

M&AE 4000 /5000
Components and
Systems : Engineering in
a Social Context . (Also
S&TS 4001)

Fall 2009. T & R 2:55- 4:10.
Snee 1150. 3 credits. Can
also be taken as a senior
M&AE design elective (4
credits).

This course addresses at the technical level, broader questions than are normally posed in the traditional engineering curriculum. Through case studies the course investigates interactions between the scientific, technical, political, economic and social forces that are involved in the development of engineering systems.

The course emphasizes the “open endedness” and evolutionary nature of the design process, the distinction between exact and “ball park” calculations, the notions of built in obsolescence and modernity, and the social and political nature of engineering.

The case studies will include:

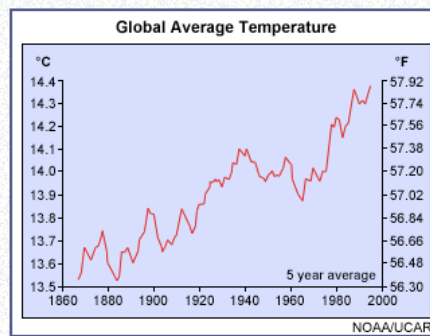
1. Ballistic missile defense systems from the beginning of the nuclear age



to the recent test of the North Korean ballistic missiles . It will include “Star Wars”, the Patriot/Scud encounters during the 1991 Gulf War and the National Missile Defense system.



2. The National Aerospace Plane including its precursors (The Super Sonic Transport and the Concorde) and concepts for routes to space.



3. Transportation, power production and global climate change . The question of whether we will be able to counteract global warming with new net carbon free power sources or whether we will have to deploy devices that mitigate global warming (climate engineering) will be dealt with in detail.

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