

Philosophy 369/001: Philosophy of Science

University of British Columbia
Department of Philosophy
Fall 2023
MWF 9-10, Buchanan D-201

<u>Instructor</u>	<u>Office</u>	<u>Telephone</u>	<u>E-mail</u>	<u>Office Hour</u>
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Description: This course is an introduction to some of the major concepts and issues in contemporary philosophy of science. The orientation of the course (as reflected in the readings) is primarily philosophical, rather than historical. The first part of the course is concerned with the nature of evidence and scientific knowledge. Our main topics in this part of the course are the problem of induction, objectivity and values in science, and the confirmation of scientific theories. The second part of the course focuses on broadly metaphysical themes: explanation and causation, laws of nature, and scientific realism. We conclude with a brief discussion of the role of thought experiments in science.

Typically, there is a mix of philosophy majors/honours students and science students in this course. That creates great potential for interesting discussions, but the success of the course depends upon your involvement.

I. Course learning objectives.

- 1) You will be able to discuss and evaluate some of the central philosophical issues and arguments that emerge from recent scientific practice and from contemporary philosophy of science.
- 2) You will be able to write well-conceived philosophical essays about some of these issues, progressing from short answers (first two assignments) to a carefully structured final paper.

II. Texts.

[CCP] *Philosophy of Science: The Central Issues*, 2nd ed., J. A. Cover, M. Curd and C. Pincock (Norton, 2012). Available in bookstore.

[X] Extra material provided by instructor. These materials will either be linked to the syllabus or available in the “Required Readings” module.

Please do all readings *before* lecture, so that we can have a good class discussion. We’ll discuss two to three papers per week, though this will vary.

III. Requirements. The final grade will be based upon the following scheme:

	<u>Weight</u>
Short essay (1200 words/4 pages), due Oct. 2	10%
In-class mid-term test, Oct. 23	20%
Term paper (3000-3600 words/10-12 pages), due Nov. 17/Dec. 8	35%
Final exam (exam period)	35%

Short essay: Students will have ten days to complete the short essay. This assignment must be submitted online (using the Canvas portal) by the deadline indicated.

Midterm test: The midterm test will be held in class on **Oct. 23**. Please make sure that you can attend. The midterm will cover sections I – IV. Details will be provided closer to the date.

Term paper: Sample topics will be provided by **Oct. 25**, although I encourage students to propose their own topics (by **Nov. 17**). You will be asked to submit a one-page outline by **Nov. 17** (worth 5%), followed by the paper on **Dec. 8** (worth 30%). I strongly encourage you to discuss your term paper with me, either by email or in an office hour (see below).

The **late penalty** for all assignments is 5% per day, but no assignment will be accepted after five days beyond the due date, unless there is clear reason for academic accommodation. In particular, note that the one-page outline of the term paper must be submitted by **Nov. 17** to receive credit.

Final exam. There will be a two-hour final examination during the exam period. More details will be provided during the course.

IV. Course organization. You will need to organize your schedule to keep on top of the material and the assignments. The key organizational tool is the **Canvas page**. In addition to the lectures, there are multiple ways to learn the course material, as follows:

- **Independent reading.** As with any course, you will learn through careful reading of the assigned material, following the schedule posted below ([Lecture and Assignment Schedule](#)).
- **Posted lecture overheads.** Lecture overheads will be posted in the “Modules” section of Canvas. I’ll aim to put these up in advance of the actual lectures. The overheads typically do not capture everything that is covered in the lectures.
- **Posted handouts and assignments.** Copies will be posted in the “Modules” section of Canvas.
- **Office hours.** In person, MW 1-2. If you require an additional meeting, please send me an email message and we can set up a private meeting either in person or using Zoom.
- **Canvas Discussion.** I encourage you to raise questions of general interest using Piazza.

V. Course calendar. The course calendar on Canvas lists all assignment dates, apart from the final exam. This course syllabus also includes a [Lecture and Assignment Schedule](#) that lists assignment dates, topics and readings for each class.

VI. Announcements. Please read carefully all announcements posted throughout the term. These will include course updates, information about upcoming assignments, changes to assignments or due dates, corrections, and important alerts. They will remain posted in the **Announcements** section of Canvas.

VII. Assignments: submission and records.

The short paper and the term paper will be administered through the **Assignments** tab in Canvas. The **short paper**, **term paper proposal** and **term paper** must be submitted as pdf file uploads, by the posted deadline, using the portal in the **Assignments** section. The **midterm test** and **final examination** will be held in person.

Assignment grades will be recorded and posted to Canvas in the **Grades** section. **Important:** although the grades will be accurate, please ignore any cumulative grade scores computed by

Canvas. I will use a separate spreadsheet to compute cumulative grades. Please inform me of any discrepancies between assignment grades on Canvas and your own records.

General policies and other matters:

Academic accommodation: [UBC Access & Diversity](#) works with all instructors to provide appropriate accommodation for students with disabilities. Please notify Access and Diversity of your situation well in advance of any assignment due dates, and please feel free to discuss with me any way in which I can be of assistance.

For those new to philosophy, there is a [Philosophy Essay clinic](#) that offers help for those who wish to improve their philosophical writing skills. The website will be updated with the names and schedule of the instructors. I also encourage you to speak to me during my office hours.

Students are responsible for ensuring that they understand and abide by the [UBC regulations concerning academic misconduct](#) and **plagiarism**. Plagiarism is a very serious academic offense. If you are unsure about any issues relating to academic integrity, please consult with me or with your academic advising office. In particular, **all work done on take-home tests and papers must be your own.**

Statement of UBC values and policies:

UBC provides resources to support student learning and to maintain healthy lifestyles but recognizes that sometimes crises arise and so there are additional resources to access including those for survivors of sexual violence. UBC values respect for the person and ideas of all members of the academic community. Harassment and discrimination are not tolerated, nor is suppression of academic freedom. UBC provides appropriate accommodation for students with disabilities and for religious and cultural observances. UBC values academic honesty and students are expected to acknowledge the ideas generated by others and to uphold the highest academic standards in all of their actions. Details of the policies and how to access support are available [here](#).

LECTURE AND ASSIGNMENT SCHEDULE

<u>Week of:</u>	<u>Topic</u>	<u>Readings</u>
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I. Science and pseudoscience

Sept. 4	Demarcation problem	[CCP] 3 (Popper); [X] Hansson, “Science and Pseudo-Science”
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First class Sept. 6

II. The Problem of Induction

Sept. 11	Induction	[CCP] 406 (Popper); [CCP] 412 (Salmon)
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III. Science, Values and Objectivity

Sept. 11	Kuhn	[CCP] 79 (Kuhn)
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Sept. 18	Kuhn (cont'd)	[CCP] 79 (Kuhn); [CCP] 94 (Kuhn)
	Values in science	[CCP] 144 (Longino)

Short essay topic assigned (Sept. 22)

Sept. 25	Values in science (cont)	[CCP] 144 (Longino) [X] Douglas, “Inductive Risk and Values in Science”
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IV. Probability and Confirmation

Sept. 25	Confirmation and Induction	[X] Salmon and Earman, “The Confirmation of Scientific Hypotheses”, 2.1 - 2.2
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Oct. 2	Confirmation and Induction (cont'd)	[X] Salmon and Earman, “The Confirmation of Scientific Hypotheses”, 2.3 - 2.6 Note: Some sections of Salmon and Earman will be omitted; this will be explained in Canvas Announcements
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Short essay due (Oct. 2)

Oct. 9	Bayesian approach	[CCP] 518 (Salmon)
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NO CLASS Oct. 9 (Thanksgiving)

IV. Explanation and Causation

Oct. 16	Salmon	[X] Salmon, “Scientific Explanation”
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Oct. 23	Causation and Explanation	[CCP] 711 Kitcher [CCP] 735 Woodward
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Mid-term test (Oct. 23)

Oct. 30	Causation/Connection	[X] Dowe, “Causes are Physically Connected to their Effects” [X] Schaffer, “Causes need not be Physically Connected to their Effects”
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V. Laws of Nature

Oct. 30	Laws	[CCP] 871 (Cartwright)
Nov. 6	Laws (cont'd)	[X] Roberts, "There are no Laws of the Social Sciences" [X] Kincaid, "There are laws in the social sciences"
Nov. 13	Laws (cont'd)	[X] Beatty, "The Evolutionary Contingency Thesis"
NO CLASS Nov. 13, 15 (Midterm Break) Term paper proposal due (Nov. 17)		

VI. Empiricism and Scientific Realism

Nov. 20	Unobservables Realism/Anti-realism	[CCP] 1060 (van Fraassen) [CCP] 1108 (Laudan)
Nov. 27	Realism/Anti-realism (cont'd)	[CCP] 1140 (Hacking) [X] Worrall, "Structural Realism: The Best of Both Worlds?"

VII. Thought Experiments

Nov. 27	Thought Experiments	[X] Brown, "Why Thought Experiments Transcend Empiricism"
Dec. 4	Thought Exp'ts (cont'd)	[X] Norton, "Why Thought Experiments do not Transcend Empiricism"

Term paper due Dec. 8