HTS 3082: Sociology of Science

Location: TBD Days: Tues/Thurs Time: 5:00 – 6:15

Prof. Andrew Buskell (abuskell@gatech.edu)
Office Hours: TBD

Course Description

How do scientists establish scientific *facts*? What is the nature of scientific authority? And just who are these scientists in the first place? If scientists are just like you and me, how do their positions in society, their politics, and their culture shape their scientific work — and how does their work shape society, politics, and culture in return?

This course introduces you to the field of Science and Technology Studies (STS), a methodologically diverse and interdisciplinary approach to understanding connections between the production of knowledge, the innovation of technology, and the conflicting values and demands of social life. Through case studies drawn from historical and contemporary science, you will learn key STS concepts and theories, apply novel methods, and develop skills for ethically navigating your own scientific career.

Course Materials

All course materials will be available through Canvas. Optional texts that complement this course include:

Sismondo, Sergio. 2010. *An Introduction to Science and Technology Studies*. 2nd ed. Blackwell.

Latour, Bruno. 1987. *Science in Action: How to Follow Scientists and Engineers through Society*. Harvard University Press.

Learning Objectives

The central aims of this course are to develop:

1. **Course specific knowledge,** i.e. to:
    a. Identify accounts of scientific change and the growth of scientific knowledge and to explain how different accounts understand the activity of science and scientists.
    b. Illustrate key theories, concepts, case studies in the science and technology studies literature and to examine how these apply to ongoing issues in scientific work.
2. **Research skills and techniques,** i.e. to**:**
    a. Summarize social scientific methods (e.g. ethnography and interviewing), diagnose when and where such methods are appropriate, and evaluate efforts at applying them.
    b. Assess secondary source material; notably, to critically appraise key arguments and ideas in support of general literature reviews
    c. Design, plan, and construct research papers, lab books, and reports that incorporate STS concepts, cases, and real-world evidence.
3. **Critical reasoning skills as they are applied to the sociology of science,** i.e. to:
    a. Appraise and assess accounts of how power, identity, and politics shape the development of scientific knowledge, technical artefacts, and infrastructure.
    b. Survey and critique claims of scientific progress and to assess the authority of scientific and technical experts
4. **Ethical skills for navigating the production of scientific work,** i.e. to:

a. Describe everyday writing practices of scientists (record-keeping, publishing, citing, grant-seeking), identify areas of ethical concern, and devise solutions and policies to address these areas of concern.

Core IMPACTS statement

This is a Core IMPACTS course that is part of the Social Sciences area.

Core IMPACTS refers to the core curriculum, which provides students with essential knowledge in foundational academic areas. This course will help master course content, and support students' broad academic and career goals.

This course should direct students toward a broad Orienting Question:

- How do I understand human experiences and connections?

Completion of this course should enable students to meet the following Learning Outcomes:

- Students will effectively analyze the complexity of human behavior, and how historical, economic, political, social or geographic relationships develop, persist or change.

Course content, activities and exercises in this course should help students develop the following Career-Ready Competencies:

- Intercultural Competence
- Perspective-Taking
- Persuasion

Course Format

This course will alternate between lectures and in-class analysis and discussion of assigned readings.

Course Schedule

Tue

Lecture:

⁞ Course Overview and Introduction

Reading:

⁞ Edwards - "How to Read"

⁞ Sismondo - "The Prehistory of Science and Technology Studies"

Thu

Lecture:

⁞ Scientific Boundaries are social

Reading:

⁞ Kuhn – "The Structure of Scientific Revolutions"

Tue

Lecture:

⁞ Scientific outcomes are social

Reading:

⁞ Sayre - "The Making of a Discovery"

Additional Reading:

⁞ Prasad - "The Amorphous Anatomy of an Invention"

Thu

Lecture:

⁞ Scientific processes are social

Reading:

⁞ Goodyear - "The Stress Test"

Tue

Lecture:

⁞ Science and social construction

Reading:

⁞ Murphy - "Demographic Transitions"

Thu

Lecture:

⁞ Topic 1 - How does one become a scientist?

Reading:

⁞ Liboiron - "Introduction" (1–16)

Tue

Readings:

⁞ Traweek - "Pilgrim's Progress"

Additional Reading:

⁞ Kohler - "Moral Economy, Material Culture, and Community in *Drosophila* Genetics"

Thus

Lecture:

⁞ Topic 2 - How is science organized?

Reading:

⁞ Liboiron - "Otherwises and Alterlives" (16–35)

Tue

Readings:

⁞ Merton - "The Normative Structure of Science"

Additional Reading:

⁞ Mulkay - "Norms and Ideology in Science"

Thu

Lecture:

⁞ Topic 3 - Who is an expert?

Reading:

⁞ Liboiron - "Chapter 1" (39–55)

Tue

Readings:

⁞ Epstein - "The Construction of Lay Expertise"

Additional Reading:

⁞ Cole - "Which Came First, the Fossil or the Fuel?"

Thu

Lecture:

⁞ Topic 4 - What happens in a laboratory?

Reading:

⁞ Liboiron - "One Pollution, One Nature" (55–62)

Tue

Readings:

⁞ Latour and Woolgar - "Laboratory Life"

Additional Reading:

⁞ Mody - "A Little Dirt Never Hurt Anyone"

Thu

Lecture:

⁞ Topic 5 - What is technology?

Reading:

⁞ Liboiron - "Resource" (62–79)

Interview

Tue

Readings:

Thu

Lecture:

⁞ Latour - "Mixing Humans and Nonhumans together"

Additional Reading:

⁞ Vallor - "Moral Deskilling and Upskilling in a New Machine Age"

Tue

Readings:

⁞ Collins - "The TEA laser"

Additional Reading:

⁞ Callon - "Some Elements of a Sociology of Translation"

Tue

Readings:

⁞ Joyce - "Appealing Images"

Additional Reading:

⁞ Lynch - "Discipline and the Material Form of Images"

Tue

Readings:

⁞ Martin - "The Egg and the Sperm"

Additional Reading:

⁞ Subramaniam and Bartlett - "Re-imagining Reproduction"

Tue

Readings:

⁞ Galison - "Trading Zone"

Additional Reading:

⁞ Traweek - "Buying Time and Taking Space"

Tue

Readings:

⁞ Wynne - "May the sheep safely graze?"

Additional Reading:

⁞ Topic 6 - How do experiments work?

Reading:

⁞ Liboiron - "Chapter 2" (81–101)

Thu

Lecture:

⁞ Topic 7 - Does science tell us about the world?

Reading:

⁞ Liboiron - "Scales of Action" (101–111)

Thu

Lecture:

⁞ Topic 8 - Does it matter who does science?

Reading:

⁞ Liboiron - "Chapter 3" (113–121)

Thu

Lecture:

⁞ Topic 9 - Does it matter where science is done?

Reading:

⁞ Liboiron - "Protocol" (122–134)

Thu

Lecture:

⁞ Topic 10 - Can non-scientists do science?

Reading:

⁞ Liboiron - "Compromise and Obligation" (134–156)

Thu

Test

⁞ Wetmore – "Redefining Risks and Redistributing Responsibilities"

Tue

Working Period

Thu

Working Period

Tue

⁞ Last instructional day

Presentations

Assessment

Assignment	% of total grade	Assessment
Readings	23	Complete (1) | Incomplete (0)
Presentation	10	Sufficient (1) | Insufficient (0.5) | Incomplete (0)
Interview	8	Per Canvas Page
Ethnography	8	Per Canvas Page
Quiz	8	Written Assignment Rubric
Test	16	Written Assignment Rubric
Final	17	Final Project Rubric/Written Assignment Rubric
Participation	10	Participation Policy

Grade Scale
A: 90–100
B: 80–89.5
C: 70–79.5
D: 60–69.5
F: 0–59.5

Reading Assignments

Completing the assigned readings is central to the course. The readings form the basis for in-class discussions and provide exemplars for how to write and reason critically. So doing the reading is important.

This course uses the Perusall platform for assigned readings. You must use this platform to complete the readings, and these readings must be completed the day before class. Perusall is a community space where you leave comments (and images, and videos) and engage with the comments of your peers. We're all in this together — I'll be leaving comments and memes and pictures just like you.

> **Some warnings and guidance**: you must be connected to the internet while you access the Perusall platform. Moreover, Perusall does not perform well on phones or tablets, and struggles with having multiple sessions open. I encourage you to complete these readings using a laptop or desktop computer in an area with a strong internet connection. If this presents a problem, do get in touch.

Your completion grade for each reading is determined by three metrics: (1) completing the reading, (2) the time spent engaging with the reading, and (3) the comments that you leave. Some readings are short, some are long — but in general, I encourage you to make about 3–4 substantive comments per piece.

Reading Presentation

In week 3, the class moves to a topical organization, looking at specific issues in STS. Each week, one individual from each group will be responsible for providing a short, 10-15 minute presentation (of 3-4 slides) of the readings.

Interview

For this assignment, you'll be interviewing a scientist and answering both analytical and reflective questions about the experience. Course materials will provide you with guidance about what to ask, how to listen, and how to interpret what you hear. You should start contacting your potential interviewee early in the semester.

Ethnography

For this assignment, you'll be engaging in ethnography and answering both analytical and reflective questions about the experience. Course materials will provide exemplars for how this work should be undertaken, and to help guide you in your observations and questioning.

Test and Quiz

There will be one quiz and one test in this class.

The quiz will be 40-minutes and will cover material from the introductory sessions (weeks 1–3). Composed of short-answer questions, this quiz will serve both as a means of assessing your grasp of key concepts, and to introduce you to the style of questions that will appear on the test. The quiz will use Respondus LockDown Browser but will be "open book" (you'll have access to Perusall) and you can bring in notes.

The test will cover material from the ten topics covered in weeks 3–14. It is designed so that you can get deeper knowledge on specific topics in the course that interest you, and so that you can gain further skills in exercising your critical thinking skills and synthesizing knowledge. The test will have ten questions — one linked to each topic covered — and you only have to answer one. Answering it, however, will require you to be familiar with all the assigned readings *and* the additional reading.

As with the quiz, the test will use Respondus LockDown Browser, be "open book", and you can bring in notes.

Final Project

The final project will link to the Liboiron readings done throughout weeks 3–14. It will be a collaborative project asking your group to identify an important scientific question and explore how to design a lab that might answer that question in an ethical manner.

Class Participation

This class is all about participation! And class participation means more than just mere attendance. At minimum, I expect that you will have completed the reading for the day's session and have come to class ready to discuss it both with your peers and with the class. For more on how I evaluate participation, please check my course policies. To anchor your expectations: if you merely show up but don't otherwise engage, you'll receive a "D" for participation.

But listen, I know not everyone feels comfortable in class. So know that participation grades are evaluated holistically — across all the ways in which we engage with each other —and that their evaluation happens at the end of the course. To avoid these grades being a big surprise, I provide a participation "check-in" around the mid-point of the semester, which will provide you with feedback on your participation and suggest the likely grade range you would fall in if evaluated at that point in time. This is also a point at which we can talk about how you feel best able to participate in the class.

Course Policies

Commenting & Feedback Recording & Intellectual Property

Academic Integrity & Expectations

Academic Integrity:

Honesty and transparency are important features of good scholarship. On the flip side, plagiarism and cheating are serious academic offenses with serious consequences. If you are discovered engaging in either behavior in this course, you will earn a failing grade on the assignment in question, and further disciplinary action may be taken.

Your work should be new material crafted and written by you for each assignment. You may talk with others about your ideas—you may even use the ideas discussed in class seminars—but these ideas must be made your own. That means working by yourself to develop your own ideas, providing your own reasons, and explaining things in your own words.

You are required to cite all sources you use in your submitted coursework. This includes both direct quotations and cases where you use ideas published elsewhere. "Sources" thus include papers, journals, conversations, anything found on the internet, and so on. Basically, if the thought did not originate within the assignment you are producing, you should provide an in-text citation and a reference list. For the GATech's description of what counts as plagiarism, cheating, and/or the use of unauthorized sources, please see the Academic Honor Code.

> Note that, while not explicitly mentioned within the Academic Honor Code, self-plagiarism — where you substantially copy or duplicate your own previous work — counts as plagiarism in my classes and is taken to be a violation of the Academic Honor Code.

If you have questions about the integration of GATech's honor code into this course, please do not hesitate to ask: my aim is to foster an environment where you can learn and grow, while ensuring that the work we all do is honest and fair.

Student-Faculty Expectations:

I believe that mutual respect is at the heart of the student-teacher relationship. In general, this is characterized by respectful language, punctuality and care for others' time, clear and an openness to dialogue and debate. I am committed to such mutual respect and encourage everyone in the class to work towards the best possible learning environment so that all can meet their highest ambitions. Please explore Tech's policies this for more information.

I encourage and appreciate suggestions for ways that the classroom can better support learning, inclusion, and the effectiveness of the course for you personally, or for other students or student groups.

Accommodations, Extensions, & Late Assignments

Accommodations:

If you wish to request an accommodation due to a documented disability, please inform me and contact Disability Services as soon as possible. They can be reached at dsinfo@gatech.edu or 404-894-2563 (voice)/ 404-894-1664 (TDD). I encourage you to make use of the academic and pastoral resources at https://success.gatech.edu

I also encourage you to discuss with me what you need — I will do whatever I can to improve your ability to succeed in the course. Adjustments will often be case-by-case, but to give a sense of accommodations I have provided in the past, these include: booking additional rooms for quiet group-work, providing access to readings for speech-to-text software, and providing flexible submission schedules.

Extensions, Late Assignments, Missed Quizzes:

For course assignments (essays, creative projects) you have three "late day" tokens to use over the term, with no explanation needed. Each token provides you with **one additional day** to submit work without a late penalty applying. When you submit your late assignment on Canvas, simply add a note saying that you are using one (or two, or three) of your "late day" tokens. Note that I will not use up your "late day" tokens without you telling me.

You cannot use these "late day" tokens for in-class presentations, assigned readings, or for final course work. These have to be presented, read, or submitted, by the assigned days.

Finally, late assignments will incur a penalty of 2 points for each day that they are late. I will not accept work that is more than a week late.

AI & Coursework

In my classes, you will frequently be evaluated on written coursework. Such assignments are meant to probe your understanding of course material, your reasoning abilities, and your analytical acuity. Since I'm using your writing to evaluate these, it is important that what you submit is a true representation of your effort and understanding.

In light of this, I have two policies surrounding AI and coursework. First, for all work where you write material outside of class **you must write your work on OneDrive's Microsoft Word**. As Georgia Tech students, you all have institutional access to OneDrive and Microsoft Word. The reason I require this is that this has version control. When you submit work, you provide "editing" access to this version control document. This allows me (if necessary) to see and understand how you have written your essay and how your thoughts have developed.

Second, and related to the above, the use of any standalone (e.g. ChatGPT, scite, OpenAI Research) or integrated AI tools (e.g. Grammarly, Co-Pilot, Notebook LM) is **impermissible.** It is impermissible at all points in process of producing and submitting work. This includes the stages of brainstorming, preparation, writing, and/or correction of materials. (Spelling and grammar checkers that alert you to errors are fine, so long as you don't use a tool like Grammarly or Microsoft Co-Pilot to modify your text).

You might worry about your writing, especially if English is not your first language. Know that when I read your work and evaluate it, I ignore spelling mistakes and grammatical errors. I evaluate your understanding, reasoning, and analysis — not your flair for coming up with nice metaphors or a snappy phrase. Spelling and grammatical errors only become an issue when they seriously impede my ability to understand the text, evidence, and argumentation.

If you believe that an AI tool is essential to you completing your submitted work you must: (i) **check with me** as to whether the use of the tool is permissible, (ii) accept **responsibility** for all material submitted including errors, hallucinations, or outright falsehoods produced by AI tools, (iii) include a short written statement (typically around 100 words) that is **open** and **transparent** about what elements of the essay were produced with AI tools, and (iv) **document** specific content, if any, was generated by AI tools through correct citation practices.

The unattributed use of AI tools to produce text, citations, or images will be seen as a violation of academic integrity and reported to the Office of Student Integrity. Though penalties for such violations differ — and will typically be settled on a case-by-case basis (what OSI calls Faculty Conference Resolution) — it will typically result in the assignment being marked "0". If the assignment is worth less than 10 points, a minimum penalty that deducts 10 points (one grade classification) from your overall grade will be applied.

Detection tools will be used, including Turnitin, to check for plagiarism and unattributed AI-generated text and I reserve the right to employ other means of detection as needed.

Attendance Policy

Class is a collective effort — we're all in this together! Because the class is centered around conversation and in-class activities, showing up is required and expected. That being said, I know that there are opportunities you want to take advantage of while undertaking your studies, and that life happens. My way of balancing these different elements is to give you four "free" absences. In other words, there is no penalty for missing a single session. But once you miss **5 or more classes**, the grade ceiling starts getting lowered and the highest grade you can achieve is a "B". Miss 7 or more classes, the highest you can get is a "C"; 9 or more, a "D".

You can think of this another way. You have 4 "freebies" — 4 absences to use to go to career fairs, music concerts, or if you're just not feeling the reading for that week.

There are legitimate reasons for missing a class: those necessary for career advancement (graduate school visits, job interviews, professional conferences where you are presenting), those related to your health (serious illness, mental health), and those related to your family and legal status (bereavement, court appearances, religious holidays, visa appointments). If you have something you believe counts as a legitimate reason for your absence that is not on this list, please feel free to get in touch with me to discuss.

CIOS Incentive & Extra Credit Assignments

The CIOS Survey:

The Course Instructor Opinion Survey (CIOS) is an important source of feedback for instructors. We use this to update and change course material, to address issues of presentation, and generally to improve our abilities to speak with and engage with you all. I strongly encourage you to complete the CIOS survey, which opens the last week of classes.

Unless explicitly overruled elsewhere in your syllabus (which is updated more regularly than these terms and conditions), I offer a standard incentive to complete this CIOS survey: if 70% of students complete the CIOS survey, I forgive one reading assignment (that is, a reading on Perusall — typically worth 1 full point of your final grade, depending on the course). If 80% of students complete the CIOS survey, I forget two such reading assignments.

Extra Credit Assignments:

Depending on the course, optional extra credit assignments may be added throughout the year. These are opportunities arising where the course material ends up connecting with outside events. Generally, these involve self-funded travel to outside events (academic talks, museums, movies) or engagement with Tech resources (video games at RetroTech, board games from the library) alongside critical evaluation of one's experience (usually a photo and a short paragraph on your experience).

Aside from these opportunities, I do not offer extra credit assignments to recover grade points that have been lost or not otherwise achieved on other assignments.

Class participation

Class participation is not just mere attendance. You should be ready to participate in the class, whatever its format. Usually this will mean you have completed the reading for the day's session and are ready to discuss or debate about it with the class or in your small groups.

Generally, the class participation grade reflects your engagement with readings, the questions that you contribute, your involvement in class discussions and activities, and your commitment to fostering a positive and respectful learning environment. It is evaluated holistically, but is based on the following criteria:

- **Quality of contributions:** This includes contributions on Perusall, on peer-reviews, and in class discussions. **"**Quality" here is measured in terms of how one's contributions help the class come to understand the structure and content of the readings. Helpful contributions can come in any number of forms: well-supported guesses about puzzling passages, relating elements of argument to one another, spelling out a difficult concept, offering a using example, or simply asking a question and explaining why such a question is an important one to address.
- **Regularity of contributions:** Regularity does not mean asking the same question ("Well what does *this* mean?") every five minutes every class. Regularity instead is measured in terms of the frequent occurrence — across class sessions — of helpful contributions.
- **Respect for others:** Your behavior in class should facilitate a positive learning environment for all class participants. Experiences of class members, when offered, should be treated with respect. Arguments, reasons, and evidence should be treated charitably — interpreted to bring out the most helpful contributions to class discussions and activities. Being disrespectful about others' experiences, uncivil or rude in response to others' contributions, or being deliberately uncharitable are discouraged.
- **Commitment to the learning environment:** Your behavior should support the learning objectives. Such behavior means participating and being attentive, considerate, and punctual. Doing homework for other courses, noodling about on your phone, being late, or falling asleep in class detracts from such a learning environment. It will lead to a lower participation grade.

Excellence on all these metrics, and across all points of engagement (Perusall, Piazza, seminar discussions) will earn full marks. To anchor your expectations, note that showing up, but not otherwise participating, will earn you the equivalent of a "D" grade on the participation component of the course.

Commenting & Feedback

You do not have to wait until your assignment has been graded to get feedback! I am happy to support your work by listening to pitches and reading outlines, sketches, and drafts.

But this support becomes curtailed towards assignment due dates. I will read full drafts of assignments emailed to me **7 days before the due date**. So, for example, if your assignment is due on a Friday, I will read and give feedback on all full drafts received by the preceding Thursday, end-of-day.

I will continue to read and provide support on outlines and introductions up to **3 days before the due date**. To continue the above example, I will read and give feedback on outlines and introductions received on Tuesday for work that is due on Friday.

Recording & Intellectual Property

The course materials that I have prepared and that you access — the syllabus, exams, study guides, assignments, slides, notes, presentations, handouts — are my intellectual property. The selling and dissemination of these is prohibited. In addition, video, audio, and photographic recording of lectures, or the streaming of lectures, is prohibited without my explicit permission. If you have an accommodation that requires audio recording, please do get in touch as soon as possible.

Version History:

I am sometimes forced to update the syllabus during the semester to deal with unanticipated issues or to improve its clarity. I will notify you in class if the syllabus has changed, and what has changed. This syllabus is up-to-date as of 1 April, 2026.