



UNIVERSITÀ  
DEGLI STUDI DI MILANO-BICOCCA

## COURSE SYLLABUS

### Medical Genetics

2223-4-H4101D262-H4101D077M

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#### Aims

to introduce the students to appropriateness of genetic prescriptions

#### Contents

Main techniques of cytogenetics, molecular cytogenetics and molecular genetics

#### Detailed program

- choosing between the different technologies for the diagnosis of genetic diseases; applications, advantages and limitations in comparison: cytogenetics; molecular cytogenetics (FISH and CGH array, SNP array); molecular genetics (PCR, digital and real-time PCR, allele-specific amplification, hybridization with allele-specific oligonucleotides, Sanger and NGS sequencing, MLPA)
- genetic counseling
- genetic tests: classification (diagnostic, presymptomatic, predictive, pharmacogenomics); appropriateness of requests for genetic testing and clinical utility; genetic testing for research; ethical and social aspects of genetic testing; system for genetic variant classification; ability to read and understand information of a genetic report.
- Genetic and Genomic Databases
- genomic diseases and complex diseases
- cancer predisposition syndromes
- invasive and Non invasive prenatal genetic testing
- clinical cases

## **Prerequisites**

Those foreseen by the didactic regulations of the CdS

## **Teaching form**

Lessons in attendance, subject to any ministerial changes following the COVID pandemic situation

## **Textbook and teaching resource**

Textbook: Tom Strachan, Andrew Read: Genetica molecolare umana  
slides  
guidelines and scientific articles provided by the teacher

## **Semester**

first semester

## **Assessment method**

Written exam with 30 multiple choice questions, relating to the lectures topics course program, and oral examination

## **Office hours**

appointment on request by e-mail

## **Sustainable Development Goals**

GOOD HEALTH AND WELL-BEING

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