

Weekly Programme Post Graduate Master TUNNELLING AND TUNNEL BORING MACHINES

Last update 26/05/10



MODULE 1 (Tunnel design and construction methods)

Week - 1			Subjects	Lecturer	hours	Company / University	
Monday	morning	16/11/2009	10.00 - Opening Cerimony (at D.I.T.A.G. Politecnico)		PEILA Daniele	1	Politecnico di Torino, Former President of ITA/AITES Politecnico di Torino, Former President of ITA/AITES Politecnico di Torino Geodata SpA, Torino Politecnico di Torino Corep CNRIGAG, CNR, Istituto di Geologia Ambientale e Geingegneria Politecnico di Torino /Ventilation & Comfort Systems
	afternoon		General tunnelling aspects	14.30 - 16.30	PELIZZA Sebastiano	2	
Tuesday	morning	17/11/2009	General tunnelling aspects	9.30 - 12.30	PELIZZA Sebastiano	3	
	afternoon		Guidelines for underground structures design	14.30 - 17.30	PEILA Daniele	3	
Wednesday	morning	18/11/2009	Geological aspects	9.30 - 12.30	SOLDO Luca	3	
	afternoon						
Thursday	morning	19/11/2009	Geological and geotechnical surveys	9.30 - 12.30	OGGERI Claudio	3	
	afternoon		ORGANIZATION - General aspects of course management	14.30 - 16.30	OVCIN Emanuela	2	
Friday	morning	20/11/2009	Natural undisturbed state of stress in rock and soil	9.30 - 12.30	CRAVERO Masantonio	3	
	afternoon		Methods for risk analysis: general overview	14.30 - 16.30	GUARDINI Claudia	2	

Week - 2			Subjects	Lecturer	hours	Company / University	
Monday	morning	23/11/2009	Rock and Soil mechanics outline	9.00 - 13.00	BARLA Giovanni	4	Politecnico di Torino Geodata SpA, Torino Politecnico di Torino Politecnico di Torino Politecnico di Torino Politecnico di Torino Politecnico di Torino Politecnico di Torino
	afternoon		Hydrogeological aspects and water inflow into the tunnel	16.00-18.00	RICCI Giovanni	2	
Tuesday	morning	24/11/2009	Rock and Soil mechanics outline	11.00-13.00	BARLA Giovanni	2	
	afternoon		Rock and Soil mechanics outline	14.00-18.00	BARLA Giovanni	4	
Wednesday	morning	25/11/2009	Holiday				
	afternoon						
Thursday	morning	26/11/2009	Geophysical investigations	9.30 - 12.30	SAMBUELLI Luigi	3	
	afternoon			14.30 - 17.30	SAMBUELLI Luigi	3	
Friday	morning	27/11/2009	Drill and blast method	9.30 - 12.30	CARDU Marilena	3	
	afternoon			14.30 - 17.30	CARDU Marilena	3	

Week - 3			Subjects	Lecturer	hours	Company / University	
Monday	morning	30/11/2009	Holiday				Politecnico di Torino Politecnico di Torino Politecnico di Torino Golder Associates Geodata SpA, Torino Geodata SpA, Torino Politecnico di Torino Politecnico di Torino
	afternoon						
Tuesday	morning	01/12/2009	Rock and Soil mechanics outline	11.00-13.00	BARLA Giovanni	2	
	afternoon		Outline of soil mechnaics	14.30 - 17.30	OGGERI Claudio	3	
Wednesday	morning	02/12/2009	Outline of soil mechnaics	9.30 - 12.30	OGGERI Claudio	3	
	afternoon		Risk assesment in tunnelling: Case histories	14.30 - 17.30	ROBERDS William / BORIO Luca	(Vdc) 3	
Thursday	morning	03/12/2009	Rock mass characterization and classifications	9.30 - 12.30	RUSSO Giordano	3	
	afternoon			14.30 - 17.30	RUSSO Giordano	3	
Friday	morning	04/12/2009	Drill and blast method - vibrations control	9.30 - 12.30	CARDU Marilena	3	
	afternoon		EXERCISE- Design of a blast round	14.30 - 17.30	CARDU Marilena	3	

Week - 4			Subjects	Lecturer	hours	Company / University	
Monday	morning	07/12/2009	Holiday				National Technical University of Athens, Past President of IAEG National Technical University of Athens, Past President of IAEG Sandvik Mining and Construction Sandvik Mining and Construction Sandvik Mining and Construction Sandvik Mining and Construction
	afternoon						
Tuesday	morning	08/12/2009	Holiday				
	afternoon						
Wednesday	morning	09/12/2009	Geological constraints and geotechnical issues in mechanized	9.30 - 12.30	MARINOS Paul	3	
	afternoon		tunneling	14.30 - 17.30	MARINOS Paul	3	
Thursday	morning	10/12/2009	Roadheader	9.30 - 12.30	PICHLER Josef	3	
	afternoon			14.30 - 17.30	PICHLER Josef	3	
Friday	morning	11/12/2009	Drilling machines and tools	9.30 - 12.30	KUKKONEN Juha	3	
	afternoon			14.30 - 17.30	KUKKONEN Juha	3	

Week - 5			Subjects	Lecturer	hours	
Monday	morning	14/12/2009	Supports: general overview	9.30 - 12.30	PELIZZA Sebastiano	3
	afternoon			14.30 - 16.30	PELIZZA Sebastiano	2
Tuesday	morning	15/12/2009	Design of supports (general concepts)	9.00 - 13.00	PEILA Daniele	4
	afternoon			15.00 - 18.00	PEILA Daniele	3
Wednesday	morning	16/12/2009	Shotcrete Technology	9.30 - 12.30	DAL NEGRO Enrico	3
	afternoon			14.30 - 17.30	OGGERI Claudio	(laib 1) 3
Thursday	morning	17/12/2009	Concrete Technology	9.30 - 12.30	PISTOLESI Carlo / MALTESE Cristiano	3
	afternoon			14.30 - 17.30	PISTOLESI Carlo / MALTESE Cristiano	3
Friday	morning	18/12/2009	Monitoring general concepts	10.30 - 12.30	OGGERI Claudio	2
	afternoon			14.30 - 17.30	BARPI Fabrizio	3

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 Mapei - Underground Technology Team
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 Politecnico di Torino
 Politecnico di Torino

Week - 6			Subjects	Lecturer	hours	
Monday	morning	11/01/2010	Fundamental of static and codes for lining design	9.30 - 12.30	BARPI Fabrizio	3
	afternoon			14.30 - 15.30	BARPI Fabrizio	1
Tuesday	morning	12/01/2010	Segmental lining	9.30 - 12.30	PESCARA Moreno	3
	afternoon			14.30 - 17.30	PESCARA Moreno	3
Wednesday	morning	13/01/2010	Segmental lining	9.30 - 12.30	PESCARA Moreno	3
	afternoon			14.30 - 17.30	PESCARA Moreno	3
Thursday	morning	14/01/2010	Home work			
	afternoon					
Friday	morning	15/01/2010	Risk assessment in tunneling: DAT	9.30 - 12.30	SCOTTI Gianmario	3
	afternoon			14.30 - 17.30	SCOTTI Gianmario	3

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 Geodata SpA, Torino

Week - 7			Subjects	Lecturer	hours	
Monday	morning	18/01/2010	Example of monitoring	10.30 - 12.30	LOCATELLI Livio	2
	afternoon					
Tuesday	morning	19/01/2010	Design of reinforcement of segments with steel fibers	9.30 - 12.30	PLIZZARI Giovanni / TIBERTI Giuseppe	3
	afternoon			14.30 - 17.30	PLIZZARI Giovanni / TIBERTI Giuseppe	3
Wednesday	morning	20/01/2010	Structural Eurocodes	9.00 - 13.00	FANTILLI Alessandro	4
	afternoon			14.30 - 16.30	MORINO Alberto	2
Thursday	morning	21/01/2010	Improvements in nailing systems for tunnelling for coarse soils	10.00-12.00	ZENTI Carla	2
	afternoon			14.00-16.00	ZENTI Carla	2
Friday	morning	22/01/2010	Design of segment lining: analysis of a relevant case history	9.30 - 12.30	DELLA VALLE Nicola	3
	afternoon			14.30 - 16.30	DELLA VALLE Nicola	2

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 gdtest Srl, Torino
 Elas Geotecnica
 Elas Geotecnica
 Tunnelconsult
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Week - 8			Subjects	Lecturer	hours	
Monday	morning	25/01/2010	Relevant examples of conventional tunnelling	8.30 - 12.30	GALLER Robert	4
	afternoon			14.00 - 16.00	GALLER Robert	2
Tuesday	morning	26/01/2010	Use of fibers for shotcrete and segment lining	9.30 - 12.30	ROSSI Bruno	3
	afternoon					
Wednesday	morning	27/01/2010	Forepoling	9.30 - 12.30	PEILA Daniele	3
	afternoon			14.30 - 16.30	PEILA Daniele	2
Thursday	morning	28/01/2010	Grouting	16.30 - 17.30	PELIZZA Sebastiano	1
	afternoon			10.30 - 12.30	PEILA Daniele	2
Friday	morning	29/01/2010	Formworks	14.00 - 18.00	PETTINAROLI Andrea	4
	afternoon			9.30 - 12.30	BERTINO Eugenio / CANDELORO Bruno	3
				14.30 - 16.30	BERTINO Eugenio / CANDELORO Bruno	2

Mining University of Loeben, Head of chair of subsurface Engineering
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 Politecnico di Torino, Former President of ITA/AITES
 Politecnico di Torino
 Studio Balossi
 Cifa Spa
 Cifa Spa

Week - 9			Subjects	Lecturer	hours	
Monday	morning	01/02/2010	Use of a FEM programme	9.30 - 12.30	PEILA Daniele	(laib 1) 3
	afternoon			14.30 - 17.30	BORIO Luca	(laib 1) 3
Tuesday	morning	02/02/2010	EXERCISE: Example of calculations	9.30 - 12.30	BARBERO Monica	(laib 1) 3
	afternoon			14.30 - 17.30	BARBERO Monica	(laib 1) 3
Wednesday	morning	03/02/2010	Numerical modelling of a case histories	10.30 - 12.30	FLORIA Vincenza	2
	afternoon			14.30 - 16.30	FLORIA Vincenza	2
Thursday	morning	04/02/2010	Example of rock tunnelling	9.30 - 12.30	ASSIS André	3
	afternoon			14.30 - 17.30	ASSIS André	3
Friday	morning	05/02/2010	Example of rock tunnelling	9.30 - 12.30	ASSIS André	3
	afternoon			14.30 - 17.30	ASSIS André	3

MODULE 2 (Mechanized tunnelling)

Week - 10			Subjects	Lecturer	hours	
Monday	morning	08/02/2010	Class work - design of a rock tunnel	9.30 - 12.30	BARBERO Monica	(laib 1) 3
	afternoon			14.30 - 16.30	BARBERO Monica	(laib 1) 2
Tuesday	morning	09/02/2010	Design of bored tunnels in urban area	9.30 - 12.30	KOVARI Kalman / STEINER Patrick	(laib 1) 3
	afternoon			14.30 - 17.30	KOVARI Kalman / STEINER Patrick	(laib 1) 3
Wednesday	morning	10/02/2010	Class work - design of a rock tunnel	9.30 - 12.30	BARBERO Monica	(laib 1) 3
	afternoon			14.30 - 16.30	BARPI Fabrizio	(laib 1) 2
Thursday	morning	11/02/2010	Overview of TBM machines	9.30 - 12.30	PEILA Daniele	3
	afternoon			14.30 - 16.30	PEILA Daniele	2
Friday	morning	12/02/2010	Face stability design and face counterpressure	9.30 - 12.30	ANAGNOSTOU Georgios	3
	afternoon			14.30 - 16.30	ANAGNOSTOU Georgios	2

Week - 11			Subjects	Lecturer	hours	
Monday	morning	15/02/2010	Tools and excavability forecast for Roadheaders	9.30 - 12.30	BILGIN Nuh	3
	afternoon			14.30 - 17.30	BILGIN Nuh	3
Tuesday	morning	16/02/2010	Exercise	8.30 - 12.30	BILGIN Nuh	4
	afternoon			14.00 - 16.00	BILGIN Nuh	2
Wednesday	morning	17/02/2010	EXAM - First Module	13.30 - 15.30	PEILA Daniele	2
	afternoon		Enhancement of Personal Resources (Tech. Of Communication)	16.00 - 18.00	OVCIN Emanuela	2
Thursday	morning	18/02/2010	TBM tunnelling in difficult ground	9.30 - 11.30	RAMONI Marco	2
	afternoon		Rock TBM types and facilities	14.30 - 17.30	CONCILIA Massimo	3
Friday	morning	19/02/2010	Rock TBM types and facilities	9.30 - 12.30	CONCILIA Massimo	3
	afternoon		14.30 - 17.30	CONCILIA Massimo	3	
Saturday	morning	20/02/2010	Rock TBM types and facilities	9.30 - 11.30	CONCILIA Massimo	2

Week - 12			Subjects	Lecturer	hours	
Monday	morning	22/02/2010	Slurry shield and treatment plants	8.30 - 12.30	THEWES Markus	4
	afternoon		14.00 - 16.00	THEWES Markus	2	
Tuesday	morning	23/02/2010	Holiday			
	afternoon					
Wednesday	morning	24/02/2010	Choice of a rock TBM	9.30 - 12.30	SKUK Stefan	3
	afternoon		Choice of a rock TBM	14.30 - 17.30	SKUK Stefan	3
Thursday	morning	25/02/2010	Case histories	9.30 - 12.30	PIEK Luis	3
	afternoon		14.30 - 17.30	PIEK Luis	3	
Friday	morning	26/02/2010	Soil conditioning and tail injection	9.30 - 12.30	SCHULKINS Richard	3
	afternoon		14.30 - 16.30	SCHULKINS Richard	2	

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 ETH - Swiss Federal Institute of Tecnology / Solexperts Ltd.
 ETH - Swiss Federal Institute of Tecnology / Solexperts Ltd.
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 ETH - Swiss Federal Institute of Tecnology
 ETH - Swiss Federal Institute of Tecnology

Istanbul Technical University
 Istanbul Technical University
 Istanbul Technical University
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 Politecnico di Torino
 Corep
 ETH - Swiss Federal Institute of Tecnology
 Todini Costruzioni Generali S.p.a.
 Todini Costruzioni Generali S.p.a.
 Todini Costruzioni Generali S.p.a.
 Todini Costruzioni Generali S.p.a.

Bochum University
 Bochum University

Galleria di Base del Brennero
 Galleria di Base del Brennero
 Tunnel consultant - Master former student
 Tunnel consultant - Master former student
 Mapei - Underground Technology Team
 Mapei - Underground Technology Team

Week - 13			Subjects		Lecturer	hours
Monday	morning	01/03/2010	TBM - EPB and HS	9.30 - 12.30	BÄPPLER Karin	3
	afternoon			14.30 - 16.30	BÄPPLER Karin	2
Tuesday	morning	02/03/2010	Relevant case histories of mechanized tunnelling	8.30 - 12.30	BÄPPLER Karin	4
	afternoon					
Wednesday	morning	03/03/2010	TBM - EPB and HS	9.30 - 12.30	RAMIREZ VAZQUEZ René Raul	3
	afternoon			14.30 - 16.30	RAMIREZ VAZQUEZ René Raul	2
Thursday	morning	04/03/2010	Relevant case histories of mechanized tunnelling	9.30 - 12.30	RAMIREZ VAZQUEZ René Raul	3
	afternoon			14.30 - 16.30	RAMIREZ VAZQUEZ René Raul	2
Friday	morning	05/03/2010	Soil conditioning - Laboratory experience	9.30 - 11.30	PEILA Daniele / BORIO Luca	(TUSC) 2
	afternoon			14.30 - 17.30	BARLA Giovanni	3

Herrenknecht

Herrenknecht

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Week - 14			Subjects		Lecturer	hours
Monday	morning	08/03/2010	Microtunnelling	10.30 - 12.30	STERLING Raymond	2
	afternoon			14.30 - 17.30	STERLING Raymond	3
Tuesday	morning	09/03/2010	Microtunnelling	10.30 - 12.30	STERLING Raymond	2
	afternoon			14.30 - 17.30	STERLING Raymond	3
Wednesday	morning	10/03/2010	Microtunnelling	10.30 - 12.30	STERLING Raymond	2
	afternoon			14.30 - 17.30	STERLING Raymond	3
Thursday	morning	11/03/2010	Microtunnelling Relevant case histories	9.30 - 12.30	SCHMALZBAUER Silvio	3
	afternoon			14.30 - 16.30	SCHMALZBAUER Silvio	2
Friday	morning	12/03/2010	Machine monitoring and control	9.30 - 12.30	GUGLIELMETTI Vittorio / CARRIERI Giampiero	3
	afternoon			14.00 - 16.00	GUGLIELMETTI Vittorio / CARRIERI Giampiero	2
			Equal opportunities and corporate social responsibility	16.00 - 18.00	DI MARTINO Monica	2

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Week - 15			Subjects		Lecturer	hours
Monday	morning	15/03/2010	Driving of full face machines	9.30 - 12.30	GRÜBL Fritz	3
	afternoon			14.30 - 16.30	GRÜBL Fritz	2
Tuesday	morning	16/03/2010	Worksites organization in urban area	9.30 - 12.30	DELLA VALLE Nicola	3
	afternoon			14.00 - 16.00	PATRIGNANI Norberto	2
Wednesday	morning	17/03/2010	Innovation in Business	16.00 - 18.00	CAREGNATO Davide	2
	afternoon					
Thursday	morning	18/03/2010	Social Responsibility in Business	9.00 - 11.00	OVCIN Emanuela	2
	afternoon			16.00 - 18.00	OVCIN Emanuela	2
Friday	morning	19/03/2010	Gantt e Pert	9.30 - 12.30	OGGERI Claudio	3
	afternoon			14.30 - 17.30	OGGERI Claudio	3
Friday	morning	19/03/2010	Enhancement of Personal Resources (CV)	9.30 - 12.30	OGGERI Claudio	3
	afternoon			14.00 - 16.00	CAREGNATO Davide	2
			Exercise: forecast of rock TBM penetration	14.30 - 17.30	OGGERI Claudio	3
			Exercise: forecast of rock TBM penetration	14.30 - 17.30	OGGERI Claudio	3
			Reuse and management of excavated material	9.30 - 12.30	OGGERI Claudio	3
			Employment contracts	14.00 - 16.00	CAREGNATO Davide	2

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Week - 16			Subjects		Lecturer	hours
Monday	morning	22/03/2010	Holiday			
	afternoon					
Tuesday	morning	23/03/2010	EPB excavation problems in the metro of Torino	10.30 - 12.30	SARTORE Piero Antonio	2
	afternoon			14.30 - 16.30	SARTORE Piero Antonio	2
Wednesday	morning	24/03/2010	Plant Facilities needed when using Full Face TBM's	8.30 - 12.30	WAGNER Harald	4
	afternoon			12.30 - 14.30	WAGNER Harald	2
Thursday	morning	25/03/2010	Home work			
	afternoon					
Friday	morning	26/03/2010	Relevant tunnel examples: choice between open and close TBM	10.30 - 12.30	GRANDORI Remo	(Aula 6) 2
	afternoon			13.30 - 15.30	GRANDORI Remo	(Aula 6) 2

Maire Tecnimont S.p.A.

Maire Tecnimont S.p.A.

Independent Consulting Engineer and Expert of ITA Executive Council

Independent Consulting Engineer and Expert of ITA Executive Council

Seli S.p.a.

Seli S.p.a.

holiday			Subjects	Lecturer	hours
Monday	morning	29/03/2010	Holiday		
	afternoon				
Tuesday	morning	30/03/2010			
	afternoon				
Wednesday	morning	31/03/2010			
	afternoon				
Thursday	morning	01/04/2010			
	afternoon				
Friday	morning	02/04/2010			
	afternoon				

holiday			Subjects	Lecturer	hours
Monday	morning	05/04/2010	Holiday		
	afternoon				
Tuesday	morning	06/04/2010			
	afternoon				
Wednesday	morning	07/04/2010			
	afternoon				
Thursday	morning	08/04/2010			
	afternoon				
Friday	morning	09/04/2010			
	afternoon				

MODULE 3 (Management and safety of job sites)

Week - 17			Subjects	Lecturer	hours
Monday	morning	12/04/2010	Compressed air	9.30 - 12.30 MONTRASIO Paolo	3
	afternoon		Compressed air	14.30 - 16.30 MONTRASIO Paolo	2
Tuesday	morning	13/04/2010	Tunnel Facilities	9.30 - 12.30 NICOLA Antonio	3
	afternoon		Tunnel Facilities	14.30 - 16.30 NICOLA Antonio	2
Wednesday	morning	14/04/2010	Water treatment plants	9.30 - 12.30 NARVAEZ Gladys / DI MURO Marco	3
	afternoon		Equal opportunities and corporate social responsibility	14.00 - 18.00 DI MARTINO Monica	4
Thursday	morning	15/04/2010	Holiday		
	afternoon				
Friday	morning	16/04/2010	EXAM - Second Module	9.30 - 11.30 PEILA Daniele	2
	afternoon		Equal opportunities and corporate social responsibility	14.00 - 18.00 DI MARTINO Monica	4

Atlas Copco
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Impregilo S.p.a.
Impregilo S.p.a.
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Week - 18			Subjects	Lecturer	hours
Monday	morning	19/04/2010	Holiday		
	afternoon				
Tuesday	morning	20/04/2010	Contractual aspects and work site management	9.30 - 12.30 ARRIGONI Gianni	3
	afternoon			14.30 - 17.30 ARRIGONI Gianni	3
Wednesday	morning	21/04/2010	Contractual aspects and work site management	9.30 - 12.30 ARRIGONI Gianni	3
	afternoon			14.30 - 17.30 ARRIGONI Gianni	3
Thursday	morning	22/04/2010	Contractual aspects and work site management	9.30 - 12.30 ARRIGONI Gianni	3
	afternoon			14.30 - 17.30 ARRIGONI Gianni	3
Friday	morning	23/04/2010	Claims	9.30 - 12.30 TORTA Patrizio	3
	afternoon			14.30 - 16.30 TORTA Patrizio	2

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Week - 19			Subjects	Lecturer	hours		
Monday	morning	26/04/2010	Safety of work site and equipments	9.30 - 12.30	PATRUCCO Mario	3	Politecnico di Torino
	afternoon			14.30 - 17.30	PATRUCCO Mario	3	
Tuesday	morning	27/04/2010	Holiday				
	afternoon						
Wednesday	morning	28/04/2010	Safety of work site and equipments	9.30 - 12.30	SORLINI Achille	3	Geodata SpA, Torino
	afternoon			14.30 - 17.30	SORLINI Achille	3	Geodata SpA, Torino
Thursday	morning	29/04/2010	Ventilation methods	9.30 - 12.30	AMADO Ana Belén / FERNANDEZ Javier	3	Zitron Company
	afternoon			14.30 - 16.30	AMADO Ana Belén / FERNANDEZ Javier	2	Zitron Company
Friday	morning	30/04/2009	Holiday				
	afternoon						

Week - 20			Subjects	Lecturer	hours		
Monday	morning	03/05/2010	Rome Metro C: the machine / MetroBus Brescia	9.00 - 12.00	CRESTO Alessandro	(Aula 6) 3	Herrenknecht Metro C - Rome
	afternoon			13.00 - 16.00	SORGE Roberto	(Aula 6) 3	
Tuesday	morning	04/05/2010	Technical esper. on the use of chemical Injections underground	8.30 - 12.30	TRALDI Diletta	4	---
	afternoon			14.30 - 17.30	TRALDI Diletta	3	---
Wednesday	morning	05/05/2010	Technical esper. on the use of chemical Injections underground	9.30 - 12.30	TRALDI Diletta	3	---
	afternoon			h. 17.00 Transfer from Hagerbach (CH) Underground Lab to Torino			
Thursday	morning	06/05/2010	Holiday				
	afternoon						
Friday	morning	07/05/2010	Immersed Tunnel - Examples of Mechanized tunnelling	9.30 - 12.30	ADMIRAAL Johannes	3	Professor of Underground Space - CARUS Centre Professor of Underground Space - CARUS Centre
	afternoon			14.30 - 16.30	ADMIRAAL Johannes	2	

Week - 21			Subjects	Lecturer	hours		
Monday	morning	10/05/2010	Case history: Lotschberg-Base tunnel and Nant de Drance tunnel	9.30 - 12.30	SEINGRE Gérard	3	DGT - Project Nant-de-Drance AF - Colenco
	afternoon			14.30 - 16.30	SEINGRE Gérard	2	
Tuesday	morning	11/05/2010	Case history: Pinglin Tunnel	9.30 - 12.30	PELIZZA Sebastiano	3	DGT - Project Nant-de-Drance AF - Colenco Politecnico di Torino, Former President of ITA/AITES
	afternoon						
Wednesday	morning	12/05/2010	Case histories: metro Torino	9.00 - 12.00	CROVA Roberto	3	Gruppo Torinese Trasporti Politecnico di Torino
	afternoon			14.30 - 18.30	PATRUCCO Mario	4	
Thursday	morning	13/05/2010	CE marking of construction products	9.30 - 12.30	BALDO Roberto	3	Tecnopiemonte S.r.l.
	afternoon						
Friday	morning	14/05/2010	Case histories of Frejus tunnel	9.30 - 12.30	BRINO Lorenzo / FARINETTI Angelo	3	Lion - Turin Ferroviaire
	afternoon						

Week - 22			Subjects	Lecturer	hours		
Monday	morning	17/05/2010	Ventilation	9.30 - 13.30	PATRUCCO Mario	4	Politecnico di Torino
	afternoon						
Tuesday	morning	18/05/2010	Holiday				
	afternoon						
Wednesday	morning	19/05/2010	Holiday				
	afternoon			14.30 - 18.30	PATRUCCO Mario	4	Politecnico di Torino
Thursday	morning	20/05/2010	Holiday				
	afternoon						
Friday	morning	21/05/2010	Holiday				
	afternoon						
Saturday	morning	22/05/2010	TECHNICAL VISITS : Pontremolese	10.00 - 13.00	BORIO Luca	3	Politecnico di Torino
	afternoon			14.00 - 16.00	BORIO Luca	2	

Week - 23			Subjects	Lecturer	hours
Monday	morning	24/05/2010	Holiday		
	afternoon				
Tuesday	morning	25/05/2010	Soft Eye	9.30 - 12.30	CORBA Antonio
	afternoon				
Wednesday	morning	26/05/2010			
	afternoon				
Thursday	morning	27/05/2010			
	afternoon		h 14.45 - Transfer from Torino to Barberino del Mugello -		
Friday	morning	28/05/2010	Exercitation on the site: excavation in tunnels with gas problem	8.30 - 12.30	PELIZZA Sebastiano
	afternoon		Variant pass BO-FI - h. 17.00 Transfer from Firenze to Roma	14.30 - 16.30	PELIZZA Sebastiano
Saturday	morning	29/05/2010	Exercitation on the site: excavation of tunnels in urban environment	8.30 - 12.30	PELIZZA Sebastiano
	afternoon		Roma Metro - h 14.00 Transfer from Rome to Torino -		

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Week - 24			Subjects	Lecturer	hours
Monday	morning	31/05/2010	Homework		
	afternoon				
Tuesday	morning	01/06/2010	Homework		
	afternoon				
Wednesday	morning	02/06/2010	Homework		
	afternoon				
Thursday	morning	03/06/2010	EXAM - Third Module	9.30 - 11.30	PEILA Daniele
	afternoon				
Friday	morning	04/06/2010	to be defined		
	afternoon				

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Week - 25			Subjects	Lecturer	hours
Monday	morning	07/06/2010	h. 6.30 - Transfer from Torino to Monte Ceneri Tunnel (CH) -	9.00 - 13.00	PEILA Daniele
	afternoon		Exercitation on the site		
Tuesday	morning	08/06/2010	h. 13.30 - Transfer to Schwanau (GER) -	8.00-12.00	PEILA Daniele
	afternoon		Herrenknecht Factory	12.00-14.00	PEILA Daniele
			h 14.30 - Transfer from Schwanau to Torino -		

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