Philosophy of Science

Code: 100312
ECTS Credits: 6

2025/2026

Degree	Type	Year
Philosophy	OB	3

Contact

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Prerequisites

There are no prerequisites.

Teaching groups languages

You can view this information at the of this document.

Objectives and Contextualisation

In this course students will learn to reflect on some of the basic questions of the Philosophy of Science, and to identify some of the main approaches to the discipline. The course starts from a reflection on the nature of science and its limits, and then delves into some classic discussions, such as those relating to the problem of induction, the demarcation criterion, the nature of scientific change, to the nature of scientific explanation, realism and anti-realism, and the human impact of science and its relationship to ethics and politics. These discussions are illustrated using examples from sciences such as physics, biology, psychology and sociology, also seeking to offer some insight into some particular sciences and their relevant contributions to philosophy. At the same time, the foundations will be laid for a brief history of some classical positions in the Philosophy of Science, a picture which will be completed and revised during the last part of the course.

Competences

- Act within one's own area of knowledge, evaluating sex/gender-based inequalities.
- 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 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. Analysing historical cases about scientific facts.
3. Autonomously searching, selecting and processing information both from structured sources (databases, bibliographies, specialized magazines) and from across the network.
4. Correctly, accurately and clearly communicating the acquired philosophical knowledge in oral and written form.
5. Effectively communicating and applying the argumentative and textual processes to formal and scientific texts.
6. Engaging in debates about philosophical issues respecting the other participants' opinions.
7. Explaining aspects of the history of philosophy by using the discipline's specific terminology.
8. Explaining the philosophical importance of contemporary science and its implementation area.
9. Explaining the specific notions of the History of Philosophy.
10. Expressing both orally and in written form, the complex concepts of the analysis and scientific methodologies.
11. Formulating arguments for and against an issue, using proper vocabulary, conceptual precision and argumentative coherence.
12. Indicating and summarising the common content of several manifestations of various fields of culture.
13. Judging the moral impact of new technological developments on humans.
14. Leading working groups, overseeing collective tasks and working with commitment in order to bring together various positions.
15. Producing an individual work that specifies the work plan and timing of activities.
16. Reading thoroughly historical texts of the history of science.
17. Relating elements and factors involved in the development of scientific processes.
18. Rigorously building philosophical arguments.
19. Specifying the general impact of new technological developments on humans.
20. Using specialized knowledge acquired in an interdisciplinary context when debating.

Content

Part One: Fundamental Problems in Philosophy of Science Through Emblematic Cases This section will address the classic problems of the philosophy of science, using the contributions and challenges of selected female scientists as case studies.

Module 1: The Nature of Science, Demarcation, and Explanation. The Legacy of Physics and Chemistry.

- What is science and how is it distinguished from what is not? (Demarcation criterion)
- What is the goal of science and what counts as a "good" scientific explanation?
- Case Studies

Module 2: The Problem of Induction, Scientific Change, and the Construction of Knowledge.

- How is valid scientific knowledge acquired? The problem of induction.
- What is the nature of scientific change?
- Case Studies

Part Two: History, Recent Developments, and the Social Impact of Science. This section will reconstruct a brief history of key contributions to the discipline and address the social impact of science, using female scientists to illustrate these topics.

Module 3: New Perspectives in Biology and the Critique of Reductionism.

- From positivism to logical positivism and its critics.
- Historicism in the philosophy of science.
- Case Studies

Module 4: Science, Situated Knowledge, and Human Impact.

- Recent developments: From constructive empiricism to Science and Technology Studies (STS).
- The human impact of science and its relationship with ethics and politics.
- Case Studies

Activities and Methodology

Title	Hours	ECTS	Learning Outcomes
Type: Directed			
8 classes on the first part	12	0.48	3, 18, 7, 9, 5, 11, 13, 16, 1, 19
8 classes on the second part	12	0.48	3, 18, 7, 9, 5, 11, 13, 16, 1, 19
Type: Supervised			
1 class of evaluation activity on the first part of the course	1.5	0.06	3, 18, 7, 9, 5, 11, 13, 16, 1, 19
1 class of evaluation activity on the second part of the course	1.5	0.06	
6 classes of discussion group over the themes of the second part	9	0.36	3, 18, 7, 9, 5, 11, 13, 16, 1
6 classes of discussion groups on the topics of the first part	9	0.36	3, 18, 7, 9, 5, 11, 13, 1, 19
Type: Autonomous			
Readings of texts and preparation of the questions for the next class	30	1.2	3, 7, 5, 11, 16, 1
Study of the concepts presented in class and preparation of presentations	50	2	3, 18, 7, 9, 5, 11, 13, 16, 1, 19

Classes for both parts of the course will consist of lessons where participation will be encouraged with questions and discussions. Students will be required to read a text each week between classes and email the teacher a question about the text. At the end of each part's classes, students will be required to form discussion groups. After the discussion sessions, there will be a written exam in class (online or face-to-face) with questions of various options and open.

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
Digital presentation	0	6	0.24	2, 3, 4, 15, 7, 5

Discussions and written exam on the first part of the course	40%	7	0.28	2, 12, 3, 4, 18, 20, 7, 8, 9, 10, 5, 11, 13, 14, 16, 1, 6, 19, 17
Discussions and written exam on the second part of the course	40%	7	0.28	2, 12, 3, 4, 18, 20, 7, 8, 9, 10, 5, 11, 13, 14, 16, 1, 6, 19, 17
Oral and collective Speech	20%	5	0.2	3, 7, 10, 5, 11, 13, 16, 19

CONTINUOUS ASSESSMENT:

The Department of Philosophy agreed that the subjects of the first semester would have two periods of concentration of evaluation activities and a week in which students could prepare specifically for the tests in the modality that each teacher will specify at the beginning of the course. The dates for the review week and in which the tests will be concentrated are:

• Oct. 27- Oct. 31: review week or tutorials
• Nov. 3 - Nov. 7: evaluation week
• January 8-9-12-13-14: evaluation week

The continuous evaluation will consist of:

A) Two partial exams (40% + 40%), one for each block of the subject. The format will be announced sufficiently in advance.

B) A group presentation (20%). The format will be announced sufficiently in advance.

All assessment activities will have a corresponding review. At the time of each assessment activity, the teacher will inform the students (via Moodle) of the procedure and date for reviewing grades.

To pass the subject, a minimum average of 5 is required. The student will receive a grade of "Not Assessable" if they have not submitted more than 30% of the assessment activities.

If a student commits any irregularity that could significantly alter the grade of an assessment activity, that activity will be graded as 0, regardless of any disciplinary process that may be initiated. If multiple irregularities occur in the assessment activities of the same subject, the final grade for the subject will be 0.

To be eligible for the retake, the student must have been previously assessed in a set of activities whose weight is equivalent to at least 2/3 of the total grade. The minimum average grade of the assessed activities cannot be less than 3 or more than 5.

The retake will consist of resubmitting the failed assessment activities in a format that will be announced well in advance.

Any modifications related to assessment, methodology, etc., will be promptly communicated through the virtual campus.

UNIQUE ASSESSMENT

The unique evaluatrion procedure will be based on three tests that will take place on the same day.

The evidence for each test is as follows:

A review such as those developed by the continuous assessment on a required reading 20%

A commentary on a text presented in class 40%

A written exam 40%

ARTIFICIAL INTELLIGENCE (AI)

This subject allows the use of AI technologies exclusively for support tasks such as [content-based searches, text correction or translations, where applicable]. No use to bibliography. In the case of subjects in a Modern Languages degree, the use of translation must be specifically authorised by the teacher. Other specific situations may be contemplated, as deemed appropriate by the teacher.

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 seriousaction may be taken.

Bibliography

- Casacuberta David (2021). *La era de Casandra. Una apología del no saber.* Bellaterra: Ediciones UAB.
- Crawford, Kate (2023). *Atlas de IA: Poder, política y costes planetarios de la inteligencia artificial*. Barcelona: NED Ediciones.
- Diez, José A. & Moulines, Ulises (2008). *Fundamentos de Filosofía de la Ciencia.* Barcelona: Ariel.
- Echeverria, Javier (2003). *La revolución tecnocientífica.* Madrid: Fondo de Cultura Económica.
- Estany, Anna (2016). *Introducción a la filosofía de la ciencia.* Bellaterra: Ediciones UAB.
- Feyerabend, Paul (2007). *Contra el método.* Madrid: Tecnos.
- Haraway, Donna (2019). *Seguir con el problema: Generar parentesco en el Chthuluceno.* Bilbao: Consonni.
- Kastrup, Bernardo (2025). ¿Por qué el materialismo es un embuste? Girona: Atalanta
- Kuhn, Thomas S. (2016). *La estructura de las revoluciones científicas.* Madrid: Fondo de Cultura Económica.
- Latour, Bruno (2017). *Lecciones de sociología de las ciencias*. Barcelona: Arpa.
- Perdomo, Inmaculada & Sánchez, Jesús (2013). *Hacia un nuevo empirismo: La propuesta filosófica de Bas C.Van Fraassen*. Madrid: Biblioteca Nueva.
- Popper, Karl (2008). *La lógica de la investigación científica.* Madrid: Tecnos.

Software

The subject does not require the use of any software, although a space will be opened in Google Classroom to share materials and doubts.

Groups and Languages

Please note that this information is provisional until 30 November 2025. You can check it through this link. To consult the language you will need to enter the CODE of the subject.

Name	Group	Language	Semester	Turn
(PAUL) Classroom practices	1	Catalan	first semester	morning-mixed
(TE) Theory	1	Catalan	first semester	morning-mixed