

## Course guide

### 300281 - ARDI - Aerospace R&D&I

**Last modified:** 09/06/2023

**Unit in charge:** Castelldefels School of Telecommunications and Aerospace Engineering  
**Teaching unit:** 748 - FIS - Department of Physics.

**Degree:** MASTER'S DEGREE IN AEROSPACE SCIENCE AND TECHNOLOGY (Syllabus 2021). (Compulsory subject).

**Academic year:** 2023    **ECTS Credits:** 5.0    **Languages:** English

#### LECTURER

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**Coordinating lecturer:** Defined in the course webpage at the EETAC website.

**Others:**

#### DEGREE COMPETENCES TO WHICH THE SUBJECT CONTRIBUTES

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**Specific:**

CE1 MAST21. Apply the scientific method to the study of the particular phenomenology of the aerospace environment.

CE3 MAST21. Carry out, present and publicly defend a research work carried out in a group, on a research topic in the aerospace field.

**Generical:**

CG2 MAST. Identify and apply the fundamental theoretical, experimental and numerical analyzes currently used in aerospace engineering.

CG4 MAST. Participate in an R+D+i project in the aerospace field, providing a vision and innovative knowledge associated with the most cutting-edge techniques in the field.

**Transversal:**

CT1b. ENTREPRENEURSHIP AND INNOVATION: Being aware of and understanding the mechanisms on which scientific research is based, as well as the mechanisms and instruments for transferring results among socio-economic agents involved in research, development and innovation processes.

CT2. SUSTAINABILITY AND SOCIAL COMMITMENT: Being aware of and understanding the complexity of the economic and social phenomena typical of a welfare society, and being able to relate social welfare to globalisation and sustainability and to use technique, technology, economics and sustainability in a balanced and compatible manner.

CT3. TEAMWORK: Being able to work in an interdisciplinary team, whether as a member or as a leader, with the aim of contributing to projects pragmatically and responsibly and making commitments in view of the resources that are available.

CT4. EFFECTIVE USE OF INFORMATION RESOURCES: Managing the acquisition, structuring, analysis and display of data and information in the chosen area of specialisation and critically assessing the results obtained.

CT5. FOREIGN LANGUAGE: Achieving a level of spoken and written proficiency in a foreign language, preferably English, that meets the needs of the profession and the labour market.

CT6. GENDER PERSPECTIVE: An awareness and understanding of sexual and gender inequalities in society in relation to the field of the degree, and the incorporation of different needs and preferences due to sex and gender when designing solutions and solving problems.

**Basic:**

CB6. Possess and understand knowledge that provides a basis or opportunity to be original in the development and/or application of ideas, often in a research context.

CB7. Students will be able to apply the acquired knowledge and their ability to solve problems in new or little explored environments in broader (or multidisciplinary) contexts related to their study area.

CB8. Students will be able to integrate knowledge and face the complexity of formulating judgments based on information that, while being incomplete or limited, includes reflections on social and ethical responsibilities linked to the application of their knowledge and opinions.

CB9. Students will be able to communicate their conclusions and the knowledge and ultimate reasons that support them to specialized and non-specialized audiences in a clear and unambiguous manner.

CB10. Students will acquire learning skills that allow them to continue studying in a way that will be largely self-directed or autonomous.

**TEACHING METHODOLOGY**

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Lectures.

Team work.

Tutorials.

**LEARNING OBJECTIVES OF THE SUBJECT**

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To provide knowledge on the methodological base of R&D&I.

To propose an advanced aerospace challenge to be solved by student teams.

**STUDY LOAD**

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Type	Hours	Percentage
Hours large group	45,0	36.00
Self study	80,0	64.00

**Total learning time:** 125 h



## CONTENTS

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### Aerospace R&D&I

#### Description:

1. Introduction to R&D&I.

Method.

Scientific and academic communication.

2. Library resources.

Library catalogues and search engines.

Databases and professional sources of information.

Bibliographic managers.

Ethical use of information: plagiarism, open access, intellectual property.

Scientific publishing.

3. Research challenge: Advanced Aerospace Project

A technical aerospace challenge proposed by a space agency, industry and/or research group will be developed by student teams.

**Full-or-part-time:** 125h

Theory classes: 15h

Guided activities: 110h

## GRADING SYSTEM

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