

## Stone conservation course – SC09 Curriculum

### Week One

#### Module 1 - Introductions & Orientation

Sun 12 April	Mon 13 April	Tues 14 April	Wed 15 April	Thurs 16 April <b>MODULE 1</b>	Fri 17 April	Sat 18 April
	<i>Easter Monday</i>	Arrival and registration course participants (at Palazzo Badoer)	Arrival and registration course participants (at Palazzo Badoer)	09:30 - 12:30 Course opens General introductions organizers & participants	9:15 - 10:30 Introduction to the Architectural History of Venice PM	9:30 - 11:30 Venice walking tour PM
				Visit to premises & facilities	<i>break</i>	
				<i>lunch</i>	11:00 - 12:15 Cont.	
				<i>lunch</i>	15:00 – 17:00 Course inauguration at the UNESCO-BRESCE Office	
				14:00 - 15:15 Expectations exercise		
				<i>break</i>		
				15:45 - 17:00 Administrative logistics		

Paola Modesti - PM

Course opening and closing	Laboratory	Case studies	Exercise	Participants presentation	Lecture	Worksite	Visit
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## Week Two

### Module 1 - Orientation

### Module 2 - Introduction to Conservation; Principles & Theory (GR & JK)

Sun 19 April	Mon 20 April	Tues 21 April <b>MODULE 2</b>	Wed 22 April	Thurs 23 April	Fri 24 April	Sat 25 April
	9:00 - 10:30 Stone conservation in Venice LL	9:00 - 10:30 Overview of conservation GR	9:00 - 10:30 Planning process in conservation, incl. preventive cons JK	9:00 - 10:30 General principles of stone conservation GT	9:00 - 10:30 General principles of stone conservation GT	
	break	break	break	break	break	
	11:00 - 12:30 Participants' presentations of home country (3)	11:00 - 12:30 International context & charters JK	11:00 - 12:30 Participants' presentations of home country (3)	11:00 - 12:30 Cont.	11:00 - 12:30 Participants' presentations of home country (3)	
	lunch	lunch	lunch	lunch	lunch	
	14:00 - 15:45 Venetian construction techniques ED	14:00 - 15:15 Types of intervention: Marrying theory & practice GR	14:00 - 15:15 Historical research and context for conservation decisions GR	14:00 - 15:15 Participants' presentations of home country (3)	14:00 - 15:15 Summary presentation/ Case study GR	
	break	break	break	break	break	
	16:15 - 17:00 Participants' presentations of home country (2)	15:45 - 17:00 Terminology & values International values  15:45 - 17:00 Values exercise JK	15:45 - 17:00 Participants' presentations of home country (3)	15:45 - 17:00 Participants' presentations of home country (3)	15:45 - 17:00 Discussion GR, GT	

Edoardo Danzi - ED

Lorenzo Lazzarini - LL

Joseph King - JK

Gionata Rizzi - GR

Giorgio Torraca - GT

Course opening and closing	Laboratory	Case studies	Exercise	Participants presentation	Lecture	Worksite	Visit
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### Week Three

#### Module 3 – Stone; Mineralogical and Physical Characteristics; Stone as a Building Material (LL)

Sun 26 April	Mon 27 April <b>MODULE 3</b>	Tues 28 April	Wed 29 April	Thurs 30 April	Fri 1 May	Sat 2 May
	9:00 - 10:30 Earth Science Mineralogy LL	9:00 - 10:30 Earth Science Petrography, Sedimentary rocks LL	9:00 - 10:30 Tools, quarrying & working techniques PR	Fieldtrip to Vicenza and Euganean Hills: Visit to stone workshop, limestone and trachite quarries PR, LL  8:00 Departure by coach from Piazzale Roma	9:00 – 11:00 Visit to San Marco LL	
	<i>break</i>	<i>break</i>	<i>break</i>			
	11:00 - 12:30 Magmatic rocks. LL	11:00 - 12:30 Metamorphic rocks LL	11:00 - 12:30 Cont.			
	<i>lunch</i>	<i>lunch</i>	<i>lunch</i>			
	14:00 - 15:15 Lab lecture – analysis & sample prep. (group 1) LL	14:00 - 15:15 Lab lecture - analysis & sample prep. (group 2) LL	14:00 - 15:30 Cont.			Free time
	<i>break</i>	<i>break</i>	<i>break</i>			
	15:45 - 17:00 Cont. (group 1)	15:45 - 17:00 Cont. (group 2)	16:00 - 17:30 Tool marks walking tour PR			

Lorenzo Lazzarini - LL  
Peter Rockwell - PR

Course opening and closing	Laboratory	Case studies	Exercise	Participants presentation	Lecture	Worksite	Visit
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## Week Four

### Module 3 – Stone; Mineralogical and Physical Characteristics; Stone as a Building Material cont. (LL)

Sun 3 May	Mon 4 May	Tues 5 May	Wed 6 May	Thurs 7 May	Fri 8 May	Sat 9 May
	9:00 - 10:30 Physical and mechanical properties of stone SR, LL	9:00 - 10:30 In situ testing on historic masonry structures SR	9:00 - 10:30 Intro to worksite LL	9:00 - 10:30 Stonework as a system (relation stone /mortars) GR	9:00 - 10:30 Material science of mortars LL	
	<i>break</i>	<i>break</i>	<i>break</i>	<i>break</i>	<i>break</i>	
	11:00 - 12:30 Cont.	11:00 - 12:30 Cont.	11:00 - 12:30 Visit to ongoing conservation worksite	11:00 - 12:30 Introduction to lime mortars GR, VM	11:00 - 12:30 Other types of mortars GR, VM	
	<i>lunch</i>	<i>lunch</i>	<i>lunch</i>	<i>lunch</i>	<i>lunch</i>	
	14:00 - 16:00 Demo Porosity and water absorption measurements LL	14:30 – 17:00 Demo lab mechanical testing SR  <i>(at IUAV LabSCo Lab Via Torino 153, Mestre)</i>	14:30 - 15:45 Review discussion Module 3 LL	14:30 - 17:30 Field demo & exercise mixing mortars GR, SV  <i>(at the Scientific Laboratory of the Misericordia)</i>	14:30 - 17:30 Field demonstrations & Practical exercise pointing /filling GR, SV  <i>(at the Scientific Laboratory of the Misericordia)</i>	
			<i>break</i>			
			Individual study time			

Lorenzo Lazzarini - LL

Valerie Magar - VM

Gionata Rizzi - GR

Salvatore Russo - SR

Stefano Volta - SV

Course opening and closing	Laboratory	Case studies	Exercise / Demo	Participants presentation	Lecture	Worksite	Visit
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## Week Five

### Module 4 – Deterioration Mechanisms; Survey and Analysis (JF & MLT)

Sun 10 May	Mon 11 May <b>MODULE 4</b>	Tues 12 May	Wed 13 May	Thurs 14 May	Fri 15 May	Sat 16 May
	9:00 - 10:30 Overview of deterioration mechanisms (terminology discussion) <i>JF</i>	9:00 - 10:30 Morphology of stone decay <i>MLT</i>	9:00 - 10:30 Introduction to climate (macro & micro), moisture & regional differences <i>DC</i>	9:00 - 10:30 Overview of non destructive diagnostic techniques <i>JF</i>	9:00 - 10:30 Structural mechanisms of deterioration, factors/effects <i>IH</i>	
	<i>break</i>	<i>break</i>	<i>break</i>	<i>break</i>	<i>break</i>	
	11:00 - 12:30 Cont.	11:00 - 12:30 Cont. Morphology, Documentation systems for mapping decay <i>MLT</i>	11:00 - 12:30 Cont.	11:00 - 12:30 Overview of non & micro destructive diagnostic criteria & techniques <i>LL, MLT</i>	11:00 - 12:30 Cont.	
	<i>lunch</i>	<i>lunch</i>	<i>lunch</i>	<i>lunch</i>	<i>lunch</i>	
	14:00 - 17:00 Walking tour Stone Deterioration (outdoor and indoor) <i>JF, MLT</i>	14:30 – 16:00 (group 2) Worksite – preliminary visual examinations <i>MLT</i>	14:30 - 17:30 Worksite – mapping Condition survey MvM	14:00 - 15:30 (Group 1) Demonstrations non destructive monitoring techniques <i>JF</i>	14:00 - 15:00 Introduction to the ongoing Ducal Palace structural monitoring <i>SR</i>	
		<i>break</i>		14:00 - 15:30 (Group 2) Visit to Circe recording and documentation Lab <i>CB</i>		
		16:00 - 17:30 (group 1) Worksite– preliminary visual examinations <i>MLT</i>		16:00 - 17:30 (Group 2) Demonstrations <i>JF</i>		15:30 - 17:00 Cont. at the Ducal Palace <i>SR</i>
				16:00 - 17:30 (Group 1) Visit to Circe recording and documentation Lab <i>CB</i>		

Caterina Balletti - CB  
Marisa Laurenzi Tabasso - MLT

Dario Camuffo - DC  
Lorenzo Lazzarini - LL

John Fidler - JF  
Salvatore Russo - SR

Ian Hume - IH  
Mieke Van Molle - MvM

Course opening and closing	Laboratory	Case studies	Exercise / Demo	Participants presentation	Lecture	Worksite	Visit
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## Week Six

### Module 4 – Mechanisms of Decay; Methods of Documentation and Analysis *cont.* (JF & MLT)

Sun 17 May	Mon 18 May	Tues 19 May	Wed 20 May	Thurs 21 May	Fri 22 May	Sat 23 May
	9:00 - 10:30 Air pollution MLT	9:00 - 10:30 Sources of moisture and its control IM	9:00 - 10:30 Moisture and its control IM	9:00 - 10:30 Salt/frost ED	9:00 - 10:30 Mortars analysis LL	10:00 - 13:00 Site visit Church of S. Maria dei Miracoli MP
	break	break	break	break	break	
	11:00 - 12:30 Interaction water /porous building materials MLT	11:00 - 12:30 Cont.	11:00 - 12:30 Cont.	11:00 - 12:30 Cont. ED	11:00 - 12:30 Review Discussion Module 4 MLT, LL	
	lunch	lunch	lunch	lunch	lunch	
	14:00 - 15:00 Participants presentations (2)	14:30 - 17:30 Worksite – mapping Condition survey MvM	14:00 - 15:15 Methods of control IM	14:00 - 15:15 Case studies, water MLT Incl: Participant presentation (1)	14:30 - 17:30 Worksite – mapping and site sampling LL	
	break		break	break		
	15:30 - 16:30 Participants presentations (2)		15:45 - 17:00 Cont. IM Incl: Participant presentation (1)	15:45 - 17:00 Case studies, salts/frost ED Incl: Participant presentation (1)		

Eric Doehne - ED

Marisa Laurenzi Tabasso - MLT

Lorenzo Lazzarini - LL

Ippolito Massari - IM

Mario Piana - MP

Mieke Van Molle - MvM

Course opening and closing	Laboratory	Case studies	Exercise	Participants presentation	Lecture	Worksite	Visit
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## Week Seven

### Module 4 – Mechanisms of Decay *cont.* (JF & MLT)

### Module 5 - Conservation Measures and Treatments (DO & GR)

Sun 24 May	Mon 25 May	Tues 26 May	Wed 27 May	Thurs 28 May <b>MODULE 5</b>	Fri 29 May	Sat 30 May
	9:00 - 10:30 Ecology of Biodeterioration GC	9:00 - 10:30 Vegetation control GC	9:00 - 10:30 Microbiological deterioration OS	9:00 - 10:30 Methodological approach to cons. Interventions GR	9:00 - 10:30 Structural repairs IH	
	break	break	break	break	break	
	11:00 - 12:30 Cont.	11:00 - 12:30 Cont.	11:00 - 12:30 Cont	11:00 - 12:30 Practical repair options DO	11:00 - 12:30 Cont.	
		Incl: Participant presentation (1)				
	lunch	lunch	lunch	lunch	lunch	
	14:30 - 17:30 Worksite – mapping and site sampling OS, GC	14:30 - 15:45 Lab OS, GC (at the Scientific Laboratory of the Misericordia)	14:00 - 15:15 Other human interaction GR	14:00 - 15:15 Practical repair options DO	14:30 - 17:30 Worksite - mapping	
		break	break	break		
		16:00 - 17:15 Lab Cont. OS, GC	15:45 - 17:00 Case study: volcanic tuff rock art VM	15:45 - 17:00 Emergency and preventive interventions DO, GR		

Giulia Caneva - GC  
Valerie Magar - VM  
Ornella Salvadori - OS

Ian Hume - IH  
David Odgers - DO  
Gionata Rizzi - GR

Course opening and closing	Laboratory	Case studies	Exercise	Participants presentation	Lecture	Worksite	Visit
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## Week Eight

### Module 5 - Conservation Measures and Treatments *cont.* (GR & DO)

Sun 31 May	Mon 1 June	Tues 2 June	Wed 3 June	Thurs 4 June	Fri 5 June	Sat 6 June
	9:00 - 10:30 Stone repair (architectural & sculptural elements) GR	9:30 - 12:30 <i>Worksite – mapping Finalization</i>	9:00 - 10:30 Archaeological site conservation GR	9:00 - 10:30 Mortars/grouts DO	9:00 - 10:30 Cleaning: introduction and techniques LL	
	<i>break</i>		<i>break</i>	<i>break</i>	<i>break</i>	
	11:00 - 12:30 Cont.		11:00 - 12:30 Cont. incl. Case studies GR	11:00 - 12:30 Cont.	11:00 - 12:00 Cont.	
					12:00 - 12:30 introduction to Worksite Working Group (WG) activities <i>Team, PP</i>	
	<i>lunch</i>	<i>lunch</i>	<i>lunch</i>	<i>lunch</i>	<i>lunch</i>	
	14:00 - 15:15 Case st: Wells Cathedral DO	Free Time	14:30 - 17:30 Demonstrations on stone repair GR, SV	14:30 - 17:30 Demonstrations on mortars DO, SV, GR	14:30 - 17:30 Demonstrations on cleaning DO, SV, GR	
	<i>break</i>	<i>break</i>	<i>(at the Scientific Laboratory of the Misericordia)</i>	<i>(at the Scientific Laboratory of the Misericordia)</i>	<i>(at the Scientific Laboratory of the Misericordia)</i>	
	15:45 - 17:00 Participants presentations (3)	Free Time				

Lorenzo Lazzarini - LL

David Odgers - DO

Paolo Pagnin - PP

Gionata Rizzi - GR

Stefano Volta - SV

Course opening and closing	Laboratory	Case studies	Exercise / Demo	Participants presentation	Lecture	Worksite	Visit
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## Week Nine

### Module 5 - Conservation Measures and Treatments *cont.* (GR & DO)

Sun 7 June	Mon 8 June	Tues 9 June	Wed 10 June	Thurs 11 June	Fri 12 June	Sat 13 June
	9:00 - 10:30 Cleaning systems DO	9:00 - 10:30 Introduction to consolidation DO, GW	9:00 - 10:30 Consolidation – alkoxysilane based GW, DO	9:00 - 10:30 Demonstration Consolidation with silicic materials GH	9:00 - 10:30 Control and prevention of biological growth OS	
	<i>break</i>	<i>break</i>	<i>break</i>	<i>break</i>	<i>break</i>	
	11:00 - 12:30 Cont.	11:00 - 12:30 Cont.	11:00 - 12:30 Cont.	11:00 - 12:30 Demonstration Cont. GH	11:00 - 12:30 Testing & selection of materials/products OS	
					Incl: Participant presentation (1)	
	<i>lunch</i>	<i>lunch</i>	<i>lunch</i>	<i>lunch</i>	<i>lunch</i>	
	14:00 - 15:00 Participants presentations (2)	14:00 - 15:15 Consolidation – water and solvent based DO, GW	14:00 - 15:15 Testing/Choice of products GW incl structural stone consolidation application methods GH	14:00 - 15:15 Paint on stone: Surface protection by re-application of paint coats GH	14:30 - 15:45 Lab Demonstration & exercises (group 1) OS <i>(at the Scientific Laboratory of the Misericordia)</i>	
	<i>break</i>	<i>break</i>	<i>break</i>	<i>break</i>	<i>break</i>	
	15:30 - 17:00 Demonstration Laser cleaning PP	15:45 - 17:00 Cont.	15:45 - 17:00 Water repellents GH	15:45 - 17:00 The conservation of original paint on stone GH	16:00 - 17:15 Cont. (group 2)	

Gottfried Hauff - GH

David Odgers - DO

Paolo Pagnin - PP

Ornella Salvadori - OS

George Wheeler - GW

Course opening and closing	Laboratory	Case studies	Exercise / Demo	Participants presentation	Lecture	Worksite	Visit
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## Week Ten

### Module 5 - Conservation Measures and treatments *cont.* (GR & DO)

Sun 14 June	Mon 15 June	Tues 16 June	Wed 17 June	Thurs 18 June	Fri 19 June	Sat 20 June
	9:00 - 10:30 Monitoring, maintenance and evaluation of repairs GR	9:00 - 10:30 Case study: The conservation of the Acropolis Monuments FMT	Study tour detailed programme to be defined  Overnight in Florence (Fiesole hills)	Study tour detailed programme to be defined  Overnight in Rome	Study tour detailed programme to be defined  Overnight in Rome	Study tour detailed programme to be defined
	<i>break</i>	<i>break</i>				
	11:00 - 12:30 Cont.	11:00 - 12:30 Cont.				
	<i>lunch</i>	<i>lunch</i>				
	14:00 - 15:15 Review discussion Module 5 GR	Individual study time				
	<i>break</i>	<i>break</i>				
	15:45 - 17:00 Part. presentations (3)	Individual Study time				

Fani Mallouchou-Tufano - FMT  
Gionata Rizzi - GR

Course opening and closing	Laboratory	Case studies	Exercise	Participants presentation	Lecture	Worksite	Visit
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## Week Eleven

### Module 6 – Worksite & Final Presentations (Team)

Sun 21 June	Mon 22 June <b>MODULE 6</b>	Tues 23 June	Wed 24 June	Thurs 25 June	Fri 26 June	Sat 27 June
	9:00 - 10:30 Case study: Angkor SW	9:00 - 10:30 Project Proposal writing SW	9:00 - 12:30 Worksite WG activities	9:00 - 10:30 Diagnosis & treatment of granitic rocks JDR	9:00 - 12:30 Worksite WG activities	
	break	break		break		
	11:00 - 12:30 Cont.	11:00 - 12:30 Cont.		11:00 - 12:30 Cont.		
	lunch	lunch	lunch	lunch	lunch	
	14:00 - 17:00 Worksite WG activities	14:00 - 15:15 Part. presentations (3)	14:00 - 17:00 Worksite WG activities	14:00 - 15:15 Case studies on granite monuments JDR	14:00 - 17:00 Worksite WG activities	
		break		break		
		Individual Study time		15:45 - 17:00 Case studies Cont. JDR		

José Delgado Rodrigues - JDR  
Simon Warrack - SW

Course opening and closing	Laboratory	Case studies	Exercise	Participants presentation	Lecture	Worksite	Visit
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## Week Twelve

### Module 6 – Worksite & Final Presentations *cont.* (Team)

Sun 28 June	Mon 29 June	Tues 30 June	Wed 1 July	Thurs 2 July	Fri 3 July	Sat 4 July
	9:00 - 12:30 Worksite WG activities	9:00 - 12:30 Preparation worksite WG reports & presentations	9:00 - 12:30 Preparation presentation results worksite WG activities	9:00 - 10:30 Expectations exercise	Closing ceremonies  END OF COURSE	
				<i>break</i>		
				11:00 - 12:30 Cont.		
	<i>lunch</i>	<i>lunch</i>	<i>lunch</i>	<i>lunch</i>		
	14:00 - 17:00 Worksite WG activities	14:00 - 17:00 Final editing Worksite WG reports	14:00 - 15:15 Presentation results worksite WG activities	14:00 - 15:15 Evaluation		
			<i>break</i>	<i>break</i>		
			15:45 - 17:00 Cont.	15:45 - 17:00 Cont.		

Course opening and closing	Laboratory	Case studies	Exercise	Participants presentation	Lecture	Worksite	Visit
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