AEROSPACE ENGINEERING (LM52)

(Brindisi - Università degli Studi)

Teaching ROBUST CONTROL AND FLIGHT CONTROL (MOD 1) C.I.

GenCod A006160
Owner professor Antonio PETITTI

Teaching in italian ROBUST CONTROL AND FLIGHT CONTROL (MOD 1) C.I.
Teaching ROBUST CONTROL AND FLIGHT CONTROL (MOD 1) C.I.

SSD code ING-INF/04

Reference course AEROSPACE ENGINEERING
Course type Laurea Magistrale

Credits 6.0

Teaching hours Front activity hours: 54.0

For enrolled in 2020/2021

Taught in 2020/2021

Course year 1

Language ENGLISH

Curriculum CURRICULUM AEROSPACE SYSTEMS

Location Brindisi

Semester First Semester

Exam type Oral

Assessment

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

BRIEF COURSE DESCRIPTION

The following topics are introduced and analyzed:

- state-space modeling;
- nonlinear systems theory;
- Lyapunov control theory;
- Sliding mode control
- Linear Matrix Inequalities applied to Linear Parameter-Varying systems control.

REQUIREMENTS

Basics in Automatic Control and Control Systems Theory

COURSE AIMS

The objective of the course of Robust Control and Flight Control is to provide in-depth knowledge of the state-of-the-art control methodologies for guaranteeing robustness. The course is organized to face the control topics from an aerospace point of view with practical examples and case studies.

TEACHING METHODOLOGY

The course is delivered with lectures and lab hours.

ASSESSMENT TYPE

The exam is oral.
The exam starts with a discussion of the project work carried out during the semester to assess the level of knowledge of the student about the Flight Control techniques analyzed during the course.
The oral exam also includes the discussion of more general aspects regarding the Robust Control methodologies encountered during the lectures.

REFERENCE TEXT BOOKS

Lecture notes are sufficient to learn the topics faced during the course.
However, further information can be retrieved from:

- Stability of Aircraft Systems: Introduction to Classical Feedback Control, Langton
- Nonlinear Systems, Khalil.