Course guide
210331 - SCP - Cartography and Design Seminar

Last modified: 06/07/2024

Unit in charge: Barcelona School of Architecture
Teaching unit: 752 - RA - Departamento de Representación Arquitectónica.

Degree: DEGREE IN ARCHITECTURE STUDIES (Syllabus 2014). (Optional subject).

Academic year: 2024 **ECTS Credits:** 3.0 **Languages:** Catalan

LECTURER

Coordinating lecturer: SALVADOR GILABERT SANZ

Others: Primer quadrimestre:
MARILENA CHRISTODOULOU - CP
SALVADOR GILABERT SANZ - CP

PRIOR SKILLS

Drawing by hand
Rinoceros and geometry knowledge

REQUIREMENTS

Go to Catalan or Spanish version.

TEACHING METHODOLOGY

Go to Catalan or Spanish version.

LEARNING OBJECTIVES OF THE SUBJECT

A deep knowledge of what exists from various perspectives; the ability to identify the problems of a place and propose design solutions (of different appropriate and pertinent scales) assessing their strategic, extrapolable, scalable or repeatable value.
It is about proposing built solutions that are strategic and that allow the transformation and improvement of existing conditions, always under the prism of the triple balance through data management and computing.

As a prominent instrument of the course, students will learn to use cartographies, as forms of knowledge and graphic interpretation of reality in different scales and formats, so that they become essential tools to prefigure a new reality transformed through design intervention.
When we talk about mapping, we refer to the elaboration of a set of graphic material where the elements represented make sense through the relationships established between them. It is about creating maps that will guide them towards a knowledge of what exists, a reinterpretation of places.

General objective
To learn to understand what exists from various perspectives
To learn to identify the problems of a place and the spaces of opportunity
To learn to propose project solutions (of different appropriate and pertinent scales) assessing their strategic, extrapolable, scalable or repeatable value.

STUDY LOAD

Type	Hours	Percentage
Self study	45,0	60.00
Hours large group	30,0	40.00

Total learning time: 75 h

CONTENTS

Mapping/Projecting Seminar

Description:
The course content is organized into 4 thematic PARTS and 3 DELIVERY, based on the integration of three fundamental concepts:

1 Project sustainability and “triple balance”. Given the current climate emergency, concepts of sustainability and energy efficiency will be explained and taken into account in the projects, both in the appropriate solution and in its correct quantification.

2 Computational design of the project. The information, data and situations or phenomena present in the place are used to creatively generate computational graphic systems that serve as design tools. From this information, ideas will be developed with computational tools to evolve complex geometries such as parametric, fractal or fragmented systems. The next step is to develop these proposals with computational systems, using them in the most appropriate way to find solutions to the proposed ideas.

3 Graphic documentation of the presentation. The principle of progression of improvement of skills and knowledge is taken. Consequently, the skills of hand drawing and collage making will be strengthened to develop and transform ideas, from the abstract world to the concrete world of architecture.

PART I, Learning From 1, Learning from the perspective of others.
PART II, â□□â□□Learning From 2, Learning from one's own perspective, proposes an approach to the study of existing reality and the choice of places of opportunity.
PART III, What, why and for whom?, proposes a first definition of the program and the uses of the project that each group will have to develop.
PART IV, How?, involves the proposal and spatial and constructive formalization of a project whose scale varies according to each case.

Specific objectives:
Under the prism of the three fundamental concepts of the seminar: Project sustainability and “triple balance”, Computational design of the project and Graphic documentation and presentation:
Knowing and representing through the eyes of others
Knowing and representing through one's own eyes
Interpreting the existing reality from a morphological and topological approach
Analyzing a place from an interscalar approach
Developing Strategies, Plans and Programs
Working from the intermediate scale to the macro and micro scale
Proposing the re-use of existing buildings and spaces
Using the In-Between spaces as opportunities for interscalar relationships
Proposing architectural solutions with reusable and recyclable construction systems

Full-or-part-time: 2h
Theory classes: 0h 30m
Laboratory classes: 1h 30m

GRADING SYSTEM

Go to Catalan or Spanish version.

BIBLIOGRAPHY

Basic:
- Pottmann, Helmut; Bentley, Daril. Architectural geometry. 1st ed. Exton, PA: Bentley Institute Press, 2007. ISBN 9781934493045.
- Tedeschi, Arturo. AAD_Algorithms-aided design : parametric strategies using Grasshopper. Brienza: Le Penseur, cop. 2014. ISBN 9788895315300.
- Paez, Roger. Operative mapping : the use of maps as a design tool. Barcelona: Actar Publishers : Elisava Barcelona School of Design and Engineering, 2019. ISBN 9781948765077.
- Thomson, J. A.. On growth and form. 1961. ISBN 0521437768.
- Fernández-Abascal, G., & Vázquez, J. G. G. Documentos de su tiempo: Dibujos de jovenes arquitectos Españoles. Ediciones Asimétricas, 2022.

Complementary:
- "The co-operative evolution of buildings and cities. In Cooperative Buildings: Integrating Information, Organization, and Architecture: First International Workshop, CoBuild'98 Darmstadt, Germany". 1998 Proceedings 1.
- Digital cities. Architectural Design, 2009.

RESOURCES

Other resources:
About Parametric Design with Grasshopper (Rhinoceros)

Programs Rhinoceros 3D v.8 - v.7 + Grasshopper
Full 90-day trial version (windows and mac) in different languages.
https://www.rhino3d.com/downloa />
QGIS
https://qgis.org/es/site/forusers/download.html />
Essential Algorithms and Data Structures - Rajaa Issa - https://www.food4rhino.com/resource/essential-algorithms-and-data-structures-grasshopper />
Webgraph
https://www.grasshopper3d.com/ official web / examples / forums / downloads
https://www.grasshopper3d.com/page/tutorials-1 official web / tutorials
https://www.food4rhino.com/ plugins and apss for rhino and gh
http://grasshopperdocs.com/ helps, plugins and tutorials
http://grasshopperprimer.com/en/index.html theory and explanations
https://www.ladybug.tools/index.html#header-slide-show ladybug tools