Course Structure and Information
This course will focus on the historical development of science in the context of embedded culture and how that affects or creates the ability for knowledge to be transmitted from one generation to the next. Fundamental to this approach is examining the cultural conditions that must exist before scientific theory is accepted. We will concentrate on a few important historical periods to identify and assess various scientific ideas within those periods in the context of both social and technological settings. Throughout, we will attempt to trace the origin, transmission and refinement of scientific ideas from their early inception to their modern manifestation. This is an interdisciplinary course designed to enhance both the science and cultural literacy of the students. We intend to present science as an empirical process driven by observations and curiosity that represents an ongoing humanistic endeavor to understand the world. Along the way we will continually confront the paradox that, at any given time, every culture believes that they know the "truth" and therefore are not particularly receptive to new ideas. The course website is

http://zebu.uoregon.edu/2004/sc.html

Go there for further information.

Physics/Humanities 399

Science and Culture
Professors: Bothun and Nicols

Instructors:

Greg Bothun
417 Willamette Hall
Office hours:
UH 10-12 MW 1-3
nuts@bigmoo.uoregon.edu

John Nicols
385 McKenize Hall
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nic@darkwing.uoregon.edu

Undergraduate Assistants to Help Lead you

http://zebu.uoregon.edu/2004/sc.html
through the dark and confusing times of this course

Anna Rosenberg
arozenbe@gladstone

Nick Seibert
nseibert@gladstone

Class Discussion Page
use this facility!

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This course has three main goals:

- To get students to understand that science is a process deeply embedded in culture and language.
- To get students to realize that “scientific knowledge” is largely acquired via a combination of discovery and an open mind.
- To get students to understand the collective set of human and cultural biases that impeded the acquisition and transmission of knowledge from one generation to another.

Course Mechanics:

This course is being held in a wireless laptop classroom. From time to time, students will be doing various exercises on the laptops that are related to the course themes and content. Some of these will involve virtual experiments that simulate some of the famous experiments of the past. Collaborative software exists in this space so that students can run experiments and publish their results. We will not be doing this every...
class period but there will be 5-6 times throughout the term where this facility is extensively used.

In addition to the laptops, we will also be making use of the Personal Response System in this class to assess student attitudes, misconceptions, and understanding of key concepts. When you see the big cardbox up front for a lecture, please retrieve a transmitter. Return it to the box after class ends.

Grading Policy

Your grade will be based on this approximately criteria:

- Individual assignments: 45%
- The Final Exam: 40%
- In class participation: 15%

Useful Reference Material:

- Recommended Text: *The Day the Universe Changed*
- Comprehensive overview of most of this entire course

http://zebu.uoregon.edu/2004/sc.html
Weekly Topics:

Week 1:

Mar 30  Introduction to Course
      PRS poll

Apr 01

Reading: Chapter 1 in Burke