

Insegnamento: ADVANCED APPLIED ENGINEERING MATHEMATICS	
Modulo /i:	
CFU: 9	SSD: MAT/07
Ore di lezione: 40	Ore di esercitazione: 40
LAUREA MAGISTRALE IN INGEGNERIA STRUTTURALE E GEOTECNICA - Anno di corso: I	
<p>Obiettivi formativi: After this course students should be able to: organize/develop mathematical model for the engineering problem at hand, solve partial differential equations using numerical methods, use finite-difference method and finite element method, use Matlab for scientific programming</p>	
<p>Contenuti: The main purpose of this course is the introduction to mathematical and numerical modeling for Engineering. The following topics will be discussed. Heat conduction and diffusion. Parabolic partial differential equations. Initial boundary value problems. Finite difference Method. Consistency, Convergence, Stability. Von Neumann criterion. Finite element method. Weak form. Dirac delta function. Elliptic partial differential equations and steady-state processes. Wave motions and hyperbolic partial differential equations. Euler-Bernoulli equation and partial differential equations of higher order. Matlab for scientific programming</p>	
Docente: LUIGI FRUNZO	
Codice:	Semestre: 2
Prerequisiti / Propedeuticità: Calculus, Mechanics	
Metodo didattico: Lectures , Tutorials	
Modalità di esame: Oral exam	