

## Course guide

### 310721 - 310721 - Fluid Installations

**Last modified:** 04/10/2023

**Unit in charge:** Barcelona School of Building Construction  
**Teaching unit:** 753 - TA - Department of Architectural Technology.

**Degree:** BACHELOR'S DEGREE IN ARCHITECTURAL TECHNOLOGY AND BUILDING CONSTRUCTION (Syllabus 2019).  
(Compulsory subject).

**Academic year:** 2023    **ECTS Credits:** 6.0    **Languages:** Catalan, Spanish

#### LECTURER

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**Coordinating lecturer:** Tarragona Roig, Joan

**Others:** Sedo Beneyto, Elena  
Torra Guarch, Oriol  
Dolcet Butsems, David

#### PRIOR SKILLS

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#### REQUIREMENTS

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#### DEGREE COMPETENCES TO WHICH THE SUBJECT CONTRIBUTES

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##### Transversal:

1. SELF-DIRECTED LEARNING - Level 2: Completing set tasks based on the guidelines set by lecturers. Devoting the time needed to complete each task, including personal contributions and expanding on the recommended information sources.
2. ENTREPRENEURSHIP AND INNOVATION - Level 1. Showing enterprise, acquiring basic knowledge about organizations and becoming familiar with the tools and techniques for generating ideas and managing organizations that make it possible to solve known problems and create opportunities.

#### TEACHING METHODOLOGY

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The teaching methodology is divided into three parts:

- Face-to-face for content presentation.
- Face-to-face for practical work (exercises and problems).
- Autonomous work.

In the content presentation sessions, the lecturer will present the theoretical bases of the subject, concepts, methods and illustrative results with examples to facilitate general understanding.

In the face-to-face practical work sessions, the lecturer will guide the student in the application of the theoretical concepts for problem solving, promoting at all times critical reasoning. Students will have to solve exercises during the face-to-face sessions and at home.

Students, must work autonomously the material provided by the lecturer and the result of the work-problem sessions to assimilate and fix the concepts. The lecturers will provide a study plan and follow-up of activities (through Atena).

## LEARNING OBJECTIVES OF THE SUBJECT

The course aims at providing the capacity to design mechanical fluid systems for buildings, considering their use, the applicable regulations and the suitability and energy efficiency of their systems.

## STUDY LOAD

Type	Hours	Percentage
Hours small group	6,0	4.00
Hours large group	30,0	20.00
Self study	90,0	60.00
Hours medium group	24,0	16.00

**Total learning time:** 150 h

## CONTENTS

### title english

#### Description:

- Introduction to Building systems.
- Regulations.
- Initial concepts.
- Cold water supply.
- Elements of cold-water systems.
- Cold water distribution.
- Materials for the piping network.
- Water treatment.
- Sizing cold water systems.

#### Related activities:

Fluid Systems project. Cold water part.  
Practicum exercicis.

#### Full-or-part-time: 28h

Theory classes: 8h  
Practical classes: 6h  
Self study : 14h

## Module 2: Fire Systems

### Description:

- Regulations.
- Initial concepts.
- Elements of fire systems.
- Fire water supply and storage.
- Sizing fire systems.

### Specific objectives:

Fluid Systems project. Fire systems part.  
Practicum exercicis.

### Full-or-part-time: 20h

Theory classes: 6h  
Practical classes: 2h  
Self study : 12h

## Module 3: Hot water Systems.

### Description:

- Regulations.
- Initial concepts.
- Hot water generation.
- Elements of hot water systems.
- Hot water distribution.
- Regulation of hot water systems.
- Energy efficiency of hot water systems.
- Sizing hot water systems.

### Related activities:

Fluid Systems project. Hot water part.  
Practicum exercicis.

### Full-or-part-time: 20h

Theory classes: 6h  
Practical classes: 4h  
Self study : 10h

## Module 4. Solar energy Systems.

### Description:

- Regulations.
- Initial concepts.
- Elements of solar energy systems.
- Energy efficiency of solar energy systems.
- Sizing solar energy systems.

### Related activities:

Fluid Systems project. Solar energy systems part.  
Practicum exercicis.

### Full-or-part-time: 24h

Theory classes: 6h  
Practical classes: 6h  
Self study : 12h

### Moduel 5: Sanitary and rainwater drainage Systems.

**Description:**

- Regulations.
- Initial concepts.
- Elements of sanitary and rainwater drainage systems.
- Ventilation systems.
- Pumping systems.
- Materials for sanitary and rainwater drainage network
- Sizing sanitary and rainwater drainage systems.

**Related activities:**

Fluid Systems project. Sanitary and rainwater drainage systems part.  
Practicum exercicis.

**Full-or-part-time:** 20h

Theory classes: 6h

Practical classes: 4h

Self study : 10h

### Module 6: Gas systems

**Description:**

- Regulations.
- Initial concepts.
- Supply and Distribution.
- Elements of gas Systems.
- Syzing gas Systems.

**Related activities:**

Fluid Systems project. Gas systems part.  
Practicum exercicis.

**Full-or-part-time:** 12h

Theory classes: 4h

Practical classes: 2h

Self study : 6h

## GRADING SYSTEM

- Mid-term exam, weight: 30%
- Final exam, weight: 30%
- Group project, weight: 30%
- Follow-up of the project in practice sessions, weight: 10%

**Reassessment**

The student who has obtained a final grade of failure with a numerical grade between 3.5 and 4.9 will have the option to take a single reassessment exam, which will include all of the contents and will be carried out in period established for the purpose. If you pass this test, the final grade of the subject will be passed (5.0)

Students who meet any of the following conditions will not be able to take the reassessment exam:

- i) has already passed the subject
- ii) your final grade is below 3.5 (includes the NP case, which is 0 NP)



## EXAMINATION RULES.

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## BIBLIOGRAPHY

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### Basic:

- CTE-DB-HS (Codi Tècnic de l'Edificació - Document Bàsic - Salubritat).
- RIGLO (Reglament d'instal·lacions de gas en locals destinats a usos domèstics, col·lectius o comercials).
- RIPCI (Reglament d'instal·lacions de protecció contra incendis).
- CTE-DB-SI (Codi Tècnic de l'Edificació - Document Bàsic - Seguretat Contra Incendis).
- CTE-DB-HE(Codi Tècnic de l'Edificació - Document Bàsic - Estalvi d'Energia).

## RESOURCES

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### Other resources:

Class handouts.