Coordenadas GPS: 41º09'09,41"N; 8º37'01,02"W

INSCRIPTION AND FURTHER DETAILS:

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INSCRIPTIONS ONLINE (LIMITED): UNTIL 21th OF SEPT. 2015

E-LEARNING COURSE

PRINCIPLES OF ENVIRONMENTAL TOXICOLOGY AND CONTAMINATION

START DATE: 25st SEPTEMBER

INTERDISCIPLINARY CENTRE OF MARINE AND ENVIRONMENTAL RESEARCH, UP

What is the main aim of the course?

This course will provide a broad overview of environmental toxicology and contamination, a multidisciplinary field concerned with the movement of contaminants and their metabolites in the environment and in the food chains and the effect of such compounds on living organisms. The course was developed in the frame of the Atlantic Area transnational programme ARCOPOL PLATFORM.

The course is principally aimed at:

- Degree students; Master students; PhD students (initial phase); Technicians; and to those that have a general interest in environmental toxicology issues.

On completion you should be able to:

⇒ Understand many of the fundamental principles (e.g. fate, transport and transformation of contaminants, etc.) of environmental toxicology.
⇒ Describe the major types of pollutants, their main sources and effects.
⇒ Understand the main impacts of accidental marine spills.
⇒ Develop knowledge based on a series of interrelated scientific principles (e.g. toxicokinetics, toxicodynamics, etc.) and understand how and why environmental/toxicological processes and events occur.
⇒ Explain the importance of toxicity testing.
⇒ Understand the ecological and human health risk assessment processes as well as the risk communication.
⇒ Identify the importance of modeling tools in environmental toxicology.
⇒ Understand the principles of chemical regulation.

How is the course designed?

The course is divided into a theoretical and a practical module. Participants can attend only one component of the course (theoretical) or both. The theoretical component (e-learning format) contains 12 chapters and a glossary:

- UNIT 1 - General principles
- UNIT 2 - Main sources of environmental contamination
- UNIT 3 - Air pollution
- UNIT 4 - Water and soil pollution
- UNIT 5 - Transport and fate of contaminants in the environment
- UNIT 6 - Principles of toxicokinetics and toxicodynamics
- UNIT 7 - Biotransformation
- UNIT 8 - Toxicity testing
- UNIT 9 - Environmental risk assessment
- UNIT 10 - Environmental risk communication
- UNIT 11 - Modeling tools
- UNIT 12 - Legislation

The practical component will be held at CIIMAR and is divided into three modules:

- Toxicity testing using embryo bioassays;
- Toxicokinetics models;
- Coastal pollution by oil and HNS: Modeling and decision support tools.

Language and course fee

English. The course is free.

Evaluation

Theoretical component - Pass/fail based on assessment tests.
Practical component - Pass/fail based on the satisfactory participation.

Course Coordination

Dr. Miguel Santos and Dr. Helena Oliveira

Practical modules

Dr. Miguel Santos, CIIMAR and FCUP
Dr. Helena Oliveira, CIIMAR
Mr. Tiago Torres, CIIMAR
Dr. Daniel Ribeiro, CIIMAR
Dr. Rodrigo Fernandes, IST and MARETEC
Dr. Francisco Campuzano, IST and MARETEC

PRINCIPLES OF ENVIRONMENTAL TOXICOLOGY AND CONTAMINATION (PART I)

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"All substances are poisons; there is none which is not a poison. The right dose differentiates poison from a remedy."

Paracelsus (1493-1541)

There is increasing public concern over matters of human health and environmental quality. Today, it is common to read in daily newspapers reports about health problems that may be associated with exposure to environmental chemicals. However, few readers have sufficient background to understand the issue in detail. Toxicology, the study of adverse effects of chemical contaminants on living systems, forms the basis of our ability to predict and prevent adverse effects to human health and the environment. Without an understanding of the basic principles of toxicology, one cannot make a fully informed decision about the true risks and benefits of anthropogenic and natural chemicals. This course will provide a broad overview of environmental toxicology and contamination, a multidisciplinary field concerned with the movement of contaminants and their metabolites in the environment and in food chains and the effect of such compounds on living organisms.

This course will be delivered in order to address the needs of students at different education levels population (Degree, master and PhD (initial phase) students), technicians as well as anyone with a general interest in environmental toxicology issues.

This training course was produced by CIIMAR (Interdisciplinary Centre of Marine and Environmental Research) in the frame of the Atlantic Area Transnational Programme (Priority 2: Marine Environment and Renewable Energy) ARCOPOLplatform (Platform for improving maritime coastal pollution preparedness and response in Atlantic regions). We thank to the Agencia de Medio Ambiente y Agua de Andalucía, Spain, through Antonio Santiago Gahete for the collaboration in shaping the course.

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