

GEOG 2960: Introduction to Physical Geography

Class numbers: LEC 24772 & LABS 31836 & 24773

SP15 Syllabus

Instructor: Scott Reinemann, Ph.D.

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Office hours: Thur. 10:00AM-1:00PM **or by appointment**

Graduate Teaching Assistant: Daniel D'Amico, PhD student

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Office hours: Mon/Wed. 11:30AM – 12:30PM or by appointment (subject to change)

Class Meetings*:

Lecture (class # 27704): We, Fr 8:00AM – 9:20AM

[Page Hall \(PA\) 020](#)

Lab (class # 31836): We 2:20PM – 3:40PM

Lab (class # 24773): Fr 9:35AM – 10:55AM

[Derby Hall \(DB\) 0070](#) (basement)

****NOTE: Students are required to register and attend both lecture & lab sections***

Course Rationale

This course is an introduction to physical geography, the study of Earth's natural environmental elements and processes. Any student interested in our planet will find such study important, since these natural processes explain the distribution of resources, the settlement of human civilization, and the myriad environmental impacts to society throughout history. Earth is the only planet to support humans; this course provides valuable information for all residents taking care of our home.

The course presents an earth systems approach that describes how the flow of energy and matter through the hydrosphere (water), lithosphere (solid earth), atmosphere, and biosphere produce local and global patterns of weather and climate, vegetation, soils, rivers, and landforms. A primary objective is to provide students with a basic understanding of the processes shaping the environment in which we live. Secondly, students will be instructed about the dynamic nature of our Earth environment and challenged to consider the implications for society. How much has it changed in the past, to what extent is it changing at present, and what aspects of these changes relate to human activity?

The course has separate lecture and lab components that are coordinated so the labs provide students with a more in-depth understanding of many of the same basic concepts discussed in lecture, along with new material. There are three midterm exams and a comprehensive final exam that are based on topics covered in lecture and lab. The labs include indoor and field exercises involving direct observations of the physical environment, using tools and methods practiced by scientists.

Disability Services

Students with disabilities that have been certified by the Office for Disability Services will be appropriately accommodated, and should inform the instructor as soon as possible of their needs. The Office for Disability Services is located in 150 Pomerene Hall, 1760 Neil Avenue; telephone 292-3307, TDD 292-0901; <http://www.ods.ohio-state.edu/>.

Academic Misconduct

It is the responsibility of the Committee on Academic Misconduct to investigate or establish procedures for the investigation of all reported cases of student academic misconduct. The term “academic misconduct” includes all forms of student academic misconduct wherever committed; illustrated by, but not limited to, cases of plagiarism and dishonest practices in connection with examinations. Instructors shall report all instances of alleged academic misconduct to the committee (Faculty Rule 3335-5-487). For additional information, see the Code of Student Conduct (http://studentaffairs.osu.edu/info_for_students/csc.asp).

General Education (GE) for Natural Science

This course meets the requirements of the GE for Natural Science - Physical Science. Natural Science coursework fosters students' understanding of the principles, theories, and methods of modern science, the relationship between science and technology, the implications of scientific discoveries and the potential of science and technology to address problems of the contemporary world.

1. Students understand the basic facts, principles, theories, and methods of modern science.
2. Students learn key events in the history of science.
3. Students provide examples of the inter-dependence of scientific and technological developments.
4. Students discuss social and philosophical implications of scientific discoveries and understand the potential of science and technology to address problems of the contemporary world.

This course meets these goals and objectives by introducing students to a variety of elements and processes in the natural environment, and how scientists analyse them. The course focuses on specific insights and tools (theories and methods) that Geography brings to bear on these topics. Students will apply what they learn during lecture in the lab section, in which they will learn and practice many of the key methods used by physical geographers. Throughout, the course applies concepts from Physical Geography to issues and problems of contemporary relevance, and hence helps students develop knowledge that will be useful for problem solving.

The course provides fundamental physical background for understanding integrated environmental issues relevant to society. Important sub-themes include landscape evolution, earth history, surface processes, global climate and environmental change. Lectures will introduce general concepts, and these will be supplemented with lab exercises with individual and group activities that allow students to explore these concepts in case studies.

Course Organization

The course is structured around two weekly lectures of 80 minutes, and one weekly lab session of 80 minutes. Class and lab attendance is critical to success in this course.

Chapters from the textbooks are assigned weekly (be aware that we will not be reading the chapters in order) and should be completed in preparation for the lectures and/or labs. The texts will be supplemented with additional readings that will be supplied to the class website (Carmen). Students are asked to please bring their texts to lab.

Weekly lab sessions allow students to apply their understanding and practice scientific techniques. The lab content will not necessarily match lectures for a given week, but and will sometimes feature field trips and activities outdoors. Students are responsible for any new material presented in lab sessions. The campus field trips will allow students to interact with scientists and experience internationally-renowned research ongoing within the OSU community on topics related to the course. The final lab session will comprise a final exam review. The remaining eleven lab sessions will feature interactive lab exercises requiring students to complete in-class activities with written responses. Teamwork is encouraged during labs, but grading is based on the quality of individual work and individual participation.

Students are expected to prepare for, and attend, *all* weekly labs. Students will be advised in advance when labs involve trips outside of the classroom. Labs may require use of calculator, ruler, and/or textbook.

Required Textbook

The lectures and labs will cover material that is detailed in many textbooks, available both online and in print. Text reading in addition to class attendance is required. I will use De Blij and others, "Physical Geography" (4th ed.) published by Oxford University Press (#1 below). I will also document relevant chapters to accompany lecture topics from a free online text (#2 listed below):

1. *Physical Geography* (4th ed.), by De Blij, Muller, Burt and Mason, Oxford University Press, 2013, ISBN: 978-0-19-985961-0.

This is available in OSU bookstores.

2. *The Physical Environment: An introduction to Physical Geography* (Free ONLINE), by John E. Ritter, http://earthonlinemedia.com/ebooks/tpe_3e/.

Other material is available online. For example, Annenberg Learner (www.learner.org) is a recommended site with educational resources. In particular, the integrated Earth System is featured in "The Habitable Planet" featuring an online text, labs, videos, and simulations:

<http://www.learner.org/courses/envsci/index.html>

Evaluation

1.	Mid-semester exams (3, drop lowest score)	20%	
2.	Final exam (cumulative)	30%	<u>Fri May 1 8:00-9:45 AM</u>
3.	Lab assignments (10 at 4% each)	40%	due <u>in lab</u> weekly
4.	Overall attendance/participation	10%	

Letter Grade Conversion

A: 92 % and above; A-: 90-91.9%; B+: 85-89.9%; B: 80-84.9%; B-: 75-79.9%; C+:70-74.9%; C: 65-69.9%; C-: 60-64.9%; D+: 55-59.9%; D: 50-54.9%; E: below 50%.

Policies

Student Code of Conduct applies; refer to webpage: http://studentaffairs.osu.edu/resource_csc.asp.

Students who anticipate missing an exam must see the Instructor *at least one week prior* to make alternative arrangements. In-class evaluation cannot be made up without special advance notice and is done at the discretion of the instructor.

Exam absences due to illness must be substantiated by a written note from a health care provider. Students who miss lectures or discussion groups due to illness are encouraged to borrow class notes from others, to attend all review sessions, and to meet with the TA or instructor to review missed topics. Missed discussion groups cannot be made up.

In the classroom, be respectful of others, and specifically: NO EMAIL, TEXT, PHONE, or WEB-BROWSING DURING LECTURE! So turn off the mobile devices (phone, laptops, etc). If you require a laptop during lecture, you must get permission from instructor before class.

WEEKLY SCHEDULE* (version 1/14)

Class Topics, Required Readings, and Labs

*Note: These topics and readings are subject to change! Students will be advised of updates to the schedule on Carmen, and should follow the version with most current date.

For weekly text readings, chapters (units) are listed below, abbreviated as:

DeB = De Blij et al., *Physical Geography* (4e)

Wk	Topic	Lecture	Date	Text	Lab
1	Course Introduction	1. Introduction & expectations	W 1/14	Review and obtain text	None
2	Introduction to Earth's physical environment	2. The Physical Geography of Earth	F 1/16	DeB 1-3	Location, time, seasons
		3. Mapping Earth	W 1/21		
3	Earth energy balance and atmosphere	4. The Earth-Sun system	F 1/23	DeB 4	Map skills 1: reading maps
			W 1/28	DeB 5-6	
4	Weather	5. Radiation, temperature & balance	F 1/30	DeB 7-9,11	Circulation patterns
		6. Atmospheric moisture	W 2/4	DeB 12, 13	
5	Climate Systems	7. Weather systems	F 2/6		Climate zones
		8. Climate & Climate Change	W 2/11	DeB 14, 18,19	
6	Biogeography	MIDTERM EXAM 1	F 2/13		Olenyok flood
		10. Cycles and patterns of life on Earth	W 2/18	DeB 20,24-26	
7	The Hydrosphere	11. Biomes, flora & fauna	F 2/20		Rock cycle weathering
		12. Water on Earth	W 2/25	DeB 11,38	
8	The solid Earth	13. Water resources	F 2/27		Ohio agroecosystem
		14. Structure and composition of Earth	W 3/4	DeB Part 5, 36, 37	
9	Weathering processes	15. Plate tectonics & volcanism	F 3/6		Biomes & Invasive species
		16. Erosion & mass wastage	W 3/11		
10	Biogeochemistry & Soils	NO CLASS (Spring Break)	W 3/18		None
			F 3/20		
11	Geomorphology	17. Soils & Nutrients	W 3/25	DeB 20-23	Observing Weather
		18. Landforms	F 3/27		
12	Fluvial systems & processes	19. Surface processes: Streams	W 4/1	DeB 39-41, 50	Stream, glacial and coastal processes
		20. Rivers and sediments	F 4/3		
13	Glaciation	21. Ice Ages	W 4/8	DeB 43-46	Aerial Photography and landforms
		22. Glacial modification of landscape	F 4/10		
14	Deserts & caves	MIDTERM EXAM 3	W 4/15		Tour of Byrd Polar Research Center
		23. The arid lands	F 4/17	DeB 15,42	
15	Oceans & coastal processes	25. Karst landforms	W 4/22		No Lab
		26. Coastal landforms	F 4/24	DeB 10,48,49	

FINAL EXAM: Friday, May 1 8:00am-9:45am in Page Hall 020