Universidad Zaragoza

Academic Year/course: 2021/22

28720 - Civil Engineering: Health and Safety

Syllabus Information

Academic Year: 2021/22
Subject: 28720 - Civil Engineering: Health and Safety
Faculty / School: 175 - Escuela Universitaria Politécnica de La Almunia
Degree: 423 - Bachelor's Degree in Civil Engineering
ECTS: 6.0
Year: 3
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:

Mainly in knowing and mastering the regulations on occupational health and safety applicable to construction activities. For this it is essential to know how to interpret the regulations to know the basic preventive measures to eliminate occupational risks in the works.

Once the theoretical concepts are known, students may be able to write a Health and Safety Study with minimum coherence and to be able to follow up on a basic profile.

These approaches and objectives are in line with the following Sustainable Development Goals (SDGs) of the United Nations 2030 Agenda (https://www.un.org/sustainabledevelopment/es/), in such a way that the acquisition of the course learning outcomes provides training and competence to contribute to their achievement to some degree:

Goal 3: Ensure healthy lives and promote well-being for all at all ages
Goal 4: Quality Education
Goal 8: Promote inclusive and sustainable economic growth, employment and decent work for all
Goal 12: Ensure sustainable consumption and production patterns
Goal 13: Take urgent action to combat climate change and its impacts

Specifically with the goals:

3.9 By 2030, substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination

3.D Strengthen the capacity of all countries, in particular developing countries, for early warning, risk reduction and management of national and global health risks

4.5 By 2030, eliminate gender disparities in education and ensure equal access to all levels of education and vocational training for the vulnerable, including persons with disabilities, indigenous peoples and children in vulnerable situations

4.7 By 2030, ensure that all learners acquire the knowledge and skills needed to promote sustainable development, including, among others, through education for sustainable development and sustainable lifestyles, human rights, gender equality, promotion of a culture of peace and non-violence, global citizenship and appreciation of cultural diversity and of culture?s contribution to sustainable development

8.8 Protect labour rights and promote safe and secure working environments for all workers, including migrant workers, in particular women migrants, and those in precarious employment

12.5 By 2030, substantially reduce waste generation through prevention, reduction, recycling and reuse

12.8 By 2030, ensure that people everywhere have the relevant information and awareness for sustainable development and lifestyles in harmony with nature

13.3 Improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning

1.2. Context and importance of this course in the degree

The subject of Occupational Health and Safety in Civil Engineering, is part of the degree in Civil Engineering taught by EUPLA, framed within the group of subjects that make up the module called Common Formation. It is a third year subject located in the fifth semester and compulsory (OB), with a teaching load of 6 ECTS credits.

The need for the subject within the curriculum of the present degree is more than justified by the need for any company that develops its activities in a work is required to comply with the preventive regulations. The technicians involved in the management of civil works, whatever their productive responsibility, are also responsible and active agents of compliance.

1.3. Recommendations to take this course

The development of the subject of Occupational Health and Safety in Civil Engineering does not require prior knowledge in the subject, although it may be important to have an idea of the construction processes, equipment, machinery and work media, as well as its operation .

2. Learning goals

2.1. Competences

Mandatory powers

C09 - Ability to analyze safety and health problems in construction works.

General competences

G01 - Organizational and planning capacity
G02 - Ability to solve problems
G03 - Ability to make decisions
G04 - Aptitude for oral and written communication in the native language
G05 - Analysis and synthesis capacity
G06 - Information management capacity
G07 - Ability to work in a team
G08 - Capacity for critical reasoning
G09 - Ability to work in an interdisciplinary team
G10 - Ability to work in an international context
G11 - Improvisation and adaptation capacity to face new situations
G12 - Leadership aptitude
G13 - Positive social attitude towards social and technological innovations
G14 - Capacity for reasoning, discussion and presentation of ideas
G15 - Ability to communicate through words and images
G16 - Ability to search, analyze and select information
G17 - Ability for autonomous learning
G18. Possess and understand knowledge in an area of ??study that starts from the general secondary education base, and is usually found at a level that, although supported by advanced textbooks, also includes some aspects that involve knowledge from the avant-garde. from your field of study. Acquired transversally considering the entire study plan.
G19. Apply their knowledge to their job or vocation in a professional way and possess the competencies that are usually demonstrated through the elaboration and defense of arguments and problem solving within their area of ??study. Acquired transversally considering the entire study plan.
G20. Ability to collect and interpret relevant data (usually within their area of ??study) to make judgments that include reflection on relevant issues of a social, scientific or ethical nature. Acquired transversally considering the entire study plan.
G21. Transmit information, ideas, problems and solutions to a specialized and non-specialized audience. Acquired transversally considering the entire study plan.
G22. Develop those learning skills necessary to undertake further studies with a high degree of autonomy.
G23 - Know and understand respect for fundamental rights, equal opportunities between women and men, universal accessibility for people with disabilities, and respect for the values ??of the culture of peace and democratic values
G24 - Promote entrepreneurship
G25 - Knowledge of information and communication technologies

2.2. Learning goals

The student, to pass this subject, must demonstrate the following results ...
Learn about the preventive regulations applicable in the companies that intervene in the works and in particular within the work in your set
Differentiates and values ??the different preventive responsibilities assumed by each of the participants in a work
Identifies the mandatory and recommended preventive documentation for each of the participants.
Identify the different occupational risks that may arise in the different phases of the work
Designs adequate basic preventive measures to eliminate or minimize occupational risks that may arise
Apply basic safety management measures on a construction site
Writes Health and Safety Studies

2.3. Importance of learning goals

The learning outcomes are focused on obtaining the competencies established for this subject and they cover the entire security management process.

3. Assessment (1st and 2nd call)

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

Evaluation should be understood as a continuous and individualized process throughout the entire period of teaching-learning, valuing as a priority the capacities and abilities of each student, as well as the yields thereof. The assessment process will be carried out through:
Direct observation of the student to know their attitude towards the subject and the work that it requires (attention in class, carrying out work, solving questions and problems, active participation in the classroom, etc.).
Checking your progress in the conceptual field (questions in class, comments in the classroom and comments in moodle).
Regular oral and / or written tests to assess the degree of knowledge acquired, as well as the qualities of expression that, at this educational level, it must manifest with wide correction.
All this through two types of action:
Continuous assessment system, which will be carried out throughout the learning period.
In order to be eligible for this evaluation system, the student must attend 80% of the face-to-face activities of which consists of the subject.
The continuous evaluation system will have the following group of qualifying activities:
Individual activities in class and moodle: Active participation in the entire process of teaching-learning and the provision of photos, articles and preventive comments both in class and on the forum Moodle will contribute 5% to the final grade for the course.
Exercises, theoretical questions and proposed works: Students must prepare a Safety Study and Health individually and under a closed statement and index applied to a specific case of a work of building. The grade for this ESS will be 70% of the final grade for the course.
Written evaluative tests: They will be carried out in order to regulate learning, stimulate the distribution of effort over time and have a more individualized process evaluation tool educational. Said tests will collect theoretical and / or practical questions of the different subjects to be evaluated. Bliss Activity will contribute 25% to the final grade for the course.
In order to compensate, the minimum mark obtained in each of the evaluation activities must be greater than 4 points.
Evaluation activity Weighting
Individual class participation activities, moodle 5%
Practical exercises and proposed works 70%
Written assessment tests 25%
Final assessment global test
The student must opt ??for this modality when, due to their personal situation, they cannot adapt to the work rhythm required in the continuous evaluation system, have suspended or would like to upload a mark of the continuous evaluation, having
participated in said evaluation methodology.
It will have the following evaluation activities:
Exercises, theoretical questions and proposed works: Students must prepare a Safety Study and Health, individually and under a closed statement and index applied to a case of a construction site.
The grade for this ESS will be 80% of the final grade for the course.
Written evaluative tests: Where theoretical and / or practical questions of the different topics will be collected treated in the subject. This activity will contribute 20% to the final grade.
In order to compensate, the minimum mark obtained in each of the evaluation activities must be greater than 4 points.

Evaluation activity Weighting
Exercises, practical questions and proposed works 80%
Theory evaluation tests 20%

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. It is based on participation and the active role of the student favors the development of communication and decision-making skills. A wide range of teaching and learning tasks are implemented, such as lectures, laboratory sessions, laboratory sessions,

autonomous work, and tutorials.

Students are expected to participate actively in the class throughout the semester.

Classroom materials will be available via Moodle. These include a repository of the lecture notes used in class, the course syllabus, as well as other course-specific learning materials.

If classroom teaching were not possible due to health reasons, it would be carried out on-line

4.2. Learning tasks

This 6 ECTS course is organized as follows:

- **Lectures** (1.5 ECTS): 37.5 hours. The professor will explain the theoretical contents of the course and solve illustrative applied problems. These problems and exercises can be found in the problem set provided at the beginning of the term. Lectures run for 3 weekly hours. Although it is not a mandatory activity, regular attendance is highly recommended.
- **Laboratory sessions** (1.5 ECTS): 37.5 hours. Students will complete assignments, problems, and exercises related to concepts seen in lectures. They will be submitted at the beginning of every session to be discussed and analyzed. If assignments are submitted later, students will not be able to take the assessment test.
- **Autonomous work** (3 ECTS): 75 hours. Studying theory, solving problems, preparing lab sessions, and taking exams.
- **Tutorials**: the professor's office hours will be posted on Moodle and the degree website to assist students with questions and doubts. It is beneficial for the student to come with clear and specific questions.

4.3. Syllabus

This course will address the following topics:

Section 1. Health and Safety Management

1.- Basic concepts

2. Labour risk prevention law (RD 486/1997)

3. Construction work law (RD 1627/1997)

Section 2. Basic safety requirements

4. Collective Protection

5.-Personal protection equipment

6. Signalling

7. Welfare and sanitation facilities

8. First Aid

4.4. Course planning and calendar

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 (http://www.eupla.unizar.es) and Moodle.

4.5. Bibliography and recommended resources

http://psfunizar10.unizar.es/br13/egAsignaturas.php?codigo=28720