



ADVANCED NUMERICAL METHODS FOR PARTIAL DIFFERENTIAL EQUATIONS

Enrollment year	2019/2020
Academic year	2019/2020
Regulations	DM270
Academic discipline	MAT/08 (NUMERICAL ANALYSIS)
Department	DEPARTMENT OF MATHEMATICS "FELICE CASORATI"
Course	MATHEMATICS
Curriculum	PERCORSO COMUNE
Year of study	1°
Period	2nd semester (02/03/2020 - 09/06/2020)
ECTS	6
Lesson hours	48 lesson hours
Language	English
Activity type	ORAL TEST
Teacher	BREZZI FRANCO (titolare) - 2 ECTS MOIOLA ANDREA - 2 ECTS SANGALLI GIANCARLO - 2 ECTS
Prerequisites	Basic knowledge of numerical analysis, mathematical analysis, partial differential equations and MATLAB language. Previous attendance of the Finite Elements course is preferable.
Learning outcomes	The course aims at studying in detail some modern methods for the numerical approximation of partial differential equations that are relevant for applications. The methods under consideration will be analyzed theoretically.
Course contents	The course will focus on some advanced techniques for the solution of partial differential equations that extend the program of the Finite Element course. Some examples are: stabilization of Mixed FEMs (for the Stokes problem or for domain decomposition); a-posteriori error analysis;

	numerical solution of variational inequalities; Virtual Element Method (VEM)
Teaching methods	Classroom lectures
Reccomended or required readings	Notes prepared by the lecturer. Scientific papers provided by the lecturer.
Assessment methods	Oral exam
Further information	
Sustainable development goals - Agenda 2030	\$lbl_legenda_sviluppo_sostenibile