

# AEROSPACE ENGINEERING (LM52)

(Brindisi - Università degli Studi)

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

GenCod A003291

**Insegnamento** MATHEMATICAL AND NUMERICAL METHODS IN AEROSPACE

**Insegnamento in inglese** MATHEMATICAL AND NUMERICAL METHODS IN AEROSPACE

**Settore disciplinare** MAT/07

**Corso di studi di riferimento** AEROSPACE ENGINEERING

**Tipo corso di studi** Laurea Magistrale

**Crediti** 6.0

**Ripartizione oraria** Ore Attività frontale: 54.0

**Per immatricolati nel** 2020/2021

**Erogato nel** 2020/2021

**Anno di corso** 1

**Lingua** INGLESE

**Percorso** CURRICULUM AEROSPACE TECHNOLOGY

**Docente** Raffaele VITOLO

**Sede** Brindisi

**Periodo** Primo Semestre

**Tipo esame** Orale

**Valutazione** Voto Finale

**Orario dell'insegnamento**

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

### BREVE DESCRIZIONE DEL CORSO

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

### PREREQUISITI

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

### OBIETTIVI FORMATIVI

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

### METODI DIDATTICI

Lectures and computer experiments.

### MODALITA' D'ESAME

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

### PROGRAMMA ESTESO

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.

