

PHIL 1400 Philosophy and Science
section 280R Fall 2015
Course Syllabus

Course Information

meetings time and place:

Monday, Wednesday, and Friday
10:00 am to 10:50 am
in Libby 103

Instructor: Mike Zerella
email: mjzerella@gmail.com
office hours: Wednesdays, 1:00 - 1:50 pm in Buckingham S121
Fridays, 11:00 - 11:50 am in Kittredge Central N223

Required Texts

All readings available electronically on Desire2Learn

About the Course

This course will cover our current understanding of the scientific method, and how we establish and change scientific theories in the face of inevitable human limitations. We also will discuss some philosophically interesting theories in science, and whether there are limits to scientific investigation.

Graded Assignments

There will be tests, homework, and papers (see below for due dates). The tests will be short answer and multiple choice questions designed to make sure you are keeping up with the main theories and arguments in the course. The homework will be short writing assignments. The papers will be longer essays in which you are expected to explain and assess a specific issue of your own choosing. The format of the final exam will be the same as the tests, and will cover all of the major themes of the course. Since philosophy requires that we be able to express and discuss ideas, participation is also a required element of the course. To participate, you may speak up during class discussions, or post in our online discussions, or you may speak with me after class or during office hours. Regular attendance in class is also expected in order to fulfill the requirements of the course.

The following lists the relative weights of the different assignments in determining overall grade.

Participation:	5 %
Homework:	25 %
Tests	25 %
Papers:	25 %
Final Exam:	20 %

Important Dates:

Weekly homework due every week before end of Friday (except during paper or test weeks)

Test #1 in class Friday, September 18th

Paper #1 due by Friday, October 2nd

Paper #2 due by Friday, October 23rd (research report)

Test #2 in class Friday, December 4th

Final Exam on Wednesday, Dec. 16th at 4:30 pm in Libby 103

Late work and Missed Exams

Unfortunately, I cannot accept late work or reschedule missed exams without an official medical or legal excuse. Check your personal calendar to make sure you will be in town for all due dates. *I cannot make last-minute accommodations for missed assignments or due dates!!*

Attendance Policy

Students are expected to attend every class meeting. Points for attendance will be included in your participation grade. If you miss more than 6 class meetings, your grade for the course will drop by one letter grade. If you miss more than 9 class meetings, then you will receive an F for the course.

Reading List:*Scientific Method*

Zerella “Arguments and Logic” & “Induction” notes

Thomas Nagel “How Do We Know Anything?”

Karl Popper “The Problem of Induction”

“Science: Conjectures and Refutations”

Harry Frankfurt “On Bullshit”

Allen Franklin “Experiment”

Carol Cleland “Historical vs. Experimental Science”

Zerella “Scientific Methods” notes

Sources and Effects of Bias

N.R. Hanson, “Observation”

Thomas Kuhn “The Structure of Scientific Revolutions” (excerpt)

“The Logic of Discovery or the Psychology of Research?”

Paul Feyerabend “Science and Myth”

Richard Dawkins “Is Science a Religion?”

Zerella “Biological Evolution” notes

Counteracting Bias and Strengthening Science

Philip Kitcher “Believing Where We Cannot Prove”

Kathleen Okruhlik “Gender and the Biological Sciences”

Logic and Laws in Science

Carl Hempel “Scientific Inquiry: Invention and Test”

Zerella “History of Science” (from Ch.1 of dissertation)

Mitchell, Sandra “Ceteris Paribus—An Inadequate Representation for Biological Contingency”

Zerella “Quantum Mechanics and General Relativity” notes

Existence of Unobservable Entities

Bruno Latour and Steve Wolgar “The Social Construction of Scientific Facts”

Grover Maxwell “The Ontological Status of Theoretical Entities”

Cleland and Zerella “What Is Life?”

if there’s time: Climate Change and Geoengineering; Bioethics

Official Syllabus Statements:

(1) **On Disabilities:** If you qualify for accommodations because of a disability, please submit to your professor a letter from Disability Services in a timely manner (for exam accommodations provide your letter at least one week prior to the exam) so that your needs can be addressed. Disability Services determines accommodations based on documented disabilities. Contact Disability Services at 303-492-8671 or by e-mail at dsinfo@colorado.edu. If you have a temporary medical condition or injury, see Temporary Injuries guidelines under the Quick Links at the Disability Services website and discuss your needs with your professor.

(2) **On Religious Observances:** Campus policy regarding religious observances requires that faculty make every effort to deal reasonably and fairly with all students who, because of religious obligations, have conflicts with scheduled exams, assignments or required attendance.

(3) **On Classroom Behavior:** Students and faculty each have responsibility for maintaining an appropriate learning environment. Those who fail to adhere to such behavioral standards may be subject to discipline. Professional courtesy and sensitivity are especially important with respect to individuals and topics dealing with differences of race, color, culture, religion, creed, politics, veteran’s status, sexual orientation, gender, gender identity and gender expression, age, disability, and nationalities. Class rosters are provided to the instructor with the student's legal name. I will gladly honor your request to address you by an alternate name or gender pronoun. Please advise me of this preference early in the semester so that I may make appropriate changes to my records. For more information, see the [policies on classroom behavior](#) and [the student code](#)

(4) **On Discrimination and Sexual Harassment:** The University of Colorado Boulder (CU-Boulder) is committed to maintaining a positive learning, working, and living environment. CU-Boulder will not tolerate acts of discrimination or harassment based upon Protected Classes or related retaliation against or by any employee or student. For purposes of this CU-Boulder policy, "Protected Classes" refers to race, color, national origin, sex, pregnancy, age, disability, creed, religion, sexual orientation, gender identity, gender expression, veteran status, political affiliation or political philosophy. Individuals who believe they have been discriminated against should contact the Office of Institutional Equity and Compliance (OIEC) at 303-492-2127 or the Office of Student Conduct and Conflict Resolution (OSC) at 303-492-5550. Information about the OIEC, the above referenced policies, and the campus resources available to assist individuals regarding discrimination or harassment can be found at the [OIEC website](#). The [full policy on discrimination and harassment](#) contains additional information.

(5) **On the Honor Code:** All students of the University of Colorado at Boulder are responsible for knowing and adhering to [the academic integrity policy](#) of this institution. Violations of this policy may

include: cheating, plagiarism, aid of academic dishonesty, fabrication, lying, bribery, and threatening behavior. All incidents of academic misconduct shall be reported to the Honor Code Council (honor@colorado.edu; 303-735-2273). Students who are found to be in violation of the academic integrity policy will be subject to both academic sanctions from the faculty member and non-academic sanctions (including but not limited to university probation, suspension, or expulsion). Additional information regarding the [Honor Code policy can be found online](#) and at the [Honor Code Office](#).