



MASTER'S DEGREE IN BIOTECHNOLOGY AND MEDICAL BIOLOGY

Faculty of Medicine and Surgery



PRESENTATION

This 2-Year Master's Degree in Biotechnology and Medical Biology bridges **theoretical knowledge to hands-on training in biological research**, with an emphasis on biological processes underpinning human physiology and pathology.

Our Master Graduates will be exposed to an intensive training in the **research laboratories** of the San Raffaele Scientific Institute (or in linked institutions in Italy and abroad) culminating in the discussion of a written dissertation. Thus, our Master Graduates will be leading through a short yet **complete research project**; they will personally know what and why to look for, how to design a research project, how to generate and interpret data, and how to communicate their results to other researchers, through both oral and written presentations in English. Our teaching methodology encourages students to take active responsibility for their own **learning**; "student-centered" and "self-directed" learning are the keywords for this approach. Thus, top-down learning is complemented by a bottom-up learning aiming at solving issues arising during the research project.

The unique **research environment** of the San Raffaele Scientific Institute provides students with the most stimulating and interdisciplinary conditions to study and conduct research as it promotes encounters of people and massive flows of ideas. Together with our University, the Institute reunites in the same campus the **Ospedale San Raffaele**, an internationally recognized center of excellence in numerous areas of biomedical research, also part of the **San Donato Group**, one of the most prominent research centers and hospitals in Europe. Nearly all of our Master graduates are in paid employment or paid training within a few months after their thesis dissertation, either in biotechnological or pharmacological companies, or in the PhD in Molecular Medicine of our University or in other programs in Europe, North America or Asia.

MASTER'S DEGREE IN BIOTECHNOLOGY AND MEDICAL BIOLOGY

PROF. MASSIMO CLEMENTI

Dean of the Faculty of Medicine

PROF. MARCO EMILIO BIANCHI

Dean of the Course

OBJECTIVES

This M.Sc. aims at training specialists in medical biotechnology and biomedical research, who can then decide whether to go on to a Ph.D. in the life sciences, or to apply directly their expertise to science-based careers, such as lab management, research administration, research funding (both in government or charities), intellectual property (patent consultants, strategic planning in biotech industries).

In all these careers, the ability to retrieve and evaluate current knowledge, plan new research, generate and analyze data, and communicate the results are essential.

The training is hands-on, and is based on the execution of a short but complete research project by the student, and its writing up and discussion with a thesis committee of experts.



FIRST YEAR

First semester

- Diagnosis of genetic diseases
- Molecular and cell biology and organelle impairment
- Gene expression, genomics and proteomics
- Communication skills in English (*corso annuale*)
- Molecular mechanisms of diseases (*corso annuale*)

Second semester

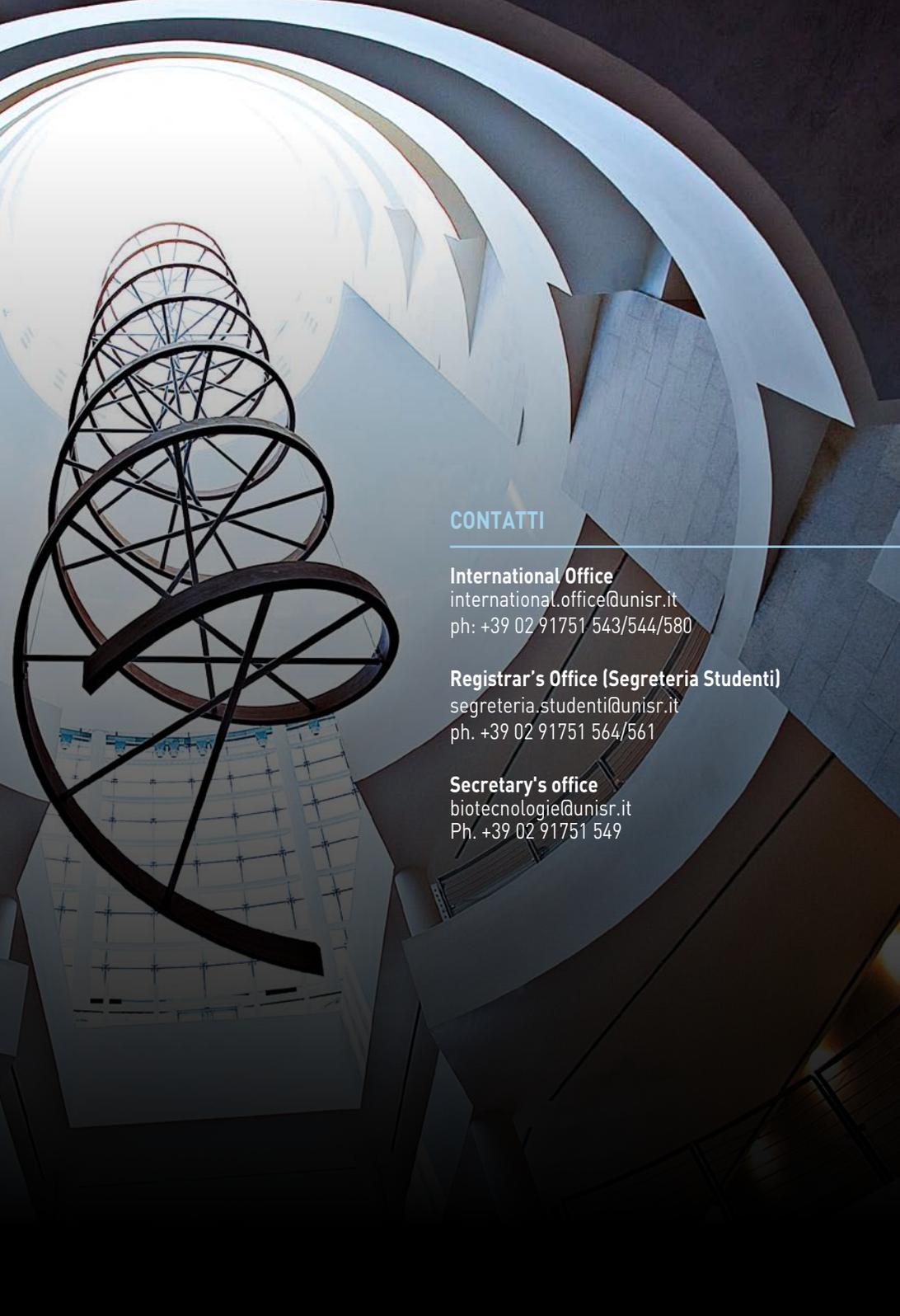
- Molecular virology
- Cell and gene therapy
- Intrinsic and extrinsic factors in tumor progression
- Molecular and cellular neurosciences
- Chemistry-driven modern drug discovery: from chemical probes to hits, leads and drugs

SECOND YEAR

- Logic of scientific discovery and innovation
- Assisted reproductive technologies
- Quality in biotechnological processes
- Tissue engineering strategies in orthopaedics
- Morphological and functional imaging

Elective Courses

Thesis internship



CONTATTI

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