Course guide
310626 - 310626 - Smart Cities

Last modified: 16/01/2024

Unit in charge: Barcelona School of Building Construction
Teaching unit: 751 - DECA - Department of Civil and Environmental Engineering.

Degree: BACHELOR'S DEGREE IN GEOINFORMATION AND GEOMATICS ENGINEERING (Syllabus 2016). (Compulsory subject).

Academic year: 2023 **ECTS Credits:** 4.5 **Languages:** Catalan, Spanish

LECTURER

Coordinating lecturer: Mercadé Aloy, Josep

Others: Taberna Torres, Mercè

TEACHING METHODOLOGY

Theoretical sessions taught in the classroom will be combined with the follow-up of the course activities.

LEARNING OBJECTIVES OF THE SUBJECT

Information cities and territories produce continuous data, putting in evidence the movement of persons and materials, the decision fluxes and the characterisitcs of its spacial configuration and social form, between other aspects. The goal of the subject is the recognition of the lecture tools in the constructed environments like instruments for the improvement of the efficiency, equity, sustainability and the quality of life in the cities of the future.

STUDY LOAD

Type	Hours	Percentage
Self study	67,5	60.00
Hours medium group	27,0	24.00
Hours large group	18,0	16.00

Total learning time: 112.5 h

CONTENTS

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Description:
01. The smart city concept: top-down smart cities vs bottom-up smart cities
02. Lecture of the city/territory from the morphologic elements: The spacial configuration of the urban environment
03. Lecture of the city/territory from the fluxes: The configuration related with the urban environment
04. Visualization and Simulation
05. Smart cities and citizenship participation
06. Smart cities and mobility
07. Smart cities and economy
08. Smart cities and evironment
09. Smart cities and infrastructures of urban services and management of services
10. Smart cities and adaptative design
11. Smart cities and green infrastructure

Full-or-part-time: 45h
Practical classes: 30h
Guided activities: 9h
Self study : 6h

GRADING SYSTEM

4 x Assignments to be done individually (25% each)
There is no retest

BIBLIOGRAPHY

Basic:
- Schmitt, Gerhard. Information cities [on line]. Zurich: ETH Zurich, 2015 [Consultation: 22/05/2017]. Available on: http://dx.doi.org/10.3929/ethz-a-010403946.
- Batty, Michael. The new science of cities [on line]. Cambridge, Massachusetts: MIT Press, cop. 2013 [Consultation: 03/06/2020]. Available on: https://ebookcentral.proquest.com/lib/upcatalunya-ebooks/detail.action?docID=3339700. ISBN 9780262019521.
- Townsend, Anthony M. Smart cities : big data, civic hackers and the quest for a new utopia. New York: Norton & company, 2013. ISBN 0393082873.