

PRESENTATION OF THE SUMMER SCHOOL

The course aims to present and discuss appropriate solutions and services for global and safe management of problems related to drinking water, wastewater and municipal solid waste in low and middle income countries, considering the new indicators of the Sustainable Development Goals (SDGs). An overview of environmental and sanitary aspects related to the safe management of water, wastewater (SDG6) and municipal solid waste (SDG11 and SDG12) will be presented. The SDGs will also be discussed in relation to the applicable tools for an integrated assessment of technical, environmental, social and economic aspects in development projects.

The course is relevant to:

- people working in International Development Cooperation;
- undergraduates, MSc and PhD students;
- researchers, professors and other interested persons.

Participation is free of charge but you must **register** by sending an e-mail to the organizing secretariat writing full name, affiliation, address, e-mail and phone within the **21st of June 2018**.

A maximum number of 30 people will be accepted.

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 CFU, after the approval of the Commission for CFU accreditation.

Scientific secretariat

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Organizing secretariat

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<http://cetamblab.unibs.it/>

CeTAmb LAB

CeTAmb LAB aims at conducting research on appropriate technical solutions to environmental issues in Low and Middle Income Countries. CeTAmb LAB collaborates with partners such as NGOs or universities, to carry out research and education activities. So far, a number of projects has been developed on water and sanitation and energy recovery in several Countries (Kenya, Senegal, Burkina Faso, Gaza Strip, Mozambique, Colombia, Peru, Brazil, Bosnia and Herzegovina, Cameroon, Chad and others).

GETTING THERE

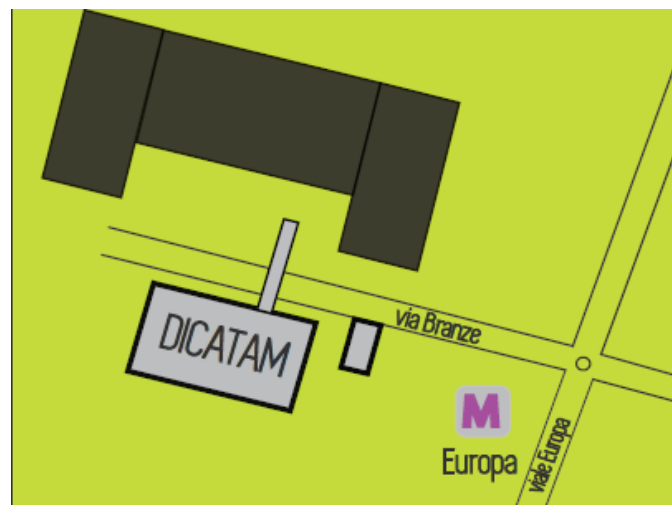
by car

Highway A4 Milano-Venezia

- from Milano, exit A4 at "Brescia Ovest" and follow indications to "stadio" (stadium) or "ospedale" (hospital) (North direction). Pass the hospital and turn right from via Triumplina to via Branze - from Verona or Piacenza, exit A4 at "Brescia Centro" and follow indications to "stadio" or "ospedale".

by train

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



UNIVERSITY
OF BRESCIA

CeTAmbLAB

Research laboratory for Appropriate Technologies for
Environmental Management in resource-limited Countries

8th International Summer School

**Safe management of
water supply and
sanitation services:
one step towards the
Sustainable
Development Goals**

25th - 29th June 2018

Coordinators:

*Prof. Sabrina Sorlini,
Eng. Mentore Vaccari*

University of Brescia—DICATAM
Via Branze 43 Brescia (Italy)
Room B.05

Safe management of water supply and sanitation services: one step towards the Sustainable Development Goals

COURSE PROGRAMME

Monday 25th June

- 09:15** Participants registration
09:45 Welcome

Morning session

- 10:00** Presentation of the Summer School (*S. Sorlini*)
10:15 Safe management of water supply and sanitation services
- Health aspects (*A. Matteelli*)
 - Environmental aspects (*S. Sorlini*)
 - Social aspects (*A. Casella*)
 - Economic aspects (*D. Castellani*)

- 12:00** Discussion
12:45 Lunch

Afternoon session

- 14:00** The partnership between NGOs and research centres for the sustainability of development cooperation projects: pros and cons (*P. Rossi*)
14:30 PhD course in "Appropriate Methodologies and Techniques in International Development Cooperation": opportunities for students and impact on projects (*M. Vaccari*)

The experiences of the PhD students

Technological track

- Waste collection and management in developing countries: a case study in Jordan (*S. Gibellini*)
- Solid waste management assessment (*F. Villa*)
- Appropriate solutions for the wastewater treatment and reuse in Senegal (*D. Bop*)
- Monitoring Wash in schools in Posse - Brazil (*C. Pereira*)
- Solid waste management in low and middle income countries (*G. Vinti*)

Health track

- Applied research and innovation in laboratory techniques in middle-low income countries (*V. Quaresima*)
- Early detection and integrated management of tuberculosis in Europe with a focus on migrants (*V. Marchese*)

Tuesday 26th June

(Speaker: Marcos Von Sperling)

Safe management of sanitation systems: natural wastewater treatment processes

9:00 - 13:00

- Introduction concept (concept of safely managed, treatment objectives, need for simplicity)
- Comparison among simple methods for sewage treatment in developing countries
- Waste stabilization ponds

14:00 - 18:00

- Treatment wetlands (horizontal, vertical, French system)
- Cases studies

Wednesday 27th June

(Speaker: Maryna Peter-Varbanets)

Safe management of drinking water systems

9:00 - 13:00

- Sustainable development goals and drinking water
- Drinking water systems and technologies: from source to consumer
- Water safety and risk management frameworks

14:00 - 18:00

- Water quality monitoring
- Water and Hygiene in Institutions: cases from Tanzania, Vietnam and Tajikistan
- FACET - the facility evaluation tool
- Cases studies

Thursday 28th June

(Speakers: Mansoor Ali; Terry Tudor)

Waste management and public health

9:00 - 13:00

- Overview of the United Nations SDGs
- Focus on SDGs 3, 6, 11 and 17 – SDGs relevant to public health, water, sanitation and waste services
- Existing situation in developing countries including participatory exercises
- Public health impacts of wastes (transmission routes, key infections, etc.) including participatory exercises
- Drivers and pathways of improvements

14:00 - 18:00

- Introduction to a given case studies
- The students examine case studies and come up with suggested recommendations to overcome the challenges faced
- Concluding points on SDGs, challenges and possibilities of improvements

Friday 29th June

(Speakers: Mansoor Ali; Terry Tudor)

Recovering value from biodegradable waste

9:00 - 13:00

- Waste composition in different countries
- Variation between cities and within countries
- Treatment technologies (biomass, AD and composting)
- What is meant by value (i.e. energy, by-products, and financial)
- Innovation in waste recycling and resource recovery

14:00 - 18:00

- The students examine case studies of how value could be recovered from various scenarios, using cost effective approaches

EXTRA ACTIVITIES

- Visit to the CeTAmb LAB laboratory of appropriate technologies, DICATAM Department
- Visit to the old town center of Brescia, organized with the support of FAI Brescia

SPEAKERS

M. Ali	WEDC, Loughborough University (UK)
D. Castellani	University of Bergamo (IT)
A. Casella	UCSC, Brescia (IT)
A. Matteelli	University of Brescia (IT)
M. Peter-Varbanets	University of Applied Sciences and Arts Northwestern Switzerland (CH)
P. Rossi	NGO Col'Or, Torino (IT)
S. Sorlini	CeTAmb LAB, University of Brescia (IT)
T. Tudor	University of Northampton (UK)
M. Vaccari	CeTAmb LAB, University of Brescia (IT)
M. Von Sperling	University of Minas Gerais (BR)

PhD Students:

D. Bop	CeTAmb LAB, University of Brescia (IT)
S. Gibellini	CeTAmb LAB, University of Brescia (IT)
V. Marchese	University of Brescia (IT)
C. Pereira	CeTAmb LAB, University of Brescia (IT)
V. Quaresima	University of Brescia (IT)
F. Villa	CeTAmb LAB, University of Brescia (IT)
G. Vinti	CeTAmb LAB, University of Brescia (IT)