

# Early Modern Philosophy and Science

## Spring 2018

**Instructor:** Monica Solomon

**Time:** MWF 11.00-11.50am

**Location:** TBA

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**Office Hours:** TBA

### Course description

This course is an introduction to the intellectual world of Early Modern Europe as it set the vision and the foundations of modern science. During the seventeenth century and into the first half of the eighteenth century, many of the traditional ways of thinking about the world and our place in it changed. The period came to be called the “Scientific Revolution.”

This course will lead you through a time in European history when science, philosophy, and religion were deeply intertwined and rarely separated. On the one hand, it is a survey of important questions: *What methods do we use to gain knowledge about the world? What sort of knowledge? How do we use this knowledge? What are the starting points of science? Is there a scientific method? What makes a good experiment? What are the binding moral principles of science? What is relation between science and society? Are science and religion in conflict with each other? What role does science and philosophy play in our every day life? etc.*

On the other hand, this course is designed to be your own intellectual endeavor: your curiosity and your hard work will shape the questions that you find important and your interests will be guiding your answers. You will gain familiarity with some major thinkers in the philosophical tradition. Admittedly, some texts will prove to be a challenging reading. However, it is worth the struggle: you will gain confidence in your writing skills, you will be able to formulate engaging philosophical questions on your own, to give articulate, thoughtful and compelling arguments for views of choice, and to apply the same thinking to other parts of your life.

### Course goals

The main objectives of the course are: (1) to develop your skills in reading, analyzing, and understanding scientific and philosophical texts from diverse time periods; (2) to learn and practice how to construct a well-written, compelling, robust, and engaging philosophical argument.

In this course, you will work to improve your ability to communicate your thoughts *clearly* in writing. This means, first, that you must *use proper grammar, spelling and punctuation in all of your written work*. Secondly, this means that you must *say what you mean and mean what you say*. Sometimes students will say about something they wrote (usually *after* they have already turned an assignment in and it has *already* been graded) “but such-and-such was what I *meant*.” Since you are learning to communicate your thoughts clearly, you will be graded on *what you write*, not *what you meant to write*.

Therefore, you should write your sentences carefully, taking care to check whether what you have written is indeed what you mean to say and what you mean to say is indeed what you have written. If something you have written is *ambiguous*, you should either find an unambiguous way to say it, or write something more to clarify your meaning.

Assignments will include brief reflection papers, a mid-term exam, a final exam, a final paper which must be revised at least once in light of the feedback and comments that you will receive from me and your peers.

- Reflection papers (two double-spaced pages): You choose one of the main claims or questions addressed in the weekly readings, present the evidence brought forward for it, and present an objection or ask further questions.
- Mid-term exam and final exam: They comprise of analysis of arguments, short logic exercises, explanation of key terms, and two essay-like questions. All the questions will refer only to examples from the readings and our discussions in class.
- Final paper: A ten-page double-spaced piece of crafted writing developed in stages. You will identify a question or debate in the readings, you will present it along with your own stance and arguments for the latter. You are strongly encouraged to discuss anything related to this paper with your peers, but the writing must be *your own*. (You will, of course, learn to acknowledge their contribution.) We will share drafts and offer constructive feedback on them.

There are no science pre-requisites for this course. You are encouraged, however, to follow and develop your own curiosity and interests (in science, philosophy, history, literature, art, etc.) as they pertain to our course topics. I will provide the technical background if/when needed. The exam questions will not test in depth your comprehension of the physical theories invoked, but they will ask you to identify main claims and supporting evidence. Please note also that individual papers need *not* tackle primarily the mathematical or technical aspects of our readings.

#### Grading Scheme:

Reflection papers: 20%

Mid-term exam: 20%

Final exam: 20%

Final paper: 30%

Participation: 10%

A note on participation: In this course, you will gain confidence and grow to take ownership over your intellectual endeavors. Participation *is required* and it takes many forms. Speaking up in class is only one of them. Supporting the contributions of your peers and offering helpful feedback are more important for our purposes, especially if you have an introverted nature.

Common Standards for All Course Papers:

During our first meeting, I will provide you with a guiding rubric.

Required Reading:

The readings assigned for each class are required. You will be asked to focus on some passages but you must read the selections entirely.

Week-By-Week Schedule (selections from the following authors will be posted on our course page):

Week 1: Introduction to the Scientific Revolution. Logic and arguments. Writing guides.

Weeks 2-4: Theories of the Heavens. The Astronomical Revolution.

Week 2: Copernicus, Tycho.

Week 3: Kepler.

Week 4: Galileo.

- Griffith Observatory Visit: The Moons of Jupiter, the Moon, Mars, etc.

Weeks 5, 6: The Royal Society: Natural Philosophy, Experimental Philosophy, Social Organization of Science, Science Writing.

Week 5: The Royal Society: Francis Bacon.

Week 6: Cavendish.

- Visit at the USC Libraries.

Midterm exam.

Weeks 7-10: Natural Philosophy, Early Modern Epistemology and Metaphysics, The System of the World, Foundations of Modern Science.

Week 7: Descartes (I)

Week 8: Descartes (II)

Week 9: Newton (I)

Week 10: Newton (II)

- California Science Center: Air and Space Exhibit.

Weeks 11-13: Early Modern Political Thought, Science and Religion.

Week 11: Locke.

Week 12: Hobbes.

Week 13: Spinoza.

- Review
- May 4<sup>th</sup>, 2018: Final papers due.

Final exam.

Academic Integrity - The USC Dornsife is committed to upholding the University's academic integrity code. The University presumes that you are familiar with its standards and policies; should you be found to have committed a violation, ignorance of these standards and policies will not be accepted as an excuse. You should be familiar with the following resources:

\* "Trojan Integrity" [https://dornsife.usc.edu/assets/sites/903/docs/Trojan\\_Integrity\\_-\\_Guide\\_to\\_Avoiding\\_Plagiarism.pdf](https://dornsife.usc.edu/assets/sites/903/docs/Trojan_Integrity_-_Guide_to_Avoiding_Plagiarism.pdf)

\* "USC Libraries Tutorials" <https://libraries.usc.edu/research/reference-tutorials>

\* The "2017-8 SCampus" (the student handbook) contains the university's Student Conduct Code and other student-related policies.

<https://policy.usc.edu/student/scampus/>

Late & Unfinished Work – Students must complete all assignments in order to earn a grade in the course. Any material turned in late will be reduced one letter grade per calendar day late.

Special Assistance - Any student requesting academic accommodations based on a disability is required to register with Disability Services and Programs (DSP) each semester. A letter of verification for approved accommodations can be obtained from DSP. Please be sure that the letter is delivered as early in the semester as possible. DSP is located in STU 301 and is open 8:30 a.m. - 5:00 p.m., Monday through Friday and can be reached at (213) 740-0776.