

Faculty	Ingegneria
Master	Mechatronic Engineering (La Spezia)
Year/Semester	1/I

Course Title	Mathematical methods for engineering
ID Course Code	56834
Course Credits (CFU)	6
Scientific-Disciplinary Sector	MAT/05
Course Type	mono-disciplinary course
Lecturer-in-charge	BARONTI Marco

Learning Outcomes:

The course aims to complete basic training on topics of Calculus significant in applications such as optimization, differential equations and systems, transforms, with special attention to numerical aspects of the problems.

Course Organisation Details

Optimization, gradient method. Equations and differential systems, methods of Euler, Heun, Runge Kutta. Elements of functional analysis, Hilbert spaces, Fourier series, Laplace transform, Fourier transform.

Assessment	hours
Lectures	40.0
Practice	20.0
Laboratory	0.0
Integrative activities	0.0

References

G.C.Barozzi, *Metodi matematici per l'ingegneria dell'Informazione*, Zanichelli, 2005;

Organization and examinations

The course includes 40 hours of lecture and 20 hours of training some of them in the computer lab.

During the course some written tests will be performed in between.

The examination will consist of a written test and an oral test.

Pre-requisites

Elements of Calculus and Geometry.