Philosophy 369/001
Philosophy of Science
Fall 2020
MWF 10-11

Instructor	Office	Telephone	E-mail	Office Hour
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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. The online environment creates a special challenge: we can't expect all students to find the lecture times convenient. At the same time, it is more important than ever to find time for interaction. My main ideas to meet this challenge are in section IV.

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 – order for delivery well in advance.

[X] Extra material provided by instructor. Materials will either be on Canvas or online and linked to the syllabus.

Please do all readings *before* lecture (and especially before the Friday discussion), so that we can have a good class discussion. We'll discuss roughly two papers per week, though this will vary.

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

	Weight
Short essay (1200 words/4 pages), **due Oct. 5**	10%
Take-home mid-term test, **due Oct. 26**	20%
Term paper (3000-3600 words/10 pages), **due Nov. 20/Dec. 4**	35%
Final exam (exam period)	35%

Short essay and mid-term: Students will have ten days to complete the short essay and ten days to complete the take-home mid-term test. Both of these assignments must be submitted online (via email or Canvas) on the date indicated.

Term paper: Sample topics will be provided by **Oct. 28**, although I encourage students to propose their own topics (by **Nov. 13**). You will be asked to submit a one-page outline by **Nov. 20** (worth 5%), followed by the paper on **Dec. 4** (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. 20** 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. This will be a **synchronous** event, scheduled for a fixed time period.

IV. Adaptation for web-based course.

In order to balance the desire for participation against the flexibility that students will need in their schedules, I propose the following plan.

1) **Live lectures: Monday and Wednesday.** The Monday and Wednesday 10-11 a.m. lectures will be live on **Collaborate Ultra**, but will all be recorded and posted. Students can certainly ask questions during these lectures, but the focus is the lecture itself. For those who do not attend, these lectures are required viewing.

2) **Pre-recorded lecture.** A third weekly lecture will be pre-recorded and posted for students to watch at their convenience. This lecture will be required viewing. I'll do my best to have the lecture posted by each Thursday afternoon.

3) **Optional tutorial: Friday.** The Friday 10-11 a.m. time slot will be reserved entirely for class discussion (on **Collaborate Ultra**) of issues raised during the week, which we'll call the "tutorial". We may use this time for a combination of breakout discussions and full-class discussion. I will record these sessions. Participation is optional and there is no grade for participation, but there is no doubt that participation in these sections (and in the Monday and Wednesday lectures) will significantly enhance your understanding and enjoyment of the course material.

Please note: even though I will post lecture notes, those notes will likely not include everything that we discuss in class. That is why I am requiring that you view or attend the lectures.

In summary: this course has **no required synchronous component other than the final examination.** The Friday tutorial is a synchronous activity, but it is optional.

V. Course organization. This course is entirely delivered online. 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).
- **Pre-recorded and posted lectures.** As noted above, I'll record two live lectures and one pre-recorded lecture per week. You will find the lectures on the Canvas page as follows:

Collaborate Ultra → Menu (three horizontal lines) of **Sessions bar** (black rectangle at top of the screen) → **Recordings.**

Old recordings. After one month, the recordings seem to disappear, but they are still there. After clicking **Recordings**, go to the right side of the screen and click on **Recent Recordings**. Switch to **Recordings In a Range**, then (on the left side of the screen) enter a start date of September 9 to see all of the old recordings.

- **Posted lecture overheads.** The lecture overheads are posted in the "Modules" section of Canvas.
- **Posted handouts and assignments.** Copies will be posted in the "Modules" section of Canvas.
- **Tutorial.** As noted, the Friday classes will be optional tutorials for discussion. These will be sessions in **Collaborate Ultra** (click **Collaborate Ultra** on left side of Canvas page, then **join session** in progress – do not use the phone #, as this has long-distance charges), open to anyone who wishes to join. I will record and post them.
- **Office hours.** I will have one additional office hour per week, also held via **Collaborate Ultra**. This is an open office hour: anyone can join. If you require a confidential discussion, please send me an email message and we can set up a private meeting using Zoom.
- **Canvas Discussion.** I encourage you to raise questions of general interest using the **Discussion** section of Canvas. (*This may change to Piazza if I am able to set it up.)

VI. 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.

VII. 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.

VIII. Assignments: submission and records.

Most assignments will be administered through the **Assignments** tab in Canvas. The **short paper**, **Midterm test**, **term paper proposal** and **term paper** must be submitted as pdf file uploads, by the posted deadline, using the portal in the **Assignments** section. (This is subject to change: term papers may be submitted via Turnitin.com.)

The **Final Examination** will also be conducted on Canvas, at a time yet to be determined.

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.

Additional statement on honesty: Because this is an online course, all tests and assignments will be open book. However, **you are expected NOT to collaborate in any form with other students on tests or the final examination. All work done on tests 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

Week	Topic	Readings
I. Science and pseudoscience		
Sept. 7	Demarcation problem	[CCP] 3 (Popper); [X] Hansson, "Science and Pseudo-Science"
		First class Sept. 9
II. The Problem of Induction		
Sept. 14	Induction	[CCP] 406 (Popper); [CCP] 412 (Salmon)
III. Science, Values and Objectivity		
Sept. 21	Kuhn	[CCP] 79 (Kuhn), [CCP] 94 (Kuhn)
		Short essay topic assigned (Sept. 25)
Sept. 28	Values in science	[X] Douglas, "Inductive Risk and Values in Science" [X] Crasnow, "Feminist Philosophy of Science: Values and Objectivity"
IV. Probability and Confirmation		
Oct. 5	Confirmation and Induction	[X] Salmon and Earman, "The Confirmation of Scientific Hypotheses", 2.1 - 2.6 **Note:** Some sections of Salmon and Earman will be omitted; this will be explained in class.
		Short essay due (Oct. 5)
Oct. 12	Bayesian approach	[CCP] 518 (Salmon)
		NO CLASS Oct. 12 (Thanksgiving)
		Mid-term test distributed (Oct. 16)
Oct. 19	Scientific decisions: Precautionary Principle	[X] Manson, "Formulating the Precautionary Principle" [X] Sandin et al, "Five Charges against the Precautionary Principle"
IV. Explanation and Causation		
Oct. 26	Salmon	[X] Salmon, "Scientific Explanation", 1.1 - 1.17
		Mid-term test due (Oct. 26)
Nov. 2	Causation and Explanation	[CCP] 711 Kitcher [CCP] 735 Woodward

V. Laws of Nature

Nov. 9	Laws	[CCP] 871 (Cartwright) [X] Lange, "Natural Laws and the Problem of Provisos"
		NO CLASS Nov. 11 (Remembrance Day)

VI. Empiricism and Scientific Realism

Nov. 16	Unobservables	[CCP] 1060 (van Fraassen); [CCP] 1108 (Laudan)
		Term paper proposal due (Nov. 20)
Nov. 23	Realism/Anti-realism	[CCP] 1108 (Laudan); [CCP] 1140 (Hacking)

VII. Thought Experiments

Nov. 30	Thought Experiments	[X] Brown, "Why Thought Experiments Transcend Empiricism" [X] 2 Norton, "Why Thought Experiments do not Transcend Empiricism"

Term paper due Dec. 4

Possible changes: Crasnow, Lange.