VNIVERSITAT DE VALÈNCIA

Course Guide
34508 Risks in the workplace and environmental toxicology

COURSE DATA

Data Subject	
Code	34508
Name	Risks in the workplace and environmental toxicology
Cycle	Grade
ECTS Credits	4.5
Academic year	2020 - 2021

Study (s)

Degree	Center	Acad. year	Period
1204 - Degree in Medicine	Faculty of Medicine and Odontology	4	First term

Subject-matter

Degree	Subject-matter	Character
1204 - Degree in Medicine	18 - Optional subjects	Optional

Coordination

Name	Department
BERRADA RAMDANI, HOUDA	265 - Prev. Medicine, Public Health, Food Sc.,Toxic. and For. Med.

SUMMARY

The subject of occupational hazards and environmental toxicology (Riesgos laborales y toxicologia ambiental) (34508) is an optional subject character of Medicine degree, taught at the Faculty of Medicine of the University of Valencia. This subject has in the current curriculum of a total of 4.5 ECTS taught in the first half.

The main objective is the formation on toxicology for interpreting the scientific data on the toxic effects of chemical, physical and biological agents in the workplace in order to acquire knowledge leading to the toxicological risk assessment and their prevention.

For this knowledge is provided:

- Basic Toxicology

- Methods of assessment of toxicity.

- Pathophysiological processes toxic origin.

- Toxic effects of physical and chemical agents in the workplace.

- Characterization of risks through hazard identification and assessment

- Exposure to toxic substances in the workplace. Safety limits .

- Analytical Toxicology and regulatory work environmentd.

PREVIOUS KNOWLEDGE

Relationship to other subjects of the same degree

There are no specified enrollment restrictions with other subjects of the curriculum.

Other requirements

To study occupational hazards and environmental toxicology, the knowledge of a number of basic concepts that are part of the content of the subjects taught during the previous courses of grade is necessary.

OUTCOMES

1204 - Degree in Medicine

- Students must be able to apply their knowledge to their work or vocation in a professional manner and have acquired the competences required for the preparation and defence of arguments and for problem solving in their field of study.
- Students must have the ability to gather and interpret relevant data (usually in their field of study) to make judgements that take relevant social, scientific or ethical issues into consideration.
- Recognise health determinants in population, such as genetic ones, dependent on sex, lifestyle, demographic, environmental, social, economic, psychological and cultural.
- Proper organisation and planning of the workload and timing in professional activities.
- Team-working skills and engaging with other people in the same line of work or different.
- Criticism and self-criticism skills.
- Capacity for communicating with professional circles from other domains.
- Acknowledge diversity and multiculturality.
- Consideration of ethics as a fundamental value in the professional practise.

- Working capacity to function in an international context.

LEARNING OUTCOMES

With the completion of this course, students will acquire the following skills and abilities:

- Understand the toxic agents on health in the workplace.

- Understanding the mechanisms of action of toxins that act with greater frequency in acute intoxication and / or reports at work.

- Ability to Solve toxicological basis, relating the chemical and structural properties of toxins in the workplace.

- Skill and ability to solve problems toxicological

- Knowledge of toxicology through the opportunities provided by the Internet, and ability to relate to the presence of toxins in the workplace with the effects that can cause.

- Preparing students for conducting research work related to the toxicology work

- Establish preventive measures both individual and collective level.

- Evaluate the importance of the influence of poor working conditions on health.

- Recognize legal requirements and the structure of the prevention of occupational risks in Spain

DESCRIPTION OF CONTENTS

1. THEORETICAL TEACHING PART

1. Working conditions and health.
2. Toxicology labor. Type of Accredited toxic at work. Features poisoning hazards.
3. Characteristics Toxicokineticindividuals occupational exposure.
4. Type the mechanisms of toxic agents in the workplace based on the route and time of exposure. 5. Top local and systemic toxic effects to occupational exposure.
6. Top chronic toxic effects caused by toxic agents.
7. Experimental toxicology. Evaluation of the toxicity of industrial agents.
8. Environmental limit value (VLA). Biological limit values (VLB).
9. Toxic effects of inorganic compounds in the workplace.
10. Effects of toxic organic compounds in the workplace.
11. Toxic effects of biological and physical agents.
12. Evaluation and preventing other hazards.
12. Legal and organizational framework for the prevention of occupational hazards.
13. Accidents, occupational diseases and other damage origin. Specializing in the prevention of occupational hazards.

2. TEACHING PRACTICE

Teaching practice is organized in seminars and practice of computer science, with a total of 11 sessions. That will include toxic risk analysis approach situations with virtual exposure to toxic working in different sectors so that students acquire skills for:
Identify potential hazards.

To evaluate the dose-response relationship.
Assess exposure

To characterize the risk.
Propose preventive measures.

SEMINARS: five seminars / two hours each session.
1. Values environmental and biological toxic industrial. Exposure assessment.
2. Alcohols.
3. Gas.
4. Drug abuse.
5. Physical agents.

INFORMATIC SESSIONS (clinical cases): Six sessions of two hours each one
1. Alcohols and solvents.
2. Gas.
3. Drug abuse.
4. Detergents.
5. Pesticides.
6. Biological agents.

WORKLOAD

ACTIVITY	Hours	% To be attended
Theory classes	19,00	100
Computer classroom practice	12,00	100
Seminars	10,00	100
Tutorials	4,00	100
Development of individual work	4,00	0
Study and independent work	7,00	0
Readings supplementary material	3,00	0
Preparation of evaluation activities	4,50	0
Preparing lectures	39,00	0
Preparation of practical classes and problem	5,00	0

Resolution of case studies	5,00	0
TOTAL	**112,50**	

TEACHING METHODOLOGY

The development of the course will be structured as follows: Lectures teacher provides the student an overview of the topic, in addition to the information required to understand the contents of the subject. In these classes, it stimulates the students themselves seeking information or additional accessory, guiding the use of bibliographical sources necessary. To monitor the class, is recommended for students to review the material before the teacher leaves the virtual classroom.

Sessions seminars on specialized will take place in computer classroom in groups. Organized into two groups of students in order to guide students and determine the operation of the course. It will be the ideal way for students to raise doubts or questions that arise during the development agenda.

Sessions computer. There will be two students groups and attendance is mandatory. Addressed step by step student work to achieve it acquires skill and resolve problems for yourself that are raised. The last day of practices students will expose to the rest of the group and discuss the results and interpretation of toxicological them. Upon completion, they must submit a notebook of the same memory.

Within this block the student focuses on research of toxicological information on the Internet and access to databases useful in toxicology.

EVALUATION

Evaluation Theory: 50% of the final grade. It is done through a written exam of short questions that focus on the content of the theoretical program and will aim to evaluate the acquisition of knowledge.

Practical evaluation: 50% of the final grade. Be made by assessing participation in seminars and practical activities and a report on the acquisition of skills related to general and specific skills characterizing the risk of a toxic agent.

Is required to access to the advance announcement of this course that the student has completed all practical part.

Attendance of practices will be compulsory.

REFERENCES

Basic

- Gestal J.S. Riesgos del trabajo del personal sanitario. Interamericana-McGraw Hill. 2003.
- Gil F. Tratado de Medicina del Trabajo, 2ª ed. Elsevier, Barcelona, 2011.

- Gil F. Tecnopatías: repercusión toxicológica y perspectiva prevencionista, 1ª ed. Comares, Granada, 2010.
- Klaassen CD, Watkins JB. Casarett y Doull. Fundamentos de Toxicología. Madrid, McGraw-Hill Interamericana, 2005.
- Repetto M. Toxicología Fundamental. 4 ed. Díaz de Santos, Madrid (2009).

ADDENDUM COVID-19

This addendum will only be activated if the health situation requires so and with the prior agreement of the Governing Council

Siguiendo las recomendaciones del Ministerio, la Consellería y el Rectorado de nuestra Universidad, para el período de la "nueva normalidad", la organización de la docencia para el primer cuatrimestre del curso 2020-21, seguirá un modelo híbrido, donde tanto la docencia teórica como práctica se ajustará a los horarios aprobados por la CAT pero siguiendo un modelo de Presencialidad / No presencialidad en la medida en que las circunstancias sanitarias y la normativa lo permitan y teniendo en cuenta el aforo de las aulas y laboratorios docentes. Se procurará la máxima presencialidad posible y la modalidad no presencial se podrá realizar mediante videoconferencia cuando el número de estudiantes supere el coeficiente de ocupación requerido por las medidas sanitarias. De manera rotatoria y equilibrada los estudiantes que no puedan entrar en las aulas por las limitaciones de aforo asistirán a las clases de manera no presencial mediante la transmisión de las mismas de manera síncrona/asíncrona via “on line”.