UNIVERSITÀ
DEGLI STUDI DI MILANO-BICOCCA

COURSE SYLLABUS

Physiology

2627-5-H4102D043-H4102D143M

Aims

The course aims to enable medical students to understand the physiological processes underlying the physiology of the gastrointestinal tract. This will provide them with the tools to consciously address the aspects related to the pharmacology and pathology of the GI tract itself.

Contents

The course is based on the systematic presentation of physiological concepts underlying the functioning of the digestive tract. The mechanism leading to function imbalance cannot be appreciated without a deep understanding of the underlying biophysical and physiological mechanisms. Therefore, we will present such mechanisms that guarantee functions at the cellular, tissue, organ and apparatus level and at the integrated level.
During the course, the effects of the aging process on the physiology of the gastrointestinal system and the effects due to gender differences will be emphasized.

Detailed program

Functions and general characteristics. Structure of the gastro-intestinal tract. Secretion. Motility. Nervous control of the digestive function. Enteric nervous system. Electrophysiology of smooth muscle cells of the gastrointestinal tract. Hormonal control of motility of the gastrointestinal tract (gastrin, CCK, secretin). The oral cavity. The chemical senses of taste: physiology of taste and smell. Salivary secretion. Stomach and gastric secretion (composition and regulation). Intestinal secretions. Pancreatic secretion (composition and regulation). Liver secretion (composition and regulation). Digestion and absorption.

Prerequisites

Fundamentals of Human Physiology.

Teaching form

The two-hour classes will be held in person. They will begin with a presentation of concepts (instructional phase), followed by student interaction that shapes the subsequent part of the lesson (interactive phase). Teaching methods will include lectures, videos, and class discussions.
Up to 30% of the teaching hours may involve innovative teaching methods—such as delivery under the instructor's supervision, co-teaching, or remote learning—in accordance with Ministerial Decree no. 1835 of December 6, 2024.

Textbook and teaching resource

Guyton & J.E. Hall, *Textbook of Medical Physiology*, Elsevier;
Boron WF, Boulpaep EL, *Medical Physiology*, Ed. Elsevier.
Reviews or scientific papers recommended by the Professor During Lectures

Semester

Fifth, year, second semester

Assessment method

The exam will be carried out in an integrated manner according to the modality envisaged by the vertical track

Office hours

The professor receives by appointment upon agreement by e-mail
ilaria.rivolta@unimib.it

Sustainable Development Goals

GOOD HEALTH AND WELL-BEING | QUALITY EDUCATION | GENDER EQUALITY