Overview of the Course

This course is an introduction to physical geography, the study of natural environmental systems, emphasizing how these systems produce local and global patterns of weather and climate, vegetation, soils, and landforms. The first objective of the course is to provide a basic understanding of the most important processes shaping the environment in which we live. The second is to convince you of the dynamic nature of that environment, and the degree to which it has changed in the past and is changing at present, in part because of human activity.

The course has separate lecture and lab components, which are coordinated so the labs provide you with a more in-depth understanding of many of the same basic concepts discussed in lecture, along with new material. The three exams are based on topics covered in lecture, and there are separate lab quizzes to test your understanding of lab material. The labs include indoor and field lab exercises and a field-based semester project, which are discussed in more detail in the lab syllabus. A review assignment on weather and climate is also part of the lab work; this is timed so that it should help you prepare for the lecture exam that covers the same topics.

Prerequisites

There are no prerequisites for this class, but students are expected to be geographically literate. You should know the location of the world’s continents and oceans, the 50 states and major natural features like the Mississippi River or the Rocky Mountains. Google Earth will be used to illustrate some of the points made in lecture, and it would be a good idea to try this freely available program out for yourself, if you haven’t already (http://earth.google.com/)

Required Textbook


The textbook is mainly intended to provide you with more in-depth background on lecture topics, and to help you review lecture material. In studying for the exams, focus first on your lecture notes, to get an idea of the major topics that will be covered. However, there will be three or four questions on each exam that are based mainly on the assigned textbook readings, rather than on lectures, and will be hard to answer without doing the reading. I will give some additional information on how to study for the exam using both lecture notes and the textbook, along with sample questions.

Grading

The final course grade will be based on work in lab (30%), and three lecture exams (70% total; the exams are equally weighted). You must receive a passing grade in both lecture and lab components to pass the course as a whole. After the first exam, I will discuss the grading scale and how to assess your standing in the class at that point. The lecture exams will be mainly in multiple-choice format (a few short-answer questions are possible), and they are not comprehensive. If you must be out of town for a lecture exam, please discuss this with the instructor as early as possible in the semester, or it may not be possible to schedule an alternative exam time. If you miss an exam because of an emergency or health issues, notify the instructor as soon as possible, preferably within 24 hours. Extra time for exams or other accommodations should be arranged through the McBurney Center. Extra credit is not offered. Plagiarism in lab papers or other academic misconduct will affect your course grade and/or have other consequences. For information on what is considered academic misconduct, and possible consequences, see http://students.wisc.edu/saja/misconduct/UWS14.html. This issue will also be discussed in lab.

Honors: If you are registered for honors credit, please contact your TA during the first three weeks of the semester to discuss the required project.
**Lecture Schedule. Please note:** The schedule of lecture topics is approximate and may be modified to some extent over the course of the semester. *The dates of exams are fixed.* Each exam will cover the material actually discussed in lecture on the dates listed, regardless of minor changes in lecture topics. If you have any questions about this point, please ask.

<table>
<thead>
<tr>
<th>Date</th>
<th>Lecture Topics</th>
<th>Readings from the textbook:</th>
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| Tuesday 9/3, Thursday 9/5  | 1. Introduction to physical geography and to this course.  
                               2. The geographic grid and map projections  
                               3. Minerals and rocks                                                                  | Units 3 (section on Remote Sensing of the Environment can be skipped), 28, and 29          |
| Tuesday 9/10, Thursday 9/12, Tuesday 9/17 | 1. Structure of the Earth  
                               2. Plate tectonics  
                               3. Volcanoes  
                               4. Faults, folds, and earthquakes                                                        | Units 27, 30, 31, 32, 33, and 34                                                         |
| Thursday 9/19                | 1. Earth-Sun relationships  
                               2. Radiation and heat balance                                                            | Units 4 and 5                                                                             |
| Tuesday 9/24, Thursday 9/26 | 1. Composition and structure of the atmosphere  
                               2. Temperatures of the lower atmosphere                                                  | Units 6 and 7                                                                             |
| Tuesday 10/1                 | Air pressure and winds                                                        | Unit 8                                                                                     |
| **Thursday 10/3**            | **Exam 1 (covers lectures on 9/3 through 10/1)**                                | Unit 10                                                                                   |
| Tuesday 10/8                 | Atmospheric circulation                                                       |                                                                                            |
| Thursday 10/10               | Atmospheric moisture and water balance                                        | Unit 11                                                                                   |
| Tuesday 10/15                | Precipitation, air Masses, and fronts                                         | Unit 12                                                                                   |
| Thursday 10/17               | Weather systems                                                               | Unit 13                                                                                   |
| Tuesday 10/22                | Major climates of the world                                                   | No reading                                                                                |
| Thursday 10/24, Tuesday 10/29| Climate Change, Past, Present, and Future                                     | Units 18 and 19                                                                           |
| Thursday 10/31, Tuesday 11/5 | 1. The Carbon Cycle  
                               2. Energy flow in Ecosystems: Photosynthesis, respiration, decomposition               | Units 20 and 24                                                                           |
| **Thursday 11/7**            | **Exam 2 (covers lectures, 10/8 through 11/5)**                               |                                                                                           |
| Tuesday 11/12                | Global and local patterns of vegetation                                       | Unit 25                                                                                   |
| Thursday 11/14, Tuesday 11/19| 1. Introduction to soils  
                               2. Weathering and soil formation                                                      | Units 21 and 36                                                                           |
| Thursday 11/21               | 1. Global and local patterns of soils  
                               2. Soils and the carbon cycle                                                          | Unit 23                                                                                   |
| Tuesday 11/26, Tuesday 12/3  | 1. Overview of the hydrologic cycle  
                               2. Infiltration and runoff  
                               3. Soil erosion  
                               4. Drainage basins                                                                        | Units 38 and 39                                                                           |
| Thursday 12/5                | 1. Stream channels, floods, and floodplains  
                               2. Aggradation, incision, and terraces                                                  | Unit 41                                                                                   |
| Tuesday 12/10                | 1. Glaciers and Ice Age Wisconsin                                                 | Units 43 and 44                                                                           |
| **Thursday 12/12**           | **Exam 3 (covers lectures on 11/12 through 12/10)**                           |                                                                                           |

No exam during finals week