

Presentation of the summer school

The course explores resilience as a fundamental principle for strengthening global WASH - water, sanitation, waste management, and health systems in the face of climate change, urbanization, epidemics, and humanitarian crises. Through case studies, expert lectures, and applied group work, participants will critically assess vulnerabilities, evaluate adaptive strategies, and develop practical WASH solutions to improve equity, sustainability, and resilience in diverse global contexts.

The course is relevant to:

- Practitioners in international development cooperation;
- Undergraduates, MSc and PhD students;
- Researchers, professors and other interested persons.

Participation is free of charge, but **registration** is required by **June 9th 2026** by filling out the registration form at this [link](#), or scanning the QR code.



SCAN ME

A maximum number of 30 people will be accepted to participate in class.

A certificate of attendance will be issued for students attending at least 75% of the course.

Students enrolled at University of Brescia in Civil Engineering, Land and Environmental Engineering or Architectural Engineering degree courses can get n. 3 ETCS, if Summer School has been chosen in the study plan.

Scientific and organizing committee

Sabrina Sorlini (UniBS, IT)

Mentore Vaccari (UniBS, IT)

Marta Domini (UniBS, IT)

Organizing secretariat

Carmencita Tonelini (UEG/IFG, BR)

Elisa Gregorio (UNIBS, IT)

Fabian Odeh (UNIBS, IT)

CeTAmb

CeTAmb is a research center of University of Brescia supported by Fondazione Cogeme, Museke, Sipek and Tovini. CeTAmb aims to build knowledge and develop research on appropriate technical solutions for the management of environmental issues in Low and Middle Income Countries. CeTAmb collaborates with NGOs, universities and secondary schools to carry out research and education activities. So far, several projects have been implemented and developed on water, sanitation and energy in different countries.

<https://cetamb.unibs.it/> E-mail: cetamb@unibs.it

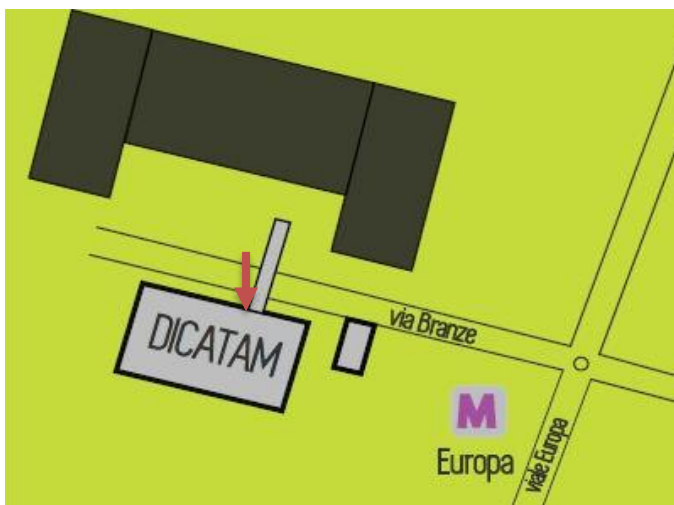
GETTING THERE

by car

Highway A4 Milano-Venezia: exit *Brescia Ovest*, follow signs for *Stadio/Ospedale*

by train

At Brescia station take the metro towards *Prealpino*, stop at *Europa* then see the map below:



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XV International Summer School CeTAmb

**Climate-resilient Water,
Sanitation and Hygiene
(WASH) solutions in low-
income countries**

Coordinator:

Prof. Sabrina Sorlini

15th - 19th June 2026

University of Brescia - DICATAM

Via Branze 43, Brescia (Italy)

Room B.03

Participation: in person and remote mode

In collaboration with:



Climate-resilient Water, Sanitation and Hygiene (WASH) solutions in low-income countries

Monday 15th June

Morning session (9:00 - 13:00)

09:00 Participant registration and welcome

10:00 Presentation of the Summer School - *S. Sorlini*

10:15 Appropriate technologies for WASH resilient solutions - *M. Vaccari*

10:45 Governance & Stakeholder Engagement - *C. Luthi (on-line)*

11:15 The Human right to water and international law in the age of permacrisis - *M. Distefano (on-line)*

11:45 Financial issues in achieving WASH resilient services - *L. Viganò*

12:15 Participants' presentation and discussion

13:00 Lunch

Afternoon session (14:00- 18.00)

14:00 WASH as a public health defense - *A. Matteelli, G. Di Rosario*

16:00 Presentation of the PhD course - Curriculum "Appropriate Methodologies and Techniques in International Development Cooperation" *S. Sorlini*

16:30 The experience of the PhD students

Technological Track

Mohamed Elkhider - Digital tools and WASH resilient systems

Elisa Gregorio - Drinking water supply and resilience in Mozambique

Fabian Odeh - Sustainable waste management in Mozambique

Aruna Silva - Sustainable compost production from agricultural bio waste- integrated study of Pemba island

Health Track

Marie Lys Irakoze - Nutrition, WASH and tuberculosis

Tuesday 16th June

RESILIENCE OF DRINKING WATER SUPPLY SERVICES - *B. Mwakisunga (on-line), C. Diop, S. Sorlini, M. Pezzato*

Morning session (9:00 - 13:00)

- Climate change impacts on drinking water sources and quality
- International standards
- Resilient water supply solutions
- Water monitoring
- Water Safety Planning (WSP)

13:00 Lunch

Afternoon session (14:00-17:00)

- Case studies: Valorization of functionalized clays and activated carbon for small-scale water treatment: application to rural or emergency drinking water supply - *C. Diop*
- Working group: A methodology to assess and evaluate the resilience of rural water supply systems in Nepal - *M. Pezzato*

17:30-19:00 Intercultural guided tour to the old town center of Brescia - *F. Martinelli*

Wednesday 17th June

RESILIENCE OF SANITATION SYSTEMS – *B. Reed, M. Domini, A. Masoud, E. Appiah-Effah (on-line)*

Morning session (9:00 - 13:00)

- Introduction to environmental sanitation and hygiene
- Impacts on sanitation and hygiene implications
- Fecal sludge management and GHG emissions
- Response strategies

13:00 Lunch

Afternoon session (14:00-18:00)

- Surface water impacts
- Case studies: Nature-based solutions (NbS)
- Vector control
- Group work

Thursday 18th June

RESILIENCE OF SOLID WASTE MANAGEMENT (SWM) - *M. Vaccari, J. Chitata, A. Mansoor (On-line)*

Morning session (9:00 - 13:00)

- SWM and organic recovery in low-income countries - *M. Vaccari*
- Informal recycling and entrepreneurship in Africa: SWM, circular economy and sustainability - *J. Chitata*

12:00 Open discussion and Q&A session

13:00 Lunch

Afternoon session (14:00-18:00)

- Case studies:
 1. Community-based waste management in Mozambique: challenges and opportunities for inclusive recycling: a case study - *J. Chitata*
 2. Climate-resilient waste management in Dar es Salaam, Tanzania: a case study - *A. Mansoor*

17:00 Open discussion and Q&A session

Friday 19th June

MULTIDISCIPLINARY APPROACH IN WASH RESILIENCE

Morning session (9:00 - 12:00)

- The Role of digital technologies in strengthening WASH systems - *S. Rinaldi*
- Social WASH aspects - *A. Masoud*
- Mechanical design of WASH solutions - *A. Mazzù*
- Resilience in WASH in international cooperation - *M. Chiappa*

10:00 Flash presentations and discussion

11:00 Visit to the CeTAmb Laboratory

12:00 Lunch

Afternoon session (13:00-16:00)

- 13:00** Disaster risk reduction and resilience - *D. Giardina (on-line)*
- 14:00** Nature-Based Decentralised Systems for Wastewater Treatment and Reuse - *A. Albuquerque*

16:00 Conclusions

EXTRA ACTIVITIES

Visit to CeTAmb laboratory of appropriate technologies, DICATAM Department
Intercultural integration and guided tour to the old town center of Brescia

Speakers

Antonio Albuquerque	University of Beira Interior (PT)
Eugene Appiah-Effah	Knust University, Kumasi (GH)
Massimo Chiappa	Medicus Mundi Italia (IT)
Joaquine Chitata	UNISAVE, Maxixe (MZ)
Gianluca Di Rosario	University of Brescia (IT)
Marcella Distefano	University of Messina (IT)
Cheikhak Diop	UCAD University (SN)
Marta Domini	University of Brescia (IT)
Daniela Giardina	MIT, J-WAFS, Boston (USA)
Christoph Lüthi	Sandec/EAWAG (CH)
Ali Mansoor	Consultant (UK)
Federica Martinelli	Guida Artistica, Brescia (IT)
Ahmed Masoud	University of Brescia (IT)
Alberto Matteelli	University of Brescia (IT)
Angelo Mazzù	University of Brescia (IT)
Benard Mwakisunga	RUCU University (TZ)
Maria Pezzato	University of Brescia (IT)
Brian Reed	Consultant (UK)
Stefano Rinaldi	University of Brescia (IT)
Sabrina Sorlini	CeTAmb, University of Brescia (IT)
Mentore Vaccari	CeTAmb, University of Brescia (IT)
Laura Viganò	University of Bergamo (IT)

PhD Students

Mohamed Elkhider	CeTAmb, University of Brescia (IT)
Elisa Gregorio	CeTAmb, University of Brescia (IT)
Marie Lys Irakoze	University of Brescia (IT)
Fabian Odeh	CeTAmb, University of Brescia (IT)
Aruna Silva	CeTAmb, University of Brescia (IT)