

Course guide

210291 - DRC - Designing for Climate Resilience

Last modified: 22/12/2023

Unit in charge: Barcelona School of Architecture
Teaching unit: 740 - DUTP - Department of Urbanism, Territory and Landscape.
Degree: DEGREE IN ARCHITECTURE STUDIES (Syllabus 2014). (Optional subject).
Academic year: 2023 **ECTS Credits:** 3.0 **Languages:** Spanish, English

LECTURER

Coordinating lecturer: MIRIAM GARCIA GARCIA - MIQUEL MARTI CASANOVAS

Others: Segon quadrimestre:
MIRIAM GARCIA GARCIA - Grup: 2SM
MIQUEL MARTI CASANOVAS - Grup: 2SM

PRIOR SKILLS

Intermediate level of spoken and written English.

REQUIREMENTS

URBANÍSTICA III - Prerrequisito

DEGREE COMPETENCES TO WHICH THE SUBJECT CONTRIBUTES

Specific:

EP5. Translation from Spanish slope
EP19. Translation from Spanish slope
EP14. Translation from Spanish slope
EP12. Translation from Spanish slope

Transversal:

CT7. Translation from Spanish slope
CT6. Translation from Spanish slope
CT5. Translation from Spanish slope
CT4. Translation from Spanish slope
CT2. Translation from Spanish slope

Basic:

CB3. Translation from Spanish slope

TEACHING METHODOLOGY

Face-to-face activities: Hours / week:
Participatory exhibition class 1,5
Case study 1,5

LEARNING OBJECTIVES OF THE SUBJECT

The goal is understanding social-ecological systems as complex adaptative systems (CAS) to promote an “anthropocene” design revolution based on landscape as a resilient infrastructure. Systems linking people and nature, such as metropolitan areas, cities or neighborhoods, are increasingly understood as CAS. We need to work improving their resilience to contrast the internal and external stresses that they are about to face in the following decades. It becomes essential to integrate structural, nonstructural, natural and natural based structures with technology and place engaging different agents through the design process. This commitment with ecology and society, engaged with creative design as a method for achieving resilience to climate change are the engines of the course.

STUDY LOAD

Type	Hours	Percentage
Hours large group	33,0	44.00
Self study	42,0	56.00

Total learning time: 75 h

CONTENTS

Designing for climate resilience

Description:

Knowledge of resilient design tools to face the effects of climate change

Specific objectives:

1st module: RESILIENCE THINKING AND DESIGN

The aim is to give the students an overview of the theoretical framework of Landscape architecture resilience design through a set off lectures and selected projects. (Lectures + Debates)

2nd module: TOWARD A LEXICON FOR DESIGNING RESILIENT LANDSCAPES

The ambition is to unveil general adaptation strategies integrated with the local components, materials, technology, agents and processes to face climate change through a set off innovate projects (selected case studies researched by the students) and collective resilience lexicon. (Case studies + Research + Design)

Related activities:

Through the student's research by design work we will collective develop a worldwide typological and technological catalogue of strategies, structures and socio-ecological processes for the design of resilient landscapes to face climate change effects.

Related competencies :

EP5. Translation from Spanish slope
EP12. Translation from Spanish slope
EP19. Translation from Spanish slope
EP14. Translation from Spanish slope
CT5. Translation from Spanish slope
CT6. Translation from Spanish slope
CT7. Translation from Spanish slope
CT2. Translation from Spanish slope
CT4. Translation from Spanish slope
CB3. Translation from Spanish slope

Full-or-part-time: 30h

Theory classes: 10h

Practical classes: 10h

Self study : 10h

ACTIVITIES

TOWARD A LEXICON FOR DESIGNING RESILIENT LANDSCAPES

Description:

A set of conceptual and design responses selected by the students. Through the student's research by design work we will collectively develop a worldwide typological and technological catalogue of strategies, structures and socio-ecological processes, with which design resilient landscapes.

Specific objectives:

Understanding landscapes under climate changes effects, their principal hazards due to climate change effects and develop a set of resilience tools.

Material:

Innovative projects (selected case studies) such as Rebuild by design competition, Changing course competition, Resilient by design Bay area challenge, Minneapolis Riverfront design competition, Yamuna river project, Greater New Orleans urban water plan, Rotterdam waterplan2, 2014 Rotterdam adaptation strategy, Zoho climate proof district in Rotterdam, Climate-smart agricultural projects, among others.

Delivery:

Resilience structures, moving from hard to semi-hard, from fixed to mobile and from monofunctional to multifunctional structures, expanding the range of its possible benefits and integrating them in the construction of new socio ecological landscapes. Including structures aimed at operating in relation to the communities.

Related competencies :

EP19. Translation from Spanish slope
EP5. Translation from Spanish slope
EP14. Translation from Spanish slope
EP12. Translation from Spanish slope
CT4. Translation from Spanish slope
CT7. Translation from Spanish slope
CT6. Translation from Spanish slope
CT5. Translation from Spanish slope
CT2. Translation from Spanish slope
CB3. Translation from Spanish slope

Full-or-part-time: 10h

Practical classes: 10h

GRADING SYSTEM

EVALUATION SYSTEM

Continuous assessment

Continuous assessment will be based on the work carried out by the student during the academic year, through the submission of assignments or the performance of written and/or oral tests, according to the criteria and timetable established.

Final assessment

If the continuous assessment is not positive, a second assessment may be carried out, which will consist of a final overall test in the established methodology according to the criteria of the lecturer in charge (written or oral test and/or submission of assignments).

Telematic continuous assessment

In online teaching situations, continuous assessment will be carried out synchronously and asynchronously, by the methods established by the University and the School, with a periodic record of academic activity by submitting assignments, forums, questionnaires or any other means provided by the Atenea platform, or the alternative tools provided to the teaching staff. In situations in which this telematic teaching takes place when face-to-face teaching has already begun, or for non-academic reasons, any alterations to the weightings or regular teaching control systems will be communicated in detail to all students on the Atenea platform for every subject.

Final telematic assessment

If the continuous telematic assessment is not positive, a second assessment may be carried out consisting of a final overall test in telematic format to be established in accordance with the criteria of the lecturers in charge and the ICT resources and tools provided by the University or the School.

The measures for adapting to distance teaching will be implemented in accordance with ICT security and personal data protection criteria to ensure compliance as regards Personal Data Protection legislation (RGPD and LOPDGDD).

EXAMINATION RULES.

The course is organized as a face-to-face workshop where the study topics are presented and the work is carried out. Work is combined with theoretical classes.

BIBLIOGRAPHY

Basic:

- Walker and Salt. Resilience practice: building resilience to absorb disturbance and maintain function. Washington, DC: Island press, 2012.
- Buchanan, Richard. "Wicked Problems in Design Thinking". Design issues. 1992, núm. 8.
- Fischer, J. [et. al]. "Integrating resilience thinking and optimisation for conservation.". Trends in ecology & evolution [on line]. 2009, núm. 24, p. 549 [Consultation: 15/07/2021]. Available on: <https://www.sciencedirect.com/science/journal/01695347>.- "The resilience of terrestrial ecosystems; local surprise and global change.". Holling, C.S.. Sustainable Development of the Biosphere. Cambridge, U.K.: Cambridge University Press, 1986.. Pages 292-317.
- Ahern, J.. "From Fail-Safe to Safe-To-Fail: Sustainability and Resilience in the New Urban World". Landscape and Urban Planning. 2011, núm. 100, p. 341-343.
- Walker, B. H., and David Salt. Resilience thinking: sustaining ecosystems and people in a changing world.. Washington, DC: Island Press, 2006.
- Carpenter et al. "From metaphor to measurement. Resilience of what to what?". NEcosystems 4(8). (2001) :765-781.

RESOURCES

Other resources:

Proposed Videos

Buzz Holling: Resilience Dynamics at the



Stockholm Resilience Centre TV: <https://www.youtube.com/watch?v=FrNWUOmOHRs> />

The best explanation to resilience at the Stockholm Resilience Centre TV: <https://www.youtube.com/watch?v=tXLMeL5nVQk> />

Dr. Steve Carpenter: Resilience in social-ecological systems: Models and field studies:
https://www.youtube.com/watch?v=h4vKs9_c-kk />

Henk Ovink: "Resiliency by design, the politics of planning and rebuilding".

Syracuse Architecture (Syracuse University School of Architecture)

<https://www.youtube.com/watch?v=OMOsyyqGW6UI> />

Resilience video school

<http://www.stockholmresilience.org/research/resilience-video-school.html> />

The materials and documents of the subject may be written indistinctly in any languages of instruction.