

# AEROSPACE ENGINEERING (LM52)

(Brindisi - Università degli Studi)

## Teaching MATHEMATICAL AND NUMERICAL METHODS IN AEROSPACE ENGINEERING, WITH

GenCod A003291

Owner professor Raffaele VITOLO

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 Ore-Attività-frontale: 60.0

For enrolled in 2018/2019

Taught in 2018/2019

Course year 1

Language INGLESE

Curriculum AEROSPACE DESIGN

Location Brindisi

Semester Secondo-Semestre

Exam type Orale

Assessment Voto-Finale

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

### BRIEF COURSE DESCRIPTION

Algorithms and methods of approximate solution of algebraic and differential equations, with computer experiments.

### REQUIREMENTS

Calculus of functions of one or more real variables; linear algebra.

### COURSE AIMS

The students will acquire basic knowledge about main numerical methods in engineering applications.

### TEACHING METHODOLOGY

Lectures and computer experiments.

### ASSESSMENT TYPE

Oral exam on the course program (as exposed during the lectures) and proof of knowledge of the Matlab language.

### FULL SYLLABUS

Matrix computations  
Principles of numerical mathematics  
Direct methods for the solution of linear systems  
Iterative methods for the solution of linear systems  
Iterative methods for eigenvalues and eigenvectors  
Solution of non-linear algebraic equations  
Polynomial interpolation of functions and data  
Numerical integration  
Orthogonal polynomials and Fourier transform  
Numerical solution of ODEs  
Finite difference methods and finite element methods for PDEs.

