

Fall 2019

HIST 381-H01: Science and Technology in Modern Medicine

Stephen Pemberton

Follow this and additional works at: <https://digitalcommons.njit.edu/hist-syllabi>

Recommended Citation

Pemberton, Stephen, "HIST 381-H01: Science and Technology in Modern Medicine" (2019). *History Syllabi*. 20.
<https://digitalcommons.njit.edu/hist-syllabi/20>

This Syllabus is brought to you for free and open access by the NJIT Syllabi at Digital Commons @ NJIT. It has been accepted for inclusion in History Syllabi by an authorized administrator of Digital Commons @ NJIT. For more information, please contact digitalcommons@njit.edu.

SCIENCE & TECHNOLOGY IN MODERN MEDICINE

History 381 Honors

FALL 2019 SYLLABUS

Prof. Stephen Pemberton
Federated Department of History
New Jersey Institute of Technology

Class Meetings

Central King Building (CKB) 206
10 AM - 11:20 AM Mondays & Thursdays

Office & Contact

Cullimore Hall 325, NJIT Campus
Phone: 973-596-5716
Email: stephen.pemberton@njit.edu

Office Hours

Mondays, 4-5 p.m. and by appointment on Mondays and Thursdays

This history course examines the critical roles of science and technology in modern medicine by looking at social developments associated with germs, genes, and the body. Readings, lectures, and discussion focus on specific innovations in ideas, practices, and technologies that helped transform Western medicine in the 19th and 20th centuries and render it “modern.” Of particular focus will be the extent to which medicine is or has been scientific; the ways science became vital to the medical and health professions; and the degrees to which the professional cultures of medicine and the biomedical science both mirror and inform attitudes toward the human body in Western society and culture. The lectures and readings will allow us to link interactions between medicine, science and culture to the changing social and political economies of health care in North America and Europe, and analyze a variety of issues, including the growing role of technology in medicine, the integral relationship between medicine and public health in the modern world, the roles of business and government in advancing health care, and the historical effects of specific disease problems for the advancement of science-based healing. Throughout the course, special attention will be paid to how issues of class, race and ethnicity, and gender have impacted cultural understandings of the body, disease and health as well as interactions between medical professionals, scientists, industry, government, and the public.

Learning Outcomes

By the end of the course, students will be able to:

- *Identify* and *correlate* key historical actors and events in North America and Western Europe and how they have shaped and influenced medicine, science, technology, and society across the globe from the mid-nineteenth century to the present.
- *Identify* and *describe* various developments and controversies related to medicine, medical science and technologies of the last two centuries, and *explain* how medical practitioners have approached the challenges of improving the health of individuals and populations for better and/or worse.
- *Describe* and *begin to explain* how scientific and medical developments in a modernizing world are embedded in a social context: meaning that each student will learn that “social factors” such as class, race, and gender not only impact our understandings of the body, disease, and health, but that these features of social experience also frequently impinge upon how medical developments unfold as well as how medicine is practiced (in its dimensions as both art and science).
- *Write* effective essays that *describe* and critically *evaluate* the merits of a certain argument in a specific place and time, even if the vexing issues involved are (in some sense) irresolvable.
- *Demonstrate* information literacy consistent with being an upper-level undergraduate: including (1) locating, retrieving and evaluating information relevant to the writing of a college-level argumentative essay; (2) organizing, synthesizing and communicating that information in clear, persuasive prose; and (3) producing a finished essay that employs principles consistent with the ethical and legal uses of information.

Prerequisites and Honors Credit

HUM 102 with a grade of C or higher, and a course fulfilling the History and Humanities General Education Requirement with a grade of C or higher.

Student must be enrolled in Honors College or have permission of instructor to take this course.

Course Webpage. There is a Canvas webpage for this course that the professor and class will utilize throughout the semester. Please consult this website regularly, preferably at least once before every class meeting. It contains the syllabus, assignments, readings, and other features that will enhance your learning experience this semester. **You can access Canvas here.**

Readings. The required readings for this course include one book and numerous shorter readings assignments. Students should follow the semester schedule below to determine what readings to complete for each class period.

The one book assigned in this course is Rebecca Skloot’s *The Immortal Life of Henrietta Lacks* (Broadway Books, 2011) ISBN # 9781400052189. Copies are available at the NJIT Campus bookstore as well as online booksellers. Audiobook and electronic versions can be purchased as well.

Short readings are newspaper or magazine articles, scholarly essays, articles, or book chapters. These readings are available on **Canvas**.

Students should follow the detailed semester schedule in this syllabus to determine what readings to complete for each class period.

Assignments and Grading

The primary goal of this course is to promote critical thinking about medicine and society, both past and present. All students will be evaluated on their written and oral communication over the course of the semester. This requires that you do the reading and writing assignments dutifully. In addition to in-class participation, the student will write three essays and complete two exams.

<u>Assignments</u>		<u>Grading Scale for Assignments</u>
Participation	10%	A = 89.5 to 100
Short Essays	25%	B+ = 86.5 to 89.4
First Exam	20%	B = 79.5 to 86.4
Second Exam	15%	C+ = 76.5 to 79.4
Final Essay	30%	C = 69.5 to 76.4
		D = 59.5 to 69.4
		F = 59.4 to 0
<hr/>		
Course Grade	100%	
Consistent effort and improvement are weighted heavily in grading.		
Passing this class with a B or higher is unlikely without completing each assignment in a timely fashion.		

<u>Due Dates for Major Assignments</u>		
Short Essay I	due	Thursday, September 19
Exam I	due	Monday, October 14
Short Essay II	due	Thursday, October 31
Exam II	due	Monday, November 18
Final Essay	due	Monday, December 9

Participation

Participation will count **10%** of your final course grade. The class participation grade reflects (1) the student's attendance record and (2) the student's performance in classroom activities, including the student's written and oral engagement with the required reading. The professor will consider improvement and other factors in his assessment of each student's participation grade, and he reserves the right to award extra credit to students who make substantial contributions to the in-class learning environment. Above all, students should promptly communicate any concerns they may have about their ability to meet the attendance or classroom participation requirements with the professor.

Attendance Policy. Missing even a single class is not recommended. However, each student is allowed to miss up to two full class periods without penalty to his or her participation grade. No excuses are necessary for those two classes. Any class time missed beyond the first two classes will result in reductions in the student's participation grade (as calculated as a percentage of formal contact hours in the classroom for the semester). The professor will only consider excusing repeat absences under extraordinary circumstances. Any student who knows he or she will miss more than two classes should consult with the professor to determine whether the absence is excusable or not. Attendance accounts for 2/3rds of the overall participation grade.

Classroom Performance. The student's active engagement with classroom activities accounts for 1/3rd of the participation grade. Each student should come to class promptly and regularly, actively listen to the lectures, and be prepared to discuss the readings assigned for the day. Students should respect the learning environment by arriving on time and staying the full term of the session. The student's comprehension of the assigned readings is graded in this course. The professor will evaluate reading comprehension, in part, by taking account of each student's contributions to in-class discussions. Students should promptly communicate any concerns about their ability to meet these requirements with the professor. Students who participate regularly in discussion, and do so constructively, will be rewarded with higher grades in their final participation grade. Merely coming to class does not constitute engagement (because attendance is considered a separate component of participation). The student must contribute to the learning environment to receive full credit in this area.

Short Essays

The student's ability to discuss the readings in written form is graded throughout this course. Every student is expected to complete two short essay responses to one of the Professor's discussion questions at designated times during the course. The guidelines for each of the short essays will be detailed in document that will be distributed at least a week before the assignment is due. Performance on the short essays will count as **25%** of your final course grade (15% for the highest graded essay and 10% for the other essay).

Exams

The First Exam will be given in class and will count **20%** of the final course grade.

The Second Exam will be given in class and will count **15%** of the final course grade.

There will be an in-class review session during the class preceding each exam.

Exam Attendance and Make-Up Policy: Attendance at scheduled exams is mandatory. Missing an exam for an unexcused reason can result in the loss of a full letter grade on the makeup exam. In the event that the student knows s/he cannot attend a scheduled exam or has actually missed the exam, the student should contact the professor as soon as possible to discuss the possibility of a make-up exam. Make-up exams are only offered within one business week of the originally scheduled exam; exception under extreme circumstances.

Final Essay

This essay will address a major issue or theme in the course related to the student's reading of the required book, *The Immortal Life of Henrietta Lacks*. The paper topic and guidelines for the writing assignment will be distributed to the class no later than two weeks before the assignment

is initially due. Electronic and paper copies of the essay are due on the last day of class. This essay assignment counts for **30%** of your final course grade.

Respect for Persons and the Learning Environment

In the interest of an open exchange of ideas and collegiality, everyone participating in the class should strive to respect their classmates as persons. The professor will make every effort to facilitate a respectful environment for learning, but students should keep in mind their own responsibilities in the classroom.

Students are expected to limit cell phone, tablet, and lap top use to class-related activities only. Texting and social media in class are not allowed. Web-surfing unrelated to class, along with texting and social media usage, are disruptive of a respectful learning environment.

The professor reserves the right to ask you to leave the classroom for any behaviors that do not meet the expectations of a proper, professional learning environment.

Essential Resources for Excelling in this Course

To excel in this course, you are expected to be able to locate and use web AND library resources effectively and cite your sources correctly. Googling alone will not suffice. Most of the library materials are available online 24/7 from anywhere. Try a search in **SEARCH EVERYTHING**. Self-help materials on finding books and articles can be found in the **Tutorials Guide**.

NJIT Librarian Dr. David Scharf is the expert to contact to field your questions about how the library's resources can help you succeed in this class. Her contact information is **here**.

Dr. Scharf also maintains a variety of website at NJIT Van Houghton Library that can aid your research and learning in this class.

Tutorials appropriate to doing coursework in a history class, such as this one, can be found **here**.

Tutorials that explain acceptable academic writing for this course are available **here**.

Tutorials on how to cite sources in your academic writing are **here**. Proper citation will help you avoid plagiarism. Students can use the APA, MLA or Chicago citation styles in their written work. You should pick one of these standard styles and apply it properly in your formal writing for this course.

Tutorials on how to evaluate appropriate online source material can be found **here**.

Reading the daily news related to health and medicine is also strongly encouraged while taking this course. As an NJIT Student, you qualify for a **free subscription** to *The New York Times*. *This free subscription includes access to the NY Times news archive, which dates back to 1851!*

Academic Integrity and Plagiarism

Academic integrity is *enforced* in this course. Academic Integrity is the cornerstone of higher education and is central to the ideals of this course and the university. Cheating is strictly prohibited and devalues the degree that you are working on. As a member of the NJIT community, it is your responsibility to protect your educational investment by knowing and following the academic code of integrity policy that is found **here**.

It is the instructor's professional obligation and responsibility to report any academic misconduct to the Dean of Students Office. Any student found in violation of the code by cheating, plagiarizing or using any online software inappropriately will result in disciplinary action. This may include a failing grade of F, and/or suspension or dismissal from the university. If you have any questions about the code of Academic Integrity, please contact the Dean of Students Office at **dos@njit.edu**.

Students are also responsible for upholding the integrity of NJIT by reporting any violation of academic to the **Dean of Students Office**. The identity of the student filing any academic integrity violation will always remain anonymous.

Again, all students are expected to abide by the norms outlined in these websites, this syllabus as well as the Canvas course page for this class, and students will be penalized for failure to do so. Please consult the professor if you have any concerns about academic integrity, academic reading, writing and citation, plagiarism or their meanings in actual practice.

Students will also be required to submit their original written work online via Canvas. Student work submitted online will be subject to review by **Turnitin.com**, an online service used by NJIT instructors to detect plagiarism and irregularities in sourcing and citation of the written word and claims.

Student Accommodations and Privacy

If a student needs accommodation in the classroom for illness, disability, death in family, religious reasons, etc., University Policy dictates that the student must inform the **Dean of Students Office**. Instructors can only accommodate a student at the direction of the Dean's Office.

Students with disabilities should also contact NJIT's **Student Disability Services (SDS)** for any necessary accommodations related to their disability **here**. SDS will communicate your specific needs to the professor, ensuring that your disability-related accommodations for the class and assignments are met without your having to divulge any private health information to the professor or anyone else in the class.

Students who have concerns that might impact their learning experience beyond the issues stated above may identify the nature of that concern with the professor so that he may advise you appropriately. The professor will hold all individual communication with students in confidence.

Semester Schedule

Thurs, Sept 5. How Have Science and Technology Have Mattered to Modern Medicine?

In-Class Reading: Lewis Thomas, “The Technology of Medicine” (6 pages)

Mon, Sept 9. Anatomical Knowledge and Modern Medicine

Reading: Ruth Richardson, “The Corpse as an Anatomical Object” (22 pages)

Thurs, Sept 12. Anatomical Knowledge and its Social and Political Messiness, 1820s

Reading: Review Richardson, “The Corpse as an Anatomical Object” and begin reading Ronald Numbers, “William Beaumont and the Ethics of Human Experimentation” (32 pages)

Mon, Sept 16. William Beaumont, Physiology, and Human Experimentation

Reading: Re-read Ronald Numbers, “William Beaumont and the Ethics of Human Experimentation” (32 pages)

Thurs, Sept 19. The Body and Modern Medicine in the 19th Century

ESSAY I DUE

Mon, Sept 23. The Rise of Experimental Medicine / Hospitalism

Reading: Claude Bernard, “An Introduction to the Study of Experimental Medicine,” (5 pages) and Ignaz Semmelweis, “The Etiology, Concept, and Prophylaxis of Childbed Fever,” (7 pages), and Sherwin Nuland, “The Germ Theory Before Germs: The Enigma of Ignaz Semmelweis” (25 pages).

Thurs, Sept 26. What is Germ Theory?

Reading: Louis Pasteur “On the Extension of Germ Theory to the Etiology of Certain Common Diseases;” and Rom Harré, “Louis Pasteur: The Preparation of Artificial Vaccines.” (21 pages total)

Mon, Sept 30. What is Germ Theory II?

Reading: Joseph Lister, “On the Antiseptic Principle in the Practice of Surgery;” and Robert Koch, “The Aetiology of Tuberculosis.” (21 pages total)

Thurs, Oct. 3. How Germs Mattered for Public Health: Immigrant Medical Inspections

In-Class Movie

Reading: Alan Kraut, “‘Proper Precautions’: Searching for Illness on Ellis Island” (27 pages)

Mon, Oct 7. How Germs Mattered for Medicine and Surgery: Radical Mastectomy

Reading: Barron Lerner, “Establishing a Tradition: William Halstead and the Radical Mastectomy (25 pages)

Thurs, Oct 10. Exam I Review

Mon, Oct 14. EXAM I

Thurs, Oct 17. Harry Haiselden & The Black Stork: A Case Study in Euthanasia and Popular Culture, 1910s-1930s

Reading: Martin Pernick, “The Birth of a Controversy,” pp. 3-18 and “The Black Stork,” pp. 143 - 158 of *The Black Stork* (32 pages)

In-Class Movie: Excerpts from eugenic film, *Are You Fit to Marry?*

Mon, Oct 21. Heredity, Genetics, & Eugenics

Reading: Ruth Schwartz Cowan, “Many Varieties of Beautiful Inheritance” (29 pages)

Thurs, Oct 24. Diabetes, Insulin, and Quality of Life

Reading: Chris Feudtner, “The Want of Control” (25 pages) and review Lewis Thomas, “The Technology of Medicine” (6 pages)

Mon, Oct 28. Experimental Medicine & Vivisection, 1900-1950

Reading: Susan Lederer, “Political Animals,” (18 pages)

Thurs, Oct 31. Experimental Surgery in Jim Crow America

ESSAY II Due

In-Class Movie: “Partners of the Heart: A Black Genius, A White Surgeon, A Blue Baby, and a Miracle”

NOTICE: From this point forward in the course you will be reading Rebecca Skloot’s book, *The Immortal Life of Henrietta Lacks*. You should try to complete your reading of the book by **Nov. 25** to take full advantage of the lesson plan. Discussion of the book will begin that day.

Mon, Nov 4. The Relevance of Race, Gender, and Cell Cultures to Clinical Innovation

Reading: Sherwin Nuland, “The Triumph of Twentieth Century Medicine: Helen Taussig and the Blue Baby Operation” (35 pages)

Begin Reading Rebecca Skloot, *The Immortal Life of Henrietta Lacks*

Thurs, Nov 7. The Tuskegee Syphilis Experiment: A National Tragedy in Slow-Motion

Reading: Allan Brandt, “Racism and Research” / Susan Bell, “Events in the Tuskegee Syphilis Project: Timeline” / Primary Sources from Susan Reverby’s *Tuskegee’s Truths* (about 50 pages)

Continue reading Skloot, *The Immortal Life of Henrietta Lacks*

Mon, Nov 11. Sickle Cell Anemia and the Legacies of Scientific Racism

Reading: Alondra Nelson, “The Spin Doctors” (37 pages)

Continue reading Skloot, *The Immortal Life of Henrietta Lacks*

Thurs, Nov 14. Exam II Review

Mon, Nov 18. EXAM II

Wed, Nov 20. Honors College Colloquium on “Medical Humanities” (optional)

Mon, Nov 25. From the Polio Vaccine to America’s War on Cancer

Reading: Complete reading *The Immortal Life of Henrietta Lacks*

In-Class Discussion of Book and Final Essay Assignment

Tues, Nov 26. The Immortal Life of Henrietta Lacks

In-Class Discussion: Skloot, *The Immortal Life of Henrietta Lacks*

Thanksgiving Break

Mon, Dec 2. The Immortal Life of Henrietta Lacks

In-Class Discussion: Skloot, *The Immortal Life of Henrietta Lacks*

Thurs, Dec 5. The Immortal Life of Henrietta Lacks

In-Class Discussion: Skloot, *The Immortal Life of Henrietta Lacks*

Mon, Dec 9. Medicine’s Future

FINAL ESSAY DUE