



STUDY GUIDE

WHAT IS SCIENCE?

Organised by

University of Cantabria (UC)





1. IDENTIFYING DATA.

· Course Name.	What is science?
· Coordinating University.	University of Cantabria (UC).
· Partner Universities Involved.	-
· Course Field(s).	Extra.
· Related Study Programme.	Transversal Doctoral Programme.
· ISCED Code.	ISCED 6, 7, 8
· SDG.	4, 9
· Study Level.	B, M, D

· Number of ECTS credits allocated.	2
· Mode of Delivery.	Online.
· Language of Instruction.	English.
· Course Dates.	10.02.2025 – 28.03.2025 (10 th of February – 28 th of March)
· Schedule of the course.	Synchronous lessons the following days: <ul style="list-style-type: none"> ○ 13/02/2025 Carnap's logical empiricism 16:00-18:30 (CET) ○ 27/02/2025 Popper's falsificationism 16:00-18:30 (CET) ○ 20/03/2025 Kuhn's paradigms and revolutions 16:00-18:30 (CET)
· Key Words.	Science, Philosophy, Carnap, Popper, Kuhn.
· Catchy Phrase.	Dare to discover what science is.

· Prerequisites and co-requisites.	<ul style="list-style-type: none"> ▪ EUNICE Student. ▪ English Level: B2. ▪ Basic Science Education. ▪ Intellectual curiosity.
· Number of EUNICE students that can attend the Course.	24
· Course inscription procedure(s).	Application through the EUNICE website

2. CONTACT DETAILS.

· Department.	Department of Earth and Materials Science and Engineering.
· Name of Lecturer.	Diego Ferreño.

· E-mail.	diego.ferreno@unican.es
· Other Lecturers.	-

3. COURSE CONTENT.

Philosophy of Science.

The course covers the main contributions of three of the most relevant philosophers of science of all time: Rudolf Carnap, Karl Popper and Thomas Kuhn. The conception that each of these authors makes of the scientific phenomenon serves as an excuse to review the main scientific theories, which will be presented in their historical context.

4. LEARNING OUTCOMES.

General concepts of Philosophy of Science.

After completing the course, students will have understood the successes and limitations of the different interpretations that have been offered about the scientific phenomenon. It will become apparent that science is a complex, dynamic process that springs from the imagination of scientists and that, at least to date, has not been satisfactorily codified in a set of simple rules.

5. OBJECTIVES.

- Improvement of critical thinking.
- Ability to appreciate the advantaged of the data-driven methodology.

6. COURSE ORGANISATION.

UNITS

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| 1. | Logical Positivism: the philosophy of Rudolf Carnap. |
| 2. | Karl Popper: the rise and fall of falsificationism. |
| 3. | Thomas Kuhn: paradigms, revolutions and ... a whiff of relativism? |

LEARNING RESOURCES AND TOOLS.

Virtual course, material provided by the professor.

PLANNED LEARNING ACTIVITIES AND TEACHING METHODS.

In view of the current circumstances, lessons will be given by the professor and, after each one, there will be a join session for questions and debate.

7. ASSESSMENT METHODS, CRITERIA AND PERIOD.



Multichoice tests, group presentation of a topic proposed by the professor.

OBSERVATIONS.

8. BIBLIOGRAPHY AND TEACHING MATERIALS.

Specific lectures provided by the professor.

General literature:

- Chalmers, Alan. What Is This Thing Called Science? Third Edition (1999). 288 pages. Open University Press; ISBN-10: 0335201091, ISBN-13: 978-0335201099.
- Godfrey-Smith, Peter. Theory and Reality: An Introduction to the Philosophy of Science (2003). 272 pages. University of Chicago Press. ISBN-10: 0226300633, ISBN-13: 978-0226300634.
- Newton-Smith, William H. The Rationality of Science (1981). 308 pages. ISBN-10: 0415058775, ISBN-13: 978-0415058773.
- Sokal, Alan. Fashionable Nonsense: Postmodern Intellectuals' Abuse of Science (1999). 300 pages. St Martin's Press. ISBN-10: 0312204078, ISBN-13: 978-0312204075.