

# History of Biology and Medicine

## Spring 2020 HUMA 2596: History of Biology and Medicine

**Meeting Times:** Wednesday & Friday 15:00-16:20

**Instructor:** Prof. Jenny Leigh Smith (hmsmith@ust.hk)

**Teaching Assistant:** Zhuyun Lin ([zlin@connect.ust.hk](mailto:zlin@connect.ust.hk))

**Instructor office:** Rm 2378

**Office Hours:** 1:00-2:00 PM Wed & Fri and by appt.

**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 19th Century and the 20th Century, 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 20th Century “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 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

**Please Note:** Cheating and plagiarism are serious offenses and will not be tolerated in this class. This includes plagiarism and paraphrasing online sources. Learn more about HKUST’s policies on academic integrity:

<http://tl.ust.hk/integrity/student-1.htm>

### Grading:

- **Course Participation (20%),** Students will contribute discussion questions and responses for each of the five topic modules
- **Quizzes (40%):** Students will answer questions in quizzes administered based on materials covered in the course.
- **Final Presentation (25%)** Students will be asked to make a final presentation in groups of 1, 2, or 3 students.
- **Book Review (15%)** 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.

### Module One: Introduction to the History of Science and Medicine

<b>February 19:</b> Class Introduction to History of Science	<b>February 21:</b> Origin of the field, scientific revolutions, paradigms, magic bullets
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**February 26:** epidemiology, cholera, John Snow

**February 28:** colonial health and governance

**March 4:** leprosy, ebola, history of quarantine

**March 6:** Quiz #1 (online) & choose group project topics

## Module Two: 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:** See Module II in "Modules"

<b>March 11:</b> History of Evolution	<b>March 13:</b> Early Eugenics, positive eugenics
<b>March 18:</b> History of Eugenics: negative Eugenics	<b>March 20:</b> History of Genetics
<b>March 25:</b> Lysenko and Epigenetics	<b>March 27:</b> Quiz #2

## Module Three: Clinics, Institutes and Laboratories

April 1: Birth of the Clinic	April 3: Modern Nursing
April 8: Medicine as a profession	April 10: No class
April 15: Medicine as an institution	

## Module Four: Pharmaceutical Industry

	April 17: Apothecaries and Pharmacies
April 22: Birth of the Pharmaceutical Industry	April 24: blockbuster drugs
April 29: When experiments travel	May 1: Holiday, no Class (Take Home Quiz on Modules 3 & 4)

## Module Five: Instruments

May 6: History of scientific instruments: seeing	May 8: History of scientific instruments: hearing
May 13: Laboratories in the 20th and 21st Century	May 15: Quiz on Module V

**Lecture Topics:** glassware, optics, LHC, the military-industrial complex, large public labs, biotech startups,

Sharon Traweek. *Beamtimes & Lifetimes*, Chapter 1

**Film:** *the Immortal Life of Henrietta Lacks*