Course Syllabus

GEOSCIENCE and PUBLIC POLICY
GE187 - Spring 2014

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Office Hours: T-Th 3:30-4:30, Devlin 312
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This document provides a basic summary of the course. Other course materials will be posted on the BC Canvas course web site, where you will find much more detail about the course.

* In this course, we will be using BC's new Canvas course management system. This course is one of a number of BC courses this semester that have been chosen as early adopters and testers of the new system, which is planned to replace Blackboard in September 2014. Students should always check Canvas for all announcements, updates, and any other information regarding the course.

Teaching Assistant: Caleb Lucy (lucyc@bc.edu)

Lecture: T Th 6:30-7:45, Devlin 008

Textbook and Readings:

- Readings from the textbook and from other sources will be assigned periodically in class, and will be posted on the Canvas course web site.

Description of Course:

We are confronted daily with news of problems that require a solid foundation in science to evaluate. In this course, we will explore a variety of geoscience issues that affect the public and are, therefore, also public policy issues. Students will be introduced to the underlying scientific concepts relevant to the problem being addressed. After this scientific foundation is developed, we will discuss how it needs to be considered as part of the process of making policy decisions. The course will also introduce students to how scientists and public policy makers apply the concepts of probability and statistics in the decision making process.

Grades will be based on:

(1) Two in-class exams: These two exams will count for a total of 60% of the course grade (30% each). Tentative dates for in-class exams: February 25, 2014 and April...
3, 2014.

(2) Cumulative Final Exam (35% of course grade): May 6, 2014 at 6:30 PM. **You are required to be here on the day of the Final Exam. If your travel plans, or any other personal plans, are such that you can not be here for the Final Exam, you will not be able to take this course.**

(3) Course Participation: 5% of course grade. (See Online Class Participation Exercise below.)

**Tentative Outline of Topics:**

The topics we will be discussing in GE187 this semester are a moving target: New scientific discoveries, and new political challenges are happening every day. Below is a tentative list of topics that will be covered this semester, but given the nature of this course, there may be changes as current events in the world unfold that are relevant to this course:

- Introduction: Life is Uncertain
- Galileo and the Church: Science and Religion
- How Old is the Earth?
- Radiometric Dating of Rocks
- Origin of the Solar System
- Evolution
- Introduction to Global Warming
- The Earth's Atmosphere
- Light & Electromagnetic Radiation
- The Greenhouse Effect
- Introduction to Earthquakes and Earthquake Prediction
- Some Examples of Predicted Earthquakes
- Probability and Statistics in Science and Public Policy
- Earthquake Statistics
- The Haicheng, China Earthquake Prediction
- Sputnik: A Digression
- The Haicheng Prediction & U.S. Public Policy
- The 1980's and 90's: The Parkfield Earthquake Prediction Experiment
- Earthquake Prediction 2014 and Beyond …
- Seismic Hazard Analysis
- Earthquakes in the Eastern United States

**“What's gonna be on the test?”**

Please don’t ask us, “What's gonna be on the test?” As we approach each exam, you will be updated online and in lecture as to what topics will be covered on that exam. Each exam will cover all lectures and readings related to the topics announced for that exam. Much of the course (including participation in the Online Class Participation Exercise, described below) is designed to help you to assimilate, integrate and summarize the course material and discern for yourself (with the help of
your Teaching Assistant and student colleagues) how best to study that material.

Being able to discern for yourself what to study for a test is part of what you are expected to master as a student in this course. If you are uncomfortable with this level of uncertainty, this is probably not a good course for you. If you are thinking of asking us any variation on the question “What’s gonna be on the test?”, re-read the above two paragraphs.

**Online Class Participation Exercise:**

In this course, we will be using an online discussion of potential exam questions as a medium for enhancing interaction among the many students in this large class.

As educational colleagues in this class, you will be given the opportunity to collaboratively write and discuss potential questions for the exams in this course. This component of the course is intended to enhance the learning experience in GE187 in three ways: (1) to make the course more personal and interactive in spite of the large number of students, (2) to help you study for the exams in this course, and (3) to experiment with new web-based technology in an effort to make the exams in this course a better assessment of what you are learning.

All exam questions will either be "objective", such as: Multiple Choice, True/False, Fill-in-the-blank, etc., or very short essay questions (no more than 50 words, or roughly two sentences).

Class participation grades will be based primarily on this online discussion of potential exam questions, and will count for 5% of course grades, which will range from 0 points (students who rarely contributed) to 5 points (students who were major contributors). As early adapters and testers of the new Canvas course management system, we will probably be experimenting with other creative ways to use web-based interactive exercises to enhance learning. Participation in any such additional exercises will be included as part of your participation grade.

To access this online exercise, go to the Canvas website for this course, and click on Discussions.

**Academic Integrity:**

Boston College values the academic integrity of its students and faculty. It is your responsibility to familiarize yourself with the university’s policy on academic integrity, which can be found at [www.bc.edu/publications/ucatalog/policy.shtm#integrity](http://www.bc.edu/publications/ucatalog/policy.shtm#integrity). Violation of academic integrity will be reported to your class dean and judged by the academic integrity committee in your school. If you are found responsible for violating the policy, penalties may include a failing grade as well as possible probation, suspension, or expulsion, depending on the seriousness and circumstances of the violation.

**Note:** Students are responsible for knowing all of the information in this syllabus.

There may be changes, corrections or addenda to what is written here, and if so they will be posted on the course Canvas website. The most current version of the syllabus will always be the version on the web.