

**PHYS 160 – Physical Geology**  
Fall 2018

Instructor: Dr. Rebecca Butler  
Class time: MWF 9:00-9:50 am  
Text: *Understanding Earth, 6<sup>th</sup> Ed.*, Grotzinger  
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Hours: MWF 10-11, MW 12-4, W 1-4  
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This course is an introduction to the physical processes that affect the Earth (such as plate tectonics, earthquakes, volcanism, mountain building, glaciation, weathering, and erosion) and to the rocks, minerals, and other materials that make up the earth's surface and interior. PHYS 165 is a co-requisite.

This course is also intended for partial fulfillment of the Pitt State Pathway Curriculum.

**Pitt State Pathway Mission Statement:** The *Pitt State Pathway* curriculum serves as the heart of the university education by fostering interdisciplinary competencies that typify the educated person. It is designed to facilitate the development of key proficiencies including communication and information literacy. The *Pitt State Pathway* curriculum provides a transformational experience that challenges students to think creatively and critically, and to immerse themselves in the productive examination of humans in their global setting. By encouraging the development of skills that promote life-long learning, the *Pitt State Pathway* fosters a sense of personal responsibility, an appreciation of diversity, and an understanding of interconnectedness in our truly global society.

**Pillar(s) of the Pitt State Pathway and Learning Outcome(s) to be Covered in This Course:**

The students will learn about the physical processes that affect the Earth (such as plate tectonics, earthquakes, volcanism, mountain building, glaciation, weathering, and erosion) and the rocks, minerals, and other materials that make up the earth's surface and interior. Students will also learn how scientists approach problems and why science is a never ending process.

The **Learning Outcome** for Natural World in a Global Context is:  
Students will explore global systems conscientiously.

The **Learning Outcome** for Scientific Inquiry is:  
Students will analyze data logically.

**Learning Outcomes:** Student will understand basic principles, methods of inquiry, facts, and theories of the physical geology and connect basic science and everyday life. Students will be informed citizens on matters that involve science and public policy, and they will understand how the natural sciences contribute to the general welfare of the civilization.

**Essential Study to be covered in this course: Natural World within a Global Context**

Biological, physical, and chemical systems form the context for life. Students need to understand how these systems work, how these change naturally, and how these can change as a result of human activities. The implications of these changes are essential for long-term decision-making. In this course we will:

*Analyze* physical and chemical systems;

*Evaluate* the implications of changes that result from interactions between natural and human systems.

**Companion Element to be covered in this course: Scientific Inquiry**

The scientific method is the systematic approach to understanding the world around us. Through experimentation and hypothesis testing, students will apply analytical skills and appropriate methods of scientific inquiry (i.e. qualitative and quantitative) to solve a variety of research questions. In this course we will:

*Compose* appropriate research questions and hypothesis, drawing from experts, reliable sources, or previously collected data.

*Collect, synthesize, and analyze* data from multiple sources;

*Draw* logical conclusions, assessing for gaps and weaknesses, and addressing potential consequences and implications

*Communicate* results using appropriate delivery methods or formats.

**Course Description:** 3 hours. Introduction to minerals and rocks on the earth's surface and interior; dynamic geological processes, including plate tectonics, volcanism, orogeny, glaciation, weathering, and erosion. Co-requisite: PHYS 165 Physical Geology Laboratory.

## Course Objectives and Learning Outcomes

**Natural World within the Global Context:** Level of Student Learning = Milestone I

Explains physical and chemical processes and human activities that alter them.

**Scientific Inquiry:** Level of Student Learning = Milestone I

Student will apply the scientific methods to a problem.

This course uses the Kansas Board of Regents Core Outcomes (available at [https://www.kansasregents.org/resources/PDF/Academic\\_Affairs/TAAC/FY\\_2015/2015-16\\_KCOG\\_Report.pdf](https://www.kansasregents.org/resources/PDF/Academic_Affairs/TAAC/FY_2015/2015-16_KCOG_Report.pdf)) for Geology.

Students should be able to

1. Explain the nature of scientific inquiry.
2. Identify and describe a range of Earth materials, including minerals, rocks, soils, and fossils.
3. Discuss basic geologic principles including Geologic Time and Plate Tectonics.
4. Interpret geologic features in terms of Earth system processes and cycles, including tectonic, water, and rock cycles.
5. Identify and evaluate the origin and nature of resources.

## Method of Assessment

Students, on homework, exams, and in-class work, will *describe*, and *explain*, items, principles, and processes related to the student outcomes. (Milestone 1)

## Grading

Homework	20%	A 100-90%
4 midterms	50% (12.5% each)	B 89-78%
In class work	10%	C 77-67%
Final	20%	D 66-56%
Total	100%	F 55-0%

## Homework

Homework will be due every Monday in class (or if its online, by class time). Homework will not be accepted late. **Homework answers must be in the student's own words.** Assignments will be on Canvas.

If you're having trouble finding an answer, remember the glossary and index in the back of the book, and the "find" function in powerpoint (either under the "Home" menu, or you can hit Control-f). Lecture powerpoints will be posted on Canvas.

## Midterms

We might be running a little behind or ahead on the material for each midterm, but barring natural disaster, the dates for the tests will stay as listed on the calendar in Canvas.

Old midterms from a previous year are on Canvas for use as practice tests.

**In class work**

Sometimes there will be worksheets or activities during class. If you miss a day with these, you can still do them, either by filling out the worksheet on your own (they'll be on Canvas) and sending it or showing it to me, or if the activity required materials, coming by my office to do it, before the next test.

**Final**

The final will be comprehensive.

**Plagiarism and Cheating:**

Plagiarism and cheating are serious offenses and may be punished by failure on the exam, paper or project, failure in the course, and/or expulsion from the University.

For more information refer to the PSU Code of Student Rights and Responsibilities: Article 30, Academic Misconduct at

[http://catalog.pittstate.edu/contentm/blueprints/blueprint\\_display.php?bp\\_listing\\_id=162&blueprint\\_id=124&sid=1&menu\\_id=7980](http://catalog.pittstate.edu/contentm/blueprints/blueprint_display.php?bp_listing_id=162&blueprint_id=124&sid=1&menu_id=7980)

Please review the following syllabus supplement:

[https://www.pittstate.edu/registrar/\\_files/documents/syllabus-supplement-spring-2019-updated-1-3-19-.pdf](https://www.pittstate.edu/registrar/_files/documents/syllabus-supplement-spring-2019-updated-1-3-19-.pdf)

**Minimum Technology Requirement:**

Canvas is required. Please click the link to a Canvas help page:

<https://www.pittstate.edu/it/information-technology-services/canvas.html>

Any technical difficulties, please contact Gorilla Geeks at

<https://www.pittstate.edu/it/gorilla-geeks.html>