

Philosophy 305 - Summer I 2004

Introduction to Philosophy of Science

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Course Description

Science is generally held in high esteem these days, but why? What's so special about science? Apart from the benefits (and costs!) flowing from its applications, science is valued for the knowledge it has generated. But what kind of knowledge is this, and how has it been generated? Is scientific knowledge certain, probable or merely conjectural? Does science have some special method for arriving at or validating its knowledge claims? And what exactly are the products of scientific knowledge: facts, laws, theories or what?

Science has certainly developed theories that have led to successful predictions and the ability to control natural processes. But do these theories really explain what lies behind our observations, and if so how? Do scientific theories even claim to truly describe aspects of the world we cannot observe? And, come to think of it, which aspects are those, exactly?

Science has changed a lot even since the seventeenth century "scientific revolution" -- a change that seems to have led to progress in our understanding of the world. But this "progress" has often involved the rejection of central principles of earlier theories: so how much confidence should we really have in our current theories?

These are the kinds of questions we'll ask in this course. To get a better focus on them, and try to answer them, we'll look at the ideas of a number of prominent 20th century philosophers of science, including Popper, Kuhn and van Fraassen.

****Note: this course counts for the Natural Science Tier 2 General Education requirement****

Course Text

Understanding Philosophy of Science, by James Ladyman

I will also assign original reading on POLIS as the class progresses.

Course Administration

The class meets every week day from June 7 to July 8 (except July 5) from 3 – 4:45pm. The location of the class is: ECON 104. My office hours this session are 1:30 – 2::30.

This class will have a POLIS web page where reading and assignments will be posted:

https://polis.arizona.edu:9443/summer104/Course-Homesite.cgi?PHIL_305-1

Course Requirements

You are required to attend class. If your absence is noted more than four times your grade will be reduced by one letter grade for every two additional absences. No excuses: I'll check!

1. Pre-assignment (5%) Due Tuesday June 8

2.3 Short Assignment Summaries (10% each) Due: 11, 17, and 25 of June

3. Mid-Term Exam: (20%) On Monday June 21

4. Final paper (20%) Due Tuesday July 06

5. Final Examination (20%) On July 08 (last day of Classes)

6. Class participation (5%)

Students should be familiar with and conform to the University of Arizona Code of Academic Integrity.

Contested Grades

Students who wish to contest a grade on an assignment must submit their request in writing by email directly to the instructor within three days of the date on which the assignment was returned to the class. The request must explain the specific points in dispute. Disputes will be resolved within seven days of being filed.

Class Calendar June/July 2004

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
7 <i>First Day of Classes</i>	8 <i>Pre-Assignment</i>	9	10	11 <i>Assignment Sum 1</i>	12	13
Introduction	Chapter 1: Induction ●————●		Chapter 2: Problems ●————●			
14	15	16	17 <i>Assignment Sum 2</i>	18	19	20
Chapter 3: ●————●	Falsificationism	Chapter 4: ●————●	Kuhn and	Revolutions ●————●		
21 <i>Midterm Exam</i>	22	23	24	25 <i>Assignment Sum 3</i>	26	27
	Chapter 5: Realism ●————●		Chapter 6: Under-determination ●————●			
28	29	30	1	2	3	4
Chapter 7: ●————●	Explanation	Chapter 3 and ●————●	Further readings	Models and ●————●		
5 Independence Day Weekend	6 <i>Final Paper</i>	7	8 <i>Final Exam</i>	9	10	11
	Structure ●————●					

NO CLASSES