

## Course guide

### 290505 - AGUA - Water and City

**Last modified:** 05/07/2024

**Unit in charge:** Vallès School of Architecture  
**Teaching unit:** 756 - THATC - Department of History and Theory of Architecture and Communication Techniques.  
740 - DUTP - Department of Urbanism, Territory and Landscape.

**Degree:** MASTER'S DEGREE IN SUSTANAIBLE INTERVENTION IN THE BUILT ENVIRONMENT (Syllabus 2014).  
(Compulsory subject).

**Academic year:** 2024    **ECTS Credits:** 5.0    **Languages:** English

#### LECTURER

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**Coordinating lecturer:** Elena Albareda

**Others:**

#### PRIOR SKILLS

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No previous skills are established.

#### REQUIREMENTS

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No previous skills are established.

#### DEGREE COMPETENCES TO WHICH THE SUBJECT CONTRIBUTES

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**Specific:**

CE1. Capacity to asses and organize information related to sustainability and architecture.  
CE2. Awareness of the impact that social demand for sustainability has in the architect's fields of action (namely design, building, city and territory) and the need for the architect's role re-definition.  
CE3. Knowledge in the description of the material flows that determine urban metabolism as well as in understanding their relationship with urban spaces.

**Generical:**

CG1. Competence in outlining the relationship between sustainability and the urban environment on a theoretical and experimental level.  
CG2. Ability to diagnose urban settings according to sustainability characterization.

**Transversal:**

CT3. TEAMWORK: To be able to work as a member of an interdisciplinary team, either as an associate or as a team-leader, so that projects are developed in a pragmatic and responsible manner by setting up goals fitted with the available resources.

CT4. SOLID USE OF INFORMATION RESOURCES: Proper management and acquisition, structuring, analysis and visualization of data and information in the specified knowledge field; capacity for critical assessment of results and conclusions.

CT5. (ENG) TERCERA LENGUA: Conocer una tercera lengua, preferentemente el inglés, con un nivel adecuado oral y escrito y en consonancia con las necesidades que tendrán los titulados y tituladas.

**Basic:**

CB6. Students will gain and understand knowledge which may be further developed or applied in a research environment.  
CB10. Students will build a capacity for self-driven and autonomous learning that may empower them in further studies or education.  
CB9. Students will earn skills in clear and non-ambiguous communication of their conclusions, as well as the knowledge and reasoning sustaining them, to expert and non-expert audiences.

## TEACHING METHODOLOGY

MD1 Master class  
MD2 Participatory exhibition class  
MD3 Cooperative work

## LEARNING OBJECTIVES OF THE SUBJECT

To become aware of the importance of material flows in urban metabolism until the current environmental crisis, especially through the water flow, as a paradigmatic one.  
To know the basic technical and theoretical references of water management in urban metabolism along history until the current situation.  
To know and reason the critical variables in the evolution of the contemporary city.  
To develop research and proposals in case studies using these critical tools.  
To study specifically the case of Barcelona and the incidence of water in the conformation of the city.  
To defend the results of these analyzes in writing and orally.  
To elaborate critical and intervention tools for the sustainable transformation of the city, and to identify opportunities for action on urban flows and spaces that allow improving urban metabolism.

## STUDY LOAD

Type	Hours	Percentage
Hours medium group	22,5	18.00
Self study	80,0	64.00
Hours large group	22,5	18.00

**Total learning time:** 125 h

## CONTENTS

### Presentation of course: 'What is water?'

#### Description:

content english

**Full-or-part-time:** 3h 45m

Theory classes: 1h 55m

Practical classes: 1h 50m

### Water runoff in the city of the preindustrial age

#### Description:

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**Full-or-part-time:** 3h 45m

Theory classes: 1h 55m

Practical classes: 1h 50m



### Water runoff in the city of the industrial age

**Description:**

content english

**Full-or-part-time:** 3h 45m

Theory classes: 1h 55m

Practical classes: 1h 50m

### Water and organic matter in organic economies

**Description:**

content english

**Full-or-part-time:** 3h 45m

Theory classes: 1h 55m

Practical classes: 1h 50m

### Water and organic matter in the city of the industrial age

**Description:**

content english

**Full-or-part-time:** 3h 45m

Theory classes: 1h 55m

Practical classes: 1h 50m

### Drinking water in the city of the preindustrial age

**Description:**

content english

**Full-or-part-time:** 3h 45m

Theory classes: 1h 55m

Practical classes: 1h 50m

### Drinking water in the city of the industrial age

**Description:**

content english

**Full-or-part-time:** 3h 45m

Theory classes: 1h 55m

Practical classes: 1h 50m



#### Water and energy in organic economies

**Description:**

content english

**Full-or-part-time:** 3h 45m

Theory classes: 1h 50m

Practical classes: 1h 55m

#### Water and energy in industrial economies

**Description:**

content english

**Full-or-part-time:** 3h 45m

Theory classes: 1h 55m

Practical classes: 1h 50m

#### title english

**Description:**

Coursework

**Full-or-part-time:** 3h 45m

Theory classes: 1h 50m

Practical classes: 1h 55m

#### Coursework presentation

**Description:**

content english

**Full-or-part-time:** 3h 45m

Theory classes: 1h 55m

Practical classes: 1h 50m

## GRADING SYSTEM

EV1 Assistance (20%) and participation in discussions in the classroom (30%)

EV2 Labour and oral presentation (50%)

## BIBLIOGRAPHY

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### Basic:

- Laureano, Pietro. La Piramide rovesciata : il modello dell'oasi per il pianeta terra. Torino: Bollati Boringhieri, 1995. ISBN 8833909433.
- Melosi, Martin V.. The sanitary city : environmental services in urban America from colonial times to the present. Abridged ed.. Pittsburgh, Pa.: The University of Pittsburgh Press, 2008. ISBN 9780822959830.
- La Revolució de l'aigua a Barcelona : de la ciutat preindustrial a la metròpoli moderna, 1867-1967. Barcelona: Ajuntament de Barcelona, 2011. ISBN 9788498503654.
- Martin Pascual, Manel. Barcelona: aigua i ciutat : l'abastament d'aigua entre les dues Exposicions (1888-1929). Barcelona: Fundació AGBAR : Marcial Pons, 2009. ISBN 9788497686716.
- Dictámen previo emitido por la subcomisión ponente designada para proponer la redacción de un proyecto de alcantarillado para Barcelona conforme a las exigencias de la higiene. Barcelona: Establecimiento Tipográfico de los Sucesores de N. Ramírez y C<sup>a</sup>, 1886.
- Matés Barco, Juan Manuel. "Le aziende di approvvigionamento d'acqua potabile nelle città e regione spagnole, 1840-1970". Storia Urbana. 2008, núm. 119, p. 49-74.
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- Urteaga, Luis (coord.). "L'Electrificació de Barcelona, 1881-1935". Barcelona quaderns d'història [on line]. 2013, núm. 19 [Consultation: 30/09/2022]. Available on: <https://raco.cat/index.php/BCNQuadernsHistoria/issue/view/20448>.
- Beltrán-Caballero, José Alejandro. Agua y forma urbana en la América precolombina : el caso del Cusco como centro del poder inca. Barcelona, 2013.
- Magnaghi, Alberto. Il progetto locale. Torino: Bollati Boringhieri, 2000. ISBN 8833912329.
- Fischer-Kowalski, Marina. "Society's metabolism. The intellectual history of materials flow analysis, Part I, 1860-1970". Journal of industrial ecology [on line]. 1998, vol. 2, núm. 1, p. 61-78 [Consultation: 30/09/2022]. Available on: <https://onlinelibrary-wiley-com.recursos.biblioteca.upc.edu/doi/10.1162/jiec.1998.2.1.61>.