| Program | 59EC – Communications Electronic Engineering B. Eng. |
|---|---|
| | 59SC – Telecommunications Systems Engineering B. Eng. |
| | 59SO – Sound and Image Engineering B.Eng. |
| | 59TL – Telematics Engineering B. Eng. |

| Course code and name | |
|---|---|
| Code | 595044117 |
| Name | Science, Technology and Society |
| Semester | S3 [(September-January)] & S4 [(February-June)] |

| Credits and contact hours | |
|---|---|
| ECTS Credits | 3 |
| Contact hours | 30 |

| Coordinator's name | Portillo Aldana, Eloy [eloy.portillo@upm.es] |
|---|---|

| Specific course information | |
|---|---|

| Tuition language | Spanish |
|---|---|

**Description of course content**

The course aims to promote the reflection on the interactions between current society and technological development. Scientific and technological revolutions are studied from the XVI century to the current day, analyzing some of the environmental, cultural and social problems of the technification. Controversial aspects related to ICTs and the human rights will be discussed, furthermore the awareness about the professional responsibility of engineers in their activity impacts on society. The SDGs of the United Nations Horizon 2030 are also studied. Some particularly interesting case studies, such as the relationships between finance and technology or the interdisciplinary work.

**List of topics to be covered**

1. Ecological and social sustainability.
      1.1. Development cooperation.
2. Scientific and technological revolutions
      2.1. Science policy
3. ICT, ethics and human rights
      3.1. Codes of ethics in the ICT sector
4. Social technology use cases.

**Prerequisites or co-requisites**

- None

**Course category in the program**

| ☑ R (required) | ☐ E (elective) |
|---|---|
| | *(elective courses may not be offered every year)* |

| Specific goals for the course |
| --- |

| Specific outcomes of instruction |
| --- |
| • RA192 – To find the right required information.<br>• RA193 – To analyze the information and to discard the irrelevant one.<br>• RA196 – To appreciate the exactitude of the information source.<br>• RA195 – To check the ideas from different sources.<br>• RA197 – To link the scientific-technological aspects within an increasing-complexity social environment: social, economic, political, legal, ethical and environmental point of view.<br>• RA194 – To process the information from different sources and properly synthesize. |

| Further reading and supplementary materials |
| --- |
| – La estructura de las revoluciones científicas. T. Kuhn.<br>– Ética para ingenieros, Bilbao, C. Fuentes, J. Guibert, J. M. Ed.Desclee de Brouer. Bilbao.<br>– IEEE Ethics and Member Conduct. http://www.ieee.org/about/ethics.html<br>– CUTCLIFFE, Stephen H. (2003): Ideas, máquinas y valores. Anthropos, Barcelona.<br>– MEDINA, M. y SANMARTÍN, J. (eds.) (1990): Ciencia, tecnología y sociedad, Anthropos, Barcelona.<br>– VIRILIO, Paul (2003): Paul Virilio y los límites de la velocidad, Campo de<br>– Ideas, Madrid.<br>– Wright, D. (2011). A framework for the ethical impact assessment of information technology. Ethics and Information Technology, vol. 13.3, pp. 199-226.<br>– La Ingeniería Informática: Aspectos éticos, jurídicos y sociales. Anguera.<br>– A., Davara, E., Fernández, C., Miñano, R. Editorial Universitas, S.A. Madrid 2012.<br>– Moodle. |