

Course guide

330098 - PRL - Occupational Health and Safety

Last modified: 21/04/2026

Unit in charge: Manresa School of Engineering
Teaching unit: 732 - OE - Department of Management.

Degree: BACHELOR'S DEGREE IN ELECTRICAL ENGINEERING (Syllabus 2009). (Optional subject).
BACHELOR'S DEGREE IN MECHANICAL ENGINEERING (Syllabus 2009). (Optional subject).
BACHELOR'S DEGREE IN CHEMICAL ENGINEERING (Syllabus 2016). (Optional subject).
BACHELOR'S DEGREE IN INDUSTRIAL ELECTRONICS AND AUTOMATIC CONTROL ENGINEERING (Syllabus 2016). (Optional subject).
BACHELOR'S DEGREE IN MECHANICAL ENGINEERING (Syllabus 2016). (Optional subject).
BACHELOR'S DEGREE IN AUTOMOTIVE ENGINEERING (Syllabus 2017). (Optional subject).

Academic year: 2026 **ECTS Credits:** 6.0 **Languages:** Catalan, Spanish

LECTURER

Coordinating lecturer: Fortuny Santos, Jordi

Others:

DEGREE COMPETENCES TO WHICH THE SUBJECT CONTRIBUTES

Specific:

1. Adequate knowledge of the concept of company, its institutional and legal framework. Organization and management of companies.

Transversal:

2. ENTREPRENEURSHIP AND INNOVATION - Level 3. Using knowledge and strategic skills to set up and manage projects. Applying systemic solutions to complex problems. Devising and managing innovation in organizations.

TEACHING METHODOLOGY

In the classroom, the methodology combines the presentations by the teachers (with or without multimedia support) with the realization of practical exercises by the students (with or without computer support).

LEARNING OBJECTIVES OF THE SUBJECT

At the end of the course, the students must be able to:

- Recognize safe behaviors, the correct use of working equipment and protective equipment
- Encourage the cooperation of workers in matters related to safety and health at work
- Promote basic preventive actions
- Take part in occupational risk assessments and propose preventive measures while cooperating with the prevention services.

STUDY LOAD

Type	Hours	Percentage
Hours small group	30,0	20.00
Hours large group	30,0	20.00
Self study	90,0	60.00

Total learning time: 150 h

CONTENTS

Title of content #1: Basic concepts

Description:

1. Work and health. Work-related injuries
2. Spain's Prevention of Risks at Work Act 31/1995 and organization of risk prevention types

Specific objectives:

To give the definitions of health, health-work relationship, definition of occupational risk, definition of danger. To explain how a risk is assessed, concept of serious and imminent risk, working conditions that may involve a risk, agents, types of risks, risk prevention, specific techniques, principles of preventive activity. To list the types of damage. Accident definition. Classification. Definition of illness (occupational). Psychosocial pathologies. Work incapacity. To know the requirements of the Spain's Prevention of Risks at Work Act 31/1995 and the organizational modalities.

Related activities:

Practical exercises

Assessment questionnaires

Full-or-part-time: 16h

Theory classes: 4h

Laboratory classes: 4h

Self study : 8h

Title of content #2: General risks

Description:

3. Risks linked to the conditions of the work spaces
4. Risks related to machinery, maintenance elements and tools
5. Electrical hazards
6. Risk of fire. Emergency and evacuation plans
7. Personal protective equipment. Hazard signals
8. Chemical agents
9. Risks due to environmental conditions. Chemical and biological agents
10. Physical agents: noise, vibration, temperature, radiation and lighting
11. Ergonomic and psychosocial conditions

Specific objectives:

To identify the risks linked to the characteristics of work spaces according to RD 486/1997

To identify the risks related to machinery, handling elements and tools and their preventive measures according to RD 1215/1997 and RD 1644/2008

To identify the electrical risks according to regulation RD 614/2001. To explain the effect of electricity on the human body. Types of contacts and preventive measures.

To list the types of fire. Extinguishing agents. Fire fighting facilities.

Identification and classification of chemical agents. Labeling. Safety data sheets. Storage and handling.

To list types of personal protective equipment according to RD 773/1997.

To list types and effects of risks due to environmental conditions, chemical and biological agents. Exposure limits. Preventive measures.

To explain the effects, measurement and prevention of physical agents: noise, vibrations, temperature, radiations and lighting.

To explain the risks associated to lifting load tasks, repetitive movements, postures, working with a computer and psychosocial aspects.

Related activities:

Practical exercises

Assessment questionnaires

Full-or-part-time: 119h

Theory classes: 23h

Laboratory classes: 23h

Self study : 73h

Title of content #3: Management of occupational risk prevention

Description:

12. Management of occupational risk prevention and health surveillance.
13. Accident analysis. Statistical indexes.
14. First aids

Specific objectives:

To know the requirements of risk assessment and planning of preventive activity.

To know how to act in situations that require first aids.

To know how to do the analysis of an accident.

To know how to interpret and compute accident statistics.

To explain what health surveillance is all about.

Related activities:

Practical exercises

Assessment questionnaires

Full-or-part-time: 15h

Theory classes: 3h

Laboratory classes: 3h

Self study : 9h

ACTIVITIES

Title of activity #1: Applied tasks

Description:

Practical exercises.

Specific objectives:

Those corresponding to each content of the subject.

Material:

Statements provided by the instructor .

Delivery:

This activity allows students to work on the contents of the course, including its associated skills but it is not part of the quantitative assessment.

Full-or-part-time: 30h

Laboratory classes: 10h

Self study: 20h

Title of activity #2: Questionnaires

Description:

Written exam.

Specific objectives:

Those corresponding to each content of the subject.

Material:

Questions supplied by the instructor

Delivery:

Several deliveries throughout the course

Full-or-part-time: 1h

Theory classes: 1h

GRADING SYSTEM

Any academic fraud, plagiarism or use or possession of unauthorised means in an assessment activity leads to a mark of zero (0) for the affected test or assignment. Furthermore, in accordance with the University's regulations, if disciplinary proceedings are initiated the subject is recorded as "Pending Assessment" until a decision is reached. These incidents are managed in accordance with the [Action Framework for Academic Integrity in Assessment at the UPC](#).

There will be different short exams (test type) throughout the course. The final grade is obtained from the average of the different tests. In case the subject is not passed with this system, there is an end-of-term exam to take.

EXAMINATION RULES.

Exams are conducted individually and without notes.

The different practices are done individually or in groups, as indicated in the statement of each.

BIBLIOGRAPHY

Basic:

- Bartolomé, Luciano, i altres. Curso básico en prevención de riesgos laborales para delegados y delegadas de prevención [on line]. 4ª ed. Barakaldo: OSALAN, Instituto Vasco de Seguridad y Salud Laborales, 2008 [Consultation: 06/11/2020]. Available on: https://www.fundacionmapfre.org/documentacion/publico/es/catalogo_imagenes/grupo.cmd?path=1064074. ISBN 9788495859129.
- OSALAN. Curso básico en prevención de riesgos laborales para delegados y delegadas de prevención [on line]. Barakaldo: Instituto Vasco de Seguridad y Salud Laborales, 2017 [Consultation: 06/11/2020]. Available on: http://www.osalan.euskadi.eus/contenidos/libro/gestion_201405/es_asma/adjuntos/manual_delegado_preencion_osalan_2017.pdf. ISBN 9788495859822.

Complementary:

- Boletín Oficial del Estado [on line]. Madrid: Agencia Estatal del Boletín Oficial del Estado, 1960- [Consultation: 06/11/2020]. Available on: http://www.boe.es/diario_boe/.
- Guías técnicas INSHT [on line]. Madrid: Instituto Nacional de Seguridad, Salud y Bienestar en el Trabajo, [Consultation: 11/11/2020]. Available on: <https://www.insst.es/especificas>.
- Notas técnicas de prevención: NTP [on line]. Madrid: Instituto Nacional de Seguridad, Salud y Bienestar en el Trabajo, 1982- [Consultation: 11/11/2020]. Available on: <https://www.insst.es/ntp-notas-tecnicas-de-prevencion>.
- Erga formación profesional [on line]. Madrid: Instituto Nacional de Seguridad, Salud y Bienestar en el Trabajo, 1996- [Consultation: 09/11/2020]. Available on: <https://www.insst.es/erga-fp>.