



ENVIRONMENTAL RISK ASSESSMENT AND MITIGATION ON CULTURAL HERITAGE ASSETS IN CENTRAL ASIA

ERAMCA

ERASMUS+ CBHE PROJECT NR. 609574



Deliverable D5.4 Organization and delivery of a training session

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1. Introduction

The deliverable entitled "D5.4 Organization and delivery of a training session" is aimed at documenting the training program that took place between the **18th – 22nd of July 2022 at Bauhaus-Universität Weimar, Germany** (Figure 1), in the frame of the ERASMUS+ Capacity Building project in the field of Higher Education grant with the reference number 609574-EPP-1-2019-1-IT-EPPKA2-CBHE-JP. This report covers the delivery of the training for teachers and staff. It should be read in conjunction with the deliverables:

- D5.1: Creation of a program of training for teachers and staff;
- D3.1 D3.3: Definition description and taxonomy of a Master in Cultural Heritage Conservation in Central Asia;
- D4.2: Development of practical trainings for each theoretical course.

This report focusses on the organization and delivery as well as success and lessons learnt. Information regarding the presenters and participants are documented in D 5.2 & D5.3 titled "Selection of trainers and selection of teachers and staff". The overall pedagogical approach was documented in D 5.1.



Figure 1: Workshop participants in lecture hall

2. Organization and Delivery

In order to achieve the project objectives, a one-week workshop was organized and held at Bauhaus University Weimar from July 18-22, 2022, as planned, for the purpose of communicating and discussing the teaching materials developed as part of the ERAMCA project.

The organization followed a uniform (see also D5.1) and content-related timetable adapted to the disciplinary teams (see Appendix I). General topics, laboratory visits and technical excursions to the Naumburg Cathedral (Figure 3.) were carried out together. The specialist topics (including exercises), on the other hand, were dealt with in the individual small groups (disciplinary teams). The program was supplemented by joint evening events to promote professional and social exchange.

The disciplinary team leaders were responsible for the organization of the individual lectures in close cooperation with the partners of the Bauhaus University Weimar. The supporting program was organized by the Bauhaus University Weimar.



Within the individual sessions, mainly teachers from the European countries gave short presentations of the teaching content they had developed (D4.1) as an introduction to the discussion, highlighting important aspects accordingly and or specially prepared sample lectures. Thus, it was possible to show in this way how the teaching content can be conveyed accordingly. The presentations were supplemented by exercises on the tools and software acquired in the course of the project.

General topics were devoted to aspects of professional practice and evaluation criteria as well as requirements for project work.

Most of the training and discussions were done in person (Figure 2), however some of the sessions were done via video conference by European partners who had problems with flight cancelations.



Figure 2: Typical room for training sessions



Figure 3: Pinnacle of Naumburg Cathedral





Day 1: Opening: Welcome speech by the Dean of the Faculty of Civil Engineering At Bauhaus-Universität Weimar as well as BUW's project leader.

General Lecture: Presentation by Z.D. Alduk (UNIOS) about professional practie organization. Working in small groups (Disciplinary Team): Lectures and Exercises; discussion and elaboration on teaching materials; training of software tools and equipment (e.g. in geomatics). Social gathering at the evening.

- Day 2: Working in small groups (Disciplinary Team): Lectures and Exercises; discussion and elaboration on teaching materials; training of software tools and equipment (e.g. in geomatics).
- Day 3: Laboratory Tour and excursion to the Naumburg Cathedral.
- Day 4: Working in small groups (Disciplinary Team): Lectures and Exercises; discussion and elaboration on teaching materials; training of software tools and equipment (e.g. in geomatics).

Merging of the Restoration and Earthquake Engineering groups with the aim of establishing a basic understanding between the groups and the problems that influence each other, so that these can be dealt with in future in the degree program in jointly supervised theses.

Day 5: Working in small groups (Disciplinary Team): Lectures and Exercises; discussion and elaboration on teaching materials.

General discussion about evaluation criteria, thesis requirements and closing incl. feedback , future possibilities for joint thesis supervision and use of e-learning tools (e.g. online guest lecture).

Project leader meeting (see separat protocoll).

Social gathering at the evening.

3. Attendance

The workshop was supported by the following colleagues incl. naming their main contributions. More details can be taken from the different time schedules presented in Appendix I. The complete list of participants can be found in Appendix II.

Name	Affiliation	Disciplinary Team	Main Contribution
Fulvio Rinaudo	POLITO	Geomatics	Lead
Vittorio Scolamiero	POLITO		Practice on LIDAR acquisition
Saidislomkhon Usmanov	TTPU		GIS basic concepts incl. exercise and examples
Jafar Niyazov	IWPHE		LIDAR basic concepts and survey examples
Volker Rodehorst	BU-W		Digital Photogrammetry
Thomas Gebhardt	BU-W		Technical Training geodetic equipment
Monica Barbero	POLITO	Geotechnics and	Lead & Rock Mechanics
Adriano Fiorucci	POLITO	Hydrogeology	Hydrogeology II
Gunther Aselmeyer	BU-W		Hydrogeology I – Geotechnical Laboratory Tour
Krunoslav Minažek	UNIOS		Geotechnics
Alberto Sapora	POLITO	Mechanics	Lead & Structural Mechanics
Fabrizio Barpi	POLITO		Advanced Structural Mechanics
Kemmar Webber	BU-W		Exercise in Structural Mechanics and FEM
Filip Anić	UNIOS		Experimental mechanics

Table 1. General structure of the training lecturers, affiliations and activities





Name	Affiliation	Disciplinary Team	Main Contribution
Carla Bartolozzi	POLITO	Restoration	Lead & Theory and History of Restoration: Europe
Lana Skender	UNIOS		International Law on Heritage
Nikolina Raguz Lucic	UNIOS		
Rustam Mukimov	ττυ		Theory and History of Restoration: Central Asia
Rosario Ceravolo	POLITO	Seismic	Lead & Earthquake Engineering I, II
G. Coletta	POLITO	Engineering	Exercise: local and global seismic assessment of
G. Miraglia	POLITO		heritage buildings
Lars Abrahamczyk	BU-W		Earthquake Engineering III, IV
Aanis Uzair	BU-W		Exercise Earthquake Engineering
Davorin Penava	UNIOS		Seismic Protection of Historical Structures
lvica Guljaš	UNIOS		
Zlata Dolaček Alduk	UNIOS	General lecture	Professional practice organization

4. Conclusion

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The preliminary feedback from participants and dialogue on future cooperation was conducted in the form of an open discussion on the final day of the workshop. Based on this, it was noted that the participants had a detailed understanding of the course content and modalities of the pedagogical approach. There was also shared experiences and discussions regarding the overall project framework and implementation. In general, the participants noted that the objectives were clear and well defined. The training material were made available to the participants through online databases.

The format and organization of the training program was developed and delivered in collaboration with project partners and was sufficient to achieved the objectives set out in D5.1. The associated learning objectives, pedagogical approach and delivery methods are recommended for future projects. Based on this, some information regarding the training program has been documented in a Journal article title "Cultural heritage assets in Central Asia – Interdisciplinary approach into the complex problem of environmental risk assessment" to be included in the next annual publication "Perspectives for higher education development" by the Higher Education Reform Experts (HEREs).

The events during the workshop were accompanied by announcements on social networks and the project's website.

Publication bibliography

The Accreditation of Higher Education Programmes. UK Standard for Professional Engineering Competence. Third edition. Engineering Council. 2014.

ERASMUS+ KA2– Cooperation for innovation and the exchange of good practices – Capacity Building in the field of Higher Education. Application Form. Call for Proposals 2019 - EAC/A03/2018. Environmental Risk Assessment and Mitigation on Cultural Heritage assets in Central Asia / ERAMCA. Detailed description of the project.

Erasmus+ project card [Internet]. Erasmus+ - European Commission. 2020 [Accessed: 25 June 2021]. Available at: https://ec.europa.eu/programmes/erasmus-plus/projects/eplus-project-details/#project/609574-

ERAMCA project main web-site [Internet]. Eramca.com. 2020 [Accessed: 25 June 2021]. Available at: https://www.eramca.com/



Bauhaus-Universität Weimar

Faculty of Civil Engineering

17th - 23th July 2022



Appendix I – Disciplinary Teams Time Schedules

Eramca Workshop 2022

Disciplinary Team: Geomatics

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Time	Time Schedule 11.07.2022						
	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Sat.
	July 17 th	July 18 th	July 19 th	July 20 th	July 21 st	July 22 nd	July 23 rd
09:00 - 10:30		Opening Session M.Sc. Course General requirements Professional practice organization <i>z.D. Alduk (UNIOS)</i>	Digital Photogrammetry V. Rodehorst (BUW)	Laboratory Tour (Experimental Facility, Bauhaus)	Exercises (Practice on LIDAR acquisition) Scolamiero (POLITO)	Teaching strategies All	
		Lecture Hall A	M7B, Room 104	Marienstr. 9	M7B, Room 104	M7B, Room 104	
11:00 - 12:30	/al	Main contents of Geomatics I and II All	Exercise (GIS practice) J. Niyazov ()	GIS examples F. Niyazov	Exercises (Practice on LIDAR acquisition) Scolamiero (POLITO)	Final discussion on Geomatics I and II All	0
	i,	M7B, Room 104	M7B, Room 104	M7B, Room 104	M7B, Room 104	M7B, Room 104	, IL
	Ar			Lunch			- 1
13:30 - 15:00		Measurement theory F. Rinaudo (POLITO)	LIDAR basic concepts S. Usmanov (TTPU)		Exercise (Practice on LIDAR data management) Scolamiero (POLITO)	Evaluation Criteria / Project and M.Sc Thesis Requirements	Depa
		M7B, Room 104	M7B, Room 104		M7B, Room 104	Lecture Hall A	
15:30 - 17:00		GIS basic concepts J. Nyazov	LIDAR survey examples S. Usmanov (TTPU)	Exkursion	Exercise (Practice on LIDAR data management) Scolamiero (POLITO)	Partner's Meeting Feedback future collaboration/support open discussion	
		M/B, Koom 104	M/B, Koom 104		M/B, Koom 104	Lecture Hall A	
		ICEBREAKER BBQ 19:00			WEIMAR CITY TOUR 18:00 - 19:00	FAREWELL PARTY 19:00	
		Kasseturm	<u> </u>		Cafeteria courtyard	TBA	

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Faculty of Civil Engineering

17th - 23th July 2022



Eramca Workshop 2022

Disciplinary Team: Seismic Engineering

Time	ïme Schedule 11.07.2022						
	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Sat.
	July 17 th	July 18 th	July 19 th	July 20 th	July 21 st	July 22 nd	July 23 rd
09:00 - 10:30		Opening Session M.Sc. Course General requirements Professional practice organization Z. D. Alduk (UNIOS)	Earthquake Engineering III (Reliability and Risk) L. Abrahamczyk (BUW)	Laboratory Tour (Experimental Facility, Bauhaus)	Seismic Protection of Historical Structures I (safety vs. conservation req.) R. Ceravolo (POLITO)	Seismic Protection of Historical Structures III (knowledge process on local traditional architectures) TTPU, SamSACII, IWPHE TTU, KPITTU	
		Lecture Hall A	M7B, Room 106	Coudraystr.	M7B, Room 106	M7B, Room 106	
11:00 - 12:30	al	Earthquake Engineering I (Seismic Response) R. Ceravolo (POLITO)	Exercise (SAP2000) A. Uzair (BUW)	multi disciplinary final seminar <i>All</i>	Exercise (global seismic assessment of heritage buildings) G. Coletta & G. Miraglia (POLITO)	Seismic Protection of Historical Structures VI (seismic inter-ventions) I. Guljaš (UNIOS)	
	i	M7B, Room 106	Luna blue	M7B, Room 106	M7B, Room 106	M7B, Room 106	e
	Ar			Lunch			E L
13:30 - 15:00		Exercise (Signal processing & in-plane analysis) G. Coletta & G. Miraglia Exercise (POLITO)	Earthquake Engineering IV (Seismic analysis) L. Abrahamczyk (BUW)		Exercise (local seismic assessment of heritage buildings & advanced topics) G. Coletta & G. Miraglia (POLITIO)	Evaluation Criteria / Project and M.Sc Thesis Requirements	Depa
		M7B, Room 106	M7B, Room 106		M7B, Room 106	Lecture Hall A	
15:30 - 17:00		Earthquake Engineering II (Seismic Response) R. Ceravolo (POLITO)	Exercise (SAP2000) A. Uzair (BUW)	Exkursion	Seismic Protection of Historical Structures II (experiences learned from past eq's) D. Penava (UNIOS)	Partner's Meeting Feedback future collaboration/support open discussion	
		M/B, Koom 106	Luna blue		M/B, Koom 106	Lecture Hall A	
		ICEBREAKER BBQ 19:00			WEIMAR CITY TOUR 18:00 - 19:00	FAREWELL PARTY 19:00 –	
		Kasseturm			Cafeteria courtyard	TBA	

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Eramca Workshop 2022

Disciplinary Team: Restoration

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Bauhaus-Universität Weimar Faculty of Civil Engineering 17th - 23th July 2022

Time Schedule 11.07.20					1.07.2022		
	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Sat.
	July 17 th	July 18 th	July 19 th	July 20 th	July 21 st	July 22 nd	July 23 rd
09:00 - 10:30		Opening Session M.Sc. Course General requirements Professional practice organization Z. D. Alduk (UNIOS)	International Law on Heritage D. Stober, M. Turkalj Podmanicki (UNIOS)	Laboratory Tour (Experimental Facility, Bauhaus)	Seismic Protection of Historical Structures I (safety vs. conservation req.) R. Ceravolo (POLITO)	Seismic Protection of Historical Structures III (knowledge process on local traditional architectures) TTPU, SamSACII, IWPHE TTU, KPITTU	
		Lecture Hall A	M7B, Room 205	Coudraystr.	M7B, Room 106	M7B, Room 106	
11:00 - 12:30		Theory and History of Restoration Culture and Practice in Europe	History of Architecture of Central Asia R. Mukimov (TTU)	multi disciplinary final seminar All	Exercise (global seismic assessment of heritage buildings) G. Coletta & G. Miraglia	Seismic Protection of Historical Structures VI (seismic inter-ventions)	
	a	(POLITO)			(POLITO)	1. Guijas (UNIOS)	
	i - È	M7B, Room 205	M7B, Room 205	M7B, Room 205	M7B, Room 106	M7B, Room 106	1 2
	Ar			Lunch			Ę
13:30 - 15:00		Theory and History of Restoration Culture and Practice in Europe C. Bartolozzi, D. Dabbene (POLITO)	Theory and History of Restoration Central Asia R. Mukimov (TTU)		Exercise (local seismic assessment of heritage buildings & advanced topics) G. Coletta & G. Miraglia (POLITO)	Evaluation Criteria / Project and M.Sc Thesis Requirements	Depa
	1	M7B, Room 205	M7B, Room 205		M7B, Room 106	Lecture Hall A	
15:30 - 17:00		Contemporary Project Experiences C. Bartolozzi (POLITO)	Final Discussion C. Bartolozzi, D. Stober, M. Turkalj Podmanicki, R. Mukimov	Exkursion	Seismic Protection of Historical Structures II (experiences learned from past eq's) D. Penava (UNIOS)	Partner's Meeting - Feedback future collaboration/support open discussion	
	ļ	M7B, Room 205	M7B, Room 205		M7B, Room 106	Lecture Hall A	l
		ICEBREAKER BBQ 19:00			WEIMAR CITY TOUR 18:00 - 19:00	FAREWELL PARTY 19:00	
		Kasseturm			Cateteria courtyard	TBA	

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Eramca Workshop 2022

auhaus-Universität Weimar Faculty of Civil Engineering 17th - 23th July 2022

Disciplinary Team: Mechanics / Structures

Time	ïme Schedule 11.07.2022						
	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Sat.
	July 17 th	July 18 th	July 19 th	July 20 th	July 21 st	July 22 nd	July 23 rd
09:00 - 10:30		Opening Session M.Sc. Course General requirements Professional practice organization Z. D. Alduk (UNIOS)	Structural Mechanics III (deflection) A. Sapora (POLITO)	Laboratory Tour (Experimental Facility, Bauhaus)	Advanced Structural Mechanics I (stability) ()	Advanced Structural Mechanics III (unit load method) ()	
		Lecture Hall A	M7B, Room 105	Coudraystr.	M7B, Room 105	M7B, Room 105	
11:00 - 12:30	al	Structural Mechanics I (virtual work theorem) F. Barpi (POLITO)	Exercise (SAP2000) A. Uzair (BUW)	Structural Mechanics (final seminar) All	Exercise (FEM) K. Webber (BUW)	Advanced Structural Mechanics VI (truss structures) ()	0
	, Li	M7B, Room 105	Luna blue	M7B, Room 105	Luna blue	M7B, Room 105	Ľ,
	Ar			Lunch			Ē
13:30 - 15:00		Exercise K. Webber (BUW)	Structural Mechanics IV (stress calculation) A. Sapora (POLITO)		Advanced Structural Mechanics II (numerical methods) ()	Evaluation Criteria / Project and M.Sc Thesis Requirements	Depa
		Lunna blue	M7B, Room 105		M7B, Room 105	Lecture Hall A	
15:30 - 17:00		Structural Mechanics II (constitutive equation) F. Barpi (POLITO) M78, Room 105	Exercise (SAP2000) A. Uzair (BUW) Luna blue	Exkursion	Exercise (FEM) K. Webber (BUW) Luna blue	Partner's Meeting Feedback future collaboration/support open discussion Lecture Hall A	
		ICEBREAKER BBQ 19:00			WEIMAR CITY TOUR 18:00 - 19:00	FAREWELL PARTY 19:00	
		Kasseturm			Cafeteria courtyard	TBA	

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Eramca Workshop 2022

Disciplinary Team: Geotechnics and Hydrogeology

Bauhaus-Universität Weimar Faculty of Civil Engineering

17th - 23th July 2022

Time	Time Schedule 11.07.2022						
	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Sat.
	July 17 th	July 18 th	July 19 th	July 20 th	July 21st	July 22 nd	July 23 rd
09:00 - 10:30		Opening Session M.Sc. Course General requirements Professional practice organization <i>z.D. Alduk (UNIOS)</i>	Laboratory Tour (Experimental Facility, Bauhaus)	Laboratory Tour (Experimental Facility, Bauhaus)	Risk Assessment and Mitigation I (Part Geotechnics) M. Barbero (POLITO) K. Minažek (UNIOS)	Hydrogeology II A. Fiorucci (POLITO)	
		Lecture Hall A	Coudraystr. 11c, Room HS001	Coudraystr.	Coudraystr. 11c, Room HS001	Coudraystr. 11c, Room HS001	
11:00 - 12:30	/al	Geotechnics (Soil Mechanics) K. Minacek (UNIOS)	Hydrogeology I G. Aselmeyer (BUW)	Geotechnics (Rock Mechanics) M. Barbero (Polito)	Risk Assessment and Mitigation II (Part Hydrogeology) A. Fiorucci (POLITO) G. Aselmeyer (BUW)	Exercise Risk Assessment and Mitigation I (Part Geotechnics) M. Barbero (Polito) K. Minažek (UNIOS)	a
	rriv	Coudraystr. 11c, Room HS001	Coudraystr. 11c, Room HS001	Coudraystr. 11c, Room HS001	Coudraystr. 11c, Room HS001	Coudraystr. 11c, Room HS001	nre
	A			Lunch			arti
13:30 - 15:00		Exercise Geotechnics I (Soil Mechanics) K. Minažek (UNIOS)	Exercise Hydrogeology Ia G. Aselmeyer (BUW)		Exercise Geotechnics II (Rock Mechanics) M. Barbero (POLITO)	Evaluation Criteria / Project and M.Sc Thesis Requirements	Depa
		Coudraystr. 11c, Room HS001	Coudraystr. 11c, Room HS001		Coudraystr. 11c, Room HS001	Lecture Hall A	
15:30 - 17:00		Demonstration and evaluation of geotechnical analyses Laboratory Staff (BUW) K. Minažek (UNIOS) G. Aselmeyer (BUW)	Exercise Hydrogeology Ib G. Aselmeyer (BUW)	Exkursion	Exercise Risk Assessment and Mitigation II (Part Hydrogeology) A. Fiorucci (POLITO) G. Aselmeyer (BUW)	Partner's Meeting Feedback future collaboration/support open discussion	
		Coudraystr. 11c, Room HS001	Coudraystr. 11c, Room HS001		Coudraystr. 11c, Room HS001	Lecture Hall A	
		ICEBREAKER BBQ 19:00			WEIMAR CITY TOUR 18:00 - 19:00	FAREWELL PARTY 19:00	
		Kasseturm			Cafeteria courtvard	TBA	

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Appendix II – List of Participants

Name	Affiliation	Name	Affiliation
Rakhimov Laziz Abduazizovich	SamSACII	Jafar Niyazov	IWPHE
Lars Abrahamczyk	BU-W	Gadoev Abror Niyazovich	SamSACII
Qodirov Nemat	ττυ	Davorin Penava	UNIOS
Usmonjon Ahmedov	KPITTU	Fulvio Rinaudo	POLITO
Zlata Dolaček Alduk	UNIOS	Farkhod Rikhsiev	TTPU
Farrukh Aminov	KPITTU	Volker Rodehorst	BU-W
Filip Anić	UNIOS	Mukimov Rustam	ττυ
Gunther Aselmeyer	BU-W	Alberto Sapora	POLITO
Manoev Said Bakhranovich	SamSACII	Bakhrom Tulaganov	TTPU
Manoev Sanat Bakhranovich	SamSACII	Saidislomkhon Usmanov	TTPU
Monica Barbero <i>(online)</i>	POLITO	Shuhrat Usmonov	KPITTU
Fabrizio Barpi <i>(online)</i>	POLITO	Sultanov Damir Utkurovich	SamSACII
Carla Bartolozzi	POLITO	Aanis Uzair	BU-W
Rosario Ceravolo	POLITO	Amirtimir Vahobov	KPITTU
Adriano Fiorucci <i>(online)</i>	POLITO	Kemmar Webber	BU-W
Thomas Gebhardt	BU-W	Saidov Furqat	ΤΤυ
lvica Guljaš	UNIOS	Hidirov Muhsin Mikhaylovich	SamSACII
Anvarova Gulnora	ττυ	Krunoslav Minažek	UNIOS
Qalandarbekov Iftikhor	ττυ	Dinara Nazarova	TTPU
Mukhiddin Juliev	TTPU	Lana Skender	UNIOS
Davronbek Kambarov	TTPU	Giorgio Culetta	POLITO
Begmurod Karimov	TTPU	Gaetano Miraglia	POLITO
Erkin Khaltursunov	TTPU	Nikolina Raguz Lucic	UNIOS
Isakov Erkin Khujayorovich	SamSACII	Daniele Dabbene	POLITO