Introduction to Philosophy of Science

Course Description

Most of this course will be devoted to epistemological issues concerning science as a method of gaining knowledge about the world. These issues include the distinction between science and pseudo-science, the logic of explanation, the concept of scientific progress, and social influences on scientific theory (including the question of whether science is male-biased). In addition, we shall look at the ethics of experimentation on animals and ask what science can tell us about how we should live. (See page 3 for dates and readings.)
The Instructor

Angus Taylor has a Ph.D. in Social and Political Thought from York University, Toronto. He also has an M.A. in Political Science from the University of Toronto and an M.Sc. in History and Social Studies of Science from the University of Sussex. He is the author of *Animals and Ethics: An Overview of the Philosophical Debate*, as well as of a number of papers on political philosophy and on environmental ethics.

Texts

Coursepack (available from the Bookstore)

Formal Course Requirements

Test (Sept. 29) = 10%
First mid-term exam (Oct. 16) = 25%
Second mid-term exam (Nov. 6) = 25%
Final exam (2 hrs. duration) = 40%

*Please note:* Late assignments will not be accepted or missed exams rescheduled without a medical or other compelling reason, for which you must provide documentation justifying your absence (e.g., a medical certificate). If you know that you will be missing an exam, you must inform the instructor in advance. For policies regarding plagiarism and cheating, see pp. 33-35 of the 2015-16 Undergraduate Calendar.

Grading:

Exams will be marked on a percentage basis, with the percentage mark for the course being converted to a letter grade on the following basis:

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<thead>
<tr>
<th>Grade</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>A+</td>
<td>90 - 100</td>
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<tr>
<td>A</td>
<td>85 - 89</td>
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<tr>
<td>A-</td>
<td>80 - 84</td>
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<td>B+</td>
<td>77 - 79</td>
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<td>B</td>
<td>73 - 76</td>
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<tr>
<td>B-</td>
<td>70 - 72</td>
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<td>C+</td>
<td>65 - 69</td>
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<td>C</td>
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<td>D</td>
<td>50 - 59</td>
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<td>F</td>
<td>0 - 49</td>
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During the term, graded work will be returned in class or during office hours. Final grades will not be posted by the instructor or the department, but will be available on-line.

*Note:* Students who are not fluent in English may find some of the readings or assignments in this course difficult. In written assignments or exams, students who persist in misspelling the word *argument*, or who persist in omitting or misusing apostrophes, or who display generally atrocious spelling or grammar, may be penalized.

*Note:* October 31 is the last day for withdrawing from this course without penalty of failure.
Philosophy 220 (A01)  Sept.-Dec. 2015

Sept. 9, 11  Introduction
                 Newton: physics, alchemy, and religion (video)
Sept. 22, 23, 25  Popper, “Science: Conjectures and Refutations” (I-III)
                 Bakker & Clark, “Causality and Explanation”
Sept. 29, 30, Oct. 2  ● TEST (Sept. 29)
                 Popper, "Science: Conjectures and Refutations" (IV-X)
Oct. 6, 7, 9  Hempel & Oppenheim, “Studies in the Logic of Explanation”
              Ruse, “Darwin's Debt to Philosophy”
Oct. 13, 14, 16  Rifkin, from Algeny
                 Gould, “Darwin's Untimely Burial”
              ● FIRST MID-TERM EXAM (Oct. 16)
Oct. 20, 21, 23  Kuhn, “The Function of Dogma in Scientific Research” and
                 “The Nature and Necessity of Scientific Revolutions”
Oct. 27, 28, 30  Dray, "Historical Understanding"
                 Taylor, “Flogging a Straw Man: Popper’s Critique of Marx’s
                 ‘Historicism’” (PDF on CourseSpaces site)
Nov. 3, 4, 6  Fee, “Is Feminism a Threat to Scientific Objectivity?”
              Keller, “Feminism and Science” (on-line)
              Levin, “Caring New World: Feminism and Science”
              Evelyn Fox Keller on science and gender (video)
              ● SECOND MID-TERM EXAM (Nov. 6)
Nov. 10, 11  READING BREAK
Nov. 13  Needham, “Human Law and the Laws of Nature”
Nov. 17, 18, 20  Needham (continued)
                 Taylor, “Is It Wrong to Use Animals for Scientific Research?”
Nov. 24, 25, 27  Taylor (continued)
                 Midgley, from Science As Salvation
Dec. 1, 2, 4  Film: “Mindwalk”
              discussion and review
Dec. exam period  ● FINAL EXAM