

AEROSPACE ENGINEERING (LM52)

(Brindisi - Università degli Studi)

Teaching MATHEMATICAL AND NUMERICAL METHODS IN AEROSPACE ENGINEERING, WITH

GenCod A003291

Owner professor PIERANDREA VERGALLO

Teaching in italian MATHEMATICAL AND NUMERICAL METHODS IN AEROSPACE ENGINEERING, WITH

Teaching MATHEMATICAL AND NUMERICAL METHODS IN AEROSPACE

SSD code MAT/07

Reference course AEROSPACE ENGINEERING

Course type Laurea Magistrale

Credits 6.0

Teaching hours Front activity hours: 54.0

For enrolled in 2024/2025

Taught in 2024/2025

Course year 1

Language ENGLISH

Curriculum AERONAUTICS DESIGN

Location Brindisi

Semester First Semester

Exam type Oral

Assessment Final grade

Course timetable

<https://easyroom.unisalento.it/Orario>

BRIEF COURSE DESCRIPTION

The present course is divided into five chapters:

1. Linear Algebra
2. Solving Linear Systems
3. Solving Nonlinear algebraic equations
4. Ordinary Differential Equations and their solutions
5. Partial Differential Equations for Models in Aerospace

Some laboratory experiences are planned with Matlab-type softwares.

REQUIREMENTS

This course requires basic notions of linear algebra and geometry, jointly with some knowledge of calculus with derivatives and integrals.

COURSE AIMS

The main aims of this course are reaching the students' awareness of mathematical methods to solve problems coming from Aerospace Engineering and presenting rigorous methods that help the student to get familiar with high-level mathematical thinking.

TEACHING METHODOLOGY

Classes (with related exercise sessions) and laboratories.

ASSESSMENT TYPE

Written and oral assessment.

REFERENCE TEXT BOOKS

1. Quarteroni, Sacco, Saleri: Numerical Methods, 2nd Edition, Springer, 2006;
2. R.J. LeVeque: Finite Difference Methods for Ordinary and Partial Differential Equations, SIAM, 2007;