**HIST 315/515**

**Episodes in the History of Science: Seventeenth-Century Science in Perspective I**

Fridays 12:40-15:30

SYLLABUS – ROUGH DRAFT

**Course Description:** This course provides broad overview of seventeenth-century science. The aim is to acquaint the students with what is often considered a pivotal period for the emergence of modern science. Students will be exposed to a century of debate and controversy on whether or how modern science emerged in Western Europe in the seventeenth century. The readings will be a mixture of primary and secondary sources. Since we will be approaching the past as something that allows a number of different interpretations, the course will require undergraduates to take an active part in class discussion and to write a mid-term and a final paper. For undergraduates, the weekly readings will be about thirty pages a week on average. Each week, undergraduates will also be asked to produce a paragraph summarizing the reading. Graduate students will be expected to read an additional monograph each week and will have a rotating written assignment.

**Grades:**

UNDERGRADUATE

Attendance and participation: 28%

Weekly assignments: 28%

Mid-term paper: 22%

Final paper: 22%

GRADUATE

Attendance and participation: 28%

Weekly assignments: 28%

Final paper: 44%

Grading Rubric:

|  |  |
| --- | --- |
| 90-100 | A |
| 86-89 | A- |
| 82-85 | B+ |
| 78-81 | B |
| 74-77 | B- |
| 70-73 | C+ |
| 66-69 | C |
| 62-65 | C- |
| 58-61 | D+ |
| 54-57 | D |
| 0-53 | F |

**Attendance:** Attendance is mandatory. Each student is allowed to miss only two courses. I will never ask you why you missed class, but you will lose 7% of your final grade for every class you miss after you have used up your two allowed absences.

**Class Format and Participation:** Each week, I will start with what I call a “missed the meeting” session, where students are encouraged to ask about very general questions they may have about being a student or about the academic profession. I will then lecture for 1 hour, providing background and context for the assigned reading. After a short break, we will reconvene for a democratic seminar addressing the main questions that emerge from the reading, lasting about 1.5 hours. Participation entails both listening and speaking in a way that is civilized, constructive and responsive to your peers’ ideas.

**Extra Credit and Quizzes:** During the course of the semester, I may be inclined to assign work for extra credit or to give out pop quizzes for various reasons. Under certain circumstances, I may also change the grade value of the various components of your work.

**Late Work:** Late work is penalized at 4% of your final grade per 24 hours.

**Plagiarism:** I approach plagiarism with extreme prejudice. You will get a zero from the plagiarized assignment and I will do my best to make your life difficult. Do not plagiarize.

**Meeting 1: Preliminaries**

Preliminaries

In-class exercises on:

How to read

How to take notes

How to work with notes

How to write paragraphs

How to take part in discussion

Please come having read:

Shapin, Steven. “Science and the Modern World.” In *Handbook of Science and Technology Studies*, 3rd ed., 433–48. MIT Press, 2007.

**UNIT 1: THE SCIENTIFIC REVOLUTION**

**Meeting 2: The Very Idea of the Scientific Revolution**

Herbert Butterfield, “The Place of the Scientific Revolution in the History of Western Civilisation”

GRADUATES: Lawrence Principe, *The Scientific Revolution: A Very Short Introduction.*

**Meeting 3: Kuhn and Paradigms**

Thomas Kuhn, *The Copernican Revolution*, selections.

GRADUATES: Robert Westman, *The Copernican Question,* selections

**Meeting 4: Gilbert**

William Gilbert, *De Magnete,* selections

GRADUATES: Daston and Lunbeck, *Histories of Scientific Observation*

**Meeting 5: Descartes**

Rene Descartes, *The World*, selections

GRADUATES: Harold Cook, *Young Descartes*

**Meeting 6: Newton**

Isaac Newton, *Principia*, selections

GRADUATES: Betty Jo Teeter Dobbs, *The Janus Face of Genius: The Role of Alchemy in Newton’s Thought*

**UNIT 2: MARXIST VIEWS**

**Meeting 7: Boris Hessen**

Boris Hessen, “Social and Economic Roots of Newton’s Principia”

GRADUATES: Talbot and Pattison, *Boris Hessen: Physics and Philosophy in the Soviet Union, 1927-1931*

**Meeting 8: Edgar Zilsel**

Edgar Zilsel, “The Origins of William Gilbert’s Scientific Method”

GRADUATES: Pamela Long, *Artisan/Practitioners and the Rise of the New Sciences, 1400-1600*

**Meeting 9: Henryk Grossman**

Henryk Grossman, “Social Foundations of the Mechanistic Philosophy”

GRADUATES: Harold Cook, *Matters of Exchange*

**UNIT 3: PROBLEMATIZING THE SCIENTIFIC REVOLUTION**

**Meeting 10: Astrology**

Robert Westman, *Copernicus and the Astrologers*

**Meeting 11: The Occult Sciences**

Frances Yates, *The Rosicrucian Enlightenment,* selections

GRADUATES: Read the whole book

**Meeting 12: The Social Status of the Scientist**

Steven Shapin and Simon Schaffer, *Leviathan and the Air Pump*, selections

GRADUATES: Read the whole book

**Meeting 13: Going Beyond the West I**

Claire Sabel, “The Impact of European Trade with Southeast Asia on the Mineralogical Studies of Robert Boyle”

GRADUATES: Pamela Smith, *Entangled Itineraries: Materials, Practices, and Knowledges across Eurasia*

**Meeting 14: Going Beyond the West II**

Simon Schaffer, “Newton on the Beach: The Information Order of *Principia Mathematica*”

GRADUATES: Roberts, Schaffer and Dear, *The Mindful Hand: Inquiry and Invention from the Late Renaissance to the Early Industrialisation*