

# **GEOG 2960: Introduction to Physical Geography**

## **Class numbers: LEC 32763, Lab \*32764 (4 units)**

### **SP18 Syllabus**

**Course Instructor:** Professor Bryan G. Mark, Ph.D., Geography  
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Office hours: Tu, Th 9:30-10:30AM or by appointment.

**Graduate Teaching Assistant (lab instructor):** Jerry Zou, Ph.D. Candidate, Atmospheric Sciences  
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Office hours: Mon 1-3 pm or by appointment.

#### **Class Meetings\*:**

- Lecture (class # 32763): Tu,Th 2:20PM – 3:40PM
  - Stillman Hall 235
- Lab (students must also enroll in class #32764): Tu 3:55-5:15PM
  - Lab is held in Derby Hall 0070 (basement), unless otherwise instructed.

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

#### **Course Description & Summary**

This course is an introduction to physical geography, the study of Earth's natural environmental elements and processes that influence our lives. 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 aspires to inform the residents taking care of our home by providing a fundamental physical background for understanding environmental issues relevant to society.

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. What landscape features are where they are, and why? 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. The text includes enhanced MasteringGeography content to aid in engaging the students. There are two 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.

## **Students with Disabilities**

The University strives to make all learning experiences as accessible as possible. If you anticipate or experience barriers based on your disability (including mental health, chronic or temporary medical conditions), please inform the instructor immediately **at the beginning of the course**. Students are also welcomed to register with Office of Student Life Disability Services (SLDS), and will be appropriately accommodated upon registration. Bring forms to the instructor as soon as possible to be sure accommodations can be implemented in a timely fashion. **SLDS contact information:** [slds@osu.edu](mailto:slds@osu.edu); 614-292-3307; [slds.osu.edu](http://slds.osu.edu); 098 Baker Hall, 113 W. 12th Avenue.

## **General Education Goals & Expected Learning Outcomes**

This course meets **General Education (GE) requirements** in one area - *Natural Science, Physical Science* (i.e. <http://asccas.osu.edu/curriculum/ge-goals-and-learning-outcomes>). Specifically this means we aspire to the following *goals*:

Students understand 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.

In this class, we aim to address the *expected learning outcomes* as follows :

**1) Students understand the basic facts, principles, theories and methods of modern science.**

A combination of lectures, readings, and labs will help students comprehend natural processes on Earth that influence our lives. We'll consider how these processes involve flows of energy and matter throughout many spheres of the Earth System, and result in landscape features we interact with in the environment. We'll address fundamental principles of Earth's energy balance, climate, hydrology, tectonics, geomorphology, ecology, and biology. We'll focus 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, where they will learn and practice many of the key methods used by actual physical geographers. Students will access real geographic data, practice analyses, and critically evaluate scientific evidence for how we understand these processes.

**2) Students understand key events in the development of science and recognize that science is an evolving body of knowledge.**

Students will study the history of key concepts in physical geography, with a particular focus on how we have understood longitude, climate changes, and the evolution of both landscapes and life forms. We will take a critical look at the data, observations, models and assumptions that underly our understanding to be able to appreciate how we know what we know, and how that has changed progressively over time.

**3) Students describe the inter-dependence of scientific and technological developments.**

Students will examine how technology has informed our understanding of natural phenomena, what measurements document climatic and environmental changes, and how technology continues to provide critical observations of these processes, from the laboratory to satellites in space. We will use instrumentation, and visit an actual science lab in action. We'll pay particular attention to geospatial tools like satellite imagery and digital mapping, and experience how these technologies have revolutionized our view of the Earth with hands-on exercises.

**4) Students recognize social and philosophical implications of scientific discoveries and understand the potential of science and technology to address problems of the contemporary world.**

Students will confront the evidence of how the landscape and Earth System are impacted by both human and natural processes, and get exposed to the implications of these for policy makers; climate and environmental changes are considered among the leading problems facing the contemporary world. We will provide the basic facts and physical principles involved, and what processes influence change over different time scales. Throughout the course, students will be asked to specifically link Physical Geography concepts to issues and problems of contemporary relevance, helping them develop knowledge useful for problem solving.

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. Important sub-themes include landscape evolution, earth history, surface processes, global climate and environmental change.

### **Course Organization**

This 4 credit lab 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 at least weekly, with certain MasteringGeography content due before lecture. Reading thus should be completed in preparation for the lectures and/or labs. The text may be supplemented with additional readings that will be supplied to the class website (Carmen). Students are asked to please bring their texts (print or digital) 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, and will sometimes feature field trips and activities outdoors. Students are responsible for any new material presented in lab sessions. It is generally not possible to run make up labs. Most of the lab sessions will feature interactive 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.

## Textbook

We will use the textbook and accompanying Mastering Geography online components. Text reading in addition to class attendance is recommended, and exercises will be assigned for completion prior to lecture. It is available in the OSU bookstores.

- *Geosystems Core (1<sup>st</sup> edition)*, by Christopherson / Cunha / Thomsen / Birkeland (Pearson)  
The OSU Barnes & Noble bookstore carries this, but there are also direct from publisher options for purchase, based on the following list of ISBN numbers (estimated cost via bookstore):
  - a. Mastering + Looseleaf: 9780134153537 (\$107)
  - b. Mastering access card: 9780134011288 (\$96)
  - c. Mastering instant access: (from publishers, \$78.95 retail)

Note that the OSU bookstore price matches, so it will honor prices if you find them lower on other sources like Amazon. They have savings on new and used books. Here is the link:

[https://secure.bncollege.com/webapp/wcs/stores/servlet/TBListView?cm\\_mmc=RI--218--1--A](https://secure.bncollege.com/webapp/wcs/stores/servlet/TBListView?cm_mmc=RI--218--1--A)

The lectures and labs will cover material that is detailed in many textbooks, available both online and in print. For example, there is a free online text:

- *The Physical Environment: An introduction to Physical Geography*, by John E. Ritter,  
[http://earthonlinemedia.com/ebooks/tpe\\_3e/](http://earthonlinemedia.com/ebooks/tpe_3e/).

Many other materials are available online. For example, Annenberg Learner ([www.learner.org](http://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-quarter exams (2)	20%	
2.	Final exam (Wednesday April 25 2:00pm-3:45pm*)	20%	
3.	Lab assignments	35%	due <u>in lab</u> weekly
4.	Mastering/GeoLabs/Quizzes	15%	
5.	Personal Geo project	10%	

\* Note that final exam dates are scheduled by the university, but we may discuss an alternative.

## Letter Grade Conversion

A: 95% and above; A-: 90-94.9%; B+: 86-89.9%; B: 82-85.9%; B-: 78-81.9%; C+: 74-77.9%; C: 70-73.9%; C-: 66-69.9%; D+: 62-65.9%; D: 57-61.9%; E: below 57%.

## Course Policies

### Absence & late penalties:

Students who anticipate missing an exam or in class exercise for valid reasons must discuss with instructors immediately, and present valid documentation no later than *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.

If you miss a quiz, exam, lab or exercise, you must present a doctor's note demonstrating you sought medical attention for an unavoidable reason that prohibited you from attending class. The doctor's note must include a name and telephone where we can contact them. We will consider make up requests on a case-by-case basis; given the nature of the class content, it is impossible to redo certain activities. An absence related to exams or labs must be explained directly to instructors in person, and then communicated clearly via email.

All laboratory exercises must be completed the lab period (unless explained otherwise by the instructor or TA). Assignments may not be completed prior to, or subsequent to, the assigned lab time. Assignments not handed in on time will lose 2 (two) percentage points per day. You will also lose points if assignments are not **STAPLED!**

### **Academic integrity & misconduct:**

Academic integrity is essential to maintaining an environment that fosters excellence in teaching, research and other educational and scholarly activities. The Ohio State University and the Committee on Academic Misconduct (COAM) expect that all students have read and understand the University's *Code of Student Conduct*, and that all students will complete all academic and scholarly assignments with fairness and honesty. Students must recognize that failure to follow the rules and guidelines established in the University's *Code of Student Conduct* and in this syllabus may constitute "Academic Misconduct."

The Ohio State University's *Code of Student Conduct* (accessible here:

<https://oaa.osu.edu/coam.html>) defines the term "academic misconduct" as: "Any activity that tends to compromise the academic integrity of the University, or subvert the educational process."

Examples of academic misconduct include (but are not limited to) cases of plagiarism, collusion (unauthorized collaboration), copying the work of another student and dishonest practices in connection with examinations (e.g. possession of unauthorized materials during the exam). Ignorance of the University's *Code of Student Conduct* is never considered an "excuse" for academic misconduct, so we recommend that you review the *Code of Student Conduct* and specifically the sections dealing with academic misconduct.

If we suspect that a student has committed academic misconduct in this course, we are obliged by University Rules to report our suspicions to COAM, who will investigate or establish procedures for the investigation of all reported cases of student academic misconduct. If COAM determines that you have violated the *Code of Student Conduct* (i.e. committed academic misconduct), the sanctions for the misconduct could include a failing grade in this course and suspension or dismissal. If you have any questions about this policy or what constitutes academic misconduct in this course, please contact us.

### **Class protocols:**

We aim for an engaging and interactive class; please read carefully the following protocols that will hold, without exception, for all students. These are designed to make your learning experience more edifying and enjoyable. We take our teaching responsibility seriously, and we hope you approach learning equally so.

- In the classroom, be respectful of others, and specifically: **NO EMAIL, TEXT, PHONE, or WEB-BROWSING DURING LECTURE!**
- The use of cell phones, smart phones, and other mobile communication or media devices in class is disruptive to your colleagues' learning. The use of these devices is prohibited during class. **Turn off your cell phone ringer before class starts.** If you'd rather be online than attend lecture, then make your choice and do not come to class. Students are encouraged to report anyone who is engaged in distracting use of phone, laptops or tablets. If you use your mobile device in class, or if your cell phone rings in class, we will give you a 1<sup>st</sup> warning and remind you of this class policy. If you violate this policy a 2<sup>nd</sup> time, we will ask you to immediately

leave the classroom for the remainder of the lecture period and meet with us in office hours. There will be no exceptions to this rule.

- Use of a laptop or tablet or computing device for classwork (e.g. taking notes, making calculations, using online material and Mastering) is permitted during lecture class, but our expectation is that you are using it for that purpose alone. Using your portable device for other reasons (e.g. surfing, news, email, messaging, videos, games) is a distraction for you and your peers. If we detect that you are using your device for non-class related activities, we will give you a 1<sup>st</sup> warning and remind you of the class policy. If you violate this policy a 2<sup>nd</sup> time, we will ask you to immediately leave the classroom for the remainder of the lecture period and meet with us in office hours. There will be no exceptions to this rule.
- Active participation during the lecture in the form of questions and discussion of the material at hand is welcomed. It is our responsibility to ensure that students' participation in class is orderly and respectful. If your participation disrupts the class, or is not respectful to us or your peers, we will ask you to leave the classroom for the lecture period and meet with us immediately afterwards to discuss your continued enrollment in the class.
- Lecture slides will be posted in pdf form after class or by the end of the week. Note that this does not serve as an excuse to miss lecture. Lecture slides are condensed versions of material covered in class. There will be material presented, emphasized or discussed in class that will not appear on the lecture slides. Questions arise or discussions get initiated that are not anticipated or explicitly recorded on lecture slides. If you miss a class, it is recommended that you consult with a colleague who was in attendance to obtain notes on material you might have missed.