Geography of Environmental Systems

Geography 201

Spring 2019

ESJ Room 0202, Tuesday and Thursday from 9:30 am to 10:45 am

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Office hours: Monday and Wednesday 11:30 am – 12:30 pm or by appointment

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Course Text

The required text for the class is Elemental Geosystems Plus Mastering Geography with Pearson, 9th Edition, which you can purchase through the Pearson website when you register for Mastering Geography.

There is an option to purchase only the Mastering Geography access, which you are free to opt for if you would like, but you will need a textbook in order to answer the questions in the assignments posted in Mastering Geography. There is currently a copy of the 8th edition of the textbook in the library, and the publisher is sending 2 additional copies of the 9th edition for the library.

Course Background

Geography 201 is an introduction to physical geography, a natural science allied with sciences such as geology, climatology, meteorology, oceanography, hydrology botany and agronomy. The geographic perspective is unique in that it integrates not only the individual systems that have commonly been associated with a single discipline, but also the interaction of these systems within a framework we call *Earth System Science*. The major goal of this class is to provide a fundamental understanding of the physical environment we live in. In doing so, the course will provide the basis for comprehending modern environmental issues, including those affected by human activities.

Learning Outcomes

1. To understand the fundamental laws and principles underlying the physical environment, how these control processes that occur on the land surface, in the oceans and in the atmosphere, and how these systems interact.

2. To understand the mechanisms that lead to variability in important physical characteristics such as air temperature, weather, climate, landforms, soils, plants and other elements of the environment

3. To develop a basic understanding of the geographic perspective as applied to earth system science.

4. To develop the foundational learning of environmental science and the scientific method that enables critical thinking about the many pressing environmental problems facing society in the coming decades.

Knowledge Objectives

At the completion of our course, we should be able to describe the basic elements of physical geography, including the following:

1. The Earth's revolution around the Sun and its impact on energy, temperature, and seasons.
2. The Earth's global energy balance and its variability by latitude and seasons
3. The factors that control air temperature and its variability, and the science behind global warming.
4. The role of water in the atmosphere and its importance in the hydrologic cycle.
5. The formation of clouds, weather systems and severe storms.
6. The formation winds, from local to global scales, and the impact of air pressure and coriolis force on these.
7. How the climates of the Earth are classified.
8. The processes that control the rock cycle and plate tectonics.
9. The formation of landforms, including volcanoes, tectonic features, and earthquakes.
10. The processes that reduce landforms, including weathering and mass wasting, and those which shape them through running water, wind and ice.
11. The formation, classification and geographic distribution of soils.
12. The fundamental biogeographic processes and how these shape the global distribution of plants and animals.
13. Specific knowledge of current environmental issues including global warming, sea-level rise, impacts of severe storms, air-pollution, water pollution, soil degradation, and loss of biodiversity, and the key processes in physical geography that underlay them.

Course Organization
The course is organized around the four basics systems of the Earth: the energy-atmosphere system, the hydrosphere, the lithosphere and the biosphere. We will follow the general outline of book and cover each chapter in sequence. Lectures will highlight key concepts in our text as well as a number of special topics. We will also present some material that is not in the text.

Geography 201 is a *Mastered* course using the content of Pearson's MyLab and Modified Mastering (abbreviated as ML&M) available via Canvas.

That means that in addition to in class exams, students will be assessed using the Mastering component via Canvas. The teaching assistant, Meredith Brown has provided via ELMS all the instructions on how to engage in this aspect of the course.

The course will be taught using graphics and notes in PowerPoint, as well as notes written by hand during lecture. The PowerPoint slides will be made available on Canvas, but not the hand-written notes. These materials and all lecture notes taken during class are copyrighted by the University and may not be reproduced or disseminated without the written permission of the instructor. In addition, no audio taping of lectures is allowed without the written permission of the instructor.

Course Requirements
There is no explicit attendance requirement for our course. However, students should browse each chapter. There will be two midterms and a comprehensive final exam, but the final will be weighted towards the material not covered on the first two midterms.

Course Grading
Course grades will be determined as the sum of the weighted scores of the assigned work on ML&M, the two midterms and final. Grades are assigned as follows:

Final Percentage	Grade
96-100	A+
92-95	A
90-91	A-
88-89	B+
82-87	B
80-81	B-
78-79	C+
72-77	C
70-71	C-
60-69	D
Less than 60	Fail

Final Grade Components

ML&M Reading Quizzes	15%
Midterm #1	25%
Midterm #2	25%
Final Examination	35%

ELMS places a default grade by adding all your scores and calculating the percentage of that grand score out of the total possible points. That is not how grades are calculated in this course. For example, for the first Midterm exam, if the maximum possible points are 65, a student who gets 51 out of 65 should calculate their scores by dividing 51 by 65 and then multiplying that value by 25. This should be also done for the second exam. For the final exam, instead of multiplying the value by 25, students must multiply the value by 35. The final percentage is obtained by adding each of those scores plus the mastering section which is worth 15 percent.

CORE Laboratory Science Requirement
Geography 201, when taken concurrently with Geography 211, fulfills the CORE Laboratory Science Requirement. Geography 201/211 ***must*** be taken in the same semester to meet this requirement. Geography 201 by itself does ***not*** count as a non-lab science for CORE.

Academic Integrity
The University of Maryland, College Park has a nationally recognized Code of Academic Integrity, administered by the Student Honor Council. This Code sets standards for academic integrity at Maryland for all undergraduate and graduate students. As a student you are responsible for upholding these standards for this course. It is very important for you to be aware of the consequences of cheating, fabrication, facilitation, and plagiarism. **Please note well:** Each student must complete their own online Mastering work, by themselves. Unless specifically directed, working collaboratively on the ML&M graded components is a violation of academic integrity and will be treated very seriously (possibly resulting in a grade of "XF"). For more information on the Code of Academic Integrity and the Student Honor Council, please visit the Student Honor Council website to see Code of Academic Integrity.

STUDENTS WITH SPECIAL NEEEDS AND COUNSELING FOR STUDENTS WITH SPECIAL NEEDS: If you are a student who has special needs that have been recognized by the University of Maryland at College Park, please see your instructor immediately so that arrangements can be made for you to maximize the chances for you to successfully complete this course. If you experience difficulties in mastering the academic demands of this course, please contact the Learning Assistance Service, 2201 Shoemaker Building, 301-314-7693 as soon as possible. Their educational counselors can provide assistance with time management, reading, note-taking, and exam preparation skills.

DISABILITIES: We will make every effort to accommodate students who are registered with the Disability Support Services (DSS) Office and who provide me with a University of Maryland DSS Accommodation form. This form must be presented to the Instructor as early as possible. We will not be able to accommodate students who are not registered with DSS or who do not provide me with documentation, which has been reviewed by DSS after this date

RELIGIOUS OBSERVANCE: By February 20th, students must provide the instructor in writing a request for a request for a make-up exam if you are unable to take an exam on the scheduled date due to a specific religious observance (specify). In addition, written requests must also be made for turning in a discussion assignment late or missing a discussion because of a specific religious observance. Please refer to the Online Undergraduate Catalog Policy on Religious Observance

Absences

The most effective way to learn the material in this course is to attend *every* lecture. Students are therefore advised to attend each lecture even though all the notes in the class will be available on line through ELMS. Missing exams owing to illnesses, students are required to bring a sick note documented by a health care professional and an appropriate time will be arranged for the student to take the exam that was missed. The documentation must specify the dates for which the absences are excused.

Policy on General Lecture Behavior

Students are expected to be considerate of their fellow classmates and the instructors during lecture. This includes no talking or other distracting behavior. If you arrive late for class, please enter the classroom by the rear lecture room doors. If you must use the washroom during lecture please enter and exit by the rear doors.

Class Schedule

Class Schedule Dates	Topic	Readings
Jan 29	Introduction and Essentials of Geography	Chapter 1
PART I: The Energy-Atmosphere System		
Jan 31	Solar Energy, Seasons and Atmosphere	Chapter 2
Feb 5, 7	Atmospheric Energy and Global Temperatures	Chapter 3
Feb 12, 14	Atmospheric and Oceanic Circulations	Chapter 4

PART II: Weather, Water and Climate Systems		
Feb 19, 21, 26	Atmospheric Water and Weather	Chapter 5
Feb 28, Mar 5, 7	Water Resources	Chapter 6
Mar 12	***First Midterm Exam***	Chapters 1-6
Mar 14	Earth's Climatic Regions and Climate Change	Chapters 7, 8

PART III: Landforms and Geomorphology		
Mar 26, 28	The Dynamic Planet	Chapter 9
Apr 2, Apr 4	Tectonics, Earthquakes and Volcanism	Chapter 10
April 9	Weathering, Karst Landscapes and Mass Movement	Chapter 11
April 11, 16	River Systems	Chapter 12
April 18	***Second Midterm Exam***	Chapter 7-12
April 23, 25	Oceans, Coastal Systems and Wind Processes	Chapter 13
April 30	Glacial and Periglacial Landscapes	Chapter 14

PART IV: Ecosystem Processes		
May 2	The Geography of Soils	Chapter 15
May 3	Ecosystem Essentials	Chapter 16
May 7, 9, 14	Terrestrial Biomes	Chapter 17

To be decided	***Final Exam***	Chapters 1-17

Important Dates

First Midterm Examination: Tuesday, March 8th
Second Midterm Examination: Thursday, April 18th
Final Examination: to be decided

A note on querying exam scores: Students are free to query their exam scores under the following conditions: You cannot query scores from a previous exam after a second exam is given, etc. Your window of opportunity therefore lasts from the end of the exam until the time the next one is given.

PLEASE BE ADVISED THAT THE MATERIAL OUTLINED IN THE SYLLABUS, INCLUDING DATES FOR EXAMS ARE SUBJECT TO CHANGE IN ACCORDANCE WITH THE OCCURRENCE OF SPECIAL CASES AND EVENTS.