



UNIVERSITÀ  
DEGLI STUDI DI MILANO-BICOCCA

## COURSE SYLLABUS

### Biochemistry

2324-2-H4101D006-H4101D016M

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#### Aims

The module main objective is to provide students with the concepts necessary for understanding biological phenomena and the energetic variation associated with them. The course will focus on how to place the molecular basis for understanding the complex processes underlying the metabolism of living creatures

#### Contents

Enzymology. Diagnostic use of enzymes and isoenzymes. Bioenergetics: respiratory chain and oxidative phosphorylation. Glucose metabolism: digestion, absorption. Aerobic and anaerobic glycolysis. Regulation of glycolysis. Glycogen synthesis and glycogenolysis and regulation. Galactose and fructose metabolism. Lipid metabolism: digestion and absorption. Catabolism of lipids. Citric acid cycle. Lipogenesis. Regulation of lipolysis and lipogenesis. Metabolism of cholesterol and its derivatives. Metabolism of ketone bodies. Lipoprotein metabolism of plasma lipoproteins. Protein metabolism: digestion, absorption, and transport of amino acids. General metabolism of amino acids. Urea cycle. Gluconeogenesis and its regulation. Purine and pyrimidine metabolism

#### Detailed program

#### Prerequisites

Knowledge of the introductory courses indicated in the regulation of the degree course

## **Teaching form**

Face to face Lessons will be organized to discuss topics and group exercises in presence

## **Textbook and teaching resource**

1. Devlin Biochimica V ed.– EDISES
2. Siliprandi and Tettamanti Biochimica Medica V ed - Piccin.
3. Ermine Ercikan ABALI Le basi della Biochimica 3ed Zanichelli

## **Semester**

second year, I semester

## **Assessment method**

All students have access to a written test followed by an oral interview. The written test consists of 27 quizzes, of which about 20 single-answer and the remaining multiple-choice.

A time of one hour for the written test is assigned. The student is admitted to the oral exam if the answers score reaches a minimum of 17; The oral is carried out the same day, after the correction of the writing and takes about 20 minutes for each candidate. The questions proposed in the written test aim at evaluating the comprehension of the topics covered in lesson, with particular reference to the acquisition of knowledge concerning cell and organ metabolism.

In the oral examination, taking into account the written test, the student is asked to explain / deepen some of the answers provided (both those provided wrong and correct), in order to verify the correct interpretation of the question and the reasoning that led to the answer. It also evaluates the knowledge of the main metabolic pathways, and of the biochemical interactions between the cells or in the different organs / tissues and of the dysfunctions.

## **Office hours**

Reception by appointment

## **Sustainable Development Goals**

GOOD HEALTH AND WELL-BEING | QUALITY EDUCATION

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