PHILOSOPHY OF SCIENCE

Instructor: Eli Lichtenstein
Email: 
Office Hours:

COURSE DESCRIPTION

This course is a survey of central issues in the philosophy of science. Students will be expected to work towards developing thoughtful answers to the following sorts of questions:

What is science, and what does it tell us the world is like? How does scientific understanding differ from other modes of understanding? Does scientific theory have a secure claim to truth? If so, why? Is there a scientific method, and if so in what does it consist?

Do scientific theories give us insight into unobservable aspects of reality—quarks, ultraviolet radiation, and so on—or are they only trustworthy regarding observable phenomena? What does it mean for something to be 'observable' or 'empirical', in the first place? What is a scientific explanation? What are laws of nature? And how, if at all, do they relate to scientific explanation?

Is there any appropriate role for non-epistemic value judgments in science? If so, what is it? If not, why not? How do different areas of scientific inquiry relate to one another? How did modern science arise, and how is its current meaning related to its historical origins? What is the value of science?

COURSE MATERIALS:

All course readings will be posted on [the course website] in pdf format for student use.

COURSE REQUIREMENTS:

-Complete all assigned readings by the date indicated on the schedule below.
-Regularly attend and actively participate in class.
-Write 1 short (~500-word) response paper.
-Write 2 essays, the first ~1500 and the latter ~2100 words in length.
-Complete a cumulative final exam.

GRADING

Response paper: 5% of final grade
First essay (~1500 words) = 20% of final grade
Second essay (~2100 words) = 35% of final grade
Final Exam: 30% of final grade
Participation = 10% of final grade

SCHEDULE **subject to revision**

1. Introduction (No Reading)
DEMARCATION, MIRACLES, INDUCTION

2. Popper, “Science: Conjectures and Refutation” (1953); Lakatos, “Science and Pseudoscience” (1973)


LAWS OF NATURE, SCIENTIFIC EXPLANATION, AND THE (DIS)UNITY OF SCIENCE


    [Suggested: Machamer, Darden, and Craver, “Thinking About Mechanisms” (2000)]

ESSAY 1 DUE

TRUTH AND EMPIRICAL ADEQUACY: KNOWLEDGE OF UNOBSERVABLE REALITY (?)


   Coordination” (from Scientific Representation (2008)]

SCIENCE AND VALUES


   Study of Feminist Research on Divorce” (2004)
   [Suggested: Anderson, “Knowledge, Human Interests, and Objectivity in Feminist Epistemology”
   (1995)]

SCIENCE OF CULTURE

22. Durkheim, Rules of Sociological Method (1895) and The Elementary Forms of Religious Life
   (1912) (excerpts)


24. Cassirer, “The Object of the Science of Culture” (from The Logic of the Cultural Sciences (1942))
   [Suggested: Cassirer, The Logic of the Cultural Sciences, Studies 2-5]

ESSAY 2 DUE

SCIENCE AS CULTURE

   Importance of Laws of Nature” (2004)”]

   (2009)]

27. Nietzsche, Beyond Good and Evil (1886) and The Genealogy of Morals (1887) (excerpts);
   Husserl, The Crisis of European Sciences (1936) (excerpts)

   [Suggested: Heidegger, “Science and Reflection” (1954); van Fraassen, “Representation Of,
   Representation As,” “From Bildtheorie of Science to Paradox” (from Scientific Representation)]

FINAL EXAM