Course guide
240660 - 240660 - Debates on Technology and Society

Unit in charge:	Barcelona School of Industrial Engineering
Teaching unit:	756 - THATC - Department of History and Theory of Architecture and Communication Techniques.

Degree:	BACHELOR'S DEGREE IN INDUSTRIAL TECHNOLOGY ENGINEERING (Syllabus 2010). (Optional subject).

Academic year: 2024   **ECTS Credits:** 3.0   **Languages:** English

LECTURER

Coordinating lecturer:	MARTA AGUILAR PEREZ
Others:	Marta Aguilar

PRIOR SKILLS

Students taking the course should at least have an Upper-Intermediate level (B.2.2) or above.

DEGREE COMPETENCES TO WHICH THE SUBJECT CONTRIBUTES

Transversal:
1. EFFICIENT ORAL AND WRITTEN COMMUNICATION. Communicating verbally and in writing about learning outcomes, thought-building and decision-making. Taking part in debates about issues related to the own field of specialization.
2. SUSTAINABILITY AND SOCIAL COMMITMENT. Being aware of and understanding the complexity of social and economic phenomena that characterize the welfare society. Having the ability to relate welfare to globalization and sustainability. Being able to make a balanced use of techniques, technology, the economy and sustainability.
3. THIRD LANGUAGE. Learning a third language, preferably English, to a degree of oral and written fluency that fits in with the future needs of the graduates of each course.
4. EFFICIENT ORAL AND WRITTEN COMMUNICATION. Communicating verbally and in writing about learning outcomes, thought-building and decision-making. Taking part in debates about issues related to the own field of specialization.
5. THIRD LANGUAGE. Learning a third language, preferably English, to a degree of oral and written fluency that fits in with the future needs of the graduates of each course.
6. TEAMWORK. Being able to work as a team player, either as a member or as a leader. Contributing to projects pragmatically and responsibly, by reaching commitments in accordance to the resources that are available.
7. EFFECTIVE USE OF INFORMATION RESOURCES. Managing the acquisition, structure, analysis and display of information from the own field of specialization. Taking a critical stance with regard to the results obtained.

TEACHING METHODOLOGY

The course draws on the following methodologies:
-Explanatory lectures that allow for participation
- Case Study: After Reading texts, different connotations and interpretations of technology will be analyzed, evaluated and debated. Technology and its interrelationship with culture, society and western technological development will be analyzed (idea of progress linked to technological progress).
Discussions and debates. The Socratic debate.
-Role-play. Individual written reports at the end of every topic.

LEARNING OBJECTIVES OF THE SUBJECT

- Describe, analyze and debate on technology, not as a neutral force but as a powerful human activity enmeshed in humans affairs and society in general.
- Develop critical thinking skills among students by means of the analysis and argumentation of Anglosaxon philosophers, historians, writers, etc from the humanities. Apply these theories from the humanities.
- Learn to discern among philosophy theories and sociology of science theories (e.g. Science, Technology and Society, STS) that can help us interpret ethic and les ethic issues in technology.

Secondary objective:
- Indirectly, identify and become aware of the English argumentative rhetoric and discourse and apply this discourse in order to participate in debates and discussions: express, exchange, defend or refute opinions in a convincing and appropriate way in English. Compare singularities and cultural differences.

STUDY LOAD

Type	Hours	Percentage
Hours large group	30,0	40.00
Self study	45,0	60.00

Total learning time: 75 h

CONTENTS

1. Science, technology and Society (STS) discipline and the role of humanities and social sciences according to the school

Description:
Description and introduction to STS in general and its main tenets from the perspective of sociology of science and the humanities. The two mainstream theories (techno-optimist and techno-pessimist)

Full-or-part-time: 1h
Theory classes: 1h

2.On the meaning of technology and progress from the Enlightenment until the XX century. Development in weaponry and the nuclear path. The Manhattan Project and Cold War technology.

Description:
Introduction to Science, Technology and Society Studies and their evolution, drawing on the concept of technological progress from the 18th century to our current days (particularly in the USA). The Manhattan Project: scientists' dilemma to drop the bomb, Oppenheimer and Cold War, our nuclear age. A Worksheet used as a guide to write an essay: summarise and assess selected sources in writing.

Related activities:
Relative to the Manhattan Project theme, students will carry out the Worksheet.

Related competencies :
04 COE. EFFICIENT ORAL AND WRITTEN COMMUNICATION. Communicating verbally and in writing about learning outcomes, thought-building and decision-making. Taking part in debates about issues related to the own field of specialization.
02 SCS. SUSTAINABILITY AND SOCIAL COMMITMENT. Being aware of and understanding the complexity of social and economic phenomena that characterize the welfare society. Having the ability to relate welfare to globalization and sustainability. Being able to make a balanced use of techniques, technology, the economy and sustainability.
03 TLG. THIRD LANGUAGE. Learning a third language, preferably English, to a degree of oral and written fluency that fits in with the future needs of the graduates of each course.
05 TEQ. TEAMWORK. Being able to work as a team player, either as a member or as a leader. Contributing to projects pragmatically and responsibly, by reaching commitments in accordance to the resources that are available.

Full-or-part-time: 30h
Theory classes: 9h
Practical classes: 6h
Self study : 15h

3-Whose nature?: environmentalism views. The energy and environmental debate.

Description:
The dabte on nature, the environment and energy according to William Cronon. The role of culture and the humanities in the defence of the environment.

Full-or-part-time: 29h
Theory classes: 9h
Practical classes: 5h
Self study : 15h

4.Information Technologies and society

Description:
Brief overview of the development of information technologies, their impact on and relationship with: a) society (mass media, company-related, state/military-related), and b) individual citizen (communication, human relationships, etc.).

Related activities:
Two reports on the topic of Information Technologies. One based on data privacy and the other on the influence on human relationships and communication.

Full-or-part-time: 1h
Theory classes: 1h

5.Roboethics. Ethics in technology through a distopian novel on robotics.

Description:
The reading and further analysis of the distopian novel written by roboticist Carme Torras (The Vestigial Heart), by menas of already existing pedagogic materials that have been adapted to the engineering student are the departure point to introduce the topic of ethics and analyse, reflect and debate on very current topics.

Specific objectives:
Ethics in robotics will be covered by reading the distopian novel "The Vestigial Heart" by C. Torras and using her MIT materials.

Full-or-part-time: 2h
Theory classes: 2h

ACTIVITIES

STUDENTS WILL HAVE TO DELIVER TO ORALLY SUMMARIZE SOME OF THE LECTURES OR VIDEOS THEY HAVE CHOSEN TO READ-SEE. THEY WILL ACT AS SPRINGBOARDS FOR DISCUSSION AND DEBATES.

Description:
The students will choose the topic and readings or videos assigned for that topic and will then write a written essay, following the guidelines in the worksheet (students will have to summarize and comment on the ideas present in the texts-videos).

Full-or-part-time: 15h
Self study: 15h

ORAL PRESENTATION

Description:
The students will choose the topic and readings or videos assigned for that topic and will then write a written essay, following the guidelines in the worksheet (students will have to summarize and comment on the ideas present in the texts-videos).

Full-or-part-time: 10h
Self study: 10h

GRADING SYSTEM

-Written Essay (Worksheet): 10%
-Final Exam: 30%
-Quizz on mainstream theories and oral presentation of the work on distopian novel The Vestigial Heart: 10%
-Participation in class and debates and tasks, writing of argumentative pieces (on scholarly texts, interviews and videos): 50%

EXAMINATION RULES.

The exam will be entirely in English, as the whole course, but access to online and paper dictionaries will be given to those students who need a given word.

BIBLIOGRAPHY

Basic:

- Ginés, M. The Meaning of technology : selected readings from American sources [on line]. Barcelona: Edicions UPC, 2003 [Consultation: 12/09/2022]. Available on: https://upcommons.upc.edu/handle/2099.3/36674. ISBN 8483017334.
- Carme Torras. The Vestigial heart : a novel of the robot age [on line]. Cambridge, Ma: MIT Press, 2018 [Consultation: 18/09/2020]. Available on: https://ebookcentral.proquest.com/lib/upcatalunya-ebooks/detail.action?docID=6246568. ISBN 9780262037778.
- Nyholm, Sven. This is technology ethics : an introduction. Hoboken, New Jersey: Wiley Blackwell, 2023. ISBN 9781119755579.
- Felt, U.; Fouché, R.; Miller, C. A.; Smith-Doerr, L. The Handbook of science and technology studies [on line]. 4th ed. Cambridge, Massachusetts ; London, England: The MIT Press, 2017 [Consultation: 19/09/2024]. Available on: https://web-p-ebscohost-com.recursos.biblioteca.upc.edu/ehost/ebookviewer/ebook?sid=26b23df8-87ac-4318-ab61-e4cd8c913314%40redis&vid=0&format=EB. ISBN 9780262035682.

RESOURCES

Other resources:

Materials posted on Atenea.