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PHIL 2301  
Introduction to the Philosophy of Science

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Winter 2020  
Course Outline

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## I. Admin

Instructor: Gabriele Contessa

Office: PA 3A43

Office Hours: Wednesdays, 1:35pm–2:25pm or by appointment

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## II. Description

Philosophical issues arising out of the attempt to understand the world scientifically. Topics may include: scientific methodology, revolution, observation, explanation, causation, induction, reduction, the difference between natural and social scientific understanding, realism, instrumentalism, constructivism.

## III. Prerequisites

A course in philosophy or second-year standing.

## IV. Readings

Please see the Course Schedule for the latest reading schedule.

Our background readings for the first part of the term will be from T. S. Kuhn, *The Copernican Revolution: Planetary Astronomy in the Development of Modern Thought*, Harvard University Press, 1957, which can be purchased through the Carleton University Bookstore. All other readings are available through cuLearn.

## V. Grading

- a. Two In-Class Tests (worth 15% each);
- b. Three Assignments (the best of which worth 30% of your final grade, the other two worth 15%);
- c. Attendance and Participation (worth 10% of your final grade)

Test dates and assignment deadlines can be found on the Course Schedule.

Please note that all final grades are subject to the approval of the Dean of the Faculty of Arts and Social Sciences.

## VI. Policies

**Attendance.** Class attendance is required. If, for any reason you are absent, you are responsible for finding out what has been covered in class and for any course-related announcements. If unforeseen circumstances are preventing you from attending class regularly, it is your responsibility to inform me as soon as possible. Please be aware that, if you don't attend class regularly and pay attention in class, you are very unlikely to do well in this course!

**Readings.** You are responsible for consulting the Course Schedule to find the readings for that class and for reading each of them carefully and attentively before each class. Please be aware that, if you don't do the readings, you are very unlikely to do well in this course.

**Copyright.** Carleton University is committed to compliance in all copyright matters. Noncompliance is a violation of the Canadian Copyright Act. In addition to any actions that might be taken by any copyright owner or its licensing agent, the University will take steps against any breach of this policy. In Canada, copyright for a work is given automatically to the creator of the work. The work does not need to be marked or declared as copyrighted in order to be copyrighted. The majority of works in Canada are copyrighted. It is important for students to understand and respect copyright. Copyright determines your usage rights for a particular work, which includes textbooks, web pages, videos and images, both electronic and hard copy. Students may not photocopy entire or major portions of books or other works, even if it is only for their personal use. Fair dealing makes some allowances for copying small portions of works. See Carleton's Fair Dealing Policy for more information. If journal articles or portions of works are available through the library, either as hard copies or electronically, students may make a single copy for their personal use. Students may not distribute copies of works that are under copyright. For more information, please see the Carleton's Fair Dealing Policy and the library's copyright website: [www.library.carleton.ca/copyright](http://www.library.carleton.ca/copyright).

**Communication.** You are responsible for checking regularly your Carleton e-mail account and the cuLearn course page for course-related messages and announcements. You are also responsible for checking regularly the Course Schedule for any changes or updates.

**Assignments.** Instructions for each assignment will be sent to your Carleton e-mail account about two weeks before the assignment is due. *Please follow those instructions very carefully, as failure to do so may result in penalties.* If you have not received the instructions for an assignment two weeks prior to the deadline for that assignment, it is your responsibility to contact me as soon as possible to let me know.

The deadline for each assignment is at 11:59pm of the day the assignment is due (see Course Schedule for assignment deadlines). Unless I have granted you an extension in writing (see below), 5 points will be subtracted from your grade for every day the assignment is late. Late assignments will be graded but no written comments will be provided. If you wish to receive feedback on a late assignment, please make an appointment with me to discuss it.

Each assignment must be exclusively the work of the individual student submitting it. All sources must be properly referenced. Please be aware that plagiarism and unauthorized collaboration are very serious academic offences (see below) and that I am bound to report any suspected academic offence directly to the Office of the Dean.

*Please note that failing to submit an assignment will result in a 0% on that assignment.*

**Drafts.** While I am happy to answer any general questions you might have about your assignments, please note that I am not able to provide any feedback on draft assignments.

**Tests.** Please note that, barring extraordinary circumstances (e.g. documented illness or emergency), *missing a test will result in a 0% on that test.*

**Extensions.** Extensions will be granted only in *extraordinary* circumstances (e.g. documented illness or family emergency) *and* only if the extension is requested *in writing before* the assignment deadline. If you think you will need an extension, please contact me as soon as possible by e-mail.

**Academic Integrity.** You are responsible for ensuring that you understand the nature of academic offences (such as plagiarism and unauthorized collaboration), as defined in the [Undergraduate Calendar](#), and to avoid both committing them and aiding or abetting academic offences perpetrated by other students. Please be aware that I am bound to report any suspected academic offence directly to the Office of the Dean.

## VII. Course Schedule

Please note that all information provided below is provisional and subject to change.

You are responsible for checking this Course Outline online regularly for any changes or updates.

With the exception of the chapters from T. S. Kuhn's *The Copernican Revolution*, all other readings can be accessed through cuLearn.

Important Dates/Deadlines	
Assignment 1	Feb 7
Assignment 2	Mar 6
Assignment 3	Apr 7
Test 1	Feb 26
Test 2	Apr 3
Winter Break (No Classes)	Feb 17–21

Unit	Readings	Dates
Unit 0: Introduction		Jan 8–10
		Jan 15–17
Unit 1: Inductivism	David Hume, <i>An Enquiry Concerning Human Understanding</i> (Section IV: ‘Sceptical Doubts Concerning the Operations of the Understanding’ Part I and Part II only!) Nelson Goodman, ‘The New Riddle of Induction’ (skip §3!) <i>Background Reading:</i> Thomas Kuhn, <i>The Copernican Revolution</i> : Ch 1 ‘The Ancient Two-Sphere Universe’	Jan 22–24
Unit 2: Deductivism	Karl Popper, ‘Conjectural Knowledge’ Karl Popper, ‘Science: Conjectures and Refutations’ Carl Hempel ‘Problems and Changes in the Empiricist Criterion of Meaning’	Jan 29–31

	<i>Background Reading:</i> Thomas Kuhn, <i>The Copernican Revolution</i> : Ch 2 ‘The Problem of Planets’	
<b>Unit 3: Underdetermination</b>	W. V. Quine, ‘Two Dogmas of Empiricism’ (§6 only!) Larry Laudan, ‘Demystifying Underdetermination’ Larry Laudan ‘The Demise of the Demarcation Problem’ <i>Background Reading:</i> Thomas Kuhn, <i>The Copernican Revolution</i> : Ch 5 ‘Copernicus’ Innovation’	Feb 5–7
<b>Unit 4: A Farewell to Methodology?</b>	Thomas Kuhn, ‘The Resolution of Revolutions’ Imre Lakatos ‘Falsificationism and the Methodology of Scientific Research Programs’ (§§1-3(b) only!) <i>Background Reading:</i> Thomas Kuhn, <i>The Copernican Revolution</i> : Ch 6 ‘The Assimilation of Copernican Astronomy’	Feb 12–14
<b>Unit 5: Probabilism</b>	Michael Strevens ‘Notes on Bayesian Confirmation Theory’, §§1–6. <i>Background Reading:</i> Thomas Kuhn, <i>The Copernican Revolution</i> : Ch 7 ‘The New Universe’	Feb 26–28
	Michael Strevens ‘Notes on Bayesian Confirmation Theory’, §§7–11.	Mar 4–6
<b>Unit 6: Explanation and Causation</b>	Carl G. Hempel ‘The Thesis of Structural Identity’  <b>March 13: No Class!</b>	Mar 11
<b>Unit 7: Realism</b>	Bas van Fraassen (1982) ‘Arguments Concerning Scientific Realism’ Larry Laudan (1981) ‘A Confutation of Convergent Realism’	Mar 18–20
<b>Unit 8: Values</b>	Helen Longino (1990) ‘Values and Objectivity’ <i>Background Reading:</i> Stephen Jay Gould, ‘Measuring Heads’ (from <i>The Mismeasure of Man</i> )	Mar 25–27
	Hardwig (1994) ‘Towards an Ethics of Expertise’ <i>Background Reading:</i> Naomi Oreskes & Erik M. Conway ‘The Denial of Global Warming’ (from <i>Merchants of Doubt</i> )	Apr 1–3

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## **Department of Philosophy and Carleton University Policies (Fall/Winter 2019-20)**

### **Assignments:**

Unless specifically told otherwise by their instructors, students:

- Must not use a plastic or cardboard cover or paper clips.
- Must staple the paper (there is a stapler on the essay box).
- Must include the following on the first page: student name and number; course name and number; instructor's name.
- No assignments will be accepted after the last day for handing in term work – see dates below.
- Assignments handed in through the essay box (just inside the glass doors, Paterson Hall, Floor 3A) must be dropped into the box by **4:15** on a regular business day in order to be date-stamped with that day's date. Assignments handed in after 4:15 or on a non-business day will be stamped as having been handed in on the next business day.
- Students are required to keep copies of their assignments. If your paper is lost at any point, you will be considered not to have submitted it if you cannot produce a copy immediately on request.

### **Evaluation:**

Standing in a course is determined by the course instructor subject to the approval of the Faculty Dean. This means that grades submitted by the instructor may be subject to revision. No grades are final until they have been approved by the Dean.

### **Deferrals for Final Exams:**

If you miss a final examination (formally scheduled or take-home) because of circumstances beyond your control, you may apply for a deferral. You must apply within 3 working days after the scheduled date of your formally scheduled exam or within 3 working days after the due date of a take-home exam. Visit the Registrar's Office for more information: <http://calendar.carleton.ca/undergrad/regulations/academicregulationsoftheuniversity/acadregsuniv2/#2.5>

### **Plagiarism:**

It is the responsibility of each student to understand the meaning of 'plagiarism' as defined in the Undergraduate or Graduate Calendars, and to avoid both committing plagiarism and aiding or abetting plagiarism by other students. <https://carleton.ca/registrar/academic-integrity/>

### **Academic Accommodation:**

You may need special arrangements to meet your academic obligations during the term. For an accommodation request the processes are as follows:

If you have a documented disability requiring academic accommodations in this course, please contact the Paul Menton Centre for Students with Disabilities (PMC) at 613-520-6608 or [pmc@carleton.ca](mailto:pmc@carleton.ca) for a formal evaluation or contact your PMC coordinator to send your instructor your Letter of Accommodation at the beginning of the term. You must also contact the PMC no later than two weeks before the first in-class scheduled test or exam requiring accommodation (if applicable). After requesting accommodation from PMC, meet with your instructor as soon as possible to ensure accommodation arrangements are made. [carleton.ca/pmc](http://carleton.ca/pmc)

**Pregnancy obligation:** write to your professor with any requests for academic accommodation during the first two weeks of class, or as soon as possible after the need for accommodation is known to exist. For more details visit the Equity Services website: <http://www2.carleton.ca/equity/>

**Religious obligation:** write to your professor with any requests for academic accommodation during the first two weeks of class, or as soon as possible after the need for accommodation is known to exist. For more details visit the Equity Services website: <http://www2.carleton.ca/equity/>

**Survivors of Sexual Violence:** as a community, Carleton University is committed to maintaining a positive learning, working and living environment where sexual violence will not be tolerated, and its survivors are supported through academic accommodations as per Carleton's Sexual Violence Policy. For more information about the services available at the university and to obtain information about sexual violence and/or support, visit: [carleton.ca/sexual-violence-support](http://carleton.ca/sexual-violence-support)

**Accommodation for Student Activities:** Carleton University recognizes the substantial benefits, both to the individual student and for the university, that result from a student participating in activities beyond the classroom experience. Reasonable accommodation must be provided to students who compete or perform at the national or international level. Please contact your instructor with any requests for academic accommodation during the first two weeks of class, or as soon as possible after the need for accommodation is known to exist. <https://carleton.ca/senate/wp-content/uploads/Accommodation-for-Student-Activities-1.pdf>  
For more information on academic accommodation, please contact the departmental administrator or visit: [students.carleton.ca/course-outline](http://students.carleton.ca/course-outline)

**Important Dates:**

Sept. 4	Classes start.
Sept. 17	Last day for registration and course changes for fall term and fall/winter (two-term) courses.
Sept. 30	Last day for entire fee adjustment when withdrawing from fall term or two-term courses. Withdrawals after this date will result in a permanent notation of WDN on the official transcript.
Oct. 14	Statutory holiday. University closed.
Oct. 21-25	Fall Break – no classes.
Nov. 22	Last day for summative tests or examinations, or formative tests or examinations totaling more than 15% of the final grade, before the official examination period.
Dec. 6	Last day of fall term classes. <b>Classes follow a Monday schedule.</b> Last day for academic withdrawal from fall term courses. Last day for handing in term work and the last day that can be specified by a course instructor as a due date for term work for a fall term course.
Dec. 9-21	Final examinations for fall term courses and mid-term examinations in two-term courses. Examinations are normally held all seven days of the week.
Dec. 21	All take-home examinations are due.
Jan. 6	Classes begin.
Jan. 17	Last day for registration and course changes in the winter term.
Jan. 31	Last day for a full fee adjustment when withdrawing from winter term courses or from the winter portion of two-term courses. Withdrawals after this date will result in a permanent notation of WDN on the official transcript.
Feb. 17	Statutory holiday. University closed.
Feb. 17-21	Winter Break – no classes.
Mar. 24	Last day for summative tests or examinations, or formative tests or examinations totaling more than 15% of the final grade, in winter term or fall/winter courses before the official examination period.
Apr. 7	Last day of two-term and winter term classes. Last day for academic withdrawal from fall/winter and winter courses. Last day for handing in term work and the last day that can be specified by a course instructor as a due date for two-term and for winter term courses.
Apr. 10	Statutory holiday. University closed.
Apr. 13-25	Final examinations for winter term and two-term courses. Examinations are normally held all seven days of the week.
Apr. 25	All take-home examinations are due on this day.

**Addresses:**

Department of Philosophy:	3A35 Paterson Hall <a href="http://www.carleton.ca/philosophy">www.carleton.ca/philosophy</a> 520-2110
Registrar's Office:	300 Tory <a href="http://www.carleton.ca/registrar">www.carleton.ca/registrar</a> 520-3500
Academic Advising Centre:	302 Tory <a href="http://www.carleton.ca/academicadvising">www.carleton.ca/academicadvising</a> 520-7850
Writing Services:	4 <sup>th</sup> Floor, Library <a href="http://www.carleton.ca/csas/writing-services/">http://www.carleton.ca/csas/writing-services/</a> 520-3822

