

Science, Technology, and Society (GE 301)

“GEyik”

“GEek”

No well-educated person can be ignorant of the nature of technology and science, and of their drastic influences upon our values, culture, and way of life. Unfortunately, the rigor of science and engineering education leaves little room for reflecting on these matters. This course is designed to initiate students into critical thinking and self education beyond the technical confines of their academic discipline.

Web page Check often: www.ee.bilkent.edu.tr/~ge301

Anything written in this document will be overridden by more recent information posted on the web page.

Instructors Haldun Özaktaş, Electrical Engineering (coordinator). Ahmet Üçer.

Registration details The course is worth 2 units and is required for engineering students.

Textbooks (compulsory) L. S. Hjorth, B. A. Eichler, A. S. Khan, and J. A. Morello. *Technology and Society: A Bridge to the 21st Century*, second edition. Prentice-Hall, New Jersey, 2003.

T. Easton. *Taking Sides: Clashing Views in Science, Technology, and Society*, seventh edition. McGraw-Hill, 2006.

Recommended textbooks:

W. M. Evan and M. Manion. *Minding the Machines: Preventing Technological Disasters*. Prentice-Hall, New Jersey, 2002.

R.E. McGinn. *Science, Technology, and Society*. Prentice-Hall, New Jersey, 1991.

Content The course consists of (i) lectures, invited speakers, and video showings, (ii) compulsory readings, and (iii) optional readings.

Lectures, invited speakers, and video showings Lecture titles and names of invited speakers will be announced on the web page. You are responsible for the content of these in the exams unless otherwise indicated. It may be a good idea to take notes while listening or watching the presentations, in order to have material to study from. If it is indicated that you are not responsible for them, then a signup register will be distributed to check your attendance.

Compulsory readings Compulsory reading material will be assigned on a weekly basis on the course web page. You will be responsible for reading that material before coming to class that week. The exams will measure your mastery of the readings, as well as indicated lectures and seminars.

The compulsory readings will either be made available on the web page or assigned from the compulsory textbooks or other books.

Optional readings The optional readings can be roughly divided into two parts. The first part is of a more general nature and discusses subjects such as: The history and philosophy of science and technology with emphasis on the seventeenth century onwards. The origins of the modern scientific method in the Western world and the consolidation of the scientific world view through the scientific and industrial revolutions. Consequences of scientific advances such as the discovery of the solar system and the laws of mechanics, the theory of evolution and modern genetics, etc. The interplay of science and religion. Social, cultural, and psychological changes induced by the advent of new technologies. Controversies surrounding issues such as euthanasia, genetic selection or modification of offspring, cryo-preservation. Ethical issues and professional responsibilities students may face as citizens or professionals. Review of historical and contemporary critical attitudes towards technology and industrial development, including populist, feminist, environmentalist, religious, and primitivist perspectives.

The second part deals more specifically with information technology and its consequences: Changes in the nature of work. How information technology influences the structure of organizations and society, management, and global economic relations. Information as property and commodity. Issues of security, privacy, reliability, and social control. Effects on human psychology and social relationships. The impact on education.

The list (but not the texts) of optional readings are available from

www.ee.bilkent.edu.tr/~haldun/scitechsoc.read.ps or www.ee.bilkent.edu.tr/~haldun/scitechsoc.read.pdf.

or under the course web page. The readings themselves are available in the reserve section of the library. You are not responsible for them in the exams but they are strongly encouraged.

Logistics and attendance Unless otherwise noted, lectures, invited seminars, and video showings will take place at 13:45–15:30 on Tuesday at Bilkent Concert Hall. Buses will depart from the vicinity of the Engineering Building at 13:40. Return departure from the Music School is at 15:30. The lecture or seminar will begin at 13:50. After this, you will lose 2 percentage points of your attendance for that day for every minute you come late. Example: If you come at 14:10, your attendance for that day will count as 60%. If you come 50 minutes or more late, you will be assumed absent. Naturally, this rule applies only for lectures for which attendance is required, as indicated on the web page.

If you miss more than two events for which attendance is required, a penalty of 1/3 letter grade will be applied for each absence in excess of two. For instance, if you would normally get a B from the course but you have 3 absences, you will get B–. The two absence allowance is for medical conditions and other similar situations. Medical reports will be considered only if they cover at least three such events. Medical reports covering only one or two events will not be considered.

When attendance is taken, be sure to sign your name on dated and validated signup sheets provided by us, not on any other piece of paper.

Examinations There will be a midterm and a final, both consisting of short-answer questions. They will both be of 50% weight. The final will not cover material covered in the midterm. Both exams will cover (i) the compulsory reading materials and (ii) the indicated seminars or lectures or videos.

Open book and notes: You should bring the compulsory textbook but no other books. You may bring one dictionary if you feel you may need it. You should bring printouts (or photocopies of printouts) of compulsory reading material posted on the web page and included in the exam. You may not bring any other printed material or photocopies, including notes you or someone else typed or wordprocessed. You may bring any original handwritten notes in your handwriting, but not mechanically reproduced or carbon copies of handwritten notes. (If you want to benefit from someone else's notes, you should copy them in your own handwriting.)

Sharing any materials during the exam is strictly prohibited. In particular you will not be allowed to share books, notes, dictionaries, paper, pens, pencils, erasers, pencil sharpeners, or other mechanical or electronic tools or equipment. In fact, you are not allowed to have any electronic equipment with you other than a wristwatch; if you have them, keep them inside your bags or coats.

You will not have the time to read the material during the exams.

If you have a medical report or similar documents approved by the University, photocopies of official reports and permissions must be turned in to the assistant designated for this purpose. Making every effort not to be ill or having an accident during the exams will be to your advantage.

Office hours Please try to keep to the announced office hours. Course assistants will be available once a week to help you and answer your questions etc. Please respect their hours as well. This is a very crowded course, so please help us manage it well by addressing questions by e-mail first to a course assistant from your department and if you cannot obtain a satisfactory answer, to the course instructor.

Criticism and feedback is most welcome. If you wish, you may write them anonymously.