COURSE GUIDE 2022/23

Faculty 230 - Faculty of Education, Philosophy and Anthropology **Cycle** Not Applicable

Degree GFILOS20 - Bachelor`s Degree in Philosophy **Year** Third year

COURSE

25157 - Philosophy of Science I **Credits, ECTS:** 6

COURSE DESCRIPTION

COMPETENCIES/LEARNING RESULTS FOR THE SUBJECT

Study of the different perspectives about Science itself. General characterization of scientific activity.

This subject introduces a reflection on the concept of science and the basic themes of its methodology; characterizes the philosophy of science and its more relevant issues, starting from the main views of the last century, and explores the basic subjects of the philosophy of science.
This subject belongs to the part (considered) Mandatory and the section (or module) Philosophy of Science. Its contribution is necessary to obtain the capacities or skills related to the section (or module) and all of them are cross-curricular.
The course coordinator will look after the horizontal coordination of this subject while the vertical coordination will correspond to the grade coordinator.

Competences:
- To actively understand and critically interpret texts by well-known authors in the philosophy of science, always within their theoretical and conceptual frames and, at least, in two official languages of the E.U.
- To orally present, debate, critically assess and write with arguments well-structured discourses regarding the diverse traditional and contemporary problems, points of view and concepts about science, using to that purpose the specialized terminology of the philosophy and methodology of science.
- To identify and assess through diverse procedures the validity or plausibility of arguments around traditional and current debates in the field of philosophy and methodology of science, emphasizing the importance of logic in the analysis of scientific discourse.
- To engage in team work in order to advance in the comprehension of the social, ethical, economical and cultural consequences of the development of modern science and the philosophical consideration upon it.
- To use the technologies of information in order to collect and interchange data and to access bibliographic sources for the study of currently debated perspectives in the field of philosophy and methodology of science.

CONTENIDOS TEÓRICO-PRÁCTICOS

1. What is Science? Introduction to the Methodology of Science. Laws, hypotheses and theories; scientific concepts; deductive and inductive arguments; scientific explanation.
2.- Characterization of Philosophy of Science. Brief Introduction to the main views of XXth and XXIth centuries.
3. Synchronic perspectives of Science. Logical Positivism and Logical Empiricism; Structuralism.
4. Diachronic perspectives of Science. Importance of History of Science for the Philosophy of Science.
5. Social conceptions of Science. Sociology of Science, Cultural Studies of Science, STS studies; feminist Philosophy of Science; relativism and "Science Wars".
6. Key issues of Philosophy of Science. The problem of verifiability; Popper and falsability (demarcation); Kuhn: Normal Science and scientific revolutions, Inconmensurabuility, (Kuhn y Feyerabend); Scientific Research programs (Lakatos); rationalty and progress (Laudan).

* At the beginning of the term, the lectures will specify, within this official syllabus, those aspects or parts considered appropriate.

TEACHING METHODS

TYPES OF TEACHING

Types of teaching	M	S	GA	GL	GO	GCL	TA	TI	GCA
Hours of face-to-face teaching	36		24						
Horas de Actividad No Presencial del Alumno/a	54		36						

Legend:
M: Lecture-based
S: Seminar
GA: Applied classroom-based groups
GL: Applied laboratory-based groups
GO: Applied computer-based groups
GCL: Applied clinical-based groups
TA: Workshop
TI: Industrial workshop
GCA: Applied fieldwork groups

Evaluation methods

- End-of-course evaluation

Evaluation tools and percentages of final mark

- Written test, open questions 60%
- Teamwork assignments (problem solving, Project design) 40%

ORDINARY EXAMINATION PERIOD: GUIDELINES AND OPTING OUT

With the followign proportions that the lectures will specify at the beginning of the term:
- Exam: between 40 and 60 % of the final evaluation;
- Individual essays: between 40 and 60 % of the final evaluation;
- Class assistance and participation will be taken into account for the final assessment.

EXTRAORDINARY EXAMINATION PERIOD: GUIDELINES AND OPTING OUT

Exam

MANDATORY MATERIALS

Echeverria, J. (1999) Introducción a la metodología de la ciencia, Madrid: Cátedra.

BIBLIOGRAFÍA

Basic bibliography

Dieguez, A. (2005) Filosofía de la ciencia, Madrid: Biblioteca Nueva/Universidad de Málaga.
Díez Calzada, J.A., Moulines, C.U., (1997) Fundamentos de Filosofía de la Ciencia, Barcelona: Ariel.
Godfrey-Smith, P. (2003): Theory and Reality. An introduction to the philosophy of Science. Chicago: The Chicago University Press.
Olivé, L. y Pérez Ransanz, A. R. Eds. (1989) Filosofía de la ciencia: teoría y observación, México: Siglo XXI.

Detailed bibliography

Balashov, Y & Rosenberg, A. Eds. (2002) Philosophy of Science. Contemporary Readings. New York: Routledge.
Curd, M. & Cover, J. A. Eds. (1998) Philosophy of Science. The central issues. WW. Norton.
Lange, M. (2007) Philosophy of Science. An anthology. Oxford: Blackwell.
Okasha, S. (2002): Philosophy of Science. A very short introduction. Oxford University Press.
Rosenberg, A. (2000) Philosophy of Science. A contemporary introduction. New York: Routledge.

Journals

Erkenntnis; Philosophy of Science; Synthese; Theoria; Teorema.

Web sites of interest

European Philosophy of Science Association. www.epsa.ac.at
Philosophy of Science Association. philsci.org
Philsci Archive. philsci-archive.pitt.edu
Sociedad de Lógica, Metodología y Filosofía de la ciencia. www.solofici.org
Stanford Enciclopedia of Philosophy. plato.stanford.edu

OBSERVATIONS

Osasun publikoko krisi hipotetiko baten aurrean konfinamendua edo antzeko neurriren bat ezarriko balitz, irakaskuntza gida honetan zehaztutako ebaluazio irizpideak aldatzerik legoke (ikus eGelan "Ebaluazioaren egokitzapena" dokumentua).

En el caso de que una hipotética crisis de salud pública provocara alguna medida de confinamiento o similar, cabría la posibilidad de variar los criterios de evaluación estipulados en esta guía docente (véase el documento "Adecuación de la evaluación", sito en eGela).

The evaluation criteria stipulated in this course guide might be modified in the event that a hypothetical public health crisis caused some measure of confinement or similar (see the "Adaptation of evaluation" document, placed in eGela).

Philosophy of Science I (2022-2023)
(Lecturer: Jon Umerez)

A) Papers to read:

Kosso, P. (1992) *Reading the Book of Nature. An Introduction to the Philosophy of Science*. Cambridge: Cambridge University Press. Introduction: pp.: 1-7 + Chapter 1: pp.: 8-26.

Kosso, Peter (2011) *A Summary of Scientific Method*. Dordrecht: Springer. pp.: v-vi, ix-x, 1-5.

Godfrey-Smith, P. (2003) *Theory and Reality. An Introduction to the Philosophy of Science*. Chicago, Ill: The University of Chicago Press. Chapter 1: pp. 1-18.

Schlick, M. (1930/31) The Turning Point in Philosophy. A.J. Ayer (ed.) *Logical Positivism*, Chicago, Ill: The Free Press, pp.: 53-59.

Carnap, R. (1932) The Elimination of Metaphysics Through Logical Analysis of Language. In A.J. Ayer (ed.) *Logical Positivism*, Chicago, Ill: The Free Press, pp.: 60-81.

Quine, W.V.O. (1953[1951] Two Dogmas of Empiricism. In W.V.O. Quine *From a Logical Point of View*. Cambridge, MA: Harvard University Press. II: pp. 20-46.

Popper, K. (1963 [2002] *Conjectures and Refutations*. London: Routledge. 1: 42-86.

Kuhn, Th. (1970) Logic of Discovery or Psychology of Research. In I. Lakatos & A. Musgrave (eds.) *Criticism and the Growth of Knowledge*. Cambridge: Cambridge University Press, pp. 1-23.

Kuhn, Th. (1962/ 2nd. ed. 1970) *The Structure of Scientific Revolutions*. Chicago, Ill: The University of Chicago Press. Chapter IX: pp. 92-110.

Lakatos, I. (1981) *Philosophical Papers, Vol I*. Cambridge: Cambridge University Press. Introduction: Science and Pseudoscience: pp. 1-7.

Laudan, L. (1977) *Progress and its Problems*. Berkeley, CA: University of California Press. Chapter 3, excerpt: pp. 70-81.

Feyerabend, P. (1994) *Killing Time*. Chicago, Ill: The University of Chicago Press. Chapter 12: pp. 139-152.

Merton, R.K. (1973 [1942]) The Normative Structure of Science. In R.K. Merton (ed. N. W. Storer) *The Sociology of Science. Theoretical and Empirical Investigations*. Chicago, Ill: The University of Chicago Press, pp. 267-278.

Barnes, Barry (1991) Sociological Theories of Scientific Knowledge. In R.C. Olby; G.N. Cantor; J.R.R. Christie & M.J.S Hodge (eds.) (1990) *Companion to the History of Modern Science*. London: Routledge, pp. 60-73.

Keller, E.F. (1992) Gender and Science: An Update. In E.F. Keller *Secrets of Life. Essays on Life, Gender, and Science*. London: Routledge. Chapter 1: pp. 15-36.

SOKAL Affair

Sokal, A.D. (1996) Transgressing the Boundaries. … *Social Text* **46/47**: 217- 252.
Sokal, A.D. (1996) A Physicist Experiments with Cultural Studies. *Lingua Franca* (May/June 1996)
Robbins, B. & Ross, A. (1996) A response by the Editors. *Lingua Franca* (July/August 1996)
--- (1996) Mystery science Theater . *Lingua Franca* (July/August 1996)
Blackburn, S. (2008) Truth's Caper. *The New Republic* (August 13, 2008).
Levins, R. (1996) Ten Propositions on Science and Antiscience. *Social Text* **46/47**: 101- 111.

B) Book to read:

Kuhn, Th. (1962/ 2nd. ed. 1970) *The Structure of Scientific Revolutions*. Chicago, Ill: The University of Chicago Press.

(Recommended: Kosso, Peter (2011) *A Summary of Scientific Method*. Dordrecht: Springer)

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PoS I – Instructions for Reading Seminar Presentation

1. Sign up to present on one of the assigned weekly readings.
2. Read the text twice (at minimum).
3. Prepare a five minute presentation for the Friday Reading Seminar. In this presentation you will:
    a. Summarize the main argument of the text.
    b. Choose a significant passage or quotation for discussion. This passage may exemplify the author's point, be difficult to understand, reveal a problem the author hasn't addressed, or it may raise a point that particularly interests you or that you think will particularly interest the class.
    c. Pose a specific, direct question for the seminar to work on together.

It is a good idea to make notes or write out your presentation and to practice it beforehand, especially to achieve the correct timing.
Once everyone has done one presentation, you may volunteer to do a second presentation. Your presentation grade will then be the average of the two presentations.

Philosophy of Science I
(Year 2022-2023)

Lecturer: Jon Umerez
Email: jon.umerez@ehu.eus --- Phone: 943 015537
Office hours: Tuesday 11:00-12:00, Wednesday 09:00-11:00 (office 1B5).

	Date	Hours	Lecture	Reading material
Week 1			Course presentation	Text 1: Kosso 1
			Reading seminar	Kosso 2
Week 2			**Intro to Phil of Sci / Theories**	
			Reading seminar	Godfrey-Smith / Kosso 3
Week 3			**Vienna Circle**	
			Reading seminar	Schlick
Week 4			**Logical Positivism**	
			Reading seminar	Carnap
Week 5			**"Received view"**	
			Reading seminar	Hempel (or t.b.a.)
				(1st essay due)
Week 6			**Popper falsationism**	
			Reading seminar	Popper
Week 7			**Kuhn: normal science**	
			Reading seminar	Kuhn 1
Week 8			**Kuhn: scientific revolut**	
			Reading seminar	Kuhn 2
Week 9			**Lakatos (research programs) & Laudan (research traditions)**	
			Reading seminar	Lakatos - Laudan
Week 10			**Feyerabend (meth. anarchism)**	
			Reading seminar	Feyerabend
				(2nd essay due)
Week 11			**Sociology of Science** -old	
			Reading seminar	Merton
Week 12			**Sociology of Science**-new	
			Reading seminar	t.b.a.
Week 13			**---**	---
			---	---
Week 14			**Feminist phil. of science**	
			Reading seminar	E.F. Keller
Week 15			**Science Studies & *Science wars***	
			Reading seminar	Sokal/Ross/ Blackburn
				(3rd essay due)

EVALUATION

Essay 1: 10%
Essay 2: 10 %
Essay 3: 15 %
Exam: 50%
Assistance and classroom participation: 15%

Note: It is mandatory to deliver all the essays in order to be evaluated.

SPECIAL **NOTE 2022/23**: The evaluation criteria stipulated in this course guide, as well as the teaching modalities, might be modified in the event that a hypothetical public health crisis caused some measure of confinement or similar (in that event see eGela).

BIBLIOGRAPHY

Balashov, Y. & Rosenberg, A. (eds.) (2002) *Philosophy of Science. Contemporary Readings*. London: Routledge.

Barker, G. & Kitcher, Ph. (2014) *Philosophy of Science. A New Introduction*. Oxford: Oxford University Pres.

Bird, A. (1998) *Philosophy of Science*. McGill-Queen's University Press.

Chalmers, A. (2001) *What is this thing called Science? An assessment of the nature and status of science and its* methods (3rd ed.). London: Open University Press.

Curd, M. & Cover, J. A. Eds. (1998) *Philosophy of Science. The central issues.* WW. Norton.

Dieguez, A. (2005) *Filosofía de la ciencia*, Madrid: Biblioteca Nueva/Universidad de Málaga.

Díez, J.A., Moulines, C.U., (1997) *Fundamentos de Filosofía de la Ciencia*, Barcelona: Ariel.

Echeverria, J. (1995) *Introducción a la metodología de la ciencia*, Cátedra

***** Godfrey-Smith, P. (2003): *Theory and Reality. An introduction to the philosophy of Science.* Chicago: The Chicago University Press** (used as textbook)**.** (just published second edition, July 2021, some changes)

Kosso, Peter (1992) *Reading the Book of Nature. An Introduction to the Philosophy of Science*. Cambridge: Cambridge University Press.

Kosso, Peter (2011) *A Summary of Scientific Method*. Dordrecht Springer

Newton-Smith, W.H. (ed.) (2000) *A Companion to the Philosophy of Science*. Oxford: Blackwell.

Okasha, S. (2002): *Philosophy of Science. A very short introduction.* Oxford: Oxford University Pres.

Oreskes, Naomi (2019) *Why Trust Science*. Princeton University Press.

Rosenberg, A. (2000 [2005]) *Philosophy of Science. A contemporary introduction*. London: Routledge (2nd edition).

Ziman, J. (2003) *What is Science?* Cambridge: Cambridge University Press.