

**Philosophy 305: Philosophy of Science**  
**Summer Pre-Session 2006: 5/15-6/3**  
**University of Arizona**  
**Course Syllabus**

**Course Time and Location:** MTWRF, 1:00 – 3:50 PM, Computer Center 301

**Instructor:** Mike Bruno

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**Personal Website:** <http://www.u.arizona.edu/~mbruno/>

**Course Website:** [https://www.polis.arizona.edu/courseHomesite.do?course=PHIL\\_305-031&semester=summer106](https://www.polis.arizona.edu/courseHomesite.do?course=PHIL_305-031&semester=summer106)

**Office hours:** After class and by appointment

**Office:** 138 Social Sciences

**Office Phone:** 520-621-7098

**Mailbox:** 213 Social Sciences, Philosophy Department Main Office

**Course Description:** This will be a survey course in the philosophy of science. The philosophy of science investigates the nature of scientific practice by asking the following sorts of questions. What is science? Is there any way to demarcate genuine science from pseudoscience? How are scientific inferences made and what justifies these inferences? What sorts of things can science tell us about how the world is? The topics covered in this class will include logical positivism, holism, falsification, sociological and historical views of science, feminist views of science, naturalism, realism, evidence, and the nature of explanation.

As a pre-session class, I recognize that it is important to take breaks to facilitate attention. We will usually take two five-minute breaks throughout the class. On most days, the last 50 minutes of class will be dedicated to student presentations.

**Academic Honesty:** Academic dishonesty of any form will be punished in accordance with University guidelines, available at: <http://catalog.arizona.edu/policies/974/acacode.htm>. Be forewarned that it is my policy that the minimum punishment for any plagiarized work is that students will *fail the course* and will receive an official warning from the University. This is only the minimum punishment and exceptions will not be made in any circumstance. Stricter action may be taken in more egregious cases.

**Classroom Conduct:** Students will be expected to conduct themselves in a professional manner in the classroom. This includes being respectful to both the instructor and fellow students. Threatening behavior of any kind by any student will be dealt with in accordance with the University policies, available at <http://policy.web.arizona.edu/~policy/threaten.shtml>. Note that conducting yourself in a professional manner also includes refraining from using cell phones, listening to i-pods, reading newspapers, etc.

**Grades:** Grades will be determined on the basis of the following factors.

- (1) First paper (approximately 1500 words): 25%
- (2) Second paper (approximately 2000 words): 30%
- (3) Quizzes: 5%
- (4) Class Participation: 5%
- (5) Presentation: 10%
- (6) Final Exam: 25%

You will be given a topic prompt to write on for each of the papers. If you are unfamiliar with writing a philosophy paper, check out the documents linked from the polis site. Feel free to ask questions about how to write the paper in class, during office hours, or over email. I will not be able to comment on drafts before they are due, however. If you need help with your writing, you should check in with the writing center

[\(http://uawc.web.arizona.edu/\)](http://uawc.web.arizona.edu/).

Quizzes will be short and straightforward. Occasionally, I will let you know that there will be a quiz on something in particular the next day. Additionally, on some days, there will be pop quizzes on the material you were assigned to read for that day.

Class participation is required for this course. Class participation means asking questions, raising objections, and engaging in dialogues with me and your other classmates. Just showing up to class does not contribute to your participation grade. If you do not participate in discussion you will receive no credit for the participation portion of your grade.

On the first day of class, I will divide the class into groups of 2-3 people each and assign each group a presentation date. Each group will be required to lead class discussion for the last 50 minutes of class. Groups will be graded on their mastery of the material and their clarity of presentation.

The final exam will be cumulative and will contain a mix of true/false, matching, multiple choice, fill-in-the-blank, and short essay questions.

Students with special needs who are registered with the S.A.L.T. Center or the Disability Resource Center (<http://drc.arizona.edu>) must submit appropriate documentation to me if they plan on requesting special accommodations.

**Readings:** Students should expect to read every assignment carefully and thoroughly and be prepared to discuss them in class on the day indicated. The schedule of readings is subject to change at my discretion, provided sufficient advanced notification, but I do not expect that there will be significant changes.

**Required Texts:** *Theory and Reality: an introduction to the philosophy of science*, 2003, Peter Godfrey-Smith, Chicago University Press, ISBN: 0-226-30063-3.

*Scientific Inquiry: Readings in the Philosophy of Science*, 1999, Ed. Robert Klee, OUP, ISBN: 0-19-511976-2.

### **Class Schedule:**

Mon	5/15	Introduction: a brief history of philosophy of science, a survey of the topics to be covered, and an introduction to logical argumentation
Tue	5/16	PGS 1 ('Introduction') & 2.1-2.3 ('Logic plus Empiricism'), Klee 1 (Rosenberg: 'The Rise of Logical Positivism'), 2 (Suppe: 'The Positivist Model of Scientific Theories')
Wed	5/17	PGS 2.4-2.6 ('Logic plus Empiricism'), Klee 7 (Duhem: 'Physical Theory and Experiment'), 9 (Quine: 'Holism, Part 1: Two Dogmas of Empiricism'), & 10 (Quine: 'Holism, Part 2: Posits and Reality')

Thu	5/18	PGS 3 ('Induction and Confirmation') & 4 ('Popper: Conjecture and Refutation'), Klee 8 (Popper: 'Falsificationism')
Fri	5/19	PGS 5 ('Kuhn and Normal Science'), Klee 19 (Kuhn: 'The Nature of Normal Science')
Sat	5/20	No Class
Sun	5/21	No Class
Mon	5/22	PGS 6 ('Kuhn and Revolutions'), Klee 20 (Kuhn: 'The Nature of Revolutionary Science') <b>FIRST PAPER DUE</b>
Tue	5/23	PGS 7 ('Lakatos, Laudan, Feyerabend, and Frameworks') & 8 ('The Challenge from Sociology of Science'), Klee 23 (Bloor: 'The Strong Programme in the Sociology of Science')
Wed	5/24	PGS 9 ('Feminism and Science Studies'), Klee 28 (Pinnick: 'Problems with Feminist Epistemology')
Thu	5/25	PGS 10 ('Naturalistic Philosophy in Theory and Practice') & 11 ('Naturalism and the Social Structure of Science')
Fri	5/26	PGS 13 ('Explanation'), Klee 16 (Hempel and Oppenheim: 'The Deductive-Nomological Model of Scientific Explanation') & 17 (Kitcher: 'The Unification Model of Scientific Explanation')
Sat	5/27	No Class
Sun	5/28	No Class
Mon	5/29	No Class, Memorial Day
Tue	5/30	PGS 12 ('Scientific Realism'), Klee 31 (van Fraassen: 'Alternatives to Realism'), 32 (Kitcher: 'Realism and Scientific Progress') <b>SECOND PAPER DUE</b>
Wed	5/31	PGS 15 ('Empiricism, Naturalism, and Scientific Realism?')
Thu	6/1	Movie: TBA
Fri	6/2	Review
Sat	6/3	Final Exam