SOCY 550 – ~~Sociology~~ Science of Science

Spring 2026 – M/W 14:20-15:35 – Davis 216

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Office Hours: M/W 1-2pm ("drop in" or by appointment – https://calendly.com/jimiadams)
NOTE: Drop in hours will be in person only. Appointments can be virtual (a link will be auto-generated) or in person.

Course Description

What do scientists do all day? Science and technology both shape and are shaped by our everyday lives in increasingly intertwined ways. We're often trained in the practices of science, without necessarily taking the time to consider how and why the approaches we take came to be the dominant approach. This seminar will therefore turn the analytic lenses of science onto science itself. That is, we're going to see how scientists have studied scientists and the practice of science. This will help us to better understand why science works the way it does, is structured the way it is, and why those questions matter. We'll engage with the history, philosophy, and sociology of science, and how those perspectives have been combined into modern approaches of "science and technology studies" (STS). Our approach will be broken up into 3 primary modules, addressing: (1) "What is science?" (2) "How is science done?" and (3) "How is science communicated?". In each of these modules we will address the theoretical bases and justifications for our current system, the pragmatic details of everyday practice, and several examples of how those have played out.

Objectives

By the end of the course, participants should be able to:

- Describe key conceptual and theoretical claims about the nature of scientific practice.
- Account for how the structural organization of science promotes or inhibits achieving those aims.
- Explain how the aims and organization of science shape what questions are asked (and which are not), how we arrive at answers to those questions, and the certainty of those answers.
- Present and write more clearly than when you began the course.

Assigned Readings

All required readings and supplemental materials will be available via Canvas.

Course Structure & Requirements

First and foremost, this course will be organized as a seminar. ***This means that you will need to come to each class session having completed assigned readings and prepared to discuss the day's topic***. Much of our reading for this course will be primary peer-reviewed research articles. At times the content of these will be over your head. This is to be expected. Your aim will not be to fully interpret the minutiae of every aspect of these readings, but to extract the key dimension(s) of how science functions, and use those ideas to help the class formulate an informed discussion. I will provide guidance on strategies for how to optimize your reading for this class, particularly on how to extract key ideas from articles used for different aims in the course.

Requirements

I – Participation Elements

A. Active in-class participation (25 points, 5% of total grade)
This entails showing up for class sessions on time, ready to discuss the day's material, including assigned readings. You should be actively engaged in discussions (using devices only for class-relevant activity) and activities.

B. Periodic in-class activities (75 points max, 15% of the total)
We will occasionally have in-class brief written assignments. These will vary in format, with the vast majority graded only for completeness. No more than 75 accumulated points will be applied to your final grade.

II – Reading Elements

More details are provided in separate handouts for each of these assignments.

A. Discussion Lead (40 points, 8% of total grade)
Each student will individually be in charge of introducing the discussion for a day's assigned reading(s). This will entail providing some summary and key questions to orient the in-class discussion for the day. The presentation itself will be informal, and should take no more than 15 minutes. You are welcome to consult with me on how best to structure your session.

B. Reading Responses (160 points, 32% of total grade)
For 8 class sessions, you will turn in a *brief* summary/reaction to the assigned reading(s) for the day. These should be approximately 300 words. Details will be described in a separate handout.

III – Project Elements (200 points total. 100 points each, 40% of total grade).
Pick *any* TWO of the following (due dates are listed on the course schedule):

A. Historical Essay
For this option, you will examine library (and other reputable) sources to write a historical account of how a particular scientific discovery came to be, applying concepts from our class to interpret that process. This will not primarily recount what the finding was. Rather, you will provide a description of: (1) why the question was thought worth answering, (2) the process that led to the finding, (3) how the finding was communicated, and (4) a discussion of how it was received by the scientific and lay communities. You will accomplish this in 2 steps, producing an annotated bibliography of your sources (*at least* 8), then writing a paper (~6 pages) to summarize your findings. **No advance notice of using this option is required,** however you are strongly encouraged to discuss planned options with me.

B. Exam over Modules 1 & 2
The exam option will be taken in class. All material covered in Modules 1 & 2 is fair game for this exam. It will consist of a mix of multiple choice, short answer, and essay questions. **No advance notice of this option is required, however you cannot opt out of it after beginning the exam.**

C. Podcast or Vodcast
Individually, or in teams of 2, you will produce a podcast (audio only) or vodcast (with visuals) of 15-20 minutes applying ideas from the course to interpret a scientific controversy of your choosing. More details for this assignment will be made available in a separate handout. If you choose to do this assignment with a partner, both team members will receive the same grade. **Your topic (& partnership) for this option should be confirmed with me by Mar 27th.**

D. Data Analysis, Write-up, & Reflection

This assignment asks you to identify a question of relevance to your own interests, then: (1) procure "raw data" (whether gathered yourself, or acquired from secondary sources), (2) conduct original analysis of those data to address an analytic question, (3) write up a description of that analysis and interpretation of your finding, then (4) interpret how well the process was able to align with your originally-intended aims. Further details of this option will be provided in a separate handout. You should confirm a plan for this option with me no later than **Apr 3rd**.

E. Dealer's Choice

If you have a particular skillset or interest that may be used to demonstrate mastery over our course material in a way other than those listed above, let's chat. We can negotiate an equivalent option that you can complete to satisfy **ONE** of the project options. If you plan to make use of this option, we must have agreed upon a plan by **Mar 6th**.

Grading

Maximum Potential Points (500):

Participation (20%, 100 points)	Reading (40%, 200 points)	Projects (40%, 200 points)
Active engagement (25 points)	Discussion Lead (40 points)	Option 1 (100 points)
In-class activities (*up to* 75 pts)	Reading Responses (160 points)	Option 2 (100 points)

Final Grade Computation:

Your final grade will be determined by summing the number of points earned from each of the above categories. Letter grades will be determined from your point total as follows:

Letter Grade	Points Range	Letter Grade	Points Range	Letter Grade	Points Range
A	468+	B	412-437	C	362-387
A-	450-467	B-	400-411	C-	350-361
B+	438-449	C+	388-399	D	300-349

Any student accumulating 299 or fewer points will receive an F for the course.

Grading Expectations:

Participation, presentation, and paper grades you earn will reflect how thoroughly your work demonstrates the assignment requirements *and* overall course aims, which will correspond to the following sets of expectations:

- F Work that **fails to address** an assignment's **minimum requirements** will earn grades in the F range.
- D Work that **incompletely addresses** an assignment's **minimum requirements** will earn grades in the D range.
- C Work that **addresses only** an assignment's **minimum requirements** will earn grades in the C range.
- B Work that, **in addition to** meeting an assignment's **minimum requirements**, also ***occasionally*** reflects **engagement** with other material from the course where appropriate, in ways that **meet course objectives** will earn grades in the B range.
- A Work that, **in addition to** meeting an assignment's **minimum requirements**, also ***consistently*** reflects **engagement** with other material from the course where appropriate & in ways that **exceed course objectives** will earn grades in the A range.

Please note now that there are NO extra credit opportunities in this course. For this course to be successful—and therefore for you to be successful in this course—we need everyone keeping up with requirements throughout the semester.

Course Expectations

What I expect from you:
1 – *Make a concerted effort to bring the best you can to the course.* This means doing readings before class, bringing materials you need to actively participate in class sessions, putting forth effort into the evaluated elements of the course. It also means taking ownership over the grades you earn.
2 – *Treat others in the class with respect.* This includes simple norms of regular interaction (listening when others are speaking, giving due attention to others presenting that you would expect in return, etc.) and thoughtfully considering the contributions of others. At times we'll potentially cover material of a sensitive nature; being able to respect other's expressed opinions makes critical discourse possible.

What you can expect from me:
1 – *Make a concerted effort to bring the best I can to the course.* This means leading a class appropriate to its level, selecting "up to date" material that helps illustrate the course's key aims, regularly being available for interaction within and (to a reasonable extent) outside the classroom, and adapting as is appropriate for the needs of the class.
2 – *Treat others in the class with respect.* This includes being prepared for class, returning graded materials in a timely manner with useful feedback, striving to be impartial in the assessment of student work, while holding that work to the standards of the course and honors program. It also means fostering an environment where diverse perspectives can comfortably be shared in class.

What we all can expect from each other:
Behave in a manner reflecting common courtesies. Show up to class on time; don't leave early. If something arises, and you need to leave class, do so in a way that minimizes distractions to others. Show up to office hours or other appointments as scheduled. Maintain professionalism in all electronic communication (e.g., email/Blackboard messages). Use laptops/tablets **for class purposes only** (e.g., to access readings or take notes). Any other uses will lead you to lose this privilege. All other devices (phones, etc.) should be silenced for the duration of class.

Due Dates & Late Assignments:
- Reading Responses are due on Blackboard **before** the class meeting in which they are to be discussed. Because you have multiple options of when to choose to complete the 7 required responses, no late responses will be accepted. However, you can submit an 8th response if you are unsatisfied with your performance on these, and only your top 7 will be included in the final grade calculations.
- Discussion Lead are in-class presentations. These cannot be rescheduled within a week of the assigned presentation slot without an excused absence.
- In-class Activities are due at the time they are collected in class. No makeup opportunities are made for In-Class Activities, because I will provide enough opportunities for these in class so that up to two could be missed (for any reason) and full credit still achieved.

Course Communication:
- *The Syllabus* has answers to the most common questions pertaining to the course. Be sure check the syllabus first, before asking me about due-dates, assignment requirements, etc.
- *Office Hours* are available to add to your experience in this course. **Please make use of them.** These are meant to supplement required course work and in-class elements. As such, while I am

happy to discuss course materials or other aspects of science/academia in general with you during this time, they should not be viewed as an opportunity to ask, "What did I miss in class?" (You should find peers in the class with whom you can share notes for that purpose.)

- *Blackboard* will be used for the majority of communication in this course. You can find a copy of the syllabus, additional assigned readings, and all assignments there. I will also post any lecture notes after each class. To make your experience in this course successful, you should expect to make this resource a *regular* part of your preparation for this course.
- *E-mail* should be used for quick communications (things that can be responded to in a few sentences); use office hours for anything requiring more depth. Please use your USC email account for communication related to this course; I will not read/reply to emails from your personal accounts (e.g., Yahoo!, Hotmail, etc). Please consider e-mail as subject to the same standards of communication as you would all other forms written material in this course (i.e., you should use complete sentences, proper punctuation, etc.). I will typically respond to email within ***48 hours*** (weekdays). I will ***NOT***, ***under any circumstances*** discuss grades over email.

University, CAS, and other Important Administrative Policies

Academic Integrity. You are expected to practice the highest possible standards of academic integrity. Any deviation from this expectation will result in a minimum academic penalty of your failing the assignment (i.e., receiving a zero) and will result in additional disciplinary measures. This includes improper citation of sources, using another student's work and any other form of academic misrepresentation.

Generative Artificial Intelligence. Our aim in this course is to develop critical analytic skills (e.g., synthesis, interpretation, application) related to course concepts, theories, and data. Employing AI tools will detract from your developing these skills and meeting our aims. Therefore, while you may use these tools for "brainstorming" or copy-editing, all ideas underpinning your work, and the content of all submitted assignments should be your original work. In particular, you should ***NOT*** use any form of AI for reading and reactions. These are intended to hone your skills in learning from and critically engaging with material (not just arriving at their distillations), and using AI for this purpose negates that purpose.

Plagiarism. Using the words or ideas of another (including AI) as if they were your own is a serious form of academic dishonesty. This includes direct quotations (e.g., sentences, extended phrases) and unique or specific ideas, terms, and/or their definitions (i.e., most key course concepts), or empirical claims (e.g., research findings); you must give *all sources* credit through proper citation (see handout). Please remember that avoiding plagiarism is only a *minimal threshold* for maintaining academic integrity. If you remain unsure what this means for your successful participation in and completion of assignments in this course, ask me, don't assume. Additionally, the first tenet of the Carolinian Creed is, "I will practice personal and academic integrity." There are useful resources on what this entails available for you at:

- Carolinian Creed (http://www.sa.sc.edu/creed)
- Academic Responsibility (http://www.sc.edu/policies/staf625.pdf)
- Office of Student Conduct and Academic Integrity (https://www.sa.sc.edu/academicintegrity/)

Class Recording. *The recording of class lectures, discussions, or any other teaching activity associated with this course is prohibited.* "Recording" refers to any analog or digital sound or image reproduction. Exceptions may be granted with disability documentation and/or the written permission of your professor. In such cases, the accommodation letter must be presented to the instructor in advance of any recording being done and all students in the course will be notified whenever recording.

Incomplete Grades: The current university policy will be followed in this course. Incomplete grades are

given only in situations where unexpected emergencies prevent a student from completing the course. Students have up to one year (three semesters) to complete course requirements. Incompletes should not be assumed; they require all appropriate approvals. Incomplete work must be finished within the time allowed or the "I" will automatically be converted to an "F" on your transcript.

Course Schedule Overview

NOTE: this schedule is subject to change. Changes will be announced in class and on Blackboard.

Date	Topic	Readings	Due
0. Preliminaries & Introductions			
01/12	Introductions & Overview	none	
1. What is science?			
01/14	as Experimentalism	Shapin 2006 *de Souza Leão & Eyal 2019	
01/21	as Logic(s)	Reichertz 2013 (A-H, ln) ***or*** Rothchild 2006 (I-Z, ln)	
01/26	as Explanation & Prediction	*Hofman et al 2021	
01/28	as Inference	*Sprenger 2016	
02/02	as Falsification	*Popper 1963	
02/04	as Paradigms	*Kuhn 1962	
02/09	as Culture	Merton 1973 (A-K, fn) ***or*** Hawking 1988 (L-Z, fn)	
02/11	as Fields	*Bourdieu 1975	
2. How does science get done?			
02/16	in Labs	Latour & Woolgar 1986	
02/18	in Labs (cont'd)	[none]	Option A
02/23	with Uncertainty	*Star 1986	
02/25	with Numbers	Schüll 2016 (Jan-Jul bd) ***or*** Berman & Hirschman 2018 (Aug-Dec)	
03/02	via Iteration	*NASEM 2019 (ch 2)	
03/04	via Updating	*Ecker et al. 2017	
03/16	by (selected) Experts	Morgan 2021 (1st-15th bd) ***or*** Riegle-Crumb et al. 2011 (16th-31st)	
03/18	by Trainees	*NRC 2007	
03/23	in movements	*Frickel & Gross 2005	
03/25	in disciplines	*Light & adams 2016	
03/30	with boundaries	Jasanoff 1987 (even ID#) ***or*** Gieryn 1983 (odd ID#)	
04/01	with non-scientists	Epstein 1995 (ph last 0-4) ***or*** Shim 2005 (ph last 5-9)	
04/06	Exam		Option B
3. How is science communicated?			
04/08	for ourselves	Shreier et al. 2006 ***or*** Wilson et al. 2017 (your choice)	
04/13	for reproducibility	*NASEM 2019 (ch 3)	Option C

04/15	in pictures	Healy & Moody 2014	
04/20	to other scientists	Edwards 2014 ***and*** Likis & Swett 2019 () ***or*** Simons-Morton et al. 2012 ()	
04/22	to correct "common sense"	*Bode & Vraga 2017	
04/27	to "the public"	*Weisberg et al. 2021	
	Finals Week (no class)		Option D & E

Full Reference Information for Required Readings

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