UNIVERSITA' DEGLI STUDI DI MILANO
PROGRAMME DESCRIPTION - ACADEMIC YEAR 2019/20
MASTER DEGREE
Veterinary Biotechnology Sciences (Classe LM-9)
Enrolled from 2016/2017 academic year

HEADING	
Degree classification - Denomination and code:	LM-9 Pharmaceutical, veterinary and medical biotechnologies
Degree title:	Dottore Magistrale
Curricula currently available:	Gametes, cells, tissues: applications for reproduction and therapy / Advanced techniques for disease control and biosafety
Length of course:	2 years
Credits required for admission:	180
Total number of credits required to complete programme:	120
Years of course currently available:	1st , 2nd
Access procedures:	Open, subject to entry requirements
Course code:	H52

PERSONS/ROLES

Head of Interdepartmental Study Programme

prof.ssa Gabriella Tedeschi

Tutors - Faculty

Prof.ssa Gabriella Tedeschi, Prof.ssa Antonella Baldi, Prof.ssa Federica Cheli, Prof. Fabio Luzi, Prof.ssa Tiziana Brevini, Prof.ssa Lauretta Turin, Prof. Luciano Pinotti, Prof.ssa Chiara Bazzocchi.

Degree Course website

https://www.unimi.it/it/node/359/

Via dell'Università, 6 Phone 02 503134200 La segreteria riceve su appuntamento tramite sevizio infostudente (http://www.unimi.it/studenti/segreterie/773.htm) nei seguenti orari: Martedì h 13:00-15:00 Mercoledì h. 9:00-12:00 Giovedì h. 13:00-15:00 http://www.unimi.it/studenti/segreterie/773.htm

http://www.unimi.it/studenti/matricole/77648.htm

CHARACTERISTICS OF DEGREE PROGRAMME

General and specific learning objectives

To provide the graduating students with:

a) an adequate training to develop scientific methodologies, to coordinate national and international research activities

b) the expertise in the fields of veterinary biotechnologies, including veterinary microbiology and immunology, animal pathology, diagnostics, infectious and parasitic diseases, zoonosis, pharmacology and toxicology, animals productions and reproduction, genetic improvement and biodiversity preservation, animal nutrition and food safety, development of animal models for biomedical studies, as well as the main rules regulating veterinary biotechnology.

Expected learning outcomes

Following what suggested by the Dublin Descriptors, the Master Course of Veterinary Biotechnological Sciences will provide the graduated with the following expertise:

Knowledge and understanding

The graduated in Master course of Veterinary Biotechnological Sciences are supposed to have acquired the theoretical and practical knowledge in the field of biotechnologies applied to veterinary medicine during their bachelor studentship. These qualifications include: molecular diagnostics, the preservation of animal biodiversity by means of applied genetics, the control of human health through the control of the safety of food from animal origin, the control of zoonosis, the development of animal models for human diseases, the study of techniques focused on animal productions and animal reproduction. The graduated in Master course of Veterinary Biotechnological Sciences will integrate this knowledge with those acquired during the present master study, improving their capability to apply their knowledge to multidisciplinary topics. The teaching program will also take advantage of seminars and workshops, provided by experts from different disciplines, who will discuss the last updates in their studying areas.

Applying knowledge and understanding

The graduated in the Master course of Veterinary Biotechnological Sciences will apply their knowledge to specific areas in

the field of veterinary biotechnology, such animal nutrition and food safety, animal diseases and diagnostics in the field of pathology, microbiology and immunology, infectious and parasite diseases, zoonosis, veterinary pharmacology and toxicology, animal production and reproduction, genetic improvement and preservation of biodiversity, development of animal models, management and marketing techniques related to R&D in an industrial frame.

Making judgements

The graduated in the Master course of Veterinary Biotechnological Sciences will develop a skill in making judgments to design and carry out investigations in veterinary and animal science biotechnologies, and close fields as well. Students will be exposed to seminars and workshops aimed at developing this judgment making capability. The final part of the student career will be devoted to the preparation of an experimental master thesis, which might also be carried out in external research laboratories, In Italy or in other countries.

Communication

The graduated in the Master course of Veterinary Biotechnological Sciences will be able to communicate with their peers, the larger scholarly community and with society in general about the area of veterinary biotechnology and in close disciplines to specialist and non-specialist audiences clearly and unambiguously. Their communication ability will be verified at the end of the course, though the evaluation of their master thesis presentation and discussion.

Lifelong learning skills

The graduated in the Master course of Veterinary Biotechnological Sciences will acquire the ability to improve the knowledge in the field of veterinary biotechnology and close disciplines, not limited to the field of animal sciences. The learning skills will be verified through seminars, individual tutoring and the writing of the thesis.

Professional profile and employment opportunities

The graduated in the Master course of Veterinary Biotechnological Sciences will find his/her ideal employment profile in the following R&D environments:

• Universities
• Public and private research institutions.
• Pharmaceutical, diagnostic and biotechnological companies
• Food and feed processing companies
• The graduated in the Master course of Veterinary Biotechnological Sciences will also find his/her employment in the management function of Quality control, Clinical and pre-clinical monitoring in the veterinary and human medicine fields, scientific information and sale representative activities, Management of animal breeding and genetic selection activities, control quality in feed and food preparation industries, environmental safety,

Notes

In order to get their degree, students are required to certify their knowledge of the English language at the B2 level. This level can be certified in one of the following ways:

· By submitting their language certificate, taken no more than 3 years before its submittal and attesting a B2 o higher level (for the list of the language certificates which are accepted by the University of Milan, please refer to the website: http://www.unimi.it/studenti/100312.htm).

Students can submit their language certificate during the immatriculation procedure or send it to the Language Centre of the University of Milan (SLAM) via the Infostudente service.

· By sitting the placement test run by SLAM, during the first year exclusively, from September to December. Should they not pass the Placement Test, students will have to attend the English language course organized by SLAM. All students who do not have a valid language certificate must sit the Placement Test. Those students who do not sit the Placement test by December or do not pass the end of course test in one of the 6 attempts granted will have to get a language certificate outside the University of Milan within their degree.

EXPERIENCE OF STUDY ABROAD AS PART OF THE TRAINING PROGRAM

The University of Milan supports the international mobility of its students, offering them the opportunity to spend periods of study and training abroad, a unique opportunity to enrich their curriculum in an international context.

Study and internships abroad

Students of Veterinary Biotechnological Sciences have the opportunity to spend a term (from 3 to 12 months) in the universities with whom the School has developed bi-lateral agreement, which for 2015-2016 Academic Year include The University of Warmia and Mazury, Oltzyn (Poland), The university of Bonn (Germany), The Autonomous University of Barcelona (Spain), The University of Ljubljana (Slovenia) and the University of Rijeka (Croatia). It is possible to combine courses with a graduating thesis stage, provided that an Internal Tutor (Italian) and external Tutor (from the country where the student will spend his Erasmus + period) are available. ECTS will be acknowledged following the learning agreement signed, as included by bi-lateral agreement between Universities.

The Program of Veterinary Biotechnological Sciences also offers the opportunity for a traineeship regulated by Erasmus + Traineeship program (former Erasmus placement). The program is activated in the frame of a scientific cooperation between a researcher group belonging to the School and others from foreign institution. Erasmus + Traineeship is financed by scholarship from the University of Milano.

How to participate in Erasmus mobility programs

To gain access to mobility programs for study purposes, lasting 3-12 months, the enrolled students of the University of Milan must attend a public selection that starts usually around the month of February each year through the presentation of specific competition announcements, which contain information on available destinations, respective duration of the mobility, requirements and deadlines for submitting the online application.

The selection, aimed at evaluating the proposed study abroad program of the candidate, knowledge of a foreign language, especially when this is a preferential requirement, and the motivations behind the request, is performed by specially constituted commissions.

Each year, before the expiry of the competition announcements, the University organises information sessions for the specific study course or groups of study courses, in order to illustrate to students the opportunities and participation rules.

To finance stays abroad under the Erasmus + program, the European Union assigns to the selected students a scholarship that - while not covering the full cost of living abroad - is a useful contribution for additional costs as travel costs or greater cost of living in the country of destination.

The monthly amount of the communitarian scholarship is established annually at national level; additional contributions may be provided to students with disabilities.

In order to enable students in economic disadvantaged conditions to participate in Erasmus+ program, the University of Milan assigns further additional contributions; amount of this contributions and criteria for assigning them are established from year to year.

The University of Milan promotes the linguistic preparation of students selected for mobility programs, organising every year intensive courses in the following languages: English, French, German and Spanish.

The University in order to facilitate the organisation of the stay abroad and to guide students in choosing their destination offers a specific support service.

More information in Italian are available on www.unimi.it > Studenti > Studiare all¿estero > Erasmus+

For assistance please contact:
Ufficio Accordi e relazioni internazionali
via Festa del Perdono 7 (ground floor)
Tel. 02 503 13501-12589-13495-13502
Fax 02 503 13503
E-mail: mobility.out@unimi.it
Desk opening hour: Monday-friday 9 - 12

1st COURSE YEAR Core/compulsory courses/activities common to all curricula

Learning activity	Ects	Sector
Anatomical bases and molecular networks in the Central Nervous system and its pathologies	8	VET/01, VET/03
Biotechnologies: experimental models in research	12	(4) VET/07, (5) AGR/18, (3) AGR/20
Cellular communication and signal transduction	10	BIO/10, BIO/09
Ethiopathogenesis of hereditary and parasitic diseases	6	VET/06, AGR/17
Molecular epidemiology	5	VET/05
Molecular Microbiology	10	MED/04, BIO/19, MED/07
Omics	10	BIO/10, BIO/18
Total compulsory credits	61	

2nd COURSE YEAR Elective courses for all curricula

In the II year, integrated courses will be activated into modules up to the amount of expected credits (eight credits). These integrated courses are 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. For more information consult the university website www.unimi.it and www.veterinaria.unimi.it.

Biobanking	8	(5) VET/09, (3)

			VET/10
Biomarkers and immunoassays in animal health and nutrition		8	(2) AGR/18, (2) BIO/10, (4) VET/05
BIOTECHNOLOGICAL DIAGNOSTIC TOOLS INTO THE CLINICAL MEDICINE OF DOG AND CAT		8	(3) VET/08, (3) VET/01, (2) BIO/12
Biotechnologies for innovation and sustainability of animal health and production		8	(3) VET/07, (3) AGR/18, (2) VET/06
FROM 3D-CULTURE AND 3D-PRINTING TO ORGANOIDS		8	(3) AGR/18, (2) VET/09, (3) VET/01
IMAGING TECHNIQUES IN BIO-MEDICAL RESEARCH		8	(2) BIO/10, (6) VET/01
MOLECULAR AND IMMUNOLOGICAL INTERACTIONS IN PARASITOLOGY		8	(2) BIO/10, (6) VET/06
MOLECULAR PATHOLOGY AND PARASITOLOGY		8	(2) VET/06, (6) VET/03
NANOMATERIALS: APPLICATIONS AND EFFECTS		8	(3) VET/07, (2) VET/02, (3) VET/05
VACCINOLOGY		8	(2) AGR/18, (6) VET/05
Further elective courses common to all curricula			
MANDATORY ACTIVITIES COMMON TO ALL CURRICULA. **The student has to obtein 4 cfu as indicated below:** **- n. 2 cfu for further training activities related to stage, orientation and computer skills** **- n. 2 cfu for further languages skills**			
English proficiency B2 (2 ECTS)		2	L-LIN/12
End of course requirements common to all curricula			
Final examination		21	NA
	Total compulsory credits	21	

ACTIVE CURRICULA LIST

Gametes, cells, tissues: applications for reproduction and therapy Course years currently available: 1st , 2nd
Advanced techniques for disease control and biosafety Course years currently available: 1st , 2nd

CURRICULUM: [H52-D] Gametes, cells, tissues: applications for reproduction and therapy

2nd COURSE YEAR Core/compulsory courses/activities Curriculum-specific features Gametes, cells, tissues: applications for reproduction and therapy			
Learning activity		**Ects**	**Sector**
Biotechnology of reproduction		6	VET/10
Cellular regeneration techniques		7	VET/01
Functional genomics and the molecular basis of differentiation		8	VET/06, AGR/17
In Vitro Model Technologies		5	VET/07, VET/02
	Total compulsory credits	26	

CURRICULUM: [H52-E] Advanced techniques for disease control and biosafety

2nd COURSE YEAR Core/compulsory courses/activities Curriculum-specific features Advanced techniques for disease control and biosafety			
Learning activity		**Ects**	**Sector**
Biotechnology applied to animal health and production		5	AGR/19
Experimental Nutrition		5	AGR/18
Molecular Virology		8	VET/03, VET/05
Research strategies and methodologies applied to disease study and control		8	(5) VET/06, (3) VET/05
	Total compulsory credits	26	