Sociology 4715: The Sociology of Science and Technology

Instructor: Dr. Antony Puddephatt
Classroom: RB 3027
Class Time: Thursday, 2:30-5:30 pm

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Introduction to the Course

In this course, we will examine readings in the sociology of science and technology, looking to see how this growing body of work has come to challenge our common sense understandings of both science and technology in a number of interesting ways. We begin with readings in the philosophy of science, moving to Merton's pioneering efforts, to ethnographic, constructionist, and actor-network schools of thought, before considering Bourdieu's ideas as well as the potential of radical interactionism. The second half of the course considers the sociology of technology, covering constructionist and post-constructionist approaches and trying to capture some of the key debates in the field. I hope we can approach each of the readings with a critical eye and debate the various arguments about science and technology as we encounter them. The topics are fun and engaging but intellectually challenging and require a good amount of reading.

Goals of the Course

The goals of the course can be broken into three emphases: (1) to gain a working knowledge of the sociology of science and technology studies, such that you are able to distinguish between, understand, and articulate the various positions encountered; (2) to read, summarize and discuss the key aspects of scholarly arguments in both written and verbal form; and (3) to craft a critically informed and well written essay related to the themes of the course.

With these goals in mind, you will be evaluated on the following:

(a) Participation	(20%)
(b) Weekly reactions	(20%)
(c) Essay Proposal	(15%)
(d) Essay Presentation	(15%)
(d) Final Essay	(30%)
	Total = (100%)

Required readings:

All readings are available free of charge through the university library system, or will be provided to you on the D2L course site.

EXPLANATION OF ASSIGNMENTS:

A. Participation (20%)

Since this is a seminar class, it is very important that you do the readings each week and come to class prepared to discuss the material. To get a good grade here, you want to attend regularly, participate often, and demonstrate a good working knowledge of the key ideas and concepts. Quality of participation is weighted more importantly than quantity.

B. Weekly Reactions

Each week, students must submit a short, concise, written reaction to the reading for the day's class. This reaction should be no more than one page (single spaced), providing a very quick synopsis of the key arguments, as well as challenges or questions about the pieces we read. This is an extremely important skill to have, and will definitely improve with weekly practice. These short reactions are due before the start of the relevant class, and so should be posted by noon (12 pm) for them to count. Since there are 10 weeks of readings, I will count the best 8 reactions toward your final grade. I will provide a place to submit these reactions on D2L.

C. Essay Proposal (15%) / Presentation (15%) / Major Essay (30%)

The major requirement of this course is that you develop a major paper on a topic of your choice that has to do with issues related to the sociology of science and technology. As this field might be somewhat foreign to you, it may be helpful to get advice from me at the outset to save time later on. I am very open to discussing paper ideas even as they are very early in development (i.e. you have a general idea of what interests you, but you have no idea how to pursue it). For this reason, *it is important to start thinking about and reading literature on your chosen topic as early as possible.* This is why I assigned the paper proposal early in the term, as well as a presentation on your work in progress on the last day of class. These are set up as opportunities for feedback from myself and your peers, positioning you to do well on the final edition. I am also very willing to assess outlines, and read partial or full drafts as requested.

Some ideas/topics for the paper:

(a) Provide a critical discussion of the contributions of particular scholar in the sociology of science and/or the sociology of technology
(b) Analyze a debate in the literature (feminist critiques, modernism vs. nonmodernism, Mertonians vs constructionist vs post-constructionist scholars, etc).
(c) Discuss a particular perspective, school, method or approach in the sociology of science and technology to provide a critical overview
(d) Apply a sociological lens to a contemporary debate in the popular media surrounding science and technology (genetically modified foods, environmental sciences, controversies in science and technology developments, etc).
(e) Something else entirely that strikes your fancy, but please clear the topic with me beforehand.

Due Dates for Paper and Proposal:

Proposal: Maximum 5 pages, double spaced, 12 pt times new roman, due February 16
Final Essay: Maximum 20 pages, double spaced, 12 pt times new roman, due April 20.

SCHEDULE OF READINGS

January 12 – Introduction to the Course
Welcome to the class, introductions, and overview of the course

January 19 – Philosophical Foundations: Popper vs Kuhn
1. Popper, Karl. 1999. "Selections from The Logic of Scientific Discovery" pp 99-119 in Boyd, Gasper, and Trout's *The Philosophy of Science,* Cambridge, Mass: MIT Press.
2. Kuhn, Thomas S. 1999. "Scientific Revolutions" pp 139-157 in Boyd, Gasper, and Trout's *The Philosophy of Science,* Cambridge, Mass: MIT Press. (D2L)

January 26 – Mertonian Sociology of Science
1. Robert Merton "The Normative Structure of Science," pp 267-280 and "The Mathew Effect in Science," pp 439-459 both in Robert Merton's *The Sociology of Science: Theoretical and Empirical Investigations,* Chicago, IL: University of Chicago Press. (D2L)
2. Trevor Pinch. 1997. "Kuhn: Conservative and Radical Interpretations: Are some Mertonians Kuhnians and some Kuhnians Mertonians?" *Social Studies of Science*, 27: 465-482.

February 2 – Cultural and Ethnographic studies of Science
1. Mitrov, Ian. 1974. "Norms and Counter-Norms in a Select Group of the Apollo Moon Scientists: A Case Study of the Ambivalence of Scientists," *American Sociological Review,* 39: 579-595.
2. Pinch, Trevor. 1985. "Theory Testing in Science – The Case of Solar Neutrinos: Do Crucial Experiments test Theories or Theorists?" *Philosophy of the Social Sciences*, 15(2): 167-187.

February 9: Bruno Latour and Actor-Network Theory
1. Latour, Bruno. 1999. "Give me a Laboratory and I will Raise the World," pp 258-275 and "One More Turn after the Social Turn," pp 276-289, both in Mario Biagioli's *The Science Studies Reader*. NY: Routledge.

February 16: Science and Fields of Power
1. Bourdieu, Pierre. 1975. "The Specificity of the Scientific Field and the Social Conditions of the Progress of Reason," *Social Science Information*, 14(6): 19-47.
2. Puddephatt, Antony. "Toward a Radical Interactionist Account of Science," in *Studies in Symbolic Interaction*, 41: 53-82.

********** **PROPOSAL DUE!!** **********

February 23
Reading Week!

March 2: Social Construction of Technology?
1. Trevor Pinch and Wiebe Bijker. 1984. "The Social Construction of Facts and Artefacts: Or how the Sociology of Science and Sociology of Technology might Benefit Each Other," *Social Studies of Science*, 14(3): 399-441.
2. Puddephatt, Antony. 2005. "Mead has Never Been Modern: Using Meadian Theory to Extend the Constructionist Study of Technology," *Social Epistemology*, 19(4): 357-380.

March 9: Do Artifacts have Politics?

Langdon Winner. 1980. "Do Artifacts have Politics?" *Deadalus,* 109(1): 121-136. Bernward Joerges, "Do Politics Have Artifacts?" *Social Studies of Science*, 29 (3), 1999. 411-431. (online from library via JSTOR).

March 16: Cases in Technology Studies: The Golem at Large

1. Harry Collins and Trevor Pinch. 1998. "The Naked Launch: Assigning Blame for the Challenger Explosion," pp 30-56 and "The Science of the Lambs: Chernobyl and the Cambrian Sheep Farmers," 113-225, both in *The Golem at Large: What you should know about Technology.* Cambridge, UK: Cambridge University Press.

March 23: Technology and how Users Matter

1. Pinch, Trevor. 2008. "Technology and Institutions: Living in a Material World," *Theory and Society*, 37: 461-483.
2. Van den Scott, Lisa-Jo, Carrie Sanders, and Antony Puddephatt "Reconceptualizing Users through Enriching Ethnography," pp 501-528 in *The Handbook of Science and Technology Studies, 4th edition.* Edited by Ulrike Felt et al.

March 30: Everyday and Mundane Technologies

1. Johnson, Jim. 1988. "Mixing Humans and Nonhumans Together: The Sociology of a Door-Closer," Social Problems, 35(3): 298-310.
2. Collins-Nelsen, Rebecca and Antony Puddephatt. 2018. "Gender, Artefacts, and Ritual Encounters: The Case of Tomboy Tools Sales Parties," *Canadian Review of Sociology*, 55(4): 1-24.

April 6: Essay topics and directions

1. Essay Presentations and peer feedback and discussion

IMPORTANT NOTE: POLICY ON LATE ASSIGNMENTS:

All work handed in past the deadlines shown will be deducted 5% per day for that particular requirement, not including weekends. Please hand in your work on time! As a general rule, spending more time on things usually does not improve the work enough to justify the late penalties. Also note that this does not apply for the daily summaries, only the larger writing assignments.

VERY IMPORTANT NOTE: POLICY ON ACADEMIC DISHONESTY:

The University states unequivocally that it demands scholarly integrity from all its members. Academic dishonesty, in whatever form, is ultimately destructive of the values of the University; furthermore, it is unfair and discouraging to those students who pursue their studies honestly.

Academic dishonesty is not qualitatively different from other types of dishonesty. It consists of misrepresentation by deception or by other fraudulent means. In an academic setting, this may include any number of forms such as:

- copying or the use of unauthorized aids in tests, examinations and laboratory reports,
- plagiarism, i.e., the submission of work that is not one's own or for which previous credit has been obtained, unless the previously submitted work was presented as such to the instructor of the second course and was deemed acceptable for credit by the instructor of that course,
- aiding and abetting another student's dishonesty,
- giving false information for the purposes of gaining admission or credit,
- giving false information for the purposes of obtaining deferred examinations or extension of deadlines, and
- forging or falsifying documents.