SYLLABUS for HUMA 2596: History of Biology and Medicine

Instructor: Dr. Jenny Leigh Smith (jenny.smith@ust.hk)
Monday 4:30-5:50 Friday 12:00-1:20 Room 1409
Teaching Assistant: Yuying Shen (yshenal@connect.ust.hk)
Office: Room 2378 Office Hours: M 11AM-1 PM and by appointment

Course Overview: This course explores the past 200 years of history of biology and medicine. It is designed as an introductory course for students who have no background in the subject. Topics will include case studies from both the 19thCentury and the 20thCentury, and will include the history of disease and hygiene, the impact of evolutionary theory, eugenics, the history of nursing, the history of the modern hospital, the use of statistics and demographic information to track health, the rise of field sciences, the history of ecology, ethology and public science, the culture and impact of 20thCentury “blue-sky” research labs studying genetics, embryology, and evolutionary development, the expansion of the pharmaceutical industry, and the rise and controversy surrounding patents on life forms, including biopharmaceuticals.with an emphasis on how the past has influenced the present. Classes will mix lectures with discussions, and students will prepare an in-depth final research presentation as well as an extended review essay of a book in the history of biology or medicine of their choosing.
Intended Learning Outcomes: After successfully completing this course, students will be able to:

- Evaluate at least ten central topics in the history of biology and medicine during the modern era
- Analyze and critique intellectual arguments using primary and secondary sources
- Present clear and well-argued reasoning to defend or refute historical arguments about the history of biology and medicine both in writing and in oral presentation

Course Expectations:

- Students will read between **60-70 pages per week** on topics related to class
- Students who sleep/ browse their phones in class will be warned once, and then counted as absent from class for subsequent infractions.
- Note-taking on computers or phones is strongly discouraged. For the vast majority of students, it's not the best way to learn or remember information. If you think your case is exceptional, please come discuss it with me.
- Cheating and plagiarism are serious offenses and will not be tolerated in this class. They violate institute regulations. Learn more about HKUST's policies on academic integrity: http://tl.ust.hk/integrity/student-1.html

Grading:

- **Course Participation (20%)**, Students will contribute discussion questions and responses for each of the eight topic modules. In addition, there will be four different one-point mini-assignments students will need to complete during the course of the semester
- **Midterm Exam (10%): (march 18)** Students will answer questions based on materials covered in the course. The exam will consist of short answer and short essay questions.
- **Final Presentation (25%)** Students will be asked to make a final presentation about the "culture" of a laboratory, either contemporary or historical. these will be done in groups of 1,2,3 or 4 students.
- **Book Review (25%) (April 26)** Students will be asked to read and write a review on a book of their choice. This assignment will consist of a rough draft and an edited final draft.
- **Final Exam (20%)**

How to succeed in this class: (and maybe even learn something) in four easy steps

1. plan to attend (nearly) every class. 90% is a good target. If

you can't attend class, contact me **before** class and contact the professor or the TA **after** class to follow up.
2. In class, pay attention and stay awake. Use paper and a pen to jot down a few notes. **Don't take too many notes**. One page per class is a good guide.
3. Do the reading. Read at the pace that works best for you. However, you will probably not do well at the quizzes if you do not do the readings, or if you skim the readings the night before. The readings compliment the lectures, but they contain more information and different information, and I expect you to learn from both sources.
4. Invest a little! You can learn quite a lot about the topic of this class on your own-- no need to pay money, get up for class or study for quizzes. Online MOOCs mean you can earn credit for an online history class you watch on a screen. The value added of being in a classroom is found in the people around you. And **you** are their value added. So, be valuable! Speak in class, share your mints with your neighbor, complain about the readings with your classmates before I arrive, share online resources in your native language with others who will appreciate them, email me if you read a news article related to something we are studying, stop by my office (I often have snacks...). The possibilities for investment in this class are almost endless, and the dividends are as well.

Week One: (Feb.1 & 8) Introduction to History of Science (Biology & Medicine)

Lecture Topics: Introduction to the history of science (biology & medicine): Origin of the field, Kuhn's scientific paradigms

Readings:

- Thomas Kuhn, *The Structure of Scientific Revolutions* (1962)
- Steven Shapin,*The Scientific Revolution (1996)* Introduction
- Lorraine Daston, Lorraine. "Science Studies and the History of Science" *Critical Inquiry* (2009)

Weeks Two and Three: (Feb. 11,15,18,22) Disease & Hygiene in the 19thCentury

Lecture Topics:history of 19thCentury epidemiology, cholera, malaria, John Snow, colonial health and colonial governance

Readings:

- Timothy Mitchell. “Can the Mosquito Speak?” in *Rule of Experts*
- Ira Klein, “Malaria and Mortality in Bengal 1840-1921”
- John McNeill. “Revolutionary Fevers, 1790–1898: Haiti, New Granada, and Cuba” in *Mosquito Empire*

Feb. 18: Discussion Questions on Modules 1 & 2 due

Primary Source Lab on Feb. 22 : John Snow’s Map of Cholera Epidemics in London/ Class Discussion

Weeks Four and Five: (Feb 5, Mar 1, 4 & 8) Evolution & Eugenics

Lecture Topics: Charles Darwin, Francis Galton, impact of mass printing on reading public, colonial racism, nationalism, Eugenics in US, Eugenics in Germany

Readings:

- James Secord, Victorian Sensations pp 155-191
- Nayan Shah. *Contagious Divides: Epidemics and Race in San Francisco's Chinatown*. University of North California Press, 2001 pp 1-45
- Francis Galton, *Natural Inheritance*
- "The Emergence, Politics, and Marketplace of Native American DNA" in The Routledge Handbook of Science, Technology, and Society, eds. Daniel Lee Kleinman and Kelly Moore. London: Routledge, 2014: 21-37

March 4: Discussion Questions due for Module 3

Mar 8:Primary Source Lab: Selections from Darwin’s Voyage of the Beagle, Selections from the Genome Project’s Online Eugenics Archive / Class discussion

Week Six: (March 11 & 15) Modernization of Medicine

Lecture Topics: Nurses, the rise of modern hospitals in mainland Europe & Statistical Models of Health

Readings:

- Florence Nightingale. Notes on Nursing, (selections)
- Bernard Cohen, “Florence Nightingale”, *Scientific American*, (1984)
- Dora Weiner: “The City of Paris and the Rise of Clinical Medicine” (2016)

• Katrin Schultheiss. *Bodies and Souls: Politics and the Professionalization of Nursing in France, 1880-1922*, pp 3-11

March 15: Discussion Questions due

*******March 18: midterm Exam (worth 10% of your final grade)*******

Also March 18: class discussion of Module four

Module Five: (Mar 22, 25, 29)The rise of Field Sciences:

Lecture Topics:history of ecology, history of ethology, rise of public science, publication of *Silent Spring*

Readings:

• Donald Worster. *Nature's Economy, the Roots of Ecology (selections)*

• Theodora J. Kalikow. "Konrad Lorenz's Ethological Theory: Explanation and Ideology," *Journal of the History of Biology*, 1983, 16:39-73.

• Melinda Gromley*. Pulp Science: Education and Communication in the Paperback Revolution. (2016)*

March 22: Choose a book for your book review. The book review is due the first class after you return from Easter Break

Primary Source Lab March 29: Rachel Carson's *Silent Spring* & reactions in the New Yorker, 1961.

Module Six: (April 1, 5,8) Laboratory Life

Lecture Topics: : Genetics, Embryology & Evo-Devo Research

Readings:

• Sharon Traweek. *Beamtimes & Lifetimes*, Chapter 1

• Ron Amundson. *The Changing Role of the Embryo in Evolutionary Thought*: pp. 1-23

• Paul Rabinow. *Making PCR* pp*. 1-46*

Primary Source Lab Week of April 8- 12: Lab Site Visits & Ethnographic Description Exercise

Module Seven: (April 12, 15, 26) The History of Pharmaceuticals

Lecture Topics: Apothecaries, German drug factories, Impact of World War II, patenting, medicalization "drugs for life" search

for cancer drugs

Readings:

• Thomas Hager: *The Demon Under the Microscope* (excerpts)

Module Eight: (April 29, May 3, 6) the Ownership of Life

Lecture Topics: first patented organisms, rise of industrial agriculture, cell line patents, GMOs

Readings:

• Doogab Yi, “Who Owns What?”

• Dan Kevles, Of Mice and Money, the story of the World’s First Animal Patent

• "The Emergence, Politics, and Marketplace of Native American DNA" in The Routledge Handbook of Science, Technology, and Society, eds. Daniel Lee Kleinman and Kelly Moore. London: Routledge, 2014: 21-37

Film: *the Immortal Life of Henrietta Lacks*