AEROSPACE ENGINEERING (LM52)

(Brindisi - Università degli Studi)

Teaching COMPUTER AIDED DESIGN FOR AEROSPACE APPLICATIONS

GenCod A005152

Owner professor Marta DE GIORGI

Teaching in italian COMPUTER AIDED DESIGN FOR AEROSPACE

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SSD code ING-IND/15

Reference course AEROSPACE ENGINEERING

Course type Laurea Magistrale

Credits 6.0

Teaching hours Front activity hours: 54.0

For enrolled in 2022/2023

Taught in 2022/2023

Course year 1

Language ENGLISH

Curriculum CURRICULUM AEROSPACE DESIGN

Location Brindisi

Semester Second Semester

Exam type Oral

Assessment Final grade

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

BRIEF COURSE DESCRIPTION	Computer aided design aims at provide to the students the knowledge regarding the design process and 3d modelling from a theoretical and practical point of view. The course includes the teaching of the 3D modelling software Catia V5, with particular attention to the surface modelling in the Generative Shape Design module.
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.
TEACHING METHODOLOGY	Theoretical and practical lessons
ASSESSMENT TYPE	The exam consists of two cascaded parts (maximum overall duration: two hours). The first part is closed book; the student is asked to illustrate some theoretical topics. The second part, that starts when the student has completed the first part, consists in modelling, using CATIA, a given mechanical/aeronautical component and outputting the detail drawing.

FULL SYLLABUS	Introduction: CAD/CAM/CAE systems in the industrial product development cycle. Geometric modeling methods and techniques. CAD tools evolution and wireframe modelling. Surface modelling. Solid modelling. The representation schemes of solid geometry: CSG, B-rep, finite elements, schemes by enumeration of occupied spaces . Curves and surfaces used in the CAD modelling . CATIA V5: Introduction CATIA V5: The sketching CATIA V5: Part Design CATIA V5: Assembly Design CATIA V5: Generative Shape Design CATIA V5: Drawing
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 ▪slides of the lessons