



## Course guide

# 310423 - 310423 - Urbanism, Sustainable Development and Climate Change

Last modified: 01/12/2023

**Unit in charge:** Barcelona School of Building Construction

**Teaching unit:** 740 - DUTP - Department of Urbanism, Territory and Landscape.

**Degree:** MASTER'S DEGREE IN ADVANCED BUILDING CONSTRUCTION (Syllabus 2014). (Optional subject).

**Academic year:** 2023    **ECTS Credits:** 5.0    **Languages:** Spanish

## LECTURER

**Coordinating lecturer:** MIGUEL Y. MAYORGA CÁRDENAS

**Others:**

## PRIOR SKILLS

Would you like to acquire skills to advance towards a fairer and more balanced urban planning in spatial, social and environmental terms? If so, the subject Urbanism, Sustainable Development and Climate Change, proposes a training that will allow working from the principles of urban ecology and in a transdisciplinary way, in the preparation of research, studies, projects and strategies for a more sustainable urbanism.

The course offers professionals in the fields of architecture and urban planning in general, a set of knowledge and skills necessary to advance towards: a new urban planning, a sustainable development of urban systems and the improvement of the climatic quality of cities . From integrating to the design and urban planning, sustainability criteria, adaptation of the city and the territory to climate change, from the knowledge of urban ecology, the conservation of biodiversity and ecological connectivity.

## TEACHING METHODOLOGY

Theoretical classes, readings, debates, visits and workshop for the development of the course exercise.

NOTE:

Within the practical sessions the course has planned 8 visits outside the School: 4 to public institutions (City Council and Districts, Municipal Institute of Urbanism, Office of Urban Resilience of Barcelona, Barcelona Institute of Technology BIT-Habitat...) and 4 of field visit for the course project, and routes to urban and public space projects in Barcelona. To be held on Wednesdays from 17:00 to 19:00 hours. The order will be established at the beginning of the course through the availability and confirmation of the calendar and schedule of the collaborating institutions.

It is compulsory for students over 28 years old to take out a private insurance to cover the trips.



## LEARNING OBJECTIVES OF THE SUBJECT

To introduce from a critical, holistic and integral approach: the evolution towards a sustainable urbanism from the perspective of the principles of ecology; the challenges of the new urban agenda and the objectives for sustainable development; and the strategies for the improvement and mitigation of climate change conditions. Through reflections and debates on theoretical concepts, the exemplification of current international cases and the elaboration of practical exercises, from a vision that starts from the potentials of transformation, transition and improvement of territorial and urban habitat conditions.

With the aim of:

- Understand the potentials, advantages and challenges involved in the conception of an ecological urbanism, through reflections, experiences and case studies at territorial and urban scale.
- To formulate a set of approaches, methods, instruments and criteria for the implementation of strategies, plans, programs and projects aimed at sustainable urbanism.
- Propose new urban solutions for the management and design of the city and the territory, aimed at improving the habitat, in terms of sustainable development and climate change mitigation.

## STUDY LOAD

Type	Hours	Percentage
Hours small group	5,0	4.00
Guided activities	10,0	8.00
Hours medium group	5,0	4.00
Self study	90,0	72.00
Hours large group	15,0	12.00

**Total learning time:** 125 h

## CONTENTS

### 1.- Introduction to new urban planning.

#### Description:

Approach to a historical evolution of urban planning, its approaches, methods and instruments.

#### Full-or-part-time: 1h

Theory classes: 1h

### 2.- Bases of Urban Ecology.

#### Description:

Evolution of environmental awareness and the concept of sustainability.

#### Full-or-part-time: 1h

Theory classes: 1h

### 3.- La ciutat i el territori com a ecosistemes.

#### Description:

Principis de l'Urbanisme Ecològic. Ecocity, Smart Growth, New Urbanism i certificacions per al desenvolupament sostenible

#### Full-or-part-time: 1h

Theory classes: 1h



#### 4.- Urban and territorial metabolism.

**Description:**

Ecological cycles and that of matter, energy flows, diversity and information. Information and entropy. Ecological footprint.

**Full-or-part-time:** 1h

Theory classes: 1h

#### 5.- Sustainable territorial models and sustainable landscape planning and management.

**Description:**

Ecological matrix of the territory. Mosaics, rural space, territorial systems of free spaces, biological diversity

**Full-or-part-time:** 1h

Theory classes: 1h

#### 6.- New Urban Agenda and Sustainable Development Goals.

**Description:**

Critical assessment of its meaning, scope, themes, specification, indicators and financing.

**Full-or-part-time:** 1h

Theory classes: 1h

#### 7.- New Urban Agenda.

**Description:**

Concepts, background and perspectives.

**Full-or-part-time:** 1h

Theory classes: 1h

#### 8.- New Urban Agenda Cases.

**Description:**

Experiences and good practices.

**Full-or-part-time:** 1h

Theory classes: 1h

#### 9.- Urban sustainability indicators.

**Description:**

Cases and main international references.

**Full-or-part-time:** 1h

Theory classes: 1h



#### 10.- Sustainable urban models and strategies.

**Description:**

Proximity, compactness, containment in urban renewal. Diversity and mixture, social cohesion, sustainable mobility, energy autonomy and waste management.

**Full-or-part-time:** 1h

Theory classes: 1h

#### 11.- Climate change and urban climatology.

**Description:**

Urban climate analysis techniques and large-scale implementation measures in planning

**Full-or-part-time:** 1h

Theory classes: 1h

#### 12.- Climate change and urban resilience.

**Description:**

Urban and small-scale adaptation. Concepts, cases and good practices.

**Full-or-part-time:** 1h

Theory classes: 1h

### GRADING SYSTEM

Follow-up continuity evaluations will be carried out according to the development of the course workshop work, distributed in deliverables and stages: hypothesis (20%), analysis (30%) and final project proposal (50%).



## BIBLIOGRAPHY

---

### Basic:

- Decrecimiento vs Green New Deal. ISBN 978-84-120478-1-3.
- Herce, Manuel. Infraestructuras y medio ambiente I. Urbanismo, territorio y redes de servicios.. Barcelona: UOC, 2010. ISBN 9788490291559.
- Herce, Manuel. Infraestructuras y medio ambiente II: Gestión de recursos energéticos, emisiones y residuos.
- Angi, Barbara. Eutopia Urbana. Eutopia Urbanscape. La riqualificazione integrata dell'edilizia sociale. The combined redevelopment of social housing. . 2016. ISBN 978-8862421904.
- McHarg, Ian L.. Proyectar con la naturaleza. Barcelona: Gustavo Gili, DL 2000. ISBN 9788425217838.
- Velázquez Margarita, Vázquez García Verónica. Miradas al futuro: hacia la construcción de sociedades sustentables con equidad de género. ISBN 9789703217557.
- Herce, Manuel. El negocio del territorio: evolución y perspectivas de la ciudad moderna. ISBN 9788420674490.
- Mostafavi, Mohsen; Doherty, Gareth. Urbanismo ecológico [on line]. Barcelona: Gustavo Gili, cop. 2014 Available on: [https://discovery.upc.edu/permalink/34CSUC\\_UPC/rdguc1/ alma991004879866606711](https://discovery.upc.edu/permalink/34CSUC_UPC/rdguc1/ alma991004879866606711). ISBN 9788425227424.
- Rueda, Salvador. Barcelona, ciudad mediterránea, compacta y compleja. Una visión de futuro más sostenible.
- Forman, Richard T.T.. Land mosaics : the ecology of landscapes and regions. Cambridge [etc.]: Cambridge University Press, 1995. ISBN 9780521474627.
- Mayorga, M. Fontana, M. P.. "Franjas costeras y proyecto de paisaje: tres estrategias de intervención en la costa sur italiana". ZARCH Journal of Interdisciplinary studies in Architecture and Urbanism.
- Ascher, François; Hernández, María. Los Nuevos principios del urbanismo : el fin de las ciudades no está a la orden del día . Madrid : Alianza Editorial, cop. 2004. ISBN 9788420641980.
- Magrinyà, Francesc. Reflexión estratégica metropolitana para un territorio resiliente. ISBN 9788487881275.
- Dramstad, Wenche E.; Olson, James D.; Forman, Richard T.T.. Landscape ecology principles in landscape architecture and land-use planning. New York [etc.]: Island Press [etc.], 1996. ISBN 9781559635141.
- Mayorga, M. . ""Is green the new color?. Paradojas de un nuevo urbanismo global". Revista TINTALIBRE. Green New Deal, ¿truco o trato? [on line]. [Consultation: 08/07/2020]. Available on: [https://www.infolibre.es/noticias/tintalibre/2019/12/01/green\\_new\\_deal\\_truco\\_trato\\_102380\\_1042.html](https://www.infolibre.es/noticias/tintalibre/2019/12/01/green_new_deal_truco_trato_102380_1042.html) "Is green the new color?. Paradojas de un nuevo urbanismo global" ..
- Gehl, J., Svarre, B.. How to Study Public Life. 2013. ISBN 9781610914239..
- Magrinyà, F. ,Mayorga, M. . "Diseñar la ciudad para el deporte en los espacios públicos". Revista APUNTS.. <https://www.revista-apunts.com/es/hemeroteca/?article=580>.- Mayorga, M.. Hacia un nuevo urbanismo. Materiales docentes UOC,
- Mayorga, M. Fontana, M. P.. "Por unos espacios verdes en red: cercanos, accesibles y mejor distribuidos". The Conversation [on line]. [Consultation: 08/07/2020]. Available on: <https://theconversation.com/por-unos-espacios-verdes-en-red-cercanos-accesibles-y-mejor-distribuidos-139445>.- Magrinyà, Francesc; Miró Farrerons, Joan; Herce, Manuel. L'Espai urbà de la mobilitat . Barcelona : Edicions UPC, 2007. ISBN 978-84-8301-917-7.