

UNIVERSITY OF PERUGIA

**MASTER'S DEGREE IN MEDICAL, VETERINARY OR FORENSIC
BIOTECHNOLOGICAL SCIENCES**

**CLASS LM-9
IN ACCORDANCE WITH THE ITALIAN GOVERNMENT
MINISTERIAL DECREE D.M. 270/2004**

REGULATIONS FOR THE 2022-2023 ACADEMIC YEAR

**ARTICLE 1
General Information**

- University: University of Perugia
- Reference Departments: Medicine and Surgery (course organizer), Veterinary Medicine and Law
- Course Name: Master's Degree in Medical, Veterinary or Forensic Biotechnology
- Class: LM-9 Medical, Veterinary and Pharmaceutical Biotechnology
- Course Language: English
- Degree: MSc in Medical, Veterinary or Forensic Biotechnology
- Where: Lecture halls in Sant'Andrea delle Fratte and San Costanzo (Perugia)
- Web-site: http://www.med.unipg.it/ccl/Biotechnological_Sciences/

**ARTICLE 2
Professional Objectives and MSc Course Regulations**

1. Specific Professional Objectives

This MSc in Medical, Veterinary or Forensic Biotechnology will provide top-level skills and competence in the science, technology and production that underlie applied biotechnology programming and development in the fields of human health, veterinary medicine and forensic science.

Its specific objectives are to provide students with knowledge in the following areas:

- basic science and morphology of the human body, focusing on the molecular and cellular biology of organs and tissues;
- the main human diseases, particularly their pathogenic cellular and molecular mechanisms
- the principal laboratory methods that are used in cellular and molecular biotechnology to prevent, diagnose and treat human disease, both clinically and experimentally;
- how to design and apply biotechnological strategies to prevent, diagnose and treat disease in humans in teamwork with a physician or surgeon;
- basic know-how for setting up projects for, and analysis of, innovative bio-pharmaceutical agents, diagnostic tests and vaccines;
- specific diagnostic investigations to identify interactions between extraneous microbes and the human body;
- molecular disease mechanisms in-depth and advanced molecular diagnostic systems;
- current legislation and ethical issues in the use of biotechnology;

- graduates with a biotechnology background as applied to veterinary medicine will focus on: animal production and reproduction, food safety, disease in animals, diagnostics, veterinary microbiology and immunology, infectious and parasite-related diseases, zoonoses, know-how for improving biodiversity genetics and conservation, developing and using animal models for biomedical studies, current legislation in areas of interest to veterinary biotechnology.

- graduates with a background in medicine and law will focus on: technological skills to flank their forensic and investigative knowledge so they will competently interact as experts with lawyers and public prosecutors during investigations and in court.

Although an Inter-Departmental MSc, most lectures and activities will be held in the Dept. of Medicine. They will be the same for all students in the first year and differentiated according to the student's background and focus in the second.

Year 1: All students will study the human body and the principal cellular and molecular pathogenic mechanisms of human diseases. They will acquire knowledge of advanced molecular biology techniques and their applications in the fields of the prevention, diagnosis and treatment of human diseases. Teaching is based on formal lectures and practical laboratories. Subjects include Genetics, Molecular Biology, Physiology, Pathology, Anatomy, Microbiology and Pharmacology.

Year II: Students will concentrate on specific disciplines for one of the following:

- a) Medicine and advanced molecular diagnostics. Subjects include Hematological Diseases, Cardiovascular Diseases, Oncology, Infectious Diseases
- b) Veterinary Medicine, focusing on animal production and reproduction, veterinary diseases and diagnostics, development and use of animal models for bio-medical studies. Subjects include Veterinary Physiology, Parasitology and Parasite-borne Diseases in Animals, Infectious diseases in Pets, Veterinary Gynecology and Obstetrics, Special Animal Husbandry, Internal Veterinary Medicine, General Animal Husbandry and Genetic Improvements (prevalently animal oriented).
- c) Forensic medicine focusing on legal medicine, law and criminology. Subjects include Legal Medicine, Private Law, Criminal Law, Criminal Law Procedures (prevalently forensics oriented)

A wide range of mainly practical optional courses will provide students with the opportunities for in-depth studies and increased skills and proficiencies.

The MSc degree course also includes a training period to be spent in public or private specialized institutes in Italy or abroad. Students will write and discuss a thesis in their final examination.

2. Expected Outcomes

a) KNOWLEDGE AND UNDERSTANDING

Graduates will have in-depth knowledge of a wide range of biotechnological skills, which will reinforce what they learnt in their BSc course. They will be able to understand, manage, develop and apply advanced new procedures in the settings of medical and

veterinary diagnostics, forensic science and criminology. The course objective will be achieved as students will acquire in-depth knowledge in the disciplines in each sector, skills in advanced biotechnology techniques and procedures as well as further competence in the fields of Medicine, Veterinary Medicine and Law.

Specifically students will have to know and understand:

- how to use the principal methodologies in medical and veterinary biotechnology and their application in the fields of forensics and criminology;
- the fundamentals of the standard operating procedures underlying industrial-scale production of biotechnological products for gene therapy and cell therapy, and how to formulate bio-pharmacological agents;
- how to use specific techniques and technologies that are used in molecular modelling and the design and development of innovative pharmacological agents;
- basic disease processes in humans and animals, with particular reference to cellular and molecular pathogenic mechanisms;

They will be able to:

- recognize acquired or congenital conditions which may be suitable candidates for biotechnology-based treatment;
- design or apply, biotechnology-based diagnostic and therapeutic strategies in teamwork with a doctor or veterinary surgeon, in their relative areas of competence;
- intervene to optimize animal production and reproduction;
- use specific diagnostic tests to identify interactions between extraneous microbes and humans or animals;
- display a basic knowledge and understanding of the legal setting.

Students will progress in knowledge and understanding by means of:

- a) Formal lectures; b) practical laboratories; c) recommended text-books; d) audio-visual material and hypertexts; and e) computerized simulation systems.
- Individual students may also have recourse to tutors.

Examinations will include practical tests and viva voce discussions, which may sometimes be preceded by written examinations and class tests.

b) APPLYING KNOWLEDGE AND UNDERSTANDING

Graduates will be able to apply and manage their multi-disciplinary skills in methodologies, technology and scientific instruments and their theory-based knowledge towards problem-solving in the medical, veterinary and legal sectors.

They will be specifically skilled in using and applying:

- the principal techniques of biochemistry, molecular biology, recombinant DNA and molecular diagnostic tests for the prevention, diagnosis and treatment of human diseases, in clinical and experimental settings;
- the principal molecular biology techniques to the fields of forensic medicine, law and justice, criminology;
- essential veterinary biotechnology techniques across many fields, focusing on food safety, diagnosing diseases in animals, veterinary microbiology and immune-biology, managing, marketing research and development in the food production industry for humans and animals.

Graduates will have learnt how to apply their knowledge by attending courses, carrying out supervised laboratory activities and performing specific tasks during training periods.

Progress is assessed in essays, class tests and/or oral presentations on the activities the student has carried out, with a formal examination in each subject and thesis evaluation.

c) **MAKING JUDGEMENTS** Graduates will know how to:

- integrate knowledge and manage complex human and animal biological systems.
- recognize the molecular basis underlying the pathogenesis of the human or animal disease of interest by means of specific diagnostic investigations.
- conduct studies and set up research projects in medical and veterinary biotechnology.
- independently assess the ethical-social impact of advances in science that derive from biotechnological research in medicine and veterinary medicine.
- apply their medical and scientific knowledge to forensic medicine and criminology.
- make independent professional judgements.
- propose solutions to specific problems in their professional fields.
- team work with members of the legal, medical and veterinary professions.
- analyze, manage and interpret data independently from scientific publications.
- generate original, innovative data in a multi-disciplinary approach and perspective.

Independence of judgement will be stimulated and developed throughout the entire course of study, through discussions with lecturers and tutors, and course-work. It will be continually assessed by evaluating the student's aptitude for problem-solving during course activities and ability to work independently on all thesis tasks and activities.

d) **COMMUNICATION SKILLS**

Graduates will be able to communicate clearly and efficiently:

- in speech and in writing, the results of their experiments, analyses and assessments to specialist and non-specialist third parties.
- with diverse professionals in the fields of medicine, veterinary medicine, law and criminology by using common terminology that they learn in a multi-disciplinary setting. This skill will increase the graduate's employment opportunities in diverse professional sectors.
- using informatics and telematics communication systems.

Communication skills will be stimulated by encouraging students to present oral and written reports of individual or group projects, using multi-media electronic equipment and by supplying them with models of oral and written results of research in the fields of medicine, veterinary medicine, law and criminology.

When assessing coursework and particularly the final examination, presentation quality and efficacy will be judged as part of the candidate's overall assessment.

e) **LEARNING SKILLS**

Graduates holding an MSc in Medical, Veterinary or Forensic Biotechnology will be able to:

- plan and organize laboratory work
- advance their knowledge of experimental and diagnostic techniques.
- self-update on the regulations, methods, techniques and instruments that apply to their field, by consulting and studying research publications because constant updating is essential in a field in continuous evolution.
- work to objectives independently and as a team member.

- select and interpret data and information.
- successfully pursue higher learning for the most part independently.
- fully understand and satisfy the demands of the judiciary, and competently present oral and written probatory evidence as they have legal and theoretical knowledge combined with technological skills.

They are able to successfully pursue III level academic studies or enter the workforce, updating their skills in whichever sector they are engaged in, as they have acquired a study method. Learning capacity will be stimulated and developed throughout the MSc course of studies through lectures, specific seminars and workshops, and will be honed as students research their thesis. Learning capacity and critical powers will be assessed through class tests and activities, practical laboratories and seminars. Self-learning abilities will be assessed during thesis presentation and viva voce examinations.

3. Specific Mission of the International MSc in Medical, Veterinary or Forensic Biotechnology

At present, medicine, veterinary medicine and forensic medicine are adopting a “molecular approach” to problem solving and there is a constant demand for professionals who are well-trained and up-dated in biotechnology. Expertise in Medical, Veterinary and Forensic Biotechnology is acquired through knowledge of molecular processes that underlie health and disease, developments in molecular diagnostics, target therapies, animal husbandry, toxicology, forensic genetics and pertinent legislation. This MSc aims at potentiating and expanding knowledge and abilities in the fields by balancing formal lectures, varied activities and practical laboratories, with individual and group learning, training schemes and internships.

4. Study Activities as established by the MSc Regulations are reported as Tables in **Enclosure 1**. They show basic, essential, complementary subjects etc, as divided for Disciplines and Sectors

ARTICLE 3

Professional Profiles and Employment Opportunities

Workplace Function:

Graduates may expect to find employment in state universities or private research Institutes. They will work in mainly biotechnological laboratories focusing on human, veterinary and forensic medicine. They will be able to contribute to the development and production of bio-pharmaceutical agents, diagnostic tests and vaccines. They may be engaged in reproductive processes in the clinical, experimental and zootechnical fields. They may set up and organise bio-informatics databanks. They will be able to share in the acquisition and distribution of scientific and technological information. In teamwork with a doctor or veterinary surgeon they may develop biotechnology-based therapeutic and diagnostic strategies.

If graduates complete III level studies (2nd level MSc or PhD) they will be eligible to enter the workforce as Head of Laboratory in state universities or private research institutes.

They will be able to co-ordinate, manage and administer research development and biotechnological surveillance programs as applied to humans and animals. They will probably focus on the development of pharmaceutical agents and vaccines, bearing in mind ethical, technical, legal and environmental issues and effects.

Workplace Skills:

As graduates will be highly skilled in planning, developing and technically producing biotechnological advances as applied to the fields of human and animal health, they will be able to assume high levels of responsibility in the workplace.

The main skills they acquire during their studies are in the following areas:

- Diagnostics, particularly molecular analytics and biomedical technologies as applied to medicine, veterinary medicine and forensic medicine, toxicology, endocrinology and reproduction (including transgenic animals, molecular probes, cell systems, bio-artificial tissues, cell systems producing biologically active molecules and other advanced bio-health techniques).
- Bio-engineering, particularly in the use of bio-materials and bio-engineered organs or tissues.
- Bio-medical and Animal Experimentation, particularly in the use of in vivo and in vitro models to elucidate disease processes in humans and animals.
- Therapeutics, particularly in the development and testing of innovative pharmaceutical agents (including gene therapy and cell therapy) as applied to human and animal diseases.
- Biotechnology as applied to reproduction.
- Producing and planning patents for the use in human and animal health.

Employment Opportunities:

After passing a professional state examination, graduates are included in the Italian State Registry of Biologists.

They may find employment in the following sectors:

State universities, public and private research institutes, focusing on pre-clinical research and technological development in human and veterinary medicine.

The Italian National Health Service and similar private services.

Biotechnological industries and services.

Pharmaceutical industries and drug surveillance.

Food Industry and Food transformation: research, technological development and laboratory quality controls.

Technical-scientific Information.

Managing quality control.

Environmental protection agencies.

Consultant for Legal and Forensic Medicine agencies.

Diagnostics and Pharmaceutical Industries.

Certifying Agencies.

Italian national and international Regulatory Agencies.

Monitoring clinical experiments.

Patent offices.

Biotech and Genomic Companies.

ARTICLE 4**Teaching in the MSc in Medical, Veterinary or Forensic Biotechnology**

The MSc in Medical, Veterinary or Forensic Biotechnology lasts for 2 years.

To reach established objectives, students need to achieve 120 Credits over 2 years, 30 of which are acquired in activities that are designed to augment professional skills and the others in 13 examinations.

This MSc includes 15 courses over 4 semesters. Four topics are grouped into 2 integrated assignments which receive specific Credits, as decided by the MSc Management Board, which recognized them as essential.

Enclosure 2 illustrates the Study Plan and Teaching Program. It integrates the present MSc Regulations.

Although the Departments of Veterinary and Forensic Medicine fully participate in this MSc, the Department of Medicine hosts it.

The MSc lasts for 2 years. In Year 1 all students attend the same lectures. In Year 2 students choose 1 of the following 3 alternative curricula.

1. Forensics
2. Medicine
3. Veterinary Medicine

To graduate, each student must achieve 120 Credits, with each year of the MSc covering approximately 60 credits. Each Credit corresponds to 25 hours teaching and study for the student.

All teaching activities are conducted in semesters.

Students should choose their course of study upon enrollment, with a reserve option to change as they move from their first to their second year. The study course also includes a training period and thesis presentation for the Final Examination. These activities may be carried out in a state or private specialized research institute, in Italy or abroad.

Credits:

The Credit is the unit of measurement for assessing the student's achievement in each activity that the MSc Regulations prescribe as needed for the MSc in Medical, Veterinary or Forensic Biotechnology.

Each credit corresponds to 25 hours study, 7 of which are usually spent in formal lectures or in theoretical and practical teaching sessions. Each professional upskilling Credit corresponds to 25 hours work in small groups under the supervision of a university lecturer. Each Credit for the Final Examination corresponds to 25 hours of assisted teaching activities.

The 25 hours of study that correspond to each Credit are divided as follow:

- a) formal lectures;
- b) laboratory tutorials;
- c) seminars;
- d) time that the student spends in other activities that are included in the Teaching Regulations;
- e) time that the student spends in individual study.

The present Regulations establish how much time should be reserved for individual study and other individual study activities for each taught course in the MSc.

Students acquire the Credits corresponding to each taught course as they pass the relevant examination.

Taught Courses:

The MSc Regulations define the objectives of each discipline and identify the most suitable form of teaching to achieve them. Activities are divided into taught and integrating courses. When integrated course teaching is carried out by more than one

lecturer, a Course Coordinator is appointed annually by the MSc Management Board.

Forms of Teaching:

Each course is sub-divided as follows for credits and diverse forms of teaching:

- Formal lectures

Formal lectures (henceforth referred to as “lectures”) address a specific topic, have a title, may be delivered in either year 1 or 2 of the MSc program, and are on one of the subjects that make up the MSc curriculum. They are delivered by a University Professor or Researcher, on an established date and at an established time to students who are enrolled in the MSc. Students may be divided into small groups.

- Seminars

Seminars support formal lectures. They may be chaired by more than one lecturer or researcher who belong to diverse disciplines or who have different skills. They are recorded in the Lecture Register. They may involve other universities and may be held as video conferences.

- Tutorials

Tutorials are a form of interactive teaching that are reserved for small groups of students. They are coordinated by a teaching tutor, who assists personally assigned students to acquire knowledge, skills, behavioral patterns, i.e. specific professional competency.

Learning in tutorials is achieved by stimulating problem-solving skills, mobilizing methodological competencies that are needed for problem-solving, decision-making, and intervening directly in practice sessions and/or laboratory internships.

Each tutorial has precise objectives as defined by the MSc Management Board. Student achievement of the objectives will be assessed in the relevant examination.

The MSc Management Board will nominate Tutors from among the University lecturers and researchers in the teaching program.

If lecturers should so propose, the MSc Management Board may nominate on a yearly basis, a well-qualified individual as Lecturer-Tutor in any specific sector.

- Seminars, Tutorial Activities, Single-theme courses, certified attendance at conferences and/or congresses as authorized by the MSc course

- Elective internships or laboratory tutorials in Italy and abroad;

- Professional skilling activities

While learning or even after completed the earning stage, the student must:

- acquire specific professional skills in the fields of medical, veterinary and forensic biotechnology.
- -carry out professional up-skilling activities, at established times, in institutes that have been approved by the MSc Management Board. These activities are worth 18 Credits (12 Credits are for training and 6 for internships).

Training periods are obligatory and constitute a form of tutorial. The student will perform practical tasks so as to simulate professional work skills. Although working largely independently during obligatory training periods, the student will be supervised by a Lecturer-Tutor who will perform the same function as a Tutor during the taught courses. The student’s acquired laboratory skills will be assessed in the final examination of the taught course that organized the training period.

To strengthen contacts between students and the world of work, each student will undertake an internship in a state or private research institute in Italy or abroad that is suitably equipped to provide a professional internship in line with the MSc objectives. Internships will be regulated in an agreement between the Institute and the MSc Management Board. Internships are obligatory for all students, constitute a form of tutorial teaching, are similar to other professional training periods and take place in non-academic, highly professional working environments.

- The Thesis

Twelve Credits are available for research work that is done in university or non-academic state or private research institutions in Italy or abroad with the aim of presenting it as a thesis. This activity is denominated “degree internship”. It is performed outside the hours of official lectures and activities. Permission to perform the work should be requested from the Institute hosting the internship. It should be sent to the MSc Course Secretary together with the Thesis Request Form which can be downloaded from the MSc Website.

Examinations and Assessments:

The MSc Management Board establishes the type and number of examinations that are needed to assess student learning. The Board nominates members of examination committees, as proposed by Course Coordinators.

Examinations may not number more than are established in the Regulations. They may not total more than 12 in number in the 2-year MSc Course.

Student learning may be evaluated by means of training and certification assessments.

Training assessments:

- class tests are designed to monitor learning and teaching efficacy of a specific course content. They have no certification value, are not obligatory and provide no exemption from the course examination, as their only aim is to aid students and assess their progress. Certification Assessments:

- pass/fail tests show students have acquired established skills in training periods.

- formal examinations assess, mark and certify the individual has achieved the overall MSc course objectives.

Other forms of assessment that are often used as the second part of an examination include the:

- viva voce – a question and answer session on the theoretical background to topics that were explored in lectures. The viva voce examination assesses the student’s acquirement of cognitive objectives;

- essay with the same content and objectives as the viva voce;

- written problem-solving tests;

- research presentations that assess the student’s development of independent thought and judgement of topics in the teaching program.

Objective written tests using multiple choice or open answers to questions are strongly recommended for all taught courses. Passing will depend on achieving an established percentage of correct answers, and/or correct answers to threshold questions, as decided by the Examination Committee.

Each lecturer will inform students in detail about course examination modalities at the beginning of the course. Examination information is included in each course description.

Formal examinations are held only at certain times in the academic year, which are known as “examination sessions”. They do not coincide with the lecture semester or with other activities, which could prevent students from sitting for examinations.

Final Examination:

The Final examination is a viva voce discussion of the student’s thesis, which was supervised by a professor or researcher. A second supervisor may also be involved. The thesis may be either non-experimental (“compilativa”) or experimental. The former compiles information from research sources and is designed to illustrate the candidate’s skills in synthesis and communication. The latter presents the results after an original hypothesis is tested in applied biotechnology and assesses the candidate’s independent judgement of topics that are related to specific courses.

ARTICLE 5

Admission requisites and assessment modalities

The MSc course is open to all graduates with a 3-year BA or BSc or any other recognized equivalent qualification. The degree may have been obtained from the University of Perugia (ex Ministerial decree. 270/2004) or from any other university, even from abroad as long as candidates are eligible to attend the MSc.

This MSc course is open to all holders of a university degree in the following subjects:

- BSc L-2 Biotechnology
- BSc L-13 Biology
- BSc L-SNT3 Technical-Health Services – only graduates with a degree as bio-medical laboratory technicians
- MD LM-41 Medicine
- Vet.M.D LM-42 Veterinary Medicine
- BSc L-38 Animal science and animal production

Alternatively, in accordance with ex Ministerial decree 09/1999

- Class 1 Biotechnology
- Class 12 Biology
- Class SNT3 Technical-Health Services – only graduates with a degree as bio-medical laboratory technicians
- Class 46/S Medicine
- Class 47/S Veterinary Medicine
- Class 40 Animal science and animal production

Furthermore, for the enrollment in the MSc course student’s personal preparation needs to be tested. In first instance, a graduation grade above 90/110 is a sufficient indicator for a satisfactory personal preparation. If candidates have the required requisites (curriculum and graduation grade), it will be not necessary to request the authorization for the enrollment (*nulla osta*). If the graduation grade is lower than 90/110, candidates have to perform an interview with a Committee formed by teachers of the first year of the degree which will evaluate if candidates have the required knowledges.

In case of candidates coming from other universities or disciplines, an Admissions Committee, as nominated by The Head of the MSc Management Board, will evaluate their eligibility. A strong background in chemistry, biochemistry, molecular and cellular biology and physiopathology is requested.

For students with moderate curricular gaps, the Admissions Committee may propose an individual up-grading program. The educational debts must be recovered by enrolling in single courses offered in other degree courses at University of Perugia. A student will be formally admitted to the MSc course after successfully completing the assigned up-grading program.

Students can require the recognition of previously acquired ECTS not computed for the achievement of the Degree which gives access to the Master's Degree in Medical, Veterinary or Forensic Biotechnological Sciences.

Similarly, foreign students could be enrolled in the MSc, after the evaluation of their university career, carried out on a case-by-case manner. In details, the Admissions Committee will evaluate the candidate's *curriculum vitae et studiorum* and the individual knowledges, eventually completed by personal interviews or specific and personalized tests. The characteristic of tests will be directly communicated to the students, by the Admissions Committee.

ARTICLE 6

Examination Sessions and Graduation

- Start MSc: 1 October 2022

- Examination Sessions:

1st Semester: Examinations are held in January/February after the end of the semester. Other dates for examination are scheduled for the following June, July and September.

2nd Semester: Examinations are held in June/July after the end of the semester. Other dates for examination are scheduled for the following September.

Any examination committee may decide to hold extra examination sessions (before the Christmas or Easter vacation) i.e. at times when no lessons are being held.

Each examination session will provide the date of the examination, which will be held again after a minimum of two weeks. There will be at least two alternative examination dates in each subject in each examination session

An "off-course" student has attended all lectures, practical and training sessions but has not yet passed all the examinations leading to the final examination or sustained the final examination.

The examination timetable will be established according to criteria for rational use of facilities, for encouraging attendance and in conformity with Article 14 of the University of Perugia's Regulations. It will be posted about a month in advance on the MSc Secretary's notice board and on the MSc webpage <http://www.med.unipg.it/scienzebiotecnologiche/>.

- Graduation and Final Examination:

The Final examination is a viva voce discussion of the student's original thesis which was supervised by a professor or researcher. A second supervisor may also be involved.

Final examinations are held in July (1st session) and October (2nd session). Extra sessions may be held in February and April.

- Lecture Timetable:

The lecture timetable will be established in conformity with Article 14 of the University of Perugia's Regulations on the basis of rational use of facilities and encouraging

attendance. It will be posted with sufficient advance notice of about 1 month before the start of each semester on the MSc Secretary's notice-board and the MSc webpage <http://www.med.unipg.it/scienzebiotecnologiche/>.

ARTICLE 7

Final Examination

The Final Examination is a discussion of original work by the student as presented in a non-experimental or experimental thesis ("tesi compilativa" or "tesi sperimentale") which was supervised by a professor or researcher. A second supervisor may also be involved. Admission criteria to the Final Examination are as follow. The candidate must have:

- attended all Courses and passed all related examinations
- obtained overall 120 Credits in 2 years
- delivered the following documents to the Student Secretariat:
 - a) graduation request to the Chancellor of Perugia University
 - b) a copy of the candidate's thesis in accordance with the University Senate's latest recommendations.

The Final Examination is held in July (1st session) and October (2nd session). Extra sessions may be held in February and April.

A candidate is admitted to the Final Examination if all Credits have been obtained as established by the candidate's study program. Choice of an experimental thesis and conduction of experiments in a university or non-academic, state or private research institution in Italy or abroad in accordance with the MSc regulations must be approved, assisted and supervised by a professor or researcher from the University of Perugia. A second supervisor may also concur with the candidate in the choice of topic and experimental modalities. The decision to opt for an experimental thesis must be made at least 6 months before the date of the Final Examination.

The Final Examination which leads to graduation as a Master of Medical, Veterinary or Forensic Biotechnology is open to the public and consists of a written thesis which is presented orally in front of the examination committee. The final assessment, which is marked on a scale of 110, includes an overall evaluation of the candidate's study curriculum. In calculating the final mark, the examination committee uses the mean of the marks achieved in examinations and activity assessments, as expressed out of 30. Other marks may also be included such as the pass mark in exams validated in other study courses, using the relative Credits for weighing. The examination committee converts the mean into its equivalent out of 110. Up to 7 marks may be added as the score for the Final Examination - 4 for the thesis itself, 1 for its presentation and discussion and 2 for graduation times (2 if the candidate graduates within 2-3 years of starting this MSc, 1 if graduation occurs within 4 years, 0 if the candidate takes more than 4 years to graduate).The examination committee may award 1 mark for the candidate's studies abroad under, for example the Erasmus or Erasmus Traineeship or other similar international programs.

Up to 10 visual aids like slides, transparencies, power point, etc may be used to support understanding of the candidate's presentation. They must contain only graphs, figures, tables and schematic illustrations and no discourse.

ARTICLE 8

Orientation, Tutors

There are 2 types of Tutor:

a) The Advisor of Studies, a professor or researcher who is nominated by the MSc Management Board, may be consulted by the student for suggestions and advice about study progress. Each student will have the same Advisor of Studies for all or part of his/her course of studies. All the professors and researchers who are engaged in teaching the MSc must make themselves available to the Board to act as Advisors of Studies.

b) The Teacher-Tutor holds tutorials, which are a form of teaching, for a small number of assigned students. Each Teacher-Tutor co-ordinates the tutorials with topics in the taught courses as the tutorials share the same objectives. Each Teacher-Tutor may engage in preparing didactic materials for the tutorial.

ARTICLE 9 Switches and Transfers

Switches and transfers from other degree courses

Any Credits the student has achieved in other degree courses at the University of Perugia or in any other Italian University may be validated for the present MSc. They will be judged as to whether or not they are appropriate for the objectives of one or more courses, as described in the MSc Regulations, by a specific Working Committee and the judgement will be approved by the MSc Management Board.

The mark of a validated examination will not be changed. If more than one examination is validated, the mean of the marks will be calculated.

Transfers from other Universities

The request to transfer from any other Italian University must be presented before the deadline on the website announcement www.unipg.it

Credits that were achieved in similar degree courses in other Italian Universities will be validated after assessment of their appropriateness to the MSc study plan.

After approving validation of a certain number of credits, the MSc Management Board will assign the student to Year 1 or 2 of the MSc course, on the basis of the criterion that students should have passed all previous examinations before enrolling in the next year.

Transfers from foreign universities will follow current legal procedures.

ARTICLE 10 The MSc Management Board and its Committees

- The following Committees constitute the MSc in Medical, Veterinary or Forensic Biotechnology:

1. The MSc Management Board (in accordance with Article 45, paragraph 4, Statute of the University of Perugia) includes professors who are heads of courses being taught in the MSc, researchers who conduct support activities for taught courses, and student representatives. In number, student representatives constitute 15% of the professors/researchers, have a 2-year mandate and are elected as established by the Statute of the University of Perugia.

2. The Head of the MSc Management Board, as established by Article 45, paragraph 4,

Statute of the University of Perugia, is elected as established by the University of Perugia Regulations. Candidates may include chair-holders and associate professors who lecture in the MSc. Nominated by the Chancellor of the University of Perugia, the Head of the MSc Management Board has a 3-year mandate which may be consecutively renewed only once. The Head is responsible for the MSc functioning and is the university representative of the degree.

3. The Teaching Committee includes equal numbers of lecturers and students. It monitors activities, teaching quality and services offered to students by MSc and it collaborates with the Joint Teaching Committee in the Interdepartmental School of Medicine.

4. The Working Group includes a sub-group of lecturers who are on the Teaching Committee. It assesses the appropriateness of the objectives of one or more taught courses that are included in the MSc Regulations. It also evaluates Credits achieved by students in other degree courses at the University of Perugia and other Italian universities.

5. The Training Committee includes MSc lecturers. It identifies university or non-academic, state or private research institutions in Italy or abroad that are suitable for providing traineeships or internships in line with the MSc objectives.

6. The Orientation Committee includes representatives from: the MSc Management Board, the Association of State Licensed Biologists, industries whose activities are linked to occupational and professional opportunities provided by the MSc course, the Umbria region, Italy and abroad. The Orientation Committee is a consultant grouping. Every semester, it responds to Teaching Committee requests for information about MSc teaching and training coherence with its objectives and modern workforce needs. The Teaching Committee uses this information to correct aberrations, adjust deviations and introduce innovations.

7. The Quality Control group includes the Head of the MSc Management Board, lecturers, (one of whom is responsible for quality control) and student, technical and administrative staff representatives. It analyses data on student progress, experience, movement towards the workforce and issues review reports, bearing in mind project validity and resource availability by means of:

- a. data monitoring
- b. assessing the efficacy of interventions designed to constitute improvements
- c. planning improvement interventions.

ARTICLE 11

Approving and modifying the regulations

The Head of the MSc Management Board must propose any modification to the regulations which must then be approved by the Board and competent authorities. Modifications reported in Enclosure 2 were approved by a majority on the MSc Management Board. They do not abrogate present Regulations which conform with the current Statute of Perugia University and which will be implemented as indicated by Article 53.