New Technologies, Digital Cities and the Urban Experience: Barcelona Smart City - 2016

COURSE OVERVIEW

Number of Credits: 5
Type of Course: GEOG
Semester: 
Language: English
Instructor: 
Email: 

Course Description

The main aim of the course is to offer an overview on how information and telecommunications technologies are changing both urban spaces and human behavior in cities.

More specifically, the course is organized in three parts:

Firstly, some preliminary definitions are presented. Concepts such as ‘digital technology’, ‘real time communication’ or ‘smart city’ are explained.

Secondly, key evidences and facts are presented to illustrate how information and telecommunication technologies have definitely changed the nature of many different economic, social and cultural processes and, as a consequence, the whole urban life and lifestyle. A wide range of examples are presented to explain how digital technologies have provided with innovation and creativity the urban planning and management.

Thirdly, some conclusions are presented on how digital technologies can have a stronger influence on cities future urban life.

Finally, the course approaches these contents using the city of Barcelona as an urban laboratory where testing the previous mentioned ideas on the basis of existing on-going projects to develop Barcelona as a future smart city.

Learning Outcomes

- Getting familiar with critical definitions and perspectives on key concepts such as ‘digital technology’, ‘information and telecommunication technologies’ or ‘smart city’.

- Multidisciplinary knowledge on different approaches – economic, spatial, social, environmental and cultural – defining the relationships between digital technologies and the city.
- Comparative work on different real study cases particularly relevant for the understanding of the main contents particularly focusing on the key example of Barcelona.

- First contact with some of the leading projects updating urban management from the basis of the use of digital technologies in Barcelona.

- Empirical knowledge on the city of Barcelona based on the analysis and observation of the urban space and the local urban experience.

**Assessment Criteria**

The course will represent 46h of teaching from September 29th to December 12th.

The course will be organized in sessions of two hours: two sessions of two hours (4h) weekly.

The course will represent ten weeks of classes and activities and one last week when final evaluation activities and tutorials can be developed.

- Two presentations on selected readings particularly relevant for the course.

- One short essay based on an observation and research urban fieldtrip.

- One short essay based on a group work and discussion on selected issues particularly relevant for the course.

- One final essay based on a research work on an issue particularly relevant for the course.

**Evaluation and Grading Policy**

- Presentations on selected readings: 30% of the final grade.

- Short essay based on a research urban fieldtrip: 20% of the final grade.

- Short essay based on a group discussion: 10% of the final grade.

- Final essay: 40% of the final grade.

**Sessions**

A breakdown of topics and assignments to be consider session by session is explained for the better understanding of the course scope and orientation. A short description of the contents to be weekly offered to the students is also provided.
1st week.

Contents

Introduction to the main aims of the course (I). Presentation and definition of main concepts regarding the ‘digital city’ idea. Discussion on these introductory statements in relation with the city and the urban experience.

1st session. *Digital cities: main concepts approaching the cityspace.*

2nd session. *Digital cities: main theories approaching the cityscape.*

2nd week.

Contents

Introduction to the main aims of the course (II). Presentation and definition of main concepts regarding information and telecommunication technologies (ITT). Discussion on these introductory ideas in relation with the city and the urban experience.

1st session. *The ITT today: main concepts approaching the cityspace.*

2nd session. *The ITT today: main theories approaching the cityscape.*

3rd week.

Contents

The development and evolution of the urban society. Main considerations made on the role of technology in the definition of both the physical built urban environment and the human relationships shaping the urban life. Key statements cover important discussions such as the main differences between the modern and the postmodern city, culture and society.

1st session. *The evolution of the urban society (19th and 20th centuries).*

2nd session. *The role of the urban technologies from modern to postmodern cities.*

Assignments: Presentations on selected readings.

4th week.

Contents

Historical evolution of the information and telecommunication technologies (ITT) considering the changing dimensions of the relationships between technology and society. Main statements cover key discussions related to the transition from the fordist to the postfordist
city such as the development of technological networks or the discussion of the main reasons explaining the present role of telecommunications defining both physical spaces and the cyberspace.

1st session. *The evolution of the ITT (19th and 20th centuries).*

2nd session. *The role of the ITT from the fordist to the postfordist cities.*

**Assignments:** Presentations on selected readings.

5th week.

**Contents**

Overview of relevant transformations affecting the urban landscape (20th and 21st centuries). Main statements put in relation changes in the cityscape with lifestyle mutations emphasizing the idea of the city as a container of both physical and intangible connected evolutions. Finally, main changes in urban perception are discussed suggesting the present moment relationship between individuals and space as specifically defined and mediated by information and telecommunication technologies.

1st session. *Cityspaces, landscapes and lifestyles in transition.*

2nd session. *Digital culture changing the built environment perception.*

Assignments: 1st short essay.

6th week.

**Contents**

The relationships between economy, environment and technology when facing the urban management of cities. Main discussions cover economic, social and entrepreneurial perspectives. Key statements refer to the explanation of the present day digital audiovisual mobile culture and the new roles and functions played by cities as platforms for the development of new experimental digital technologies applications. Some study-cases and key-projects will be presented to illustrate facts and conclusions.

1st session. *From the physical to the digital, from the permanent to the mobile.*

2nd session. *Economic and social perspectives on urban management and the ITT.*

Assignments: Presentations on selected readings.
7th week.

**Contents**

Presentation of main approaches referred to the *standard* use of the Information and telecommunication technologies in former urban management projects. Main discussion focuses on the increasing availability and portability of information changing the nature of urban management. Samples of projects and initiatives worldwide are presented to illustrate how new technologies have changed the way in which the city services and activities are managed and offered to citizens.

1st session. *Main uses of the ITT in urban management.*

2nd session. *Availability/portability of information and new trends in urban management.*

**Assignments:** 2nd short essay.

8th week.

**Contents**

Presentation of main projects and initiatives covering the use of digital technologies in urban management in relation with urban environment. The concept of the ‘green city’ is explained as mediated by the new digital technologies and taking into consideration some key programs recently implemented in Barcelona.


2nd session. *Managing urban environment with digital technologies: key projects in Barcelona.*

**Assignments:** Presentations on selected readings.
9th week.

Contents

Presentation of main projects and initiatives covering the use of digital technologies in urban management in relation with urban economy. The concept of the 'global city' is explained as mediated by the new digital technologies and taking into consideration some key programs recently implemented in Barcelona.


Assignments: Presentations on selected readings.

10th week.

Contents

Presentation of main projects and initiatives covering the use of digital technologies in urban management in relation with urban society and culture. The concept of the 'informational city' is explained as mediated by the new digital technologies and taking into consideration some key programs recently implemented in Barcelona.


2nd session. *Managing urban society and culture with digital technologies: key projects in Barcelona.*

Assignments: Presentations on selected readings.

11th week.
Final discussion on how digital technologies have been mainly used as a basic technical support for the availability and portability of information regarding urban management. However, information and telecommunication technologies clearly offer inspiring possibilities to design more attractive and successful urban management projects. The study case of Barcelona clearly shows the potential of this new approach to urban management.

1st session. *New relationships between urban management and the ITT today.*

2nd session. *New visions on urban management and the ITT today.*

**Assignments:** Final essay presentation.

**Texts**

**Required course bibliography and materials**

4 main titles in English language are specifically considered taking into account the value of some well-known publications on the topic:


10 main titles in Spanish language are proposed covering both academic research and the review of some on-going smart city projects in the local context of Barcelona:


Rueda, Salvador; de Càceres, Rafael; Cuchí, Albert; Brau, Lluís (2012) *El urbanismo ecológico.* Ayuntamiento de Barcelona; Barcelona Ecología (Agencia de Ecología Urbana).


**Optional course bibliography and materials**

A very wide range of on-line materials on the development of on-going smart city projects are available at the present moment provided by local companies, local media and the local authority of Barcelona. Some of these materials will be used in lectures and activities for a better illustration of the main contents covered by the materia.