



UNIVERSITÀ
DEGLI STUDI DI MILANO-BICOCCA

COURSE SYLLABUS

Biochemistry

2021-1-I0302D002-I0302D006M

Aims

Students must be able:

- to explain structural characteristic of protein and the structure-function ratio;
- to describe the role of enzyme in the biochemical reactions, with particular attention to enzymatic kinetic and regulation;
- to define bioenergetics concepts, explaining respiratory chain function;
- to describe sugars, lipids and proteins mechanisms of digestion and absorption;
- to describe the metabolism of glucose, amino acid and fatty acid;
- to describe cholesterol, ketone bodies, purines and pyrimidines, hormones metabolism and hormonal regulation of metabolism;
- to describe calcium metabolism.

Contents

The course aims to provide the student with: the knowledge of the main metabolic pathways and biochemical cellular mechanisms.

Detailed program

- Living matter in general.

- Proteins: structure-function ratio, plasmatic protein.
- Biochemical reactions, enzymes, enzymatic kinetic and regulation.
- Bioenergetics, respiratory chain, oxidative phosphorylation.
- Digestion, absorption of sugars, lipids and proteins.
- Glucose, amino acid and fatty acid metabolism.
- Cholesterol, ketone bodies, purines and pyrimidines, hormones metabolism, and hormonal regulation of metabolism.
- Calcium metabolism.

Prerequisites

Teaching form

Lectures, exercises.

It is required 70% course attendance.

Textbook and teaching resource

Siliprandi & Tettamanti: Biochimica medica" PICCIN

M. Stefani, N. Taddei: Chimica Biochimica e Biologia Applicata Zanichelli.

R. Roberti, G. Alunni Bistocchi: Elementi di Chimica e Biochimica McGrawHil

Semester

First semester

Assessment method

Being an integrated course, the evaluation will cover all four modules.

Regarding the Biochemistry module, the evaluation will consist of a written test that will be used to ascertain the level of knowledge and ability to understand the topics covered during the course and to be able to solve problems. The student will have to answer 10 quizzes (Multiple choice test) concerning the topics of Biochemistry.

Oral examination will be required at professor's discretion (discussion of the written test). The oral test will serve to clarify critical issues emerged from the written test and to verify the communication skills of the student and will focus on the topics covered by the written test.

Office hours

By appointment required by mail
