UNIVERSITÀ
DEGLI STUDI DI MILANO-BICOCCA

# COURSE SYLLABUS

# Clinical Biochemistry

**2223-1-F0601Q094**

## Aims

This class aims to study the fundamentals of the laboratory methods relevant for qualitative and quantitative study of pathogens and biological processes in medical field and to study the effect of a disease or a pharmacological therapy on biochemical processes of organs, biological tissues and fluids.

## Contents

In the first part of the class, clinical biochemistry basic topics will be presented. In particular we will focus on laboratory analysis, collection and conservation of biological samples, methods of acquisition of laboratory data and analytical techniques.

In the second part of the course, analytical methodologies and clinical studies will be considered for the evaluation of disease susceptibility, diagnosis and monitoring of traditional and innovative therapies.

## Detailed program

The following topics will be addressed:

-Pre-analytic phase

-Clinical laboratory principles

-Electrolytes

-Anemias

-Enzymes in clinical biochemistry

-Liver: assays to test liver functionality

-Diabetes mellitus: glycated hemoglobin

-Lipids: lipoproteins, cholesterol and atheromatous indexes

-Electrophoresis in clinical laboratory

-Allergology

-Autoimmunity: diagnostic technology

-Endocrinology: hormones and tests for endocrine system

-Hematology parameters

-Tumor markers

-Kidneys: assays to test kidneys functionality

-Emergency medicine

-Laboratory medicine and sports

-Clinical laboratory in pregnancy

-Written test simulation

-Professional opportunities presentation

## Prerequisites

Basic knowledge of biology and biochemistry

## Teaching form

Classroom lectures supported by slides

## Textbook and teaching resource

Slides and video.

Textbook: Ciaccio, Lippi Biochimica Clinica e Medicina di Laboratorio

## Semester

Second semester

## Assessment method

Written and oral examination: 15 multiple-choice questions to be completed in 45 minutes. The exam is positively evaluated with a score of 18-30. The optional oral examination will include a discussion on the written test, including questions about topics program of the course.

## Office hours

Meeting on demand

## Sustainable Development Goals

GOOD HEALTH AND WELL-BEING