

HTS 2084

Summer 2017

China Study Abroad Program

Technology and Society

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Introduction:

This course introduces students to three major historical events in which scientists and engineers have been faced with major ethical decisions. These are

1. The development of guided missiles in Nazi Germany by Wernher Von Braun and his team of rocketeers and the subsequent transfer of the team to the US where they played a major role in the Apollo program to take men to the moon.
2. The decision to drop the atomic bombs on Hiroshima and Nagasaki at the end of WWII, and the important role played by weapons scientists in making that decision possible.
3. The decision to launch the Space Shuttle *Challenger* in January 1986 after warnings that the temperature on the launch pad was too low for safety.

All these decisions required scientists and engineers to face up to social and ethical responsibilities that they had not anticipated. This course does not pass judgment, but introduces students to the complex social contexts in which they will practice as scientists and engineers and explains why fatal decisions were taken — often to be bitterly regretted.

This course fulfills the Core Area E Social Science Requirement and the Georgia Tech Ethics requirement.

Area E Approved Learning Outcome:

- Students will demonstrate the ability to describe the social, political, and economic forces that influence social behavior.

Explain how the course satisfies the learning outcome:

This course focuses on the complex social contexts in which scientists and engineers developed and used radical new technologies and explains why fatal decisions were taken — often to be bitterly regretted.

To meet the Area E learning outcome, students will demonstrate that they

understand the element of contingency in major historical projects involving large technological systems and the importance of economic, political, and ideological factors — as well as of the role of science and technology — in shaping historical change. They will examine the factors that led outstanding scientists and engineers to develop and use revolutionary civil and military technologies in Europe and US during after WWII. Students will demonstrate that they have met Area E outcomes by successfully passing three exams. Class attendance is obligatory.

Course Learning Outcomes:

- Students will describe the major turning points in the history, development, and use of rockets, missiles, bombs, and space craft
- Students will identify the economic, political and ideological forces that shaped the moral responsibility of scientists and engineers.
- Students will understand the dynamics of decision-taking under social and technological conditions of great uncertainty
- Students will critique traditional accounts of the development and use of a variety of weaponry and spacecraft.

Readings.

Prescribed readings will be made available in a course package containing a selection of material from academic journals and scholarly books that students can download before departure.

Pedagogy. The course is taught using power-point slides that present the core material for the subject. Video clips and documentary films are included to enhance the learning experience. Regular readings are the basis for in-class discussion.

Course Requirements

1. Students will do THREE exams during the semester, one at the end of each section of the program. Each exam will combine multiple-choice questions (20 marks) with a short essay (10 marks). (Total 3 x 30 = 90%)
2. Class attendance: 10% (see 'Attendance' below)

Grading scheme: A: 90-100; B: 80 – 89; C: 70 – 79; D: 60 – 69; Less than 60: fail

Attendance: Attendance in class is obligatory. The register will be taken regularly. Two absences without good reason are permitted. After that, each absence from class without good reason is punished by the loss of 2%.

Accommodating disabilities: If you have or acquire any sort of condition that may require special arrangements please let me know as soon as possible so that I can make the necessary arrangements. Proper documentation from the Office of Disability Services is required.

Academic Conduct: All students are expected to conduct themselves in accordance with the policies of the Georgia Tech Honor Code with respect to conduct and academic honesty. Anyone engaging in acts that violate these policies, such as plagiarism or cheating, will be penalized.

John Krige
Kranzberg Professor