

## 25256 - Toxicology and public health

### Syllabus Information

**Academic Year:** 2019/20

**Subject:** 25256 - Toxicology and public health

**Faculty / School:** 201 -

**Degree:** 571 - Degree in Environmental Sciences

**ECTS:** 6.0

**Year:** 3

**Semester:** First Four-month period

**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 methodology followed in this course is oriented towards the achievement of the learning objectives. A wide range of teaching and learning tasks are implemented, such as lectures, practice sessions and autonomous work and study.

#### 4.2.Learning tasks

This 6 ECTS (150 hours) course is organized as follows:

- **Lectures** (25 hours). Teacher exposition of the main ideas and concepts, detailed explanations and problem-solving.
- **Practice sessions** (35 hours). Problem-solving in which students work in an autonomous way, present their results orally and the teacher and other students comment on it.

#### 4.3.Syllabus

This course will address the following topics:

- Unit 1.- Principles of Toxicology

- Unit 2.- Absorption, distribution and excretion of poisons. Metabolism of poisons. Toxicokinetics
- Unit 3.- Poisons and cancer. Mutagenesis. Teratogenesis.
- Unit 4.- Tests for toxicity and evaluation of toxicological risk. Identification of the dangers.
- Unit 5.- Evaluation of the exposure. Relation dosage-response
- Unit 6.- Characterization of the risk
- Unit 7.- Principal environmental contaminants and effects on human health
- Unit 8.- Health and its determinants. The Environment and health.
- Unit 9.- The European Environment and Health Strategy.
- Unit 10.- Public Health. Historical background and the current concept.
- Unit 11.- Health demography. Health Information Systems.
- Unit 12.- Introduction to Epidemiology. Measurement of health and illness phenomena.
- Unit 13.- Epidemiological research. Phases and types of studies. Descriptive studies, cohort studies, case and control studies, experimental studies. Chance. Biases.
- Unit 14.- Systematic reviews and meta-analysis. Medicine based on the evidence.
- Unit 15.- Applications of environmental epidemiology.
- Unit 16.- The human setting and health. The urban environment. Health protection, promotion and prevention.
- Unit 17.- Principles and problems of food and environmental safety.
- Unit 18.- Noise and physical contaminants. Climate change and health. Ozone and health. Pesticides and health. Waste and health.

#### 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 Sciences website and Moodle.

#### 4.5. Bibliography and recommended resources

- BB** Manual de epidemiología y salud pública para grados en ciencias de la salud / directores, Ildefonso Hernández- Aguado ... [et al.] ; coordinadora de la edición, Blanca Lumbreras Lacarra . 2ª ed. Buenos Aires ; Madrid [etc.] : Editorial Médica Panamericana, D.L. 2011
- BB** Medicina preventiva y salud pública / directores, Antonio Sierra López ... [et al.] ; directores asociados, Fernando Rodríguez Artalejo ... [et al.] . 11ª ed. Barcelona [etc.] : Masson, 2008
- BB** Moreno Grau, María Dolores. Toxicología ambiental : evaluación de riesgo para la salud humana / María Dolores Moreno Grau Madrid [etc.] : McGraw-Hill, D.L. 2003
- BB** Repetto, Manuel. Toxicología fundamental / Manuel Repetto Jiménez, Guillermo Repetto Kuhn . - 4ª ed. Madrid : Díaz de Santos, 2009
- BC** Capó Martí, Miguel Andrés. Principios de ecotoxicología : [Diagnóstico, tratamiento y gestión del medio ambiente] / Miguel A. Capó Martí Madrid : Tébar, D.L.2007
- BC** Epidemiología : diseño y análisis de estudios / editor Mauricio Hernández Avila . México, D.F. [etc.] : Editorial Médica Panamericana, cop. 2007
- BC** Klaassen, Curtis D.. Fundamentos de toxicología / Curtis D. Klaassen y John B. Watkins . Madrid [etc.] : McGraw-Hill Interamericana, D.L. 2005
- BC** Lilienfeld, Abraham M.. Fundamentos de epidemiología / Abraham M. Lilienfeld, David E. Lilienfeld ; versión española de Carlos Luis González Wilmington, Delaware [etc.] : Addison-Wesley Iberoamericana, 1988
- BC** Peña, Carlos E.. Toxicología ambiental : evaluación de riesgos y restauración ambiental / Carlos E. Peña, Dean E. Carter, Felix Ayala Fierro . Arizona : Collegue of Pharmacy, cop. 2001

#### URLs LIST:

Estrategia Europea de Medio Ambiente y Salud. Agencia Europea de Medio Ambiente - [<http://sostenibilidadyprogreso.org/files/entradas/estrategia-europea-de-medio-ambiente-y-salud.pdf>]

Peña, C.E., Carter, D.E., Ayala, F. (2001). Toxicología ambiental. Evaluación de riesgos y restauración

ambiental. The University of Arizona - [<http://www.ingenieroambiental.com/informes2/toxamb.pdf>]

The updated recommended bibliography can be consulted in:

<http://psfunizar7.unizar.es/br13/egAsignaturas.php?codigo=25256&Identificador=C70930>