



UNIVERSITÀ  
DEGLI STUDI DI MILANO-BICOCCA

## COURSE SYLLABUS

### Laboratory of Organic Chemistry III

2223-3-E2702Q101-E2702Q103M

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#### Aims

Elements of functional groups elaboration and organic synthesis

#### Contents

examples of single and/or multi step organic reactions involving functional group transformations (dehydration, reduction, oxidation), diazocoupling reaction (synthesis of acid orange 7 dye), and an aldol condensation

#### Detailed program

- reduction of a keton
- Friedel Crafts Alkylation
- Oxidation under green conditions
- dehydration of an alcohol
- synthesis of an azo dye
- cyclohexene oxidation to adipic acid
- aldol condensation

#### Prerequisites

Sound knowledge of basic organic chemistry, common glassware, basic lab techniques and physicochemical

principles of purification techniques and qualitative analysis (i.e. simple and fractional distillation, steam distillation, melting point). Such knowledge is summarized in the recommended books.

## Teaching form

Lab experiences about the reactions and processes described in the detailed program

In detail, the students will be assigned to groups according to the maximum lab capacity (number of fume hoods). Whenever possible, short introductory videos aimed to highlight key aspects of the lab activities will be made available on the e-learning (LMS) platform. A short lesson (15-20 min) will also take place before each lab activity to further highlight key aspects.

## Textbook and teaching resource

Suggested books:

Understanding the Principles of Organic Chemistry: A Laboratory Course, Reprint, 1st Edition Steven F. Pedersen, Arlyn M. Myers ISBN 9781111428167 [link](#)

A Small Scale Approach to Organic Laboratory Techniques, 4th Edition Donald L. Pavia, George S. Kriz, Gary M. Lampman, Randall G. Engel ISBN 9781305253926 [link](#)

## Semester

third year first semester

## Assessment method

In details, the student will be evaluated on the basis of the capability to safely work in an organic chemistry lab, according to the best practices for every procedure. The capability to work in a team as well as the experimental results will be evaluated. Finally, the quality and clarity of (individual) lab reports will be evaluated according to these points:

- handling of errors in calculation
- comprehension of basic principles of the lab procedures
- exhaustive and correct exposition of experimental observations and results along with their discussion

A description of the report structure with a short description of the sections will be made available.

## Office hours

upon request

**Sustainable Development Goals**

CLEAN WATER AND SANITATION

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