

Philosophy of Science

COURSE SYLLABUS
University of Central Arkansas

Dr. Sharon Mason
Department of Philosophy and Religion

PHIL 3380
CRN: 25539
FALL 2021



University of Central Arkansas

Department of Philosophy and Religion

Dr. Sharon Mason

Office Hours:

M/W, 11am-11:30am,
Th 2:30-3pm

Irby Hall 118D

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Academic interests:

- Contemporary Analytic Epistemology
- Feminist Epistemology
- Modern Philosophy
- Philosophy of Science



Course Description

Philosophy of science is not an attempt to "do" science, but to ask questions about why and how science is done and why it may be a good method

Tuesday/Thursday, 12:15 to 1:30 PM
Irby Hall 316

Scientific inquiry has transformed our world. Scientific knowledge supposedly tells us what our world is like, and scientific technologies (e.g. engineering and medicine) affect almost every aspect of modern-day life. But what, exactly, is science? What is the difference between "real" science and "pseudoscience"? When do we have enough evidence to accept a hypothesis, and what counts as evidence, anyway? What is a scientific explanation? Are scientific theories true descriptions of the world, or are they something else? Is objectivity possible? What is scientific progress, and how does it occur? What moral responsibilities do scientists have in the projects they pursue and the knowledge they produce? How can scientific knowledge effectively be communicated to the general public? In this class, we will explore these questions and more in a combined historical and contemporary introduction to the philosophy of science. This course may be taken in fulfillment of Upper Division CORE "I" (Critical Inquiry) and "C" (Effective Communication) requirements. It also fulfills 3 credit hours in the "Epistemology & Metaphysics" area for philosophy. There are no prerequisites.

Course Objectives



Objective 1

To philosophically examine scientific knowledge and critically engage with key theories, developments, and problems in philosophy of science



Objective 2

To gain skill in critical reading, writing, and constructive dialogue



Objective 3

To cultivate curiosity, open-mindedness, and intellectual autonomy, especially in regard to science, knowledge, and the modern world



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Course Requirements

Class Participation (60 points)

Showing up prepared for class and participating is essential for learning

Three Exams (80x3=240 points)

Three take-home exams, roughly every 5 weeks

Ten Writing Practices (10x20=200 Points)

Weekly writing and constructive feedback helps develop writing skill

Two Presentations (15x2 = 30 points)

Share your writing with the class and lead the day's discussion



Attendance and Participation

- I assume that you are interested in this subject matter and that your goal is to learn. This assumption is well-supported by the fact that a) this is an elective class, and b) being here is costing you something (time, money, opportunity cost, etc.) I have done my best to prepare content for you that is important, relevant, accessible, and that I hope will blow your mind. I think you will miss out if you don't attend.
- I will be tracking attendance in order to comply with UCA guidelines and to have data for contact tracing, financial aid, etc. In case a student needs to quarantine or cannot attend in person, a virtual class option will be available. However, this is for emergency use only. Expect to attend in-person, but keep in mind that we may need to have some virtual classes this semester. We will use Zoom for any virtual classes.
- If you stop actively participating in the course (defined as: no attendance, no assignment submissions, no contact for 1 week), I will send you an email to see if you need support. You will have one week to respond. If you do not respond (2 weeks no contact), I will administratively withdraw you from the course for nonattendance. If you cannot attend class for some reason, it is important to let me know right away so that we can work together on a solution.



Writing Practices and Presentations

This course fulfills one upper division C (Effective Communication) requirement. Effective communication will be a primary focus of this course. Expect to write a lot; you will become a better writer with practice.

Writing Practices: You should plan on completing one writing assignment each week. Most of these will be 1-2 page writing responses (20 points each). On weeks where an exam is due, the exam will count as your writing assignment.

Presentations: expect to read portions of your writing out loud to the class twice during the semester, and to lead discussion based on your writing prompt. Most Thursdays we will begin by reading and discussing your writing assignments for the week.

Assignments that do not meet the minimum requirements will be returned to the student once for revision.



Exams

There will be three short take-home essay exams, roughly every 5 weeks. The exams will cover material from both the readings and the class lectures/discussions.

Each exam is worth 80 points.



Late Work Policy

It is helpful to have strict deadlines for assignments so that everyone can plan accordingly. I will provide due dates in the course schedule. Please note them carefully, as you are expected to turn in work at those times.

You also have 2 late passes that can be used at any time for any reason (you don't even need to tell me what it is). A late pass gives you an extra 72 hours to submit your work without penalty. In order to use a late pass, you must tell me that you are using one before the assignment is due.

Additional extensions are possible, depending on the details of the case, but in general, any late work will receive a 10% deduction per calendar day that it is late.

Personal Care/Family Care Policy

To undertake a semester course of study together is to undertake a particular commitment. As your professor, I come to class prepared to make ideas come alive, to guide you through difficult concepts, to facilitate discussions, to give you regular and constructive feedback about your work, and to create an effective learning environment that allows you to gain knowledge and grow in intellectual virtue.

Students are responsible for what they do with this opportunity, and a student will (likely) get the most out of this course when they adopt an attitude of charitable critical inquiry, engage the material deeply on their own both before and after class, work to make connections between it and their own experiences, and give careful attention to what they can learn from peers.

One central commitment in my pedagogy is the belief that the relationship between a teacher and a student is a relationship between one complex, multi-dimensional person and another. As a student, I recognize that you are also a complex individual. You probably have a variety of commitments, which include competing demands on your energy, attention, and time. The same is also true about me. My goal is to do what I can to hold you to high standards of excellence in your work while at the same time welcoming you to enter my class as the multi-dimensional person that you are.

If you have care-giving obligations, this dimension of who you are is welcome in my classroom.

I understand that care-giving can present unique challenges, especially with scheduling. I have taken several steps to make your schedules easier by, for instance, posting due dates and instructions for all coursework in advance. However, if there are other adjustments that would help you succeed in this class, please let me know so that we work on this together. I am happy to problem solve with you in a way that makes you feel supported as you strive for balance.

Required Textbooks

- ✓ Ladyman, J. (2002). *Understanding Philosophy of Science*. New York, NY: Routledge.

- ✓ Oreskes, Naomi. (2019). *Why Trust Science?* Princeton University Press.

- ✓ Kuhn, T. S. (2012). *The Structure of Scientific Revolutions*. Chicago, IL: University of Chicago Press.

- ✓ Firestein, Stuart. (2012). *Ignorance: How it Drives Science*. New York, NY: Oxford University Press.

- ✓ Additional readings are available on Blackboard under “Readings.”



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A dynamic course schedule is available in the class Google Drive folder. The schedule will be updated frequently. You should check it regularly to see the upcoming reading assignments and instructions for how to prepare for class.

Google Drive Folder



Classroom Conduct Statement

This course is designed to encourage you to think deeply about controversial issues, and as we go along you will almost certainly encounter viewpoints that challenge your own beliefs. I encourage you to view these challenges as opportunities to learn about perspectives that may differ widely from your own and to practice the skill of interacting respectfully and sympathetically with someone, despite the fact that you may strongly disagree with their point of view. Although debate and critical analysis are encouraged, it should be clear that we will not discriminate against or criticize members of this classroom community based on gender, ethnic origin, sexual orientation, disability, or religion.

Everyone is welcome here.

Required Syllabus Language

Please read the following information carefully. The UCA administration requires these notifications to appear on all UCA course syllabi.

Mask Policy: Students are expected to follow all university requirements regarding face coverings. Up-to-date information is posted at <https://uca.edu/coronavirus/>.

Academic Integrity Statement: The University of Central Arkansas affirms its commitment to academic integrity and expects all members of the university community to accept shared responsibility for maintaining academic integrity. Students in this course are subject to the provisions of the university's Academic Integrity Policy, approved by the Board of Trustees as Board Policy No. 709 on February 10, 2010, and published in the Student Handbook. Penalties for academic misconduct in this course may include a failing grade on an assignment, a failing grade in the course, or any other course-related sanction the instructor determines to be appropriate. Continued enrollment in this course affirms a student's acceptance of this university policy.

Americans with Disabilities Act: The University of Central Arkansas adheres to the requirements of the Americans with Disabilities Act. If you need an accommodation under this Act due to a disability, please contact the UCA Disability Resource Center, 450-3613.

Building Emergency Plan: An Emergency Procedures Summary (EPS) for the building in which this class is held will be discussed during the first week of this course. EPS documents for most buildings on campus are available at <http://uca.edu/mysafety/bep/>. Every student should be familiar with emergency procedures for any campus building in which he/she spends time for classes or other purposes.

Title IX Disclosure: If a student discloses an act of sexual harassment, discrimination, assault, or other sexual misconduct to a faculty member (as it relates to "student-on-student" or "employee-on-student"), the faculty member cannot maintain complete confidentiality and is required to report the act and may be required to reveal the names of the parties involved. Any allegations made by a student may or may not trigger an investigation. Each situation differs, and the obligation to conduct an investigation will depend on the specific set of circumstances. The determination to conduct an investigation will be made by the Title IX Coordinator. For further information, please visit: <https://uca.edu/titleix>. *Disclosure of sexual misconduct by a third party who is not a student and/or employee is also required if the misconduct occurs when the third party is a participant in a university-sponsored program, event, or activity.

Student Handbook: Students are strongly encouraged to familiarize themselves with all policies in the Student Handbook, especially the Academic Policies and the Sexual Harassment Policy.



C. Barrett:

"CLOSE ENOUGH, LET'S GO."