Universitat Autònoma de Barcelona

2023/2024

Management and Evaluation of Science

Code: 106237
ECTS Credits: 6

Degree	Type	Year	Semester
2504235 Science, Technology and Humanities	OB	3	1

Contact

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Teaching groups languages

You can check it through this link. To consult the language you will need to enter the CODE of the subject.
Please note that this information is provisional until 30 November 2023.

Teachers

Michele Catanzaro

External teachers

Arrate Muñoz

José Luis Pau

Prerequisites

There are none.

Objectives and Contextualisation

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.

Competences

- Analyse questions related to science and technology in society, using basic, essential forms of mathematical and statistical reasoning.
- Innovate in the methods and processes of this area of knowledge in response to the needs and wishes of society.
- Recognise the political, social and cultural dimension of science and technology development in the different historical periods.
- Work collaboratively in teams.

Learning Outcomes

1. Identify and critically analyse the relationships between power, productive system and technological development.
2. Identify the basic elements of the evaluation of scientific projects and recognise the issues they raise.
3. Identify the principal indicators and formats for assessing scientific activity.
4. Produce papers as part of a group.

Content

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

Methodology

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.

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.

Activities

Title	Hours	ECTS	Learning Outcomes
Type: Directed			
Lectures	30	1.2	2, 3, 1
Practical exercises	10	0.4	4, 2, 3, 1
Presentation of essays	7	0.28	4, 2, 3, 1
Seminars	3	0.12	2, 3, 1
Type: Autonomous			
Autonomous work	97	3.88	4, 2, 3, 1

Assessment

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.

Assessment Activities

Title	Weighting	Hours	ECTS	Learning Outcomes
Exam	45 %	3	0.12	2, 3, 1
Research project	50 %	0	0	4, 2
Seminars	5 %	0	0	2, 3, 1

Bibliography

Joan Bellavista, Elena Guardiola, Aida Méndez, María Bordons. *Evaluación de la investigación*. Centro de Investigaciones Sociológicas, 1997.
José García Quevedo, Mònica Martín Bofarull, Josep M Piñol Alabart, Mercedes Teruel. *El sistema d'innovació territorial de la demarcació de Tarragona*. Publicacions URV, 2010.
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.
Reforma de la Ley de la Ciencia, la Tecnología y la Innovación, Boletín Oficial del Estado, Disposición 14581, num. 214, 2022.
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

None is needed.