COURSE DATA

Data Subject

Code	33272
Name	Philosophy of science I
Cycle	Grade
ECTS Credits	6.0
Academic year	2021 - 2022

Study (s)

Degree	Center	Acad. year	Period
1004 - Degree in Philosophy	Faculty of Philosophy and Educational Sciences	3	First term
1012 - Degree in Philosophy	Faculty of Philosophy and Educational Sciences	3	First term

Subject-matter

Degree	Subject-matter	Character
1004 - Degree in Philosophy	17 - Philosophy of science	Obligatory
1012 - Degree in Philosophy	16 - Philosophy of science	Obligatory

Coordination

Name	Department
IRANZO GARCIA, VALERIANO	359 - Philosophy

SUMMARY

This subject is intended to familiarise the student with some general aspects of scientific methodology and with the philosophical problems raised by it. The basic questions addressed are: the peculiarity of science versus other discourses; the role of the experiment in empirical hypotheses testing, in their different varieties; the nature of scientific models and theories; the different conceptions of confirmation and explanation; and the discussion of whether scientific theories are true and describe reality. This list is not exhaustive so it does not exclude addressing further related issues.

PREVIOUS KNOWLEDGE

Relationship to other subjects of the same degree

There are no specified enrollment restrictions with other subjects of the curriculum.

Other requirements

No hay ninguna precondición.

OUTCOMES

1004 - Degree in Philosophy

- Que los estudiantes hayan demostrado poseer y comprender conocimientos en un área de estudio que parte de la base de la educación secundaria general, y se suele encontrar a un nivel que, si bien se apoya en libros de texto avanzados, incluye también algunos aspectos que implican conocimientos procedentes de la vanguardia de su campo de estudio.
- Students must have the ability to gather and interpret relevant data (usually in their field of study) to make judgements that take relevant social, scientific or ethical issues into consideration.
- Students must have developed the learning skills needed to undertake further study with a high degree of autonomy.

- Que los estudiantes sepan aplicar sus conocimientos a su trabajo o vocación de una forma profesional y posean las competencias que suelen demostrarse por medio de la elaboración y defensa de argumentos y la resolución de problemas dentro de su área de estudio.
- Ser respetuoso con la diferencia y la pluralidad evitando la discriminación por razones de género.
- Capacidad de comunicación profesional oral y escrita en las lenguas propias de la Universitat de València.
- Be able to obtain information from different primary and secondary sources.
- Be able to analyse, synthesise and interpret relevant cultural, social, political, ethical or scientific data, and to make reflective judgements about them from a non-androcentric perspective.
- Be able to organise and plan work times.
- Be able to convey information, ideas, problems and solutions to others (experts or not).
- Have critical and self-critical capacity.
- Know how to work in a team avoiding gender discrimination.
- Be able to learn autonomously.
- Develop innovation and creativity.

- Be competent in the philosophical study of particular areas of research and human praxis, such as mind, knowledge, language, technology, science, society, culture, ethics, politics, law, religion, literature, arts and aesthetics, avoiding androcentric biases.
- Be familiar with the ideas and arguments of the main philosophers and thinkers, extracted from their texts, and with the investigation of their traditions and schools, identifying the possible androcentric biases.
- Use and rigorously analyse specialised philosophical terminology.
- Identify the fundamental issues that underlie any type of debate.
- Relate problems, ideas, schools and traditions.
- Be able to apply the knowledge acquired to clarify or solve certain problems outside one's own field of knowledge.
- Identify and evaluate clearly and rigorously the arguments presented either in texts or orally.
- Be agile and efficient managing various sources of information: bibliographical, electronic and others.
- Acquire the learning skills needed to undertake further studies with an increasing degree of autonomy.
- Work with an increasing degree of self-motivation and self-demand.
- Appreciate autonomy and independence of judgement.
- View original and creative thinking positively.
- Recognise plurality and respect differences.

LEARNING OUTCOMES

The student must be able to identify the basic and differential aspects of scientific activity versus other human activities. She must also understand what kind of philosophical issues are recurring themes in the scientific discourse and which are currently the subject of discussion.

DESCRIPTION OF CONTENTS

1. Introduction: science and philosophy of science

The role of science in our world.
Goals of science and goals of the philosophical thought about science.

2. Observation and measurement in science.

Types of concepts.
The quantitative language in science. Its usefulness and justification in various scientific areas.
The " observational - theoretical " distinction.

3.

4. Hypothesis, laws, theories, and models.

Types of hypotheses.
What is a scientific law?
Laws, prediction, and explanation.
Conceptions of scientific theories (enunciative conception / semantic conception)
Models in the empirical sciences.

5. Correlations and causes.

Associations and correlations.
Determinism and indeterminism.
Experimental designs for the discovery of causes (randomized controlled trials (RCTs), prospective designs, retrospective designs.

6. Scientific explanation.

The deductive-nomological model.
Explanation as unification.
Explanation and intervention.
Explanation and mechanisms.

7. Science and pseudoscience.

Non-philosophical implications of the "science / pseudoscience" debate.
Comparing criteria of scientific demarcation.
Science as reliable knowledge.

WORKLOAD

ACTIVITY	Hours	% To be attended
Theory classes	30,00	100
Seminars	15,00	100
Tutorials	5,00	100
Attendance at events and external activities	5,00	0
Study and independent work	20,00	0
Readings supplementary material	20,00	0
Preparation of evaluation activities	30,00	0
Preparing lectures	25,00	0
TOTAL	**150,00**	

TEACHING METHODOLOGY

Theoretical lectures will be devoted to explain the concepts and main philosophical positions on each topic to treat. If necessary, the teacher will indicate the supplementary readings to provide a better understanding of the topic. If the teacher thinks it is convenient, and depending on the number of students enrolled, she can ask for students' presentations/talks to display their accounts on the issues raised by the teacher in previous lectures.

The practical sessions are intended to discuss and apply the notions exposed in the theoretical lectures through several texts by authors and/or specific scientific episodes related to the topics of this course. It can also be organised oral presentations by students on specific readings.

EVALUATION

The qualification of this subject obtains as follows:

- Final written exam about of the topics discussed in the theoretical classes: 70% of the global mark. It could consist of long answers, short answers, or a combination of both types.

- Text analysis (individual or group), active participation in practical classes, discussion groups, etc.: up to 30% of the global mark.

- Inappropriate practice related to evaluation tests and plagiarism in research work will be considered under the ACGUV Regulation 108/2017.

REFERENCES

Basic

- - -

Chalmers, A. (2000; 3ª edición ampliada). ¿Qué es esa cosa llamada ciencia? Madrid: Siglo XXI.

Hempel, C. (1973) Filosofía de la ciencia natural. Alianza: Madrid.

Rosenberg, A. y McIntyre, L. (2019; 4ª ed.). Philosophy of Science. A Contemporary Introduction. Londres: Routledge.

Additional

- Boyd, N. M. y Bogen, J. (2021) "Theory and Observation in Science", The Stanford Encyclopedia of Philosophy, E. N. Zalta (ed.), URL = https://plato.stanford.edu/archives/sum2021/entries/sciencetheory-observation/

Diéguez, A. (2005) Filosofía de la Ciencia. Málaga: Biblioteca Nueva.

Giere, R., (1997; 4ª ed.) Understanding Scientific Inference. Fort Worth, Texas, Harcourt and Brace College Publishers.

Humphreys, P., editor (2016) The Oxford Handbook of Philosophy of Science. Londres: Oxford University Press.

Laudan, L. (1981) Science and Hypothesis. Historical Essays on Scientific Methodology. Dordrecht: Springer.

ADDENDUM COVID-19

This addendum will only be activated if the health situation requires so and with the prior agreement of the Governing Council

1. Contents:

The contents initially included in the teaching guide are maintained.

2. Volume of work and temporary planning of teaching

In accordance with the ordinances approved and transmitted by the CAT of the Degree of Philosophy, the

organization of the teaching of Philosophy of Science-I in the academic year 2020-21 will be done as follows:

- in the theory classes, half of the class will be able to attend; the other half will be able to follow the class by means of a live broadcast via video camera;

- in the practical classes each subgroup will have a weekly session (on alternate weeks) of two hours

logy

In order to overcome the limitations that students may have who are not present in theory classes compared to those who are (loss of information, less possibility to participate in the class,...) an asynchronous forum will be set up to solve doubts about the theory classes.

4. Evaluation

EAs for the agenda and the evaluation procedure, what is indicated in the teaching guide will be maintained, unless the evolution of the pandemic require a change in the attendance regime.

5. Bibliography

The recommended bibliography is kept as it is accessible.