



MSc in "Civil Engineering for Mitigation of Risk from Natural Hazards"

## Courses offered (general structure) 2023-2024

Reduction Of Seismic Risk		First semester					Second semester				
		Month 1	Month 2	Month 3	Month 4	Month 5	Month 1	Month 2	Month 3	Month 4	Month 5
1 <sup>st</sup> year	Series	Dynamics of Structures (G.O'Reilly, H.Sucuoglu- METU Ankara *)	Reinforced Concrete Structures (B. Mihaylov - U. Lièges*, G. Guerrini)	Applied Mathematics (M.Martinelli – IMATI – CNR*)	Computation -al Mechanics (S.Morganti)	Probability and Statistics for Eng Appl (P.Bazzurro, P.Venini)	Seismic Hazard and Applied Seismology (V.Poggi – OGS Trieste*)	Foundation engineering and Earth Retaining Structures (G.Andreotti)	Fundamentals of Seismic Design (R.Monteiro)	Nonlinear Response Analysis (R.Wiebe, Univ. of Washington*)	
	Parallel			-	•	i	Geotechnical Earthquake Engineering (C.GLai)				.Lai)
2 <sup>nd</sup> year	Series	Risk Assessme- nt and Loss Estimation (P.Bazzurro + D.Vamvatsikos NTU Athens * + M.Kohrangi)	1 choice ■	Bridge structures (G.M. Calvi)	Masonry structures (G.Magenes)	1 choice ∎∎	Thesis				
	Parallel			-	•		1				

Choices	Steel Structures (R.Nascimbene)	Seismic Isolation and Dissipation (A.Filiatrault)	Geomatics and GIS –b (A.Taramellli)
	Geomatics and GIS a – (A.Taramelli) ■	Risk Emergency Management and Legislation (Monti at al.)	

Mathematics and statistics	
Solid and structural mechanics	
Structural/geotechnical design, assessment and retrofit	
Hazard and risk analysis	
Complementary	





## MSc in "Civil Engineering for Mitigation of Risk from Natural Hazards"

## Courses offered (general structure) 2023-2024

Hydrogeological Risk Assessment & Mitigation		First semester				Second semester					
		Month 1	Month 2	Month 3	Month 4	Month 5	Month 1	Month 2	Month 3	Month 4	Month 5
1 <sup>st</sup> year	Series	Continuum Mechanics (S.Manenti)	Continuum Mechanics Geomatics and GIS –a (A.Taramelli)	Applied Mathematics (M.Martinelli – IMATI – CNR*)	Engineering Geology (C.Meisina)	Probability and Statistics for Eng Appl (P.Bazzurro, P.Venini)	Hydro morphology (** t.b.a.)	Computation- al Fluid Dynamics (S.Sibilla, A.Fenocchi)	1 Choice ∎	Geomatics and GIS –b (A.Taramelli)	
	Parallel		Fluvial Hydraulics (A.Fenocchi)				Landslides Hazard and Risk (Meisina + Bordoni)				
2 <sup>nd</sup> year	Series	Hydrological Risks (M.Martina)	Reliable E Manageme Hydraulic in (E.Cr	Design and ent of Urban frastructures reaco)	Structural measures for flood risk mitigation (A.Fenocchi)	1 Choice ■■	Thesis				
	Parallel	Flood Propagation (G.Petaccia)									
Choic						Landslide modeling and		Foundation			

Choices			modeling and mitigation strategies (D.Gioffré) ∎∎	Engineering and Earth Retaining Structures	Avalanches and Related Mountain	
			Risk Emergency Management		Hazards (Barbolini *-	
			and Legislation (A.Monti et al) ∎∎		Pasian) ∎	

Mathematics and statistics	
Fluid and continuum mechanics	
Hazard and exposure; definition and modeling	
Risk analysis	
Measures for risk mitigation	
Complementary	