



Course: Tunnels and Underground Structures		Teaching Language: English
SSD (Subject Areas): ICAR/07		CREDITS: 9
Course year: II	Type of Educational Activity: C (Related or supplementary)	
Teaching Methods: in person		
Contents extracted from the SSD declaratory consistent with the training objectives of the course: The course covers theoretical and applied aspects concerning the analysis, design, construction and monitoring of excavations and underground works.		
Objectives: The course aims to provide the necessary knowledge for tunnel design. The following topics are presented and discussed: principles of tunnel design; ground investigations necessary for the definition of the geotechnical model; stability requirements of the excavation; stresses and deformations around a cavity in an elastic and elasto-plastic medium; calculation methods for the first-phase lining and the final lining; methods for the evaluation of the surface displacement field and the risk assessment procedures associated with excavation in urban area (effects on existing buildings and structures); seismic actions on tunnels; basic knowledge to set up a monitoring plan during the construction and operation phases of the work. Some simple calculations concerning the above topics are carried out in the exercises.		
Propaedeuticities: none Is a propaedeuticity for: none		
Types of examinations and other tests: Oral exam		