

PHI 306: Philosophy of Science

University of Wisconsin Stevens Point

Fall Semester 2022

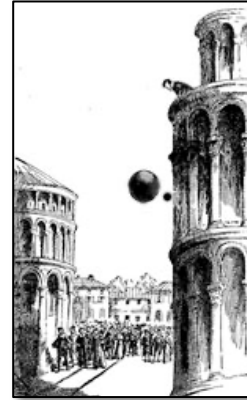
T/R 11:00 – 12:15; CCC 233

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Office Hours: By appointment on Zoom



Course Description

This course will explore various philosophical puzzles that arise in science, such as: What defines “science” from non-science and pseudo-science? What are the logical underpinnings of scientific knowledge? Does a scientific understanding of the world reflect reality? We will also have an extended discussion of science in society and the role of values in science.

Essential Questions

- What makes a question “philosophical”? How do philosophers make progress on particular issues?
- How does science contribute to our understanding of our world?
- How accurate is the scientific “depiction” of the world?
- Is there a sharp contrast between science and pseudoscience?

Enduring Understandings

You will come to understand that:

- The folk conception of science is often misleading or confused.
- The appearance of the world may not accurately reflect reality.

Knowledge, Skills, and Dispositions

You should be able to:

- Identify and evaluate arguments.
- Apply critically thinking skills to other professional and personal pursuits.
- Understand a variety of philosophical concepts, questions, and positions.
- Defend your own philosophical positions against criticisms.
- Read and comprehend challenging philosophical works.
- Appreciate and respect differing points of views.

Required Texts:

Godfrey-Smith, Peter. *Theory and Reality: An Introduction to the Philosophy of Science*. 2nd Edition. University of Chicago Press (2003).

Cover, J. A. and Martin Curd. *Philosophy of Science: The Central Issues*. W. W. Norton and Co. (1998).

Additional readings will be posted on Canvas.

Graded assignments will include:

1. Three Exams (20% each; 60% total)
2. Two Papers (15% each; 30% total)
3. Ten Quizzes/Assignments (10% total)

Quizzes/Assignments: Most quizzes will be “pop” and can occur anytime during class. I promise to give at least (12) quizzes or assignments and only the best (10) will count. As a result of this policy, quizzes cannot be made-up for any reason (including sickness, etc.). Please do not ask if there will be a quiz on any particular day.

Papers: You will be required to write (2) 1,000-word papers. Writing assignments will be distributed at least a week before they are due. At that time, I will also distribute requirements and guidelines for constructing a successful paper.

Exams: There will be three exams. Exams will consist of multiple-choice, true/false, short-answer and essay questions. Exams will be, to a limited extent, cumulative. Exam dates are listed on the schedule.

Final grades will be determined on the following scale:

100-93 A	<87-83 B	<77-73 C	<67-63 D
<93-90 A-	<83-80 B-	<73-70 C-	<63-60 D-
<90-87 B+	<80-77 C+	<70-67 D+	<60 F

Late Policy: Quizzes cannot be made-up. Short assignments will be docked 10% off per day late. Exams cannot be made-up without a university approved absence notification (e.g. a note from a health care provider explaining why the student couldn't be there). Furthermore, you need to contact me immediately in order to reschedule the exam as early as possible. If this condition is not met, you may not be able to re-take the exam.

Academic Honesty: If you commit any acts of academic dishonesty (such as plagiarism on written work or cheating on an exam) you will earn a zero for that work (and possibly other disciplinary actions). Please refer to the Student Academic Standards and Disciplinary Procedures for more information

(<http://www.uwsp.edu/stuaffairs/Documents/RightsRespons/SRR-2010/rightsChap14.pdf>)

Attendance: Attendance is not mandatory and will not be recorded (with the exception of the first few classes, which is mandatory). With that said, if you do not attend class on a regular basis, you will do poorly. Furthermore, quizzes and assignments will be administered on a regular basis and schedule changes will be announced in class.

Americans with Disabilities Act (ADA) Statement: The ADA is a federal law requiring educational institutions to provide reasonable accommodations for students with disabilities. For more information about UWSP's policies, see: <http://www.uwsp.edu/stuaffairs/Documents/RightsRespons/ADA/rightsADAPolicyInfo.pdf>.

If you require *classroom and/or exam accommodations*, please register with the **Disability and Assistive Technology Center** and then contact me at the beginning of the course. For more information, please visit the Disability Center's office, located at 604 LRC or their webpage at: <http://www.uwsp.edu/disability/Pages/default.aspx>.

Risk Management:

"In the event of a medical emergency, call 911 or use red emergency phone. Offer assistance if trained and willing to do so. Guide emergency responders to victim.

In the event of a tornado warning, proceed to the lowest level interior room without window exposure. See www.uwsp.edu/rmgt/Pages/em/procedures/other/floor-plans for floor plans showing severe weather shelters on campus. Avoid wide-span rooms and buildings.

In the event of a fire alarm, evacuate the building in a calm manner. Notify instructor or emergency command personnel of any missing individuals.

Active Shooter – Run/Escape, Hide, Fight. If trapped hide, lock doors, turn off lights, spread out and remain quiet. Follow instructions of emergency responders.

See UW-Stevens Point Emergency Management Plan at www.uwsp.edu/rmgt for details on all emergency response at UW-Stevens Point."

Schedule: Please note that there may be slight modifications to the schedule throughout the semester. If changes are made, they will be announced in class. Also, be sure to complete the readings listed for a particular day before class, since we will be discussing them on the day they are listed. Reading locations are abbreviated as follows: *Theory and Reality* (TR), *Philosophy of Science* (PS), and Canvas.

Introduction	
T Sep 6	Syllabus and Introduction
R Sep 8	Introduction (TR Chap. 1)
The Logic of Science	
T Sep 13	Schlick, The Future of Philosophy (Canvas)
R Sep 15	TR Chapter 2, Empiricism
T Sep 20	TR Chapter 3, Evidence and Induction Suggested: Lipton, Induction (PS 412-425)
R Sep 22	TR Chapter 4, Popper: Conjecture and Refutation
T Sep 27	Duhem, Physical Theory and Experiment (PS 257-279)
R Sep 29	Ruse, Creation Science Is Not Science (PS 38-47) Lauden, Science at the Bar (PS 48-53) Ruse, <i>Pro Judice</i> (PS 54-61)
T Oct 4	Movie: NOVA: Judgment Day
R Oct 6	Continued and Review
T Oct 11	EXAM
Scientific Realism, Anti-Realism, and Shades In-Between	
R Oct 13	TR Chapter 5, Kuhn's Revolution
T Oct 18	Continued
R Oct 20	TR Chapter 6, Theories and Frameworks
T Oct 25	TR Chapter 7, The Challenge from the Sociology of Science
R Oct 27	Longino, Values and Objectivity (PS 170-191)
T Nov 1	TR Chapter 10, Scientific Realism
R Nov 3	Laudan, A Confutation of Convergent Realism (PS 1114-1135)
T Nov 8	Continued and Review
R Nov 10	EXAM
Science, Society, and Values	
T Nov 15	TR Chapter 8, Science is Political
R Nov 17	Douglas, "Origin of the Value-Free Ideal in Science" (Canvas)
T Nov 22	Douglas, "Rejecting the Ideal of Value-Free Science" (Canvas)
R Nov 24	*Thanksgiving Break*
T Nov 29	Oreskes and Conway, "Merchants of Doubt" (Canvas)
R Dec 1	Kitcher, "Myth of Purity" (Canvas)
T Dec 6	Kitcher, "Constraints on Pure Inquiry" (Canvas)
R Dec 8	TBD
T Dec 13	TBD
R Dec 15	Review

FINAL EXAM: Monday, Dec. 19, 2:45-4:45