AEROSPACE ENGINEERING (LM52)

(Brindisi - Università degli Studi)

Teaching AEROSPACE SYSTEMS

GenCod A005139

Owner professor FRANCESCO NICASSIO

Teaching in italian AEROSPACE SYSTEMS

Teaching AEROSPACE SYSTEMS

SSD code ING-IND/05

Reference course AEROSPACE ENGINEERING

Course type Laurea Magistrale

Credits 6.0

Teaching hours Front activity hours: 54.0

For enrolled in 2017/2018

Taught in 2018/2019

Course year 2

Language ENGLISH

Curriculum PERCORSO COMUNE

Location Brindisi

Semester First Semester

Exam type Oral

Assessment Final grade

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

BRIEF COURSE DESCRIPTION

This course provides basic concepts of aerospace systems (on aircrafts and aerospace vehicles), with associated infrastructures and services. The course intends to overcome the "sectorial view" of a system, in which the subsystems are considered independent entities, and to reach the "integrated view" in which each subsystem is connected to the "aircraft/spacecraft system". This interdisciplinary approach facilitates the scientific development of the students.

REQUIREMENTS

In order to attend the course, students must have a deep knowledge of physics (kinematic, static, dynamic, thermodynamic, electrical, optical, acoustic studies...). Overall, skills on aircraft (configurations and main features) are desirable. The knowledge of aerodynamics, flight mechanics, aeronautic structures and propulsion principles could be an aid for the students.

COURSE AIMS

The course aims at developing the student's skills of integrated aerospace systems. In particular, it is expected that the students will know:
- the features of aerospace missions and the involved systems;
- the several aerospace systems (on aircrafts and space vehicles);
- the architecture of the main systems: navigation system, monitoring stations, infrastructural supports...
- the linking between several subsystems, in order to carry out the mission efficiently;
- subsystem information in a correct manner, to understand the connection with the entire system;
- the reliability of complex systems.
The students are encouraged to:
- carry out simple planning subsystems applications;
- estimate order of magnitude of values in case study of a system benchmark;
- learn technical terminology (English vocabulary)

TEACHING METHODOLOGY

The course is delivered with class activities, where the teacher presents methods and models and with seminars given by university professors experts in these sectors.

ASSESSMENT TYPE	*The exam consists of written test, based on questions, where the student is required to demonstrate his understanding of some specific facts of systems configuration.*
FULL SYLLABUS	*- Course introduction* *- Basic aircraft control system* *- Structural Health Monitoring* *- Landing gear system* *- Aircraft anti/de-icing* *- Flight instruments* *- Electrical system* *- Avionic system* *- Pneumatic system* *- Hydraulic system* *- Fuel systems* *- Spacecraft system* *- Spacecraft dynamics and control*
REFERENCE TEXT BOOKS	*This course is a summary of several aerospace systems concepts: teaching material has been specifically produced for each lesson and it is provided to the students.*