UNIVERSITÀ DI PAVIA

Anno Accademico 2021/2022

NUMERICAL ANALIYSIS

Enrollment year	2020/2021
Academic year	2021/2022
Regulations	DM270
Academic discipline	
Department	DEPARTMENT OF MATHEMATICS "FELICE CASORATI"
Course	MATHEMATICS
Curriculum	PERCORSO COMUNE
Year of study	2°
Period	Annual (29/09/2021 - 10/06/2022)
ECTS	12
Lesson hours	112 lesson hours
Language	Italian
Activity type	WRITTEN AND ORAL TEST
Teacher	GARDINI FRANCESCA (titolare) - 6 ECTS GARDINI FRANCESCA (titolare) - 3 ECTS TANI MATTIA - 3 ECTS
Prerequisites	The topics covered within the courses Linear Algebra and Mathematical Analysis 1
Learning outcomes	The course will give a broader overview of basic concepts of Numerical Analysis and Scientific Computing, so that the students can classify problems and the numerical algorithms suitable for their solution. The course has a theoretical part as well as some Lab classes which take place at the Computer Lab of the Math Department
Course contents	1) Error analysis. 2) Direct methods for the solution of linear systems. 3) Iterative methods for the solution of linear systems. 4) Eigenvalues and eigenvectors approximation. 5) Approximation of functions and data.

	6) Non linear equations and optimization. 7) Numerical integration. 8) Approximation of ordinary differential equations.
Teaching methods	Lectures, exercises, and Labs
Reccomended or required readings	A. Quarteroni, R. Sacco, F. Saleri. Numerical Mathematics, Springer
Assessment methods	Written and oral exam. Lab report
Further information	
Sustainable development goals - Agenda 2030	$lbl_legenda_sviluppo_sostenibile