

Degree programme	Type	Course
Environmental Sciences	OP	4

Contact lecturer

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Prerequisites

There are none.

Group languages

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

Objectives

The course aims to provide students with tools for the management and evaluation of science in a broad context. The methods of evaluation of organisations, research projects and research careers will be reviewed from a historical framework, introducing alternative metrics and the qualitative evaluation of the impact of research. The different national and European R&D&I systems will also be presented, with special attention to territorial funding programmes and European Union framework programmes. The course will include a description of the basic blocks that make up a research project and those fundamental aspects to be taken into account for its economic management. Aspects related to intellectual and industrial property and mechanisms for the implementation of entrepreneurial initiatives derived from research results will be addressed. Finally, with an eminently practical approach, working groups will be organised for the preparation of research projects that exemplify actions with a high social, economic and/or environmental impact.

Learning outcomes

- CM45 (Identify the different philosophical, ethical and sociological conceptions of science and technology, recognising their evolution throughout history and their ethical and democratic implications in today's society.) Identify the different philosophical, ethical and sociological conceptions of science and technology, recognising their evolution throughout history and their ethical and democratic implications in today's society.
- KM60 (Compare the political, social and cultural dimensions of the development of science and technology at different historical stages, as well as their impact on the environment and on the human condition.) Compare the political, social and cultural dimensions of the development of science and technology at different historical stages, as well as their impact on the environment and on the human condition.

Contents

Theory programme

A. Research Evaluation

1. Historical perspective and indicators
2. National Agency for Quality Assessment and Accreditation (ANECA)
3. Evaluation of organisations, research projects and research careers
4. Alternative indicators and qualitative evaluation

B. R&D&I systems

1. Historical introduction
2. Public Research Organisations
3. State Research Agency and CDTI
4. Territorial funding programmes
5. European Union Framework Programmes

C. Structure of a research project and economic and legal aspects

1. Parts of a research project
2. Financial management
3. Industrial and intellectual property
4. Entrepreneurial initiatives

Practical programme

A. Practical development of a research project (in work groups)

1. Conception and design of a research project
2. Oral presentation
3. Peer evaluation

Learning activities and methodology

Title	Hours	ECTS	Learning outcomes
Exercises	10	0.4	CM45, KM60
Presentation of the assignments	7	0.28	CM45, KM60
Autonomous work	97	3.88	CM45, KM60
Theory lessons	30	1.2	CM45, KM60
Seminars	3	0.12	CM45, KM60

Practical activities

Lectures: presentation of content by lecturers.

Seminars: supervised monographic sessions, with shared participation between experts, lecturers and students.

Academically directed workshops: preparation of a research project in working groups under the supervision of the teaching staff.

Work exhibitions: oral presentation of the projects in front of the rest of the students and the teaching staff.

Teaching methodologies

Expository method: oral presentations by the teaching staff and, if necessary, with computer material

(PowerPoint, information on the Internet, etc.).

Project-oriented learning: carrying out projects in a given time to address a task that includes the planning, design and implementation of a series of activities, as well as the development and application of acquired learning.

Cooperative learning: encourages the development of autonomous learning, facilitating collaboration between companies.

Note 1: The course will also include materials in Spanish and English. Knowledge of both languages is required.

Note 2: Fifteen minutes of one class session, within the schedule established by the institution/degree program, will be reserved for students to complete surveys evaluating the teaching performance and the course.

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

Continuous assessment activities

Title	Weight	Hours	ECTS	Learning outcomes
Exam	45%	3	0.12	CM45, KM60
Seminars	5%	0	0	CM45, KM60
Research project	50%	0	0	CM45, KM60

Exam (45 %)

In the exam of the course, questions related to the three thematic blocks will be raised: (1) evaluation of research, (2) R+D+I systems, and (3) structure of a research project and economic and legal aspects.

Research project (50 %)

The research project will be carried out in working groups designated by the lecturers of the subject. The qualification will be of an individual nature, with a total weighting on the final qualification of 50 %, distributed as follows: teacher assessment, up to 20 %; peer assessment, up to 30 %.

Participation in seminars (5 %)

Active participation during the seminar sessions and the activities that may be proposed during them will be assessed.

Single assessment

Students who choose the single assessment option must take the exam and present the research project on the date designated for this purpose. Each assessment evidence will be weighted 50 %.

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.

This course allows the use of Artificial Intelligence (AI) technologies exclusively for tasks such as information retrieval, text correction, or translation, and under no circumstances to replace creative activities, such as writing texts. Other situations may be considered, always with the approval of the instructor. The student must (i) identify the parts that have been generated using AI; (ii) specify the tools used; and (iii) in the case of special uses, include a critical reflection on how these tools have influenced the process and the final outcome of the

activity. Lack of transparency regarding the use of AI in this graded activity will be considered academic dishonesty and will result in the activity being graded with a 0 and not eligible for recovery, or more severe sanctions in serious cases.

Bibliography

Joan Bellavista, Elena Guardiola, Aida Méndez, María Bordons. *Evaluación de la investigación*. Centro de Investigaciones Sociológicas, 1997.

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Gerard M. Crawley, Eoin O'Sullivan. *How To Write A Research Proposal And Succeed*. Imperial College Press, 2015.

Anna M. Pulpón Segura, Eva M. Garrido Aguilar, Pilar Delgado Hito, M. Teresa Icart Isern. *Cómo elaborar y presentar un proyecto de investigación, una tesina y una tesis*. Publicacions i Edicions de la Universitat de Barcelona, 2012.

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Horizon Europe Programme Guide, Comisión Europea, 2022.

Elea Giménez Toledo. *Malestar: los investigadores ante su evaluación*. Iberoamericana Editorial Vervuert, 2016.

Hicks, D., Wouters, P., Waltman, L. et al. \"Bibliometrics: The Leiden Manifesto for research metrics\". *Nature* 520, 429-431 (2015). <https://doi.org/10.1038/520429a> Also: <http://www.leidenmanifesto.org/>

Software

It is not required, beyond common applications such as text editors and spreadsheets.

Course groups and languages

The information provided is provisional until November 30. After this date, you will be able to consult the language of each group through this [link](#). To access the information, you will need to enter the course CODE