GRADUATE PHILOSOPHY OF SCIENCE CORE COURSE

(PHIL 2600/HPS 2501)

FOR A COPY OF THE FINAL EXAM:

CLICK HERE

COURSE LEVEL: Graduate

TERM: Fall

ACADEMIC YEAR: 2001-2

CLASS DAY/TIME: Wednesdays 3:00-5:30pm

DATES: Aug. 29-Dec. 12 (excluding Nov. 21 for Thanksgiving)

LOCATION: Wilfred Sellars Room, 1001CL

INSTRUCTOR: Rob Clifton, Dept. of Philosophy

Office: CL 1009E

Office Hours: By appointment on Wednesdays and Thursdays

Phone (office): (412) 624-7636

Send me an e-mail: rclifton@pitt.edu

PREREQUISITES: NONE, however this course is limited to graduate students in Philosophy and History and Philosophy of Science, except by written permission of the instructor.

COURSE DESCRIPTION: This year's course is motivated by the desire to discern what makes scientific knowledge privileged or special as compared to other forms of knowledge. Accordingly, we shall primarily focus on the following two main problem areas in the philosophy of science:

(i) The demarcation problem (what characterizes the scientific enterprise as compared to 'pseudoscience', metaphysics, religion, etc.).

(ii) The nature of scientific explanation (laws, causality, epistemic vs. ontic conceptions of explanation, etc.).

The reading materials will all be drawn from major classics and important contemporary works.

NOTES ABOUT THE READINGS:

1) There are a large number of readings listed below, which unfortunately cannot all be discussed in class. On average we shall only be able to cover about 4 readings per class, and the readings that we shall plan to focus on will be announced one week in advance of the relevant class meeting at the top of this webpage in green (see also the 'CLASS SCHEDULE' published below).
2) It is the responsibility of the student to keep up with the readings that are discussed in class. In particular, students who take the final exam will find that studying for it will be made far easier if they maintain a good set of notes on these readings.

3) Students who take the final exam will only be responsible for the material in the readings that are actually discussed in class. Still, should it not be possible for the instructor to cover the whole of a certain article or chapter in class (due to lack of time), the student will still be held responsible for the entire article/chapter on the final exam.

4) Students should make every effort to study the readings below that are not actually discussed in class, because the readings have been chosen with a view to supplying important background information for writing term papers.

COURSE TEXT:

_Wesley Salmon, Four Decades of Scientific Explanation, 1989_ (provided free to each student, compliments of Professor Salmon)

ADDITIONAL READINGS:

The following additional readings are available for photocopying in the steel drawers in 1001CL. Each has been designated a number to make locating the article easier.

**INTRODUCTORY READINGS**

1. P. Feyerabend, 'Has the Scientific View of the World a Special Status Compared with Other Views?', from J. Hilgevoord (ed.), _Physics and Our View of the World_, 1994


**THE DEMARCATION PROBLEM**

Science vs. Metaphysics


The Scientific Method and Falsifiability

5. K. Popper, excerpts from his _The Logic of Scientific Discovery_


http://www.princeton.edu/~clifton/CorePOS.html
Analysis of Specific (Alleged) Pseudosciences


Other Approaches to Demarcation


The Rationality/Objectivity of Science


The Boundaries of Science/Science vs. Religion

35. P. Duhem, 'Physics of a Believer', from the appendix to his *The Aim and Structure of Physical Theory*.


SCIENTIFIC EXPLANATION

Survey Articles

40. W. Salmon, 'Scientific Explanation', from M. Salmon et al. (eds.), *Introduction to the Philosophy of Science*, 1992


The Covering Law Model

44. C. Hempel and P. Oppenheim, 'Studies in the Logic of Explanation', *Philosophy of Science*, 1948


47. R. Batterman, 'Explanatory Instability', *No*s, 1992.

Statistical and Causal Explanation

48. R. Braithwaite, 'Causal and Teleological Explanation', from his *Scientific Explanation*, 1960


http://www.pitt.edu/~rcrichton/CorePOS.html


**Explanation as Unification**


**The Pragmatics of Explanation**


**Other Models of/Approaches to Explanation**

61. P. Duhem, 'Representation vs Explanation in Physical Theory', from his *The Aim and Structure of Physical Theory*


ROUGH CLASS SCHEDULE:
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<th>DATE</th>
<th>TOPIC</th>
<th>READINGS</th>
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<tr>
<td>Aug. 29</td>
<td>Introduction</td>
<td>1, 2</td>
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<td>Sept. 5</td>
<td>Science vs. Metaphysics: The Scientific Method &amp; Falsifiability</td>
<td>4, 5--8</td>
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<td>Sept. 12</td>
<td>Analysis of Specific (Alleged) Pseudo-sciences</td>
<td>11, 12, 14--17</td>
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<td>Sept. 19</td>
<td>Other Approaches to Demarcation</td>
<td>18--21, 23</td>
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<td>Sept. 26</td>
<td>The Rationality/Objectivity of Science</td>
<td>25--27, 29, 30, 34</td>
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<td>Oct. 3</td>
<td>The Rationality/Objectivity of Science</td>
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<td>Oct. 10</td>
<td>The Boundaries of Science/Science &amp; Religion</td>
<td>35, 38, 39</td>
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<td>Oct. 17</td>
<td>The Covering Law Model</td>
<td>40, 41, 44; Salmon pp. 1--32</td>
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<td>Oct. 24</td>
<td>The Covering Law Model</td>
<td>Salmon pp. 33--68; 45, 47</td>
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<td>Oct. 31</td>
<td>Statistical and Causal Explanation [one term paper due]</td>
<td>Salmon pp. 61--89; 51, 61</td>
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<td>Nov. 7</td>
<td>Statistical and Causal Explanation</td>
<td>Salmon Secs. 3.7, 4.1--4.3; 49, 58, 52, 53</td>
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<td>Nov. 14</td>
<td>Explanation as Unification</td>
<td>Salmon Sec. 3.5; 55--57</td>
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<td>Nov. 21</td>
<td>Thanksgiving Break</td>
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<td>Nov. 28</td>
<td>The Pragmatics of Explanation; Other Models of Approaches to</td>
<td>Salmon Sec. 4.4; 59, 60</td>
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<td>Dec. 5</td>
<td>Other Models of Approaches to Explanation</td>
<td>12 and 16 (review!) and 66</td>
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<tr>
<td>Dec. 12</td>
<td>FINAL EXAM [all term papers due]</td>
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COURSE REQUIREMENTS:

2 papers (33% each) + final exam (33%) + freebee (1%)  

OR

1 paper (50%) + final exam (50%)  

OR

2 papers (50% each)

[NB: This third option is not open to History and Philosophy of Science students]

Your final total numerical grade will be converted to a letter grade according to the scale below:

96-100 % = A+  
92-95.9 % = A  
88-91.9 % = A-  
84-87.9 % = B+  
80-83.9 % = B  
76-79.9 % = B-  
72-75.9 % = C+  
68-71.9 % = C  
64-67.9 % = C-

**Papers:** Any paper you write should be about either the problem of demarcation or about scientific explanation. If you are writing two papers, you may choose the same topic (i.e., demarcation or explanation) for both, provided there is little overlap between your discussions. Background material for the papers is provided by the readings that we shall follow in

http://www.pitt.edu/~rliltohr/RePSOS.html
class as well as those not covered in class. No paper should exceed 20 double-spaced pages in length (using a 12pt font, 1-inch margins). All students must hand in one paper by our class on October 31. (Any other papers must be handed in by the day of our final exam --- see below.)

Final Exam: History and Philosophy of Science students must write the final exam, which will take place in-class on December 12 from 3:00-5:30pm. This exam will consist of essay-type questions based on the readings discussed in class. To avoid unnecessary worries about what questions you will be choosing from, a sample exam will be made available one week in advance of the exam on December 5. Your instructor will then select some subset of the questions on this sample exam for the actual final exam.

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