

## **PHI 306: Philosophy of Science**

University of Wisconsin Stevens Point

Fall Semester 2018

M/W 12:30 – 1:45; CCC 126

Dr. Jason Zinser

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**Office Hours:** M-R 2-3 and by appointment



### **Course Description**

This course comprises a two-pronged approach to the philosophy of science. First, we will survey some of the central philosophical issues for science proper, including: the demarcation of science and pseudoscience, scientific explanation, laws of nature, theoretic change and scientific progress, and the realism/antirealism debate. In the second part of the course, we will explore a variety of philosophical issues that arise in a particular science (biology).

### **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*. University of Chicago Press (2003).

Sterelny, Kim and Paul Griffiths. *Sex and Death: An Introduction to the Philosophy of Biology*. University of Chicago Press (1999).

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

Additional readings will be posted on our D2L site.

## 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](http://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](http://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), *Sex and Death* (SD) and D2L.

W Sep 5	Syllabus and Introduction
M Sep 10	Introduction (TR Chap. 1)
W Sep 12	<b>The Logic of Science</b> Schlick, <i>The Future of Philosophy</i> (D2L)
M Sep 17	TR Chapter 2, Logic Plus Empiricism
W Sep 19	TR Chapter 3, Induction and Confirmation Suggested: Lipoton, <i>Induction</i> (PS 412-425)
M Sep 24	TR Chapter 4, Popper: Conjecture and Refutation
W Sep 26	Duhem, <i>Physical Theory and Experiment</i> (PS 257-279)
M Oct 1	Ruse, <i>Creation Science Is Not Science</i> (PS 38-47) Lauden, <i>Science at the Bar</i> (PS 48-53) Ruse, <i>Pro Judice</i> (PS 54-61)
W Oct 3	Movie: NOVA: Judgment Day
M Oct 8	Continued and Review
W Oct 10	<b>EXAM</b>
M Oct 15	<b>Scientific Realism, Anti-Realism, and Shades In-Between</b> TR Chapter 5, Kuhn and Normal Science
W Oct 17	TR Chap 6, Kuhn and Revolutions
M Oct 22	Bird, <i>Structure at Fifty</i> (D2L)
W Oct 24	TR Chapter 8, The Challenge From Sociology of Science
M Oct 29	TR Chapter 9, Feminism and Science Studies Longino, <i>Values and Objectivity</i> (PS 170-191)
W Oct 31	TR Chapter 12, Scientific Realism
M Nov 5	Lauden, <i>A Confutation of Convergent Realism</i> (PS 1114-1135)
W Nov 7	Review
M Nov 12	<b>EXAM</b>
W Nov 14	<b>Evolution: The Adaptationist Tradition and Alternatives</b> SD Chapter 1, Theory Really Matters SD Chapter 2, The Received View of Evolution
M Nov 19	SD Chapter 10, Adaptation Perfection and Function
W Nov 21	Gould and Lewontin, <i>Spandrels of San Marcos</i> (D2L)
M Nov 26	Does Evolutionary Theory Need a Rethink? (D2L)
W Nov 28	<b>Biology and Human Nature</b> Kitcher, <i>Battling the Undead: How (and How Not) to Resist Genetic Determinism</i> (D2L)
M Dec 3	Hull, <i>On Human Nature</i> (D2L)
W Dec 5	Machery, <i>A Plea For Human Nature</i> (D2L)
M Dec 10	Appiah, <i>Why There Are No Human Races</i> (D2L)
W Dec 12	Review

**FINAL EXAM: Wednesday, Dec. 19, 2:45-4:45**