

Spring 2016
Philosophy 4310
Philosophy of Science

Instructor: Gordon Steinhoff
Place: Main 304
Time: 2:30-3:20 MWF

Objectives: In this course we will study four different views of the nature of science: the classical positions represented by Hempel and Popper, Kuhn's subjectivism that emphasizes paradigms and scientific revolutions, and Feyerabend's anarchism in which "anything goes." As we study these philosophers we will cover such topics as the nature of theories, the logic of theory testing, conventionalism, the problem of induction, scientific realism, Bayesian inference, and the growth of scientific knowledge.

Requirements: Your grade in the course will be determined by four essays you will be asked to write during the semester. The essays will be about 5 to 6 pages long. The topics on which you write will be discussed in class and will be covered in the assigned readings. The essays will be graded strictly. Plan on putting a fair amount of effort into writing each one. Good class notes and reading notes will be essential. In addition, there will be a one-page "reaction paper" assigned each week on the readings. These little papers will be graded on a 10-point scale and will count for one-fifth of your final grade. All papers and essays are due on the dates assigned. The final essay will be due Tuesday, May 3. There will be no in-class exams. For those taking the course for honors credit or for graduate credit, you will be required to write an additional essay of 5 to 6 pages on a topic of your choice (but please see instructor to discuss the topic you choose).

Required Reading: Carl Hempel, *The Philosophy of Natural Science*
Bryan Magee, *Philosophy and the Real World*, *An Introduction to Karl Popper*
Paul Feyerabend, *Against Method*
Also, selected articles available on the canvas site for this course.

Tentative Schedule:

The first seven weeks: the classical confirmationist approach to science. We'll study Hempel's book, and articles by Duhem, Lakatos, van Fraassen, and Fine.

The next three weeks: Popper's falsificationism. We'll study Magee's book, and an article by Popper.

The next two weeks: Kuhn's subjectivism. We'll study two long articles by Kuhn.

The next two weeks: Feyerabend's *Against Method*.

The last week: Bayesian theory testing.

My office: Old Main 202D
Office hours: Afternoons 3:30-5:30,
or by appointment

Phone number: 797-3688 (If I'm not in, leave a message)

Email address: gordon.steinhoff@usu.edu

Keys to Doing Well in this Course: Attend every class. Take good notes. Do the assigned reading when it is assigned. Turn in every assigned response paper. Since these are graded on a 10 point scale, low scores and zeros make a big difference in this component of your final grade. Put a fair amount of time into writing each essay. As you write an essay, address each topic in the essay assignment and answer each question as clearly as you can. In grading the essays, the instructor looks primarily for clarity and completeness in answering the questions.

For All Who Take This Course: Please come to class on time!! The class begins at 3:00. Also, please be courteous to the instructor and other students. Do not sit and chat with your neighbor during class while the instructor is teaching. Such behavior is distracting to the instructor, your neighbor, and yourself. Please socialize outside of class.

Plagiarism: This is understood (from the university catalogue) as representing, by paraphrase or direct quotation, the published or unpublished work of another person as one's own, in any academic exercise or activity without full and clear acknowledgment. In this course, do not plagiarize. Any plagiarism will result in a failing grade on that assignment. Except for some quotes, all essays and shorter papers must be in your own words. Do not paraphrase unless you clearly indicate that you are paraphrasing and provide the source.