

COURSE DETAIL

BIOCHEMISTRY

Country

Italy

Host Institution

University of Bologna

Program(s)

University of Bologna

UCEAP Course Level

Upper Division

UCEAP Subject Area(s)

Biochemistry

UCEAP Course Number

153

UCEAP Course Suffix**UCEAP Official Title**

BIOCHEMISTRY

UCEAP Transcript Title

BIOCHEMISTRY

UCEAP Quarter Units

6.00

UCEAP Semester Units

4.00

Course Description

This course is part of the Laurea Magistrale degree program and is intended for advanced level students. Enrollment is by permission of the instructor. The course is aimed at the comprehension of the main biological process at a molecular level: structures, properties and function of biomolecules, molecular mechanism, route and law of bio- transformations, the base of microbiological physiology and genetics, enzymatic catalysis, and fermentation. The course is also aimed at the comprehension and application of the knowledge and acquired skills in the biochemical interaction among organisms and environment.

The course content is divided into two parts:

Part 1: Biochemistry

- 1. Macromolecules: Amino Acids, Carbohydrates, Lipids
- 2. Protein structure: Primary, secondary, tertiary, quaternary
- 3. Plant biochemistry: Photosynthesis: light reactions, carbon fixation, synthesis of sugars, bacterial photosynthesis.
- 4. Catabolism of sugars: Glycolysis, Krebs cycle, respiration, chemiosmosis.
- 5. Enzyme catalysis: Substrate specificity, catalytic mechanisms, and enzyme kinetics

Part 2: Biochemical Methodologies

This part consists of experimental laboratory course, which introduces the students to the basic approaches for the determination of proteins amount, separation, and identification. During the practical laboratory, the following experimental activities are foreseen:

1. Determination of protein content by using a colorimetric assay;
2. Separation of a mixture of known proteins by using a chromatographic analysis;
3. Identification of purified proteins using spectrophotometric and electrophoretic techniques.

Language(s) of Instruction

English

Host Institution Course Number

64841

Host Institution Course Title

BIOCHEMISTRY

Host Institution Course Details

<https://www.unibo.it/en/study/course-units-transferable-skills-moocs/course-uni...>

Host Institution Campus

BOLOGNA

Host Institution Faculty**Host Institution Degree**

LM in LOW CARBON TECHNOLOGIES AND SUSTAINABLE CHEMISTRY

Host Institution Department

INDUSTRIAL CHEMISTRY

Course Last Reviewed

2025-2026

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