

## 68907 - Speciality in industrial hygiene

### Teaching Plan Information

**Academic year:** 2024/25

**Subject:** 68907 - Speciality in industrial hygiene

**Faculty / School:** 102 - Facultad de Derecho

**Degree:** 462 - Master's in Occupational Health and Safety

**ECTS:** 10.0

**Year:** 1

**Semester:** Second semester

**Subject type:** Optional

**Module:**

### 1. General information

This subject provides the necessary training for the performance of the competences of an industrial hygiene specialist established in RD 39/1997, of January 17, which establishes the Regulations of the Prevention Services. This R.D. also establishes the fundamentals in the training of a Specialist in Industrial Hygiene.

These approaches and objectives are aligned 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 learning results of the subject provides training and competence to contribute to some extent to their achievement: Goals 3 and 8.

### 2. Learning results

In order to pass this subject, the students shall demonstrate they have acquired the following results:

1. To be able to perform the functions of occupational risk prevention at a higher level in the specialty of Industrial Hygiene (Article 37 of Chapter VI of the Prevention Services Regulations, RD 39/1997, January 17)
2. To be able to plan specific preventive action and propose measures for the control of hygienic risks, complying with its principles.
3. To be able to draft, coordinate and direct the actions to be applied in the event of an emergency and be able to identify situations of serious and imminent risk
4. To be able to collaborate with other preventive structures of the company, forming a multidisciplinary team.
5. To be able to collaborate with competent organizations and institutions in the field of Industrial Hygiene

### 3. Syllabus

Introduction to the Specialty. Specific legislation in Industrial Hygiene, case study.

Advanced Occupational Toxicology. Biological Control.

Reactivity of chemical products. Ecotoxicological properties.

Detection of chemical contaminants in Industrial Hygiene.

Sampling of chemical contaminants, measurement strategy, measurement equipment. Exposure assessment for carcinogens, mutagens, reproductive toxicants and sensitizers.

Control of chemical contaminants by general ventilation

Control of chemical contaminants by localized extraction

Selection of PPE for respiratory protection against chemical agents, chemical suit and gloves. Case study

Noise measurement methodology and measurement equipment.

Measurement and evaluation of vibration exposure.

Lighting.

Selection of personal protective equipment against noise

Noise control measures.

Ionizing radiation. Non-ionizing radiation.

Thermal environment.

Specific risks in the manufacture of metal products.

Practical applications of Physical Agents, Noise and Vibration Assessment.

Specific risks in cattle, swine and sheep farming. Poultry farms.

Specific Risks in Hospitals and Health Facilities

Practical applications of Biological Agents Evaluation in these sectors.

Specific Risks in Wood

Specific hazards in the graphic arts: exposure to inks and solvents

Practical applications for detection, evaluation and control of chemical agents

Biological Agents. Non-pathogenic bioaerosols.

Presentation and delivery of a case study. Exam

#### **4. Academic activities**

1. Master classes. Presentation of program topics through lectures and seminars with applied examples.
2. Case studies Aimed at the practical resolution of the problems posed by the management of risks related to Industrial Hygiene. Specifically, three types of case studies related to chemical, physical and biological agents will be presented. The statements of the case studies will be provided by the faculty by e-mail or deposited in reprographics.
3. Tutored case study. The students will have to carry out a case study tutored by the teacher on a statement proposed by the faculty. The resolution of the case must be submitted by the day of the end of the face-to-face classes.

#### **5. Assessment system**

Continuous Assessment The student's progress and the acquisition of competencies will be evaluated through continuous assessment that meets the following criteria:

- Attendance and active participation in theoretical and practical classes and tutorials (10%).
- Attendance and active participation in seminars/workshops (10%).
- The completion of tutored practical activities: descriptive report, presentation, content and defence of the work (40%).
- Performance of a written test by means of specific and short development questions, which may also be of the multiple-choice type (40%).

According to the regulations in force, the results obtained will be graded according to the following numerical scale from 0 to 10, with the expression of one decimal, to which the corresponding qualitative grade may be added:

- From 0 to 4.9: Fail (S)
- From 5 to 6.9: Passed (A)
- From 7 to 8.9: Notable (N)

-From 9 to 10: Outstanding (SB)

Single evaluation. Comprehensive exam of the subject

At the end of the first semester there will be a global exam of the subject for those students who have not passed the continuous evaluation or who want to improve the grade obtained.

The date and time of the aforementioned test will be communicated to the students during the first semester.

The acquisition of competencies will be assessed through evaluation that meets the following criteria:

- Performance of a written test including two sections:

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  - specific and short development questions, which may also be of the multiple-choice type (70%).
  - case study (30%). A scientific calculator will be required for the practical cases during the exam.

According to the regulations in force, the results obtained will be graded according to the following numerical scale from 0 to 10, with the expression of one decimal, to which the corresponding qualitative grade may be added:

- From 0 to 4.9: Fail (S)

-From 5 to 6.9: Passed (A)

-From 7 to 8.9: Notable (N)

-From 9 to 10: Outstanding (SB)

## 6. Sustainable Development Goals

3 - Good Health & Well-Being

5 - Gender Equality

8 - Decent Work and Economic Growth