**PROFESSIONAL CERTIFICATION WITH LABORATORY AND WORKSHOPS: gREEN deSIGN AND nature based sOLUTIONs**

***MELAKA River flows into Stanterno River : MEETING OF MINDS OF TWO IURC CITIES***

***oBJECTIVES:***

The course-laboratory /workshop to be held online in 1 week of July and 1 week in September (1-2 days per week) with a final event at the end of September follows a series of activities already initiated between the Metropolitan City of Bologna, Italy and the Melaka Historic City Council, Malaysia.

Following the principles of **Natural-based-Solutions (NbS)**, the course-laboratory/workshop aims to search for a shared and flexible design to address the different environmental, landscape, and cultural conditions that characterizes the cities of **Melaka** and **Imola** in their symbiotic relationship with their **waterways**. Other related contents in order to complete and integrate the program will be: urban mapping heat, sustainable tourism.

NbS has been defined by the **European Commission**, since 2015, as a "*useful tool to pursue objectives such as increasing the sustainability of urban systems, restoring degraded ecosystems, implementing adaptive and mitigation actions concerning climate change, and improving risk management and implementing resilience.*"

In this cultural context, the course-laboratory /workshop, commencing with NbS, has as its primary objective to envision a **sustainable** design process of urban public spaces characterized by the two rivers in the cities of Melaka and Imola to generate a range of **ecosystem benefits** such as improved air quality, biodiversity conservation and absorption of climate-altering gases along the spaces. Strategies will be devised to **combat** climate change and biodiversity loss on the one hand and improve air quality and food security on the other.

In practice, the course-laboratory/workshop has four main goals to be achieved through NbS:

* Stimulate sustainable urbanization to make cities more livable and attractive and to improve the quality of city life;
* Restore degraded or abandoned ecosystems to strengthen ecosystem resilience;
* Develop capacity to adapt to climate change to enhance biological storage of CO2;
* Improve resilience and risk management to find a more efficient solution than adopting traditional methods.

Choosing **landscape** and public space design and applying NbS means replacing traditional methods to opt for a choice that marries the laws of **nature** without creating environmental damage and ecosystem disruption for the Melaka River and Santerno River.

The course-laboratory/workshop will outline guidelines for using nature's **resources** without further exploiting them, where clean air, water, and soil rejuvenation practices, are integrated in an intelligent way, while addressing the environmental challenges of both cities. Engaged key actors will work **symbiotically** with nature, rather than against it, to provide sustainable and economical ways to achieve an increasingly green economy that is competitive and resource-efficient.

An important lay out of the course will be the joint project for Santerno-Melaka River Parks.

***Program of the COURSE/workshop***

**25.07**

09:30 am - 10:00 am. Greetings from IURC, the cities and local authorities

10:00 am - 11:30 am. Professor Alessandro Chiarucci, Director of BIGEA UNIBO: The importance of biodiversity in urban ecosystems

Objective: a state of the art about biodiversity and urban ecosystems

Learning Outcomes: an updated overview of methodologies and experiences at scientific level

11:30 - 12:00 Break

12:00 - 01:30 pm Virtual visit to the Santerno River (the area, the design and the evolution of the project) led by Valerio Morabito

Objective: to present the main features of the area and the design and the environmental improvements

Outcome: direct knowledge of the site and the potential of the area

Insights for further boost the cooperation: Urban heat mapping: research and analysis, Alberto Barbaresi University of Bologna

**26.07**

09:30 am - 10:30 pm. Prof. Rossano Bolpagni: Water infrastructure: ecosystem services and resilient strategies

Objective: to present the ecosystem services and the possible strategies of ecological resilience to experiment in Santerno-Melaka Area

Learning Outcomes: innovative methodologies for resilience and design of green areas

10:30 pm - 11:30 pm. Professor Valerio Morabito: The ecology of landscape Design

Objective: Innovative methodologies of green design

Learning Outcomes: methods and techniques of green design

11:30 - 12:00 Break

12:00 - 01:30 pm. Laboratory/Workshop

Objective: develop a concrete green design project. Case study: *the children corner in Osservanza Park*

Learning Outcomes: to achieve professional and scientific methodologies of design

**September, dates to be defined**

09:30 am - 10:30 pm. Mayor and Landscape Architect Grabriele Meluzzi: Green Projects of NCI

Objective: some insight about the green policies at local level

Learning Outcomes: to share methodologies to develop local green policies and involvement of citizens

10:30 pm - 11:30 pm. Deputy Mayor and Landscape Architect Elisa Spada : Santerno River Reforestation Project and Green Projects in Imola

Objective: some insights about the green policies at local level

Learning Outcomes: to share methodologies to develop local green policies and involvement of citizens

11:30 pm - 12:00 pm. Break

12:00 pm - 01:30 pm. Interactive Laboratory/Workshop

Objective: develop a concrete green design project, review of the proposals, discussion

Learning Outcomes: to achieve professional and scientific methodologies of green design

Insights for further boost the cooperation: Sustainable Tourism: Projects and Strategies, IF Imola Faenza

**September, date to be defined**

09:30 am - 11:30 pm. Green Design and Nature Based Solutions in Malaysia, Professor Marlyana Azyyaty Marzukhi, Universiti Teknologi Mara, Malaysia (tbc)

Objective: NBS and innovative projects and best practices in Malaysia

Learning Outcomes: share a general framework for green design and resilient city actions

11:30 pm - 12:00 pm. Lunch Time

12:30 pm - 01:30 pm. Workshop. Individual tasks and evaluation of the lay out and the proposals.

**September, date to be defined**

10:30 am - 11:30 pm. Seminar/workshop final result presentation Public event with streaming and virtual exhibition of the layout of the laboratories

11:30 pm - 12:30 pm. Public Debate Imola- Melaka Team

Objective: disseminate the projects and the guideline elaborated during the course

Learning Outcomes: to involve local stakeholders, participants, citizens and public authorities

12:30 pm - 1:00 pm. Greetings from the city and local authorities

12:30 pm - 2:30 pm. Lunch Time

The Workshop/Laboratory activities will be led by Valerio Morabito and Sara Landi

**LANGUAGE:** English

**DURATION:** 20 h

**FINAL CERTIFICATION:** Attendance Certification of the BIGEA UNIBO Department, University of Bologna

**ORGANIZATION AND SUPPORT:** Green Arco- UniBO Spin off

The University of Bologna ([Italian](https://en.wikipedia.org/wiki/Italian_language): Alma Mater Studiorum – Università di Bologna, UNIBO) is a [public](https://en.wikipedia.org/wiki/Public_university) [research university](https://en.wikipedia.org/wiki/Research_university) in [Bologna](https://en.wikipedia.org/wiki/Bologna), Italy. Founded in **1088** by an organised guild of students (studiorum), the origins of the university go way back, and it is considered to be the **oldest university in the Western world**. Its history is intertwined with that of the **great names of science and literature**, it is a **keystone and a point of reference for European culture**. It is also the [oldest university in continuous operation in the world](https://en.wikipedia.org/wiki/List_of_oldest_universities_in_continuous_operation), and the first degree-awarding institution of higher learning. At its foundation, the word universitas was first coined. With over 90,000 students, it is the second-largest university in Italy after [La Sapienza](https://en.wikipedia.org/wiki/Sapienza_University_of_Rome) in Rome.

The **acceptance rate** at University of Bologna is at 60%.

**Ranking:** **#1** in Italy out of 88 universities. **#1** in the Emilia Romagna Region out of 4 universities in the country. Included in Top 100 universities in the whole of Europe.

It was the first place of study to use the term universitas for the corporations of students and masters, which came to define the institution (especially its law school) located in Bologna. The university's emblem carries the motto, **Alma Mater Studiorum ("Nourishing mother of studies")**, the date A.D. 1088. It has campuses in [Cesena](https://en.wikipedia.org/wiki/Cesena), [Forlì](https://en.wikipedia.org/wiki/Forl%C3%AC), [Ravenna](https://en.wikipedia.org/wiki/Ravenna) and [Rimini](https://en.wikipedia.org/wiki/Rimini) and a branch center abroad in [Buenos Aires, Argentina](https://en.wikipedia.org/wiki/Buenos_Aires). It also has a **school of excellence** named Collegio Superiore di Bologna. An associate publisher of the University of Bologna is the [Bononia University Press](https://en.wikipedia.org/wiki/Bononia_University_Press). The university saw the **first woman to earn a university degree** and teach at a university, [Bettisia Gozzadini](https://en.wikipedia.org/wiki/Bettisia_Gozzadini), and the **first woman to earn both a doctorate in science and a salaried position as a university professor**, [Laura Bassi](https://en.wikipedia.org/wiki/Laura_Bassi).

It is one of the most prestigious universities in Italy. It is especially renowned for its studies in law, medicine, and the **natural sciences**. University of Bologna had a **central role in the sciences during the Italian renaissance**, where it **housed and educated Nicholas Copernicus** as well as **numerous other renaissance mathematicians**.

Bologna ranks among the **best cities in Italy** and is **home to some of the best universities** in the country. Its metropolitan area is home to more than 1,000,000 people. It is known as the **Fat City** for its rich cuisine, and the **Red City for its Spanish-style red tiled rooftops**. It is also called the **Learned City** because it is **home to the oldest university in the world**.

***Department of Biological, Geological and Environmental Sciences University of Bologna***

***CV***

***Alessandro Chiarucci***

Full Professor at the University of Bologna from 2014. Botanist and ecologist with research activities in **vegetation science, community ecology, biogeography, biodiversity assessment and conservation biology**. Coordinator of the [BIOME - Biodiversity and Macroecology](https://bigea.unibo.it/en/research/research-groups/biome) Research Group. My research mission is to understand the **patterns and processes of species coexistence** in relation to the **spatial and temporal scales** and to improve the methods adopted for **biodiversity assessment**. I collaborate with several European and extra-European Research Groups, within the frame of various theoretical, empirical and applied research projects. I consider **Science as a contribution to a better world**, peaceful and healthy for the human beings and the other organisms living on the Earth.

[Go to the Curriculum vitae](https://www.unibo.it/sitoweb/alessandro.chiarucci/cv-en)

***Valerio Morabito***

Adjunct Professor at the **PennDesign University of Pennsylvania** (**Ivy League institution**), Philadelphia, United States Researcher at the Mediterranean University of Reggio Calabria

Researcher in **Landscape Architecture** at the "Mediterranean" University of Reggio Calabria, former Faculty of Architecture. Promoter and founder of the **Academic Spin off called APS spin off UNIRC**, at the Mediterranean University of Reggio Calabria. Spin off linked to the scientific themes of the **landscape, eco-sustainable architecture and multidisciplinary planning** of the territory. Professor at the master's degree in Landscape Architecture MAPAT in Rabat, Morocco.

**Roles in Sector Journals on Landscape Architecture** - 2014. **Scientific Committee** of the international journal "Ri-Vista", published by the University of Florence. - 2013. Scientific Committee of the international magazine "TOPSCAPE" on Landscape Architecture. - 2013. Founder and scientific director of the "Intelligent Landscape" editorial series, ARACNE EDITRICE. - 2012. Editorial Board of the international magazine "TOPSCAPE" on Landscape Architecture.

**Scientific Research** - 2017. "LANDSCAPING DESIGN OF OPEN SPACES AND THE NEW INFRASTRUCTURAL SET-UP" Scientific support activity to the Municipal Administration of Sesto San Giovanni. **Team Leader Professional Organization for PennPraxis University of Pennsylvania**. - 2015. "FORRE INTESTINUM, a new whole of city metabolic network" ROME 20-25 NEW CYCLES OF THE LIFE OF THE METROPOLIS. Participation with the PennDesign University of Pennsylvania - Department of Landscape Architecture. - 2011/2012. "Strategy to Convert the Mines of the Iglesiente, Sardinia into a Tourist Landscape" Team Leader for an international research led by PennDesign University of Pennsylvania. - 2008/2010. "The places of rejection". BRIN. Scientific Coordinator Prof. Anna Elisa CALCAGNO, Scientific Responsible Prof. Franco ZAGARI, "Mediterranean" University Unit of REGGIO CALABRIA, "**The Redevelopment of Strait Landscapes**".

**Publications Monographs and Essays** - 2017. “The city of the Imagination,” (collection of images and drawings) by Valerio Morabito, forthcoming - 2017. “Critical Projects. Urban landscape architecture experiences in four continents,” edited by Valerio Morabito, editorial series “Intelligent Landscape,” ARACNE EDITORE, Italy – pending publication - 2017. “Beauty and Forms. Urban Landscape Projects for Porta Genova, Milan”, edited by Valerio Morabito, editorial series “Intelligent Landscape,” ARACNE EDITORE, Italy – forthcoming - 2016. Valerio Morabito. “The Holistic Multiplicity of Landscape”. In “Tasting the Landscape”, 53rd IFLAS World Congress, EDIFIR editor, editorial chain “Space of Architecture, Turin. Italy - 2015. "The extended Representation of Landscape. Ideas and Methodology of Valerio Morabito", edited by Valerio Morabito, Shuping Xian and Francesco Belligerante, Editor Yunfei Teng, Shanghai, second edition. China - 2014.

***Rossano Bolpagni***

Researcher in the disciplinary scientific sector of **Ecology** at the University of Parma. Department of Chemistry, Life Sciences and Environmental Sustainability University of Parma (UNIPR). He is a **founding member of the GREENARCO University SPIN-OFF** of the University of Bologna (president Prof. Alessandro Chiarucci) (see link: https://www.unibo.it/it/servizi-e-opportunita/imprenditorialita/spin-off /greenarco and <https://www.greenarco.com/team/>).

I carried out university teaching activities as: - RtdA at UNIPR [from the academic year (academic year) 2019/2020 - ongoing; SSDBIO/07; 9 ECTS/year for a total of 2 years] - Associate Professor at the Politecnico di Milano (from the 2017/2018 academic year - ongoing; SSD BIO/07, 4 ECTS/year for a total of 4 years) - Assistant professor at POLIMI (since ay 2016/2017 to ay 2018/2019; SSD BIO/07, 4 years for a total of 120 hours provided) - Laboratory manager at the Politecnico di Milano (from ay 2014/2015 to ay 2019/2020; SSD BIO/ 07, 5 years for a total of 40 hours provided) - Teaching assistant at UNIPR (from the 2003/2004 to 2015/2016 academic year; SSD BIO/07, 13 years for a total of 98 hours provided) - Lecturer for the Interuniversity Master's in Management and Conservation of the Environment and Fauna (http://masterfauna.biol.unipr.it/; from the 2014/2015 to the 2018/2019 academic year, and for the 2020/2021 academic year, 6 years for a total of 15 hours disbursed) - Supervisor/Co-supervisor of 3 doctoral theses (starting from the 2009/2010 academic year), **22 master theses** (starting from the 2004/2005 academic year) and 11 three-year theses (starting from the 2004/2005 academic year) candidate has also carried out/carries out an intense activity as **invited speaker for seminars and workshops at numerous Italian universities** (among others UNIPR, POLIMI, UNIBO, UNIUPO, UNIROMA1).

The **Research Activities** can be summarized in the theme "**Macrophyte Biodiversity and Ecophysiology in inland waters: micro and macro perspectives and implications for aquatic ecosystem functioning**". Starting from the experience of the **PhD in Ecology**, during which the candidate investigated the **eco-physiological adaptations of rooted macrophytes** (at the individual level) to **environmental gradients, the research path has been progressively expanded to include communities and in succession ecosystems**. The gradual passage of scale (biological and functional) was possible thanks to the refinement of the experimental strategies (micro, mesocosms, sample plans), to the **expansion of the technical skills** (taxonomy, eco-physiology, a-biotic interactions, remote sensing), and to the scientific production elaborated in the progress of the studies. It is an **innovative and interactive research path** with various national and international research groups, which has seen the candidate explore original themes in full autonomy. In parallel with this academic path, the candidate has carried out various design activities of an application type with various bodies, including ISPRA, ADBPO, AIPO, the Lombardy and **Emilia-Romagna Regions, the Mincio Park and the Oglio River**, and various professional studios they deal with **environmental planning and requalification**.