

UNIVERSITÀ DEGLI STUDI DI MILANO-BICOCCA

COURSE SYLLABUS

Biochemistry

2324-1-I0303D002-I0303D006M

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 general and organic chemistry for the study of compounds in biological systems; the knowledge of the main metabolic pathways and biochemical cellular mechanisms; the knowledge of the structure and function of pro/eukaryotic cells, thanks to the tools provided by the integration of the most current and advanced concepts of molecular and cellular biology; the basis of formal human genetics, introducing the student to the most basic laboratory techniques used for the diagnostic approach and research of hereditary disease

Detailed program

BIOCHEMISTRY

- · 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

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

Office hours

By appointment required by mai

Sustainable Development Goals

GOOD HEALTH AND WELL-BEING