HPSCG42
Sociology of Science and Technology

Course Description and Objectives

This course introduces students to a set of concepts that will allow them to understand science and technology as social institutions and systems of knowledge production. It takes a sociological look at the process by which knowledge is collectively produced by communities through historical and contemporary studies. This module also provides an introduction to the main scholars and traditions in the sociology of science and technology. By the end of this module students should:

- Have an understanding of the way science and technology work as social processes, e.g. the way technical knowledge is produced by communities.
- Have a detailed knowledge of the main concepts and theories in the sociology of science and technology.
- Have developed a curiosity about the ways in which societies both influence and are influenced by science and technology.

Key Information

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<th>Session</th>
<th>2016-17 (1st semester). Postgraduate course.</th>
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| Timetable and Venue | Lecture: Mondays 1pm-2pm, Birkbeck Gordon Square (43) 122  
                          Seminar: Mondays 2pm-3pm, Birkbeck Gordon Square (43) 122 |
| Assessment | Analogy Essay (20%) – 1,000 words – 4 Nov.2016, 9pm.  
                 Applied Essay (80%) – 4,000 words - 14 Dec 2016, 9pm.  
                 Attendance requirement 70% |
| Course tutor and contact | Dr Meritxell Ramirez-i-Olle  
                            m.ramirez-olle@ucl.ac.uk  
                            Department of Science and Technology Studies, 22 Gordon Square, Room B15 (basement). |
<p>| Office hours | Mondays 3-4pm or by appointment |</p>
<table>
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<tr>
<th>UCL week</th>
<th>Lecture Topic and Seminar Reading (see reading list on Moodle)</th>
<th>Dates</th>
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| 1        | **The Sociological View(s) of Science: the “Strong Programme”**  
*What is sociological about science? The lecture will introduce the arguments in favour of and against the sociology of scientific knowledge.*  
| 2        | **Observation and Interpretation: “Paradigm Shift”**  
*Why do scientists see different things in nature? The lecture will examine the idea that scientists draw upon different cultural resources to interpret a diverse natural world.*  
| 3        | **Experimentation, Testing and Replication: “Experimenter’s Regress”**  
*What role do experiments and tests play in science? The lecture will look at the ways in which scientists create experiments and draw conclusions from them.*  
<p>| 4 | <strong>Transmission: “Tacit Knowledge”</strong> |
|   | <em>How is scientific knowledge transmitted? The lecture will investigate the conditions by which knowledge can and cannot be shared between individuals.</em> |
| 5 | <strong>Representations and Performances: “Inscription Devices”</strong> |
|   | <em>How do scientists represent what they know? The lecture will inspect the work involved in producing scientific objects and the effects of these representations.</em> |
| 6 | <strong>The Laboratory and Places of Knowledge: “Epistemic Culture”</strong> |
|   | <em>Where does science take place? The lecture will explore the laboratory as the main place where scientists generate knowledge.</em> |
| 7 | <strong>Reading Week</strong> |
| 8 | <strong>Professional Ideologies: “Boundary Work”</strong> |
|   | <em>Why is science special? The lecture will look at the specialisation of scientists as a professional group.</em> |</p>
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<th>Day</th>
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| 9   | Gender and Racial Ideologies: “Situated知 
|     | lledges” | How do social understandings of gender and race affect scientific knowledge? The lecture will evaluate the institutional factors that exclude knowledge from women and non-European groups. | 21-22 Nov |
| 10  | Networks of Reputation and Credit: “Matthew Effec |
|     | t” | What motivates scientists to do science? The lecture will consider the system of rewards and the political economy of science. | 28-29 Nov |
| 11  | The Proliferation of Experts: “Citizen Science” | Who else knows about the world? The lecture will inspect the groups who compete for or complement scientific authority and their strategies and sources of knowledge. | 5-6 Dec |
| 12  | Wrap-Up Session | | 12-13 Dec |
Additional Sources

See lecture notes on Moodle for recommendations on specific readings for each session.


Podcasts


Assignments

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<tr>
<th>Assignment</th>
<th>Deadline</th>
<th>Word Limit</th>
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<tbody>
<tr>
<td>Analogy Essay (20%)</td>
<td>4 Nov. 2016, 9pm.</td>
<td>1000 word</td>
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<tr>
<td>Applied Essay (80%)</td>
<td>14 Dec. 2016, 9pm.</td>
<td>4000 word</td>
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**Analogy Essay**

The analogy essay involves discussing one (any) seminar reading in relation to another scholarly text not included in the syllabus and selected by the student (previously agreed upon with me). The student will need to draw upon his/her personal experience and knowledge of other topics and social activities to expand and/or critique the argument put forward by the author of the seminar reading. To understand the purpose of the analogy essay, I recommend reading the essay by the sociologist of science Diane Vaughan, arguing for the importance of analogical reasoning (models, metaphors) in the refinement of ideas and theories. See “Theorizing: Analogy, Cases, and Comparative Social Organization”, in Richard A. Swedberg (ed.) (2014) *Theorizing in Social Science*, Stanford: Stanford University Press: 61-84.

**Applied Essay**

The applied essay involves applying one or a few course concepts (you should select at least one concept discussed after reading week) to analyse contemporary social issues. Below I offer five magazine articles, but you may choose others (you should consult with me about this first).


5. *Millions of microbes are yet to be discovered. Will one hold the ultimate cure?* Raffi Khatchadourian, “The Unseen”, *The New Yorker*, June 20 2016, http://www.newyorker.com/magazine/2016/06/20/miracle-microbes
Seminars

Students are expected to read all seminar readings and contribute to all seminar discussions. Each week one group of students will present one seminar reading and moderate the discussion. For each seminar reading, students should come prepared to answer these questions:

1. To what extent has the author identified a reasonable and relevant problem?
2. What are the advantages and limitations of the solution offered by the author?
3. Can the conclusions be generalised further?

Reading articles and books on the sociology of science can be particularly difficult as they often include detailed technical discussions about the specific scientific field and artefact of study. Below, I offer 12 reading strategies that should help you to read these articles more efficiently.

1. Start by understanding how a journal article, chapter or book is structured (sections).
2. Identify and clarify the specific terminology of the article.
3. Focus on the parts with high information content (title, table, images, section titles, beginning of paragraphs).
4. As you read, rely on your prior knowledge of other scholarly work and your world experience of other social activities to draw inferences from the reading.
5. Check the citations and references to see if you find other familiar sources.
6. Find out biographical information about the author (when he/she was born, where he studied, who was his/her supervisor).
7. Identify the purpose of the study and the audience at whom the article is aimed.
8. Work out the methodology (how the author generated data) and the secondary evidence (if any) that the author draws upon to put forward an argument.
9. Summarise the argument of the article in 50 words.
10. Clarify the significance that the author attributes to the results.
11. Draw a diagram of the argument put forward by the author.
12. Think of an alternative interpretation of the data that the author did not address.

Important Policy Information

Details of college and departmental policies relating to modules and assessments can be found in the STS Student Handbook: www.ucl.ac.uk/sts/handbook.

Coursework that is 10% or more over the word limit automatically gets 0%. Full details can be found in the following academic manual: https://www.ucl.ac.uk/srs/academic-manual/c4/ug-assessment/penalties.

UCL requires that you attend 70% of classes to qualify for a module pass. In order to be deemed “complete” on this module, students must attempt the two assignments.

Students who do not credit their sources of information will be penalised for plagiarism. Full details on acknowledging sources properly can be found here: http://www.ucl.ac.uk/current-students/guidelines/plagiarism.