



UNIVERSITÀ  
DEGLI STUDI DI MILANO-BICOCCA

## COURSE SYLLABUS

### Environmental Control and Safety

2425-3-E2702Q043

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#### Aims

Introduce students to the main topics of occupational safety in general, and the management of chemical agents in particular, in the industrial and professional fields, learning the theories and management and operational methods

#### Knowledge and understanding

At the end of the course the student was able to learn:

methodologies for risk assessment, environmental impact, risk management measures  
the methods of calculating the exposure and the level of risk  
the legislation on the matter

#### Knowledge and application skills

at the end of the course the student is able to:

calculate an exposure  
calculate a risk  
calculate a hazard classification  
evaluate the articles of the legislation to be applied

#### Autonomy of judgment

Knowing how to identify the most appropriate methods to apply in risk assessment, exposure levels, risk management measures

#### Communication skills

Knowing how to describe in written form in a clear and concise way and explain orally with proper language the objectives, the procedure and the results of the elaborations carried out.

#### Ability to learn

Be able to apply the acquired knowledge to contexts different from those presented during the course

## **Contents**

Basic concepts of risk and danger; Italian regulations, international standards, impact and risk assessment, risk management methodologies, risk control measures.

## **Detailed program**

Introduction to the regulatory framework concerning health and safety in the general and environmental fields

Product legislation

REACH, CLP, information transmission methods (SDS), critical reading of the same. Use of the ECHA platform

General principles and concepts: danger, risk, environmental impact, prevention, exposure, protection, CPE PPE

Main legal obligations and roles concerning health, safety in the workplace and environmental protection in Italy: Legislative Decree 81/08, 152/06, 105/2015;

All the main risks related to the working environment: chemical and physical agents, electrical, fire and explosions, confined spaces, other agents...; threshold limit value (TLV) DNEL DMEL, individual and collective protective equipment, hierarchy and methods of use.

Techniques and methodologies: management system, risk analysis (Movarisch algorithms, ECETOC TRA) Safety Data Sheets (SDS and e-SDS) labeling

Detection instruments and sensors, process safety.

## **Prerequisites**

basic courses on processes and systems

## **Teaching form**

Frontal lessons with projection of Powerpoint slides

guided exercises on real cases

## **Textbook and teaching resource**

Powerpoint slides, photographs, diagrams, national and international guidelines

## **Semester**

II semester of the III year

## **Assessment method**

oral exam which consists of a series of questions to verify the knowledge and understanding acquired of the subject represented by the content of the didactic material distributed, as well as the student's ability to elaborate the concepts learned in applying them to real situations.

The assessment of the test takes into account the completeness and accuracy of the answers, the effectiveness of the result of the elaborations and the clarity of the exposition

The evaluation will be determined according to the following scheme

18-19: preparation on a small number of topics in the course program, with limited discussion and analysis skills that, in the case of the oral exam, emerge only following the teacher's help and questions; expository skills and vocabulary that are not always correct, with limited critical processing skills;

20-23: preparation on a part of the topics in the course program, independent analysis skills only on purely practical and executive issues, use of correct vocabulary even if not entirely accurate and clear and an expository skill that is at times uncertain;

24-27: preparation on a large number of topics in the course program, ability to independently carry out argumentation and critical analysis, ability to apply knowledge to contexts and connect themes to concrete cases, use of correct vocabulary and competence in the use of disciplinary language;

28 – 30/30L: complete and exhaustive preparation on the topics in the exam program, personal ability to deal independently and critically analyze the topics, ability to reflect and self-reflect and to connect the topics to concrete cases and different contexts, excellent ability to think critically and autonomously, full mastery of the disciplinary vocabulary and a rigorous and articulated ability to present, ability to argue, reflect and self-reflect, ability to make connections to other disciplines.

## **Office hours**

On appointment

## **Sustainable Development Goals**

GOOD HEALTH AND WELL-BEING

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