Course Syllabus

Subject	Science, Technology and Society		
Degree	INDUSTRIAL ENGINEERING INTERNATIONAL SEMESTER		
	TRANSVERSAL COURSE FOR THE SEVEN BACHELOR'S DEGREES TAUGHT IN INDUSTRIAL ENGINEERING		
Code	75001		
Semester	Second semester		
Type	Optional		
ECTS credits	6		
Lenguage	English		
Teaching staff (contact information)	*Name*	*Location*	*email*
	Santiago Cáceres	Office 1.14 (Paseo del Cauce, 59)	*sancac@eii.uva.es*
Departments	Electronic Technology (Tecnología Electrónica)		

1. Sense of the Course

1.1 Contextualization

This course offers an introduction to Science and Technology Studies. It will introduce you to the multiple ways in which science and technology, individuals and institutions mutually shape one another to the benefit and sometimes detriment of society. In this course, we take a “critical” approach to science and engineering. By this, we don’t mean being negative about technology. We want you to consider just what kind of world you would like to create through your engineering and scientific work.

We would like you to recognize that nearly all of the judgments we make about science and technology have their subjective components. Who benefits? Who gets left behind? What is progress and how do science and technology contribute to or detract from our higher goals? Also, what makes new technologies exciting?

1.2 Relationship with other subjects

1.3 Recommended Prior Knowledge

No previous knowledge is necessary to understand the content of the course

2. Competences

2.1 Generic competences

The student will be able to:

- Understand professional and ethical responsibility
- Understand the impact of engineering solutions in a global, economic, environmental, and societal context.
- Understand the need to consider environmental and social impact in the process of designing a system, process, component, or service.

2.2 Specific competences

- Understand the relationship between science, technology and society

3. Course goals

Learning objectives

At the end of the course, students should be able to:

1) Explain the social and, up to certain point, environmental implications of design, construction, operation, discard and management of technology systems throughout its life cycle.
2) Understand economic, environmental, cultural, political, gender and military issues and impacts associated with technology systems at a broad cultural and geographical level and extending on a global scale.

4. Learning Units

Unit 1: Science, Technology and Society

Workload in credits ECTS: 6

a. Course goals

- Explain the social and, up to certain point, environmental implications of design, construction, operation, discard and management of technology systems throughout its life cycle.
- Understand economic, environmental, cultural, political, gender and military issues and impacts associated with technology systems at a broad cultural and geographical level and extending on a global scale.

b. Contents

a) Science, technology and culture: concept and relationship
b) Technology assessment: Social Life Cycle Assessment (SLCA), public participation
c) Science, Technology and Society (STS): historical perspective
d) Shaping and control of technology (policies)
e) Alternative technologies
f) Ethics, gender, militarism…

c. Bibliography

1. Allenby, B. R. (2012). The theory and practice of sustainable engineering. Upper Saddle River, NJ: Pearson Prentice Hall.
2. Volti, R. (2013). *Society and Technological Change*. New York: Worth Publishers.
3. Johnston, S., Gostelow, P., & King, J. (1999). *Engineering and Society: Challenges of Professional Practice* (1st edition). Upper Saddle River, NJ: Prentice Hall.
4. Huesemann, M., & Huesemann, J. (2011). *Techno-fix: why technology won't save us or the environment*. Gabriola Island, B.C.: New Society Publishers.
5. Neil Browne, & Keeley, S. M. (2014). *Asking the Right Questions*. Boston: Longman.

d. Timing

ECTS CREDITS	EXPECTED DEVELOPMENT PERIOD
6	February to May

5. Teaching and Learning Methods

- Lectures with active student participation
- Video watching and non-structured discussion
- Readings at home and discussion in class
- Research paper and oral presentation

6. Dedication of the student to the subject

PRESENTIAL ACTIVITIES	HOURS	NON PRESENTIAL ACTIVITIES	HOURS
Lectures and discussion	40	Assignments (term research paper)	75
Video watching and discussion	16	Readings	15
Term paper oral presentation	4		
Total presential	**60**	**Total non presential**	**90**

7. Activities evaluated and grading system

- **Research Paper (60%)** A formal description of the paper assignment will be distributed at the appropriate time. The written paper and an oral presentation of the work developed accounts for 60% of the total grade.
- **Final Exam (30%)** You will be required to show knowledge of course concepts and ideas by successfully passing a written exam. The exam will take place on scheduled by Faculty members and must be completed in two hour long sitting anytime during the specific exam period. This exam will count for 30% of your grade.
- **Class participation (10%)** Social knowledge differs from technical knowledge in that it requires active engagement and participation. Class participation is a component of your grade. Attendance in class does not constitute class participation. Emphasis will be placed on your individual contribution to the quality of class discussion.

8. Additional Considerations