

## PRESENTATION OF THE COURSE

The course aims to explore techniques and methods for planning and designing appropriate solutions for drinking water, wastewater, solid waste and construction in resource-limited countries, focusing on recovery and reuse of resources.

An overview of environmental and sanitary problems will be presented, exploring innovative and technical solutions currently adopted in the world through the presentation of case studies and teamwork, highlighting social, health, economic and environmental aspects.

During the course, we will discuss also about monitoring, evaluation, impact and learning in developing projects.

The course is relevant to:

- people working in International Development Cooperation;
- PhD students;
- students, researchers, assistant professors and general public.

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 **29th of June 2016**.

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.

### **Scientific secretariat**

Sabrina Sorlini, Mentore Vaccari

phone: +39 030371 1299/1300;

e-mail: [sabrina.sorlini@unibs.it](mailto:sabrina.sorlini@unibs.it) / [mentore.vaccari@unibs.it](mailto:mentore.vaccari@unibs.it)

### **Organizing secretariat**

Andrea Perteghella, Lavinia Di Francesco, Federico De Nardo, Marta Domini, Silvia Gibellini

phone: +39 030371 1323/1302; e-mail: [cetamb@unibs.it](mailto:cetamb@unibs.it)

<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

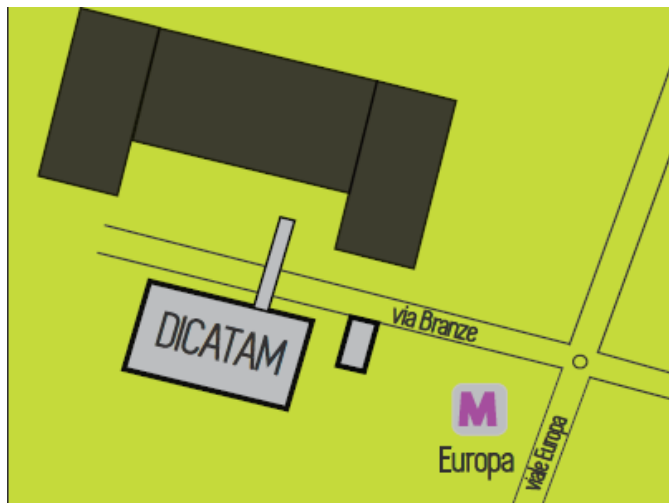
Highway A4 Milano-Venezia

- 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.



# CeTAmbLAB

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

## 6<sup>th</sup> International Summer School

*Resource Recovery from water and waste: appropriate Solutions in Low and Middle Income Countries*

**4<sup>th</sup> July - 8<sup>th</sup> July 2016**

*Coordinators:*

*Prof. Carlo Collivignarelli,*

*Prof. Sabrina Sorlini, Eng. Mentore Vaccari*

University of Brescia—DICATAM

Via Branze 43 Brescia (Italy)

Room B.05

*in collaboration with*



# Resource Recovery from water and waste: appropriate Solutions in Low and Middle Income Countries

## COURSE PROGRAMME

### Monday 4<sup>th</sup> July

09:15 Participants registration

09:45 Welcome

#### Morning session

10:00 Presentation of the Summer School (*C. Collivignarelli*)

10:15 Role of the appropriate technologies for resource recovery in water, sanitation and waste management sectors:

- Social/Anthropological aspects (*A. Fiorencis*)
- Health aspects (*F. Castelli*)
- Economic aspects (*D. Castellani*)
- Environmental aspects (*M. Vaccari*)
- Ecological aspects (*G. Gilioli*)

12:00 Discussion

12:45 Lunch

#### Afternoon session

14:00 Monitoring, Evaluation, Impact and Learning in Developing Projects (*M. Ali*)

15:00 Presentation of the researches developed in the "Appropriate Methods and Technologies for International Development Cooperation" PhD course (*S. Sorlini*)

#### **The experiences of the PhD students**

##### Technological curriculum

- *A. Pollmann Gomez*: Analysis of water poverty and protection of water resources in Vilankulo city, Mozambique
- *F. De Nardo*: Appropriate technologies for the production of organic fertilizer from organic residues in occupied Palestinian territories
- *L. Di Francesco*: Appropriate technology for remediation of mercury in ASGM (Colombia)
- *M. Domini*: Integrated and sustainable environmental sanitation concepts in the urban area of Iringa (Tanzania)
- *A. Vidoni*: Water supply management in rural areas of Burkina Faso
- *F. Zambetti*: Recovery and management of Waste of Electric and Electronic Equipment (WEEE) in resource-limited countries

##### Health curriculum

- *S. Bigoni*: Sexually transmitted infection in the migrant population
- *C. Cerini*: Maternal and child health in the Morrumbene district (Mozambique)
- *L. Praticò*: Rethinking through a social participation strategy and the Paideia method in a rural setting in Moçambique

17:30 Conclusions

### Tuesday 5<sup>th</sup> July (speakers: Roland Ramusch, Terry Tudor)

**Integrated Sustainable Waste Management - challenges in material recovery in low-income countries**

9:00 - 12:30 Morning session (*Roland Ramusch*)

- Challenges and differences in waste management in low-income countries
- The concept of Integrated Sustainable Waste Management
- Case studies

12:45 Lunch

14:00 - 17:30 Afternoon session

- Informal sector: a major contributor to recycling in low-income countries: Case studies (*Roland Ramusch*)
- Resource consumption and waste management in India (*Terry Tudor*)

### Wednesday 6<sup>th</sup> July (speaker: Kim Andersson)

**Strategies and technologies for sustainable sanitation and wastewater management**

9:00 - 12:30 Morning session

- Introduction to sustainable sanitation and wastewater management for resource recovery and reuse
- Working groups

12:45 Lunch

14:00 - 17:00 Afternoon session

- Showcasing appropriate sanitation and wastewater management systems for different contexts around the world
- Working groups

### Thursday 7<sup>th</sup> July (speaker: Sean Furey)

**Water reuse strategies to solve water scarcity**

9:00 - 12:30 Morning session

Introduction to the technologies for water harvesting in urban and rural area

12:45 Lunch

14:00 - 16:30 Afternoon session

- Sustainable water supply strategies in water scarcity area  
Case studies and Working group

### Friday 8<sup>th</sup> July (speaker: Anna Sundman)

**Appropriate solutions for reuse of waste and local materials in new buildings**

9:00 - 12:30 Morning session

Design principles for appropriate solutions in developing countries

12:45 Lunch

14:00 - 17:30 Afternoon session

- creating acceptance : what can design do?
- Working groups

#### Extra activities:

- Visit to the CeTAmb LAB laboratory of appropriate technologies, DICATAM Department
- **Tuesday 5th July at 18:00:** Visit to the old town center of Brescia, organized with the support of FAI Brescia

## SPEAKERS

<b>M. Ali</b>	International Medical Corps (UK)
<b>K. Andersson</b>	Stockholm Environment Institute (SE)
<b>A. Fiorencis</b>	ISTUD Foundation, Baveno – Milano (IT)
<b>D. Castellani</b>	University of Bergamo (IT)
<b>F. Castelli</b>	University of Brescia (IT)
<b>C. Collivignarelli</b>	CeTAmb LAB, University of Brescia (IT)
<b>S. Furey</b>	Swiss Resource Centre and Consultancies for Development (CH)
<b>G. Gilioli</b>	University of Brescia (IT)
<b>R. Ramusch</b>	Boku University (AT)
<b>S. Sorlini</b>	CeTAmb LAB, University of Brescia (IT)
<b>A. Sundman</b>	Architectural Environmental Strategies (SE)
<b>T. Tudor</b>	University of Northampton (UK)
<b>M. Vaccari</b>	CeTAmb LAB, University of Brescia (IT)

#### PhD Students:

<b>S. Bigoni</b>	University of Brescia (IT)
<b>C. Cerini</b>	University of Brescia (IT)
<b>F. De Nardo</b>	CeTAmb LAB, University of Brescia (IT)
<b>L. Di Francesco</b>	CeTAmb LAB, University of Brescia (IT)
<b>M. Domini</b>	CeTAmb LAB, University of Brescia (IT)
<b>A. Pollmann Gomez</b>	CeTAmb LAB, University of Brescia (IT)
<b>L. Praticò</b>	University of Brescia (IT)
<b>A. Vidoni</b>	CeTAmb LAB, University of Brescia (IT)
<b>F. Zambetti</b>	CeTAmb LAB, University of Brescia (IT)