

Scientific Communication

Code: 106235
ECTS Credits: 6

Degree	Type	Year	Semester
2504235 Science, Technology and Humanities	OB	2	1

Contact

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Use of Languages

Principal working language: spanish (spa)
Some groups entirely in English: No
Some groups entirely in Catalan: No
Some groups entirely in Spanish: No

External teachers

Carlos José Elías Pérez

Prerequisites

There are none.

Objectives and Contextualisation

One of the major problems of modern society is that scientific and technological production is increasing exponentially and, nonetheless, people are more and more removed from knowledge of these advances because we do not have the ability to take them in with the speed with which they occur. One way to reduce this difference is to publish this information in the media. That is precisely why the aim of this course is to provide students with the basic tools necessary to handle scientific and technological news. The programme not only includes aspects of journalistic writing, but it also aims to place the subject within a context of science, technology and society.

A relevant part of the course will address the relationship between science, technology, media and public opinion. The aim is for the student to understand that behind social changes there is always a technological and scientific change.

Competences

- Develop and communicate orally and in writing the objectives and results of research projects on science, technology and society, using techniques for managing scientific information.
- Develop and evaluate interdisciplinary projects that combine scientific, technological and humanistic knowledge and encourage citizens' involvement in matters related to science and technology in society.
- Innovate in the methods and processes of this area of knowledge in response to the needs and wishes of society.
- Make critical use of digital tools and interpret specific documentary sources.
- Work collaboratively in teams.

Learning Outcomes

1. Correctly use databases and bibliographic, encyclopaedic and lexicographical reference works in the health sciences.
2. Critically analyse recent science news in the Media.
3. Critically evaluate and use biomedical information sources to obtain, organise, interpret and communicate science and health information.
4. Identify the functions of research ethics committees.
5. Produce papers as part of a group.
6. Produce papers on science and technology communication that include a humanistic perspective.

Content

Topic I: Science as an object of communication

Topic II: Science and the public sphere.

Topic III: Sources in science communication

Topic IV: Scientific journals and their media effect

Topic V: Snow's "two cultures" and their effect on science communication

Topic VI: Science in the mainstream media culture.

Topic VII: Media genres applied to public communication of science and technology

Topic VIII: Science and journalism as tools against fake news.

Topic IX: Science and technology communication as a profession

Topic X: Scientific communication as an object of research

Methodology

Students must write scientific news using all the journalistic genres: report, interview, chronicle, bibliographic summary, news, etc. There will also be comparative analysis of the science sections of different newspapers.

Seminar

The students must follow seminars on scientific topics which tend to be newsworthy and which generally correspond to the book *Science Through Journalism*, mentioned in the bibliography. These transversal topics that might be included, among others:

- Space and the Solar System. Concepts. The International Space Station and the missions to Mars.
- The Earth: its formation and the tectonic plates. Volcanism and earthquakes
- Life: concepts on the appearance of life on Earth, embryonic stem cells. Cloning.
- Ecology and environment. The greenhouse effect, disappearance of the ozone layer and climate change.
- Diet: Food crises. "Mad Cow" Disease, information about rapeseed oil, etc.
- Matter and energy: Nuclear fusion and fission. The ITER project. Oil: information about oil spills.
- Scientific policy. National R+D plans, Spanish research in the CSIC and universities. Brief introduction to the history of Spanish science.
- Pandemics and health crises.

Annotation: Within the schedule set by the centre or degree programme, 15 minutes of one class will be reserved for students to evaluate their lecturers and their courses or modules through questionnaires.

Activities

Title	Hours	ECTS	Learning Outcomes
Type: Directed			
Learning exercises	16	0.64	2, 6, 5, 1, 3
Lectures	33	1.32	2, 4, 3

Type: Supervised

Essay supervision	4.25	0.17	2, 6, 5, 1, 3
Type: Autonomous			
Seminars and personal study	94.75	3.79	2, 6, 4, 1, 3

Assessment

Students must attend 80% of the practice and deliver them on time. The practice mark will count 50% of the final grade as long as the theoretical part is approved, which will count the remaining 50%.

The evaluation of the practice will be carried out through the continuous evaluation process in which the students will follow various activities guided by the lecturer. The evaluation of the theoretical content will be carried out through two exams.

In the event of a student committing any irregularity that may lead to a significant variation in the grade awarded to an assessment activity, the student will be given a zero for this activity, regardless of any disciplinary process that may take place. In the event of several irregularities in assessment activities of the same subject, the student will be given a zero as the final grade for this subject.

Assessment Activities

Title	Weighting	Hours	ECTS	Learning Outcomes
Partial exam 1	50%	2	0.08	2, 4, 3
Practical exercises 1	25%	0	0	2, 6, 5, 1, 3
Practical exercises 2	25%	0	0	2, 6, 5, 1, 3

Bibliography

Bauer, Martin y Bucchi, Massimiano (eds.). *Journalism, Science and Society*. London and New York: Routledge, 1997.

Bucchi, Massimiano y Brian Trench (eds.). *Handbook of Science Communication*. London and New York: Routledge, 2008.

Elías, Carlos. *Fundamentos de Periodismo Científico y Divulgación Mediática*. Madrid: Alianza Editorial, 2014.

Elías, Carlos. *El selfie de Galileo. Software social, político e intelectual del siglo XXI*. Barcelona: Península, 2015.

Elías, Carlos. *La ciencia a través del periodismo*. Madrid: Nivola, 2003.

Elías, Carlos. *Science on the Ropes. Decline of Scientific Culture in the Era of Fake News*. Cham: Springer-Nature, 2019.

Gregory, Jane; Miller, Steve. *Science in Public. Communication, Culture and Credibility*. London: Basic Book, 1998.

Weingart, Peter; Huppau, Bernd. *Science Images and Popular Images of the Sciences*. London: Routledge, 2007.

Bibliografía complementaria

Bucchi, Massimiano. *Beyond Technocracy. Citizens, Politics, Technoscience*. New York: Springer, 2009.

Elías, Carlos. *La razón estrangulada. La crisis de la ciencia en la sociedad contemporánea*. Madrid y Barcelona: Debate - Penguin Random House, 2008.

Jassanoff, Sheila. *The Fifth Branch: Science Advisers as Policy Makers*. Cambridge, MA: Harvard University Press, 1990.

Kalantzis-Cope, Phillips; Gherab-Martin, Karim. *Emerging Digital Spaces in Contemporary Society. Properties*

of Technology. New York: Palgrave Macmillan, 2011.

León, Bienvenido (coord.). *Ciencia para la televisión. El documental científico y sus claves*. Barcelona: UOC, 2010.

Recursos electrónicos básicos

Cátedra Jean Monnet Chair "EU, Disinformation & Fake News": https://www.uc3m.es/investigacion/catedras-investigacion/jean-monnet-chair-eu-disinformation-fake-news

Racionalidad y contraconocimiento. Epistemología de la detección de falsedades en relatos informativos: http://portal.uned.es/portal/page?_pageid=93,70585545&_dad=portal&_schema=PORTAL

Asociación Española de Comunicación Científica: <https://www.aecomunicacioncientifica.org/>

EUREKALERT. Web de la AAAS: <http://www.eurekalert.org/> - NASA . web de la NASA: <http://www.nasa.gov/>

Nature: <http://www.nature.com/>

World Health Organization. Risk Communication Resources:

https://www.who.int/ihr/publications/risk_communications/en/

Software

No specific software is required.