



**Teaching proposal in the field of SSD ICAR/10 – Architettura Tecnica
for developing Key Competences for Lifelong Learning,
according to “European Reference Framework of Key Competences”**

SUSTAINABLE BUILDING DESIGN AND ENGINEERING, CFU: 3
Prof. **Rossella CORRAO**

On line course “ex Art. 10” Program
Academic Year 2021-2022, 1° semester, TEAMS platform

Lecture contents

November 12th, 2021 - 16:00-18:30

Climate Change part 1 (2,5 hours)

Climate change: an environmental, social, and political challenge

Rossella Corrao, MArch (Hons), PhD, Full Prof. in Architectural Engineering, University of Palermo, IT

Embodied carbon: how much it affects the construction process and management of buildings

Daniela Azzaro, MEng CEng MICE, Project & Design Manager, Associate @Arup Italy, Milan, IT

November 15th, 2021 - 15:30-18:30

Climate Change part 2 (3,5 hours)

JRL Group DfMA Strategy: Design, Manufacture and Buildability for Innovative Envelope Systems

Emanuele Calabrò, MEng (Hons) PGDip CEng MSFE MCIBSE, Head of Engineering @Midgard Ltd, London, UK

Energy and Climate 2030 in Italy,

Enrico Genova, MS Bldg Eng-Arch, PhD, Researcher @ENEA, Bologna Research Centre - Energy Efficiency Unit Department (DUEE), Bologna, IT

PBL

November 26th, 2021 - 15:00-19:30

Strategies for mitigating microclimate (4,5 hours)

Multiscale methodology for evaluating the microclimate effects of vegetation on the built environment

Rossella Corrao, MArch (Hons), PhD, Prof. in Architectural Engineering, University of Palermo, IT

The challenges of sustainability in UAE. SWA group’s experience: “A Tower in a Park” and EXPO 2020

Sergio Lima, MArch, Instr. @AAU, Associate Principal @ SWAgroup, San Francisco, CA, USA

Sustainability pavilion @ EXPO 2020 and Museum of the future in Dubai

Simone Miriana, MSc (Hons) Meng CEng MCIBSE, Associate @Eckersley O’Callaghan, London, UK

PBL



December 3rd, 2021 - 14:30-19:00

Sustainable buildings in Mediterranean and sub-tropical areas (4,5 hours)

Water and vegetation in traditional Mediterranean architecture

Calogero Vinci, MEng, PhD, Associate Prof. in Architectural Engineering @University of Palermo, IT

Natural Ventilation in high-rise buildings

Humera Mughal, MS Arch Eng, BS Bldg Arch Eng, PhD, Assistant Prof. @Prince Sultan University, Riyadh, SA

Renovation wave: technical and economic solution for retrofitting buildings

Enrico Genova, MEng-Arch, PhD, Researcher @ENEA, Bologna Research Centre - Energy Efficiency Unit Department (DUEE), Bologna, IT

Paddington Gardens in London: A new facade solution for Energy Design and Fire Engineering Compliance

Emanuele Calabrò, MEng (Hons) PGDip CEng MSFE MCIBSE, Head of Engineering @Midgard Ltd, London, UK

December 10th, 2021 - 14:30-19:30

Energy Efficiency of the Building Envelope and Design of Innovative Components (5 hours)

Climate resilient facades

Simone Miriana, MSc (Hons) MEng CEng MCIBSE, Associate @Eckersley O'Callaghan, London, UK

DfMA - Design for Manufacture and Assembly e DfD - Design for Disassembly

Daniela Azzaro, MEng CEng MICE, Project & Design Manager, Associate @Arup Italy, Milan, IT

BIV and BIPV innovative products

Rossella Corrao, MArch (Hons), PhD, Full Prof. in Architectural Engineering, University of Palermo, IT

PBL

December 17th, 2021 - 14:30-19:30

Quality of Sustainable Buildings (5 hours)

Circular Economy, principles and applications in building construction

Daniela Azzaro, MEng CEng MICE, Project & Design Manager, Associate @Arup Italy, Milan, IT

Energy Performance Certificates worldwide

Enrico Genova, MEng-Arch, PhD, Researcher @ENEA, Bologna Research Centre - Energy Efficiency Unit Department (DUEE), Bologna, IT

LEED and the outdoors. Guthrie Green in Tulsa and other case studies

Sergio Lima, MArch, Instr. @AAU, Associate Principal @ SWAgroup, San Francisco, CA, USA

PBL

Learning assessment

In order to better assess students that want to implement their competencies in the field of Sustainable Building Design and Engineering for transforming their acquired competences into professional skills, practical activities will be requested during the course through PBL (Problem Based Learning) methodology. For the learning assessment, a final test -at the end of the course- will allow to ascertain the skills acquired by students.



UNIVERSITA DEGLI STUDI DI PALERMO
Dipartimento di Ingegneria



In response to COVID-19 emergency remote teaching has been foreseen for this course. It will be held on the Teams platform that will be accessed through the following link:

https://teams.microsoft.com/l/team/19%3auHMWiJwbpFLfleN-87as-j5IvhHfPBKCVU_WOCM7gg1%40thread.tacv2/conversations?groupId=f7e93bdc-569d-4634-a81b-2660201d6a6c&tenantId=bf17c3fc-3ccd-4f1e-8546-88fa851bad99

The course will be held in English and/or Italian (according to the number of foreign students enrolled) and it is organized in:

- lectures (25 hours);
- PBL (Problem Base Learning) activity (45 hours);
- final test/interviews (5 hours).

At the end of the course, it will be organized an interview for each student who have attended the course, in order to propose the attribution of 3 CFU as "ex art. 10".