

**Introduction to Physical Geology – GEOL 001 (NS)
Fall 2008**

(sec. 03) T-Th 10:05-11:00 AM, Breslin 103

(sec. 04) T-Th 12:45-1:35 PM, Breslin 103

Instructor: **J Bret Bennington**

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Office Hours: MF 10:00-11:00 AM, T 11:30-12:30 PM

Texts: *Visualizing Geology* by Murck, Skinner, and Mackenzie (2008), Wiley Publishers

Physical Geology Lab Manual by Merguerian and Bennington (2008), 10th Edition



"Civilization exists by geological consent, subject to change without notice."

- Will Durant, U.S. Historian

Topics

Chapter

Introduction – Course Goals

Unit 1: The Composition, Structure and Functioning of Planet Earth

Earth Systems	1
Earth Materials and Resources (minerals)	2
Structure of Planet Earth	5
Earth's Interior Machine	5
The Magnetic Field	5

Exam 1

Unit 2: Understanding the Dynamics of Earth's Lithosphere – Plate Tectonic Theory

The Rock Cycle	2, 6, 7, 8, 10
Continental Drift	4
Seafloor Spreading	4
Plate Tectonics	4

Exam 2

Unit 3: Humans as Agents of Geologic Change and Dependents on Earth Systems

The Carbon Cycle	
Earth's Climate System	12, 13
Global Warming and Climate Change	13
Fresh Water – the Most Vital Geologic Resource	11

Exam 3

Internet Resources: Course materials can be accessed through *Blackboard* via the Hofstra web portal **<http://my.hofstra.edu>**

Course Grade: The final course grade will be based on 3 lecture exams (50%) 3 lab quizzes (30%), and a 5-page research paper (10%) and classroom presentation (10%).

Hofstra University Learning Goals and Objectives Introduction to Physical Geology – GEOL 001 (NS)

Department of Geology:

- 1. Students will develop the basic observational skills they need to function as geoscientists.**
 - 1a. Students will make measurements and use various quantitative units to describe phenomena and will practice converting quantities from one unit to another.
 - 1b. Students will use maps (topographic and geologic) to estimate distances, visualize landforms, and locate / identify geographic and geologic features.
 - 1c. Students will identify at least 20 common minerals in hand samples and in field exposures of rock.
 - 1d. Students will identify the common forms of igneous, metamorphic, and sedimentary rock in hand samples and in field exposures.

- 3. Students will apply critical thinking skills such as inductive and deductive reasoning to solve geological problems using the scientific method.**
 - 3e. Students will demonstrate the ability to integrate new data with their current understanding of geologic systems to formulate or evaluate a hypothesis.

HCLAS General Education Distribution:

- 2. Students will apply analytical reasoning across academic disciplines.**
 - 2c. Apply quantitative, inductive, and deductive reasoning.
 - 2d. Apply abstract thinking and conceptual modeling.
 - 2e. Apply scientific methods to investigate and analyze the natural world.

- 3. Students will demonstrate proficiency in written communication.**
 - 3a. Compose grammatical sentences.
 - 3c. Compose a sequence of paragraphs that develop a point.
 - 3e. Write an effective argumentative essay.

- 4. Students will demonstrate proficiency in oral communication.**
 - 4a. Demonstrate skill in oral communication for purposes such as informing, persuading, and/or defending.
 - 4b. Compose and deliver effective, audience-appropriate oral presentations that develop and support a point; or participate in formal debates; or lead or participate in collaborative discussion of a question or a text.
 - 4c. When appropriate, use visual, auditory, and/or technological aids.

- 6. Students will demonstrate information literacy.**
 - 6a. Conduct research using the variety of information sources available to them.
 - 6c. Integrate sources effectively and ethically through proper citation.

- 7. Students will demonstrate technological competency.**
 - 7a. Demonstrate the ability to use general or discipline-specific technologies to identify, retrieve, analyze, and communicate ideas and information.