UNIVERSITA' DEGLI STUDI DI MILANO
MANIFESTO DEGLI STUDI A.A. 2025/26
LAUREA MAGISTRALE IN
BIOMEDICAL OMICS (Classe LM-9 R)
Immatricolati nell Anno Accademico 2025/26

GENERALITA'	
Classe di laurea di appartenenza:	LM-9 R Biotecnologie mediche, veterinarie e farmaceutiche
Titolo rilasciato:	Dottore Magistrale
Durata del corso di studi:	2 anni
Crediti richiesti per l'accesso:	180
Cfu da acquisire totali:	120
Annualità attivate:	1°
Modalità accesso:	Libero con valutazione dei requisiti di accesso
Codice corso di studi:	DBC

RIFERIMENTI

Presidente Collegio Didattico

prof.ssa Myriam Alcalay

Docenti tutor

Academic guidance tutor:
- Prof.ssa Myriam Alcalay
- Prof. Salvatore Pece
- Prof. Diego Pasini
- Dott.ssa Emanuela Colombo
- Prof. Gaetano Ivan Dellino
- Prof. Stefano Santaguida

Sito web del corso di laurea

https://bo.cdl.unimi.it

International Students - Welcome desk:

https://informastudenti.unimi.it/saw/ess?AUTH=SAML

Student administrative office:

Email: biomedicalomics@unimi.it

CARATTERISTICHE DEL CORSO DI STUDI

Premessa

The Master Program in Biomedical Omics belongs to Class LM-9, Master Programs in Veterinary Pharmaceutical and Medical Biotechnology. The Department of Oncology and Hemato-oncology (DIPO) of the University of Milan is the academic institution responsible for the Master Program in Biomedical Omics.

Obiettivi formativi generali e specifici

The advent of technologies that allow the global analysis of biological phenomena (?omics?) has revolutionized the study of human diseases and opened new perspectives in the field of research, diagnosis and therapy, tracing the path for Precision or Personalized Medicine. The central element of Precision Medicine is in fact the quantitative description of biological or clinical phenotypes by high definition omics (genomics, epigenomics, proteomics, metabolomics, microbiomics, digital imaging, radiomics and radiogenomics).

The Master Program in Biomedical Omics aims at providing students with a broad understanding of omics disciplines applied to medicine and first-hand practical experience with different omics techniques. Key competences of graduates include the ability to design experiments, manage the work flow, analyze and interpret omics data, and create applications for future developments in omics approaches.

Risultati di apprendimento attesi

Knowledge and understanding

Graduates in Biomedical Omics will have theoretical knowledge and practical experience in omics disciplines applied to the clinics. Key competences will include the ability to design experiments, manage work flow, analyze and interpret data and devise new strategies for further development of omics approaches. The courses and training activities will provide specific

skills in omics disciplines and in the computational approaches that are necessary for the interpretation of results. Graduates will also be familiar with the legal, ethical and decision-making aspects related to the handling of sensitive data.

Applying knowledge and understanding
A key objective of the Master's Degree course in Biomedical Omics is to provide graduates with the full capacity to apply the theoretical knowledge they receive. To achieve this goal, a relevant amount of time will be devoted to practical training and to the experimental thesis deriving from a research project that can be conducted in a national or international, academic or industrial laboratory.

Profilo professionale e sbocchi occupazionali

Graduates in Biomedical Omics will be able to pursue careers as Technologists in Biomedical Omics:
Tasks: Coordination and execution of omics techniques in routine diagnostics or clinical research within hospital laboratories.
Skills:
i) understanding of the clinical demand underlying the required analyses;
ii) execution of omics analyses;
iii) interpretation of results;
iv) introduction of technological upgrades in the clinical laboratory and development of technology upgrades to adapt standard protocols to local needs.
Employment opportunities: diagnostic laboratories in hospitals and clinical research laboratories.
Graduates will also have the possibility to work in basic research laboratories, in biotechnological development institutes, or to continue their academic training by enrolling in doctoral programs or second-level masters programs, both in Italy and abroad.

Conoscenze per l'accesso

Access to the Master Program in Biomedical Omics is open to:
- Graduates in classes L-2 (Biotechnology), L-13 (Biological sciences), L-27 (Chemistry), L-29 (Pharmaceutical sciences and technologies), or equivalent foreign qualification for a total of 180 ECTS;
- Graduates in classes other than those listed above provided they have at least 40 ECTS in the following scientific disciplinary sectors: BIO/06, BIO/08, BIO/09, BIO/10, BIO/11, BIO/12, BIO/13, BIO/14, BIO/15, BIO/16, BIO/17, BIO/18, BIO/19, CHIM/01, CHIM/02, CHIM/03, CHIM/06, CHIM/07, CHIM/08, CHIM/09, MED/01, MED/02, MED/03, MED/04, MED/05, MED/07, MED/08, MED/43, MED/44, MED/46, MED/50, SECS - S/01, SECS - S/02.

Knowledge of English language is required at B2 level.

Knowledge Assessment
Candidates will be admitted to the Master's Degree on the basis of their academic curriculum and an interview (in presence or online).
An evaluation committee, composed by faculty members appointed by the Teaching Board, will verify the personal preparation of all candidates meeting the above-mentioned minimum requirements.
To this end, each candidate must send, in addition to the application:
1) their study plan with the indication of the exams and the grade obtained in each exam;
2) their curriculum vitae.
The adequate preparation and personal aptitude of the students will be verified with an individual interview conducted by the evaluation committee.
The overall evaluation will result in a score out of one hundred, calculated as follows:
- up to 25/100 for the degree grade (or weighted average of the exam results in the case of non- candidates that have not yet graduated),
- up to 10/100 for the curriculum of studies (type of degree, any free courses attended/passed, other diplomas, etc.),
- up to 65/100 for the outcome of the interview.
The minimum score for admission is 60/100. A negative result will preclude access to the Master's Degree Course for the current year.
In the event of transfer from another University or another degree course, admission to years after the first will be subject to the evaluation of the previous career by the Teaching Board

Foreign Students
Students must have a Bachelor's degree in one of the disciplines described above (Biotechnology, Biology, Chemistry, Pharmaceutical sciences). The number of hours/credits of the specific courses must be clearly identifiable in the academic curriculum. If this is not possible, documents certifying the student?s career will be examined by the Faculty to assess if their background complies with the admission requirements.

Struttura del corso

The Master program in Biomedical Omics is a two-year course, corresponding to four semesters. Students must earn 120 educational credits (CFU = Crediti Formativi Universitari) to complete the Master’s degree.
One CFU corresponds to a workload of 25 hours and is calculated as follows:
- lectures: 1 CFU = 8 hours of lectures and 17 hours of independent study;

- practicals: 1 CFU = 16 hours of laboratory activities and 9 hours of independent study;
- experimental projects (thesis work): 1 CFU= 25 hours of laboratory and/or training activities.

All activities of the course will be held in English.
The first year courses will cover: omics technologies and their applications, computational approaches for analysis, interpretation and management of omics data, legal implications of omics analyses, laboratory management and technology transfer, for a total of 54 CFU. Lectures in omics and computational approaches will be complemented by practical training (6 CFU).
In the second year, students will study the application of omics technologies in diagnostic and clinical settings, experimental design and model systems, and ethical issues concerning the use of omics in a clinical setting (24 CFU).
The second year will be largely dedicated to the production of an experimental thesis (25 CFU) deriving from a research project. The national and international laboratories where students can carry out their thesis projects will be selected on the basis of quality.
Finally, during the course students will gain 11 CFU from any course of their choice offered by the University of Milan.

Obiezione di coscienza

The use of animals for teaching purposes is not allowed by law, but can be included in the experimental work performed for thesis preparation. According to Italian law Act No. 413 of October 12, 1993, students have the incontestable right to conscientiously object to participate in any experimental activity using animals. In this case, the Faculty will suggest alternative research projects to ensure degree completion.

Area didattica

Lectures will be held in the educational center of the European Institute of Oncology. Laboratory activities will be held in the research and clinical laboratories of institutions represented in the Department of Oncology and Hemato-oncology of the University of Milan.

Tutorato

Students will be assigned a tutor upon admission to the course. Tutors will provide students with academic advice, guidance on their course and thesis choices and, if requested, personal advice.

Prove di lingua / Informatica

To obtain the degree, those who do not hold an Italian high school diploma or degree must demonstrate proficiency in Italian at the A2 or higher level per the Common European Framework of Reference for Languages (CEFR). This level must be demonstrated prior to completing the course programme in one of the following ways:
- by submitting a certificate of A2 or higher level issued no more than three years prior to the date of submission. You will find the list of language certificates recognized by the University at: https://www.unimi.it/en/node/349/). The language certificate must be uploaded through the dedicated platform;
- via an entry-level test administrated by SLAM that can be taken only once and is compulsory for all students who do not have a valid language certificate. Those who fail to reach A2 level will have to attend one or more than one 60-hour Italian course(s) geared to their level. Those who do not take the entry-level test or fail to pass the end-of-course test after six attempts will have to obtain language certification privately in order to earn the 3 credits of Additional language skills: Italian.

Obbligo di frequenza

Students are required to attend to at least 75% of teaching activities.
The experimental project leading to the final dissertation is considered mandatory for the Master Degree.

Modalità di valutazione del profitto

Each course is followed by an exam, usually a written or an oral test (or a combination). Course exams must be passed, with grades calculated on a 30-point scale, to obtain course credits, with 18/30 being the minimum pass grade. Credits for a course are only granted upon passing the corresponding exam. Courses can be taught by more than one instructor: in this case, only one lecturer will be responsible for the final assessment of the student.

https://bo.cdl.unimi.it/en/study/exams

Formulazione e presentazione piano di studi

https://bo.cdl.unimi.it/en/study-plan-submission

Caratteristiche della prova finale

The final exam consists of the presentation and discussion of an experimental thesis based on data obtained by the student in a research or clinical omics laboratory. The thesis will be elaborated under the supervision of a Faculty member of the Biomedical Omics Master Program with the collaboration of the tutor. A committee of 5 Faculty members will evaluate the thesis dissertation and assign a score of maximum 10 points. The final grade will derive from the weighted average of the grades in the lecture courses, calculated on a scale of 110, to which the points of the final dissertation will be added.

Orario lezioni

https://bo.cdl.unimi.it/en/study/course-timetable

ESPERIENZA DI STUDIO ALL'ESTERO NELL'AMBITO DEL PERCORSO FORMATIVO

The University of Milan supports international mobility by providing its students with the opportunity to spend study and internship periods abroad. It is a unique chance to enrich your educational path in a new exciting environment.
The agreements entered into by the University with over 300 universities from the 27 EU member countries under the European Erasmus+ programme allow regularly enrolled students to carry out part of their studies at one of the partner universities or to undertake internships at companies, training and research centres and other organisations.
Similar international mobility opportunities are provided outside Europe, through agreements with a number of prestigious institutions.
The University of Milan is a member of the 4EU+ European University Alliance that brings together eight public multidisciplinary universities: University of Milan, Charles University of Prague, Heidelberg University, Paris-Panthéon-Assas University, Sorbonne University of Paris, University of Copenhagen, University of Geneva, and University of Warsaw. The 4EU+ Alliance offers integrated educational pathways and programmes to promote the international mobility of students (physical, blended and virtual).

Modalità di partecipazione ai programmi di mobilità - mobilità Erasmus

The students of the University of Milan can participate in mobility programmes, through a public selection procedure.
Ad hoc commissions will evaluate:
- Academic career
- the candidate's proposed study programme abroad
- his/her foreign language proficiency
- the reasons behind his/her application

Call for applications and informative meetings
The public selection for Erasmus+ mobility for study generally begins around February each year with the publication of a call for applications specifying destinations and requirements. Regarding the Erasmus+ Mobility for Traineeship, the University of Milan usually publishes two calls a year enabling students to choose a destination defined by an inter-institutional agreement or to find a traineeship position on their own.

The University organises informative meetings to illustrate mobility opportunities and rules for participation.

Erasmus+ scholarship
The European Union grants the winners of the Erasmus+ programme selection a scholarship to contribute to their mobility costs, which may be supplemented by the University funding for disadvantaged students.

Language courses
Students who pass the selections for mobility programmes can benefit from intensive foreign language courses offered each year by the University Language Centre (SLAM).
https://www.unimi.it/en/node/8/

Learn more at https://www.unimi.it/en/node/274/

For assistance, please contact:
International Mobility Office
Via Santa Sofia 9 (second floor)
Tel. 02 503 13501-12589-13495-13502
Contacts: InformaStudenti;
Student Desk booking through InformaStudenti

MODALITA' DI ACCESSO: 1° ANNO LIBERO CON VALUTAZIONE DEI REQUISITI DI ACCESSO

Link utili per immatricolazione

https://bo.cdl.unimi.it/en/enrolment

Istruzioni operative

Only candidates who are assigned a score equal to or above 60/100 by the evaluation committee may enroll in the Biomedicl Omics course. Call and deadlines for registration will be indicated at https://bo.cdl.unimi.it/en/enrolment

N° posti riservati a studenti extracomunitari non soggiornanti in Italia

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1° ANNO DI CORSO Attività formative obbligatorie

Erogazione	Attività formativa	Modulo/Unità didattica	Cfu	Settore
annuale	Practical laboratory activities		6	NA
1 semestre	Genomics and epigenomics (tot. cfu:12)	Genomics	6	(1) BIO/10,

				(1) BIO/11, (4) MED/04
		Epigenomics	6	(1) BIO/10, (4) BIO/11, (1) MED/04
1 semestre	High-throughput screenings		6	(3) BIO/11, (3) MED/04
1 semestre	Proteomics		6	BIO/10
1 semestre	Radiomics		6	(1) MED/04, (5) MED/36
2 semestre	Computational approaches for omics data		12	(6) ING-INF/05, (6) INF/01
2 semestre	Legislation, management and technology transfer (tot. cfu:12)	Legislation and technology transfer	6	MED/43
		Laboratory management	6	MED/46
		Totale CFU obbligatori	60	

2° ANNO DI CORSO (da attivare a partire dall'a.a. 2026/27) Attività formative obbligatorie

Erogazione	Attività formativa	Modulo/Unità didattica	Cfu	Settore
1 semestre	Clinical omics		6	(2) MED/15, (2) MED/11, (2) MED/06
1 semestre	Ethics and decision-making		6	M-PSI/01
1 semestre	Experimental design		6	(2) BIO/11, (2) MED/04, (2) BIO/13
1 semestre	Omics in diagnostics		6	(4) MED/03, (2) MED/08
		Totale CFU obbligatori	24	

Attività a scelta

11 CFU from courses of their choice offered by the University of Milan during the second year.

annuale	Additional Language Skills: Italian		3	NA

Attività conclusive

	Final exam		25	NA
		Totale CFU obbligatori	25	