



Degree course

Architecture LM4

Course code

18601

Lecturer

Nava Consuelo

Course name

sustainability and innovation design

Disciplinary area

Sustainable design

Disciplinary field of science

Ssd icar 12

University credits – ECTS

6 ECTS

Teaching hours

60 hours

Course year

5[^] year

Semester

2[^] semester

Synthetic description and specific course objectives

The course "sustainability and innovation design", has students of architecture, a high-tech training and experimental methodology on issues of sustainable design paradigms, which refers to the objectives for the qualifying course of studies with respect to aspects of technological innovation, product and process applied in sustainable urban projects and the monitoring of performance and constructability for energy-efficient buildings and resources.

It is believed that such teaching could be addressing students, also supporting the thesis of degree, the theme of the project infra-scales: from the territory, built settlements, buildings and components-processes products compatible systems, to entrust "value and tools" to a new technological culture of the project, in which the theme of choices between design process, construction and evaluation still, concern questions of method and model, a new scenario to face a renewed meaning zero impact on the environment inhabited buildings.

In particular, with respect to instances related to the recent European legislation, the course will address the theme of innovative and enabling technologies at the service of urban scale resilience, for collective and intelligent city and with circular processes in the life cycle of the urban system, and resource building, mapping of their relations and trade and thus on the issues-project for sustainable urban regeneration and city making, recycling and urban artificial and natural resource management, land use and protection of environmental systems.

The discipline will identify contemporary experiences from which learning strategies and tactics and application environments to explore and experience through projects capable of triggering innovative practices, capable of promoting the three dimensions of sustainability, environmental, social and economic, supported by research and project's national and international lecturer and invited experts.

Course entry requirements

Students should have already dealt with the basic disciplines in the tools of architecture and urban design and architecture.
Discipline is a prerequisite and fundamental also to those who will carry out the thesis degree of the extra proposal of the Atelier, with the report of the teacher of the course.

Course programme

The course consists of three modules, both theoretical and experimental, for 60 hours of activities divided in:

1° form _SID, Sustainable Innovation, Design 35 hours (3.5 ECTS)

5 lectures, case studies and 2 external teachers workshops

Topics: *environmental, economic and social sustainability, urban innovation, resilient systems, adaptive technologies and enablers, land use, and recycling of urban recycling systems-components , the life cycle of systems and resources, national and European standards, collective cities strategies and tactics to the city making*

*mid-term review and evaluation

2° form _SED, Sustainable Energy Design, 15 hours (1.5 ECTS)

2 theoretical seminars, # 1 application and # 1 Professor seminar

Topics: *energy efficiency and environmental effectiveness, LCA and building materials, systems of monitoring and evaluation of sustainable design (protocols and method) , energy-efficient buildings and resources, integration of solar technologies in architecture, energy certification and qualification of sustainability: tools and methods.*

*Mid-term evaluation

3° form _LbM, Learning by Making, 10 hours (1 ECTS)

1 theoretical Seminar, workshops with participation of external contributions

Topics: *strategies and tactics for making city, recycle, social innovation cities-urban*

* Happenings with module works exhibition

Expected results

The student must achieve a frequency exceeding 70% of the activities; pass the mid-term and final and acquire the theoretical and practical references offered in modules of the course.

Course structure and teaching

Lessons (hours/year in the classroom): 45 hours

Tutorial activities (classroom hours/year): 5 hours + mid-term

Practice activities (classroom hours/year): 10 hours + happening

Student's independent work

The student will be able to commit to the max 60 more hours spread for the preparation and audit of activities in three forms.

Testing and exams

1° form _SID, Sustainable Innovation, Design 35 hours (3.5 ECTS)

-mid-term review and evaluation: theoretical mapping work for new paradigms

2° form _SED, Sustainable Energy Design, 15 hours (1.5 ECTS)

-mid-term review and evaluation: experimental design and use of tools

3° form_LbM, Learning by Making, 10 hours (1 ECTS)
-urban Happenings with exhibition work of the

Final review_colloquio examinations and final evaluation.

Suggested reading materials

1° form_SID, Sustainable Innovation, Design

Carta M., (2014), Reimagining Urbanism, ListLab, Trento

Franceschini A. (2014) (a cura), Sulla città futura, ListLab, Trento

Nava C., V.Gioffré, (2012), Con_testi Sostenibili. Una visione per la città metropolitana di Reggio Calabria, ListLab ed., Trento

Nava C. (2014), *Future 1/1. The Laboratory-City: Recycle and Repair.*, in S.Marini "future_utopia"; Carte Blanche serie, Bruno ed, Venezia

Raiteri R. (2014), Progettare i progettisti, Quodlibet Studio, Macerata

Ricci M., (2012), Nuovi Paradigmi, ListLab, Trento

2° form_SED, Sustainable Energy Design

Ulisse A., (2010), EnergyCity, ListLab, Trento

Nava C., (2012) SED_Sustainable energy design, ListLabTrento

Nava C., (2012), Edifici Sostenibili. Particolari Costruttivi (MANUALE), DEI ed., Roma

3° form_LbM, Learning by Making

Lambertini A., (2013), Urban Beauty, Ed.Compositori, Bologna

Nava C., (2014), "Total Recycle Design Total Recycle Process". In S.Marini, S.C.Rosselli (a cura)

reCycleOppositionI, quaderni Recycle Italy, ed.Aracne

Nava C., (2015), ReActioncity. *Un progetto di innovazione sociale urbana per la città metropolitana di Reggio Calabria*, in M.Carta, B.Lino "Urban Hypermetabolism", Quaderni recycleI, ed.Aracne

Web site:

www.recycleitaly.it

www.reactioncity.com

www.architetturaecosostenibile.it

www.sustainablecitiescollective.com

www.citylab.com

www.key4biz.it

<http://ongreening.com>

www.inhabitat.com

www.matrec.com

www.landarchs.com

Other:

Bibliographies and abstracts international handouts provided in pdf + research papers recycle italy