The Hong Kong University of Science and Technology

UG Course Syllabus Template

Science, Technology, and Society: Historical and Cultural Approaches

HUMA 1622

3 credits

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Office Hours: Wednesday 2-3pm, Friday 2-3pm

Classroom: RM2465

Class Dates: 14 July – 8 Aug (Every Monday, Wednesday, Friday)

Class Time: 10am-12.50pm (*8 Aug 2-4.50pm)

Course Description

How science, technology, and medicine work in the present can be illuminated by a study of their pasts. This course is an introduction to those modern histories, presented as a series of carefully-chosen case studies. Students will come to understand how science, technology, and medicine are deeply entangled with societies and cultures. The course will discuss topics such as the invention and innovation of the telephone; the attempt to predict earthquakes; science and the environment; the modern survival of 'traditional' Chinese medicine; shifting ideas about robots; and how and why young people invented the personal computer, among others. By the end of the course, students will have a much clearer picture of how science, technology, and medicine are co-produced socially and culturally, and be able to apply those lessons to the world we live in now.

Intended Learning Outcomes (ILOs)

By the end of this course, students should be able to:

1. Explain the concept of "Social Construction of Science and Technology" and apply it (e.g. in a case study).

2. Analyze important milestones and debates in the modern history of science, technology, and medicine

3. Critically reflect on the role of science and technology in their own lives and that of their societies.

4. Initiate, lead, and engage in discussion about the conjunction of science, technology, medicine, and society.

Course Outline:

Week 1	
(1) 14 July	**Introduction to the Course and STS as a Field of Study and Guest Lecture by Dr. Lena Springer** Introduction to the course; syllabus, assignments, grading, relevance of subject and why we should study it. Substantive lecture on what STS is (as a discipline, an historical methodology, and a set of insights into the world that we live in, including theories and relevant case studies). Also discussion of what students expect out of the course, and will be bringing to the course, including their baseline understanding of STS.
(2) 16 July	**What is Technology, and How Should We Study It?** Humankind as a tool-using species. The modern term "technology" and its different manifestations. The idea that technology drives progress, and its critics.
(3) 18 July	**What is Science, and How Should We Study It?** Understanding nature before modern science. The "Scientific Revolution". Science and religion. The "Scientist" in history.
Week 2	
(4) 21 July	**The Telephone** The strange invention of an uncanny device. Learning to use the telephone. Women and telephony. Cultural differentiation in telephone systems.

(5) 23 July	**Earthquakes and the Limits of Science** The invention of seismology in Japan. Attempts to predict earthquakes and why they've failed. Does our understanding of nature have limits?
(6) 25 July	**Mid-Term Exam, in-class.**
Week 3	
(7) 28 July	**Inventing Efficiency: Scientific Management and Household Technologies** Invention of 'efficiency' as a social ideal. How 'scientific management' changed the world as we know it, with special reference to the household.
(8) 30 July	**Robots and Cyborgs** The idea of artificial bodies and intelligence in modern history. From Frankenstein to Artificial Intelligence. The Robot as attraction and horror.
(9) 1 Aug	**Science and the Environment: Pesticides** Rachel Carson, bird-watchers and the banning of pesticides. When scientific disciplines conflict, and role of interest groups in settling disputes.
Week 4	
(10) 4 Aug	**Citizen Technology: The Development of the Personal Computer** Hackers and the ideal of 'computer liberation'. Apple and the first (wooden) PC. How the personal computer emerged from the youth movement.
(11) 6 Aug	**Conflicting or Complementary?: Biomedicine and TCM** The presence of 2 different medicines/pharmacies in 21st century Asia and their cultural and political backgrounds.

(12) 8 Aug (*2-4.50 pm)	**Final Examination, in-class.**

Assessment and Grading

Assessment Task	Contribution to Overall Course grade (%)	Due date
Attendance	15%	N.A.
In-class participation	15%	N.A.
Mid-term examination	35%	25 July (TBC)
Final examination	35%	8 Aug (TBC)

Grading Rubrics

Grades	Short Description	Elaboration on subject grading description
A	Excellent Performance	Demonstrates a comprehensive grasp of subject matter, and significant creativity in thinking. Going beyond core requirements to achieve learning goals.
B	Good Performance	Shows good knowledge and understanding of the main subject matter. Displays high motivation to learn.
C	Satisfactory Performance	Possesses adequate knowledge of core subject matter, and some capacity for analysis and critical thinking. Shows persistence and effort to achieve broadly defined learning goals.
D	Marginal Pass	Has threshold knowledge of core subject matter, potential, and the ability to make basic judgments. Benefits from the course and has the potential to develop in the discipline.
F	Fail	Demonstrates insufficient understanding of the subject matter. Shows limited ability to think critically or analytically and exhibits minimal effort towards achieving learning goals.

Course AI Policy

Students may not use AI in this course.

Academic Integrity

Students are expected to adhere to the university's academic integrity policy. Students are expected to uphold HKUST's Academic Honor Code and to maintain the highest standards of academic integrity. The University has zero tolerance of academic misconduct. Please refer to Academic

Integrity | HKUST – Academic Registry for the University's definition of plagiarism and ways to avoid cheating and plagiarism.