

Science, Technology and Society Seminar

Code: 100295
ECTS Credits: 6

2024/2025

Degree	Type	Year
2500246 Philosophy	OT	3
2500246 Philosophy	OT	4

Contact

Name: Agusti Nieto Galan
Email: agusti.nieto@uab.cat

Teaching groups languages

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

Prerequisites

This optional subject is intended for Philosophy students who are already in the final part of their degree (3rd and 4th year) and who have a special interest in thinking about the problems of our present from an interdisciplinary perspective. Knowledge of the English language is recommended at the level of reading comprehension. Fortunately, however, the bulk of the readings can be done in Spanish and some in Catalan.

Objectives and Contextualisation

The course equips students with analytical concepts, case studies, and carefully chosen readings by influential authors, which are rooted in the field of "Science Studies," encompassing disciplines such as history, philosophy, sociology of science, and STS studies. Its purpose is to enable a critical examination of the multifaceted challenges of our current era of uncertainty, spanning areas such as politics, public health, environmentalism, identity, and globalization.

The course offers a critical perspective on "modern science," primarily referred as Western science, which until recently, has been commonly regarded as *neutral, objective, and "autonomous" in relation to society*, founded upon an assumed *universal rationality*. In contrast to this conventional understanding, the course introduces a notion of "science" that is adaptable, contingent, and ever-evolving-an understanding that encompasses various fields of knowledge, their materiality, and their social dimensions in a continuous manner.

By undertaking a critical analysis of the crises that significantly influence our present, ranging from environmental concerns to health issues and global challenges, new fluid boundaries of our knowledge come to light. These boundaries are actively "constructed" by historical actors themselves as instruments of authority and power.

Throughout this STS seminar, numerous historical examples are presented, which, when coupled with diverse analytical frameworks, establish a fresh approach to connecting the past and the present-a new form of "presentism." This approach aims to assist us in making informed decisions about our lives today and in developing an original, rigorous way of thinking.

Competences

Philosophy

- Analysing and summarising the main arguments of fundamental texts of philosophy in its various disciplines.
- Applying the knowledge of ethics to the moral problems of society, and assessing the implications about the human condition of changes in the world of contemporary techniques.
- Identifying the main philosophical attitudes in the field of aesthetics and critically applying them in the art world.
- Placing the most representative philosophical ideas and arguments of a period in their historical background and relating the most important authors of each period of any philosophical discipline.
- Recognising and interpreting topics and problems of philosophy in its various disciplines.
- Recognising the philosophical implications of the scientific knowledge.
- Students must be capable of applying their knowledge to their work or vocation in a professional way and they should have building arguments and problem resolution skills within their area of study.
- Students must be capable of collecting and interpreting relevant data (usually within their area of study) in order to make statements that reflect social, scientific or ethical relevant issues.
- Students must be capable of communicating information, ideas, problems and solutions to both specialised and non-specialised audiences.
- Students must develop the necessary learning skills to undertake further training with a high degree of autonomy.
- Students must have and understand knowledge of an area of study built on the basis of general secondary education, and while it relies on some advanced textbooks it also includes some aspects coming from the forefront of its field of study.
- Using the symbology and procedures of the formal sciences in the analysis and building of arguments.

Learning Outcomes

1. Ability to maintain an appropriate conversation.
2. Accurately drawing up normative texts.
3. Accurately using the specific lexicon of science history.
4. Analysing and summarising information.
5. Analysing historical cases about scientific facts.
6. Assessing the legitimacy of the thesis defended by participants of the most important contemporary controversies.
7. Autonomously searching, selecting and processing information both from structured sources (databases, bibliographies, specialized magazines) and from across the network.
8. Carrying out a planning for the development of a subject-related work.
9. Carrying out oral presentations using an appropriate academic vocabulary and style.
10. Communicating in the studied language in oral and written form, properly using vocabulary and grammar.
11. Correctly drawing up a previously analysed non-regulatory text.
12. Distinguishing and analysing classical and current debates of the History of Art.
13. Distinguishing and analysing representative texts of the main genres of the philosophical literature.
14. Documenting a philosophical issue and contrasting its sources.
15. Effectively communicating and applying the argumentative and textual processes to formal and scientific texts.
16. Establishing relationships between science, philosophy, art, religion, politics, etc.
17. Explaining aspects of the history of science by using the discipline's specific terminology.
18. Explaining the philosophical importance of contemporary science and its implementation area.
19. Explaining the specific notions of the History of Philosophy.
20. Identifying the main ideas of a related text and drawing a diagram.
21. Indicating the main current topics of philosophical discussion.
22. Judging the moral impact of new technological developments on humans.
23. Leading working groups, overseeing collective tasks and working with commitment in order to bring together various positions.

24. Organizing their own time and work resources: designing plans with priorities of objectives, calendars and action commitments.
25. Producing an individual work that specifies the work plan and timing of activities.
26. Recognising and implementing the following teamwork skills: commitment to teamwork, habit of cooperation, ability to participate in the problem solving processes.
27. Recognising and using the several forms of reasoning in the history of philosophy.
28. Reflecting on their own work and the immediate environment's in order to continuously improve it.
29. Relating elements and factors involved in the development of scientific processes.
30. Relating several ideas of the current philosophical debates.
31. Relating the various orders of the philosophical ideas of different authors and historical moments.
32. Solving problems autonomously.
33. Specifying the general impact of new technological developments on humans.
34. Submitting works in accordance with both individual and small group demands and personal styles.
35. Summarising the topics and arguments exposed in a classical philosophical debate.
36. Using suitable terminology when drawing up an academic text.

Content

The course presents 15 topics that are worked on a weekly basis:

1_Liquids: Introduction. The "liquid" complexity of our present (Z. Bauman) obliges us to move away from essentialisms and analyze the boundaries of knowledge in a flexible way (Th. Gieryn). We live in times of fragmentation, fragility, uncertainty, and instability, and it is this liquid dimension of the present that needs to be critically and constructively addressed in the weekly sessions of this course.

2_Presentisms: It is necessary to review an excessively uncritical image of progress (W. Benjamin) and propose new ways of interpreting the past for its usefulness in our present (N. Oreskes). "New presentism" suggests using case studies from historical research to strengthen our capacity for analysis and political positioning in the present.

3_Sociologies: Far from an essentialist view of science and knowledge, it is necessary to reflect on the different "science-society" relationships that have developed throughout the 20th century (Merton, Kuhn, Latour). From initial approaches to the study of science and knowledge as a collective phenomenon with its own autonomy, we move towards a progressive blurring of the boundaries between science and society.

4_Cultures: Science, particularly the natural sciences, has difficulty integrating into culture in a broad sense. A new approach to science and its practice is needed. It should be analysed as another cultural phenomenon, as a mediator between the natural and social order (Geertz, Latour). "Ethnographies" delve us into local and contingent knowledge, give voice to multiple actors, and question the supposed "universality" of knowledge.

5_Controversies: We are mainly interested in people's disagreement, in conflict (S. Schaffer). Controversies are disputes about boundaries (Th. Gieryn). Scientific knowledge needs to be approached symmetrically, where all discourses about nature, society, and the individual have a relevant epistemological value. Furthermore, the battle for authority and recognition is often settled in the public sphere (J. Habermas).

6_Communications: There is no clear boundary between science and its communication to society (B. Lewenstein). Knowledge is created through continuous interactions between presumed experts and laypeople who struggle for power and social recognition (S. Hilgartner, L. Fleck). The publics of science are a fluid category (Nieto-Galan). It is in this context that we can develop a critical discourse about the deeply political role of popularisation and education.

7_Transits: Knowledge in transit (J. Secord) occurs within a single society but also between different social groups, cultures, etc., which need to be critically analysed from a postcolonial perspective (S. Harding) and give voice to "subaltern" actors who until recently were invisibilized (Gramsci). The crisis of exceptionalism of Western science has led us to a set of plural "modernities".

8_Experts: What is the role of experts in liberal democracies? Is it possible to reconcile science and democracy (H. Collins)? What difference can be established between the government of experts and the influence of "intellectuals" (E. Said)? To answer these questions, it is necessary to critically analyse the relationships between knowledge and power (Adorno, Foucault), between science and politics.

9_Technologies: Just as we dismiss "essentialist" views of science and the disciplines that compose it (Gieryn), we must also question an overly simplistic view that considers technology as a neutral and autonomous force, isolated from human intervention (A. Feenberg). The boundary between science and technology, as well as between inventors and users, is not clear either. Technology is socially constructed (W. Bijker) based on class, profession, gender (J. Wajcman), etc.

10_Extremisms: Critiques of the consequences of enlightened rationality and progress (Adorno, Horkheimer, Benjamin) become particularly explicit in the face of 20th-century totalitarianism (H. Arendt) and the participation of scientists/experts in the construction of certain political regimes like Nazi Germany (R. Proctor).

11_Environmentalisms: In recent decades, "green" criticisms of scientific and technological progress have gained strength from various perspectives: environmental history (D. Worster), political ecology (Martínez Alier), the role of toxins as sociotechnical agents (Bertomeu), ecofeminism (C. Merchant), and slow violence (R. Nixon).

12_Pandemics: Public health is an excellent tool for analyzing the "science-technology-society" relationships, and pandemics, as crises of public health systems, represent an excellent example for study (Foucault, Bensaude-Vincent). They challenge our search for the mechanisms of authority in medicine and the definition of certain boundaries of expertise (Th. Gieryn, R. Porter).

13_Genders: The gender revolution has probably been one of the most significant transformations of recent decades. From the initial tradition of "women in science" (M. Rossiter), we have moved on to more ambitious interpretations of gender as a socially constructed relationship through technofeminism (J. Wajcman), ecofeminism (C. Merchant), or the construction of new knowledge from a gender perspective (E. Fox Keller, S. Harding, L. Schiebinger).

14_Activists: In the same way that the "publics of science" (students, visitors, patients, amateurs, readers, etc.) acquire relevant epistemological status in specific contexts, activists in a broad sense must also be considered from this perspective (M. Armiero). Ecologists, feminists, patient groups, etc., can provide a "strong objectivity" (S. Harding) so that the viewpoints of the marginalized and oppressed can help us co-construct more "objective" narratives of our world.

15_Synthesis: What are, or could be, the utopias of our present? How can we overcome a certain "postmodern pessimism" (L. Marx) or the pessimistic vision of *Retrotopia* (Z. Bauman) of nostalgia and seeking refuge in an idealized, supposedly better past? Some of the proposals presented in previous sessions will help us find tools to overcome the society of risk and uncertainty (U. Beck) of our present.

Activities and Methodology

Title	Hours	ECTS	Learning Outcomes
Type: Directed			
Discussion of case studies	34	1.36	5, 4, 12, 16, 17, 15, 10, 20, 21, 1, 27, 30, 31, 29, 35, 3
Theoretical lectura	50	2	5, 4, 13, 16, 17, 19, 20, 21, 27, 28, 30, 29
Type: Supervised			
Tutorials	10	0.4	14, 8, 15, 10, 9, 36, 20, 23, 1, 24, 35

Type: Autonomous

Reading texts, writing an essay, team work 40 1.6 4, 13, 25, 8, 18, 20, 23, 1, 24, 26, 32, 35

Based on a set of analytical concepts, readings from reference authors, and case studies, the course provides students with different intellectual tools to critically analyze the various political, health, environmental, identity, and global issues of our uncertain present.

The course is structured around weekly themes with 3 hours of in-person classes.

In the first session of the week, we will dedicate 40 minutes to a theoretical exposition by the professor, followed by 10 minutes for questions. Then, a text/material will be distributed, which will also be accessible through the virtual campus, for individual group work for 15 minutes, followed by a 15-minute discussion.

In the second session of the week, the professor will present practical examples in various formats for 30 minutes, followed by 15 minutes of group work and a general debate (or project presentation) for 35 minutes.

The moodle will provide a collection of theoretical and practical materials for each weekly theme, which will complement and help develop the activities in the classroom.

15 minutes will be reserved from a class, within the calendar established by the institution/program, for students to complete the evaluation surveys of the teachers' performance and the subject evaluation, in order to remind the teachers of the need to promote the surveys among the students.

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

Continous Assessment Activities

Title	Weighting	Hours	ECTS	Learning Outcomes
Analysis and synthesis exam	40%	3	0.12	5, 4, 2, 12, 13, 16, 17, 18, 19, 15, 10, 36, 20, 6, 33, 11, 28, 31, 29, 35, 3
Oral presentation	20%	1	0.04	5, 7, 18, 15, 10, 9, 36, 23, 1, 24, 34, 30, 29, 32, 3
Participation in the classroom	10%	2	0.08	17, 18, 19, 15, 10, 9, 21, 6, 22, 1, 27, 30, 31, 35, 3
Written essay	30%	10	0.4	5, 4, 7, 2, 12, 13, 14, 25, 16, 8, 17, 18, 19, 15, 10, 36, 20, 6, 23, 24, 33, 34, 26, 11, 28, 31, 29, 32, 35, 3

Essay (3000 words) on one of the topics suggested by the lecturer. Elaborate the answer to a certain question (hypothesis) with all the corresponding hermeneutics of sources. In groups of 2-3 people. It is necessary to make an original philosophical proposal and use some of the materials that will be provided in the virtual campus (30%)

Oral presentation of the essay project 15 minutes (20%)

Final analysis/synthesis exam in the classroom (40%)

Active participation in class discussions (10%)

This subject does not incorporate single assessment.

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.

Students will obtain a Not assessed/Not submitted course grade unless they have submitted more than 1/3 of the assessment items.

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.

Bibliography

Agar, Jon (2012), [Science in the Twentieth Century and Beyond](#). Cambridge: Polity.

Arendt, Hannah (2012), [Eichmann en Jerusalén: un estudio sobre la banalidad del mal](#). Barcelona: Lumen. Ed. original en anglès, 1963.

Bauman, Zygmunt (2017), [Retrotopia](#). Barcelona: Arcàdia. Ed. en anglès: 2017.

Beck, Ulrich (2006), [La Sociedad del riesgo: hacia una nueva modernidad](#). Barcelona: Paidós, 2006. Ed. original en alemany, 1986.

Bowler, Peter; Morus, Iwan Rhys (2007), [Panorama general de la ciencia moderna](#) Barcelona: Crítica. Ed. en anglès: 2005.

Carey, John (1999), [The Faber Book of Utopias](#). London: Faber and Faber.

Collins, Harry; Pinch, Trevor (1996), [El gólem. Lo que todos deberíamos saber acerca de la ciencia](#). Barcelona: Crítica, 1996. Ed. en anglès: 1993.

Domènech i Argemí, Miquel, Francisco Javier Tirado Serrano, and Michel. Callon (1998). [Sociología simétrica: ensayos sobre ciencia, tecnología y sociedad](#). Barcelona: Gedisa.

Edgerton, David (2007), [Innovación y tradición. Historia de la tecnología moderna](#). Barcelona: Crítica. Ed. en anglès: *The Shock of the Old. Technology and Global History since 1900*. London: Profile Books, 2006.

Fleck, Ludwik. (1986), [La Génesis y el desarrollo de un hecho científico: introducción a la teoría del estilo de pensamiento y del colectivo de pensamiento](#) Madrid: Alianza, 1986. Ed. original en alemany, 1936; en anglès, 1979.

Forgacs, David (2000) [The Gramsci Reader: Selected Writings, 1916-1935](#). New York: New York University Press.

Fox Keller, Evelyn (1991), [Reflexiones sobre género y ciencia](#). València: Edicions Alfons el Magnànim.

Gieryn, Thomas (1999), [Cultural Boundaries of Science: Credibility on the Line](#). Chicago: The University of Chicago Press.

Guillem Llobat, Ximo, Agustí Nieto-Galan (2020) [Tóxicos invisibles: la construcción de la ignorancia ambiental](#). Barcelona: Icaria.

Harding, Sandra G. (2011) [The Postcolonial Science and Technology Studies Reader](#). Durham: Duke University Press.

Harding, Sandra, [Ciencia y feminismo](#). Madrid: Morata, 1996.

Hay, Peter (2002), [A Companion to Environmental Thought](#). Edinburgh University Press. Edinburgh.

Horkheimer, Max, Theodor Adorno (1999) [Dialéctica de la Ilustración](#). Barcelona: Círculo de Lectores, 1999. Ed. original en alemán, 1947.

Jasanoff, Sheila et al. (ed.) (1995) [Handbook of Science and Technology Studies](#). Sage: Thousand Oaks.

Krige, John; Pestre, Dominique, eds. (2003). [Companion to Science in the Twentieth Century](#). Amsterdam: Harwood.

Kuhn, Thomas S. (2007) [L'estructura de les revolucions científiques](#), traducció de Josep Batalla. Santa Coloma de Queralt: Obrador Edèndum. *La estructura de las revoluciones científicas*, traducción de Carlos Solís. Madrid; México: Fondo de Cultura Económica, 2006. Ed. original en anglès, Chicago, 1962.

Latour, Bruno (1992), [Ciencia en acción: cómo seguir a los científicos e ingenieros a través de la sociedad](#). Barcelona: Labor Ed. en anglès, 1987.

Latour, Bruno (2007), [Nunca fuimos modernos: ensayo de antropología simétrica](#). Buenos Aires: Siglo XXI. Ed. en anglès 1991.

Latour, Bruno (2008), [Reensamblar lo social: una introducción a la teoría del actor-red](#). Buenos Aires: Manantial. Ed. en anglès, 2005.

Latour, Bruno (2023), [Habitar la Tierra. Conversaciones con Nicolas Truong. Traducción de Emilio Manzano](#). Barcelona: Arcadia.

Mate, Reyes (2006), [Medianoche en la historia: comentarios a las tesis de Walter Benjamin "Sobre el concepto de historia"](#). Madrid: Trotta.

Merchant, Carolyn (2020), [La muerte de la naturaleza: mujeres, ecología y revolución científica](#) Granada: Comares. Ed. original en anglès, 1980.

Merton, Robert K. (1984) [Ciencia, tecnología y sociedad en la Inglaterra del siglo XVII](#). Madrid: Alianza, 1984 (ed. original 1938).

Negueruela Avellà (2016), [Clifford Geertz y el nacimiento de la antropología postmoderna](#). Sevilla: Thémata.

Nieto-Galan, Agustí (2011) [Los públicos de la ciencia: expertos y profanos a través de la historia](#). Madrid: Marcial Pons (DDD: <https://ddd.uab.cat/record/188614>). Ed. en anglès: 2016.

Nieto-Galan, Agustí (2011), ["Antonio Gramsci Revisited: Historians of Science, Intellectuals, and the Struggle for Hegemony"](#). *History of science* 49(4): 453-478.

Nixon, Rob (2011), [Slow Violence and the Environmentalism of the Poor](#). Harvard University Press. Cambridge Ma.

Oreskes, "Why Am I a Presentist?", [Science in Context](#) 26(4), 595-609 (2013).

Oreskes, Naomi, Erik M. Conway (2018), [Mercaderes de la duda: cómo un puñado de científicos ocultaron la verdad sobre el calentamiento global](#). Madrid: Capitán Swing Libros. Ed. en inglés: 2011.

Palazzi, Cristian (2011), [Zygmunt Bauman. Reflexions sobre la modernitat líquida](#). Barcelona: Editorial UOC.

Pestre, Dominique (2008), [Ciència, diners i política](#) (Santa Coloma de Queralt: Obrador Edèndum; Publicacions URV. D. Pestre, *Science, argent et politique. Un essai d'interprétation* Paris: INRA, 2003. D. Pestre, *Ciencia, dinero y política*. Buenos Aires: Ediciones Nueva Visión, 2005.

Said, Edward W. (1991), [Orientalisme](#) Vic: Eumo. E. Said, *Orientalismo. presentación de Juan Goytisolo*. Barcelona: Debolsillo, 2003. Ed. original en anglès: 1979.

Said, Edward W. (1994), [Representations of the Intellectual](#). New York: Vintage Books.

Schaffer, Simon (2010). [Trabajos de cristal](#). *Ensayos de historia de la ciencia, 1650-1900*. Madrid: Marcial Pons.

Schiebinger, Londa L., Robert Proctor (2022). [Agnotología: la producción de la ignorancia](#). Zaragoza: Prensas de la Universidad de Zaragoza. Ed. original en anglès, 2008.

Wajcman, Judy (2006), [El tecnofeminismo](#). Madrid: Cátedra. Ed. original en inglés: 2004.

Software

No specific software required.

Language list

Name	Group	Language	Semester	Turn
(SEM) Seminars	1	Catalan	first semester	morning-mixed
(TE) Theory	1	Catalan	first semester	morning-mixed