UNIVERSITÀ
DEGLI STUDI DI MILANO-BICOCCA

# SYLLABUS DEL CORSO

## Analisi Funzionale e Modelli

**2223-1-F0601Q116-F0601Q119M**

### Aims

The course will be multidisciplinary and organized in modules in order to offer an overview of genetic, molecular, biochemical, physiological and pharmacological aspects of a human disease.
The focus of the course will be the study, from different perspectives, of a genetic disease, from diagnosis to treatment.
In particular, at the end of the course the student will have acquired the following skills:

1. knowledge and understanding: complete overview with different integrated approaches of a specific human genetic disease
2. applied knowledge and understanding: apply what has been learned to the study of numerous human genetic diseases
3. self-judgment: capacity to critically evaluate what has been learned
4. oral competences: oral communication of what has been learned using the correct scientific terminology
5. ability to learn: critical learning and understanding of scientific literature on different aspects of a human disease.

In the academic year 2022-2023 the genetic disease studied will be Cystic Fibrosis.

Regarding the physiology module (1 CFU), the student will have the opportunity to deepen the functional analysis of the mutated protein compared to the WT one (CFTR chlorine channel), analyzing the pathogenesis of the disease at the different organ levels. The student will be able to learn how to translate information from the analysis of the single mutate protein to the clinical manifestations associated with the pathology.

### Contents

The course is composed in lectures, group works and reverse teaching on issues relating to the cellular and organ functional aspect of cystic fibrosis.

## Detailed program

The course is structured as follows:
-physiopathology of the CFTR channel
-clinical manifestations of cystic fibrosis
-diagnosis of cystic fibrosis
-analysis and interpretation of the results of scientific articles relating to the topic

## Prerequisites

Basic knowledge of general and systems physiology.

## Teaching form

Lectures, group assignments, students presentations of scientific papers

## Textbook and teaching resource

Powerpoint presentations will be available on e-learning.

## Semester

Second

## Assessment method

Written exam.
The exam of the physiology module is part of the general exam of the course that will assess the learning of the material discussed in all the modules.
The written exam is organized in:

1. 30 multiple choice questions on the material discussed in all the modules in 30 minutes
2. 1 open question to answer on the material covered in one module in 15 minutes
   A passing grade on part 1) is required to access the part 2) of the exam. The exam will be available on the esamionline platform.

## Office hours

Appointment via e-mail with the Physiology module Lecturer.

## Sustainable Development Goals

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