

Degree programme	Type	Course
Nanoscience and Nanotechnology	OP	4

Contact lecturer

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Teaching staff

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Group languages

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

Prerequisites

There are none.

Objectives

This subject aims to help students learn about and become familiar with different types of science communication, while also acquiring a critical understanding of its history and of the different "actors" involved in it. Science is therefore presented as a dynamic process of mutual interaction between scientists and the public, without a clear-cut separation between experts and laypeople. Throughout the course, students will be provided with tools for reflecting on the content of science communication and popularization, while also analyzing its mechanisms and formats.

Learning outcomes

- CM29 (Assess sex and gender inequalities in terms of both access to and the application of nanotechnology.) Assess sex and gender inequalities in terms of both access to and the application of nanotechnology.
- KM49 (Identify the various philosophical, ethical and sociological approaches to science and technology and identify how they have evolved over time.) Identify the various philosophical, ethical and sociological approaches to science and technology and identify how they have evolved over time.
- KM51 (Describe the fundamental aspects involved in managing and protecting the knowledge of scientific results.) Describe the fundamental aspects involved in managing and protecting the knowledge of scientific results.
- SM42 (Use tools from the fields of journalism and information to synthesise, critically analyse and

communicate research results and current issues on science and society.) Use tools from the fields of journalism and information to synthesise, critically analyse and communicate research results and current issues on science and society.

Contents

Training/learning activities:

The course will begin with an introductory session describing its characteristics and features, as well as its assessment method. The rest of the sessions are divided into two units, the first related to scientific culture and the second related to science stories.

In the first unit, the framework of scientific culture is developed as a constructivist model in which science communication is treated as an integral practice within the scientific production of knowledge. In this unit, students will survey and analyse various scientific cultures based on literature related to the historical 'discontents' of science communication, a consideration of various models of science communication and a critical reflection on subalterneity and the dynamics of local and global practices of cultural production.

In the second unit, students will learn to study scientific communication through the lens of storytelling and textual analysis. In this unit, students will be presented with various forms of narrative and media-based techniques for scientific communication, including museology, cinema, and popular representations such as those found in science fiction. Case studies will include an in-person visit to the CosmoCaixa science center in Barcelona.

Presentation of the course

Introduction to Scientific Cultures

El Malestar de la Cultura Científica

Models of Scientific Communication

Subaltern Scientific Cultures

Journalism or divulgation: Science in the press

Scientific Cultures of the UAB

Local Science

Science Reports Presentation

Introduction to Science Stories

Textual Analysis

Science Fiction

Audiovisual Science: cinema, television, and documentaries

Museology and Semiotekniks

Visit to the CosmoCaixa

Activist Science

Project Presentations

Conclusions

Learning activities and methodology

Title	Hours	ECTS	Learning outcomes
Theoretical-Practical Classes	50	2	CM29, KM49, KM51, SM42
Homework	50	2	CM29, KM49, KM51, SM42
Tutoring and preparation of projects	50	2	CM29, KM49, KM51, SM42

In addition to providing the student with the necessary theoretical tools, this subject aims to have an eminently practical orientation. During the first unit, on scientific culture, students will engage with science communication initiatives specific to the UAB, contributing a journalistic article to the student news platform *UAB Media*. The article will be done in groups, constituting a review of scientific culture while also serving to shine a spotlight on local initiatives of the UAB.

During the second unit, on science stories, students will complete an individual analysis of an existing science communication while engaging with concepts presented in the course. In addition, students will develop and present a design for an original science communication using narrative elements and semiotiques in dialogue with course content. These activities will be evaluated through the use of draft revisions, in-class presentations, and graded final submissions.

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.

Title	Hours	ECTS	Learning outcomes
Classes Teòrico-Pràctiques	150	6	CM29, KM49, KM51, SM42

- CM29 (Competència) Avaluar les desigualtats per raó de sexe/gènere tant en l'accés com en l'aplicació de la nanotecnologia.
- KM49 (Coneixement) Identificar les diverses concepcions filosòfiques, ètiques i sociològiques sobre la ciència i la tecnologia i reconèixer-ne l'evolució al llarg de la història.
- KM51 (Coneixement) Descriure els aspectes fonamentals de la gestió i la protecció del coneixement de resultats científicotècnics.
- SM42 (Habilitat) Utilitzar les eines del periodisme i la informació per a sintetitzar, analitzar críticament i comunicar resultats de projectes d'investigació i temes d'actualitat sobre ciència i societat.

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	Weight	Hours	ECTS	Learning outcomes
Final written exam	30%	0	0	CM29, KM49, KM51, SM42
Participation	20%	0	0	CM29, KM49, KM51, SM42
Science culture report	20%	0	0	CM29, KM49, KM51, SM42
Textual analysis of a communication	15%	0	0	CM29, KM49, KM51, SM42
Design of a communication	15%	0	0	CM29, KM49, KM51, SM42

Continuous-assessment activities	Weighting for the Ordinary Examination Session	Weighting for the Extraordinary Examination Session
Final written exam	30%	60%
Science culture report	20%	
Textual analysis of a communication	15%	40%
Design of a communication	15%	
Participation	20%	

Final written exam

The final written exam will include questions related to science communication and to the theoretical aspects presented throughout the course. Students will also be required to comment critically on some examples of science communication in different formats.

Science culture report and textual analysis of a communication

Students must write two essays over the course of the semester. The first will be a report, completed in groups, on an example of science culture at the UAB. The second will consist of an individual analysis of approximately 1,000 words on a scientific communication. In both assignments, students must take into account the theoretical framework of the course, the readings, and the content addressed in class.

Design of a communication

Students must prepare a proposal for a science communication project using any communication medium. During a ten-minute presentation, they will present their proposal and place it in dialogue with the critical methods discussed in class. The presentation will be followed by a brief time for questions.

Participation

Active participation will be assessed in seminar sessions devoted to discussion of selected theoretical and practical aspects of science communication.

This subject allows the use of AI technologies as an integral part of the submitted work, provided that the final result reflects a significant contribution from the student in terms of analysis and personal reflection. The student must clearly (i) identify which parts have been generated using AI technology; (ii) specify the tools used; and (iii) include a critical reflection on how these have influenced the process and final outcome of the activity. Lack of transparency regarding the use of AI in the assessed activity will be considered academic dishonesty; the corresponding grade may be lowered, or the work may even be awarded a zero. In cases of greater infringement, more serious action may be taken.

Bibliography

Bibliography

BASIC TEXTS

Bucchi, Massimiano, Brian Trench (eds.) Routledge Handbook of Public Communication of Science and Technology; Second edition. London: Routledge, 2014

Gregory, Jane; Miller, Steve, Science in Public Communication, Culture and Credibility. New York: Basic Books, 1998

Nieto-Galan, Agustí, Los públicos de la ciencia. Expertos y profanos a través de la historia. Madrid: Marcial Pons, 2011. Puedes descargar el libro completo: <https://ddd.uab.cat/record/188614>

Shinn, Terry; Whitley, Richard (eds.). Expository Science. Forms and Functions of Popularization. Dordrecht: Reidel, 1985.

Thompson, John B., Los media y la modernidad: una teoría de los medios de comunicación. Barcelona: Paidós, 1998, 2003, 2007 (orig. 1995).

COMPLEMENTARY TEXTS

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Callon, Michel, "The role of lay people in the production and dissemination of scientific knowledge", Science, Technology and Society, 1999; 4(1): 81-94.

Carandell, Miquel, The Orce Man. Controversy, Media and Politics in Human Origins Research. Leiden: Brill, 2021.

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Nieto-Galan, Agustí, Science in the Public Sphere. A History of Lay Knowledge and Expertise. London: Routledge, 2016.

Strasser, Bruno; Baudry, Jérôme; Mahr, Dana; Sanchez, Gabriela; Tancoigne, Élise. "'Citizen Science'? Rethinking Science and Public Participation', Science & Technology Studies, 2019; 32(2): 52-76.

Tabernero, Carlos, Terapias de cine : 50 películas básicas en torno a la medicina Barcelona : Editorial UOC, 2016.

Tabernero, Carlos, La venganza de la naturaleza : 50 narrativas en torno al medio ambiente. Barcelona : Universitat Oberta de Catalunya, febrero 2021.

Software

Word processing software and access to the campus virtual (online) are recommended for this course.

Course groups and languages

The information provided is provisional until November 30. After this date, you will be able to consult the language of each group through this [link](#). To access the information, you will need to enter the course CODE