

**STSC 235: History of Biotechnology: Science, Industry, and Society**  
Spring 2008 ♦ University of Pennsylvania ♦ John Ceccatti, Ph.D.

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Meeting time and place

Thursdays, 6:00pm-9:00pm  
Logan Hall, Room 392

Instructor

John Ceccatti, Ph.D.  
Email: ceccatti@sas.upenn.edu  
Office hours: TBD

Course description

In this course, we will explore three aspects of the history of the biotechnology industry: the scientific developments in molecular biology, the relationship between biologists and industry, and the broader social implications of these activities. The primary goal of the course is to read, understand, discuss, and write about the scientific, industrial, and social aspects of biotechnology in historical perspective.

Each class session will begin with a class discussion of the week's readings and, following a short break with an interactive lecture (i.e. with student participation) on the following week's topic. Throughout the course, we will strive to synthesize the readings, lectures, discussions, and other outside knowledge to develop a deep understanding of how the biotechnology industry arose and how it functions in society. Although no specific science background is required, students should be able to read, understand, and discuss scientific papers and concepts. Likewise, although no specific historical background is required, students are expected to approach the primary readings from a historical framework and the secondary sources from a critical perspective.

Course requirements

1. Regular attendance, reading and understanding the assigned readings prior to coming to class, and active in-class participation are fundamental requirements and will contribute to (or detract from) a student's overall grade.
2. A 1-page summary of the week's readings submitted via the Blackboard dropbox by 4pm on the day of class. You are required to submit these for 10 of the 12 weeks with assigned readings.
3. A mid-term exam to be held on Thursday, March 6, 2008. The exam will consist of short-answer questions based on all readings and discussions up to that date. It is a 1-hour, closed-book exam during the first hour of class time.
4. An 8-10 page research essay on a topic given by the instructor. The topics will be handed on March 6. A draft of your essay (5-10 pages) is due on March 27 and will be returned with comments on April 3. Final essays (incorporating comments) will be due on April 24.
5. A final exam to be held on Thursday, May 8, 2008 during regular class time. The format of the final exam will be the same as the mid-term and will be based on the readings and discussions covered since the mid-term exam (i.e. it is not cumulative).

Grading

Class participation	10 points	A+	97 – 100	C+	77 – 79
Weekly write-ups	10 points	A	93 – 96	C	73 – 76
Mid-term exam	25 points	A-	90 – 92	C-	70 – 72
Essay – draft	10 points	B+	87 – 89	D	60 – 69
Essay – final	20 points	B	83 – 86	F	< 60

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Final exam	25 points	B-	80 – 82
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Course schedule in brief

Class	Date	Topic
1	January 17	Course overview
2	January 24	Introduction to the history of science and technology
3	January 31	Brewing and the origins of biotechnology
4	February 7	Germs, disease, and society
5	February 14	The emergence of classical genetics
6	February 21	Genetics, agriculture, and human improvement
7	February 28	Biologists and industry before DNA
8	March 6	Phage, physics, and the beginnings of molecular biology MID-TERM EXAM ESSAY TOPICS HANDED OUT
	March 13	NO CLASS – SPRING BREAK
9	March 20	From the double helix to genetic engineering
10	March 27	The development of the modern biotechnology industry DRAFT ESSAY DUE
11	April 3	Biology as ‘big science’ DRAFT ESSAY RETURNED
12	April 10	Biologists respond to genetic engineering
13	April 17	Biotechnology and society
14	April 24	Biotechnology and society FINAL ESSAY DUE
	May 1	NO CLASS – READING PERIOD
	May 8	FINAL EXAM