



## Summer School

### *Sustainability and Life Cycle Thinking*

*The integration of economic, environmental and social issues for the design of sustainable urban systems*

University of Messina

Messina (Italy) - July 3 – 7, 2017

**FIRST CALL**

#### **DESCRIPTION**

Today, for the first time in history, more than a half of the world population is living in urban areas (54%), accounting for about 3.5 billion people. This urban percentage will increase to almost 66% by 2050, with nearly 90% of the increase concentrated in Asia and Africa (ESA-UN 2014). The number of mega-cities has nearly tripled since 1990; and by 2030, 41 urban agglomerations are projected to house at least 10 million inhabitants each (ESA-UN 2014). By 2020, approximately 73% of Europeans will be living in urban areas, characterized by medium-size cities (1-5 millions of inhabitants) and by four big cities (Berlin, London, Moscow, Paris) and one big urban area (the metropolitan area Rhine-Ruhr in Germany).

In this context, a new perspective in urban planning and city management should include sustainability solutions in the design of cities (shape and dimension), in a rather different way compared to traditional urban management practices (Jones et al. 2002).

Industrial Ecology and Life Cycle Thinking can offer comprehensive methodologies and very powerful approaches to design new paradigm of sustainability in this field.

The first edition of the Summer School on “***Sustainability and Life Cycle Thinking - The integration of economic, environmental and social issues for the design of sustainable urban systems***” will be organized by the University of Messina on July 3 - 7, 2017. The main goal of this Summer School is to define the current state of the art of life cycle based sustainability applications, methodologies and tools as well as their implementation in an urban context as decision support for policy makers, companies and other stakeholders.

Moving from theory and tools to policy measures, students will be actively involved in lectures and case studies including Life Cycle Assessment (LCA), Risk Assessment (RA), Cost Benefit Analysis (CBA), Multi-Criteria Decision Analysis (MCDA), LCA-SEA (LCA-Strategic Environmental and how to outline a route for sustainable and shared urban planning development (in a triple bottom line sustainability perspective). The Summer School lectures will present a study of the urban development with an interdisciplinary and integrated approach, carrying out a new perspective, based on an approach to urban metabolism concept specially oriented to Sustainability. As (environmental) LCA, LCC and S-LCA are all based on the ISO 14040 (2006) framework and address in a complementary way the three sustainability dimensions (environmental, economic and social), it is possible to integrate these techniques into an overarching life cycle sustainability assessment (LCSA).



The result is, studying life cycle thinking and sustainability approach, to introduce a new paradigm in urban development scenarios oriented to combine resources, inputs, processes or policies in order to generate improvements in the lives of individuals or for society as a whole.

## Target Topics

The summer school seeks to explore the frontiers of sustainability and life cycle thinking applied in urban contest, by promoting discussion and debate among prominent experts, academics and graduate students. More specifically, theoretical-analytical and empirical contribution on the themes listed below will be discussed:

- Sustainability in urban development
- Industrial Ecology
- Challenges in applying hybrid-LCA in urban contest
- Industrial Symbiosis
- Urban metabolism in the framework of Life Cycle Sustainability Thinking
- Tools and databases
- Scientific background
- Indicators for sustainability in urban contest
- Urban sustainable governance

## PROGRAMME STRUCTURE

The summer school will be held from the 3<sup>rd</sup> to the 7<sup>th</sup> of July, with the following structure:

**July 3- 6:** each day will feature five hour lectures and case study-experiences (four in the morning and two in the afternoon) followed by papers' presentations by the participants on related topics. Participants will have the opportunity to discuss their research, and receive feedback by prominent scholars in the relevant field.

**July 7:** Plenary session

The best paper will be also considered for inclusion in a special issue to be published in collaboration with an international journal on sustainability issues.

This Summer School is also linked with the International Summer School on "*Life Cycle Approaches to Sustainable Development*" promoted by Lecce University, represented from the Director Prof. Stefania Massari.

Methods:

- Keynote speech (physical and by Skype)
- Roundtable discussion
- Closing remarks



Prof. Giuseppe Ioppolo

Director of the Summer School  
Department of Economics  
University of Messina,  
Messina (Italy)



Prof. Roberta Salomone

Co-Director of the Summer School  
Department of Economics  
University of Messina,  
Messina (Italy)

### Speackers



Prof. Sangwon Suh

Director of the Bren School of Environmental  
Science and Management,  
University of California (USA)



Prof. Bruno Notarnicola

Director of the Department Jonico in  
"Sistemi Giuridici ed Economici del  
Mediterraneo: Società, Ambiente,  
Culture", University of Bari (Italy)



Prof. Stefania Massari

Department of Scienze dell'Economia  
Lecce University, Lecce (Italy)  
Director of the International Summer  
School on "Life Cycle Approaches to  
Sustainable Development"



Prof. Lei Shi

Co-Direct of School of Environment,  
Tsinghua University, (China)



Prof. Marzia Traverso

University of RWTH  
Aachen (Germany)



Prof. Benedetto Rugani

Luxembourg Institute of Science &  
Technology - LIST (Luxembourg)



Prof. Maurizio Cellura

President of Italian LCA Network,  
University of Palermo (Italy)



Prof. Alessandro Ruggieri

Rector of University of Tuscia of Viterbo  
(Italy)



Prof. Sonia Valdivia

Leuphana University of Lüneburg  
(Germany) -  
World Resources Forum - Switzerland



## Experience exchange Chair



**Prof. M. Claudia Lucchetti**

Department of Studi Aziandali  
University of Roma Tre (Italy)



**Prof. Riccardo Beltramo**

Department of Management  
University of Torino (Italy)



**Prof. M. Francesca Renzi**

Department of Studi Aziandali  
University of Roma Tre (Italy)

## Skype presentations



**Prof. Tan Yigitcanlar**

School of Civil Engineering and Built  
Environment, Queensland University of  
Technology, Brisbane (Australia)



**Prof. Jun Nakatani**

Urban Resource Management (Moriguchi)  
Laboratory - Department of Urban  
Engineering, The University of Tokyo (Japan)



## **SUBMISSIONS AND KEY DATES - REGISTRATION**

Applications are open from May 01 until to complete the number of 20 accepted candidates.

Successful candidates will receive information about payment once admitted to the program. We invite to submit CV and a motivation letter that address the school topics. (max 1 page – Times New Roman 11) to [giuseppe.ioppolo@unime.it](mailto:giuseppe.ioppolo@unime.it) from May 1st to May, 30, 2017.

### **Tuition fees**

Full price:       **200 €** Registrations sent before 30 May 2017 (early-bird deadline)  
                      250 € after    1 June 2017

### **ACCOMMODATION**

Accommodation in double or single room will be provided by the Summer School Organization. Participants have to indicate at the time of motivation letter submission if they require accommodation, in this case the Tuition fee is:

200€ (early-bird deadline) plus **300€** for double room – 6 nights;

200€ (early-bird deadline) plus **450€** € for single room – 6 nights.

For additional information please contact: [Giuseppe.ioppolo@unime.it](mailto:Giuseppe.ioppolo@unime.it)





**Summer School in “Sustainability and Life Cycle Thinking”**

*“integration of economic, environmental and social issues for the design of sustainable urban systems”*

**Messina – from 03 to 7 July 2017**

	Sunday, 2	Monday, 3	Tuesday, 4	Wednesday, 5	Thursday, 6	Friday, 7	Saturday, 8
<b>Morning</b>							
<b>9:00/9:30</b>		Giuseppe Ioppolo Luigi Ciraolo Bruno Notarnicola Kick off	Stefania Massari Lesson: <i>Life Cycle Thinking</i>	Lei Shi Lesson: <i>Urban complex network</i>	Benedetto Rugani Lesson: <i>Urban metabolism</i>	Marzia Traverso Lesson:  Life cycle sustainability assessment - the general framework	
<b>9:30/10:50</b>		Sangwon Suh Lesson: <i>Industrial Ecology: foundations and applications</i>					
<b>10:50/11:10</b>		Coffee Break	Coffee Break	Coffee Break	Coffee Break	Coffee Break	
<b>11:10/12:30</b>		Sangwon Suh Lesson: <i>The potential for efficient infrastructure in improving resource efficiency of global cities</i>	Roberta Salomone Lesson: <i>Industrial Symbiosis in Agro-Industrial and Urban Context</i>	Lei Shi Lesson: <i>Urban complex network</i>	Benedetto Rugani Lesson: <i>Urban metabolism</i>	Sonia Valdivia Lesson: <i>Social- LCA</i>	
<b>12:30/13:00</b>		Sangwon Suh Lesson: <i>The potential for efficient infrastructure in improving resource efficiency of global cities</i>	Jun NAKATANI Skype Lesson: <i>Energy and Natural Resources Management</i>	Experience exchange –  Open Discussion Chair: Riccardo Beltramo <i>Presentation of Ph.D. Students</i>	Tan Yigitcanlar Skype Lesson: <i>Sustainable urban development</i>	Sonia Valdivia Lesson: <i>Social- LCA</i>	
<b>13:15/14:30</b>		Lunch	Lunch	Lunch	Lunch	Lunch	
<b>Afternoon</b>							
<b>14:30/16:00</b>		Bruno Notarnicola Lesson: <i>Experiences of Industrial Ecology</i>	Experience exchange –  Open Discussion Chair: Maria Francesca Renzi <i>Presentation of Ph.D. Students</i>	Experience exchange –  Open Discussion Chair: Maria Claudia Lucchetti <i>Presentation of Ph.D. Students</i>	Maurizio Cellura Lesson: <i>Energy applied to regional district</i>	(14:30/15:30) Marzia Traverso Lesson: <i>LC-S-A to a urban planning</i>  (15:30/16:30) Alessandro Ruggieri Introduces the Closing Round Table	
<b>16:20/20:00</b>		<i>Free Time</i>	<i>Free Time</i>	<i>Free Time</i>	<i>Free Time</i>	<i>Free Time</i>	
<b>20:30</b>		<i>Dinner</i>	<i>Dinner</i>	<i>Dinner</i>	<i>Dinner</i>	<i>Dinner</i>	





## SCIENTIFIC PARTNERS



東京大学  
THE UNIVERSITY OF TOKYO



## SCIENTIFIC SPONSORS with contribution



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sustainability



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Dipartimento di Economia



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