

28622 - Installations II

Syllabus Information

Academic year: 2023/24

Subject: 28622 - Installations II

Faculty / School: 175 - Escuela Universitaria Politécnica de La Almunia

Degree: 422 - Bachelor's Degree in Building Engineering

ECTS: 6.0

Year: 3

Semester: First semester

Subject type: Compulsory

Module:

1. General information

Goals:

Achieving that the student acquires basic and practical knowledge of regulations, diagrams, layout, modelling, calculation and control of fire protection, electrical, ventilation, air-conditioning, telecommunications and lift installations that are integrated in the building.

Acquire the basic knowledge and skills necessary to model the facilities of the building environment using the specific MEP tools of REVIT. .

These approaches and goals are aligned with the following Sustainable Development Goals (SDGs) of the United Nations' Agenda 2030 [in](#) such a way that the acquisition of the learning results of the subject provides training and competence to contribute to some extent to their achievement:

Goal 7.2: By 2030, significantly increase the share of renewable energy in the energy mix.

2. Learning results

The student, in order to pass this subject, must demonstrate the following results...

Organizational and planning skills

Problem solving skills

Ability to make decisions

Ability to communicate orally and in writing in the native language

Capacity for analysis and synthesis

Information management capacity

Ability to work in a team

Capacity for critical reasoning

Ability to work as part of an interdisciplinary team

Ability to work in an international context

Ability to improvise and adapt to face new situations

Leadership skills

Positive social attitude towards social and technological innovations

Ability to reason, discuss and present one's own ideas

Ability to communicate through words and images

Ability to search, analyze and select information

Capacity for autonomous learning.

Possess and understand knowledge in an area of study that builds on the foundation of general secondary education, and is usually found at a level, which, while relying on advanced textbooks, also includes some aspects

involving knowledge from the forefront of their field of study.

Apply their knowledge to their work or vocation in a professional manner and possess the competences usually demonstrated through the elaboration and defence of arguments and problem solving within their area of study.

Ability to gather and interpret relevant data (usually within their area of study) to make judgments that include reflection on relevant social, scientific or ethical issues.

Convey information, ideas, problems and solutions to both specialized and non-specialized audiences. Develop those learning skills necessary to undertake further studies with a high degree of autonomy.

Ability to apply the specific regulations on installations to the building process.

Ability to constructively develop the building installations, control and plan their execution and verify the service and acceptance tests, as well as their maintenance

Ability to design fire protection, electrical, ventilation, air conditioning and telecommunications installations in buildings

Knowledge and ability to select the appropriate elevator according to the type of building.

3. Syllabus

Unit 1. Fire protection installations.

1.1. DB-SI.

1.2. Passive fire protection

1.3. Active fire protection.

1.4- Case studies:

Installation in a residential building

Unit 2. Electrical installations

2.1- Low voltage electrotechnical regulations

2.2- Application to home installations.

Unit 3. Ventilation installations.

3.1- Regulations: CTE HS3 and RITE.

3.2- Design and sizing.

3.3- Practical cases of ventilation installations:

- Calculation of residential ventilation system
- Calculation and design of the garage ventilation installation, including duct calculations and selection of the exhaust fan

Unit 4. Air conditioning installations.

4.1- Regulations: Introduction to CTE HE1 and RITE.

4.2- Types of AC systems.

4.3- Air conditioning calculations:

- Calculation of thermal loads
- Equipment selection
- Calculation and design of duct networks

Unit 5. Telecommunications installations.

5.1- The regulation of common telecommunications infrastructures

5.2- Example of application in a residential building

Unit 6. Elevators in buildings

6.1- Applicable regulations

6.2- Types of elevators and characteristic elements.

6.3- Elevator selection for different types of buildings.

4. Academic activities

- **Classroom classes:** dedicated to solving practical cases of installations by the student.
- **Practical classes in the computer room:** they will be used to carry out a complete case study of a building in the computer room
- **Individual tutorials:** may be face-to-face or virtual.

The approach, methodology and evaluation of this guide is designed to be the same in any teaching setting They shall be adjusted to the socio-sanitary conditions of each moment, as well as to the indications given by the competent authorities

5. Assessment system

Continuous assessment

At least 80% of the face-to-face activities (practices, technical visits, classes, etc.) must be attended. Qualifying and mandatory activities:

Written assessment tests: two individual tests. The final grade will be the arithmetic mean of the two tests, as long as there is no unit grade below 4 out of 10.

Practices: Practices corresponding to the first 4 subjects of the subject will consist of a memory, calculations and model of the installation. The final grade will be the arithmetic mean of the 4 practicals, with a minimum unit grade of 4 out of 10.

Making an oral presentation: an oral presentation of one of the practices will be made.

In order to obtain the final passing grade, each of the activities presented must have a grade equal to 5 or higher

Assessment activity	Weighting
Written assessment tests	30 %
Practices - model	45 %
Practices - memory and calculations	20 %
Oral presentation of an practice	5 %

Global assessment.

Qualifying activities:

Written assessment tests: consists of the resolution of exercises of theoretical and/or practical application. 30 % to the final grade of the subject.

Practices: They may be carried out as part of the continuous assessment. If this is not possible, the student should deliver the reports, calculations and plans one week before the global assessment test. They will contribute 70% of the final grade.

Assessment activity	Weighting
Written assessment tests	30 %
Practices - model	50 %
Practices - memory and calculations	20 %

You will have passed the subject based on the sum of the scores obtained in the different activities developed, each of them contributing at least 50%.