STS6312 3.0

Political Economy of Technoscience
2014-15

Course Meetings	**Course Director Information**
11.30am-2.30pm South Ross 537	Kean Birch Ross S763A 416-736-2100 ext.30126 kean@yorku.ca **Office hours:** Email me to arrange

OVERVIEW

Science and technology permeate our surroundings and our lives, from the computers we use to surf the web to the subways and roads we use to get to and from campus. To understand how technoscience came to be so ubiquitous necessitates understanding more than technoscientific knowledge; it also requires an appreciation of wider political-economic policies, processes, knowledges and mechanisms that help to constitute these technoscientific systems. So, for example, without innovation policies there would be no government investment in university research; without political-economic processes like privatization and commercialization there would be no new markets for new technologies; without competing political-economic knowledges there would be no contest over the societal purpose and value of technoscience; and without neoliberal markets there would be no drive to extend technoscience into new areas of social life or the environment.

This course examines such issues by exploring key theoretical strands of STS research: economics of science; innovation studies; 'economic turn' in STS; and the political economy of science and technology. In order to ground the course in relevant examples, it draws on a number of substantive topics including: the construction of and problems with intellectual property rights; science and innovation policy; societal and policy narratives and visions of progress; materialities and political economy; and relationship between technoscience, STS and neoliberalism.

ASSIGNMENT GUIDELINES

Dues Dates

ASSIGNMENT	DATE	MARK
Presentation	Varies	20
Participation	Ongoing	20
Essay	Week 12	40
Book review (final)	Week '14'	20

Assignments

1. Presentation
   - You are expected to do one or two presentations during the course depending on the number of people taking the course. Think about which weeks interest you most and we will negotiate presentation dates in the first seminar.
   - Requirements:
     - Cover all the readings.
     - Outline and explain the contents of the readings, in your own words.
     - Relate the material to a real world example.
     - Raise several relevant questions for discussion.
2. Participation
   - You are expected to attend all the seminars and participate in discussion of the readings throughout the course.
   - Requirements:
     - Attend all classes.
     - Write a one-page summary (maximum) of the readings.
     - Engage in discussion in every class.
3. Essay
   - You are expected to write a 2500-word essay on a topic agreed between us. The purpose of the essay is to show me that you can review and synthesize literature on a particular topic, which means you need to talk to me and do a bibliographic search before you start writing.
4. Book review
   - At the start of the course think about a new book relevant to the course you would like to review for an academic journal. After discussing your choice with me, identify a relevant journal, approach the book reviews editor and propose to do a review for them. You should then get sent a free copy of the book.
   - Requirements:
     - Choose a book to review and journal to approach.
     - Ask for the book from the book reviews editor.
     - Present a preliminary outline of the book to the class (Week 12)
     - Write a 1000-2000 words review for submission to a journal (Week '14')
     - Submit to a journal (Week '14').

OTHER ISSUES

Referencing

You should use the APA (or Harvard) referencing system for all assignments; see guidelines here: https://owl.english.purdue.edu/owl/resource/560/01/

Extensions

There are no extensions without documented mitigating circumstances; these should be communicated to me before the deadline by email. Being late with an assignment without informing me of the documented circumstances will result in a grade of 0%.

Academic Honesty

You should all know what this means by now. The minimum penalty is 0% in the assignment. If you are unclear about academic honesty then consult York University guidelines: http://www.yorku.ca/secretariat/policies/document.php?document=69.

Academic Accommodation

York University shall make reasonable and appropriate accommodations and adaptations in order to promote the ability of students with disabilities to fulfill the academic requirements of their programs. The nature and extent of accommodations shall be consistent with and supportive of the integrity of the curriculum and of the academic standards of programs or courses. Provided that students have given sufficient notice about their accommodation needs, instructors shall take reasonable steps to accommodate these needs in a manner consistent with the guidelines established hereunder. 'Disabilities' shall be defined as those conditions so designated under the Ontario Human Rights Code in force from time to time, and will in any event include physical, medical, learning, and psychiatric disabilities.

The York Senate Policy on Academic Accommodation for Students with Disabilities can be found at: http://www.yorku.ca/secretariat/policies/

Please note it is up to you to seek advice and help from the Counseling and Disability Service (CDS). Requests for accommodation must be submitted to the course director at the beginning of the course OR immediately after the letter of accommodation is issued by the CDS: http://www.yorku.ca/cds/aboutus/

CLASS SCHEDULE OF TOPICS AND READINGS

1	**Introduction** • Ch.2-3, Mosco, V. (2009) *The Political Economy of Communication*, Sage. • Birch, K. (2013) The political economy of technoscience: An emerging research agenda, *Spontaneous Generations: A Journal for the History and Philosophy of Science* 7(1): 49-61. Identify an STS book (broadly conceived) on political economy of technoscience that you would like to write a book review of for an academic STS journal (identify which journal).
2	**Economics of science** • Sent, E-M. (1999) Economics of science: survey and suggestions, *Journal of Economic Methodology* 6(1): 95-124. • Ch.1-2, Mirowski, P. (2011) *ScienceMart*, Harvard University Press.
3	**Innovation studies** • Fagerberg, J. and Verspagen, B. 2009. Innovation studies -The emerging structure of a new scientific field, *Research Policy* 38: 218-233. • Hopkins, M. et al. (2013) Buying big into biotech: scale, financing, and the industrial dynamics of UK biotech 1980-2009, *Industrial and Corporate Change* 22(4): 903-952. • Ch. 2, Mazzucato, M. (2013) *The Entrepreneurial State*, Anthem.
4	**Materialities of political economy** • Mitchell, T. (2009) Carbon democracy, *Economy and Society* 38(3): 399-432. • Ch.2, Hoeyer, K. (2013) *Exchanging Human Bodily Material*, Springer. • Birch, K. and Calvert, K. (2014) Rethinking 'drop-in' biofuels: On the political materialities of bioenergy, *Science and Technology Studies*.
5	**Performativity & the economic turn in STS** • Callon, M. (1998) The embeddedness of economic markets in economics, in M. Callon (ed.) The Laws of the Markets, Blackwell. • MacKenzie, D. (2006) Is economics performative? Option theory and the construction of derivatives markets, *Journal of the History of Economic Thought* 28: 29-55. • Nik-Khah, E. and Mirowski, P. (2008) Command performance: Exploring what STS thinks it takes to build a market, in T. Pinch and R. Swedberg (eds) *Living in a Material World*, MIT Press.
6	**Changing political economy of research & innovation** • Ch.1, Tyfield , D. (2011) *The Economics of Science, vol.1*, Routledge. • Tyfield, D. (2012) A cultural political economy of research and innovation in an age of crisis, *Minerva* 50: 149-167. • Berman, E.P. (2014) Not Just Neoliberalism: Economization in U.S. Science & Technology Policy, *Science, Technology, & Human Values* 39: 397-431.

** READING WEEK (14-20th February) **

7	**Intellectual property rights** • Slaughter, S. and Rhoades, G. (1996) The Emergence of a Competitiveness Research and Development Policy Coalition and the Commercialization of Academic Science and Technology, *Science, Technology and Human Values* 21(3): 303-339. • Drahos, P. and Braithewaite, J. (2004) Who owns the knowledge economy? *Corner House Briefing 32*.
8	**Science & innovation policy** • Godin, B. (2006) The linear model of innovation: The historical construction of an analytical framework, *Science, Technology and Human Values* 31(6): 639-667. • Jasanoff, S. and Kim, S-H. (2009) Containing the atom: Sociotechnical imaginaries and nuclear power in the United States and South Korea, *Minerva* 47: 119-146. • Halliwell, J. and Smith, W. (2011) Paradox and potential: Trends in science policy and practice in Canada and New Zealand, *Prometheus* 29(4): 373-391. • Hawkins, R. (2012) *Looking at Innovation from a Uniquely Canadian Perspective*, Discussion Paper, Institute for Science, Society and Policy. •
9	**Policy frameworks & visions** • Felt et al. (2007) *Science and Governance: Taking European Knowledge Society Seriously*, Brussels: European Commission EUR 22700. • Thorpe, C. and Gregory, J. (2010) Producing the Post-Fordist Public: The Political Economy of Public Engagement with Science, *Science as Culture* 19 (3): 273-301.
10	**Bioscience & the bio-economy** • Waldby, C. (2002) Stem cells, tissue cultures and the production of biovalue, *health: An Interdisciplinary Journal* 6(3): 305-323. • Introduction, Sunder Rajan, K. (2012) *Lively Capital*, Duke University Press. • Birch, K. and Tyfield, D. (2013) Theorizing the bioeconomy: Biovalue, biocapital, bioeconomics or … what?, *Science, Technology and Human Values* 38(3): 299-327.
11	**Neoliberal science, neoliberal STS!** • McLellan, C. (1996) The economic consequence of Bruno Latour, *Social Epistemology* 10(2): 193-208. • Lave et al. (2010) Introduction: STS and neoliberal science, *Social Studies of Science* 40(5): 659-675. • Hess, D. (2013) Neoliberalism and the History of STS Theory: Toward a Reflexive Sociology, *Social Epistemology* 27(2): 177-193.
12	**Review & book review presentations**