ST(S) 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.

Readings will be graded as either complete (1 point) or incomplete (0 points). Student responses must demonstrate a thoughtful and thorough reading of the
entire assignment to receive credit. 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**
The scheduled class periods will held over Microsoft Teams. Typically, the first 15–30 minutes of the class will consist of a live-streamed lecture during which students are encouraged to engage in class-wide discussion.

The slides will be made available before class, and a recording of the lecture with a transcript will be available later the same day.

**Group discussions**
The large portion of class time will be devoted to small-group discussions and collaborative composition of discussion responses. After the second full week of classes, students will form groups of approximately four or five based. Groups will work together to provide responses to provided worksheets of discussion questions. There will be a total of 9 worksheets over the course of the semester, each spanning the content from multiple class periods.

The worksheets will be evaluated according to the following rubric:

<table>
<thead>
<tr>
<th>Points</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>9–10</td>
<td>Responses demonstrate a nuanced understanding of the reading and link ideas from the text to themes, theories, and other topics from class.</td>
</tr>
<tr>
<td>7–8</td>
<td>Responses demonstrate a basic understanding of the reading but may miss important implications or connections.</td>
</tr>
<tr>
<td>5–6</td>
<td>Responses demonstrate a superficial understanding/engagement of the reading or contain numerous fundamental misunderstandings of the concepts.</td>
</tr>
<tr>
<td>0–4</td>
<td>Responses are cursory, or not submitted at all. (0%)</td>
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</tbody>
</table>

Marks for worksheet responses will be given to all members of the group. At the end of the semester, groups will perform peer evaluation that will adjust each participant's discussion grade up or down by as much as 10%. Group discussions will contribute 30% to the final grade for the course**.

**Discussion questions**
Each student is responsible for submitting three discussion questions relating to the readings over the semester. By the end of the second week of class, random assignments will be sent to each student. If your assigned reading creates a conflict for you, please contact the professor as soon as possible to resolve the scheduling.
Discussion questions will be evaluated on a ten-point scale based on the engagement and originality of the question. High-scoring submissions will engage with more than just basic concepts and will elicit responses that go beyond what is written in the text itself. For instance, the question might ask for a critical engagement with a point made by the author, suggesting a different interpretation of the reading; or a question might contrast a point made in the text to another reading or topic discussed in the class. Students should try to craft questions that will help others to think outside the reading.

Throughout the semester, the instructor will choose some submitted questions to be included on the discussion worksheets described above. Students whose questions are used in this way will receive an automatic mark of 10/10 (100%) on their submission.

Discussion questions will contribute 20% to the final grade for the course.

**Poster presentation**

At the end of the semester, students will participate in a peer-evaluated ‘virtual’ poster session. Each student will produce a digital poster presenting a piece of scientific research or technological output to an outside perspective.

In total, the final project will be worth 40% of each student’s grade, broken down as follows: 5% for topic submission and group peer review (due February 27); 30% for the poster (due April 9); and 5% for peer evaluation of others’ posters (due April 16).

**Evaluation**

The evaluation components for this course (described above), and the dates they are set for, are non-negotiable.

<table>
<thead>
<tr>
<th>Component</th>
<th>Details</th>
<th>Percentage of final grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reading</td>
<td>See schedule for dates</td>
<td>10%</td>
</tr>
<tr>
<td>Group discussions</td>
<td>See schedule for dates</td>
<td>30%</td>
</tr>
<tr>
<td>Discussion questions</td>
<td>Assigned after week 2</td>
<td>20%</td>
</tr>
<tr>
<td>Final topic submission</td>
<td>February 27</td>
<td>5%</td>
</tr>
<tr>
<td>Poster presentation</td>
<td>April 9</td>
<td>30%</td>
</tr>
<tr>
<td>Poster peer evaluation</td>
<td>April 16</td>
<td>5%</td>
</tr>
</tbody>
</table>

** Accessibility**

Students with disabilities in need of accommodation please contact the Office for Students with Disabilities (http://www.mcgill.ca/osd/, phone 514-398-6000). Students may also contact me directly—I will make every effort to accommodate individual circumstances.
Academic integrity
McGill University values academic integrity. Therefore, all students must understand the meaning and consequences of cheating, plagiarism and other academic offences under the Code of Student Conduct and Disciplinary Procedures (see http://www.mcgill.ca/students/srr/honest/ for more information). (approved by Senate on 29 January 2003)

L’université McGill attache une haute importance à l’honnêteté académique. Il incombe par conséquent à tous les étudiants de comprendre ce que l’on entend par tricherie, plagiat et autres infractions académiques, ainsi que les conséquences que peuvent avoir de telles actions, selon le Code de conduite de l’étudiant et des procédures disciplinaires (pour de plus amples renseignements, veuillez consulter le site http://www.mcgill.ca/students/srr/honest/).

Lanugage of evaluation
In accord with McGill University’s Charter of Students’ Rights, students in this course have the right to submit in English or in French any written work that is to be graded. (approved by Senate on 21 January 2009)

Conformément à la Charte des droits de l’étudiant de l’Université McGill, chaque étudiant a le droit de soumettre en français ou en anglais tout travail écrit devant être noté (sauf dans le cas des cours dont l’un des objets est la maîtrise d’une langue).

Grade appeals
Instructors and teaching assistants take the marking of assignments very seriously, and we work diligently to be fair, consistent, and accurate. Nonetheless, mistakes and oversights occasionally happen. If you believe that to be the case, you must adhere to the following rules:

- If it is a mathematical error simply alert the instructor of the error.

- In the case of more substantive appeals, you must:
  1. Wait at least 24 hours after receiving your mark.
  2. Carefully re-read your assignment, all guidelines and marking schemes, and the grader’s comments.
  3. If you wish to appeal, you must submit to the instructor a written explanation of why you think your mark should be altered. Please note that upon re-grade your mark may go down, stay the same, or go up.

Schedule

Introduction and themes
sociology of science. Readings will introduce some of the ways that both the
doing of science (research and institutions) and the outcomes of science
(findings and knowledge) are steeped in social processes. We will learn about
the historical context of science as an institution, and see the way that this
institution aligns with societal structures of power.

Thu, Jan 7
Lectures:
Course overview and introduction

Required:
Hird (2011), Science, Technology, and the Sociological Imagination
(due Jan 9)

Tue, Jan 12
Lectures:
Theme—Scientific outcomes are social

Discussion: (In-class)
Required:
Benjamin (2019), Engineered Inequity: Are Robots Racist?

Thu, Jan 14
Lectures:
Theme—Scientific research is social

Discussion: (In-class)
Required:
Goodyear (2016), The Stem-Cell Scandal

Tue, Jan 19
Lectures:
Theme—Science and power

Discussion: (In-class)
Required:
Gould (1981), Measuring Heads

Thu, Jan 21
Lectures:
Theme—History of science is a social history

Discussion: (In-class)
Required:
Wolfe (2018), Freedom’s Laboratory (Introduction)

Science as an institution

Institutional analysis represents one approach to the sociological study of
science. Early functionalists like Merton examined the norms and culture of
science to understand what made ‘good science’ work. The study of science
was turned on its head in the 1960s and 1970s by research (like that of Kuhn)
that took the content of science to be an institutional feature. Understanding
the institutional features of science can illuminate certain structural barriers to
participation in science by marginalized groups.
**Tue, Jan 26**

**Lectures:**
- Scientific norms through a functionalist lens

**Discussion:** Group discussion 1 (due Feb 3)

**Required:**
- Merton (1973), *The normative structure of science*

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**Thu, Jan 28**

**Lectures:**
- Normal science, paradigms, and scientific revolutions

**Discussion:** Group discussion 1 (due Feb 3)

**Required:**
- Kuhn (1970), *Anomaly and the Emergence of Scientific Discoveries* and *Crisis and the Emergence of Scientific Theories*

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**Tue, Feb 2**

**Lectures:**
- Structural barriers to participation in science

**Discussion:** Group discussion 1 (due Feb 3)

**Required:**
- van den Brink and Benschop (2012), *Gender practices in the construction of academic excellence: Sheep with five legs*

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**Is knowledge social?**

*The social processes underlying scientific theories and discoveries call into question the nature of scientific knowledge itself. What does it mean when STS scholars say that knowledge is socially constructed? Is there such a thing as objectivity, or are scientific observations only meaningful in a particular social context?*

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**Thu, Feb 4**

**Lectures:**
- Social construction and the real

**Required:**
- Sismondo (2009), *Chapter 6: The social construction of scientific and technical realities*
Tue, Feb 9
Lectures:
- The ‘strong programme’ and scientific anti-realism

Discussion: Group discussion 2 (due Feb 10)

Required:
- Bloor ([1974] 1991), *The strong programme in the sociology of knowledge*

Thu, Feb 11
Lectures:
- Feminist epistemologies

Discussion: Group discussion 3 (due Feb 17)

Required:
- Haraway (1988), *Situated Knowledges: The Science Question in Feminism and the Privilege of Partial Perspective*
- Martin (1991), *The Egg and the Sperm: How Science Has Constructed a Romance Based on Stereotypical Male-Female Roles*

Tue, Feb 16
Lectures:
- Scientific realism

Discussion: Group discussion 3 (due Feb 17)

Required:
- Hacking (1983), *What is scientific realism?*

**Studying laboratories**

*Sociologists of science have a particular interest in laboratories as sites for ethnographic research. Observing scientists discussing theories, making sense of observations, and presenting findings allows a unique perspective on the social processes at play.*

Thu, Feb 18
Lectures:
- Tacit knowledge and experimental reproduction

Discussion: Group discussion 4 (due Feb 24)

Required:
- Collins (1975), *The Seven Sexes: A Study in the Sociology of a Phenomenon, or the Replication of Experiments in Physics*
**Tue, Feb 23**

**Lectures:**
- Representing reality

**Discussion:** Group discussion 4
(due Feb 24)

**Required:**

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**Thu, Feb 25**

**Lectures:**
- Poster session brainstorm and peer assessment

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**Break**

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**Tue, Mar 2**

**Thu, Mar 4**

*Spring break — no class*

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**Studying laboratories (continued)**

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**Tue, Mar 9**

**Lectures:**
- Participants beyond the laboratory—actor–network theory (ANT)

**Discussion:** Group discussion 5
(due Mar 10)

**Required:**
- Sismondo (2009), Chapter 8: Actor–network theory
- Callon (1984), *Some Elements of a Sociology of Translation: Domestication of the Scallops and the Fishermen of St Brieuc Bay*

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**Science as power**

*Like any institution (especially one as well funded and generally well regarded as science), the practices and ideologies of science frequently align with existing structures of power in society. Whether one considers technologies of war, classifications of race, or justifications of rational action, the history of Western science is inextricably linked with the history of European colonialism.*
Thu, Mar 11
Lectures:
- Political economy of science and technology

Required:
- Sismondo (2009), *Chapter 17: Political Economies of Knowledge*

Tue, Mar 16
Lectures:
- Science, colonialism, and postcolonial science studies

Discussion: Group discussion 6 (due Mar 17)

Required:
- Adams (2002), *Randomized Controlled Crime*

Supplementary:
- Whitt (1998), *Biocolonialism and the commodification of knowledge*

Thu, Mar 18
Lectures:
- Science, race, and health

Discussion: Group discussion 7 (due Mar 24)

Required:
- Poudrier (2007), *The Geneticization of Aboriginal Diabetes and Obesity*

Tue, Mar 23
Lectures:
- Standardization, bodies, and society

Discussion: Group discussion 7 (due Mar 24)

Required:

Supplementary:
to conflict between scientists and non-scientists. Public debates take a particularly salient turn when scientific findings are at odds with popular beliefs. Moreover, the authoritative voice of scientific communication can be coopted by non-scientists to make more persuasive points.

**Thu, Mar 25**

**Lectures:**
- Public trust, participation, and implicit values

**Required:**
- Winner (1980), *Do artifacts have politics?*

**Tue, Mar 30**

**Lectures:**
- Science and identity

**Discussion:** Group discussion 8 (due Mar 31)

**Required:**
- TallBear (2013), *Genomic articulations of indigeneity*

**Supplementary:**
- Winner (1980), *Do artifacts have politics?*

**Thu, Apr 1**

**Lectures:**
- Science denial

**Discussion:** Group discussion 9 (due Apr 7)

**Required:**
- TBD

**Tue, Apr 6**

**Lectures:**
- Local knowledge

**Discussion:** Group discussion 9 (due Apr 7)

**Required:**
- Allen (2018), *Strongly Participatory Science and Knowledge Justice in an Environmentally Contested Region*

**Vital poster sessions**

**Thu, Apr 8**

**Virtual poster session**
References


