



**UNIVERSITA' DEGLI STUDI DI MILANO**  
**PROGRAMME DESCRIPTION - ACADEMIC YEAR 2026/27**  
**MASTER DEGREE**  
**VETERINARY BIOTECHNOLOGY SCIENCES (Classe LM-9 R)**  
**Enrolled in 2026/2027 academic year**

### HEADING

<b>Degree classification - Denomination and code:</b>	LM-9 R
<b>Degree title:</b>	Dottore Magistrale
<b>Curricula currently available:</b>	GAMETES, CELLS, TISSUES: APPLICATIONS FOR REPRODUCTION AND THERAPY / ADVANCED TECHNIQUES FOR DISEASE CONTROL AND BIOSAFETY
<b>Length of course:</b>	2 years
<b>Credits required for admission:</b>	180
<b>Total number of credits required to complete programme:</b>	120
<b>Years of course currently available:</b>	1st
<b>Access procedures:</b>	Open, subject to entry requirements
<b>Course code:</b>	HBA

### PERSONS/ROLES

#### Head of Study Programme

Prof. Michele Mortarino

#### Tutors - Faculty

Tutor per l'orientamento: Prof.sa Laretta Turin, Prof. Michele Mortarino

#### Degree Course website

<https://biotecnologiaveterinaria.cdl.unimi.it/it>

La segreteria è aperta al pubblico previo appuntamento tramite il servizio informastudenti nei giorni: Mercoledì 9:00 - 12:00 tramite piattaforma Teams Giovedì 13:00 - 15:00 in presenza <https://www.unimi.it/it/studiare/servizi-gli-studenti/segreterie-informastudenti>

### CHARACTERISTICS OF DEGREE PROGRAMME

#### General and specific learning objectives

The Master's Degree program in Veterinary Biotechnological Sciences aims to train graduates with advanced abilities in developing scientific methodologies, who are capable of coordinating study and research projects at both national and international levels in full compliance with regulations and with ethical and bioethical considerations, and who, above all, possess in-depth specialized knowledge in the fields of biotechnology applied to veterinary sciences.

#### Expected learning outcomes

The degree program aims to provide graduates with theoretical, methodological, and applied knowledge, as well as to develop understanding skills, independent judgment, communication abilities, and learning capacity. These competencies may be applied to research in the health sector and in other interdisciplinary socio-economic fields, such as nutrition and food safety, animal pathology, epidemiology and diagnostics, veterinary microbiology and immunology, infectious and parasitic diseases, zoonoses, veterinary pharmacology and toxicology, animal production and reproduction (including assisted reproduction), genomics, genetic improvement and biodiversity conservation, statistics, and data science applied to omics sciences.

Graduates with a Master's Degree in Veterinary Biotechnological Sciences will be able to:

- develop cellular models and experimental animal models in the biomedical field for scientific and technological research, as well as for animal production and reproduction;
- apply diagnostic techniques in veterinary medicine, contribute to animal biodiversity conservation through targeted technologies for analyzing genome structure and function, genetic selection and germplasm preservation, and protect human health through the control of the safety of foods of animal origin and the monitoring of zoonotic diseases;
- understand bioethical regulations and evaluate the ethical and social impact of scientific innovations resulting from biotechnological research, not only in the animal field;
- acquire knowledge of business management and product marketing aspects related to research and development activities in the pharmaceutical industry and in the food production and processing industry for both human and animal consumption;
- design and conduct studies and research in the specific fields of veterinary biotechnology and in related areas of study and

research not strictly limited to the animal field, including comparative and translational research, taking responsibility for projects and research structures;

- communicate and disseminate newly acquired knowledge effectively and unambiguously, including its implications;
- use English, in addition to Italian, both in written and spoken form, in study, research, and communication activities, employing the appropriate disciplinary terminology.

### **Professional profile and employment opportunities**

Graduates with a Master's Degree in Veterinary Biotechnological Sciences will be able to carry out scientific research and technological development activities in the following areas:

- preventive and therapeutic fields, with particular focus on the development and testing of innovative products applied to animal pathology; the use of new methodological approaches in the pharmacological and toxicological fields; and the use of animal models for biomedical studies and cell therapy;
- design and production, particularly in relation to patents in the health sector;
- diagnostics, through the management of molecular technologies and cellular biotechnologies applied to the health sector, animal selection, comparative, translational, and environmental research;
- management and welfare of classical and innovative animal models, in relation to biotechnology-based markers;
- quality control of foods of animal origin and animal feed;
  
- technological design and research for the selection and management of animal species;
- animal production and reproduction;
- preservation of animal biodiversity and protection of species at risk of extinction;
- technical and scientific information and dissemination;
- consultancy activities in the field of bio- and nanotechnologies;
- Assessment and monitoring of environmental safety.

These activities may be carried out in:

- Universities;
- Research institutions and public bodies (such as the National Research Council ? CNR, the National Institute of Health ? Istituto Superiore di Sanità, Experimental Zooprophyllactic Institutes, organizations of the National Health Service, the National Environmental Agency, etc.);
- Pharmaceutical, diagnostic, and reproductive industries, as well as biotechnology and reproduction laboratories;
- Food and feed industries, including food processing industries, with a biotechnological focus;
- Public and private institutions and laboratories involved in: pre-clinical service activities in the medical and veterinary fields, technical and scientific communication and dissemination, quality control management, clinical monitoring, regulatory affairs, and the management and creation of biotechnology enterprises in both the public and private sectors.

## **EXPERIENCE OF STUDY ABROAD AS PART OF THE TRAINING PROGRAM**

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).

### **How to participate in Erasmus mobility programs**

How to participate in Erasmus+ mobility programmes

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

<b>1st COURSE YEAR Core/compulsory courses/activities common to all curricula</b>		
<b>Learning activity</b>	<b>Ects</b>	<b>Sector</b>
Biotechnologies: experimental models in research	12	(4) MVET-04/A, (5) AGRI-09/B, (3) AGRI-09/D
Cellular communication and signal transduction	10	(6) BIOS-07/A, (4) BIOS-06/A
EPIDEMIOLOGY, BIOSTATISTICS AND BIOINFORMATICS	8	(3) AGRI-09/A, (5) MVET-03/A
Etiopathogenesis of hereditary and parasitic diseases	6	(3) AGRI-09/A, (3) MVET-03/B
Microbiologia molecolare	10	(4) MEDS-02/A, (3) BIOS-15/A, (3) MEDS-03/A
Morphological and molecular basis of the Central Nervous System and its Pathologies	8	(3) MVET-02/A, (5) MVET-01/A
Omics	10	(7) BIOS-07/A, (3) BIOS-14/A
	Total compulsory credits	64
<b>Elective courses common to all curricula</b>		
<b>MANDATORY ACTIVITIES COMMON TO ALL CURRICULA.</b>		
<b>The student has to obtain 3 cfu as languages skills</b>		
<b>2nd COURSE YEAR (available as of academic year 2027/28) Core/compulsory courses/activities common to all curricula</b>		
<b>Learning activity</b>	<b>Ects</b>	<b>Sector</b>
Final examination	19	NN
	Total compulsory credits	19
<b>Elective courses common to all curricula</b>		
<b>In the II year, integrated courses will be activated courses (eight credits) aimed to offer students the opportunity to further deepen preparation in specific areas of Biotechnological Veterinary Sciences and can be chosen by the students. The acquisition of the eight CFU is subject to passing the related tests by the students, with the vote of thirty.</b>		
Anti-Aging: biotechnological comparative approaches	8	(2) MVET-02/A, (1) BIOS-07/A, (5) MVET-01/A
Biobanking	8	(3) MVET-05/B, (5) MVET-05/A
Biotechnological diagnostic tools into the clinical medicine of dog and cat	8	(2) BIOS-09/A, (3) MVET-04/B, (3) MVET-01/A
Biotechnological innovation and regulatory challenges of novel food and feed ingredients	8	(6) AGRI-09/B, (2)

		GIUR-05/A
Biotechnologies and Ai in insect Bioconversion for premium	8	(6) AGRI-09/B, (2) BIOS-07/A
Environmental stress and food chain: molecular approaches	8	(2) MVET-02/B, (2) AGRI-09/C, (2) BIOS-07/A, (2) MVET-03/B
Exploring Core Facilities, a new paradigm in the european universities	6	(1) BIOS-02/A, (1) CHEM-05/A, (2) BIOS-07/A, (1) MATH-03/B, (1) CHEM-03/A
From 3D-culture and 3D-printing to organoids	8	(3) AGRI-09/B, (2) MVET-05/A, (3) MVET-01/A
Molecular pathology and parasitology	8	(6) MVET-02/A, (2) MVET-03/B
Next Generation Vaccinology: Science, Strategies and Golobal Health	8	(2) AGRI-09/B, (6) MVET-03/A

### ACTIVE CURRICULA LIST

GAMETES, CELLS, TISSUES: APPLICATIONS FOR REPRODUCTION AND THERAPY Course years currently available: 1st  
 ADVANCED TECHNIQUES FOR DISEASE CONTROL AND BIOSAFETY Course years currently available: 1st

#### CURRICULUM: [HBA-A] GAMETES, CELLS, TISSUES: APPLICATIONS FOR REPRODUCTION AND THERAPY

### 2nd COURSE YEAR (available as of academic year 2027/28) Core/compulsory courses/activities Curriculum-specific features GAMETES, CELLS, TISSUES: APPLICATIONS FOR REPRODUCTION AND THERAPY

Learning activity	Ects	Sector
Biotechnologies applied to Reproduction, Development and Regenerative Medicine	12	(6) MVET-05/B, (6) MVET-01/A
Functional genomics and the molecular basis of differentiation	8	(4) AGRI-09/A, (4) MVET-03/B
In Vitro Model Technologies	6	(3) MVET-04/A, (1) MVET-01/A, (2) MVET-01/B
	Total compulsory credits	26

#### CURRICULUM: [HBA-B] ADVANCED TECHNIQUES FOR DISEASE CONTROL AND BIOSAFETY

### 2nd COURSE YEAR (available as of academic year 2027/28) Core/compulsory courses/activities Curriculum-specific features ADVANCED TECHNIQUES FOR DISEASE CONTROL AND BIOSAFETY

Learning activity	Ects	Sector
From cell to farm: methods and technologies applied to animal nutrition an dood quality	10	(5) AGRI-09/C, (5) AGRI-09/B
Molecular Virology	8	(3) MVET-02/A, (5) MVET-03/A
Research strategies and methodologies applied to disease study and control	8	(5) MVET-03/B, (3) MVET-03/A
	Total compulsory credits	26