



UNIVERSITÀ  
DEGLI STUDI DI MILANO-BICOCCA

## COURSE SYLLABUS

### Laboratory of Organic Chemistry II (blended)

2526-2-E2702Q094-E2702Q096M

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#### Aims

Knowledge and Understanding At the end of the course, the student will be familiar with:

- The basis of the organic chemical synthesis
  - The main purification methods for organic compounds (separation and extraction, crystallization, distillation, and chromatographic methods);
  - The main characterization methods for organic compounds (chromatographic methods and melting point determination);

Application of Knowledge and Understanding At the end of the course, the student will be able to:

- Design and perform a simple synthesis of an organic compound starting from commercial precursors;
- Purify and characterize the synthesized organic compounds.

Autonomy of Judgment At the end of the course, the student will be able to:

- Select the most appropriate synthesis, purification, and characterization method for producing an organic compound.

#### Communication Skills

Clearly and concisely describe the objectives, procedure, and results of the performed experiments in a technical report.

#### Learning Skills

Apply the acquired knowledge to contexts different from those presented during the course.

#### Contents

Aim of the laboratory part is to provide the student with a direct experience of the most common operations in organic synthesis, purification and basic characterization.

### **Detailed program**

- safety procedures in the organic chemistry lab
- separations
- distillations
- crystallizations
- chromatographies
- organic chemistry exercises
- spectroscopic techniques

### **Prerequisites**

elements of organic, inorganic and physical chemistry

### **Teaching form**

9 laboratory activities (4 h) Interactive Teaching in presence

12 classes (2 h) Interactive Teaching in presence

6 classes (2 h) Interactive Teaching on line

### **Textbook and teaching resource**

Experimental guide made by the teacher

E-Learning web page of the course

### **Semester**

second year first semester

## Assessment method

### Assessment of Laboratory Behavior and Report Correction

- The evaluation will consider the ability to work in compliance with current safety regulations, the ability to work independently, and the mastery of fundamental techniques in the organic chemistry laboratory.
- The ability to present, in the form of written technical reports, the performed operations concisely yet comprehensively will be assessed, as well as the ability to correctly handle experimental data, including error theory.

The following level of judgment is applied in relation to the following parameters:

1. Conceptual knowledge and understanding ability
2. Ability to apply knowledge and understanding
3. Communication and argumentation skills
4. Learning, self-assessment and self-regulation skills

**18-19:** Limited ability in discussion and analysis; inconsistent expository competence and terminology, with limited critical thinking skills.

**20-23:** Ability to analyze autonomously only in purely practical and executive matters; correct, though not entirely precise and clear, use of terminology; somewhat uncertain expository competence.

**24-27:** Ability to independently develop arguments and critical analysis; capacity to apply knowledge to different contexts and connect topics to real cases; correct use of terminology and proficiency in disciplinary language.

**28-30/30L:** Strong ability to independently discuss and critically analyze topics; ability for reflection and self-reflection, connecting topics to real cases and different contexts; excellent critical and independent thinking skills; full command of disciplinary terminology and a rigorous, well-structured expository ability; strong argumentative and reflective skills, with the ability to establish interdisciplinary connections.

## Office hours

on request

## Sustainable Development Goals

GOOD HEALTH AND WELL-BEING

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