AEROSPACE ENGINEERING (LM52)

(Brindisi - Università degli Studi)

Teaching .
AEROSPACE SYSTEMS (MOD 2) C.I.

GenCod A006161

Owner professor MICHELE GIANNUZZI

Teaching in italian AEROSPACE SYSTEMS (MOD 2) C.I.

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SSD code ING-IND/05

Reference course AEROSPACE ENGINEERING

Course type Laurea Magistrale

Credits 6.0

Teaching hours Ore-Attivita-frontale: 54.0

For enrolled in 2020/2021

Taught in 2020/2021

Course year 1

Language INGLESE

Curriculum CURRICULUM AEROSPACE SYSTEMS

Location Brindisi

Semester Primo-Semestre

Exam type Orale

Assessment

Course timetable
https://easyroom.unisalento.it/Orario

BRIEF COURSE DESCRIPTION

The course aims to analyze the functionality of each aerospace system. It analyses the interdependencies of several systems in routine or emergency conditions. The attention will be focused on the functional aspects of its components and less on their construction solutions. According to this setting, the system should be seen as a "logical block of functionality."

REQUIREMENTS

The student needs to know general notions of physics, electrotechnics, thermodynamics, and chemistry.

COURSE AIMS

Upon completion of the course, students will have acquired:

- The concept of aircraft is intended as a system operating within the air transport system, including, in particular, maintenance.
- Basic knowledge of systems engineering: definition of requirements, management of interfaces, verification, and validation.
- The ability to identify the main aerospace on-board systems, the functions they perform, the architectures, the performances, the operating principles, with references to the energy sources that allow each system's operation.
- The ability to identify the features and design choices made through retrospective analysis of aircraft systems or existing space modules.
- The ability to apply the concepts learned in class with simple sizing calculations of the on-board systems' elements.

TEACHING METHODOLOGY	The lesson is articulated through a series of sub-chapters repeated - as far as possible - in a standard way: ▪ The mission of the system ▪ Interdependence on other systems ▪ Basic operating principles ▪ Key components ▪ Command, control, and warning systems ▪ Description of the real plant ▪ Operational aspects of the operation.
ASSESSMENT TYPE	The exam consists of a written test with questions on the various systems and their correlation. An oral test will follow.
FULL SYLLABUS	**Aircraft board systems:** Zones / Rooms / Doors; Engine systems; APU; Pneumatic system; Cabin air conditioning and pressurization system; Oxygen system; Fuel system; Hydraulic system; Flight controls; Landing gear adn brake system. **Introduction to space systems**
REFERENCE TEXT BOOKS	All lecture notes shown during lessons will be made available in the digital version. During the lessons, the teacher will refer to the following textbooks: I. Moir, A. Seabridge, "Aircraft Systems: Mechanical, Electrical and Avionics Subsystems Integration", Volume 21 di Aerospace Series, John Wiley & Sons, 2008. F. Vagnarelli - "impianti aeronautici" - IBN editore S. Chiesa, fascicoli tematici su impianti di bordo di vario tipo, Ed. CLUT, Torino.