

HST 329: Science and Technology in the 20th Century

Online in the time of Covid19

Instructor:

Professor Nathan Crowe

Email: crowen@uncw.edu

Office: Technically Morton Hall rm 228 but at home for the pandemic!

Office Hours: T/Th, 3:00-4:00pm (or by appointment). Use the link below to visit my virtual office.

Office Hours Zoom Link: <https://uncw.zoom.us/my/crowe.office>

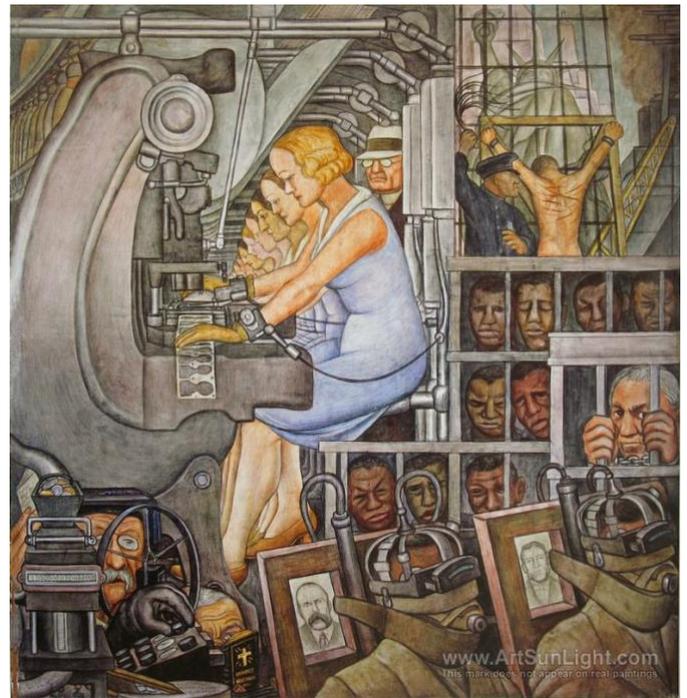
Optional Open Discussion Forum Hour: Mondays, from 2:00-3:00pm

Open Discussion Forum Zoom Link: <https://uncw.zoom.us/j/97072750961>

Course Description

The Industrial Revolution and mass production. Electrification. Eugenics. Atomic bombs. Computers. Genetic engineering. These technological and scientific breakthroughs have defined the twentieth century. In this class we will not only look at the history of science and technology in our American context, but we will also analyze these developments in a variety of political, social and cultural settings.

Importantly, we will not only look at the impact of various science and technological developments in society, but also how they were created. Science and technology is a human endeavor and therefore concepts of gender, race, power, and politics are built in to these developments whether or not those involved are conscious of it are not. By unraveling these ideas, we will not only just look at science and technology in the 20th century, but gain a better understanding of science and technology in our contemporary world.



Diego Rivera, part of the *Portrait of America: The New Freedom Fresco*, 1934.

Required Readings and Course Materials

- David Edgerton, *The Shock of the Old: Technology and Global History since 1900* (Oxford University Press, 2011).
- Joshua Freeman, *Behemoth: The History of the Factory and the Making of the Modern World* (Norton Press, 2018).
- Angela Saini, *Superior: The Return of Race Science* (Beacon Press, 2020).
- Audra Wolfe, *Competing with the Soviets: Science, Technology and the State in Cold War America* (Baltimore: Johns Hopkins University Press, 2013).

Student Learning Outcomes

This course is designed to help students:

- Compose written and oral responses that show a grasp of the relevant historical facts and themes of the development of science and technology in the 20th century
- Compose written arguments that clearly and effectively articulate the complex historical contexts and debates surrounding the history of science and technology in the 20th century
- Demonstrate an awareness of the differences in the social, cultural, and political meanings of science and technology in the 20th century.
- Critique the ways in which science and technology have disproportional effects in society.

Course Expectations and Policies

Assignments and Grading

Midterm Exam	15%
Final Exam	15%
Eugenics Primary Source Paper	10%
Race and Science Paper	15%
Discussion boards	25%
Content Quizzes	10%
Research Discussion	10%

Grade Scale

For all assignments and tests, as well as the final course grade, the grade scale is as follows:

A 100-93	B 87-83	C 76-73	D 67-63
A- 92-90	B- 82-80	C- 72-70	D- 62-60
B+ 89-88	C+ 79-78	D+ 69-68	F 59-0

Plagiarism and Academic Misconduct:

Because this is an online class that requires interaction via written work rather than orally, you may be tempted more than usual to borrow/steal language from a variety of sites. Knowingly presenting another person's language or ideas as your own constitutes plagiarism. **Don't do it.** If you are caught plagiarizing or cheating in any way you will at the very least be failed for the assignment, and depending on the level of the transgression you could receive an "F" for a final grade and be referred to Office of the Dean of Students (ODOS). Plagiarism, the theft of intellectual property, is a serious crime. If you have any questions, talk to me. For additional information:

<http://uncw.edu/ulc/writing/avoidplagiarism.html>

Exam Format

The exams will require you to engage with the material that we've covered through short answer and essay questions. Study guides will be distributed before each exam.

Papers

You will be required to compose responses to two prompts over the course of the semester. Each paper prompt will provide specific guidance as to length and requirements.

Further Research Discussion

You will also be required to sign up for one week in which you will find an additional reading on the broader topic of that week. You will read the piece and have a 5-10 min discussion with me via zoom (which will be recorded for the class). More instructions will be available via Canvas.

Content Quizzes

Many weeks you will have a content quiz associated with the week's materials. These will be low-stake quizzes that will help reinforce main ideas from the assigned materials. They will be open book/notes and a mix of question formats, such as short answer and true/false. These will be graded exercises, but I will drop the lowest quiz grade at the end of the semester.

Weekly Discussion Boards

25% of your grade is determined by your weekly discussion posts. Most weeks you will be required to post a response to a specific discussion question based on the week's materials by Sunday evenings. I will read through your answers and create a follow-up question on Mondays, which you will have to respond to by the end of the day on Wednesdays.

These discussion posts are, essentially, representations of your in-person participation and attendance grades. Read/watch/listen to the weekly assignments and write thoughtful, coherent responses to the posted questions, and you will do well. The posts will be graded, and I will drop the lowest grade at the end of the semester. For specifics on assessment, see the discussion rubric.

Note that you can lose points not only for poor quality, but also for problematic or disruptive language that attacks, demeans, or abuses your fellow students. Despite what some say, there are plenty of ways to disagree or debate controversial topics while also keeping our (virtual) spaces welcoming and safe. If you are worried about these issues, please contact me.

Sick Policy (COVID-19 and other)

Obviously, there is no attendance policy for an online course, but the reality is that right now any of us could become seriously ill, likely from the coronavirus, but there are a number of illnesses that could affect our ability to fulfill the course expectations. If you do get sick, I will allow for you to make up work after you recover. Each instance, however, is specific, so please contact me so that we can figure out the best way for you to succeed and regain your health. Depending on the severity of your illness, it may be in your best interest to consider a medical withdrawal or other solutions, but having open communication is the only way we can figure out the best course forward.

I also consider any responsibilities to take care of loved ones who are sick to also fall under this policy. Again, if you are in a situation where you are sick yourself, or you need to be caring for those who are, please let me know so that we can plan accordingly.

Missed and Late Work Policy

There are many deadlines in this course. You have weekly due dates and ones for exams and papers. These deadlines are to keep us all on track and to keep the workload spaced out in the most manageable way possible. Trying your best to meet deadlines will likely result in you doing your best work. In that regard, due dates are here to help us all excel during the semester.

That being said, I understand that there are times in which deadlines become impossible due to a confluence of circumstances (both expected and unexpected). For those times, you can rely on the following policy:

“Life Happens” late-assignment clause: One time during the semester you are allowed to invoke a no-questions asked “life-happens” clause and get an automatic 3-day extension to any paper or the midterm. You do not have to use this policy, but it’s there if you need it.

Discussion post and content quiz late policy:

Discussion posts function in a variety of ways for this class, including attendance and participation. Because of that, it’s important to post your answers by the deadlines each week. Again, I understand that things happen sometimes, and because of that I will allow two 24-hour grace periods before I begin deducting points of your discussion post grades.

Optional Open Forum Discussions

This course is designated as an asynchronous online course and therefore all requirements can be completed through the Canvas course page. That being said, I am providing an **optional** synchronous meeting time once a week in which we can engage face-to-virtual-face. These weekly meetings are NOT required, nor will they provide you with any additional credit. They are purely an extra-curricular activity for those who would like to engage with the material in real time with your fellow students and me. You can find information on the time and the zoom link in the syllabus header.

Student Roles and Expectations

I expect that you will treat this class as **a** priority in your life, which means that you should make your best effort to fulfill the course expectations. It is also your responsibility to communicate to me any issues you may have concerning disability (see the Office of Disability for more information) and to keep me informed of relevant situations (for instance, getting COVID-19 or needing to care for someone who has it!). Furthermore, I expect that your demeanor in your communication with other students and me will be respectful at all times and that you will uphold the UNCW honor code (www.uncw.edu/odos/honorcode). Other than that, if you approach this class with an open and inquisitive mind, I expect that you will find a great deal of intellectual fulfillment and learn valuable skills from this class.

Instructor Roles and Expectations

You can expect me to be respectful, honest, and open-minded, in our interactions. I will give you the benefit of the doubt unless you give me reasons to assume otherwise. I will also give you critical and timely feedback on all your work and will always make myself available outside of class if you wish to discuss any university or class-related issues. I will be timely in my emails, striving to reply within 24 hours during the work week (Monday-Friday).

Health and Safety Guidelines

Though this is an online class, I think it’s worth reminding everyone about UNCW’s health and safety guidelines for face-to-face interaction on campus. Following CDC Guidelines, UNC System directives, and out of mutual respect as outlined in the UNCW Seahawk Respect Compact, all faculty, staff, and students will wear face coverings while inside buildings. Students who are unprepared or unwilling to wear protective face coverings will not be permitted to participate in face-to-face sessions and will need to leave the building. Noncompliant students will be referred to the Dean of Students for an Honor Code Violation. Any student who has a medical concern with wearing a face covering should contact the Disability Resource Center at (910) 962-7555.

Proposed Class Schedule

Assume all requirements are due by 11:59pm of the day specified.

[1] Wednesday, August 19th – Sunday, August 23rd

Topic: Introductions and thinking about technology

Watch:

- Lecture, Week 1

Read:

- Nye, "Does Technology Control Us?" (15pgs)
- Winner, "Do Artifacts have Politics?" (17pgs)

Complete:

- Initial intro survey by Friday, August 21st
- Initial discussion board post by Sunday, August 23rd
- Response post to instructor follow up question by Wednesday, August 26th

[2] Monday, August 24th – Sunday, August 30th

Topic: Industrial Revolution and its effects: Setting the stage for the 20th century

Watch:

- Lecture, Week 2

Read:

- Freeman, chps 1 and 2 (79pgs)
- Nina Lerman, "Industrial Genders: Constructing Boundaries" (21pgs)

Listen:

- [Lady Science Podcast "The Great Man Theory of History is Garbage"](#)
 - (1hr 15mins, though you only **NEED** to listen to the first 40mins. The second half is an interview with a pioneer historian of women in science, which is interesting but unnecessary)

Complete:

- Content Quiz: Week 2 by Sunday, August 30th
- Initial discussion board post by Sunday, August 30th
- Response post to instructor follow up question by Wednesday, September 2nd

[3] Monday, August 31st – Sunday, September 6th

Topic: Scientific Management, Taylorism, Fordism

Watch:

- Lecture, Week 3

Read:

- Freeman, Chps 3-4 (~85 pgs)
- Cowan, "[The 'Industrial Revolution' in the Home: Household Technology and Social Change in the 20th Century.](#)" (22pgs)
- Smith and Clancy, Primary sources on Scientific Management and Fordism (~20 pgs)

Complete:

- Content Quiz: Week 3 by Sunday, September 6th
- Initial discussion board post by Sunday, September 6th
- Response post to instructor follow up question by Wednesday, September 9th

[4] [Monday, September 7th – Sunday, September 13th](#)**Topic:** Eugenics in America**Watch:**

- Lecture, Week 4
- [Tomorrow's Children](#) (52mins)

Read:

- Wendy Kline, [Chapter 1 of Building A Better Race](#) (24 pgs)
- [Gar Allen, "Eugenics Record Office at Cold Spring Harbor,"](#) (40 pgs)
- [Sengoopta, "'Dr. Steinach coming to make old Young!' sex glands, vasectomy and the quest for rejuvenation in the roaring twenties"](#) (5 pgs)

Listen:

- [Dig Podcast - Eugenics in Puerto Rico](#) (36 mins)

Complete:

- Content Quiz: Week 4 by Sunday, September 13th
- Initial discussion board post by Sunday, September 13th
- Response post to instructor follow up question by Wednesday, September 16th

[5] [Monday, September 14th – Sunday, September 20th](#)**Topic:** Eugenics in North Carolina**Watch:**

- Lecture, Week 5

Read:

- [Kathrine Castles, "Quiet Eugenics: sterilization in North Carolina's institutions for the mentally retarded, 1945-1965"](#) (30pgs)

Listen:

- [Dig Podcast - Nazi Eugenics](#) (1hr 20mins)

Complete:

- Initial discussion board post by Sunday, September 20th
- Eugenics Primary Source Project by Sunday, September 20th

[6] [Monday, September 21st – Sunday, September 27th](#)**Topic:** Large Scale Industrial Systems**Watch:**

- Lecture, Week 6
- [Valley of the Tennessee, 1944](#) (28mins)

Read:

- Hughes, *American Genesis*, p. 353-381 (28pgs)
- Freeman, chp 5 (57 pgs)

Complete:

- Content Quiz: Week 6 by Sunday, September 27th
- Initial discussion board post by Sunday, September 27th
- Response post to instructor follow up question by Wednesday, September 30th

[7] Monday, September 28th – Sunday, October 4th

Topic: Midterm

Watch:

- Lecture, Review
- [The World of Tomorrow](#) (45mins)

Complete:

- Midterm exam, Part I, Due Sunday, October 4th
- Midterm exam, Part II, Due Sunday, October 4th

[8] Monday, October 5th – Sunday, October 11th

Topic: WWII and the Atomic Bomb

Watch:

- Lecture, Week 8
- [Day After Trinity](#) (1hr 28mins)
- [A Time-Lapse Map of Every Nuclear Explosion Since 1945 - by Isao Hashimoto](#) (14mins)

Read:

- Wolfe, *Competing with the Soviets*, Chp 1 and 2 (40 pgs)
- Kate Brown, "Part 1: Incarcerated Space on the Western Nuclear Frontier" from *Plutopia: Nuclear Families, Atomic Cities, and the Great Soviet and American Plutonium Disasters* (70pgs)
- [Meilan Solly, "Nine Eyewitness Accounts of the Bombings of Hiroshima," Smithsonian Magazine, August 5, 2020.](#)

Complete:

- Content Quiz: Week 8 by Sunday, October 11th
- Initial discussion board post by Sunday, October 11th
- Response post to instructor follow up question by Wednesday, October 14th

[9] Monday, October 12th – Sunday, October 18th

Topic: Cold War America

Watch:

- Lecture, Week 9

Listen:

- Dig Podcast: [The Final Frontier: History, Science, and Space Exploration](#) (1hr 10mins)

Read:

- Wolfe, Chps 3-7 (80pgs)
- Freeman, Chp 6 (44pgs)

Complete:

- Content Quiz: Week 9 by Sunday, October 18th
- Initial discussion board post by Sunday, October 18th
- Response post to instructor follow up question by Wednesday, October 21st

[10] Monday, October 19th – Sunday, October 25th**Topic:** A History of Computing – or why the stereotypes are what they are**Watch:**

- Lecture, Week 10
- [Sofia Noble Challenging the Algorithms of Oppression](#) (12mins)

Listen:

- Lady Science: [Technology and Women's Labor](#) (1hr 20mins)

Read:

- Nathan Ensmenger, "Making Programming Masculine," (26pgs)
- Mar Hicks, "Meritocracy and Feminization in Conflict," (20pgs)
- [Pratyusha Kalluri "Don't Ask if Artificial Intelligence is good or fair, ask how it shifts power" July 2020, Nature.](#) (2pgs)
- Jessie Daniels, "'My Brain Database Doesn't See Skin Color': Color-Blind Racism in the Technology Industry and in Theorizing the Web," (13 pgs)

Assignment:

- Content Quiz: Week 10 by Sunday, October 25th
- Initial discussion board post by Sunday, October 25th
- Response post to instructor follow up question by Wednesday, October 28th

[11] Monday, October 26th – Sunday, November 1st**Topic:** Molecular Biology, Genetic Engineering, and the Rise of Biotech**Watch:**

- Lecture, Week 11
- ["Hypothetical Risk: Cambridge City Council's Hearings on Recombinant DNA research, 1976.](#) (32 mins)
- [CRISPR Ted Talk – Jennifer Doudna, 2015](#) (15mins)

Read:

- Stevens, Chps 3-6 and 12 (75pgs)
- Hogan, "From Precaution to Peril" (5pgs)
- Audra Wolfe, *Competing with the Soviets*, Chp 8 (14pgs)

Complete:

- Content Quiz: Week 11 by Sunday, November 1st
- Initial discussion board post by Sunday, November 1st
- Response post to instructor follow up question by Wednesday, November 4th

[12] Monday, November 2nd – Sunday, November 8th**Topic:** Biology, Race, and the late 20th century**Watch:**

- Lecture, Week 12

Read:

- Angela Aaini, *Superior*, Chp 1-7 (144 pgs)

Complete:

- Content Quiz: Week 12 by Sunday, November 8th
- Initial discussion board post by Sunday, November 8th
- Response post to instructor follow up question by Wednesday, November 11th

[13] **Monday, November 9th – Sunday, November 15th**

Topic: Biology, Race, and the late 20th century, Part II

Watch:

- Lecture, Week 13

Read:

- Angela Aaini, *Superior*, Chp 8-11 (60 pgs)
- [Nicholas Wade, "NYT Science Editor: Race Is Real,"](#) (~10 pgs)

Complete: (Note slight change in discussion post due date to account for paper)

- Discussion board post by Friday, November 13th
- Paper 2 by Sunday, November 15th

[14] **Monday, November 16th – Sunday, November 22nd**

Topic: Rethinking the History of Technology in the 20th Century

Watch:

- Lecture, Week 14

Read:

- David Edgerton, *The Shock of the Old* (212 pgs)

Complete: (Note slight changes in post/response due dates)

- Initial discussion board post by Saturday, November 22nd
- Response post to instructor follow up question by Tuesday, November 24th

[15] **Monday, November 23rd – Tuesday, November 24th**

Topic: Review and Reflection

Watch:

- Lecture, Week 15 – Closing thoughts

Assignment:

- Post response to discussion question by Tuesday, November 24th

Last day of classes is Tuesday, November 24th

Reading day is Wednesday, November 25th

[16] **Monday, November 30th – Saturday, December 5th**

Final Due: Thursday, December 3rd