PHIL 412 / 510 – (Topics in) Philosophy of Science
‘Science and Values’
Winter Term 2019
Tue, Thu 2:00–3:20 pm, Assiniboia Hall 2-02A

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Office: 2-47 Assiniboia Hall
Office hours: by appointment
Website at https://eclass.srv.ualberta.ca/course/view.php?id=48565

A. Course overview
Science and values is the topic of this seminar. Different kinds of values clearly have an impact on science, however, proponents of the view that science is (or ought to be) value-free have maintained a distinction between epistemic-cognitive values and social-political values, where only the former are a proper part of science. Likewise, one can acknowledge science’s important function for society, while arguing that science fulfills its social function best by scientists providing reliable knowledge without being guided by social or environmental considerations and by science being autonomous rather than politicized by external influences.

We will critically discuss different views on what kinds of values may influence scientific practice, and how such values can play a legitimate role. Closely associated issues are the relation between science and (the concerns of) society and the notion of scientific objectivity. The seminar will devote substantial space to feminist analyses of biology, including the question as to whether the best response to sexist and empirically flawed views promoted by past and current science is to work towards an unbiased, value-free science or towards a science (and philosophy of science) that self-consciously endorses such social values as equity.

Some of the major authors to be read and discussed include Janet Kourany, Heather Douglas, Helen Longino, Philip Kitcher, and Kristen Intemann.

B. Prerequisites
The class is organized such that background knowledge in philosophy of science is not required, though interests in the nature of science or the role of science in society are desirable.
Formal prerequisite: To enrol as an undergraduate in a 400 level PHIL course (e.g., PHIL 412), you must have previously completed two philosophy classes (incl. one class at the 200-level or higher), or obtain the instructor’s permission. Feel free to contact me to get permission to enrol.

C. Required texts
The required readings consist of journal articles and book chapters, and are listed below in Section K. A substantial part of the readings can be accessed online via our course website.
D. Course requirements

- Term paper(s) 70%
- Oral presentation 20%
- Participation 10%

Term paper(s) (70%): You must write either one long term paper, worth 70% of credit, or two short term papers, each of which is worth 35% of credit. An electronic version of the long term paper is due on Monday, April 22 at noon. If you choose the short paper option, an electronic version of the first paper is due on Tuesday, March 5 at 2pm, and the second one is due on Monday, April 22 at noon.

Approximate length of a long paper: 3500–4500 words if you are an undergraduate student (signed up for PHIL 412); 5000–7000 words if you are a graduate student (PHIL 510).

Approximate length of each short paper: 1750–2250 words if you are an undergraduate student; 2500–3500 words if you are a graduate student.

I am happy to provide comments on term paper drafts. In the case of the long paper and the 2nd short paper, I guarantee comments if you send me an electronic draft by April 14.

Oral presentation (20%): Every student has to give one oral presentation. Your task as a presenter is to briefly summarize this meeting’s readings (highlighting points that you find particularly relevant) but primarily to start the discussion by having prepared some questions (e.g. about problematic issues in the readings). I ask you to (a) prepare a short handout and email me a draft in advance so that I can provide comments, and to (b) make copies of the final version for the whole class, so that everyone has a summary of your presentation. You may give your presentation using PowerPoint (and use a printout of the slides as a handout).

Participation (10%): Attendance and active participation is important for this class. It is the responsibility of each student to come to class prepared to actively engage in discussion. Each of you will probably have picked up different points from the readings or have questions or objections, so please share them! You can also obtain participation credit by starting topics and replying to posts at the discussion forum on our website.

E. Course website

The course has a website at https://eclass.srv.ualberta.ca/course/view.php?id=48565. A good deal of our assigned readings can be accessed from this site, and I use it to post presentation handouts and additional material. The site also contains a discussion board. Let me know if you audit the class (or upon login at https://eclass.srv.ualberta.ca do not see PHIL 412 / 510 under ‘My Courses’), so that I can add you to the list of online participants.

F. Academic integrity and plagiarism

The University of Alberta is committed to the highest standards of academic integrity and honesty. Students are expected to be familiar with these standards and to uphold the policies of the university in this respect. Students are urged to familiarize themselves with the Code of Student Behaviour and avoid any behaviour which could potentially result in suspicions of cheating, plagiarism, misrepresentation of facts and/or participation in an offence. Academic dishonesty is a serious offence and can result in suspension or expulsion from the university.
The Code of Student Behaviour defines plagiarism as follows (summary):

No Student shall submit the words, ideas, images or data of another person as the Student’s own in any academic writing, essay, thesis, project, assignment, presentation or poster in a course or program of study.

Students should consult the information provided by the Office of the Dean of Students regarding avoiding cheating and plagiarism in particular and academic dishonesty in general. If in doubt about what is permitted in this class, ask the instructor. An instructor or coordinator who is convinced that a student has handed in work that he or she could not possibly reproduce without outside assistance is obliged, out of consideration of fairness to other students, to report the case to the Associate Dean of the Faculty (see the Academic Discipline Process).

The library also has information on citing and avoiding plagiarism.

G. Schedule of classes

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<thead>
<tr>
<th>Date</th>
<th>Topic</th>
<th>Readings</th>
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<tr>
<td>Jan 8</td>
<td><strong>Background 1.</strong> Pp. 3–8 of Reichenbach, <em>Experience and Prediction</em></td>
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<td>Jan 10</td>
<td><strong>Background 2.</strong> Pp. 21–41 of Kourany, <em>Philosophy of Science after Feminism</em></td>
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| Jan 15 | **Knowledge as social 1.** Pp. 91–95 of Chalmers, *Science and Its Fabrication*  
Pp. 4–6 of Bloor, *Knowledge and Social Imagery*  
Chapter 4 of Longino, *The Fate of Knowledge* |                                                                        |
| Jan 17 | **Knowledge as social 2.** Pp. 128–140 of Longino, *The Fate of Knowledge*  
Optional: Section 5 of Brigandt, ‘Intelligent design and the nature of science: philosophical and pedagogical points’ |                                                                        |
| Jan 22 | **Enter values.** Chapters 6 and 7 of Kitcher, *Science, Truth, and Democracy* |                                                                        |
| Jan 24 | **The inductive risk argument 1.** Rudner, ‘The scientist *qua* scientist makes value judgments’  
Sections 1, 4 and 6 of Jeffrey, ‘Valuation and the acceptance of scientific hypotheses’  
Sections I and II of Levi, ‘Must the scientist make value judgments?’ |                                                                        |
| Jan 29 | **Epistemic vs. non-epistemic values.** McMullin, ‘Values in science’ |                                                                        |
| Feb 5  | **The inductive risk argument 3.** Pp. 95–114 of Douglas, *Science, Policy, and the Value-Free Ideal* |                                                                        |
| Feb 7  | **The underdetermination argument 4.** Intemann, ‘Feminism, underdetermination, and values in science’ |                                                                        |
| Feb 12 | **Flawed and sexist theories 1.** Pp. 3–17 of Kourany, *Philosophy of Science after Feminism* |                                                                        |
| Feb 14 | **Flawed and sexist theories 2.** Lloyd, ‘Pre-theoretical assumptions in evolutionary explanations of female sexuality’  
Winter term reading week

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<tr>
<th>Date</th>
<th>Topic</th>
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<tr>
<td>Feb 26</td>
<td><strong>Flawed and sexist theories 3.</strong> Wylie and Hankinson Nelson, ‘Coming to terms with the values of science: insights from feminist science scholarship’</td>
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<td>Feb 28</td>
<td><strong>Epistemic plus non-epistemic values.</strong> Longino, ‘Cognitive and non-cognitive values in science: rethinking the dichotomy’</td>
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<td>Mar 5</td>
<td><strong>A role for the non-epistemic aims of research 1.</strong> Elliott and McKaughan, ‘Non-epistemic values and the multiple goals of science’</td>
<td>1st short term paper due at 2pm</td>
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<td>Mar 7</td>
<td><strong>A role for the non-epistemic aims of research 2.</strong> Intemann, ‘Distinguishing between legitimate and illegitimate values in climate modeling’</td>
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<td>Mar 12</td>
<td><strong>A role for the non-epistemic aims of research 3.</strong> Brigandt, ‘Social values influence the adequacy conditions of scientific theories: beyond inductive risk’</td>
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<td>Mar 14</td>
<td><strong>Whose values 1.</strong> Schroeder, ‘Using democratic values in science: an objection and (partial) response’</td>
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<td>Mar 19</td>
<td><strong>Whose values 2.</strong> Chapter 7 of Elliott, <em>A Tapestry of Values</em></td>
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<td>Mar 21</td>
<td><strong>Socially responsible science 1.</strong> Chapter 3 of Kourany, <em>Philosophy of Science after Feminism</em></td>
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<td>Mar 26</td>
<td><strong>Socially responsible science 2.</strong> de Melo-Martín and Intemann, ‘Feminist resources for biomedical research: lessons from the HPV vaccines’</td>
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<td>Mar 28</td>
<td><strong>Socially responsible science 3.</strong> Chapter 8 of Kitcher, <em>Science, Truth, and Democracy</em></td>
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<td>Apr 2</td>
<td><strong>Objectivity.</strong> Chapter 6 of Douglas, <em>Science, Policy, and the Value-Free Ideal</em></td>
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<td>Apr 4</td>
<td><strong>Socially relevant phil. of science 1.</strong> Fehr and Plaisance, ‘Socially relevant philosophy of science: an introduction’</td>
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<td>Pp. 118–125 of Kourany, <em>Philosophy of Science after Feminism</em></td>
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<td>Apr 9</td>
<td><strong>Socially relevant phil. of science 2.</strong> Tuana, ‘Leading with ethics, aiming for policy: new opportunities for philosophy of science’</td>
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<tr>
<td>Apr 22</td>
<td>Long term paper / 2nd short term paper due at noon</td>
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H. Student Services

The university provides various services, including **Student Accessibility Resources** (exam and classroom accommodations for students with a disability, chronic health condition, or anxiety disorders), the **Academic Success Centre** (e.g., note-taking and writing skills), and the **Centre for Writers** (writing support, in the basement of Assiniboia Hall).
I. Attendance, Absences, and Missed Grade Components

Regular attendance is essential for optimal performance in any course. In cases of potentially excusable absences due to illness or domestic affliction, notify your instructor by e-mail within two days. Regarding absences that may be excusable and procedures for addressing course components missed as a result, consult the “Attendance” and “Examinations” sections of the Academic Regulations of the University Calendar. Be aware that unexcused absences will result in partial or total loss of the grade for the “attendance and participation” component(s) of a course, as well as for any assignments that are not handed-in or completed as a result.

J. Recording of lectures

Audio or video recording of lectures, labs, seminars or any other teaching environment by students is allowed only with the prior written consent of the instructor or as a part of an approved accommodation plan. Recorded material is to be used solely for personal study, and is not to be used or distributed for any other purpose without prior written consent from the instructor.

K. Bibliography of readings


Policy about course outlines can be found in Course Requirements, Evaluation Procedures and Grading of the University Calendar.