

**GERMS, GENES AND THE BODY:
SCIENCE AND TECHNOLOGY IN MODERN MEDICINE**
History 381 Honors

FALL 2017 SYLLABUS

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Class Meetings

Central King Building (CKB) 315, NJIT Campus
10–11:25 AM Mondays & Thursdays

Office & Contact

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Office Hours

Mondays 1–2:30 PM / Mondays & Thursdays by appointment

This history course examines the critical roles of science and technology in modern medicine by looking at developments associated with germs, genes, and the body. Readings, lectures, and discussion focus on the 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 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 innovating 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 cultural 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.

HUM 102 and one from among HUM 211, HUM 212, HIST 213 or their equivalents with a grade of C or better. Honors student status or permission from the Professor.

Course Webpage. There is a Moodle webpage for this course that the professor and class will utilize throughout the semester. Please consult the website regularly, and familiarize yourself with its contents. It contains the syllabus, assignments, readings, and other features that will enhance your learning experience this semester. Login to the following web address using your UCID number: <http://njit2.mrooms.net>.

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.

Short Readings: Short readings are newspaper or magazine articles, scholarly essays, articles, or book chapters. These readings are available as PDFs on the course Moodle page. Full descriptions and proper citations of these readings are referenced in the “Course Readings” document found on Moodle.

Books: 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. Electronic versions can be purchased or rented as well.

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 participate in at least two online discussion forums, write one essay involving a significant book-length reading, and complete a mid-term and final exam.

Assignments as Component of Final Course Grade

Participation	10%
Discussion Forums	25%
First Exam	20%
Second Exam	15%
Final Essay	30%
Course Grade	<hr/> 100%

Grading Scale for Assignments and Participation

A	= 89.5 to 100
B+	= 86.5 to 89.4
B	= 79.5 to 86.4
C+	= 76.5 to 79.4
C	= 69.5 to 76.4
D	= 59.5 to 69.4
F	= 59.4 to 0

Participation

Participation will count **10%** of your final grade. The class participation grade will reflect both the student's attendance record as well as the student's performance in classroom activities.

Attendance Policy. Missing even a single class is not recommended. However, each student is allowed to miss three full class periods without penalty to his or her participation grade. No excuses are necessary for those three classes. Any class time missed beyond the first three classes will result in substantial 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 consider excusing repeat absences under extraordinary circumstances. Any student who misses more than three classes should

consult with the professor to determine whether the absence is excusable or not. Attendance accounts for 2/3rds of the participation grade.

Classroom Performance. The student's verbal engagement with classroom activities and/or the Professor 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 credit in this area.

The professor will also consider improvement and other factors in his assessment of each student's participation grade, and reserves the right to award extra credit to students who make substantial contributions to the 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.

Discussion Forums

The student's ability to discuss the readings in written form is graded throughout this course. The professor will evaluate the student's competency at discussing the readings by taking account of each student's contributions to in-class discussions (graded as "participation") as well as his or her contributions to the classes' on-line discussion forums that will be posted on the course Moodle page. Every student is expected to complete two written responses to the Professor's discussion forum questions over the course of the semester. The first forum is due by **Thursday, September 28th**. The second is due by **Thursday, November 2nd**. The guidelines for the on-line reader responses are detailed in a separate document that will be distributed on Moodle during the first two weeks of class. Performance on the discussion forums will count as **25%** of your final course grade (10% for the first forum essay and 15% for the second forum essay).

Exams

The First Exam will be given in class on **Monday, October 16th**. This exam will count **20%** of your final course grade. There will be an in-class review session during the class preceding the exam.

The Second Exam will be given in class on **Tuesday, November 21st**. This exam will count **15%** of your final course grade. There will be an in-class review session during the class preceding the exam.

Final Essay

This essay will address a major issue or theme in the course, and will involve significant reading on the part of the student. 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 **Monday, December 11th**. This essay assignment counts for 30% of your final course grade.

Academic Integrity and Plagiarism

Academic integrity is *enforced* in this course. Plagiarism involves using the written or oral work of others without acknowledgement, and/or representing that work as your own. Plagiarism or any other academic integrity violations will be reported to the Dean of Students. All instructors and students are responsible for upholding the integrity of NJIT by reporting any violation of academic to the [Office of the Dean of Students](#). The identity of the student filing the report always remains anonymous.

There are several web-based resources that you should consult if you have any questions about academic integrity, plagiarism or proper citation. First, NJIT's academic integrity policy is explained [here](#).

Tutorials that explain what is acceptable academic writing for this course are available at the Van Houghton library website, [here](#).

The Library also maintains another web page on how to cite sources in your academic writing, [here](#). Proper citation will help you avoid plagiarism. Students can use the APA, MLA or Chicago citation styles in their written work. One only need to pick one of these standard styles and apply it properly.

Tutorials on how to evaluate appropriate online source material can be found [here](#).

Tutorials appropriate to doing coursework in a history class, such as this one, can be found [here](#).

NJIT Librarian David Scharf is the expert to contact to field your questions about how the library's resources (highlighted on these webpages) can help you succeed in this class. Her contact information is [here](#).

Again, all students are expected to abide by the norms outlined in these websites, this syllabus as well as the Moodle course page for this class, and 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 be required to submit their final essays to [Turnitin.com](#), an online service used by NJIT instructors to detect plagiarism and irregularities in sourcing and citation of

the written word and claims. Details for using the service will be provided along with guidelines for the specific writing assignments.

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 and lap top use to class-related activities. 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. Students who have special needs or concerns that might impact their learning experience should feel free to raise or discuss their situation with the professor. The professor will hold all individual communication in confidence.

Semester Schedule

Thurs, Sept 7. Introduction to “Germs, Genes, and the Body: How Science and Technology Have Mattered to Modern Medicine”

In class handout: Lewis Thomas, “The Technology of Medicine” (6 pages)

Mon, Sept 11. Anatomical Knowledge and Modern Medicine

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

Thurs, Sept 14. Anatomical Knowledge in Social Context

Reading: Review Richardson, “The Corpse as an Anatomical Object” and begin the readings for the next week

Mon, Sept 18. William Beaumont, Physiology, and Human Experimentation

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

Thurs, Sept 21. The Body and the Rise of Experimental Medicine

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)

Work on your discussion forum essays (due Sept 28)

In- Class Movie and Discussion

Mon, Sept 25. Clinical Medicine and the Problem of “Hospitalism”

Reading: Sherwin Nuland, “The Germ Theory Before Germs: The Enigma of Ignac Semmelweis” (25 pages)

Thurs, Sept 28. No Class Meeting

First Discussion Forum Essay Due (completed online)

Mon, Oct 2. 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)

Thurs, Oct. 5. 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)

Mon, Oct 9. How Germs Mattered for Public Health: Immigrant Medical Inspections by the U.S. Public Health Service

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

Thurs, Oct 12. Exam 1 Review

Mon, Oct 16. Exam 1

Thurs, Oct 19. Heredity, Genetics, & Eugenics

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

Mon, Oct 23. Harry Haiselden & *The Black Stork*: A Case Study in Eugenics, 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: Excerpt from “Are You Fit to Marry?”

Thurs, Oct 26. Racial Hygiene and Nazi Medicine I

Reading: Robert Proctor, “The Sterilization Law,” (25 pages)

Mon, Oct 30. Racial Hygiene and Nazi Medicine II

Reading: Robert Proctor, “The Destruction of ‘Lives Not Worth Living,’” (48 pages)

Thurs, Nov 2.

Second Discussion Forum Essay Due

NOTICE: From this point forward in the course you will be reading Rebecca Skloot’s book, *The Immortal Life of Henrietta Lacks*. However, our formal discussion of the book doesn’t begin until Nov. 27.

Mon, Nov 6. Diabetes, Insulin, and Quality of Life

Reading: Chris Feudtner, “The Want of Control” (25 pages) and officially begin reading Rebecca Skloot, *The Immortal Life of Henrietta Lacks*

Thurs, Nov 9. Experimental Medicine in the Twentieth Century: Vivisection

Reading: Susan Lederer, “Political Animals,” (18 pages) and continue Rebecca Skloot, *The Immortal Life of Henrietta Lacks*

Mon, Nov 13. Experimental Medicine in Jim Crow America

Reading: Continue Rebecca Skloot, *The Immortal Life of Henrietta Lacks*

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

Thurs, Nov 16. The Relevance of Race, Vivisection, and Cell Cultures to Clinical Innovation

Reading: Richard Wright, “The Man Who Went to Chicago,” (40 pages) and continue Rebecca Skloot, *The Immortal Life of Henrietta Lacks*

Mon, Nov 20. Exam 2 Review

Tues, Nov 21. Exam 2

[Thanksgiving Break]

Mon, Nov 27. The Immortal Life of Henrietta Lacks

Reading: Complete Rebecca Skloot, *The Immortal Life of Henrietta Lacks*

In-Class Discussion of Book

Thurs, Nov 30. The Immortal Life of Henrietta Lacks

In-Class Discussion

Mon, Dec 4. The Immortal Life of Henrietta Lacks

In-Class Discussion

Thurs, Dec 7. The Immortal Life of Henrietta Lacks

In-Class Discussion

Mon, Dec 11. Biomedicine in “Modernizing” Societies

FINAL ESSAY DUE