

HUMA 2595: Science, Technology and the Modern Life

Lectures: Tuesday 01:30PM - 02:50PM

Thursday 01:30PM - 02:50PM

Venue: Rm 2306, Lift 17-18 (111)

Course instructor: Wang Chenyi

Office:

Email: hmwangchenyi@ust.hk

Course Overview

This course provides a historical context to the ethical, social and political dilemmas that have arisen in the history of twentieth century in the fields of science, technology and engineering. The instructor will lead the students to examine the decision of dropping the atomic bomb, the rise and regulation of the pharmaceuticals industry, the high-profile failures of space exploration vehicles produced by the United States and the Soviet Union, as well as the genetic modification of plants and animals for food and research purposes and the patenting of living creatures, etc. Students are expected to read approximately **60 pages** per week.

Learning Objectives

Gain an understanding of the topics in the history of science, technology and engineering.

Improve knowledge about current issues and debates in the history of science and technology.

Understand, synthesize, and analyze major themes and debates in the topic.

Work individually and as a team to produce well-researched and in-depth final projects.

Assessments and requirements:

Attendance and participation:	25%
Research project and a 1500-word report:	35%
Group presentation:	15%
A 1000-word film review:	15%
In-class tests in Week 5 and 9:	10%

Lectures and class participation

The two classes each week are divided into lectures (on Tuesday) and group discussion/presentation (on Thursday). While lectures will be delivered, the instructor's role is to facilitate rather than dominate discussions in the group discussion/presentation. Students are expected to come to the lecture and group discussion/presentation prepared to articulate their opinions about the subject under study each week. Students should critically analyze the readings, highlight the strengths and persuasiveness of the arguments, and offer their opinions on the subject under scrutiny. Students should also note that they are required to attend all the classes. Participation and attendance in each class will be scored and graded.

Research project and a 1,500-word report

You are entrusted by one government agency of environment, health, food, hygiene, etc., or by one nongovernment agency to investigate one of the topics under concern.

Choose one topic for your research project. Isolate the ethical, social and political issues, unintended consequences, damages or risks related to this topic, critically analyze these issues and suggest policies for your agency to correct the mistakes, reduce the risks, or soothe the harms.

Below is a list of potential topics. You can also think of any other topic that interests you. For example, you might choose a topic in your discipline, like civil engineering or any other discipline.

Hong Kong International Airport Navigation

Hong Kong Water Supply

Epidemics in Asian Megacities

Emerging high-risk technologies

Food safety and consumer confidence

You and your group members must choose the same topic. And you need to get the approval from the instructor before getting started. I will help you check whether the topic is workable. Please note that the report must be completed and written independently.

Word limits: 1,000–1,500 word, excluding notes, bibliography, and other things.
Paper due on (to be decided). After the deadline, you can still submit, but there will be a penalty).

Grading system

Your report will be graded according to following criteria:

Organization (20%)

Analysis (50%)

Writing/Grammar (30%)

- Test of writing skills;
- Choice of words;
- Ability to convey complex ideas

Group presentation

The group presentation is based on your report research projects. Students of the same group will complete and give the presentation together. Preparing the group presentations is also a chance to compare notes and discuss with the other group members.

Grading system for group presentation

The group's and individual's presentation will be graded according to following criteria:

Organization of presentation (20%)

- Is there a strong introduction containing a clear statement of purpose?
- Are there statements defining the parameters of the presentation?
- Are the arguments properly structured and arranged?

Analysis (30%)

- Coherent central argument
- Ability to synthesise material
- Command of the literature
- Ability to marshal the evidence to prove a point

Use of sources (20%)

- Does the students engage a wide variety of sources?
- Does the students use sources with critical thinking?

Group synergy (15%)

- Test of group cooperation and the ability to work together with each other.
- The individual presentation coming together to form a coherent one presentation.

Style and creativity of presentation (15%)

- Is there something extra that make the group outstanding? Fun or wow factor?

Film review:

The film review is based on one of the documentaries below.

Errol Morris, *Leaving the Earth* (2000)

Dylan Mohan Gray, *Fire in the Blood* (2013)

Peter Vlemmic , *Panopticon* (2012)

We will watch these documentaries during class (the dates of watching to be decided). You can choose and decide which documentary interests you the most and write the review accordingly. Please note that both the report and review will undergo plagiarism checks.

The use of footnotes in both the reports and reviews must follow the Chicago Manual of Style: (http://www.chicagomanualofstyle.org/tools_citationguide/citation-guide-1.html). Hardcopies of the Chicago Manual are available at the uiversity library.

Course outline

Books:

Charles Perrow, *Normal Accidents* (selections from)

Edward Tenner, *Why Things Bite Back* (selections from)

Richard White, *The Organic Machine*

Geoffrey Bowker and Susan Leigh Star, *Sorting Things Out* (selections from)

Martha Lampland, *Standards and their Stories* (selections from)

Eugenia Tognotti, *Lessons from the History of Quarantine* (article)

Module I: Science, technology & ethics

Week 1: Course introduction, technology, modern warfare and ethics (readings online)

Week 2: Unit 731, Nuremburg, Tuskegee (readings online)

Week 3: Ethical boundaries in psychology: Stanley Milgram, Stanford Prison Experiment, Ron Jones (readings online)

Module II: Normal Accidents

Week 4: Three Mile Island and Chernobyl (read Perrow p. 3-61)

Week 5: Risk societies, the Challenger & Airline accidents (read Perrow, ch. 5, 8 & 9)

Week 6: Unintended Consequences (Reading: 2 case studies and Edward Tenner Chapter 4 of *Why Things Bite Back*)

Module III: Critical Resources: Water

Readings: Richard White, *The Organic Machine*

Week 7: Harnessing water/ dams and development

Week 8: scarcity and privatization

Week 9: background on the projects, form research questions, review rubric

Module IV: Standards & Surveillance

Readings: Tognotti, “ Lessons from the History of Quarantine”

Leigh Star, Sorting things out Star & Lampland “Standards and their Stories”

Week 10: Lecture: life insurance tables, last names & marketing research

Week 11: Lecture: Fingerprinting, quarantines,

Week 12 : Lecture: Surveillance, safety, privacy

Final notes

Attendance is taken in every class. Students who sleep/ browse their phones in class will be counted as absent. Attendance is a part of your grade. If you feel not well and cannot attend class, you need to produce an original medical certificate to make up for your absence from class.

Note-taking on computers or phones is discouraged, but not forbidden. I reserve the right to ask for a copy of your notes if you choose to use an electronic device during class.

Cheating and plagiarism are serious offenses and will not be tolerated in this class. They violate institute regulations. Learn more about HKUST’s policies on academic integrity: <http://tl.ust.hk/integrity/student-1.html>