UNIVERSITÀ
DEGLI STUDI DI MILANO-BICOCCA

COURSE SYLLABUS

Biochemistry

2122-2-H4101D006-H4101D016M

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 V ed Biochimica Medica- Piccin.

3. Ferrier Le basi della Biochimica 2ed 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