

## 68902 - Industrial hygiene

### Syllabus Information

**Academic Year:** 2019/20

**Subject:** 68902 - Industrial hygiene

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

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

**ECTS:** 7.0

**Year:** 1

**Semester:** First semester

**Subject Type:** Compulsory

**Module:** ---

### 1.General information

#### 1.1.Aims of the course

#### 1.2.Context and importance of this course in the degree

#### 1.3.Recommendations to take this course

### 2.Learning goals

#### 2.1.Competences

#### 2.2.Learning goals

#### 2.3.Importance of learning goals

### 3.Assessment (1st and 2nd call)

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

### 4.Methodology, learning tasks, syllabus and resources

#### 4.1.Methodological overview

The learning process that has been designed for this subject is based on the following:

The subject has a practical orientation, so that the activities proposed focus on the understanding and assimilation of the main foundations of Industrial Hygiene and its practical application in the detection, evaluation and control of Occupational Hazards in the field of Industrial hygiene.

For this reason, the general vision of the knowledge acquired in the participatory lectures is complemented by practical classes, where the student must know the practical application of the knowledge acquired. It also proposes the realization of seminars, where the student will learn to work in a team, expose and defend the works that are elaborated in them.

As a complement to the classroom training, visits will be made to facilities in which to know the result of the application of the concepts acquired.

For a better follow-up of the learning process, students will be encouraged to use the tutoring hours through various systems and modalities: conventional tutoring, more specific tutoring related to practical work type-seminar.

#### 4.2.Learning tasks

The course includes the following learning tasks:

- 1. **Lectures.** Presentation of the course contents through lectures illustrated with examples applied.
- 2. **Case Studies.** Case studies to practice solving the problems of risk management related to industrial hygiene, from detection risk through its evaluation to end in eliminating or controlling the hygienic risk. There are specifically three types of practical cases to be solved related to chemical, physical and biological agents. The case studies's instructions will be provided by teachers or by e-mail or deposited in the reprography service.
- 3. **Guided assignment.** Students will have to prepare a case under the supervision of teachers on a proposed case by the teachers. This case is equivalent to 2 ECTS time (50 hours of student work). The deadline propose to solve the case is on January 19, 2012. It represents a 40% of the final grade. The assessment criteria will take into account the specificity in the responses, knowledge of matter and the correct interpretation of the law and applicable regulations.
- 4. **Seminars.** A specific seminar on pollution control will be held by a local exhaust and another one in which some practical cases are presented to reflect on risk assessment reports in Industrial Hygiene.
- 5. **Visits to industrial facilities.** They try to give a real picture of the risks and preventive measures implemented in a working environment.

### 4.3.Syllabus

The course will address the following topics:

Session	Topic
Lecture	Introduction to Industrial Hygiene. Specific legislation on Industrial Hygiene. Chemical Contaminants: General concepts.
Lecture	Toxicology.
Lecture	Evaluation of chemical pollutants, limit values. Measurement of chemical pollutants, equipment used.
Seminar	Industrial Hygiene Laboratories.
Lecture	PPE Selection against chemical agents.
Lecture	Chemical Pollution Control. General ventilation. Local exhaust.
Lecture	Industrial Noise.
Lecture	Radiations.
Seminar	Vibrations.
Lecture	Thermal environment. Lighting.
Lecture	Control of noise and vibration.
Lecture	Reporting in Hig. Industrial. Physical agents. Reporting on Hig. Industrial. Chemical agents.
Seminar	Biological contaminants I.
Seminar	Presentation and delivery of practical case. Exam.

Other teachers:

- Dra. Celia Domeño Recalde. Professor of Analytical Chemistry at the University of Zaragoza. Two master collaborator at the University of Zaragoza, Master in Environmental Engineering and Master of Occupational Health and Safety, and the Graduate Water Resources.
- D. Rafael Garcia Foncillas. Licensed in medicine. Primary attention doctor. Associate Professor responsible for occupational health in the Degree of Industrial Relations and Human Resources at the University of Zaragoza.
- Dr. Fernando Uceda March. Technician in Occupational Risk Prevention. Medical Labour Cabinet and Safety of

- Zaragoza. ISSLA. Vice President of the Society Medicine, Hygiene and Safety of Aragon and La Rioja (SMHSTAR)
- D. Eugenio Paredes Palomo. Technician in Occupational Risk Prevention. Master's Degree in Occupational Health and Safety at the University of Salamanca. Aragon Regional Coordinator Area Industrial Hygiene Society Prevention Fremap in Zaragoza. Professor in "Master of Occupational Health and Safety" of the University of Zaragoza.
  - D. Pedro Perez Polo. Technician in Occupational Risk Prevention. Aragon Regional Coordinator of Occupational Health and Safety Prevention Mutual Fremap. Professor in "Master of Occupational Health and Safety" of the University of Zaragoza.
  - D. Joaquín Ramo MAICAS. Technician in Occupational Risk Prevention. Provincial Chief of Aragon Institute of Occupational Safety and Health (ISSLA) in Teruel. Professor in "Master of Occupational Health and Safety" of the University of Zaragoza.
  - Ms. Ana Carmen Francisco Salas. Superior Technician Occupational Health and Safety, Health and Plant Laboratory Certification.
  - Ms. Mercedes Hernán Recio. Quality Manager of Industrial Hygiene Laboratory Aragon Institute of Occupational Safety and Health.

#### **4.4.Course planning and calendar**

The course consists of 7 ECTS distributed as follows:

- Lectures 2.2 ECTS
- Seminars / workshops 0.4 ECTS
- Presentation of work and examination 0.2 ECTS
- Tutorials 1.2 ECTS
- Guided student work 2.0 ECTS
- Visits to companies 1.0 ECTS

The final schedule will be published on the website of the Faculty of Law <http://derecho.unizar.es/> well in advance.

#### **4.5.Bibliography and recommended resources**

During the practice sessions, students will be indicated the necessary bibliography for each topic as well as a list of websites where they can check documentation and information.

The materials, notes and case studies that will be used will be provided by teachers electronically or in the reprography service.