

## **Welcome**

Introduction &  
course structure

1. Introductions
2. Course structure
3. Course tools
4. Assessment
5. Sociology of science
6. Course themes

McGill University is located on land which has long served as a site of meeting and exchange amongst Indigenous peoples, including the Haudenosaunee and Anishinabeg nations. McGill honours, recognizes and respects these nations as the traditional stewards of the lands and waters on which we meet today.

<https://www.mcgill.ca/fph/welcome/traditional-territory>

*see also:*

Chelsea Vowel. "Beyond Territorial Acknowledgments." Âpihtawikosisân (blog), September 23, 2016. <https://apihtawikosisan.com/2016/09/beyond-territorial-acknowledgments/>.

# Introductions



If you haven't already, please take a moment to fill out the (brief!) introductory questionnaire, available on Teams or at <https://forms.office.com/r/L4tkBNBz4Q>

## Attending in person

- ⋮ Wearing of masks is not required, but is greatly appreciated while in the classroom
- ⋮ If you have any symptoms of COVID-19 or have been in contact with someone who has tested positive for COVID-19 you please stay home (this will not affect your grade in this course)
- ⋮ It is up to us to make a safe and welcoming learning environment for everyone!



## **Class period: hybrid lecture—seminar**

- ⋮ Readings and small-group discussions are the foundation of the course
- ⋮ Most classes will begin with ~20 minutes of lecture (streamed and recorded), followed by ~60 minutes of structured, small-group discussion

## **Small-group discussions**

- ⋮ Groups of 4-5 students, membership fixed starting Sept. 19
- ⋮ Discussions will focus on drafting responses to 5 or 6 discussion questions
- ⋮ Each of 9 discussion worksheets will span 1–3 class periods (see syllabus for details)
- ⋮ Instructor and TA will rotate through groups during class
- ⋮ Groups may work outside of class (e.g. online), but you are not expected to spend more than ~1 hour per class period covered

## Forming a group

- ⋮ Groups will have fixed membership starting *September 16*
- ⋮ Before then, use the “Group sign-up” tab on teams to sign up for one team (maximum 5 members per team)
- ⋮ Use these first couple of weeks to find group members who have similar preferences to your own (online/offline, language, ...)

E.g. “Peter McMahan (strongly prefer online meetings)”

The screenshot displays a Microsoft Teams interface for a group named "SOC1325\_Fall2024\_Group". On the left, a sidebar lists navigation options: Home page, Class Notebook, Classwork, Assignments, Grades, and Insights. Below this, under "Main Channels", are "General" and "Instructors". The main area shows a "Group sign-up" spreadsheet. The spreadsheet has a header row with columns "1" and "2". The rows are labeled "Team Chanterelle", "Team Reishi", and "Team Velvet Foot". The spreadsheet is open in Excel, with the "Home" tab selected. The formula bar shows "Meiryo" and the cell address "B3".

	1	2
Team Chanterelle		
Team Reishi		
Team Velvet Foot		



## Peer assessment

- ∴ Peer assessment will be used:
  - (a) to adjust group discussion grades and
  - (b) for final project assessment
- ∴ With peer assessment, multiple other students assess your work
- ∴ Provides more feedback on your work than would otherwise be possible
- ∴ Allows you to engage with your classmate's work



# Course tools





## Microsoft Teams: hub of class activity

### ⋮ Why Teams?

*Teams provides integrated recording and accessibility features, class discussion, and much better collaboration features than Zoom/MyCourses*

⋮ Remote participation  
(lectures and discussions)

⋮ Groups have private channels

⋮ Class-wide discussions/questions

⋮ Students can use existing McGill accounts

⋮ **BUT**, Teams has a clunky interface, is geared towards corporate clients, and learning how to use it can be awkward

# Syllabus is online

- ⋮ Available at <https://soci325.netlify.app> (or through the "Syllabus" tab in the "General" channel on Teams)
- ⋮ Contains *schedule, assignments, assessment,* and other important information
- ⋮ Updated regularly with *links to slides* and any schedule changes

## SOCI 325: Sociology of Science

<b>Location</b>	Arts Building, room 150 and online through Microsoft Teams
<b>Time</b>	Fall 2024, Monday and Wednesday 10:05am–11:25am
<b>Instructor</b>	Peter McMahan ( <a href="mailto:peter.mcmahan@mcgill.ca">peter.mcmahan@mcgill.ca</a> )
<b>Office hours</b>	Wednesdays, 1:00pm–2:00pm (Leacock 727 or remotely by appointment)
<b>Teaching Assistant</b>	Yi-Cheng Hsieh
<b>Syllabus</b>	<a href="https://soci325.netlify.app">https://soci325.netlify.app</a>

**Description** STS (an acronym for either "science and technology studies" or "science, technology, and society," depending on who is asked) is a diverse field spanning research across the social sciences, humanities, and physical sciences. This course aims to give students a window into STS, adopting a specifically *sociological* viewpoint. The discipline of sociology has a distinctive perspective on the nature of knowledge and scientific institutions, and the course content will explore theories and applications of this perspective.

The course is structured as a hybrid of lectures and seminars. Most of the classes will begin with a short presentation by the instructor, but the bulk of the class time will be spent in small-group discussions. Group work will consist of structured discussions of the course readings in the context of broad themes and theories introduced throughout the semester. The success of the course therefore relies on students' engaged readings of the assigned texts.

**Expectations** Students are expected to (1) closely read the assigned texts, (2) participate in group discussions and worksheets, (3) submit three discussion questions, (4) complete peer evaluations, and (5) complete a final poster presentation. Each of these expectations is detailed below.

### Reading

The assigned readings are the core of the course material, and students are expected to carefully and critically read each assignment *before* class. To facilitate students' engagement with the reading and to help prevent students from falling behind, we will use the online tool *Perusall* for all required readings. *Perusall* is a reading platform in which students annotate texts collaboratively alongside one another. More information on how *Perusall* works and how it is integrated into the course is available [here](#).

Readings will be graded as either complete (1 point) or incomplete (0 points). The grading is based on annotations of the text in *Perusall*, which must demonstrate a thoughtful and thorough reading of the entire assignment to receive credit. There is no fixed threshold for number of annotations to make (the scoring considers the quality of annotations and the length of the reading), but 6 to 8 substantive annotations for a standard-length reading is a good target. At the end of the semester, the *four* lowest reading grades will be dropped from the assessment.

Reading assessments will contribute 10% to the final grade for the course.

### Lectures



# COURSE TOOLS: PERUSALL

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## Perusall for online reading

- ⋮ Collaborative reading environment
- ⋮ Annotate the course readings in groups of ~20
- ⋮ Ask questions, respond, discuss
- ⋮ **To register for this class's Perusall**, find the pinned announcement on Teams



# Assessment

## Reading

## Group discussions

## Discussion questions

## Final project

- ⋮ Reading accounts for **10% of final grade**
- ⋮ All readings are done through Perusall
- ⋮ Readings are due by the start of class (10:05am) on the date noted on the schedule
- ⋮ All scores are either 0 or 1  
(Perusall will tell you the maximum score is 3, but that is not the case for this class)
- ⋮ Lowest **four** reading scores dropped at the end of the semester
- ⋮ Details on scoring linked from syllabus:  
<https://soci325.netlify.com/pages/perusall.html>
- ⋮ **If you did the reading on time, but did not get credit, message me to fix the score (really!)**  
(I may respond to these messages slowly, but I *will* respond)

Reading

**Group  
discussions**

Discussion  
questions

**Final  
project**

- ⋮ Discussion worksheets, completed in groups, account for **37.5% of final grade** (35% for worksheet scores, 2.5% for completing peer assessment)
- ⋮ Turned in through Teams by midnight of the day indicated on the schedule  
E.g. discussion worksheet 5, covering material from Oct 21 and Oct 23, is due by midnight Oct 25
- ⋮ Responses are marked on a 10-point scale, applied to each group-member's grade  
(see [syllabus](#) for rubric)
- ⋮ Midway through the semester, there will be a round of peer assessment on group participation that *will not affect final score*
- ⋮ At the end of the semester, there will be another round of peer assessment on group participation that *will be used to adjust final score up or down by at most 10%*



Reading

Group  
discussions

**Discussion  
questions**

Final  
project

- ⋮ Each student is responsible for submitting **three** discussion questions over the course of the semester, contributing **20% to the final grade**.
- ⋮ Topics will be assigned randomly at the end of the second week.
- ⋮ Each is marked on a 10-point scale based on the *engagement* and *originality* of the question.
- ⋮ For each discussion, the instructor may pick some discussion questions to use in class. *Submissions that are used in class receive an automatic 10/10.*

Reading

Group  
discussions

Discussion  
questions

Final  
project

- ⋮ Each student will create a poster to be presented at the end of the semester, contributing a total of **32.5% to the final grade**.
- ⋮ *Topics must be submitted by Oct 2*, for 5% of final grade.
- ⋮ Each poster will be assessed by 4 other students and the instructors, the result contributing 25% to the final grade.
- ⋮ Each student will be responsible for assessing 4 posters, worth a total of 2.5% of the final grade.
- ⋮ Details of the poster project (themes, topics, etc) will be discussed in class.



## Policy on "generative AI"

- ⋮ Students must disclose the contribution of such tools in their submission, including the name of the tool and how and for what tasks it was used.
- ⋮ Turning in text written by an LLM as your own work is a violation of McGill's policy on plagiarism.
- ⋮ Applies to McGill's officially condoned tool Microsoft Copilot and any other tools you may have used (e.g. OpenAI's ChatGPT, Google's Gemini, Meta's Llama).

## *The use of these tools is strongly discouraged*

- ⋮ *They are bad for the world.*
- ⋮ *They create bad content.*

## Environmental impact

- Generative AI uses huge amounts of electricity and water to train and to use

"Just Five ChatGPT Queries Can Use 16oz of Water, Say Researchers"

- Generative AI contributes significantly to climate change

"Google emissions jump nearly 50% over five years as AI use surges"



## Human exploitation

- Generative AI relies on underpaid humans to label (often harmful) content

"What's behind the AI boom? Exploited humans"

- Generative AI is built on countless humans' uncredited, uncompensated creative work

## "Typical" text

- ⋮ The technology that makes generative AI work is essentially like the predictive text on your phone, but trained on as much of the internet as corporations can get their hands on.

*One thousand redditors in a trenchcoat*

- ⋮ The models are trained solely to sound *unsurprising*, not to recognize important or interesting ideas.

"When ChatGPT summarises, it actually does nothing of the kind"

## Bullshit generators

- ⋮ Generative AI doesn't understand or care about accuracy.

"ChatGPT is bullshit"

- ⋮ The models are very good at sounding right to someone who does not already know a topic.
- ⋮ **Remember that your instructor and TA (who *do* know about the subjects we cover in the class) will be marking your assignments.**



# Sociology of science



## "STS"

- ⋮ "Science and Technology Studies"  
or  
"Science, Technology, and Society"
- ⋮ Science and technology as the *object* of study
- ⋮ Spans many academic disciplines:  
*anthropology, history, sociology, philosophy, ...*



There is a sociology of everything. You can turn on your sociological eye no matter where you are or what you are doing. Stuck in a boring committee meeting ... you can check the pattern of who is sitting next to whom, who gets the floor, who makes eye contact, and what is the rhythm of laughter (forced or spontaneous) or of pompous speechmaking. Walking down the street, or out for a run, you can scan the class and ethnic pattern of the neighborhood, look for lines of age segregation, or for little pockets of solidarity. Waiting for a medical appointment, you can read the professions and the bureaucracy instead of old copies of National Geographic. Caught in a traffic jam, you can study the correlation of car models with bumper stickers or with the types of music blaring from radios. There is literally nothing you can't see in a fresh way if you turn your sociological eye to it. Being a sociologist means never having to be bored.

Collins, Randall. 1998. "The Sociological Eye and Its Blinders."  
Contemporary Sociology 27(1):2–7

## Sociological approach to STS

- ‡ C. Wright Mills (1959):

### The Sociological Imagination

- i. Understand individuality in its social context
- ii. See the general in the particular
- iii. See the strange in the familiar

- ‡ **For sociology of *science*, this means**

- i. Individual scientists, theories, observations, inventions should not be studied in isolation, but in their social and historical contexts.
- ii. The practices, beliefs, norms, and expectations of the scientific community should be seen as examples of general social processes.
- iii. Things that are seen as normal in the production of science should be questioned.

- ‡ E.g. *women in science* (see Hird 2011)

## *Critical* focus of the sociology of science

- ‡ *Skepticism* toward the image of science as the ideal, pure, modern, rational search for knowledge
- ‡ Recognition that science, like any institution, is *messy*
- ‡ Bound to structures of economic, social, cultural *power*
- ‡ Does ***not*** deny the reality of scientific knowledge



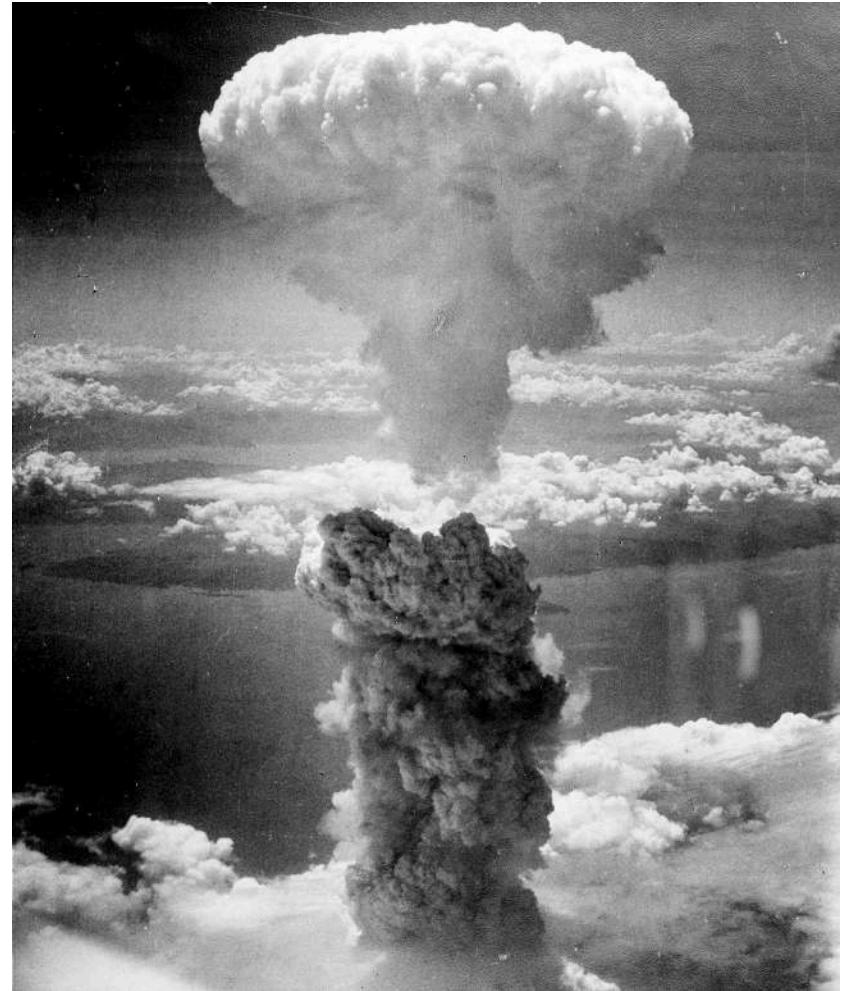
Plato and Aristotle in the marketplace of ideas

# Course themes



## Theme 1: *Scientific outcomes are social*

- ∴ The discoveries, inventions, publications, and ideas produced by scientists are ***not outside*** of society.
- ∴ Scientific discoveries are guided by social processes.
- ∴ Scientific discoveries have social implications.
- ∴ The meaning and implications of scientific ideas depends on social context.



Mushroom cloud over Nagasaki resulting from atomic bomb dropped by the U.S. in 1945



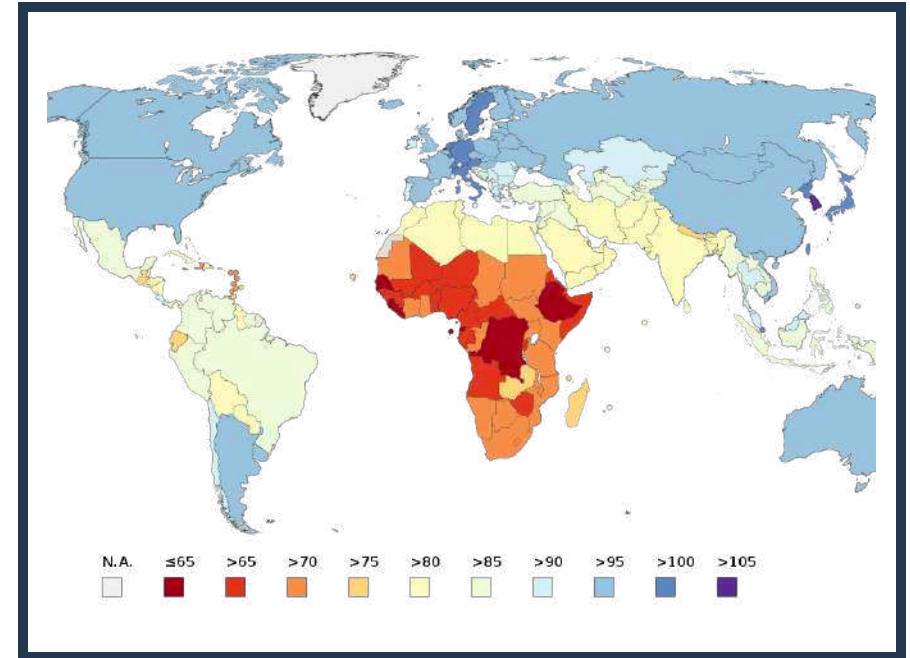
## Theme 2: *Scientific practice is social*

- ∴ Science is done *by scientists* in social settings.
- ∴ Scientists live in diverse social contexts that influence their behavior, expectations, beliefs, ideals, ...
- ∴ Laboratories and other research institutions are themselves social settings.
- ∴ ***Doing science*** involves interacting with other scientists, funding agencies, political entities, and non-scientists.



## Theme 3: Science aligns with power

- Science is ***not neutral***.
- Scientific questions, practices, and findings tend to align with prevailing power structures.
- The veneer of objectivity in science can reinforce oppressive dynamics along racial, gender, economic, disability, and geographic lines.



Map of "IQ estimates" from Richard Lynn and Tatu Vanhanen (2006). (*note that this representation has been thoroughly debunked*)

## Theme 4: *The history of science is a social history*

- ∴ The meaning of 'science' has changed over time, and those changes trace historical patterns.
- ∴ The history of Western science is inextricable from the European enlightenment and European colonialism.
- ∴ Contemporary science reflects our current historical moment.



## Theme: Scientific outcomes are social

### Required:

⋮ **Hird (2011)**

*Science, Technology, and the Sociological Imagination*

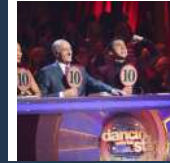
⋮ **Benjamin (2019)**

*Engineered Inequity: Are Robots Racist?*

# Image credit



Photo by [Ryan Remiorz](#)/  
[The Canadian Press](#) via  
[AP](#)



Screenshot from  
"Dancing with the Stars  
(ABC)", via the [Baltimore  
Sun](#)



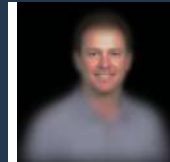
Screenshot from [Office  
Space](#) (1999).



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Faces of 500 professional  
golfers, averaged by  
Reddit user [u/osmutiar/](#)

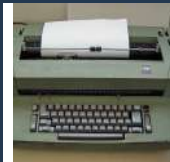


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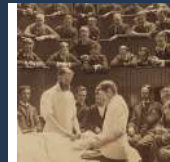


Image from News Dog  
Media, via [Daily Mail](#)



Detail of Raphael's *The  
School of Athens*, via  
[Wikimedia](#)

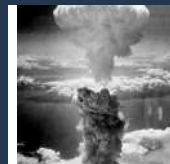


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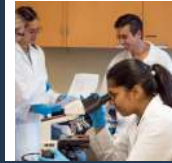


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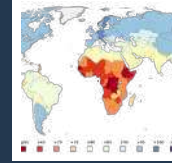


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