

Evidence, Objectivity, and Realism in the Sciences



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Turn editing on

General

Instructor: Douglas Marshall (dmarshall@carleton.edu)

Meeting Times: Fall 2019, T TH, 10:10 - 11:55 a.m.

Meeting Location: Leighton Hall Room 303

Office Hours: M 1:30 - 3:00 p.m., TH 1:00 - 2:00 p.m.

Office Hours Location: Leighton 310

Please use the [Office Hours Scheduler](#) to book time during office hours.

 [Announcements](#)

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 [PHIL 251 Course Syllabus](#) Uploaded 19/09/19, 13:54

 [PHIL 251 Tentative Schedule of Readings and Assignment Due Dates](#) Uploaded 19/09/19, 13:56

[Week 1]

Welcome to PHIL 251!

Reading for Tuesday: [Karl Popper "Science: Conjectures and Refutations"](#), Sections I and II, pp. 33-39 (7 pages). Please print out a hard copy of Popper's article and bring it to our first class meeting.

Reading for Thursday: [Thomas Kuhn "Logic of Discovery or Psychology of Research?"](#), Section I, pp. 4 - 10 (7 pages). In the case of this article, you only need to print out the assigned pages, not the whole article.

 [Thomas Kuhn "Logic of Discovery or Psychology of Research?"](#) Uploaded 5/09/19, 12:22

 [Popper Handout](#) Uploaded 19/09/19, 14:45

[Week 2]


Readings for Tuesday: [Richard Westfall "Celestial Dynamics and Terrestrial Mechanics"](#) (*The Construction of Modern Science, Ch. 1*) (22 pages); [Imre Lakatos "Science and Pseudoscience"](#) (7 pages)

Reading for Thursday: [Paul Thagard "Why Astrology is a Pseudoscience"](#) (8 pages)

 [Richard Westfall "Celestial Dynamics and Terrestrial Mechanics"](#) Uploaded 19/09/19, 14:01

 [Slides On the Seventeenth Century Revolution in Astronomy](#) Uploaded 30/09/19, 15:27

 [Imre Lakatos "Science and Pseudoscience"](#) Uploaded 19/09/19, 14:34

 [Paul Thagard "Why Astrology is a Pseudoscience"](#) Uploaded 19/09/19, 14:04

[Week 3]

Readings for Tuesday: [Michael Ruse "Creation Science Is Not Science"](#) (7 pages); [Larry Laudan "Science At The Bar – Causes For Concern"](#) (4 pages)

Readings for Thursday: [Bertrand Russell "On Induction"](#) (9 pages); [Peter Godfrey-Smith "Induction and Confirmation"](#), *Theory and Reality* Sections 3.1, 3.2 (8 pages). Note: We will eventually read all of Chapter 3 of *Theory and Reality*, so it is probably simpler to print it all out now.

Optional reading related to Thursday's class: [Angela Potochnik et. al. "Patterns of Inference"](#). This reading offers a textbook presentation of deductive inference, inductive inference, and inference to the best explanation (IBE) for those who may be interested in such a presentation.

Your first papers are due by the end of the day on Sunday, October 6. Please see the First Paper module below for paper format instructions and also to hand in your paper.

 [Michael Ruse "Creation Science Is Not Science"](#) Uploaded 27/09/19, 11:16


 [Larry Laudan "Science At The Bar – Causes For Concern"](#) Uploaded 27/09/19, 11:17

 [Bertrand Russell "On Induction"](#) Uploaded 27/09/19, 11:57

 [Peter Godfrey-Smith "Induction and Confirmation"](#) Uploaded 27/09/19, 12:04

 [Angela Potochnik et. al. "Patterns of Inference"](#) Uploaded 27/09/19, 11:58

 [Handout on Demarcation Criteria](#) Uploaded 19/11/19, 16:34

 [First Paper \(not for rewrites\)](#)

[Week 4]

Reading for Tuesday: [Karl Popper "Science: Conjectures and Refutations"](#) (You can skip or skim the sections you've already read, as well as the Appendix.) (20 pages)

Reading for Thursday: Carl Hempel *Philosophy of Natural Science* Chs 2 and 3 (31 pages)

 [Karl Popper "Science: Conjectures and Refutations"](#) Uploaded 5/09/19, 11:50

 [Carl Hempel Philosophy of Natural Science Chs 2 and 3](#) Uploaded 4/10/19, 11:54

[Week 5]

Readings for Tuesday: [Carl Hempel "Criteria of Confirmation and Acceptability"](#) (14 pages); [Peter Godfrey-Smith "Induction and Confirmation"](#) Section 3.3 (5 pages). Please also watch the [Paradox of the Ravens Video](#) linked to below.


Readings for Thursday: [Nelson Goodman "The New Riddle of Induction"](#) (25 pages); [Peter Godfrey-Smith "Induction and Confirmation"](#) Section 3.4 (7 pages). Please also watch the [Puzzle of Grue Video](#) linked to below.

 [Carl Hempel "Criteria of Confirmation and Acceptability"](#) Uploaded 11/10/19, 10:47

 [Paradox of the Ravens Video](#)

 [Nelson Goodman "The New Riddle of Induction"](#) Uploaded 11/10/19, 10:48

 [Puzzle of Grue Video](#)

 [PHIL 251 Take Home Exam \(Word Doc\)](#) Uploaded 15/10/19, 21:17

 [PHIL 251 Take Home Exam \(PDF\)](#) Uploaded 15/10/19, 21:17

[Week 6]

Reading for Tuesday: [Peter Godfrey-Smith "Bayesianism and Modern Theories of Evidence"](#) (16 pages)

Reading for Thursday: [Selected Readings Concerning Hurricane Intensity](#). Please see the folder below to download the PDFs. I suggest reading them in the order in which they are numbered in the folder. The first reading gives you an overview of a particular debate, and the second two PDFs contain some of the key original articles in that debate. In the case of the last reading, you only need to read the section of the paper entitled "Hurricanes and Typhoons". (15 pages of reading total, but these are mostly big, dense pages from scientific journals)

Your Take Home Exams are due by the end of the day on Sunday, October 27. Please use the moodle module below to hand yours in.

 [Peter Godfrey-Smith "Bayesianism and Modern Theories of Evidence"](#) Uploaded 18/10/19, 13:53

 [Selected Readings Concerning Hurricane Intensity](#)

 [Take Home Exam](#)

[Week 7]

Readings for Tuesday: Thomas Kuhn *The Structure of Scientific Revolutions* Sections IX and X (44 pages); [Giere et. al. "The Downfall of the Phlogiston Theory"](#) (2 pages). (Kuhn likes to use phlogiston as an example, so it's useful to look at the brief "Downfall" reading so you know what phlogiston is.) (If you have the time and the interest, I do recommend reading Kuhn's whole book. But I recognize some people may not have the time or the interest, and so I've only assigned a couple of the centrally important sections of the book. The book is on reserve at the Libe and in the philosophy department lounge.)

Readings for Thursday: [Thomas Kuhn "Objectivity, Value Judgment, and Theory Choice"](#) (20 pages)

 [Thomas Kuhn The Structure of Scientific Revolutions Sections IX and X](#) Uploaded 25/10/19, 13:25

 [Giere et. al. "The Downfall of the Phlogiston Theory"](#) Uploaded 25/10/19, 13:26

 [Thomas Kuhn "Objectivity, Value Judgment, and Theory Choice"](#) Uploaded 25/10/19, 13:28

 [Outline of Kuhn's Structure of Scientific Revolutions](#) Uploaded 31/10/19, 09:12

[Week 8]

Reading for Tuesday: [Paul Feyerabend "Consolations for the Specialist"](#) (34 pages)

Reading for Thursday: [Paul Feyerabend "How To Defend Society Against Science"](#) (6 pages)

Your second papers (concerning hurricane damage) are due by the end of the day on Sunday, November 10. Please use the [Second Paper](#) module below to hand in your papers.

 [Paul Feyerabend "Consolations For The Specialist"](#) Uploaded 1/11/19, 10:42

 [Paul Feyerabend "How To Defend Society Against Science"](#) Uploaded 1/11/19, 10:43

 [Second Paper](#)

[Week 9]

Readings for Tuesday: [Kathleen Okruhlik "Gender and the Biological Sciences"](#) (22 pages); [Elisabeth Lloyd "Pre-Theoretical Assumptions in Evolutionary Explanations of Female Sexuality"](#) (15 pages)

Readings for Thursday: [Helen Longino "Values and Objectivity"](#) (21 pages). This is Chapter 4 of her book *Science as Social Knowledge*. You may optionally also wish to read Chapter 3 as background, Helen Longino "Evidence and Hypothesis" (24 pages).

 [Kathleen Okruhlik "Gender And The Biological Sciences"](#) Uploaded 1/11/19, 14:42

 [Elisabeth Lloyd "Pre-Theoretical Assumptions in Evolutionary Explanations of Female Sexuality"](#) Uploaded 1/11/19, 14:44

 [Helen Longino "Values and Objectivity"](#) Uploaded 1/11/19, 15:24

 [Helen Longino "Evidence and Hypothesis"](#) Uploaded 1/11/19, 15:24

[Week 10]

Reading for Tuesday: Helen Longino "Essential Tensions--Phase Two: Feminist, Philosophical, and Social Studies of Science" (16 pages)

 [Helen Longino "Essential Tensions--Phase Two: Feminist, Philosophical, and Social Studies of Science"](#) Uploaded 1/11/19, 15:25

Final Papers

Your **final paper** for the course is due by **9:30 p.m. on Monday, November 25**. If you wish to submit a [rewritten first paper](#), the deadline for submissions is the same.

 [Rewritten First Paper](#)

 [Final Paper](#)

Course Bookshelf

 [Wilfred Sellars "The Philosophical Quest"](#) Uploaded 3/06/19, 14:21

 [Wilfred Sellars "Philosophy and the Scientific Image of Man"](#) Uploaded 31/05/19, 12:20

Hidden from students

 [McLean Vs Arkansas Documents \(1981\)](#) Uploaded 30/09/19, 15:27

 [Kerry Emanuel "What We Know about Climate Change"](#)

 [Kerry Emanuel "How Do Hurricanes Respond to Climate Change"](#)

 [Michael Strevens "Notes on Bayesian Confirmation Theory"](#) Uploaded 19/11/19, 08:34

Resources for Writing Your Papers

 [Jim Pryor's Guidelines on Writing a Philosophy Paper](#)

 [First Paper Assignment](#) Uploaded 19/09/19, 14:16

 [Second Paper Assignment](#) Uploaded 31/10/19, 09:07

 [Final Paper Topics](#) Uploaded 19/11/19, 08:33

Launchpad for Further Reading and Research

 [Minnesota Center For Philosophy of Science](#)

 [Carleton College Philosophy Department](#)

 [Stanford Encyclopedia of Philosophy](#)

 [Wi-Phi Philosophy Videos](#)

 [PhilPapers](#)

You can use search terms or browse by topic (and philosophy of science is one of the topics).

 [Philosopher's Index \(Carleton Access\)](#)

Search for philosophy books and articles.

 Moodle Docs for this page

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