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### GEO 304E.01: Science and Society

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## Science and Society

**Course requirements:** This course will be graded based on, in equal proportion, the midterm score, participation in class discussions including one class that you will moderate in the second half of the term, and a final project consisting of participation in some local or national issue related to science. Examples of possible projects include: a letter to the newspaper, to your Congressional delegation, or to local government representatives; volunteer time with a local advocacy group; a presentation in a local school or to a local group; an organized outreach effort; or another participatory activity (approved by the instructor).

**Course structure:** The structure of the class is based on Socratic discussion. In the first half of the term, we will alternate between readings from the textbook, which give historical context, and important primary sources. You will be expected to discuss the readings in class in detail, so you should be familiar with the material before our meetings. In the second half of the term, we will use philosophical tools and historical context to discuss urgent modern issues. One class meeting on each topic will be moderated by the instructor and the other by a group of students. Readings or activities in student-run meetings will be chosen by the students.

**Text:** A. Ede and L. Cormack, A history of science in society, Ontario: Broadview Press, 2004.

A. Ede and L. Cormack, A history of science in society, a reader, Ontario: Broadview Press, 2007.

**Instructor:** Rebecca Bendick, SC 331

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office hours: MW 12:00-2:00

### Part 1: history and philosophy of science

Week 1: the ancients

27 August: Intro, logistics, expectations

29 August: E&C Chapter 1 + Lucretius "On the nature of things"

Week 2: the early Christian era and Islamic scholarship

3 September: E&C 2

5 September: Avicenna "Canon"

Week 3: the revival of western science and philosophy

10 September: E&C 3

12 September: Thomas Aquinas "Questions I-IV"

Roger Bacon handout

Week 4: Renaissance, exploration, and scientific revolution

17 September: E&C 4

19 September: Galileo “Two New Sciences” and “Letter to the Grand Duchess Christina”

Week 5: Scientific revolution and modern methods

24 September: E&C 5

26 September: Newton “Principia Mathematica”

Descartes “Discourse on the Method...”

Week 6: Enlightenment: the commercial value of science and natural history

1 October: no class

3 October: E&C 6

Week 7: Enlightenment and Conclusion

8 October: Declaration of Independence

10 October: E&C Conclusion; choices of modern topics

Week 8: Transition

15 October: MIDTERM

17 October: MIDTERM

## **Part 2: modern issues of science and society**

Weeks 9-14: modern topics to be decided. Some suggestions include:

Evolution and intelligent design

Death and birth

Climate change

Neurology, guilt, and criminality

Free will

Global Energy

Food security

Human perception and reality

Extraterrestrial life

Natural catastrophes and economics of risk

Quantum physics and certainty

Week 15: Summary and conclusions

7 December: FINAL PROJECTS DUE

*All students must practice academic honesty. Academic misconduct is subject to an academic penalty by the course instructor and/or a disciplinary sanction by the University.*

*All students need to be familiar with the Student Conduct Code. The Code is available for review online at <http://www.umd.edu/SA/VPSA/index.cfm/page/1321>.*