UNIVERSITÀ
DEGLI STUDI
DI MILANO

Master's degree programme in

Molecular biology of the cell

facoltà di

SCIENZE E TECNOLOGIE

Applications and admissions

Open, subject to entry requirements.

Admission requirements

The access to the Master in Molecular biology of the cell is available to:

- Graduates in Biological Sciences (L-13) from any Italian University that follows the guidelines of CBUI (Collegio Biologi Università Italiane); further details available at https://apps.unimi.it/files/manifesti/ita_manifesto_F9Yof1_2023.pdf. In this case, the credits acquired as an undergraduate by the candidate will be fully recognized, as they already fulfilled the pre-requisites.
- Graduates in Biological Sciences (L-13) from Universities that do not follow the guidelines of CBUI, graduates in other related classes and foreign graduates that have acquired a title considered to be equivalent to the I level degree by the Italian law are requested to have earned at least 93 ECTS (European Credit Transfer and Accumulation System) in relevant subjects.

Students lacking adequate curricular requirements should contact the Coordinator of the Master's course well in advance at mbc.coordinatore@unimi.it, to plan the acquisition of the requested CFU prior to the application deadline. Any lacking CFU can be acquired by passing the relevant exams and thus acquiring the credits at the University of Milan or any other University. Only students who possess the prerequisites will be invited to the interview.

The minimum requirement for the English language knowledge is, for all students, the B1 level ("lower intermediate") of the Common European Framework or equivalent certification.

The admission exam will consist of a formal interview (that can be arranged online) with an Evaluation Committee that will verify the candidate's background knowledge in Biology. The proficiency in scientific English will be verified by the committee during the interview.

English language

Knowledge of the English language must be at least B2 level ("Upper-intermediate") according to the Common European Framework of Reference (CEFR) for Languages or equivalent certification. The proficiency in scientific English will be verified by the committee during the admission interview.

Objectives

The main goal of the Master degree is to train biologists in the field of advanced bio-molecular research to address present and future scientific challenges.
In-depth and up-to-date knowledge will be provided for the following subjects:
molecular genome analysis; regulation of gene expression; structure and function of biological macromolecules and their interactions in supramolecular complexes; cellular communication, signal perception and transduction, metabolic regulation, bio-molecular engineering and computing. Both theoretical and practical aspects of biomolecular research will be addressed. Graduate students will learn to apply novel and emerging research technologies/approaches, cutting-edge data acquisition systems and analysis, and will have hands-on experience with top-level nanotechnology, hosted in the research laboratories of the Department of Biosciences.

Career prospects

The MBC graduate will acquire specialized and in-depth knowledge in molecular and cellular biology, and consolidated competences in the application of state-of-the-art analytical methodologies and experimental techniques to address a variety of biological challenges. This highly specific, yet multidisciplinary, profile will offer MBC graduates professional employment opportunities in both the public and private sectors, operating in biology-related fields. In particular, MBC will provide the necessary training to allow graduate employment in the following sectors:

- basic and applied academic research, in universities and other public/private research centers;
- environmental management /protection sectors;
- biomedical, agro-bio and pharmaceutical industries, and related professional sectors;
- promotion and development of innovative scientific technologies;
- biotechnological research and development in the healthcare, pharmaceutical and food industries;
- editorial, intellectual property and scientific dissemination sectors;
- project management in the biotech industry;
- Biology teaching in adherence to Italian laws.

The fact that MBC is carried out entirely in English, will allow graduates to engage with public/professional sectors in both a national and international setting.

MBC graduates may be legally admitted to the 'A Section' of the National Biologists Register. Indicatively, the different employment sectors accessible to Master graduates, with reference to the intellectual, scientific and highly-specialized professions are here-listed:

- Biologists and related professionals
- Researchers and technicians graduated in the area of biological sciences (after passing the competitive exam).

Degree syllabus

I year

COMPULSORY LEARNING ACTIVITIES	ECTS
I semester	
Advanced molecular biology	6
Molecular bioinformatics	6
Organic chemistry applied to biology	6
II semester	
Molecular genetics	6
Protein biochemistry	6
Structural biology of the cell	6

II year

(to be made available as of academic year 2026/2027)

COMPULSORY LEARNING ACTIVITIES	ECTS
Annual	
Biomolecular methods laboratory	9
Laboratory training	9
6 ects to be earned by choosing among the following courses: - Developmental biology and genetics - Functional genomics - Molecular microbiology and genetics of microorganisms - Epigenetics and Epigenomics	6
6 ects to be earned by choosing among the following courses: - Biomembranes - Molecular pharmacology and immunology - Stem cells and genetic diseases	6
6 ects to be earned by choosing among the following courses: - Synthetic biology - Biostatistics - Methods in biochemical investigation - Signal transduction	6

Other activities

- Additional language skills: Italian (3 ects) (only for foreign students)
- Free choice courses (12 ects)
- Final dissertation (30 ects)

INFO

Disciplinary classification: Biology (LM-6 R)

Duration: 2 years (120 ects)

Attendance: strongly recommended

Locations:
- Biology buildings - via Celoria, 26 - Milan
- Teaching Sector - via Celoria, 20 and via Golgi, 19 - Milan
- Most laboratories are in the Department of Biosciences - via Celoria, 26 - Milan

For information:
mbc.coordinatore@unimi.it

Websites:
mbc.cdl.unimi.it
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www.unimi.it

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For further information: www.unimi.it - Education