study of Organisms. Biochemical Cycles –Energy and Matter Flow in Ecosystems.	Chapter 8 Practice Packet 6.
28	12/6/12	Ecological and Historical Biogeography. Soils. Terrestrial Ecosystems and their Taxonomy.	Chapter 8, 10
29	12/11/12	Major Biomes. Human Modification of Natural Distribution Processes. Bring and show your notes to get a bonus point if you had a perfect attendance (max 2 missed classes)!	Chapter 9 HW 5 is due. Paper is due.
30		Final Exam is on Tuesday, December 18 at 2:00 pm	

Grading Policy

You are required to take four tests during the semester that consist of multiple-choice (or true/false) questions and figure/map exercises. Each of them will cover a part or an entire environmental sphere. Each test will count **15%** toward your final grade. You are also expected to submit a 2,000 words (5 pages) paper on a selected topic* or make a 10 minutes presentation during the class at an assigned date when such a topic may contribute to the understanding of a broader problem. This individual assignment will count **10%** toward your grade and is due no later than **December 11, 2012**. There are 5 homework assignments to be completed during the semester and turned in on the due date. Homework assignments have a value of **2** points each (10% total for HW) toward your final grade, if presented on the due date or earlier. Homework submitted before the next class is assigned penalty of 50%. Later

submission is not accepted. Average of Tests 1 and Test 2 will make your **Midterm Grade** to be posted on **October 19, 2012**. The Final Exam on **December 18, 2012** will make **20%** of your grade.

All graded material will be assigned a numerical value on a scale of 100. Letter grades are given as follows: 97% and over A+; 93% to 96% A ; 90% to 92% A- ; 87% to 89% B+; 83% to 86% B; 80% to 82% B- ; 77% to 79% C+; 73% to 76% C ; 70% to 72% C- ; 67% to 69% D+ ; 63% to 66% D ; 60% to 62% D; Less than 60% F.

* Paper requirements and the list of suggested topics are posted on e-learning.

Course & Instructor Policies

Attendance is crucial for the successful learning and will be taken every class. Many of my lectures and our discussions will include materials not found in the text. As a result a good set of class notes and maps will be extremely helpful if you plan excelling in this course. Although extra help may be provided to students, the professor will not hold alternate lectures or release lecture notes to students. Test review materials (Practice Packets) with multiple choice or true/false questions are posted on e-learning. By doing homework on time you get prepared to the map/exercise part of the test. To do the classroom/ homework assignments you need to have a pencil, eraser, and colored pencils at every class. No maps colored with anything other than colored pencils will be accepted. Attendance and class participation will be used as deciding factors for borderline students. No makeup tests. (Individual consideration may be given in case of overwhelming circumstances).

If you wish to look at the ancillary syllabus material, a link to that material is as follows
<http://go.utdallas.edu/syllabus-policies>.

These descriptions and timelines are subject to change at the discretion of the Professor.