Universidad Zaragoza

Year : 2019/20

28629 - Integrated Quality, Safety and Environmental Management

Syllabus Information

Academic Year: 2019/20
Subject: 28629 - Integrated Quality, Safety and Environmental Management
Faculty / School: 175 - Escuela Universitaria Politécnica de La Almunia
Degree: 422 - Bachelor's Degree in Building Engineering
ECTS: 6.0
Year: 4
Semester: First semester
Subject Type: Compulsory
Module: ---

1.General information

1.1.Aims of the course

The subject and its expected results respond to the following approaches and objectives:
Most of the subjects studied in this degree have a very important component of design, planning and coordination of tasks essential within Technical Architecture. These tasks can be developed in multiple ways, but all of them require important planning work for successful completion.
The purpose of the management systems involves, above all, a planning task on the work to be done, with the necessary resources and the necessary time, guaranteeing their compliance and demonstrating the efficiency of the tasks carried out.

1.2.Context and importance of this course in the degree

The subject Integrated Management of Quality, Safety and Environment in Building, is part of the Degree in Technical Architecture. It is included within the fourth course in its first semester and cataloged within the specific training module, with a teaching load of 6 ECTS credits

1.3.Recommendations to take this course

This subject does not have any normative prerequisite or require specific complementary knowledge.

2.Learning goals

2.1.Competences

By passing the subject, the student will be more competent to ...
? G01Ability to organize and plan
? G02 Capacity to solve problems
? G03 Ability to make decisions
? G04 Ability for oral and written communication of the native language
? G05 Capacity for analysis and synthesis
? G05 Ability to manage information
? G07Capacity for teamwork
? G08 Capacity for critical thinking
? G09 Ability to work in an interdisciplinary team
? G10 Ability to work in an international context
? G11 Ability to improvise and adapt to new situations
? G12 Leadership skills
? G13 Positive social attitude towards social and technological innovations
? G14Ability to reason, discuss and expose own ideas
? G15 Ability to communicate through word and image
? G16 Ability to search, analyze and select information
? G17 Capacity for independent learning.
? G18 Possessing and understanding knowledge in an area of ??study that starts from the base of general secondary education, and is usually found at a level which, although supported by advanced textbooks, also includes some aspects involving knowledge from the the vanguard of their field of study.
? G19 Applyinng their knowledge to their work or vocation in a professional way and possessing the skills that are usually demonstrated through the elaboration and defense of arguments and problem solving within their area of ??study.
? G20 Ability to gather and interpret relevant data (usually within their area of ??study) to make judgments that include a reflection on relevant social, scientific or ethical issues.
? G21 Transmiting information, ideas, problems and solutions to both specialized and non-specialized audiences.
? G22 Developing those learning skills needed to undertake further studies with a high degree of autonomy.

? G23 Learning and understanding respect for fundamental rights, equal opportunities for women and men, universal accessibility for people with disabilities, and respect for the values ??of a culture of peace and democratic values.
? G24 Encouragnig entrepreneurship.

Specific Competences:
? CE20 Ability to manage quality control in works, drafting, application, implementation and updating of manuals and quality plans, conducting quality management audits in companies, as well as the production of the building book.

2.2.Learning goals

The student, to overcome this subject, must demonstrate the following results

- Planing, designing and implementing the necessary documentation for quality management in works
- Designing safety management in works
- Designinng the management of the environment in works
- Choosing and using the appropriate quality, safety and environmental management standards for the creation of procedures that establish homogenous and efficient work systems.
- Synthesizing the necessary management systems in the different activities of the building in an integrated management system
- Explaining and planningthe process of implementation, certification and suditingof management systems.
- Ability to manage quality control in works, drafting, implementation, implementation and updating of manuals and quality plans, conducting quality management audits in companies, as well as for the preparation of the building book

2.3.Importance of learning goals

Many of the companies in the construction sector have implemented quality, safety and environmental management systems as tools that facilitate homogenous and efficient work.
Much of the future work of graduates in Technical Architecture will be to coordinate and ensure that the works carried out by the agents involved are done within the application of existing regulations. This is why, when obtaining skills in the issues outlined in the subject, the student is preparing for the future workS that he will have to plan, coordinate and certify later

3.Assessment (1st and 2nd call)

3.1.Assessment tasks (description of tasks, marking system and assessment criteria)

The student must demonstrate that he / she has achieved the expected learning outcomes through the following assessment activities
Assessment system throughout the semester
In order to qualify for this system, it is necessary for the student to attend 80% of the classroom activities of which the subject is composed. The continuous system will have the following group of gradable activities:
- Exsercises and tasks posed: The teacher will pose exercises, problems, practical cases, theoretical questions, etc. to solve. These papers will have a value of 50% of the subject's grade
Part 1. Quality section and security section. Value 2.5 points
Part 2 Environment section and integrated management . Value 2.5 points
- Written assessment test: There will be two theoretical exams that will have a value of 50% of the total grade of the subject
Part 1. Quality section and security section. Score 2.5 points, minimum mark 1 point to be able to add the other grades of the subject
Part 2 Environment section and integrated management. Score 2.5 points, minimum mark 1 point to be able to add the other grades of the subject
Call assessement:
- Written test: There will be two theoretical-practical exams that will have a score of 100% of the total grade of the subject, with questions related both to the theoretical part of the subject and to task similar to those carried out throughout the semester
Part 1. Quality section and security section. Score 5 points, minimum mark 2 points to be able to add the other grades of the subject
Part 2 Environment section and integrated management. Score 5 points, minimum mark 1 point to be able to add the other grades of the subject

4.Methodology, learning tasks, syllabus and resources

4.1.Methodological overview

The methodology followed in this course is oriented towards the achievement of the learning objectives. A wide range of teaching and learning tasks are implemented, such as theory sessions, individual tutorials, and autonomous work and study.

4.2.Learning tasks

This course is organized as follows:

- **Theory sessions**: The theoretical concepts of the subject will be explained and illustrative practical examples will be developed as support to the theory when it is deemed necessary.
- **Practice sessions** Exercises and practical cases will be done as a complement to the theoretical concepts studied
- **Autonomous work and study**
    - Study and assimilation of the theory explained in the lectures.
    - Comprehension and assimilation of examples and practical cases

    - Preparation exercises and practical cases to be solved by the student
    - Preparation of written tests of continuous assessment and final exams.
- **Individual tutorials:** These are the ones made through the individual attention of the teacher in the department. They aim to help solve the doubts that students find, especially those who for various reasons can not attend group tutorials or need more personalized attention. These tutorials can be on-site or online, through e-mail, moodle private messages or messages published in the forum for solving moodle doubts

4.3.Syllabus

This course will address the following topics:

Section 1. Introduction and Quality

- - Content of the subject: The meaning of Quality, Environment and Prevention in Construction
- - What is a Management System
- - What is an Integrated Management System
- - Advantages of the management systems. Quality in Construction
- - What Quality in Construction involves.
- - Quality of the Project
- - Materials Control
- - Execution Control
- - Quality monitoring Documentation
- - Work quality control Plan
- - Practice
- - Quality Management in Construction
- - Quality Management. What it involves and its benefits
- - Standard ISO 9001: 2015
- - Management system Documentation with ISO 9001: 2015
- - Practice. procedure Performing, instruction and records

Section 2. Environment in Construction

- - Introduction to environmental management
- - Environmental impact
- - Waste management
- - Environmental management with ISO 14001
- - Environmental management. What it involves and its benefits
- - Standard ISO 14001: 2004
- - Management system Documentation with ISO 14001: 2015
- - Practice. Procedure Performing, instruction and records

Section 3. Working hazard prevention Management in construction.

- - Practical cases.
- - OHSAS 18001 and ISO 45001:2018. Implementation and development in construction companies.
- - Introduction.
- - Goals.
- - Presentation of case studies.

Section 4. Implementation and certification Process of management systems in a company

- - Implementation Planning
- - Responsibilities
- - Election of the certifying organization
- - certification Stages, audits
- - What to do after certification
- - Integrated Management ISO 9001-ISO 14001-OHSAS 18.001/ISO 45001:2018

- - Requirements of quality management systems, environment and safety
- - Common requirements Location

Practice. Procedure Performing, instruction and records of a common point to the three management systems

4.4.Course planning and calendar

Week	Subject		Assessment
1	Section 1	Introduction Quality in Construction	
2	Section 1	Quality in Construction	Work 1
3	Section 1	Quality in Construction	
4	Section 1	Quality in Construction	Work 2
5	Section 2	Working hazard prevention Management in construction	
6	Section 2	Working hazard prevention Management in construction	Work 3
7	Section 2	Working hazard prevention Management in construction	
8	Section 3	**Environment in Construction**	Written assessment 1-2
9	Section 3	Environmental management	Work 4
10	Section 3	Environmental management	
11	Section 3	Environmental management	Work 5
12	Section 4	Integrated Management	
13	Section 4	Integrated Management	
14	Section 4	Integrated Management	Work 6
15	Section 4	Implementation and certification Process of management systems in a company	Written assessment 3-4

Further information concerning the timetable, classroom, office hours, assessment dates and other details regarding this course will be provided on the first day of class or please refer to the Faculty of EUPLA website and Moodle.

4.5.Bibliography and recommended resources