

# Philosophy of Science (PHIL 178)

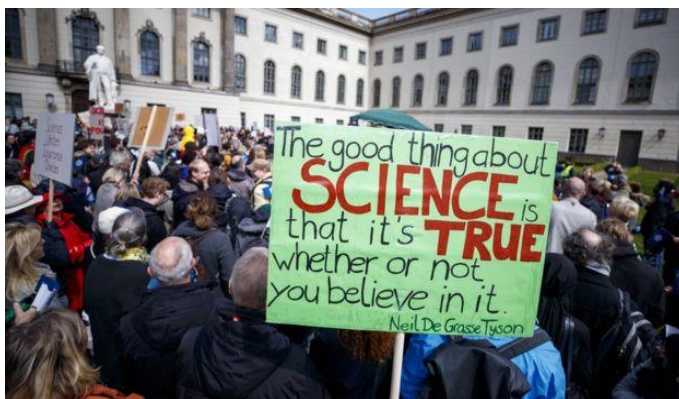
M-Th, 1-3pm

July 9-August 10, 2018

Instructor: Megan Dean

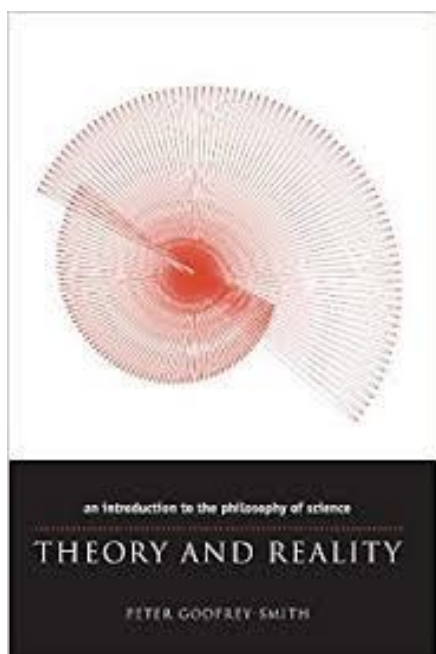
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What's so special about science? Is it its method? Its subject matter? Its aims? That science is somehow uniquely objective, value-free, apolitical, or rational? This course explores these questions and their implications for how we understand, use,



and do science. Students will engage with classic texts, contemporary scholarship, and popular science writing, including work by Helen Longino, Thomas Kuhn, Dorothy Roberts, and Karl Popper. In addition to gaining familiarity with classic debates about induction, science and values, and scientific realism, students will learn to analyze and evaluate positions within contemporary debates about the role of science and scientists in society.

This course will require one textbook entitled *Theory and Reality: An Introduction to the Philosophy of Science* by Peter Godfrey-Smith, available at the bookstore. Additional readings will be made available on online.



## Evaluations

- Short papers: 4 x 15% each = 60%
- Reading quizzes: 4 x 5% each = 20%
- Final project: 20%

Note: this course has no participation grade but students are expected to attend class regularly and to participate in in-class discussions and activities. See “Expectations and Responsibilities” for more information.

## Important dates

- Short papers due: July 12, 19, 26, August 2
- Project proposal due: July 23
- Final project due: August 9

Date	Topic	Readings*
July 9	Introduction	
10	Introduction cont.	Chapter 1
11	Logic Plus Empiricism	Chapter 2
12	Induction and Confirmation	Chapter 3; Online: Lipton, "Induction"
16	Popper: Conjecture and Refutation	Chapter 4; Online: Popper, "Science: Conjectures and Refutations"
17	Kuhn and Normal Science	Chapter 5; Online: Kuhn, "Logic of Discovery or Psychology of research?"
18	Kuhn and Revolutions	Chapter 6; Online: Kuhn, "The nature and necessity of scientific revolutions"
19	Lakatos, Laudan, Feyerabend, and Frameworks	Chapter 7; Online: Lakatos, "Science and Pseudoscience"
23	The Challenge from Sociology of Science	Chapter 8
24	Feminism and Science Studies	Chapter 9; Online: Longino, "Values and Objectivity"
25	Science and Values	Online: Okruhlik, "Gender and the Biological Sciences"; Guterl, "Diversity in Science: Why it is Essential for Excellence"; Medin, Lee and Bang, "Point of View Affects How Science is Done"
26	Science and Values cont.	Online: Douglas, "Inductive Risk and Values in Science"
30	Naturalistic Philosophy in Theory and Practice	Ch. 10
31	Naturalism and the Social Structure of Science	Ch. 11; Online: Solomon, "Social Empiricism"
Aug 1	Scientific Realism	Ch. 12; Online: Hacking, "Experimentation and Scientific Realism"
2	Explanation	Ch. 13; Online: Cartwright, "Do the Laws of Physics State the Facts?"
6	Bayesianism and Modern Theories of Evidence	Ch. 14
7	Empiricism, Naturalism, and Scientific Realism?	Ch. 15
8	Case study: Science and Race	Online: Duster, "Race and Reification in Science"; Yudell et al, "Taking Race out of Human Genetics"; Duster, "A Post-Genomic Surprise"; NOVA, "Does Race Exist?"
9	Wrap-up	

\*All readings are in the textbook unless otherwise noted. This schedule is subject to change.

## Expectations and Responsibilities

What you can expect from me: I will do my best to make the classroom a space for productive, respectful, and challenging discussion. I aim to have all readings and assignments online at least one week before they are to be completed, and provide reasonable notice about any changes to the syllabus. I will be available in person during office hours (TBD) and, in certain circumstances, by appointment. Emails will be answered within 72 hours (though usually sooner). I will not answer emails on Saturdays or after 8 pm on weekdays. I will return graded work within approximately two weeks of submission.



What is expected from you: You are expected to attend class (see Attendance policy for details). You are expected to be prepared for class, which means: bringing reading materials and something to write with; completing required readings prior to class; completing required assignments on time and submitting them as instructed. You are expected to participate regularly and treat your classmates and myself with respect. While there is no participation grade for this course, regular participation is required. Failure to regularly participate in in-class discussions and activities and/or failure to treat peers with respect (i.e. interrupting them, speaking over them, failing to take their contributions seriously, etc.) will result in reduction of your final grade.

## Course Policies and Other Information



Attendance: Attendance is an important component of this class, but I recognize that life sometimes gets in the way. You may miss up to 2 classes without penalty. Any further absence (unless a documented emergency) will reduce your final grade by a third of a letter grade each time.

Laptops, phones, etc.: Laptops and other electronic devices are not to be used in the classroom except when explicitly requested by me or by special permission.

Getting the Most out of Class/Accommodations: I aim to ensure that everyone can fully participate and succeed in this class. While I do my best to make the course accessible to a wide variety of students, I cannot always anticipate everyone's needs. Please contact me at any point in the semester to discuss anything that is hindering

your work. If you have a documented disability, contact the Academic Resource Center ASAP to arrange accommodations like extra time for tests: <http://academicsupport.georgetown.edu/disability>.

Two-Day Pass/Extensions/Late Policy: *Once* during the semester, you can claim a “two-day pass” on any written assignment (not available for quizzes). This gives you an extra 48 hours to complete and submit the assignment, no questions asked. If you wish to invoke the “two-day pass” you must send me an email *on or before the original due date* claiming your pass. No other extensions will be granted, except in case of documented emergency. Late assignments will be docked a third of a letter grade per day.



Grading: Generally speaking, A's are for extraordinary work that shows original, sophisticated thought in nearly flawless prose; B's are for good, solid work, with some room for improvement; C's show some familiarity with key concepts or facts but have some serious issues in content and/or format. D and F level grades have significant problems.

I do not discuss grades with students until 24 hours after an assignment is passed back. After that, I am happy to meet and discuss your grade with you. Requests for grade reconsideration must be made in writing within one week of receiving the grade. You must make reference to the assignment in your argument for grade reconsideration. Please be aware that reconsideration may result in lowering of your grade.

Title IX: I am committed to supporting survivors of sexual misconduct, including relationship violence and sexual assault. However, the law requires me to report any disclosures about sexual misconduct (including the survivor's name) to the University Title IX Coordinator. Georgetown has a number of fully confidential professional resources who are not

subject to this reporting requirement. More info here: <https://sexualassault.georgetown.edu/>

Plagiarism: Plagiarism is against the Georgetown Honor Pledge and can result in severe penalties. If you are feeling overwhelmed or circumstances prevent you from completing assignments to your standards, please email me ASAP to discuss alternatives. For details on the Honor Pledge see <https://honorcouncil.georgetown.edu/>