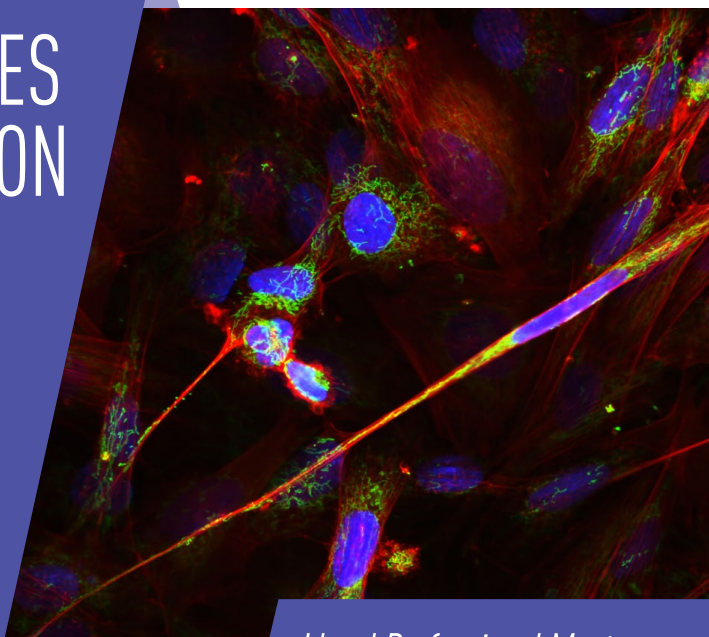




ALMA MATER STUDIORUM
UNIVERSITÀ DI BOLOGNA

TECHNOLOGIES FOR PRECISION MEDICINE

A.Y. 2021 / 2022



I level Professional Master

Application deadline

17 December 2021

Selection date

21 December 2021

Enrollment start and end

3 January 2022 - 10 January 2022

Programme start and end dates

January 2022 - January 2023

PRESENTATION

The Master aims to train professionals on techniques, legislation, ethics, and clinical applications of advanced therapies (cellular and gene), harmonizing and integrating the knowledge acquired in the master's degree courses in Medicine and Surgery, Veterinary Medicine, Biology, Biotechnology, Pharmacy and Industrial Pharmacy and Biomedical Engineering.

The course will train professionals capable of:

- design studies and carry out research in the field of advanced therapies (eg, identifying new biomaterials, isolating and culturing cells from various sources, and design engineered tissues);
- analyze, process and interpret experimental data also with bioinformatic methods;
- understand and apply cellular engineering techniques to modulate cell differentiation;
- use advanced systems of optical and electron microscopy;
- use advanced 3D cell culture techniques also for drug screening;
- be aware of current regulations on medical devices, tissue transplantation and advanced therapies;
- work in controlled contamination environments, knowing their operating parameters and their maintenance;
- work in the Good Manufacturing Practices (GMP) for advanced therapy products;
- know the ethical considerations of advanced therapies and be able to draw up protocols for the approval of the ethics committees;
- conduct a literature review in the area of interest and write a report or a scientific article.

Director: Prof. Nicola Baldini, Dipartimento di Scienze biomediche e neuromotorie, Università di Bologna, IRCCS Istituto Ortopedico Rizzoli

IN COLLABORATION WITH

IRCCS Istituto Ortopedico Rizzoli

IRCCS Istituto delle Scienze Neurologiche di Bologna

The training activities, scheduled from January 2022 to January 2023, include a practical internship at the IRCCS Istituto Ortopedico Rizzoli, IRCCS Institute for Neurological Sciences of Bologna and the IRCCS Policlinico Universitario di Sant'Orsola, following a virtuous cycle from the needs of the patient to the laboratory and viceversa, taking into account the legislative, bioethical and economic aspects of advanced therapies.

Assessment

Compulsory attendance of at least 80%. Final exam, 60 CFU.

Teachings

- Stemness and cell differentiation
- Microfluidics, organoids, bioprinting
- Nanotechnologies for precision medicine
- 3D culture, bioprinting and microfluidics laboratory
- Optical, confocal and ultrastructural microscopy laboratory
- Machine learning / high throughput
- Advanced therapies for regenerative medicine
- Gene and enzymatic therapies in medical genetics
- Advanced anticancer therapies
- GLP / GMP laboratory
- Legislation and clinical trials
- Management, health economics
- Imaging

Workshops & Lectures

- Gene therapies
- Innovative materials for bone substitutes
- Bionspired materials

ADMISSION REQUIREMENTS

First cycle degree/Second cycle or single cycle degree in:

- L-02 Biotechnology
- L-13 Biological Sciences
- L-29 Applied Pharmaceutical Sciences
- L/SNT3 Technical Health Professions (Biomedical Laboratory Techniques only)
- LM06, Biology
- LM-09 Medical, veterinary and pharmaceutical biotechnologies
- LM-13 Pharmacy and Industrial Pharmacy
- LM-21 Biomedical Engineering
- LM-41 Medicine and Surgery
- LM-42, Veterinary Medicine
- LM-46 Dentistry and dental prostheses

Admission to the Master is subject to positive passing the selection (qualifications and interview).

ENROLLMENT

Call for applications:

www.unibo.it > teaching > professional master > 2021 - 2022 > Technologies for precision medicine

Fee: 4.000 €, two instalments.

Number of participants: 12

CONTACTS

Istituto Ortopedico Rizzoli

Francesca Schirru

francesca.schirru@ior.it | 051 6366566