

Department: History

Course No: 206

Credits: 3

Title: History of Science

Contact: Nancy Shoemaker

Content Area: CA1-Arts and Humanities

Catalog Copy: 206. History of Science

(Also offered as SCI 206.) First semester. Three credits. Open to sophomores. Roe Development of modern science and technology in relation to culture, politics, and social issues.

Course Information: This course will introduce you to the history of science by looking in depth at four topics: the Scientific Revolution (16th and 17th centuries), the Darwinian Revolution (18th and 19th centuries), genetics and eugenics (20th century), and the atomic bomb (20th century). In all periods we will be especially attuned to the relationship between science and society. What were the societal origins of Galileo's clash with the Catholic church and of the controversies over Darwin's views on the evolution of human beings? And what political and social context led to the popularity of eugenic ideas to improve society by limiting reproduction among the "unfit"? Finally, how and why was the atomic bomb built and used? We will examine both the science of the time and the history of the period to answer these questions.

Course requirements:

One quiz per unit on assigned reading. One web assignment per unit (2-page paper). A midterm exam after units 1 (Scientific Revolution) and 2 (Darwinian Revolution). Final exam after units 3 (Genetics and Eugenics) and 4 (Atomic Bomb). All exams include short-answer and essay questions.

Major themes:

Unit 1. Scientific and philosophical differences between Aristotelian and Copernican views of the universe. Galileo's defence of Copernicanism and why, in the context of the Counter-Reformation, it led to his trial.

Unit. 2. Shift in natural history from a religious foundation to a naturalistic one. The development of evolutionary views, especially those of Darwin. The controversy surrounding the evolutionary origins of human beings.

Unit. 3. Impact of the rediscovery of Mendel's laws on importance of heredity. Why, in the context of the early 20th century, social policy based on control of reproduction or immigration resulted (eugenics).

Unit. 4. Discovery of radiation and science behind the fission bomb. Development and use of the atomic bomb in the context of World War II.

Meets Goals of Gen Ed: This course will contribute to students acquiring intellectual breadth,

critical judgement, moral sensitivity, and awareness of their era and society. By treating science in relation to its social context and emphasizing a critical assessment of science and its growing importance in the modern world, the course should enable students to understand present and future scientific issues from a broader perspective.

CAI Criteria: This course meets the first of the criteria for Arts and Humanities (investigations and historical/critical analyses of human experience). Since the sixteenth and seventeenth centuries science has become an increasingly significant aspect of the western world. Students will benefit from viewing science from a historical perspective and will learn to evaluate scientific ideas in relation to their social consequences. This course is not being submitted for group 3 (Science and Technology) because its goal is to historicize scientific understanding, not to teach students about the scientific method.

Role of Grad Students: The course may be offered as a larger class with discussion sections led by graduate student assistants. In that case, they would be supervised by the course instructor and would teach discussion sections based on assigned reading.