

Summer School on

SEDIMENT DYNAMICS AND ASSOCIATED RISKS

Ferrara 26 August – 4 September 2013

Coordinator
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Lecture plan and activities schedule

Purpose

Day	Topic	Lecturer	Day	Topic	Lecturer	Day	Topic	Lecturer
Day 1 26/08/2013	SEDIMENT DYNAMICS ON SLOPES		Day 4 29/08/2013	SEDIMENT DYNAMICS IN RIVERS		Day 7 01/09/2013	SEDIMENT DYNAMICS ON BEACHES	
9.00 - 10.00	Lecturer: Billi Sediment dynamics and associated risks	Billi	9.00 - 10.00	Lecturer: Billi Fluvial processes: an introduction	Billi	9.00 - 10.00	Lecturer: Ciavola Basic wave theory	Ciavola
10.00 - 11.00	Fubelli Landslide typology and hazard	Fubelli	10.00 - 11.00	Nardi Bank erosion processes	Nardi	10.00 - 11.00	Ciavola Wave processes in the surf zone	Ciavola
11.00 - 11.30	Break		11.00 - 11.30	Break		11.00 - 11.30	Break	
11.30 - 12.30	Fubelli Landslide susceptibility: predisposing parameters	Fubelli	11.30 - 12.30	Nardi Fluvial hydromorphology and river restoration	Nardi	11.30 - 12.30	Ciavola Sediment transport in the surf zone	Ciavola
12.30 - 14.00	Lunch		12.30 - 14.00	Lunch		12.30 - 14.00	Lunch	
14.00 - 15.00	Fubelli Landslide susceptibility: GIS application	Fubelli	14.00 - 15.00	Nardi Morphodynamic hazards and integrated river management	Nardi	14.00 - 15.00	Armaroli Beach morphodynamics	Armaroli
15.00 - 16.00	Salvini Slope stability monitoring	Salvini	15.00 - 16.00	Kiss Channel geometry changes	Kiss	15.00 - 16.00	Armaroli Remote sensing techniques for the study of nearshore morphodynamics	Armaroli
16.00 - 16.30	Break		16.00 - 16.30	Break		16.00 - 16.30	Break	
16.30 - 17.30	Salvini Rock mass modelling and slope stability	Salvini	16.30 - 17.30	Kiss Channel response to river regulation	Kiss	16.30 - 17.30	Ciavola Evaluation of morphological storm impact	Ciavola
17.30 - 18.00	All Panel discussion	All	17.30 - 18.00	All Panel discussion	All	17.30 - 18.00	All Panel discussion	All
Day 2 27/08/2013	Field trip/work: Slope processes and hazards		Day 5 30/08/2013	Field trip/work: fluvial processes and hazards		Day 8 02/09/2013		
8.00 - 19.00	Fubelli, Billi, Niacsu, Radoane		8.00 - 19.00	Billi, Nardi, Kiss, Bartholdy		9.00 - 10.00	Harley Wind waves in deep water	Harley
Day 3 28/08/2013			Day 6 31/08/2013			Day 8 02/09/2013		
9.00 - 10.00	Lecturer: Niacsu Soil and gully erosion in Eastern Europe	Niacsu	9.00 - 10.00	Bartholdy Principles of sediment transport	Bartholdy	9.00 - 10.00	Harley Wind waves in shallow water	Harley
10.00 - 11.00	Niacsu Advanced techniques to assess soil erosion and reservoir sedimentation	Niacsu	10.00 - 11.00	Bartholdy Bedforms and bedload transport	Bartholdy	10.00 - 11.00	Harley Wind waves in shallow water	Harley
11.00 - 11.30	Break		11.00 - 11.30	Break		11.00 - 11.30	Break	
11.30 - 12.30	Niacsu Soil and water conservation and hazard mitigation	Niacsu	11.30 - 12.30	Bartholdy Suspended load	Bartholdy	11.30 - 12.30	Harley Principles of wave modelling in deep and shallow water	Harley
12.30 - 14.00	Lunch		12.30 - 14.00	Lunch		12.30 - 14.00	Lunch	
14.00 - 15.00	Radoane Sediment dynamics in central Europe	Radoane	14.00 - 15.00	Billi Field measurement of sediment transport	Billi	14.00 - 15.00	Harley Long-term beach dynamics: sediment supply and off-shore conditions	Harley
15.00 - 16.00	Radoane Dams, sediment sources and reservoir siltation	Radoane	15.00 - 16.00	Kiss Overbank sedimentation along rivers	Kiss	15.00 - 16.00	Armaroli Short-term beach dynamics: off-shore and local morphological conditions	Armaroli
16.00 - 16.30	Break		16.00 - 16.30	Break		16.00 - 16.30	Break	
16.30 - 17.30	Radoane Downstream variation in bed sediment size along the East Carpathian rivers	Radoane	16.30 - 17.30	Billi River sediment flux and associated risks	Billi	16.30 - 17.30	Ciavola Beach flood and erosion: storms and rivers	Ciavola
17.30 - 18.00	All Panel discussion	All	17.30 - 18.00	All Panel discussion	All	17.30 - 18.00	All Panel discussion	All
Day 10 04/09/2013			Day 9 03/09/2013			Day 9 03/09/2013	Field trip/work: beach processes and hazards	
9.00 - 10.00	Lecturer: Billi/Ciavola Final test briefing/preparation	Billi/Ciavola	9.00 - 18.00			9.00 - 18.00	Ciavola, Armaroli, Harley, Billi	
10.00 - 11.00	Class final test							
11.00 - 11.30	Class final test							
11.30 - 12.30	Class final test							
12.30 - 14.00	Lunch							
14.00 - 15.00	School evaluation form							
15.00 - 16.00	Billi/Ciavola School topics discussion	Billi/Ciavola						
16.00 - 16.30	Billi/Ciavola School topics discussion	Billi/Ciavola						
16.30 - 17.30	Billi/Ciavola Final test results discussion and graduation	Billi/Ciavola						
Day 11 05/09/2013	Student departure							

Language:
English

Examination/evaluation

The School includes a final written test and the students that will attend all the lectures and field activities and will receive a positive evaluation of the final test will be granted with **3 ECTS**

Venue

All the School activities, accommodation and meals will be held at San Gerolamo dei Gesuati Hotel, Via Madama, 40/A, 44100 Ferrara

Though in many scientific/academic meetings it has been recognised the relevance of an integrated approach to sediment dynamics and associated risks, in most of European universities the concepts about principles, processes involved, field methods and monitoring, data analysis, modelling and mitigation intervention design are still fragmented in different courses, in the best case, or in different faculties or not cover at all, in the worst case. The main purpose of summer school is, therefore, to depict the fate and travel of sediment from sources on slopes and main channel bank erosion, through streambed entrainment, transport and deposition, and finally to beaches where erosion and deposition processes alternates. The students will have the opportunity to assess the complexity of the sediment dynamics throughout the river system and the associated risks induced by human impact and climate change and to learn and experience in the field the use of advanced instrumentation and/or practical methods for field data collection.