

# AEROSPACE ENGINEERING (LM52)

(Brindisi - Università degli Studi)

## Teaching COMPUTING AND MECHANICAL DESIGN

GenCod A003314

**Owner professor** Anna MORABITO

**Teaching in italian** COMPUTING AND MECHANICAL DESIGN

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**SSD code** ING-IND/15

**Reference course** AEROSPACE ENGINEERING

**Course type** Laurea Magistrale

**Credits** 9.0

**Teaching hours** Front activity hours: 81.0

**For enrolled in** 2016/2017

**Taught in** 2016/2017

**Course year** 1

**Language** ENGLISH

**Curriculum** PERCORSO COMUNE

**Location** Brindisi

**Semester** Second Semester

**Exam type** Oral

**Assessment** Final grade

**Course timetable**  
<https://easyroom.unisalento.it/Orario>

### REQUIREMENTS

Sufficiency in geometry and linear algebra.

### COURSE AIMS

#### Overview

Computer aided design aims at developing engineering design skills with a particular focus on the proficient use of modern CAD-integrated analysis tools.

#### Learning Outcomes

After the course the student should be able to

- \* acquire detailed knowledge and understanding of the most recent advances in 3D computer aided design.
- \* know the fundamental building blocks for creating parametric geometry.

### ASSESSMENT TYPE

The exam consists of two cascaded parts (maximum overall duration: three hours).

The first part is closed book (duration: one hour); the student is asked to illustrate some theoretical topics.

The second part, that starts when the student has completed the first part (duration: two hours), consists in modelling, using CATIA, a given mechanical/aeronautical component and outputting the detail drawing.

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## FULL SYLLABUS

Introduction: CAD/CAM/CAE systems in the industrial product development cycle.  
Geometric modeling methods and techniques.  
The representation schemes of solid geometry: CSG, B-rep, finite elements, schemes by enumeration of occupied spaces .  
2D and 3D geometric transformations.  
CATIA V5: Introduction  
CATIA V5: The sketching  
CATIA V5: Part Design  
CATIA V5: Assembly Design  
CATIA V5: Generative Shape Design  
CATIA V5: Drawing

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## REFERENCE TEXT BOOKS

Lee Kunwoo, "Principles of CAD/CAM/CAE Systems", Addison Wesley Longman  
▪Mortenson M.E., "GeometricModelling", John Wiley and Sons, 1997.  
▪Ibrahim Zeid, "Mastering CAD/CAM", McGrawHill  
▪Michel Michaud, CATIA-Core Tools, McGrawHill  
▪Lucidi delle lezioni