

## **Course Description**

In the history of technology, one of the central issues is the tension between innovations in technology and the use society makes of them. The development of new, sophisticated technologies leads to a constant need for finding concepts and means of dealing with these technologies. Innovations which are welcomed as being revolutionary today, may tomorrow be regarded as unusable, or even as dangerous or morally questionable. The importance of technological innovations can thus only be assessed by taking into account the historical context they were developed in.

Conceived as an introduction to the history of technology, this course focuses on the relationship between war and technology. The course should demonstrate how, for over a century, technical innovations - and among them innovations in computer science - have been linked to the idea that they would allow for a more effective conduct of war. Technical solutions have thus been propagated as means of shortening and limiting war in order to decrease the total number of victims.

The following questions shall be discussed during the course: What kind of a picture of technology (and of war) is being created by the media and the politicians presenting technological innovations as solutions for warfare? Which role do engineers and the industry play in this process? What are the interests at stake, and is there a responsibility of engineers or scientists involved in the development process? Is it correct to assume that war contributes to innovation?

The course is structured as follows: After a general introduction to the history of technology, we shall discuss the so-called (1) "modernisation theories" of the 1920's. These theories' authors proposed the use of new technical innovations as a means of overcoming the slaughters produced by trench warfare during the First World War. (2) We will then discuss the relationships between strategy and technology considering Marc Bloch's description of the French defeat in the Second World War as an example. From these earlier developments we will then move on to the (3) Strategic Defense Initiative (SDI) of the Reagan-Administration (1983) and (4) the computer science community's reaction to this Star Wars initiative. The Iraq wars gave rise to a renaissance of the "indirect strategy" and the "economic, life preserving" warfare, both ideas in favour of new technologies which were already advanced in the 1920's. These new means of warfare also include "intelligent" weapons systems and soldiers as remotely guidable objects (5) as well as training by computer games (6). We shall discuss whether they can be interpreted as a "Revolution of Warfare" as proposed by the political scientist E.A. Cohen (1996). The seminar will be wrapped up by a final discussion.