York University
Department of Science & Technology Studies

Biomedical Science in Social & Historical Context

STS 3780 3.0 • Syllabus • Fall Term 2017
Mondays, 11h30–14h30 • DB 1016 (formerly TEL 1016)

COURSE DIRECTOR
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COURSE DESCRIPTION

"Health is life lived in the silence of the organs." –René Leriche

When the French physician, René Leriche, offered this formulation of health in 1931, medicine was undergoing a series of profound changes. "Health," like "life" and "disease," was coming to encompass much more than the silent, private experience Leriche described. This course will examine some of the historical and social origins of those changes, and look at how they have come to shape current biomedical concepts and practices.

Biomedicine as we know it today is the product of some radical transformations that have taken place over the past 200 years. Health is no longer the absence of disease. It is something we achieve through the routine maintenance and even enhancement of our bodies (and our minds). Disease is not the opposite of health, but a threshold value along a continuum of physiological measures. Health has become a property of populations, described as being "at risk" for disease and requiring the mass interventions of "public health." Even in the absence of symptoms or pain, we can

still imagine our bodies as diseased through an array of visual technologies that display the invisible (bacteria, viruses, genomes, immune complexes), or the unimaginable (climates, environments, exposures). Once a craft-like and intuitive art, medical practice has become a technologized and highly specialized applied science. The shameful quest for "racial improvement" through eugenics has been abandoned; yet disease has become as an integral component of social and political identities for many. Pitched political battles are fought over whether and how the state and the market should provide health for citizens and consumers.

This course will examine some of the historical origins of these changes, and look at how current biomedical practices influence and interact with social structures. Students will be evaluated through a class presentation, written assignments of varying sizes, and their attendace and participation in the seminar. The course will also feature a field trip to a local health facility or museum (for 2017: the CAMH Queen Street facility).

This course does not assume that students have any background in the biomedical sciences. But getting such students in a classroom together with students in the social sciences is one of the unique priviledges of working in Science & Technology Studies. *All* students should expect that in the process of examining the historical & sociological contexts of biomedicine, they will need to become familiar with important concepts and practices in the sciences of both life *and* society.

Please note: while epidemics of infectious diseases are of course an integral feature of biomedicine's past and present, we won't be discussing these in any great detail in this course, as they are the focus of STS 4780 / HIST 4088 3.0 "Epidemics and the Modern World: Local, National & Global Configurations of Disease" (offered in Winter Term 2017).

EVALUATION

Attendance & Participation: **10%**
"So what's your question?" partnered assignment: **20%** (*choose date at 1st class)*
"Charting Biomedicine" assignment (1000-1200 words): **25%** (*due 16 Oct*)

- (includes <u>required</u> library research log worth 15% of assignment, *due 28 Sept*)

Assignment on CAMH tour (due 30 Oct)
<u>or</u> "biomedical material objects" (due 27 Nov): **10%**
Short research essay (2000-2500 words): **35%** (*due 4 Dec*)

I take **attendance** (5% of final grade) at the beginning of each class. If you're not there when I call your name, you will be marked absent.

Active **participation** (5% of final grade) – asking questions, expressing opinions, making informed comments – is critical for your learning, and your success, in this course. The best way to make this happen is for you to come prepared for each class. See "How to prepare for class" below for details.

The **partnered** assignment requires students to get together in groups of two and present that material to class in about 20 minutes. The presentations must include:

- a clear overview of the reading that covers its major argument(s) and evidence
- two questions to guide discussion and reflection on the reading

Sign-up will take place during the first class. A separate document will provide a grading rubric and guidelines for presentations.

The **Charting Biomedicine** assignment requires students to utilize the tables presented in chapter 2 of Clarke *et al.*'s *Biomedicalization* to construct a brief paper on a theme in biomedicine, using assigned readings and a few other sources. In preparation for this assignment (and for the short research essay), students are required to participate in the **research workshop** at Steacie Library (25 Sept) and respond to a few assigned questions on their research strategies *via* a moodle forum by 28 September.

The **short research essay** will be on a topic of your choice (in consultation with me). You'll need to find & use effectively a few authoritative and scholarly sources beyond our required readings to write this essay.

» *more details regarding the assignments will be provided during the first class*
» *Have a look at York's new Student Papers & Academic Research Kit (SPARK) for tips on how to write a better research paper*
» all assignments must be submitted electronically through our course moodle

LEARNING OBJECTIVES

As an STS course, we will aim to expand our understanding of biomedical science by exploring its historical, social, cultural, and material dimensions.

As a 3000-level course, our goals are to build upon skills introduced in previous undergraduate work, in particular:

1. Identifing the variety of methods and disciplines contributing to STS: in particular, sociology & history.

2. Recognizing and analyzing a variety of different sources, including:

» contemporary case studies that raise social issues about science policy, ethics, expertise, and networks in science;
» debates central to STS, regarding questions about objectivity, values, paradigm change, realism, physical and social causation; and
» historical case studies or narratives about scientific or technological change

3. Reading sources for argument.

4. Recognizing and practicing close reading.

5. Demonstrating an understanding of the difference between *explication* of a source or topic (summary) and *evaluation* of a source or topic (student's response, exploration).

6. Writing short expository papers that use analytical thesis statements.

In addition, students will learn to:

7. Explore biomedical topics in depth, follwing a theme or time period (with the goal of developing both some scientific literacy and familiarity with the breadth of approaches to biomedicine).

8. Use critical reasoning to identify a research topic.

9. Define an approach or method to pursue a research topic.

10. Focus and refine a research topic by searching for, evaluating and integrating a variety of sources.

11. Demonstrate an understanding of the difference between scholarly analysis and interpretation on the one hand (what some disciplinary traditions call 'secondary sources') and the direct evidence that provides building blocks for interpretation and analysis (what some disciplinary traditions call 'primary sources').

12. Discuss context for sources.

13. Identify different modes of writing (summary or overview, short analysis, research essay, opinion or response)

14. Discuss the relationship between modes of writing and audience.

TOPICS & READINGS (TENTATIVE)

11 SEPT	Introduction	Clarke *et al.*, "Biomedicalization" (*Biomedicalization*, ch. 1, pp. 1-44)
18 SEPT	Historical Overview	Clarke, "From the Rise of Medicine to Biomedicalization," (*Biomedicalization*, ch. 3, pp. 104-146)
25 SEPT	Microbes	Waller, *Discovery of the germ* (pp 95-132) **Research workshop (13h - 14h30, Steacie Library)**
2 OCT	Populations as targets	Shostak, "Marking Populations" (*Biomedicalization*, ch. 8, pp. 242-262) Bourdelais, *Epidemics Laid Low* (ch. 4, pp. 67-86)
16 OCT	Surgical interventions	Boero, "Bypassing Blame," (*Biomedicalization*, ch. 11, pp. 307-330) Guenther, "Between Clinic and Experiment"
23 OCT	Managing minds	Scull, "Moral Architecture" (ch. 8 of *Social Order/mental disorder*) Orr, "Biopsychiatry" (*Biomedicalization*, ch. 13, pp. 353-379) **Tour of Centre for Addiction & Mental Health (Queen St site)**
30 OCT	Biomedical business & labour	Twohig, *Labour in the laboratory* (pp. 37-57) Mirowski & van Horn "The Contract Research Organization and the Commericalization of Science"
6 NOV	Specialization & Expertise	Linker, "A New Female Force" (pp. 61-78 of Linker, *War's Waste*) Stevens, "Medical Specialization as American Health Policy" *n.b. 10 Nov last day to drop w/o penalty*
13 NOV	The power of images	Joyce, "The Body as Image" (*Biomedicalization*, ch. 6, pp.197-217) Howell, "Clinical Use of the X-Ray Machine" (pp.103-132 of Howell, *Technology in the Hospital*)
20 NOV	The material culture of medicine	**Visit to STS artefacts collection**
27 NOV	Reproduction & Gender	Mamo, "Fertility, Inc." (*Biomedicalization*, pp. 173-196) Howes, "Conceptualizing the Maternal-Fetal Relationship" (pp. 247-272 of Kroker *et al.*, *Crafting Immunity*)
4 DEC	Drugs & Society	Kahn, "Surrogate Markers" (*Biomedicalization*, ch 9, pp. 263-285) Epstein, "The Construction of Lay Expertise" (or chapter from Dumit, *Drugs for Life*; or Greene's *Generic*)

***Please note:* There is no course kit for this class. Copies of all required readings are available *via* the York University Library (YUL) system. Readings taken from print books are on 2-hr reserve at Steacie Science Library. They may or may not be in e-book format; if it is a case of an e-book, keep in mind that these virtual books have clearly-defined loan periods and numbers of borrowers. So don't wait until the last minute to sign it out, because the demand for the e-book will be very high just before the class for which it is required. Your best bet it to borrow the book as early as you can, print out the pages you need to read, and return it for others to use.

The *only* text I have ordered for purchase at the York Bookstore is Adele E. Clark, *et al*., (eds.), *Biomedicalization: Technoscience, Health, and Illness in the U.S*. It's inexpensive, and I encourage you to purchase a copy.***

HOW TO PREPARE FOR CLASS

Questions, concerns, and experiences (often transformative ones) regarding health & illness are probably all-too-familiar to each of us. The approaches to understanding these issues in this course, however, will likely be quite new to many students. As Course Director, my role is to help you understand some basic concepts and tools of STS, and show how they can be applied to biomedicine. This is an interdisciplinary course, so everyone (and I do mean everyone) will have something to bring to our table, be it the ability to perform a western blot, an understanding of the historical significance of the giant squid axon, or a masterful hermeneutic analysis of the final season of *House*. More likely, we will all have fallen ill at some point, and recovered well enough to reflect on our experience.

All this is important, and can make for brilliant discussion – I encourage you to share your expertise and experiences with our class. But at the same time, we need to find common ground, or we will be unable to get past anecdote and move towards analysis. *That is precisely what the assigned readings are designed to do. If you do not prepare appropriately for each class by reading, contemplating, and taking notes, you will be unable to master the core concepts presented in this course.*

Each meeting will feature roughly 40-60 pp of readings on a single topic. That's not a lot of reading, but I expect you to come to each class prepared to dissect the material carefully. That end, you should read *actively* and *critically*, and be sure to:

- identify key passages in the text and consider their significance
- clearly locate and articulate the author's argument and make note of it (a good way to do this is to read the introduction & conclusion of the articles first, and then go through the rest for detail)

- identify the relevent evidence the author uses to make their case, and consider the benefits/drawbacks of this sort of evidence
- situate the reading in a wider historical or sociological context
- consider the theoretical orientation of the reading
- think about possible criticisms or shortcomings of the reading
- compare/contrast readings assigned within the course
- consider writing 4-5 questions based on the reading, or writing a paragraph or two summarizing the argument and central points of the reading

COURSE MOODLE

Use of our course moodle (typically *via* email to your inbox) is required for success in this course. Detailed information on York's moodle system is available at https://moodle.yorku.ca/

COURSE POLICIES

I. evaluation

All grading will follow York's official standards. I strongly encourage all students to examine this document carefully, as I apply this rubric when I grade. I do accept material for re-grading (and I follow York's policy on this as well).

II. academic honesty

This course follows York's policies on Academic Honesty. Please go over the policy carefully to learn what constitutes a breach of academic honesty, and how York deals with suspected cases of it. Plagiarism will not be tolerated, and if I suspect such a breach of academic honesty, I am obligated to report my suspicions and consider convening an exploratory meeting to determine the facts of the situation and determine an appropriate outcome.

All students are required to complete (that is, score 100% on) the SPARK Academic Integrity Quiz (*via* our course moodle) to complete this course. You must submit a screen shot containing your **name & your score (100%) on the quiz** to our course moodle by 25 September, or I will not grade your assignments. (If you've already completed the SPARK quiz, you won't have to do it over again – just upload your screen shot with the relevant information).

III. accommodation

If you require any sort of accommodation for **any** reason to facilitate your participation in this course, **please alert me to this fact as early as possible**, and we'll figure out what needs to happen. If you're seeking accommodation for religious commitments, you'll need to follow York's policies (min. 14 days notice) in seeking

accommodation. All sorts of difficulties (financial, familial, emotional, physical) can appear in a very short period of time. York has excellent resources (Counselling & Disability Services or CDS is probably the foremost) to help you deal with whatever is challenging you. A list of them can be found on York's Current Students page.

IV. late assignments
Unless otherwise stated:

- » all assignments are due to be submitted to the course moodle at **11h00 on the due date**
- » late assignments are penalized **3% for every 24hrs** (or any portion thereof) of lateness
- » all missed presentations are awarded a "0," unless alternative scheduling arrangements are agreed-upon **a minimum 48 hrs in advance**, or if there is a request for emergency accommodation

If you require emergency accommodation (for an accident, a dire family emergency, or the like), you'll need to provide appropriate documentation of the situation. A doctor's note, for example, is generally not sufficient to request accommodation for medical reasons outside those covered by CDS – you'll need to supply an attending physician's statement (available on our course moodle) unless you've made other arrangements with me.

V. contacting me
I prefer to speak with students in--person or over the phone. I'm in my office most days – come during office hours (BC 315), or just drop by to chat (BC 218). If your issue is not personal and potentially relevant to the entire course, consider using the "Questions & Answers" forum on our moodle, so all students can benefit from our discussion. Email is fine for minor issues, but there is a good chance I'll just ask you to pick up the phone and call me.

BIBLIOGRAPHY

I. helpful overviews (some of these are on reserve at Steacie)

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Burnham, John. 2005. *What is Medical History?* Cambridge. Polity.

Collins, Harry & Trevor Pinch. 2005. *Dr. Golem: how to think about medicine*. Chicago. University of Chicago Press.

Conrad, Peter. 2007. *The Medicalization of Society: on the transformation of human conditions into treatable disorders*. Baltimore. Johns Hopkins.

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Maioni, Antonia. 2015. *Health Care in Canada*. Don Mills ON. Oxford.

Mol, Annemarie. 2002. *The Body Multiple: Ontology in Medical Practice*. Durham. Duke University.

Rosenberg, Charles. 1992. *Explaining Epidemics and Other Studies in the History of Medicine*. Cambridge. CUP.

Tomes, Nancy. 1998. *The Gospel of Germs: Men, Women, and the Microbe in American Life*. Cambridge, Mass. Duke University Press.

Williams, Simon J. 2005. Parsons revisited: from the sick role to...? *Health* 9: 123-144.

II. required (on reserve or available electronically through YUL)

Bourdelais, Patrice. 2006. Epidemics Laid Low: A History of What Happened in Rich Countries. Translated by Bart K. Holland. Baltimore: Johns Hopkins University Press. (pp 67-86) [print]

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Guenther, Katja. 2016. Between Clinic and Experiment: Wilder Penfield's Stimulation Reports and the Search for Mind, 1929-55," *Canadian Bulletin of Medical History/Bulletin canadien d'histoire de la médecine* 33: 281-320. [electronic]

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Linker, Beth. 2011. *War's Waste: rehabilitation in World War I America*. Chicago. University of Chicago Press. (pp 61-78) [electronic]

Mirowski, Philip & Robert van Horn. 2005. The Contract Research Organization and the Commericalization of Science. *Social Studies of Science* 35: 503-48 [electronic]

Scull, Andrew. 1989. *Social Order/Mental Disorder: Anglo-American Psychiatry in Historical Perspective*. Berkeley. University of California Press. (chapter 8, "Moral Architecture," pp. 213-238) [electronic]

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Twohig, Peter. 2005. *Labour in the Laboratory: Medical Laboratory Workers in the Maritimes, 1900-1950*. Montréal. McGill-Queen's University Press. (pp 37-57) [electronic]

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