Smart cities: The case of Barcelona

Centre: Barcelona
Programme: Business, Design & Innovation
Course Code: 01
Term: 2 (Spring)
ECTS credits: 6
Duration: 45 hours (3 hours/week)
Language of instruction: English
Instructors: Francesc Aragall

Description
Unlike other educational programs based on the conceptual model of smart cities focused on ICT as a key element to ensure the efficiency of urban services or other whose main aim is to increase the competitiveness and economic growth, this course focuses on the Barcelona model that consist in a constant search for balance between economic and social development and the environment, bearing in mind also the future generations.

The city can only be smart if citizens collectively take the challenge to innovate in a smart and sustainable way to achieve liveable, viable and equitable city.

Prerequisites
None

Attendance policy
Attendance is mandatory for all classes, including field studies. Any exams, tests, presentations, or other work missed due to student absences can only be rescheduled in cases of documented medical or family emergencies. If a student misses more than three classes in any course half a letter grade will be deducted from the final grade for every additional absence. Seven absences in any course will result in a failing grade.

Learning outcomes
By the end of the course the students will be able to:
- understand the evolution, the complexity of services and uses that defines the Barcelona’s urban structure.
- understand the critical aspects to succeed in designing and delivering services in the city.
- identify the key factors to balance social, economic and ecological aspects of the city.
- discover the Seven Interdependent Success Factors (7ISF) to design a project for a city and to assess the services through the analysis of existing services delivered in Barcelona.
- discover the relations between the administration, business initiative and social forces.
Method of presentation
- Lectures and discussions: The lectures will provide the description of different services, socio-demographic elements and analysis methods supported by bibliography and images. During the lectures open discussion will be stimulated.
- Class participation: Students will analyse in groups different projects running in Barcelona using analysis tools that will be provided.
- Field studies: Visits to companies and public spaces in Barcelona, and more specifically in 22@.
- Oral presentations: Students are expected to present the results of their analysis or proposals with visual support.

Field study
- 22@ District: Public space, Barcelona Activa, Barcelona Design Hub, Zicla (design company that produces urban furniture from recycled material) and TTC (Exhibitions production company).
- Barcelona public transport services.
- Barcelona adaptation to human diversity.

Required work and assessment methods
- Attendance and participation during sessions (40%)
- Analysis of a project using the 7ISF (15%)
- Analysis of human diversity using the HUMBLES tables (15%)
- Oral presentation of an analysis or proposal (30%)

Contents

Week 1  General overview of the course. Presentation of all participants and their interests. Introduction.
          Historical evolution of Barcelona urban planning, from the Roman city to walls demolition, Olympic Games impact to present days.

Week 2  Urban planning: A theoretical base for Barcelona's planning. Housing policies, business settlement and public space planning.
          Socio-demographical description of Barcelona. Population, districts and neighbourhoods, householders' structure, migration, business structure.

Week 3  Political and administrative organisation. Historical evolution, integration of neighbour cities, administration structure and management.
Mobility I: Mobility to and from Barcelona. Private mobility by car and Public Transport.

Week 4  Mobility II: Internal mobility. Public Transport system, pedestrian mobility, new trends and services in mobility. Mobility and users diversity.
City logistics. Freights transport, parcel distribution and garbage collection, adaptation to different urban realities. New trends in last mile distribution. Way finding in Barcelona.

Week 5  Field study. Barcelona's Public Transport system.

Week 6  Presentation and discussion of results.
Quality of life in Barcelona. Indicators and data. Perceived quality level.

Week 7  Physical and virtual social networks in Barcelona.
Tourism in Barcelona. Its evolution and present situation. Business and tourism: key factors.

Week 8  Efficiencies and efficiencies of Barcelona services.
The 7 Interdependent Success Factors (7ISF). Its use for projects and services analysis and for projects and services design.

Week 9  Discussion about the 7ISF and the students' selection of a service to analyse or a proposal to develop.
Field study: 22@ public space, Barcelona Deign Hub.

Week 10  Field study: Company Zicla and Barcelona Activa.

Week 11  The ICT in Barcelona. Its importance for services, business and social life.
New business in Barcelona based in ICT.

Week 12  Barcelona World Mobile Capital.
Field Study. TCC a cultural production company. Cultural offer in Barcelona.

Week 13  Discussion about balance between quality of life, sustainability and economic development in Barcelona.
Follow up of the use of the 7ISF.
Week 14  Oral presentation of the exercise and discussion.
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Week 15  Oral presentation of the exercise and discussion.
Discussion on the conclusion about Barcelona and its transferability.

**Required reading**

**Recommended reading**