

Scientific Communication

Code: 106235
ECTS Credits: 6

2024/2025

Degree	Type	Year
2504235 Science, Technology and Humanities	OB	2

Contact

Name: Francesc Xavier Roque Rodriguez

Email: xavier.roque@uab.cat

Teachers

(External) Carlos José Elías Pérez

Teaching groups languages

You can view this information at the [end](#) of this document.

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.

- Make critical use of digital tools and interpret specific documentary sources.
- Recognise the political, social and cultural dimension of science and technology development in the different historical periods.
- Work collaboratively in teams.

Learning Outcomes

1. Critically analyse recent science news in the Media.
2. Critically evaluate and use biomedical information sources to obtain, organise, interpret and communicate science and health information.
3. Identify and critically analyse the relationships between power, productive system and technological development.
4. Produce papers as part of a group.
5. 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

Activities and Methodology

Title	Hours	ECTS	Learning Outcomes
Type: Directed			
Learning exercises	16	0.64	1, 5, 4, 2
Lectures	33	1.32	1, 2
Type: Supervised			
Essay supervision	4.25	0.17	1, 5, 4, 2
Type: Autonomous			
Seminars and personal study	94.75	3.79	1, 5, 2

The students will have to write scientific information using the journalistic genres: report, interview, chronicle, news, etc. They will also write essays on communication and science.

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.

Assessment

Continuous Assessment Activities

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

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 one exam.

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.

On carrying out each evaluation activity, lecturers will inform students (on Moodle) of the procedures to be followed for reviewing all grades awarded, and the date on which such a review will take place.

In order to take part in the retake, the student must have been previously assessed in a set of activities whose weight is equivalent to a minimum of 2/3 of the total grade (continuous assessment) or have submitted all the activities foreseen (single assessment).

Single assessment

Students who opt for a single assessment will have to sit the theory exam and present two of the practical activities planned for the course. As in the continuous assessment, the weight of the exam will be 50% of the final mark and 25% for each practical activity. The recovery in the single assessment will consist of another final exam. For this, the student will have to hand in the two mandatory practical activities mentioned above.

Bibliography

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- Broncano, Fernando. *Espacios de intimidad y cultura material*. Madrid: Cátedra, 2020.
- 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.
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- Gregory, Jane; Miller, Steve. *Science in Public. Communication, Culture and Credibility*. London: Basic Book, 1998.
- León, Bienvenido. *Grandes comunicadores de la Ciencia: de Galileo a Rodríguez de la Fuente*. Granada: Comares, 2024.
- McLuhan, Marshall. *Comprender los medios de comunicación. Las extensiones del ser humano*. Barcelona: Paidós, 1996.
- Noguera Vivo, José Manuel. *Gestión de la Comunicación Científica*. Barcelona: UOC, 2022.
- Weingart, Peter; Huppau, Bernd. *Science Images and Popular Images of the Sciences*. London: Routledge, 2007.

Bibliografía complementaria

- Broncano, Fernando. *Sujetos en la niebla. Narrativas sobre la identidad*. Barcelona: Herder, 2013.
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- Casals Carro, María Jesús. *Periodismo y sentido de la realidad. Teoría y análisis de la narrativa periodística*. Madrid: Fragua, 2005.
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- 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.
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- Marcos, Alfredo. *Una filosofía práctica de la ciencia*. Ciudad de México: Fondo de Cultura Económica, 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.

Language list

Information on the teaching languages can be checked on the CONTENTS section of the guide.

PROVISIONAL