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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