

## Course guide

### 19900 - AS - Aerospace Seminars

**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 2015). (Compulsory subject).  
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:**

CE2 MAST21. Apply systems engineering in the aerospace environment for the design and management of the different technological aspects associated with a mission.

**Generical:**

CG1 MAST. Identify and learn about the main R+D+i activities in the aerospace field that are currently carried out internationally in academia, industry and the largest space agencies..

CG3 MAST. Identify and consistently manage the different types of aerospace vehicles and the technological, design and implementation aspects of payloads for scientific missions.

**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.

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.

#### TEACHING METHODOLOGY

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Invited lectures by speakers from academia, space agencies, etc.

#### LEARNING OBJECTIVES OF THE SUBJECT

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To offer a view of the main aerospace activities of the research teams at the University, space agencies and/or industry in the aerospace sector.

To offer a view of the main activities carried out by the leading institutions in the aerospace sector.

## STUDY LOAD

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

**Total learning time:** 125 h

## CONTENTS

### Aerospace Seminars

#### Description:

1. Introduction to:

- Resources for research in Aerospace Science and Engineering. Search for information and references management.
- Actors in the aerospace sector and opportunities.
- Innovation in the aerospace sector: success cases and opportunities. Technological incubators.

2. Invited lectures by speakers from academia, space agencies, etc:

A. CDTI seminars.

General presentation.

Contribution of Spanish industry to different ESA programmes (e.g. Science, Earth Observation, Exploration, etc.).

B. ESA Educational Week.

This series of lectures is composed every year of 4 or 5 lectures by speakers from different ESA centers (EAC, ESAC, ESTEC, Paris) on ESA programmes (e.g. Galileo, Science) or more specific activities (such as ISRU, mission studies, etc.).

C. CNES Launchers Week.

This series of lectures is given by experts of the Launchers Directorate of the French Space Agency.

The following topics are presented over the course of a week (AM and PM sessions):

Missions, Orbital dynamics, GNC and flight software, Mechanical design, Solid and liquid rocket propulsion, Avionics, Ground and flight safety, RAMS, Orbit pollution constraints, Launcher installations, Future launchers and advanced concepts.

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

Theory classes: 45h

Guided activities: 80h

## GRADING SYSTEM