

CALIFORNIA STATE UNIVERSITY, NORTHRIDGE
PHIL 495: Advanced Philosophy of the Sciences
Science and the Public
Fall 2026



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INSTRUCTOR INFORMATION

Dr. Sindhuja Bhakthavatsalam
(Interdisciplinary Studies and Liberal Studies (ISLS), and Philosophy)



Email: sbhakthav@csun.edu

Student Hours: Tuesdays and Thursdays 1 – 2 pm in EA 100 or on [Zoom](#) as well as by appointment.

CLASS TIMES AND LOCATION

Tuesdays and Thursdays 2:30 - 3:45 pm at Goodman Hall 110

COURSE DESCRIPTION

Catalog Description

Prerequisite: 6 units of Philosophy. Advanced study of one or more key issues in the philosophy of science, such as causality, theory evaluation, or values in the sciences; examination of philosophical issues in the special sciences, such as the philosophy of physics or the philosophy of psychology; or critical examination of the relation between the physical and social sciences.

Instructor's Description

Skepticism and dissent form an integral part of science; so much so, that the well-known sociologist of science, Robert Merton in his 1942 book *The Sociology of Knowledge*, listed 'organized skepticism' – consisting in inviting scientific claims to critical scrutiny before accepting them – as one of the non-negotiable norms to be followed by scientific communities. Peer review is an important feature of scientific practice that is meant to address this. But is it enough for skepticism and dissent to be confined to scientists themselves? Can the lay public express dissent towards science/ scientists too? Should they? It seems like in a democratic society, it is valuable for this to happen: in order to maintain a productive relationship between science and society, the public can and should hold scientists accountable. But what if this dissent gets pernicious? What if bad actors – say, big corporations with the sole motive of profits – manufacture and sow doubt in the public towards evidentially *well*-supported science? Are there different kinds of dissent then – some healthy and others unhealthy? Can we as philosophers draw principled distinctions between them? Under what conditions should and shouldn't scientists be trusted by the public? Could addressing these questions help improve the relationship between scientists and the public? These are some of the issues we will explore in this class.

COURSE OBJECTIVES

As a student in this course, you will

1. Analyze scientific practice and public perceptions of it from philosophical perspectives, specifically with respect to the role of social, ethical, and other values.
2. Distinguish between appropriate and inappropriate dissenting attitudes towards the practices and outputs of science.
3. Cultivate skills – without the use of AI – to closely and carefully read and interpret scholarly work in the philosophy of science and allied areas, specifically on the role of values in science.
4. Practice reconstructing and critically engaging with philosophical arguments in the literature.
5. Practice constructing original arguments in response to arguments in the literature.
6. Learn to find and use peer-reviewed scholarly material.
7. Apply ideas learned in class to new scenarios.

REQUIRED READINGS

Textbook: *The Fight Against Doubt: How to Bridge the Gap between Scientists and the Public* by Inmaculada de Melo-Martin and Kristen Intemann (referred to as “FAD” in the class calendar below).

All other readings will be posted on the Canvas site for this course. Students are expected to always have the textbook and other readings for the week with them in class.

WAYS YOU CAN DEMONSTRATE YOUR LEARNING

Regular in-class activities – 30% of course grade

You are expected to always be on time and contribute to group and class discussions constructively and respectfully. Always have with you in class the textbook as well as any other reading materials assigned for the day since we will extensively use them in class. Keep in mind that the classroom is a *collective* learning environment, and your contributions are crucial to everyone’s learning including mine. So please always take it as a *responsibility* to come to class having done the assigned work and thought about it enough to share in class. Your ideas are never expected to be perfect – we’re all learning together. So don’t be afraid to speak up! :-). You are always encouraged to draw on your own life experiences and perspectives. Do not miss class except for unavoidable reasons and let me know of your absence as early as possible.



Class Participation – 5% of course grade: We will regularly use an online platform such as Poll Everywhere for you to input short responses which will serve as a springboard for larger discussion. This exercise is meant to be very easy, and you will be graded on relevance and completeness.



Quizzes – 10% of course grade: You will complete a short, objective-type, in-class quiz roughly once a week. Questions will be based on the material discussed during the class period and are meant to be very straightforward. You will be graded on accuracy.



Reflections – 15% of course grade: You will regularly write a short (about half a page) response to guiding reflection questions provided in class. You will handwrite this in class, usually once a week at the end of the class period and turn it in before you leave. You will be graded based on accuracy, clarity, originality, and substantiation.

Content Comprehension Videos – 20% of course grade



You will complete three take-home content comprehension video assignments, each worth 10% of the course grade. You’re welcome to, but not required to, do a fourth one. If you do so, only your best three grades will be counted – the lowest will be dropped. You will be graded on accuracy, originality, and clarity. These will be due Fridays by 11:59 pm. You may not do both this assignment and the presentation (see below) on the same material.

Group Presentation – 15% of course grade

You will give one presentation as part of a group of two or three students. You are expected to respond to the provided guiding questions and present stimulating questions for class discussion. Each group will work on their presentation content on a Google doc well in advance and iterate responses based on feedback from me. Your responses should have a final ‘go ahead’ from me before you present.



Final Paper – 35% of course grade

You will read material assigned specifically for this assignment – which may include popular science/ news articles – and then write an argumentative paper applying key concepts learned in class, drawing on class material as well as other scholarly sources you find yourself (I’m happy to help with this). You will first meet with me after doing the readings, to discuss your paper outline. You will then write an in-class draft and then write the final paper, also in class. You will be graded based on relevance of ideas used, accuracy, and thoughtfulness.



GRADING

Overall scores will be rounded to the nearest integer percentage and then assigned the final course grade according to the following scale:

A 94-100%	B+ 87-89%	B- 80-82%	C 73-76%	D+ 67-69%	D- 60-62%
A- 90-93%	B 83-86%	C+ 77-79%	C- 70-72%	D 63-66%	F < 60%

COMMUNICATION

I’d like to be able to get ahold of you! I will frequently communicate important information to you via (CSUN) email and Canvas. It is therefore important that you turn on all Canvas notifications (for announcements, messages, assignment comments etc.) and check your (CSUN) email regularly. Please email me through Canvas or your CSUN email address ONLY and not your personal email.

STUDENT HOURS (Mentioned on top)

I firmly believe that good communication between professor and student is of paramount importance and meeting with me outside of class is key to achieving this. You’re always welcome to drop by to discuss any concerns you may have. Feedback on how things are going for you is always welcome and appreciated. If you’re not able to make it during the designated hours, feel free to send me an email to set up an appointment. Never hesitate to reach out to me.

POLICIES AND LEGAL STUFF

Late Assignments

Things sometimes come up and I want to be understanding while still maintaining high standards. Assignments are considered on time when they are submitted at or before the time

specified on the syllabus. Late work will be accepted with valid justification. Please be proactive about keeping me informed about your needs and I will work with you.

Accommodations/ resources

Students with special needs who need reasonable modifications, special assistance, or accommodations in this course, please direct your request to me *as early as possible* and I can direct you to the appropriate office on campus for assistance. Class is usually for students only, but if you ever have a parenting/sibling emergency, your little one can join us in class.

Policy on Academic Honesty

I expect high standards of academic integrity from students. Cases of academic dishonesty – including but not limited to, copying, allowing others to copy your work, plagiarism, failing to cite your source, copying/pasting text from the internet even with modifications, misrepresentation of others' work as your own, violations of the collaboration policy below – may be referred to the VP of Student Affairs' office for arbitration and possible disciplinary action. For information on CSUN's policy on academic honesty refer to <https://catalog.csun.edu/policies/academic-dishonesty/> The use of Artificial Intelligence (AI) including Large Language Models such as ChatGPT is forbidden in this class. Refer to the accompanying document for more information on AI use. All work turned in for a grade for this class should be completed by yourself with no use of anyone else, human or AI. Please note that the use of Grammarly is prohibited too in this class. Failure to comply with this Academic Integrity Policy may result in a zero in individual assignments and/or an F in the class.

Fine Print

It is the responsibility of each student to follow all guidance given by the instructor. In case of major changes to the syllabus due to unforeseen circumstances, a revised syllabus will be added to Canvas. Minor changes may simply be announced on Canvas and/or in class.

COURSE CALENDAR

Week/ Date	Reading	Presentation Availability
Week 1	Chapter 1 of FAD	
Tuesday, Aug 25 th	Welcome! Chapter 1	
Thursday, Aug 27 th	Chapter 1	
Week 2	Chapters 2 and 3 of FAD	
Tuesday, Sep 1 st	Chapter 2	

Thursday, Sep 3 rd	Chapter 3	
Week 3	Chapter 4 of FAD	
Tuesday, Sep 8 th	Chapter 4	✓
Thursday, Sep 10 th	Chapter 4	
Week 4	Chapters 5 and 6 of FAD	
Tuesday, Sep 15 th	Chapter 5	
Thursday, Sep 17 th	Chapter 6	✓
Week 5	Chapters 6 and 7 of FAD	
Tuesday, Sep 22 nd	Chapter 6	
Thursday, Sep 24 th	Chapter 7	✓
Week 6	Chapter 7 and 8 of FAD	
Tuesday, Sep 29 th	Chapter 7	
Thursday, Oct 1 st	Chapter 8	✓
Week 7	Chapter 8 and 9 of FAD	
Tuesday, Oct 6 th	Chapter 8	
Thursday, Oct 8 th	Chapter 9	✓
Week 8	Chapter 9 and 10 of FAD	
Tuesday, Oct 13 th	Chapter 9	
Thursday, Oct 15 th	Chapter 10	✓

Week 9	Chapter 10 and 11 of FAD	
Tuesday, Oct 20 th	Chapter 10	
Thursday, Oct 22 nd	Chapter 11	
Week 10	Epistemic Corruption	
Tuesday, Oct 27 th	‘Epistemic Corruption and Manufactured Doubt: The case of Climate Science’ by Biddle, Kidd, and Leuschner	✓
Thursday, Oct 29 th	‘Epistemic Corruption and Manufactured Doubt: The case of Climate Science’ by Biddle, Kidd, and Leuschner	
Week 11	Values and Public Trust in Science	
Tuesday, Nov 3 rd	‘Democratic Values: A Better Foundation for Public Trust in Science’ by Schroeder	✓
Thursday, Nov 5 th	‘Democratic Values: A Better Foundation for Public Trust in Science’ by Schroeder	
Week 12	Values and Public Trust in Science	
Tuesday, Nov 10 th	‘Du Bois’ Democratic Defence of the Value-Free Ideal’ by Bright	✓
Thursday, Nov 12 th	‘Du Bois’ Democratic Defence of the Value-Free Ideal’ by Bright	
Week 13	Public Health/ Prelim essay drafting	
Tuesday, Nov 17 th	‘Trustworthiness, Non-Manipulation, and Public Health Guidance for Individuals’ by Harvard, Winsberg	
Thursday, Nov 19 th	Prelim essay drafting - I	

Week 14	Prelim essay drafting	
Tuesday, Nov 24 th	Prelim essay drafting - II	
Thursday, Nov 26 th	THANKSGIVING HOLIDAY	---
Week 15	Prelim essay feedback/ Final essay drafting	
Tuesday, Dec 1 st	Prelim essays debrief/ draft revisions	
Thursday, Dec 3 rd	Final essay drafting – I	
Week 16	Final essay drafting/ Review	
Tuesday, Dec 8 th	Final essay drafting - II	
Thursday, Dec 10 th	Review	