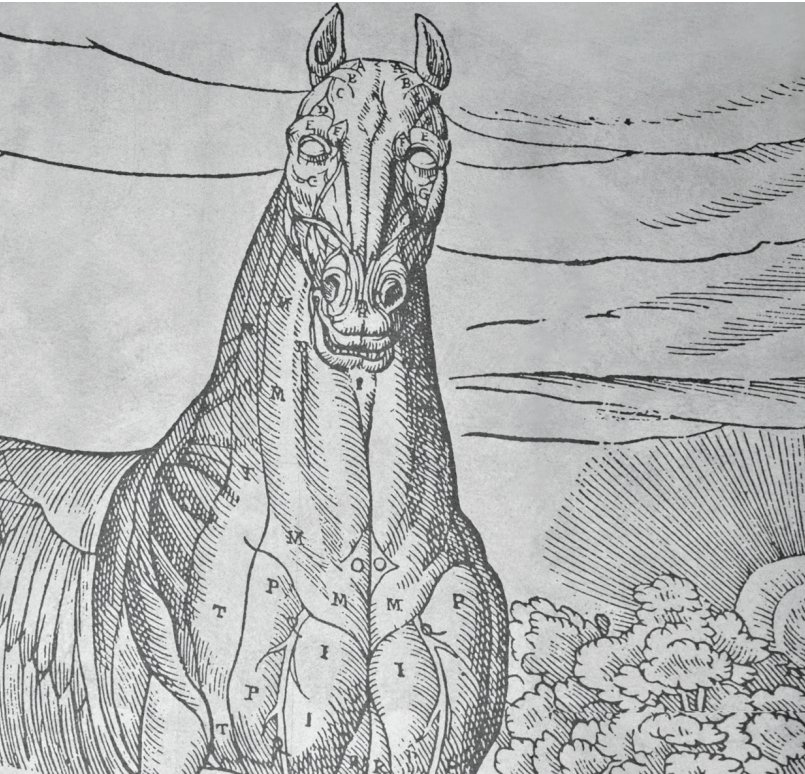




ALMA MATER STUDIORUM
UNIVERSITÀ DI BOLOGNA

DIPARTIMENTO DI SCIENZE MEDICHE VETERINARIE



SELF EVALUATION REPORT 1

EAEVE VISIT 5-9TH MAY 2014

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ABBREVIATIONS

ADPQR	Annual Degree Programme Quality Report
AIC	Artificial Insemination Centre (Istituto Nazionale di Fecondazione Artificiale-INFA)
AMQAG	Alma Mater QA Group
ANV	Normal Veterinary Anatomy Service
ANVUR	National Agency of Assessment for University and Research (Agenzia Nazionale di Valutazione del Sistema Universitario e della Ricerca)
AP	Associate Professor
APS	Pathological Anatomy Service
ARR	Annual Review Report (Riesame)
AUB	University Farm (Azienda Agraria Università di Bologna)
AVA	Periodic Evaluation and Accreditation
AY	Academic Year
BIOCHIM	Biochemistry Service
BioClinVet	Veterinary Clinical Biochemistry Service
CABA-Lab	Laboratory of Analytical Bio-Agroalimentary Chemistry (Service)
CE	Continuing Education
CFU	University Learning Credit (Credito Formativo Universitario)
CIVR	National Research Committee
CNVSU	National Committee for the Evaluation of Higher Education
CoCoCo	Term Contract (Collaborazione Coordinata e Continuativa)
CUN	National University Council (Consiglio Universitario Nazionale)
CVS	Central Veterinary Service (Servizio Veterinario Centralizzato-SVC)
DB	Department Board (Consiglio di Dipartimento)
DEC	Department Executive Committee (Giunta di Dipartimento)
DIMEVET	Department of Veterinary Medical Sciences (Dipartimento di Scienze Mediche Veterinarie)
DP	Degree Programme (Corso di Studio)
DPAB	Degree Programme in Animal Biotechnology
DPAFPH	Degree Programme in Aquaculture and Fish Production Hygiene formerly Aquaculture and Ichthyopathology
DPB	Degree Programme Board (Consiglio di Corso di Studio).
DPC	Degree Programme Coordinator (Coordinatore di Corso di Studio)
DPQAG	Degree Programme QA Group
DPR	Presidential Decree (Decreto del Presidente della Repubblica)
DPSQAP	Degree Programme in Safety and Quality of Animal Production
DPVM	Degree Programme in Veterinary Medicine
DRC	Department Research Committee
DSC	Department Safety Committee
DTC	Department Teaching Committee
ECTS	European Credit Transfer System
FIS	Physiology Service
FNOVI	Federation of the National Veterinary Chapters (Federazione Nazionale Ordini Veterinari Italiani)
FP	Full Professor
FT	Pharmacology and Toxicology Service
FTE	Full-Time Equivalent
FVMBol	Faculty of Veterinary Medicine of Bologna
HCD	Health-Care Director (Direttore Sanitario)
HE	Higher Education
IA	Hygiene and Food Technology Service

IC	Integrated Course
IEU	Internal Evaluation Unit (Nucleo di valutazione)
IQAS	Internal Quality Assurance System
ITLS	Information Technology and Laboratory Service
LD	Legislative Decree (Decreto Legislativo)
LOU	Local Organisational Unit (Unità Organizzativa di Sede)
MD	Ministerial Decree (Decreto Ministeriale)
MIPAV	Infectious, Parasitic and Avian Diseases Service
MIUR	Ministry of Education, Universities and Research (Ministero dell'Istruzione, dell'Università e della Ricerca)
MNY	Minimum Number of Years
MP	Management Procedure (Procedura Gestionale-PG)
NHS	National Health Service (Sistema Sanitario Nazionale)
NVS	Non Veterinary Surgeon teaching staff
OFA	Additional learning requirements (Obbligo Formativo Aggiuntivo)
PPT	Professional Practical Training (Tirocinio)
QA	Quality Assurance
QAS	National Quality Assurance System
RD	Rectorial Decree (Decreto Rettorale)
RDRL	Research and Education Manager (Responsabile dell'Attività Didattica e di Ricerca)
RO	Research Observatory (Osservatorio della Ricerca)
SARGA	Large Animals Hospital and Emergency Service
SARPA	Emergency and Critical Care of companion animals Service
SAVM	School of Agriculture and Veterinary Medicine
SAVM-B	School of Agriculture and Veterinary Medicine-Board
SAVM-VC	School of Agriculture and Veterinary Medicine-Vice Chairmanship
SBA	University Library System (Sistema Bibliotecario di Ateneo)
SCAR	Surgery and Anaesthesiology Service
SDIMM	Diagnostic Imaging Service
SEPAC VET	Veterinary Clinical Pathology Service
SFC	Centralized Drug Service
SMI	Internal Medicine Service
SPP	University Service of Prevention and Protection (Servizio di Prevenzione e Protezione)
SRA	Animal Reproduction Service
SSD	Scientific-Disciplinary Sectors (Settori Scientifico-Disciplinari)
S-SJC	Student-Staff Joint Committee (Commissione paritetica docenti-studenti)
STP	Strategic Three-year Plan (Piano strategico triennale)
SUA	All-inclusive Annual Profile (Scheda Unica Annuale)
UDF	University Dairy Farm
UDFU	University Dairy Farm Unit
UNIBO	University of Bologna - Alma Mater
URP	Public Relations Office (Ufficio per le Relazioni con il Pubblico)
UTS	Unit of Teaching Service (Unità di Supporto alla Didattica)
VC	Veterinary Campus
VQR	Evaluation of the Quality of Research (Valutazione della Qualità della Ricerca)
VS	Veterinary Surgeon teaching staff
VTH	Veterinary Teaching Hospital
VTP	Veterinary Teaching Portal (Portale Didattico Veterinario)
ZNA	Animal Husbandry, Nutrition and Feedstuffs Service



INTRODUCTION

HISTORICAL BACKGROUND

Historical Milestones

The origins of the Faculty of Veterinary Medicine of Bologna (from here "FVMBol") date back to 1784. Detailed historical data was provided in the previous Self Evaluation Report 2004 (Annex 1, 3-6).

1991-1993: the Faculty was transferred from its historical location in the centre of Bologna to the new site in Ozzano Emilia. This move was strategically important for the further development of the FVMBol structures

1996: the Faculty was successfully evaluated by EAEVE for the first time.

2005: the Faculty was successfully evaluated by EAEVE for the second time. Since then, many changes have been introduced, affecting the organisation, management, new buildings and degree programme. These are detailed in the following paragraphs.

THE MAIN ORGANISATIONAL CHANGES

In recent years, the Italian University system has undergone a dramatic process of renovation, introduced by Italian Law no. 240 of 30 December 2010.

Among the most important changes introduced by this Law, a few issues need to be highlighted due to their profound effect on the organisation of the Degree Programme in Veterinary Medicine (hereinafter: "DPVM"):

- The suppression of the Faculties;
- The introduction, at University level, of an organisation based on Departments, Schools and Degree Programmes (from here: DPs);
- The new role of the Departments, previously involved only in research activities. Departments have taken on the fundamental responsibilities of the Faculties, and are currently actively involved in teaching and deeply integrated with the Schools. Departments play a key role in:
 - Deciding the strategic plans concerning research and education;
 - Deciding on the activation/suppression of DPs.;
 - Deciding on the recruitment and positioning of teaching staff;
 - Managing the teaching and support staff financial budget.
- The role of the Schools is one of organisational support to the different DPs run by specific Departments (*i.e.* in the case of the School pertaining to the DPVM, those belonging to the Department of Veterinary Medical Sciences [from here: DIMEVET]).

In this perspective, the Athenaeum of Bologna, (*Alma Mater Studiorum* – Università di Bologna; hereinafter "Alma Mater") established the School of Agriculture and Veterinary Medicine (from here: "SAVM") which hosts the DPVM.

At the same time, the Alma Mater encouraged the merger of Departments (the number decreased from 70 to 33).

The Departments comprising the former FMVBol (Department of Veterinary Clinical Sciences, Department of Morphophysiology and Animal Production, Department of Veterinary Public Health and Animal Pathology and the Veterinary Biochemistry Section of the Biochemistry Department) were the first to follow this Alma Mater policy by merging in 2011 to constitute the Department of Veterinary Medical Sciences (hereinafter: "DIMEVET").

The process of merging into one single Department (the DIMEVET) was led by a specific Committee (the "Campus Committee") established as a task force by the Dean of the FVMBol. The Campus Committee, comprising junior professors from different scientific areas, aimed to ensure the smooth merger of the different competencies of the FVMBol into a single establishment.

NEW TEACHING REGULATIONS

The structure of the Degree Programmes was significantly renovated by the Ministerial Decree (In Italian "Decreto Ministeriale"; hereinafter "MD") 509/1999, as detailed in Chapter 4 of the 2005 Self Evaluation Report of the FMVBol.

MD 270/2004 introduced further important changes and is currently the Italian law establishing the set of rules concerning the structure of the DPs. For example, MD 270/2004:

- Grouped all the learning activities into subject areas and established the minimum number of University Learning Credits (from here "CFUs") assigned to area;
- Established that, to obtain a degree in Veterinary Medicine, students must acquire 300 CFUs, distributed in a maximum of 30 exams;
- Envisaged the establishment of a quality assurance system for the accreditation and periodical evaluation of the universities.

As mentioned above, Italian Law 240/2010 introduced substantial changes to the Italian university system. This was not only related to the suppression of the Faculties and the new organisation into Schools, but mainly to the introduction of the national Quality Assurance System (from here: "QAS").

Italian Legislative Decree (In Italian: Decreto Legislativo; hereinafter "LD") 219 of 27 January 2012 set the principles of a national system for accreditation and periodical evaluation of the universities and, finally, MD 47 of 30 January 2013 established the requirements and indicators for accreditation.

The introduction of the national QAS profoundly affected the local teaching systems, including that of the DPVM.

Specific information is provided in **Chapters four** and **five**.

NEW BUILDINGS OR MAJOR ITEMS OF EQUIPMENT

The 2005 EAEVE evaluation found that the new structures of the FVMBol were considered appropriate for providing quality training to veterinary students.

Since then, apart from the project for a new hospital for wild and exotic animals (currently approved and in progress), the action of building renovation has mainly focused on the more efficient reorganisation and management of the existing buildings. Specifically:

- Clinics
 - Complete renovation of the surgery and obstetrics facilities (currently in progress), including the space allocated to a new Computer Tomography and Nuclear Magnetic Resonance;
 - Improvement of the facilities and staffing of the 24-hour emergency service, including a new isolation facility for companion animals;
 - New premises for equine neonatology;
 - Reallocation of spaces for equine and cattle hospitalisation.
- Teaching
 - Renovation of some theatres for non-clinical practical activities;
 - Renovation of the IT lab;

- Welfare
 - New changing facilities for students attending the hands-on practical activities of Anatomy and Pathology;
 - New students' rest area;
 - New changing room for technicians;
 - Renovation of offices and premises for the staff working in administration, departmental Quality and Safety, biotechnology and biochemistry.
- Animal Production and Public Health
 - New area for goat breeding;
 - New facilities for pig breeding and research;
 - New facilities for honey collection, filtration and storage.

Specific information is provided in **Chapter six**.

MAIN CHANGES TO THE STUDY PROGRAMME

After the successful second EAEVE visit in 2005, the curriculum was profoundly renovated to meet the requirements of the Ministerial Decree (hereinafter "MD") no. 270/2004 and to take on board the suggestions given in the final report of the EAEVE visiting team.

In the Academic Year (hereinafter: "AY") 2008/2009, a new curriculum was developed for the Degree Programme in Veterinary Medicine (DPVM curriculum 8206) in accordance with MD 270/2004, subsequently amended in some minor details in AY 2011/2012 (DPVM curriculum 8617).

In accordance with the suggestions of the EAEVE 2005 report, the main changes of the new curriculum include:

- Significant increase of the number of CFUs dedicated to professional practical and hands-on activities;
- Switch from subject-oriented to species-oriented teaching;
- Remodulation of the total number of in-class hours per CFUs;
- Remodulation of the ratio of theoretical/practical hours per single CFU according to the different subject areas;
- Increase of the number of integrated courses made of different subjects encompassing different related disciplines;
- Introduction of extramural practical professional training in the following areas: clinical (mobile clinic), food safety, veterinary hygiene and public health;
- Increase in the number of CFUs for English language learning.

IMPORTANT DECISIONS MADE BY THE FACULTY MANAGEMENT OR RELATIVE RESPONSIBLE AUTHORITIES

Since the second EAEVE visit, the former Faculty and the current authorities have taken some important decisions. They include:

- Reduction in the number of students. In order to enhance the quality of education and facilitate practical activities, first-year students admitted to the DPVM have been reduced from 150/Year (2004) to the current 90/year;
- Discussion of the results of the students' opinion in the Degree Programme Board (hereinafter: "DPB"). This measure, adopted in 2013, is merely the most recent step in a process in which students' opinions on the quality of teaching have gradually gained importance;

- Introduction of syllabi: teachers are obliged to indicate the syllabus of each single subject in writing, in order to avoid doubling and/or lack of information. The syllabus ensures that students can have immediate feedback on the topics taught and on the content of their exams;
- Outsourcing of some practical professional activities: in order to facilitate the contact of undergraduate students with specific professional scenarios, *i.e.* veterinary surgeons working in the Public Health Service (hereinafter: "PBS").

MAJOR PROBLEMS ENCOUNTERED BY THE FACULTY, WHETHER RESOLVED OR NOT

The most striking problems encountered by the former FMVBol and the present SAVM and DIMEVET in running the DPVM can be divided in two main categories: funding and teaching/support staff.

- Funding:
 - In the past five years, Italy has experienced both the effects of a dramatic international economic crisis and national laws that have reduced government funding to universities. The DP in Veterinary Medicine is one of the most expensive, when compared to the mean of other DP, including human Medicine;
 - Shortage of funding has resulted in the significant reduction (and even the total lack) of financial support for purchasing the instruments required for teaching, research and clinical activities, including Computed Tomography and Nuclear Magnetic Resonance;
 - It was not always possible to allocate adequate resources after the revision of the curriculum, which envisaged the increase of practical professional activities in small groups, requiring an increased number of teachers/tutors.

- Teaching and support staff:

Problems concerning the teaching and support staff are both quantitative and qualitative.

Quantitative:

- Non-structured teaching staff - Quantitative problems include the difficulty, due to financial restrictions and rigidity of the employment laws, of assuring an adequate number of non-structured teaching staff in clinical premises, such as emergency care or large animal clinics;
- Nurses - In Italy there the professional profile of the veterinary nurse does not exist; therefore there is a chronic lack of specialist technical staff supporting the teaching staff in the services of the Veterinary Teaching Hospital (VTH).

Qualitative:

- The difficulty for the vast majority of teachers and support staff to understand and embrace the many changes that have been introduced in the past five years. Alma Mater has profoundly changed its structure from Faculties to Schools and has thoroughly adopted the QAS. In several situations, teachers have real difficulty in understanding and following the new teaching methods;
- Alma Mater, like the vast majority of Italian universities, does not provide any official and compulsory activities aiming to ensure the significant comprehension of the new education system.

Other problems include:

- The current selection of first-year students is through a national entrance exam, which penalises students from rural areas, possibly more interested in large animal clinics, animal production and food safety. The result is a disproportion in students oriented mainly, if not exclusively, towards equine and small animal clinics;
- Despite the efforts of the DPVM, the time required by students to graduate is still far too long. Shortening the academic life of students is one of the major goals of the DPVM;

- The national selection system currently adopts a complicated mechanism of selection that doesn't allow students to attend the first-year courses in time. In turn, students cannot sit the exams in time and this is one of the causes of the delay in completing the curriculum;
- Northern Italy and, specifically, Emilia Romagna, are experiencing a reduction in the numbers of farm animals such as cattle and pigs. This will most probably lead to major difficulties for the new graduates.



CHAPTER 1

OBJECTIVES

1.1 FACTUAL INFORMATION

1.1.1 Background

Alma Mater approved its first Strategic Plan in 2006/2007, introducing from that year onwards a Quality System based on strategies, feedback and assessment of the results. At that time, the former FM-VBoI did not have a written strategic plan describing the major objectives of the Faculty. As reported in the 2005 SER1, the objectives were identified with those stated in MD 270/2004. The reason was that all curricula for different degrees obtained in Italian universities must be defined within specific requirements called Degree Classes. The subsequent MD (16 March 2007) set the detailed requirements of each "Degree Class", identifying the specifying learning objectives for each one (<http://attiministeriali.miur.it/anno-2007/marzo/dm-16032007.aspx>).

The Degree Class for the DP in Veterinary Medicine (LM 42) states: "DPVM graduates have the scientific fundamentals and the theoretical-practical knowledge necessary to perform the profession of Veterinary Surgeon. DPVM graduates also have the methodological and cultural fundamentals necessary for continuing education and the methodological fundamentals pertaining to scientific research".

Italian Law 240/2010 introduced a profound renovation of the whole Italian University System, which is currently still in progress. Faculties disappeared and were replaced by an education system organised into Departments and Schools. For the purposes of this chapter, it must be emphasised that the main function of the Schools is that of teaching coordination, while the role of strategic planning and financial support lies with the Departments.

1.1.2 Current situation

Alma Mater

- Since 2007, Alma Mater adopted the triennial Strategic Plan, renewed every three years, which presents the mission, strategies and objectives. Along with the Strategic Plan, every year the University approves the Budget Plan, the Personnel Employment Programme, the Building Plan and the Safety Plan. The Alma Mater Strategic Plan 2010-13, which covers mainly education and research strategies, is published and downloadable on the website: <http://www.unibo.it/it/ateneo/chi-siamo/piano-strategico-2010-2013>
- The overall strategic objectives for education include:
 - Guaranteeing the students' personal, cultural and professional growth, according to the needs of society;
 - Improving the quality of learning;
 - Strengthening the international nature of education;
 - Developing policies aiming to enhance deserving students;
 - Improving policies aiming to support the right to education.
- Overall strategic objectives for research include:
 - Supporting basic research and improving applied research aiming to develop both individuals and society;
 - Promoting and supporting the training for scientific research at all levels;
 - Reinforcing the ability to attract foreign researchers to our research facilities.
- Due to profound changes in the formation of new Departments and Schools, Alma Mater worked intensively to adopt a new Statute as a primary and necessary step. The new statute came into force in January 2012 and is published and downloadable on the website:

<http://www.normateneo.unibo.it/NormAteneo/Statuto.htm>

- Currently (Autumn 2013), Alma Mater is finalising the format for the new integrated Three-Year Strategic Plan for Departments and Schools 2014-2016.

Department of Veterinary Medical Sciences (DIMEVET) and School of Agriculture and Veterinary Medicine (SAVM)

- DIMEVET was established in late 2010, from the merging of the three previous Departments and the Veterinary section of the Biochemistry Department. The basis for this reorganisation was an official document describing the recognised cultural identity of Veterinary Sciences, approved by the Dean, the Heads of the former Departments and the ad hoc Campus Committee (**Annex 1.1**: "Proposta di innovazione organizzativa a medicina veterinaria: identita' culturale, obiettivi generali e ipotesi di lavoro").
- SAVM was established in 2012, with the principal aim of coordinating the teaching activities of the former Faculties of Agriculture and Veterinary Medicine. At the same time, DIMEVET took on new responsibilities for teaching activities and organisation.
- In the first two years since their establishment, the primary goal has been to produce the regulations and the necessary policy and procedures. According to a draft document recently approved by the Academic Senate and governing body, both DIMEVET and SAVM will produce an integrated three-year strategic plan for the period 2014-2016 after the official Alma Mater form is approved.

Indicate whether there is an official list of the overall objectives of the Faculty. If this is the case, please indicate these.

Considering the specific background, the DIMEVET is the structure in charge of defining the list of overall objectives. Even for a healthy structure like DIMEVET, the strategic plan is perceived as a necessary measure to provide and maintain a vision facing the future national and international challenges and to guide the necessary decisions in order to guarantee the achievement of overall and specific objectives. In the intense transitional period, DIMEVET has approved several specific documents that can be viewed as preparatory for a strategic plan developed according to its own mission and new responsibilities.

The general principles leading the establishment of DIMEVET were clearly stated at the time of its constitution (see pages 1-5 in **Annex 1.1**: "Proposta di innovazione organizzativa a medicina veterinaria: identita' culturale, obiettivi generali e ipotesi di lavoro"). They are fully in line with the concept of "One World – One Health", and are referred to in the annual budget report (*i.e.* **Annex 1.2, 1.3** and **1.4**: "Relazione al bilancio di previsione" editions 2011, 2012 and 2013). They will be transferred in the forthcoming strategic plan 2014-2016, and include:

- Recognising the primary duty of student education. Specific importance is given to achieving:
 - Recognition of high Quality Standards of the education process (*i.e.* EAEVE Certification and Accreditation, ANVUR accreditation);
 - Innovative teaching methods.
- Aiming to achieve rigorous and thorough scientific methodology for educational and research purposes;
- Recognising as fundamental duties the activities related to education, research and services, to foster the growth and development of society;
- Affirming the close relationship between research and education;
- Affirming the enhancement of meritocracy;
- Implementing all the strategies to facilitate internationalisation;
- Recognising the fundamental relationship with society and the local community, especially with establishments and/or persons involved in education and research in the veterinary field;
- Recognising the vital importance of continuing education.

According to the abovementioned general principles, the primary overall objectives of DIMEVET are

specifically focused on:

- Teaching activities, aimed to provide students with:
 - The scientific fundamentals and theoretical-practical knowledge required to exercise the profession;
 - The methodological and cultural fundamentals required for continuing education;
 - The methodological fundamentals of scientific research.
- Research activities, with the aim of improving knowledge of basic and clinical animal sciences, animal production and welfare, as well as the prevention and treatment of human and animal diseases;
- Territorial-related activities, aimed to strengthen its public, social and environmental role through the care of:
 - Animal health and welfare, achieved through preventive and curative measures, innovative research, and high quality under- and post-graduate training;
 - Quality and safety of products of animal origin to prevent risks for human and animal health and to protect the environment.

In this transition period, the most important documents stating the main objectives of DIMEVET are the aforementioned document addressing the Departmental annual strategies and the Quality Manual (**Annex 1.5**: "Manuale della Qualità"). The strategic objectives of DIMEVET (**Annex 1.6** "Gli indirizzi strategici, gli obiettivi di base e le strategie"), prioritised in two categories ("Strategic objectives" and suggested "guidelines") are divided into:

- Learning objectives;
- Research objectives;
- Territorial-related objectives.

1.1.3 Learning objectives

The undergraduate learning outcomes of the DPVM can be found both in the Degree Class in Veterinary Medicine, pages 166-167 (<http://attiministeriali.miur.it/anno-2007/marzo/dm-16032007.aspx>) and in the Approved new curriculum 8617 (**Annex 1.7**: "Ordinamento 8617 Medicina Veterinaria"). The teaching objectives match the EAEVE requirements and aim to produce Veterinary Surgeons in accordance with EU requirements for veterinary training (EU Directive 2005/36/EC).

According to MD of 16 March 2007, Veterinary Medicine graduates have acquired the following learning outcomes:

- Knowledge of the fundamentals of basic sciences, in the perspective of future professional application;
- Knowledge of the structures and functions of healthy animals, including aquatic species, their offspring, reproduction and general hygiene, as well as their nutrition and related technologies;
- Knowledge of animal behaviour and welfare;
- The ability to:
 - Read and critically evaluate data relating to the state of health, well-being and illness of individual animals and livestock;
 - Interpret them according to their knowledge of basic sciences, physiopathology, organ and system pathology;
 - Conduct the medical and surgical procedures best suited to remove the state of disease.
- Knowledge of epidemiology, diagnosis, prophylaxis, pharmacological treatment and control of transmissible animal diseases, especially those that can affect humans (zoonoses);
- Knowledge of preventive medicine;
- Ability to understand and critically evaluate the state of wholesomeness, hygiene, quality and any alterations in foodstuffs of animal origin that may compromise man's state of health;

- Knowledge of the hygiene and technologies inherent to the production, processing, and commercialisation of food of animal origin destined for human consumption;
- Knowledge of the legislation and regulations governing the above subjects;
- Knowledge of animal nutrition and feeding and breeding techniques;
- Ability to understand and critically evaluate the impact of animal breeding on the environment;
- Ability to plan, implement and assess public veterinary health plans;
- Ability to control and manage the production chains of food of animal-origin;
- Acquisition of clinical and practical experience (under appropriate supervision);
- (Written and oral) knowledge of at least one foreign language of the European Union.

The abovementioned learning outcomes are achieved through a mandatory intra-curricular practical professional internship known as "tirocinio" (details are reported in **Chapter four**).

DIMEVET and DPVM strongly believe that students' learning outcomes must include the so-called "transversal skills" of the Dublin descriptors. During their training, students are encouraged to develop:

- The ability to communicate in an understandable, efficient and respectful manner with clients, the public, colleagues and responsible authorities;
- The ability to work in groups and be well integrated in the work team;
- The ability to critically evaluate information using strict scientific methodology and write official reports;
- The awareness of the need for lifelong education, training and professional development.

Collateral undergraduate learning outcomes have been identified over the years by the former FMVBol and have been currently maintained by DIMEVET to fulfil the professional and cultural needs of society.

The following degree programmes see the direct involvement of DIMEVET:

- First cycle three-year (Bachelor) DP in "Aquaculture and fish production hygiene"
<http://corsi.unibo.it/1Cycle/Aquaculture/Pages/default.aspx>;
- Second cycle two-year (Master) DP in "Animal Biotechnology"
<http://corsi.unibo.it/2Cycle/AnimalBiotechnology/Pages/default.aspx>;
- Second cycle two-year (Master) DP in "Safety and Quality of Animal production"
<http://corsi.unibo.it/2Cycle/SafetyQualityAnimalProduction/Pages/default.aspx>.

The following degree programmes see an indirect involvement of DIMEVET:

- First cycle three-year (Bachelor) DP in "Biotechnology"
<http://corsi.unibo.it/Laurea/Biotechnologie/Pagine/default.aspx>;
- First cycle three-year (Bachelor) DP in "Animal production and control of wild animals"
<http://corsi.unibo.it/Laurea/ProduzioniAnimali/Pagine/default.aspx>.

Postgraduate learning objectives

Important postgraduate learning outcomes at DIMEVET relate to the organisation of postgraduate continuing education programmes. In AY 2013-2014, DIMEVET offers different continuing education opportunities including (see **Chapter twelve** for details):

- ECVN and ECVIM College Residency Programmes;
- Second Level Professional Master's DP in Veterinary Small Animals Specialist Ultrasonography
<http://www.scienzemedicheveterinarie.unibo.it/it/post-laurea/master>;
- First Level Professional Master's DP in Aquaculture and Ichthyopathology
http://www.unibo.it/it/didattica/master/2013-2014/acquacoltura_ittiopatologia/;
- The international programmes: ESVN-ECVN Neuroscience Advanced Courses 2014
<http://www.ecvn.org/edu/nc/2014/default.aspx>;

1.1.4 Research objectives

DIMEVET was recently ranked first in its specific scientific area by a national survey of the Ministry of Education focused on the quality of research products in the period 2004-2010. The high quality standard of DIMEVET research is the basis for offering high quality research-based education.

DIMEVET is also Quality certified to UNI EN ISO 9001 for the following activities: "Research and development activity, advice services, laboratory analysis and/or test analysis in the following science branches: Anatomy, Pathological Anatomy, Drugs and Toxicology, Physiology, Animal Welfare, Infective and Parasitic illnesses, Public Sanity, Animal Production and Agricultural Economy, Food Technologies, Food Hygiene and Safety" (<http://www.scienzemedicaveterinarie.unibo.it/it/risorse/files/certificato-internazionale-qualita-2013>).

The overall research objective is to conduct high quality veterinary and biomedical research to high ethical standards.

Specific research objectives are detailed in the aforementioned document "Departmental three-year strategies" (**Annex 1.6**, "Gli indirizzi strategici, gli obiettivi di base e le strategie"). They include:

- Implementation of private and public funding, increasing the capacity to attract external resources through the achievement of national (PRIN, FIRB, FAR, ASI, PNR) and international (e.g. EU Framework Programmes for Research and Innovation) competition related to research projects;
- Support to multi- and interdisciplinary research;
- Enhancement and establishment of international connections, fostering the mobility of individual researchers involved in international research projects;
- Enhancement of education in the research field, supporting PhD students, fellowships and scholarships;
- Reorganisation of the research activities according to the existing research areas;
- Introduction of integrated objective criteria in the allocation of resources;
- Gradual introduction of ex-post evaluation of the allocated resources.

1.1.5 Territorial-related objectives

DIMEVET acknowledges that a high standard of clinical and professional education relies on well-structured and high-quality clinical services offered to the territorial district of Emilia Romagna. Moreover, DIMEVET staff enjoy highly qualified competencies that are useful to society to guarantee the appropriate management of challenges in the veterinary field, including the prevention of transmissible diseases, public health issues, welfare and animal protection.

For the abovementioned reasons, one of the main objectives of DIMEVET is to support and implement all clinical and non-clinical activities related to territorial issues. In this perspective, the 24-hour emergency service was established to offer a better service to customers.

A specific website is dedicated to the Veterinary Teaching Hospital (<http://www.ospedaleveterinario.unibo.it/>), hosting a specific section for pet owners (<http://www.ospedaleveterinario.unibo.it/per-il-proprietario>) and private veterinary surgeons (<http://www.ospedaleveterinario.unibo.it/per-il-medico-veterinario>).

The three-year strategic plan of the Alma Mater is the reference document for drafting the list of objectives of DIMEVET and DPVM. Two different levels of competency must be outlined:

- The first level determines the list of DIMEVET objectives. The previously mentioned document "strategic objectives" (**Annex 1.6** "Gli indirizzi strategici, gli obiettivi di base e le strategie") and the forthcoming Strategic Plan 2014-2016 are prepared by the Department Committee. The draft documents are then discussed, modified and approved by the DIMEVET Department Board;
- The second level concerns the process of Internal Quality Assurance System (hereinafter: "IQAS") and is related to the objectives pertaining not only to the DPVM but also to the other DPs within

DIMEVET. These objectives are summarised in the Annual Review Report (hereinafter: "ARR") of each DP and, in the case of the programme in Veterinary Medicine, originate from the thorough critical analysis of the data of the DPVM (**Annex 1.8** "Rapporto di Riesame"). The ARR establishes the consequent action plan to achieve the specific goals, including deadlines and responsibilities. The ARR is prepared by the Degree Programme QA Group (hereinafter: "DPQAG"), discussed and approved by the Degree Programme Board (hereinafter: "DPB") of the DPVM.

By what procedure is this list revised?

The list of DIMEVET strategic objectives is revised annually through the following procedure:

- The list of objectives approved the previous year is revised by the Department Committee, which analyses whether the goals have been achieved. In 2013 two specific Department Committees, Teaching (DTC) and Research (DRC), were established and are actively involved in the revision process. The list of objectives may then be updated and/or modified and the new version is presented to the DIMEVET Department Board for approval.

The ARR action plan including the list of objectives concerning the DPVM is revised annually through the following procedure:

- After approval by the DPB of the DPVM, the ARR is critically evaluated by the Student-Staff Joint Committee (hereinafter: "S-SJC") of the SAVM. The S-SJC report is sent to the Internal Evaluation Unit (IEU) of the Alma Mater for further evaluation and to the National Agency for Quality Assurance (National Agency for Evaluation of University and Research. In Italian: Agenzia Nazionale Valutazione Università e Ricerca [ANVUR]);
- Critical feedback is sent to the Degree Programme Coordinator of the DPVM, either by the S-SJC and by the Teaching Vice-rector in charge of education.

Do you have a permanent system for assessing the achievement of the Faculty's general objectives? If so, please describe it.

Learning Objectives

The Alma Mater QA Group (AMQAG) annually monitors the achievement of the learning outcomes and performance of each single DP using unbiased performance indicators (e.g. number of students obtaining the degree, mean number of years required by students to obtain the degree; number of students withdrawing from the DP, mean number of ULCs acquired by first-year students). The assessment is then published in the DPVM presentation website under the banner "Quality Assurance" on the right (<http://corsi.unibo.it/SingleCycle/VeterinaryMedicine/Pages/Presentation.aspx>) as an Annual QA report on the DP (**Annex 1.9** "Degree Programme Report") used for any re-definition of DPVM objectives and plans. The consequent new action plan is the final part of the ARR.

Before the establishment of the Alma Mater QAS, the former FVMBol did had no written procedures for assessing the achievement of Faculty's general objectives. The Faculty Teaching Committee regularly made a critical revision of the achievement of learning outcomes. Previous actions taken by the Teaching Committee included:

- Analysis of the situation of the "fuoricorso" students (students not aligned to the exam schedule in order to obtain the degree in the expected time) and consequent action to shorten their academic career;
- Monitoring of the situation of first-years students in terms of acquired ULCs;
- Questionnaire sent to teachers concerning their lecturing and exam methods;
- Critical evaluation (with students) of the teachers' respect of the syllabi;
- Preparation of written guidelines for exams and the final dissertation.

Research Objectives

The DIMEVET is evaluated on national basis by ANVUR, using unbiased performance indicators to assess the quality of scientific products. The process of VQR (Valutazione della Qualità della Ricerca –in English: Evaluation of the Quality of Research) 2004-2010 ranked DIMEVET first in its scientific area for the quality or research products (http://www.anvur.org/rapporto/files/Area07/VQR2004-2010_Area07_RapportoFinale.pdf).

1.2 COMMENTS

In your view, to what extent are the objectives achieved?

In the opinion of DIMEVET and DPVM, the last few years have been characterised by an intense activity focused on the renewal of many aspects of the education system. The most important included the set-up of an internal QAS and the renovation of the curriculum. The internal debate concerning education has always been very brilliant and has led to consensual development of innovative solutions.

The DIMEVET and DPVM action concerning education issues enjoyed the appreciation of the Alma Mater and ANVUR, as demonstrated by the following:

- The 2008 preliminary consultation with stakeholders in order to renovate the curriculum was taken as example by Alma Mater for all its DPs;
- The 2011 ARR of the DPVM was chosen by Alma Mater and sent to ANVUR as the best-suited example of ARR. On this basis, ANVUR developed the national model of the current ARR;
- The EAEVE representative of the former Faculty and current member of the QA Group (DPQAG) of the DPVM was chosen by ANVUR to join a task force set up to plan the internal QA according to the national law 240/2010 and DL 219/2012.

Among the most important objectives achieved, DIMEVET and DPVM include:

- The smooth merger of the three former departments into DIMEVET;
- The organisation of DIMEVET into services (as detailed in **Chapter two**);
- The establishment of an efficient Internal Quality Assurance System (IQAS) for DPVM;
- The renovation of the DPVM curriculum according to the requirements of EAEVE and new Italian legislation;
- The establishment of the mobile clinic;
- The implementation of the 24-hour emergency service;
- Advanced progress of the building (or renovation) of the teaching facilities (*i.e.* new Surgery area and new aquaculture centre in Cesenatico).

The main strengths of DIMEVET and the DPVM include:

- Being part of an Athenaeum of high prestige and reputation, advanced in the application of principles of QA and teaching innovation;
- The location in a logistic area equipped with high-standard facilities ensuring appropriate theoretical and practical training;
- The establishment of a single Department, partially reducing the negative effects of the radical transformations in progress;
- Special proactive dedication of the vast majority of the teaching and support staff, very often greatly exceeding what is normally requested;
- Significant percentage of young people among the teaching staff, compared to the Italian environment;
- Positive attitude of the teaching staff towards critical self-assessment in order to improve the education system;
- High research level, as recently stated by the Quality Research Assessment system;
- Numerous official agreements with public and private institutions;

- Free WIFI access for staff and students throughout the campus;
- The library and access to on-line scientific products;
- High standard of research products;
- Extensive, deep-rooted international relations with major academic institutions;
- Last but not least: our students! The students of the DPVM are far more aware of their role within the establishment compared to students of other DPs. DPVM students contribute actively to the development of the DPVM. The average student-teacher relationships may be considered excellent.

The main weaknesses of DIMEVET and the DPVM include:

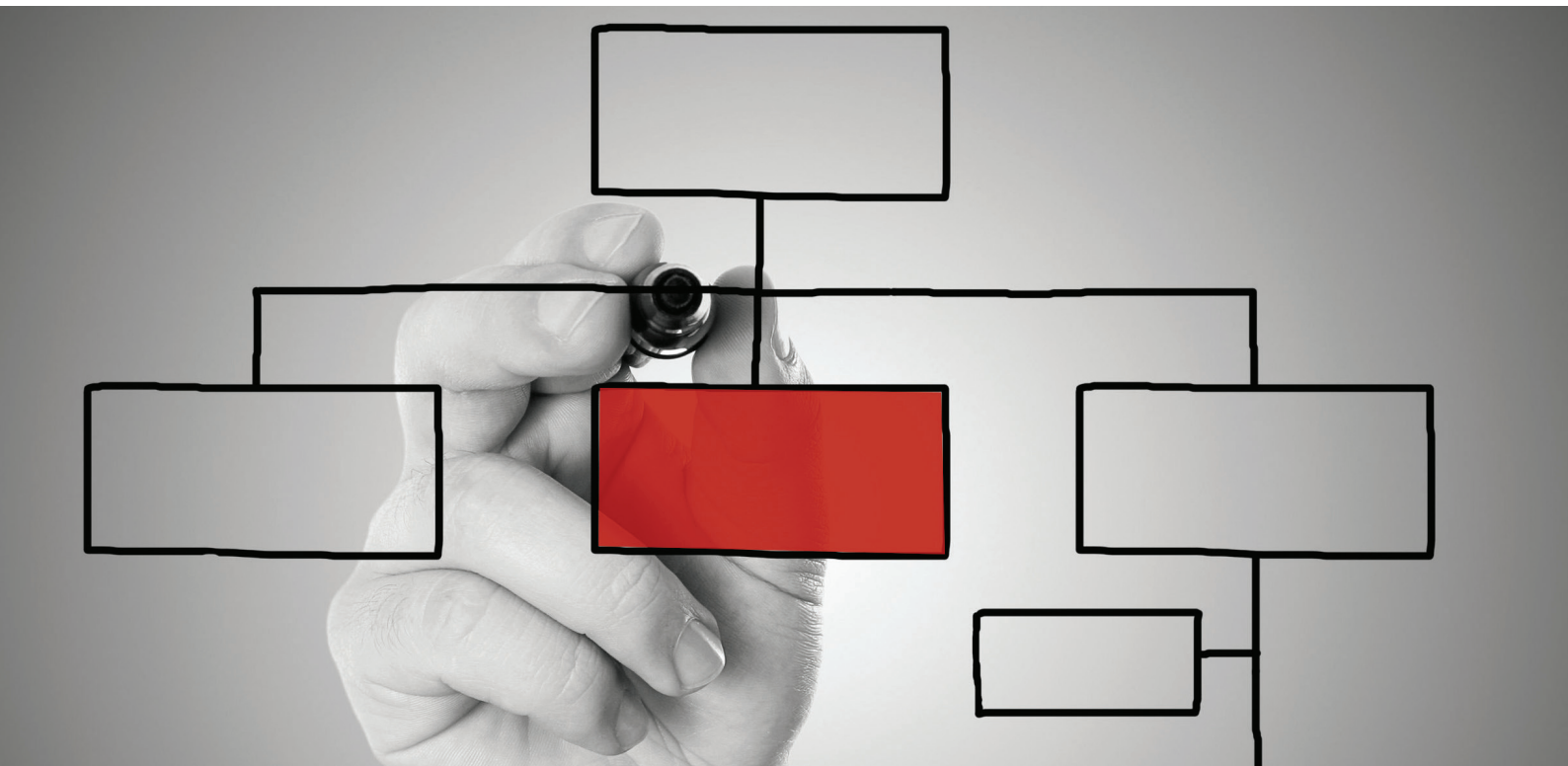
- Continuous shortage of financial support (detailed in **Chapter three**);
- Being part of a national system burdened by very heavy bureaucracy and a total lack of meritocracy;
- Difficulty to adequately follow the new order required by national Laws, slowing vital processes such as the development of a Departmental strategic plan;
- Veterinary teaching hospitals, unlike human hospitals, are not included in the National Health Service (this would make it easier to have clinical positions paid from the regional budget);
- Difficulties in obtaining large animals for practical teaching activities;
- Lack of nurses and specifically trained support staff for the VTH;
- Lack of adequate continuing education for teachers, specifically when facing the new challenges of the QA system;
- Inadequate use of E-learning technologies;
- Inadequate number of European or American College graduates among the teaching staff.

1.3 SUGGESTIONS

If you are not satisfied with the situation, please list your suggestions for change in order of importance and describe any factors which are limiting the further development of your Faculty.

Suggestions for improvement include countermeasures for all the above-listed weaknesses. Further development of our structure would be greatly facilitated by the following suggestions:

- Adequate financial support;
- Improvement of meritocracy in the organisation of the DPVM and DIMEVET;
- Introduction of mandatory continuing education for teachers, specifically focusing on understanding of QA mechanisms and new teaching approaches (including e-learning platforms);
- Availability of specific support staff such as nurses in the VTH;
- Introduction of different teaching methods to improve training effectiveness (*i.e.* blocks, integrated tutorial system for small groups of self-directed learning);
- Increase in the number of European or American College graduates among the teaching staff;
- Improvement of relations with Researchers and Colleagues working outside the Department;
- Improvement of research activities in international groups;
- Improvement of international integrated education.



CHAPTER 2

ORGANISATION

2 ORGANISATION

2.1 FACTUAL INFORMATION

According to the requirements of Italian Law no. 240/2010, the radical change in the organisation of the Italian University System also modified the management of the Degree Programme in Veterinary Medicine (DPVM).

From AY 2012/2013, the DPVM, previously governed by the Faculty of Veterinary Medicine, is coordinated and managed by the Department of Veterinary Medical Science (DIMEVET) and the School of Agriculture and Veterinary Medicine (SAVM).

2.1.1 Details of the establishment

Department of Veterinary Medical Sciences (DIMEVET)

Address: Via Tolara di Sopra, 50 – 40064 Ozzano dell'Emilia (BO), Italy

Telephone: +39 051 2097006

Fax: +39 051 2097038

Website: <http://www.scienzemedicheveterinarie.unibo.it/>

e-mail: amministrazione.vet@unibo.it

Title and name of Head of Department: Prof. Pier Paolo Gatta

School of Agriculture and Veterinary Medicine (SAVM) – Veterinary Medicine Vice-chairmanship (SAVM-VC)

Address: Via Tolara di Sopra, 50 – 40064 Ozzano dell'Emilia (BO), Italy

Telephone: +39 051 2097398 +39 051 2097003

Fax: +39 051 6511157

Website: <http://www.agrariaveterinaria.unibo.it/>

e-mail: agrariaveterinaria.vpoz.segreteria@unibo.it

School Dean: Prof. Anna Zaghini

For practical purposes, in the present report the Veterinary Medicine Vice-chairmanship will be called simply "Campus"

Is the Faculty within a university? If so, please give address of the university.

The DIMEVET and the SAVM are part of the

Alma Mater Studiorum – University of Bologna

Address: Via Zamboni, 33 – 40126 Bologna, Italy

Website: <http://www.unibo.it/>

Rector of the *Alma Mater Studiorum* – University of Bologna: Prof. Ivano Dionigi

Telephone: +39 051 2099942 +39 051 2097003

Fax: +39 051 2086102

e-mail: rettore@unibo.it

The *Alma Mater Studiorum* – University of Bologna (in the present report, simply called "Alma Mater") was most probably the first university in the Western World. The institution that we call the University today began to take shape in Bologna at the end of the 11th century; in the 19th century a committee of historians, led by Giosuè Carducci, attributed the birth of the University to the year 1088.

Alma Mater is a national (state-funded) university supervised by the Ministry of Education, University and Research (MIUR). The Ministry establishes the general guidelines for degree programmes and the general policy for higher education in Italy, allowing certain autonomy in the university government and in the structure of research, teaching and organisation (**Fig. 2.1**).

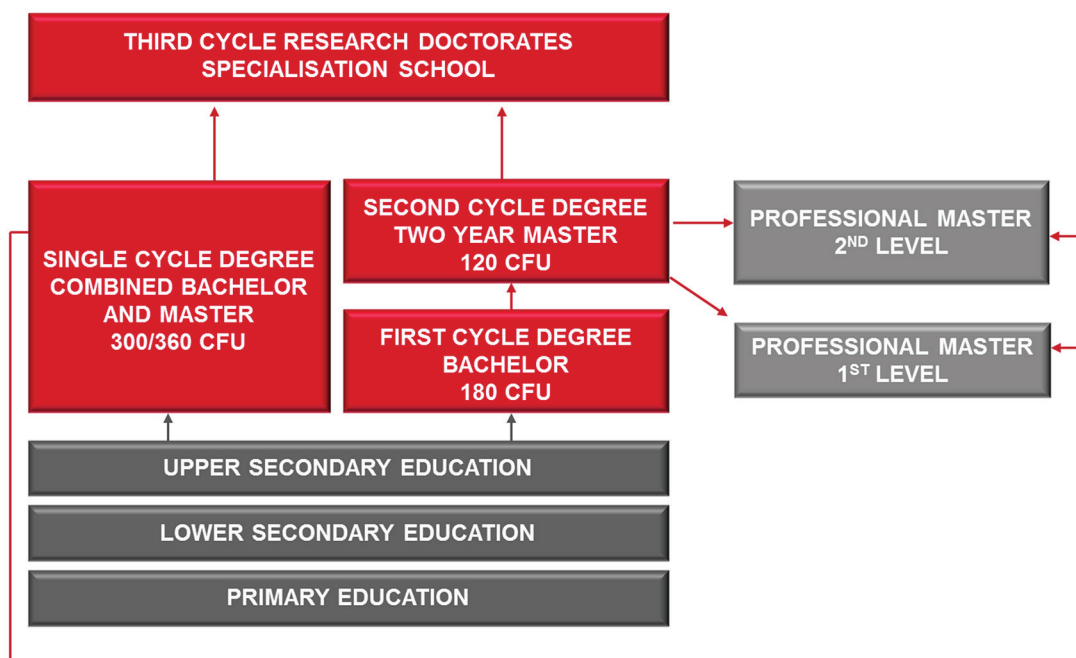


Fig. 2.1 - The Italian University System.

In 1989, Alma Mater adopted a Multicampus structure (Bologna, Cesena, Forli, Ravenna, Rimini and Buenos Aires Campus), in order to ensure the range of educational services and the continuous research activity to cover a broader scale within the region (**Fig. 2.2**).

Each Campus is organised into Departments, Schools and Local Organisational Units. Each Campus coordinates the services and initiatives to support teaching and research, interacting actively with public and private stakeholders. The Buenos Aires Campus is the university's first foreign campus abroad, and runs interdisciplinary degree programmes on different subjects. The University of Bologna's decentralisation process, the first of its kind among Italian Universities, aimed to decongest the central location of the University, creating a new model based on university branches.



Fig. 2.2 - Multicampus structure of *Alma Mater Studiorum* - University of Bologna.

2.1.2 Basic figures of the Alma Mater

Several tables and figures regarding the structures, facilities, personnel and students enrolled at the Alma Mater are reported in the following section (**Tab. 2.1-2.4; Figs. 2.3, 2.4**).

More information is available in the brochure "The Alma Mater today" (http://www.unibo.it/it/allegati/brochure-universita-di-bologna_2013_english/@@download/file/Brochure%20Università%20di%20Bologna_2013_English.pdf).

Tab. 2.1 - Alma Mater Structures (2013).

STRUCTURES	N.
Departments	33
Schools	11
Interdepartmental Research Centres	17
First Cycle Degree Programmes	92
Second Cycle Degree Programmes	105
Single Cycle Degree Programmes	12
Specialization schools	47
PhD/Doctoral Programmes	51
Professional Master Programmes	64
Advanced schools and "Collegio Superiore"	8
University Language Centre	2
Libraries	38
Museums	15

Tab. 2.2 - Alma Mater Teaching Staff (2013).

Full Professors	734
Associate Professors	829
Researchers	1284
TOTAL TEACHING STAFF	2847

Tab. 2.3 - Alma Mater Support (technical and administrative) Staff.

Service staff	3000
Language Assistants	81
Heads of Administrative Divisions	14
TOTAL SERVICE STAFF	3095

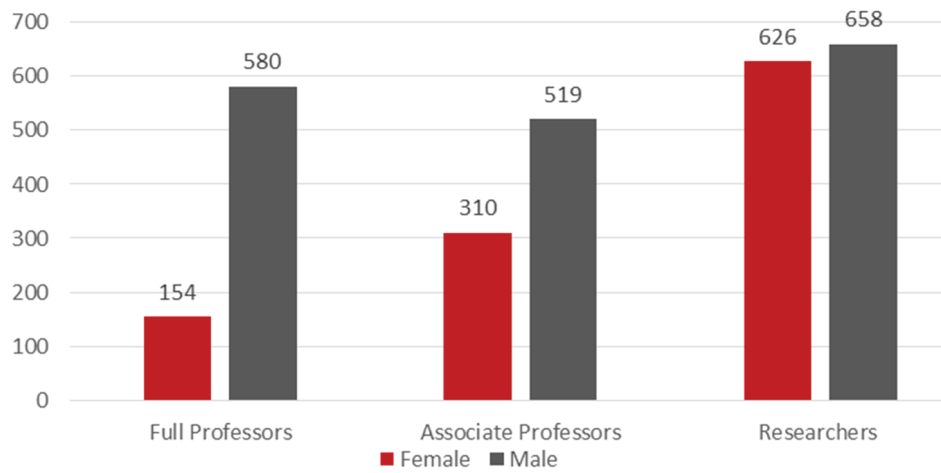


Fig. 2.3 - Alma Mater Teaching Staff by gender.

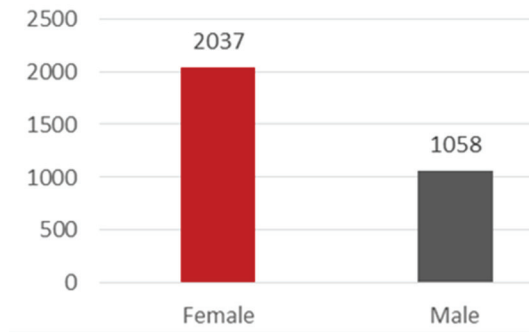


Fig. 2.4 - Alma Mater Support Staff by gender.

Table 2.4 - Students enrolled in the Schools of the Alma Mater in AY 2012/13.

SCHOOLS	1st YEAR	2nd YEAR	3rd YEAR	4th YEAR	5th YEAR	6th YEAR	TOTAL
Agriculture and Veterinary Medicine	1007	771	860	142	590	-	3370
Economics, Management and Statistics	2619	2803	3382	165	-	-	8969
Pharmacy, Biotechnology and Sport Sciences	1140	1213	1323	532	1171	-	5379
Law	1613	1383	1590	1473	2309	-	8368
Engineering and Architecture	3519	3629	3865	235	1199	-	12447
Arts, Humanities and Cultural Heritage	3957	4370	4188	576	22	-	13113
Foreign Languages and Literature, Interpreting and Translation	1025	1099	1631	108	-	-	3863
Medicine	1469	1298	1818	398	363	1089	6435
Psychology and Education	1941	2158	2052	846	52	-	7049
Science	2255	1822	1972	77	62	1	6189
Political Sciences	1897	1998	2092	252	-	-	6239
TOTAL	22442	22544	24773	4804	5768	1090	81421

Details of the competent authority overseeing the Faculty.

2.1.3 Governing Bodies of the Alma Mater

Main authority and administrative bodies within Alma Mater are:

- Rector
- Academic Senate
- Board of Governors
- Board of Auditors
- University Evaluation Unit
- General Director

Auxiliary bodies are:

- Student Council
- Service Staff Council
- Sponsors' Committee
- Student Ombudsman
- Guarantee Committee for Equal Opportunities

Support and guidance services for students (described in details in **Chapter five**) are:

- URP - Public Relations Office
- International Students Desk
- Disabled and dyslexic students service
- Tutoring
- Job Placement

Governing bodies

Rector

The Rector represents the university legally and institutionally; she/he is the head of the university organisation. She/he is responsible for the pursuit of the university's goals based on quality criteria and in compliance with the principles of effectiveness, efficiency, transparency and the promotion of merit.

The Rector is supported by 8 vice-Rectors with the following tasks: Deputy Rector, Vice Rector for the Romagna campuses, Finance, Teaching and Education, University Staff, International Relations, Research, Students. The Vice Rectors cooperate with the Rector in the management of the University.

Academic Senate

The Academic Senate is the representative body of the university community. It is involved in the general administration of the university and the appointment of the members of the Board of Governors. It has a coordinating function, acting as a link between the different structures of the university; it collaborates with the Rector in the steering, guidance and coordination of scientific and teaching activities; it collaborates with the Board of Governors for strategic management and annual and three-year financial programming and staff planning.

It is composed of 35 members: Rector, 10 Heads of Departments, 15 Professors and Researchers, 3 representatives of the service staff, 6 student representatives.

Board of Governors

The Board of Governors is in charge of strategic planning as well as the financial and staff programming of the University.

It executes its functions with a view to improving the efficiency and quality of the university's institutional activities, in compliance with the criteria of effectiveness, value for money and the protection of merit; it also monitors the financial sustainability of the University activities.

It is composed of 11 members: Rector, 5 internal members, 3 external members, 2 student representatives.

Board of Auditors

Board established to control the University's accounting and certify the regularity of the economic, financial and assets management.

The activities of the Board of Auditors include:

- Monitoring the management acts;
- Checking that the accounts and book entries are carried out correctly;
- Controlling the coffers;
- Analysing the budget as well as the attached balance sheets, the variations that may arise, the final balance sheet and the related final accounts attached;

- Preparing the appropriate reports containing a declaration certifying the correspondence of the results of the balance sheet with the book entries as well as evaluations concerning the regularity of the management;
- Carrying out all the necessary controls to guarantee the regular financial, accounting and patrimonial management and submits to the Board of Governors any comments concerning the management.

The Board of Auditors is composed of 3 statutory members and 2 deputy members.

University Internal Evaluation Unit (IEU)

The Internal Evaluation Unit is responsible for the evaluation of the University's teaching, research and administrative activities. It is composed of 5 members, 4 of which are external.

The Annual Reports produced by University Evaluation Unit are available on the following web address (Italian only): <http://www.unibo.it/nucleodivalutazione/default.aspx>.

General Director

In line with the instructions issued by the Board of Governors, the General Director is responsible for the general management and organisation of the university services, resources and technical-administrative staff, as well as the tasks required under the statutory provisions governing public administration management.

Auxiliary bodies

Student Council

This is the official student representative body at the University. It is composed of 33 members.

Service Staff Council (Council of the Support staff)

The Service Staff Council is a University body with consultation functions, without prejudice to the prerogatives of the General Director and the matters reserved for collective bargaining. It is appointed by Rector's Decree and is composed of 24 members.

Student Ombudsman

According to the Article 15 of the University Statute, the Student Ombudsman receives complaints concerning dysfunctions and restrictions on student rights.

The Student Ombudsman receives by appointment: Wednesdays from 10 am to 2 pm (http://www.eng.unibo.it/PortaleEn/University/University+Governing+Bodies/StudentOmbudsman_.htm)

Guarantee Committee for Equal Opportunities

The Guarantee Committee for Equal Opportunities has the priority task of ensuring and promoting positive actions and measures to create conditions of substantial equality of women and men workers within the University.

Describe, briefly the responsibilities, constitution and function of the main administrative bodies (councils, committees etc.). Indicate the involvement of the veterinary profession and general public in the running of the Faculty.

2.1.4 The Departments

The Departments are the functional structures of the University for the tasks related to scientific research and educational activities, and fall under at least one School. They are responsible for proposing the Degree Programmes to the Schools. Following the application of Italian Law 240/2010, Alma Mater runs 33 departments.

2.1.4.1 The Department of Veterinary Medical Sciences (DIMEVET)

The Department of Veterinary Medical Sciences (DIMEVET) was founded in 2011, resulting from the merger of 3 departments: Veterinary Public Health and Animal Pathology, Morphophysiology Veterinary and Animal Production, Veterinary Clinical and a Section of the Veterinary Biochemistry Department, in order to make the organisation more efficient and to offer improved and more integrated performance.

As part of the general reorganisation of the University following Law 240/2010, DIMEVET was established with RD rep. 1032/prot. 45909 of 28.10.2011 and implemented by RD rep. 1258/prot. 46115 of 16.10.2012 .

The present teaching staff of DIMEVET (2013) includes 20 Full Professors, 39 Associate Professors and 49 researchers, plus 2 Emeritus Professors; there are 78 Technical and Administrative Staff.

DIMEVET is divided into complex functional units called "Services", specific structures and facilities (including the Veterinary Teaching Hospital buildings, the Slaughterhouse, the museums). The majority of Services are certified to the ISO 9001 Quality Management System. Each service, including both teaching and support staff, has a certain financial autonomy. The services receive their own budget from DIMEVET and have to submit a statement of expenditure to DIMEVET (<http://www.scienzemedicheveterinarie.unibo.it/it/dipartimento/servizi/Servizi-e-Laboratori>).

The DIMEVET Services are given in **Tab. 2.5**.

DIMEVET has a Local Organisational Unit in Cesena (Municipality of Cesenatico), as per Articles 14-15 of the "Regolamento di Funzionamento del Dipartimento di Scienze Mediche Veterinarie" available at the following web address:

<http://www.scienzemedicheveterinarie.unibo.it/it/risorse/files/regolamento-di-funzionamento-d.r.-851-2012-coordinato-con-d.r.-1387-2012> [in Italian only].

The Local Organisational Unit (LOU) has financial autonomy and manages the budget allocated by Department Board. The Head of LOU is elected by the Department Board from among the teaching staff of the LOU in Cesenatico. The Head of LOU coordinates the teaching and scientific activities carried out in Cesenatico.

Other facilities connected to DIMEVET are the "Istituto Nazionale Fecondazione Artificiale" (Artificial Insemination Centre - AIC) and the University Dairy Farm Unit, which are part of the "Azienda Agraria" (University Farm - AUB) and play a vital role in supporting research projects and teaching activities.

Additional facilities of DIMEVET include the "G.B. Ercolani" Central Library, the Health Science and Technologies Interdepartmental Centre for Industrial Research (HST-ICIR) and the Incinerator.

Tab. 2.5 - DIMEVET services.

ACRONYM	SERVICE	HEAD	ISO9001
ZNA	Animal Husbandry, Nutrition and Feedstuffs	Prof. G. Biagi	✓
BIOCHIM	Biochemistry Service	Dr. A. Pagliarani	
ANV	Normal Veterinary Anatomy		
	Unit of Veterinary Anatomy	Prof. P. Clavenzani	✓
	Unit of Molecular Anatomy	Prof. L. Calzà	
IA	Hygiene and Food Technology	Prof. R. Rosmini	✓
MIPAV	Infectious, Parasitic and Avian Diseases	Prof. G. Poglayen	✓
CABA-Lab	Lab. of Analytical Bio-Agroalimentary Chemistry	Prof. G. Pagliuca	✓
APS	Pathological Anatomy	Prof. C. Benazzi	✓
FT	Pharmacology and Toxicology	Prof. A. Zaghini	✓
FIS	Physiology	Prof. C. Tamanini	✓
BioClinVet	Veterinary Clinical Biochemistry	Prof. G. Isani	
SRA	Animal Reproduction	Prof. D. Zambelli	
SFC	Centralized Drug Service	Dr. S. Valentini	
SEPAC VET	Veterinary Clinical Pathology	Prof. F. Gentilini	
SDIMM	Diagnostic Imaging	Prof. A. Diana	
SMI	Internal Medicine	Prof. P. Famigli Bergamini	
SARGA	Large Animals Hospital and Emergency	Prof. A. Spadari	
SARPA	Emergency and Critical Care	Dott. M. Giunti	
SCAR	Surgery and Anaesthesiology	Prof. O. Capitani	

2.1.4.2 Governing Bodies of DIMEVET

Head of Department

The Head of the Department is a Full Professor elected by the Department Board. The Head of Department has the following functions:

- Representation of the Department;
- Chairing the Department Board;
- Overseeing the Department's activities and administration (assisted on administrative matters by the Administrative Secretary);
- Drafting, with the administrative secretary, of the departmental budget;
- Submission of requests to the Board of Governors for support staff, space, facilities;
- Coordination of support staff.

The Head of Department appoints a Full or Associate Professor as Vice-Head Assistant who may replace her/him in any of her/his functions, in case of absence.

Department Executive Committee (DEC) - "Giunta"

The DEC assists the Head of Department in the functions appointed to it by the Department Board. The DEC is composed of: the Head of Department, the Vice-Head, the Head of the Local Organisational Unit of Cesenatico, the administrative secretary, 9 professors and researchers, equally representative of each category; 2 representatives of the support staff elected from among the members of the Department Board; 2 student representatives elected from among the members of the Department Board; up to a maximum of 3 professors and researchers which one is the President or Vice President of the School of Agriculture and Veterinary Medicine, and up to 2 appointed by the Director, taking into account the roles of coordination in the areas of research, teaching, health services, safety, quality certification. The mandate of the DEC is three years and coincides with that of the Director.

Department Board (DB)

The Department Board is the administrative and governing body of the Department. It comprises all teaching staff, the administrative secretary and a representative of the support staff, as well as a representative of PhD students, contract researchers and students. Usually the Department Board meets at least once every month or whenever deemed necessary.

The DP has the following functions:

- Coordination of financial and technical resources;
- Approval and submission to the School of the Three-year Teaching Plan, in agreement with the 3-year University Programming Document;
- Promotion and approval of external contracting;
- Coordination of the teaching and scientific activities of professors and researchers;
- Drafting of calls for applications for professors and researchers;
- Planning of staffing needs and proposals to fill professor and researcher positions;
- Identification of priority needs of the technical and administrative staff.

Other committees of DIMEVET:

- Safety Committee
- Teaching Committee (DTC)
- Research Committee (DRC)

2.1.5 The Schools

In agreement with the University Reform, the Alma Mater has reorganised its structure. The Faculties were replaced by the Schools, each of them resulting from the merger of different former Faculties.

The Schools coordinate the University teaching activities and provide space, equipment, structures and facilities for teaching activities. The focus of all the activities of the Schools are the students, their cultural and professional growth through curricula oriented to the job market. The University of Bologna has the following Schools:

- School of Agriculture and Veterinary Medicine
- School of Arts, Humanities, and Cultural Heritage
- School of Economics, Management and Statistics
- School of Engineering and Architecture
- School of Foreign Languages and Literature, Interpreting and Translation
- School of Law
- School of Medicine
- School of Pharmacy, Biotechnology and Sport Science
- School of Political Sciences
- School of Psychology and Education
- School of Science

The Degree Programme in Veterinary Medicine (DPVM) is currently managed by the School of Agriculture and Veterinary Medicine (SAVM), established in October 2012.

The SAVM coordinates the educational activities of 15 degree programmes, previously managed by the Faculties of Agricultural and Veterinary Medicine and includes the Department of Veterinary Medical Sciences (DIMEVET), the Department of Agricultural Sciences (DipSA) and the Department of Agricultural and Food Sciences (DISTAL).

The SAVM is located on two Campuses: Bologna (DipSA and DISTAL) and Ozzano dell'Emilia (DIMEVET).

2.1.5.1 Governing Bodies of the School of Agriculture and Veterinary Medicine

School Dean

The School Dean represents the School and chairs the School Board; her/his tasks, defined in art. 5 of the School Operating Regulation, are related to supervision, coordination and management of the activities of the School.

<http://www.agrariaveterinaria.unibo.it/it/documenti/regolamento-di-funzionamento-della-scuola-di-agraria-e-medicina-veterinaria/@@download/file/ALLEGATO%2001%20-%20Regolamento%20Scuola%20AGRARIA%20E%20MEDICINA%20VETERINARIA.pdf> [in Italian only]

The School Dean is supported in her/his activities by one Deputy Dean. Furthermore, to coordinate the activities of each campus with a significant number of professors and students, in compliance with Art. 18, paragraph 7 of the University Statute, the Dean appoints a Vice Dean from among the full professors of that specific campus (Statute, art.19 comma 4).

School Board

The School Board, chaired by the School Dean, is composed of the Head of the Departments and by an elected representative of professors and researchers. Each Department contributes to the formation of the representative share with 10% of its teachers.

The representatives of the Departments on the School Boards include, where possible, the coordinators of the first, second and third cycle programmes, while the other members must be members of Department Executive Committees, taking into account of any local organisational units (LOUs).

The students' representatives count for 15% of the total members of the Board.

Student-Staff Joint Committee (S-SJC)

The Student-Staff Joint Committee (S-SJC) of the School of Agriculture and Veterinary Medicine is composed of four professors (Full and Associate), including the School Dean or his/her delegate, chairing the Committee, the Vice-Dean, the Teaching Coordinator, two researchers and six student representative appointed by the School Board.

The main function of the S-SJC is to present opinions and solutions dealing with the planning, provision and monitoring of teaching activities for debate by the School Board.

School Coordinators

- Guidance for prospective students Coordinator
- Professional Practical Training Coordinator
- Tutorial Service Coordinator
- International Relationship Coordinator
- Disabled and Dyslexic Students Coordinator

2.1.6 The Degree Programmes

The Degree Programmes are School bodies in charge of the organisation and coordination of all the teaching activities required for the award of a specific Degree (First cycle/Bachelor or Second cycle/Master level). Degree Programmes do not have financial autonomy, but depend on the School and Department to which they belong. They are managed by a Degree Programme Coordinator (DPC) and by the Degree Programme Board (DPB).

Indicate the rules concerning the appointment of the elected officials of the Faculty (Dean, Vice-Dean, Heads of Department, etc.).

Head of Department

The Head of Department must be a full-time Full Professor. She/he is elected by secret ballot from among all the members of the Department Board and remains in office for three years. She/he may be re-elected only once.

School Dean

The School Dean must be a full-time Full Professor of the departments within the school. She/he is elected by secret ballot from among all the members of the School Board and remains in office for three years. She/he may be re-elected only once.

Vice Dean

The Vice Dean is appointed by the School Dean and she/he ensures the functions of the School Dean in the event of her/his absence or impediment.

Degree Programme Coordinator

The Degree Programme Coordinator must be a Full Professor. She/he is elected by all members of the Degree Programme Board and remains in office for three years. She/he may be re-elected only once.

Provide a diagram of the administrative structures showing the Faculty in relation to the university and ministerial structure of which it is part.

The SAVM of the Alma Mater is part of the Ministry of Education, Universities and Research (MIUR). The general mission of the MIUR includes the coordination, funding and monitoring of all scientific activities of national interest.

The MIUR operates in the following areas: university education, programming of intervention on university system; coordinating, supervising, financing and evaluating university activities as far as teaching and research are concerned.

Fig. 2.5 show the relationship between the MIUR, that coordinates and monitors the scientific activities, the Alma Mater, the School and the DPVM.

A diagram of the internal organization of the teaching activities of the Alma Mater is also provided (**Fig. 2.6**).

Provide a diagram of the internal administrative structure of the Faculty itself (councils, committees, departments, etc.)

Please see **Fig.2.7**.

Indicate the involvement of the veterinary profession and general public in the running of the Faculty.

Although the veterinary profession is not directly involved in the running of the DPVM, veterinarians, research institutions as well as local/Regional Veterinary Chambers are involved in the life of the DPVM.

Private practitioners are involved, as contract professors, in the Mobile Clinic and the Professional Practical Training-PPT (internship).

Agreements between DIMEVET and the Aziende Sanitarie Locali-ASL (local health authority) of Emilia-Romagna region are established to carry out PPT. Public practitioners act as tutors and train and supervise undergraduate students in the extramural practical activities (for further details on the PPT and contract teachers see **Chapters four** and **five**).

The Head of Department holds official formal meetings with the representatives of the Professional Veterinary Orders of the Bologna province.

DIMEVET has established specific agreements with animal feed manufacturers and pharmaceutical farms which provide grants for fellowships, seminars and activity research.

Agreements with the regional districts of Emilia-Romagna are established for:

- Emergency care of injured pets founds in the territory;
- Clinical referral service for pets housed in public kennels and shelters;
- Clinical referral service for wild and non-conventional pets;
- Pet therapy.

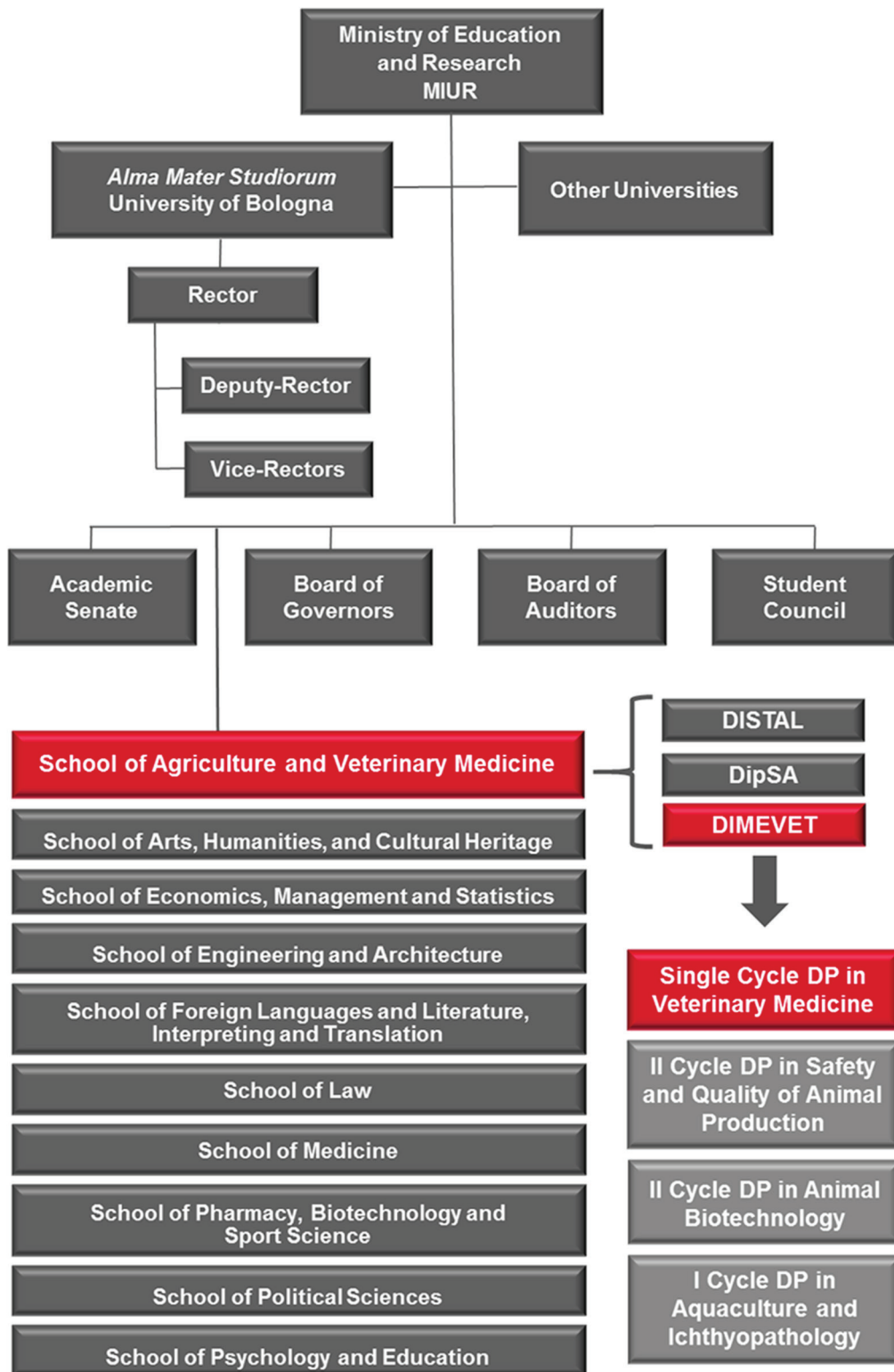


Fig. 2.5 - Relationship between the MIUR, the *Alma Mater Studiorum*, the School, and the DPVM.

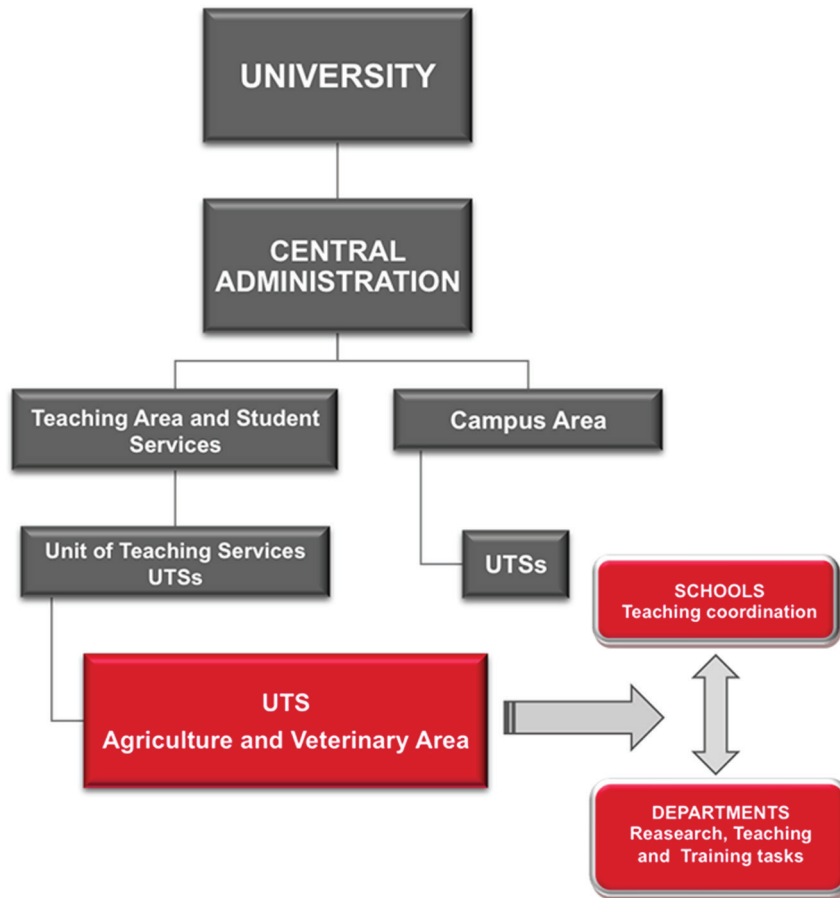


Fig. 2.6 - Diagram of the internal organization of the teaching activities of the *Alma Mater Studiorum*.

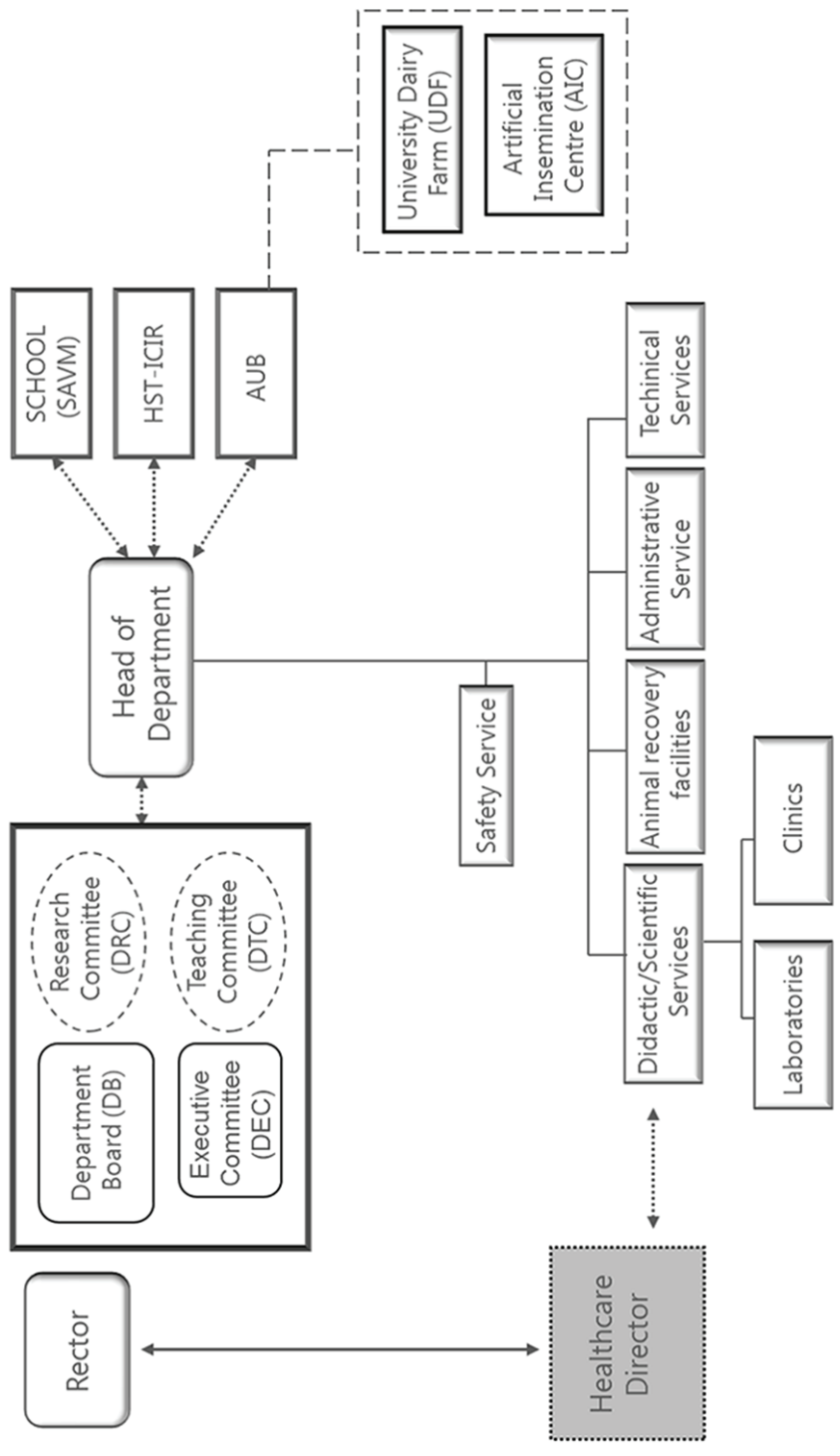


Fig. 2.7 - Diagram of the DIMEVET internal administrative structure.



CHAPTER 3

FINANCES

3.1 FACTUAL INFORMATION

Since 2010, the effects of the Law no. 240 have changed the way of funding the Degree Programme in Veterinary Medicine (DPVM) in Bologna. The Alma Mater modified its Statute late in 2011, so for that year and part of 2012, the institutions involved in funding the Degree Programme in Veterinary Medicine were the same and, specifically: the MIUR (Ministry of Education, Universities and Research), the Alma Mater, the Chairmanship of the Faculty of Veterinary Medicine of Bologna (FVMBol) and the Department of Veterinary Medical Sciences (DIMEVET). In October 2012, the Chairmanships of Faculties disappeared and Schools were activated.

Currently, the DPVM falls under DIMEVET, although teaching activities are partially coordinated by the Vice-Chairmanship of Veterinary Medicine of the SAVM. The finances supporting the DPVM, as detailed in **Tab. 3.1**, come from different sources, specifically from MIUR, Alma Mater, and both the DIMEVET and SAVM Vice-Chairmanship of Veterinary Medicine. DIMEVET and SAVM receive funds from Alma Mater and/or other public and private institutions.

Tab. 3.1 - Establishments providing direct and indirect financial support to the DPVM.

ESTABLISHMENTS	2011	2012	2013
MIUR	X	X	X
<i>Alma Mater</i>	X	X	X
Chairmanship of the FVMBol	X		
SAVM-Vice-Chairmanship of Veterinary Medicine		X	X
DIMEVET	X	X	X

The MIUR supports the Italian University System. The annual budget of each university is mainly based on both the "Fondo di Funzionamento Ordinario" (National Ordinary Operating Budget), which is under the responsibility of MIUR, and the income from student tuition fees. Both these funds must cover:

- The academic, technical and administrative staff salaries;
- The annual ordinary operating budget for the University (*i.e.* electricity, telephone for administrative Areas, heating and air conditioning, cleaning, etc.);
- The right to higher education (*diritto allo studio*);
- The annual ordinary operating budget for the Department, Schools, Administrative Areas and other Structures of the University;
- The annual budget for teaching activities (mainly allocated to Departments and Schools);
- The annual budget for research (mainly allocated to Departments);
- The annual budget for the Libraries.

The National Ordinary Operating Budget is subject to national regulations.

Alma Mater secures funding for PhD scholarships, which are allocated in accordance with a general policy of the University, but they may be implemented peripherally (by the Department) with public or private funds. However, this budget is managed directly by the Alma Mater even when implemented with contributions from the Departments.

3.1.1 General information

Indicate whether the Faculty's current financial model (system) meets the Faculty's mission.

The DPVM is one of the most expensive of all the university Degree Programmes. This is mainly due to its specific requirements in terms of staff (number of employees, their abilities and skills), facilities and equipment, services for students, teachers and the public. Moreover, the DPVM necessarily involves small numbers of students due to the EAEVE requirements and the National programmed number of student per year (numerus clausus). Finally, it should be noted that there is no financial support from the National Health Service, as on the other hand is the case for the Degree Programme in Medicine and Surgery.

The annual total income of DIMEVET and SAVM Vice Chairmanship in 2013 was € 16,165,394. This amount can be divided roughly into 75% for salaries (completely covered by the Alma Mater) and 25% for running the various of the DIMEVET and DPVM activities (from different incomes from the Alma Mater, DIMEVET and SAVM).

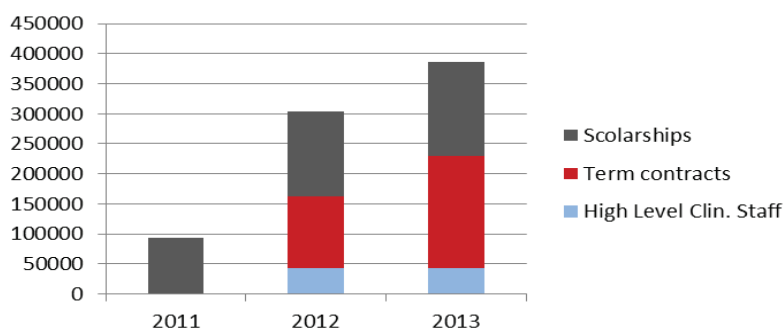
Currently, Alma Mater allocates funds to both Departments and Schools for teaching and the right to higher education according to general criteria, without any specific allocation for the DPVM. This procedure is quite different from that of other Italian Universities (such as Milan, Turin and Pisa), where specific funds are allocated directly to DPVM (*i.e.* to support the VTH).

Tabs. 3.4 and **3.5** show the different items of income and expenditures. Details are provided only for 2013 because, as already stated, in 2011 and 2012 there was a completely different model. It is quite evident that the single income from the Alma Mater is unable to sustain good or even high quality of teaching. For this reason, DIMEVET must commit a consistent part of its income to supporting teaching activities (*i.e.* clinical and diagnostic). Based on the data presented in **Tabs. 3.1** and **3.2**, excluding salary costs, DIMEVET self-financing for 2013 was approximately € 1,532,000, representing 35% of the total expenses. This percentage may vary in the event of extraordinary incomes (such as teaching projects) or expenditures for equipment, buildings and new services.

To summarise, the model of the last few years clearly shows that the DPVM is underfinanced by the Alma Mater and that the imbalance is met by the income of DIMEVET.

Since the EAEVE visit in 2005, besides the ordinary management, despite the inadequate financial support from central organs, the DIMEVET has made efforts to meet the requirements and suggestions from the EAEVE report. Several extraordinary measures were put in place to improve the quality of teaching activities, learning opportunities and service needs:

- Strengthening of the 24-hour Emergency and Critical Care Service. In this operation, in addition to the reorganisation of the responsibilities of the teaching and technical-administrative staff involved, DIMEVET committed funds mainly directed to sign contracts with graduates to supervise the activities carried out by students. The Alma Mater provided financial support for one High Level Clinician staff for 2012 and 2013. DIMEVET and the clinical services funded fixed-term contracts with junior staff-clinicians to the support of the VTH activities. The total amounts of these items are shown in the graph below:



- Setting up a service of Mobile Clinic employing teaching staff and providing funds for a training contract with 3 private veterinary surgeons, who supervise the students' activities in outside farms. The total value of this intervention in the 3 years reported in this SER is € 15,520.
- Strengthening various infrastructures in the University Dairy Farm with the contribution of € 296,172 from research funds.
- Increasing the staff dedicated to supporting training activities by signing specific contracts, currently borne jointly by DIMEVET and SAVM.
- Enhancement of the activities concerning cadaver collection used in practical training of anatomy and pathological anatomy courses and in some surgery training activities. The cost of this activity is borne entirely by DIMEVET.
- Implementation of a Veterinary Teaching Portal using funds allocated by the University through the channel for the improvement of teaching services for students.
- Renovation of diagnostic imaging equipment:
 - X-ray machine (€ 78,000) funded entirely by the Alma Mater funds to support teaching;
 - Ultrasound and endoscope (€ 55,460) self-funded by DIMEVET and the ZNA and SMI Services.
- Setting up a multimedia classroom in the VTH to discuss clinical cases (€ 37,600) funded by the Alma Mater through the channel for the improvement of teaching services for students.

The following actions are currently underway:

- Functional reorganisation of changing rooms for the activities carried out in anatomical autopsy and pathological necropsy rooms;
- Complete renovation of the former surgery and obstetrics buildings;
- Construction of the Wildlife and exotic veterinary centre (donation fund).

Other renovations include:

- New isolation facilities for companion animals;
- Stalls for large animals anaesthesia at the Teaching Hospital,
- Relocation of the surgical instrument sterilising equipment;
- Renovation of the lecture hall adjacent to the stables;
- Renovation of two rooms for practical training;
- New changing rooms for support staff.

Funds for the above-mentioned reorganisations are provided by DIMEVET (30%) and the Alma Mater (70%) with an estimated cost of € 1,333,000.

In addition please specify how the allocation of funding (including public funding) to the Faculty is determined, and by what body. Specify if the allocation of funds, or any significant proportion of it, is linked to a particular factor (e.g.: student numbers, research output). Please describe this.

To properly understand the allocation of funds by the different establishments participating in the maintenance of the Degree Programme in Veterinary Medicine, some distinctions must be considered. The following categories can be defined:

- "Fixed" funds
- "Variable" funds
 - Public funds
 - From the University
 - From other extra-University establishments
 - Private funds

“Fixed” funds include the salaries of the teaching and support staff, determined by national law. Coverage is provided by the MIUR, which allocates the budget to the University, which integrates the funds if required.

“Variable” funds include income both from:

- The Alma Mater to the Department, School, Library (operating funds for all structures, research budget for DIMEVET, teaching budget for SAVM and DIMEVET);
- Public establishments (e.g. Ministries, European Union) for research purposes. For the latter activity, funds from private enterprises can be added to the Department budget.

While the allocation of public or private funds for research is subject to negotiation between the parties (private funds) or to anonymous evaluation (calls for national or European public funds), the allocation of operating and research funds is subject to the following Alma Mater rules.

DIMEVET

DIMEVET receives funds through three channels:

- Operating fund;
- Integrated budget for research;
- Teaching and student services.

Operating fund.

This is allocated according to three standards:

- Historical – incidence equal to 75% of the total fund.
- Staff – incidence equal to 12.5% of the total fund. Each department receives a quota equal to the percentage of department staff compared to the whole University staff.
- Spaces – incidence equal to 12.5% of the total fund. Each department receives a quota equal to the percentage of spaces assigned to the department compared to all spaces.

Integrated budget for research.

In 2011, the allocation of funds was a mere confirmation of the funds allocated in 2010. In 2012, after the entry into force of the new Statute, many Departments were operative, and the allocation was established by the sum of “per capita share” of 2011 integrated budget concerning all professors/researchers who joined the new Department. For this purpose, the population at the end of October 2011 was considered, when the staff were assigned to the new Departments. In 2013, the budget for research was distributed among the Departments in proportion to funds allocated in 2012.

Once the Department has received funds allocation, it must approve the allocation of shares related to the research and based on 5 items:

- Research grants – the Department makes available this share to fund research grants.
- Funds for Marco Polo mobility – the Department makes available this share to cover the higher costs for researchers, fellows and PhD students who spend a research period abroad.
- Oriented fundamental research – the Department makes available this share to support the research of each single member of the teaching staff.
- Publications and meetings – the Department makes available this share to cover part of the costs for publications and the organisation of meetings.
- Research departmental fund – the Department makes available this share to fund research projects in the Department.

Teaching and student services.

This fund is allocated according to three indicators:

- Funds historically allocated to the ex-Faculties net of the share for the teaching programme. This item accounts for 85%.
- Indicator of regularly enrolled students who in the previous academic year obtained at least 5 CFUs. They are weighted "4" according to MIUR instructions and are valid nationwide. This item accounts for 7.5%. MIUR issued guidelines for weighting students according to type of Degree Programme. Students are weighted from 1 to 4. DPVM, Medicine and Dentistry students have a weighting factor of 4.
- Indicator of regularly enrolled students who in the previous academic year attained at least 5 CFUs. This item accounts for 7.5%.

SAVM – Ex-Chairmanship of the FVMBol

The Chairmanship of the FVMBol was still active in 2011 and 2012, while the SAVM Vice-Chairmanship became active in November 2012. In 2011 and 2012, the FVMBol Chairmanship received the "Integrated Budget", including:

- Students' contributions for Faculties based in Bologna;
- Funds for teaching equipment;
- Funds for the right to education for Faculties based in Bologna;
- Incentives for the quality of teaching;
- Operating funds.

The Integrated Budget allocated was quantified as follows:

- 85% based on the historical share;
- 7% on the basis of indicators of demand (rebalancing quota). Part of this assignment is proportional to the number of students regularly enrolled at the Faculty considering two multiplying terms: the cost of specific education and the demand and cost of structured teaching;
- 7% based on the number of regular students weighted on indicators for graduates who completed the programme according to schedule (graduation score 70-90 and 90-100) and on the opinion of undergraduates (incentive quota).
- 1% on the basis of allocations approved by Alma Mater to ensure the continuity of teaching in structures lacking staff members and/or to pursue other specific aims of general interest (guarantee quota).

Since October 2012, the SAVM has been active with the following funds:

- Operating fund;
- Fund for the Teaching and Student Services.

The *operating fund* is allocated on the basis of:

- Historical quota (85%): percentage of the 2013 teaching budget allocated to Schools.
- Indicator of regularly enrolled students who obtained at least 5 CFUs in the previous academic year, weighted "4" according to national directions.
- Indicator of regularly enrolled students who obtained at least 5 CFUs in the previous academic year. This item accounts for 7.5%.

The *fund for the Teaching and Student Services* is allocated on the basis of:

- 85% of the historical share;
- 7% on indicators of demand (rebalancing quota);
- 7% on the number of regular students weighted on indicators for graduates who completed programme according to schedule (graduation score 70-90 and 90-100) and on the opinion of

undergraduates (incentive quota);

- 1% on allocations approved by Alma Mater to ensure the continuity of teaching in structures lacking staff members and/or to pursue other specific aims of general interest (guarantee quota).

Library

The operating fund allocated annually by the Alma Mater is based primarily on historical data. Over time it has been reduced in line with the Alma Mater policy of cost reduction to cope with the shortage of MIUR funds.

In 2011, the income was reduced by 5% compared to the previous year. The funds allocated to the Library fell from € 164,160 in 2010 to € 155,952 in 2011. This amount remained unchanged in the two subsequent years (2012 and 2013). It is worth mentioning that both DIMEVET and the SAVM Vice-Chairmanship (Chairmanship of FVMBol, until 2012) strived to ensure the necessary funding for library services.

The transfer of funds by the University to the peripheral structures supporting the DPVM is subject to the Alma Mater general rules for Schools, Departments, and the University Libraries. Apart from the historical share, the number of students, especially the regular ones and those who have obtained at least 5 CFUs, influence the allocation of funds to the Departments and Schools for Teaching and Student Services. On the other hand, the number of permanent staff working in the structures influences the allocation of the operating fund for the Departments.

The qualification of the scientific production of the Teaching Staff (assessed according to internal criteria of the University and, to date, only partially integrated with national criteria) influences:

- The research budget and the number of grants awarded annually to DIMEVET and the PhD schools;
- The budget for teaching staff.

Specify how the basis for funding the Faculty compares with those teaching other courses (e.g. whether veterinary training receives a higher budget weighting compared to other disciplines). Specify how the allocation of funds within the Faculty is decided. What are the mechanisms for funding major equipment and its replacement? Specify the mechanism(s) for funding capital expenditure (e.g. building work, major items of equipment) and how decisions are taken in this matter. Specify the mechanism(s) to provide the necessary support for building maintenance and how decisions are taken in this matter.

As the funding for Schools, Departments and Libraries has rules that apply to the entire University, the differences in allocation compared to other programmes were mainly affected by:

- The number of students (this parameter negatively influences the DPVM, which has limited enrolment and for which, over the years, the number of registrations has been further reduced to align with national requirements to decrease the number of graduates);
- The weight of students. A portion of the funds allocated for teaching and student services is done by weighing "4" the students in Veterinary Medicine (the minimum for other DPs is "1") on condition that they are enrolled according to the exam schedule, obtaining at least 5 CFUs. The revisions of the Degree Programme required in recent years have always aimed to promote the students' acquisition of credits and improve the position of this criterion for funding;
- The qualification of the research of the Academic staff, influencing more funding channels (integrated budget of the Department, the number of PhD fellowships, turnover of teaching staff).

However, it should be noted that the majority allocation still comes from the historical share, while the weight of the students affects only up to 15%.

The redistribution of funds allocated to various structures in different items of expenditure depends on the approval, in most cases, of the decision-making bodies of the various structures. Specifically:

- SAVM: School Board;
- DIMEVET: Department Board;
- G.B. Ercolani Library: Scientific Committee.

All costs related to renovation and/or construction of buildings depend on the binding judgment of the Alma Mater Technical Office; depending on the funds available, it ensures the full or partial (in this case with co-financing by the proponent of the structure) coverage of the construction activity.

The co-funding from the University can vary from a minimum of 50% to a maximum of 70%. The 50% funding is allocated when the building work is in the best interests of the Department (e.g. building works strengthening research and territorial activities), while the 70% is assigned if the work is in the best interests of the university (e.g. to improve learning activities).

Until 2012, maintenance expenses were covered by the budgets of the reference structures within the operating fund, since 2013, however, the costs for routine cleaning and maintenance of buildings and equipment has been centralised and are borne by the Alma Mater that, for this purpose, has reduced the amounts allocated upstream.

Currently, the Alma Mater has no active channel for funding/replacing equipment of major importance (such as Computer Tomography and Magnetic Resonance Imaging), although it is possible to obtain an advance from the University to bear the costs which, however, weigh on the budget of the proponent structure.

DIMEVET is entitled to make official requests for this type of equipment, for which the approval of the Department Board is required. A source from which the Department can approve the purchase of large equipment is the integrated budget for research or the reserve fund generated from drawings on the income from research or third parties. Large equipment can also be purchased through budgets of funded research projects; in this case, the project manager is responsible for the purchase.

3.1.2 Information on extra income

What percentage of income from the following sources does the veterinary teaching faculty have to give to other bodies (university, etc.)? (a) Clinical or diagnostic work; (b) Research grants; (c) Other (please explain).

In the past some of the activities concerning extra income could also be decided by the Chairmanships of the Faculty but, currently, they are determined only by DIMEVET (**Tab. 3.2**) and are divided into:

1. Commercial activities, which include:
 - Clinical activities;
 - Diagnostic activities;
 - Consultancy contracts;
 - Research contracts.
2. Research funds, provided by public institutions (Ministries, European Union, Experimental Zooprophyllactic Institute).

The revenue generated by the items in point 1 are subject to appropriate Alma Mater regulation, which requires:

- The allocation of 10% of the income to the University;
- The identification of a profit to be distributed among the staff involved in the service, which may be as much as 80%.
- The identification of a percentage to cover the costs that remain available to the service that provided the service.

This regulation is integrated with the resolution of the DIMEVET Board of November 11th 2011, which establishes a 4% allocation to a reserve fund and sets the percentage of profit from clinical and diagnostic activities to be distributed among staff at a maximum of 21%. The definition of profit percentages for consultancy and research contracts remains at the discretion of the proposer.

The Alma Mater does not withhold any amounts from research funds provided by public establishments while, according to the resolution of the DIMEVET Board of November 23rd 2010, 5% is withheld; 95% remains at the disposal of the holder/scientific manager. No profit is envisaged for this type of funds.

Tab. 3.2 - Information on extra income.

TYPE	UNIVERSITY	DEPARTMENT	COSTS	PROFIT
Clinical activities	10%	4%	65%	21%
Diagnostic activities	10%	4%	66%	20%
Consultancy contracts with private institutes	10%	4%	Proposal in accordance with Rector's Decree no. 256/2011.	
Research contracts with private institutes	10%	4%	Proposal in accordance with RD no. 256/2011.	
Research funds by public institutes	0%	5%	95%	0%

Please indicate whether students: (a) Pay tuition/registration fees; (b) How much these are; (c) How they are decided; (d) How the funds are distributed.

Students pay an annual tuition fee for the teaching activities provided by the DPVM. Both the annual amount and any possible reductions are established by the Alma Mater Academic Senate (details are provided below).

For the current academic year (2013-2014) the annual fee is € 2,011 for students enrolled in the first year and € 1,666 for students enrolled in the following years.

Payment of fees can be done in a "Single instalment" with a € 75 discount or in 3 separate instalments (**Tab. 3.3**).

Tab. 3.3 - Payment of student's fee.

SINGLE instalment	FIRST instalment	SECOND instalment	THIRD instalment	TOTAL	ENROLMENT
1,924	910	784	317	2011	I year
1,579	600	802	264	1666	II, III, IV, V years and out-of-course

Students can obtain a reduction of their tuition fees, which may be:

- Total exemption;
- Partial exemption.

Details are provided in **Annex 3.1**.

It is difficult to determine which percentage of the fees paid by students return to the University. As already mentioned, Alma Mater uses several distribution channels (operating funds, teaching and

student services, research budget) to support the DPVM. These channels are covered in the Alma Mater budget, both by funds received from the MIUR and revenue from the fees paid by students.

3.1.3 Overview income (revenue) and expenditure

Tab. 3.4 - Income/Revenue (in Euros).

	STATE (GOVERNMENT)		INCOME GENERATED BY THE DEPARTMENT		TOTAL
	TO UNIVERSITY ADMINISTERED OUTSIDE THE FACULTY	DIRECT TO FACULTY/SCHOOL + DEPARTMENT + LIBRARY	INCOME FROM SERVICES PROVIDED	RESEARCH	
2013	12,184,650	1,046,863	1,540,980	1,392,900	16,165,394
2012	12,157,780	1,224,954	1,337,392	2,448,748	17,168,874
2011	12,240,878	1,282,944	1,133,359	1,068,287	15,725,468

Tab. 3.5 considers the total amount of each area of expenditure, as detailed in **Tab. 3.6** for year 2013. Due to the changes in the system, it was not possible to produce the same detailed data for years 2012 and 2011.

Further details are provided in **Annex 3.2**.

Tab. 3.5 - Expenditure.

YEAR	PERSONNEL	TEACHING SUPPORT	RESEARCH SUPPORT	CLINICAL SUPPORT	OTHER ¹	TOTAL
2013	€13,827,422.38	€266,998.00	€914,175.00	€447,851.00	€768,656.00	€16,225,102.38
2012	€13,418,930.27	€192,250.41	€763,592.53	€735,921.66	€183,065.21	€15,293,760.08
2011	€13,121,311.28	€206,255.56	€705,428.76	€714,026.31	€273,698.86	€15,020,720.77

¹ For "Other" see Table 3.6 below Extra info: Annual expenditure of the establishment = Total (general operations/utilities + general or common equipment+ building)

Tab. 3.6 - Extra info: Annual expenditure of the establishment. Calendar year: 2013.

PERSONNEL	
Salaries	€11,619,316.88
Support staff for Teaching	€165,000.00
Support staff for Research	€1,243,155.43
Support Staff for Clinical/diagnostic activities	€536,015.07
Extra salaries	€263,935.00
Total Personnel	€13,827,422.38
OPERATING COSTS	
Teaching	€150,763.00
Research	€736,362.00
Clinical/diagnostic activities	€329,247.00
General operations/utilities	€268,245.00
Total Operating Costs	€1,484,617.00
EQUIPMENT*	
Teaching	€116,235.00
Research	€177,813.00
Clinical/diagnostic activities	€118,604.00
General or common equipment	€30,478.00
Total Equipment	€443,130.00
BUILDINGS*	€469,933.00
Total Expenditure	€16,225,102.38

3.2 COMMENTS

Teaching establishments never have enough finance. Please comment on any of the "Guidelines and Requirements" that are particularly difficult to fulfil in the present financial situation. Please make any comments that you feel would help the experts concerning the Faculty's finances. What is your number one priority for the use of any increased funding? Comment on the degree of autonomy and flexibility available to the Faculty in financial matters. Comment on the percentage of income from services that the Faculty is allowed to retain for its own use, and in particular on the extent to which loss of this income acts as a disincentive for the services concerned. Please make any other general comments that you feel would help the experts concerning the Faculty's finances.

The final report of the 2005 EAEVE visit focused on a few main comments/suggestions. They are:

The team was pleased to find that there was recognition of [...] higher costs by the University in terms of the funding coefficient. It would particularly commend the increase in this coefficient that permitted the Faculty to reduce the student intake without suffering an equivalent reduction in funding. This was politically difficult, but essential to improving the quality of training.

There has been a substantial decrease in the extent of ordinary and student funds allocated by the University to the Faculty. This situation could cause serious problems in the future. For financial reasons, it is also very difficult for the Faculty to get any additional staff 'points' for promotions or new appointments.

The Faculty and Departments should seek further and closer integration in relation to the basis for the allocation of funds.

Currently, as can be seen in the factual information, there is a good integration between University - Department - School in sharing the cost burden for both maintenance and improvement. The policy applied during the past years is in line with the point raised in the report of the EAEVE visiting team.

Currently, one of the greatest financial weaknesses is that all the improvements made in the past few years require personnel that, to date, are guaranteed only through temporary contracts, for which there is no certainty of funding in the next budget. In order to reinforce and ensure continuity, the services offered should be stabilised. Firstly, this requires the permanent employment of staff clinicians currently employed with fixed-term contracts.

Besides improving the staff consistency, the DIMEVET policy focuses on both renovation of the buildings and purchase of instruments for advanced diagnostics imaging and research purposes. DIMEVET chose to plan first the maintenance and renovation of the buildings (about 25 years old), as detailed in **Chapter six**, and, secondly, the purchase of the instruments to support advanced diagnostics imaging and research. It is worth mentioning that there is no longer Alma Mater funding for purchasing large equipment.

Although national law indicates that the DPVM student weighting of 4, currently the application of this rule in the allocation of funds for teaching and student services (both to the Department and the School) counts for only 7.5% of the budget.

In the 2005 SER1 the need was emphasised to receive more financial support for the teaching practice which, in the case of Veterinary Medicine, does not benefit from integration with the National Health Service.

Without the active contribution and financial support of DIMEVET, the teaching activities within the VTH clinical activities could not take place efficiently.

Other Italian Universities (*i.e.* Milan and Turin) support the DPVM with ad hoc funds that, unfortunately, are lacking in the Alma Mater policy.

Two years ago, the Alma Mater refused the FVMBol and DIMEVET proposal to increase the tuition fees of DPVM students to support the training costs.

In 2013 DIMEVET had to integrate the student services budget with an additional allocation of € 51,389 to match the amount allocated in 2012.

DIMEVET does not have a list of actions planned to implement in the event of an increase in the allocated budget, because no increases in financial support are envisaged. The DIMEVET perception of inadequate financial support is the result of national policy of cutting the education budget over the past decade. The cuts in funding to universities have never been replenished and the trend has not changed, as shown not only by the 300 million EUR cuts in the "2013 Stability Law" of ordinary funding to universities (meaning 18 million EUR less than the previous year for the Alma Mater) but also by the abolition of merit rewards to universities, previously planned by the law 240/2010.

The current policy of the Department to operate 4-5% withholdings from the income from institutional funds or funds of activities for third parties/contracts will not be revised in the near future. The fees are considered reasonable and not easy to implement because, considering the 10% withholding on the commercial activities of the University, it would have a negative effect on the profit and cause dissatisfaction among the staff involved.

3.3 SUGGESTIONS

If you are not satisfied with the situation, please list any shortcomings and provide suggestions in order of importance and describe any factors which are limiting the further development of your Faculty.

National policy on funding rules with non-annual revision would be of great advantage in preparing a strategy that could count on definite financial support.

DIMEVET is grateful to the Alma Mater which, in these difficult years, has met much of our needs for enhancement. Nevertheless, the Alma Mater should recognise that the DPVM has specific requirements and necessities, and provide ad hoc funding, especially to solve the VTH requirements in terms of staff and equipment.

In this perspective, another option should be the increase the tuition fees for veterinary students, as was already proposed, with the approval of the students, two years ago and refused by the Alma Mater.



CHAPTER 4

CURRICULUM

4.1 FACTUAL INFORMATION

Indicate whether there is a defined national curriculum and (if applicable) how and by what body decisions are taken on this.

Veterinary training at the Department of Veterinary Medical Sciences (School of Agriculture and Veterinary Medicine - SAVM) of the Alma Mater is undertaken in accordance with a curriculum based on Directive No. 36/2005/EC.

Compared to the situation at the time of the previous EAEVE visit (2005), the Veterinary Medicine curriculum has been amended in compliance with Italian Ministerial Decree 270 of 22 October 2004 (MD 270), which amends Ministerial Decree 509 (MD 509) of 3 November 1999.

The Italian legislation (MD 509 and MD 270)

See **Figure 2.1** for a general overview of the Italian course catalogue.

The most important aspects introduced in the abovementioned laws are:

- MD 509 regulates Veterinary Medicine Degree Programmes nationally, and is part of the extensive reform of all Italian university programmes, in line with the "Bologna Declaration";
- MD 509 replaced the conventional undergraduate programmes with three-year First Cycle Degrees (Bachelor) and two-year Second Cycle Degrees (Master). Exceptions to this are the health-related degree programmes, including Veterinary Medicine, where the programme was not broken down into the two levels, but rather a single five years Single Cycle Degree (Bachelor and Master);
- MD 509 introduced the "Credito Formativo Universitario"- CFU (University Learning Credit). One credit in the Italian system corresponds to 25 working hours, including theoretical training (lectures, seminars, self directed learning) individual home study and supervised practical training. Alma Mater has obtained the ECTS Label from the European Commission, certifying the correct application of the European Credit Transfer System (ECTS) in all its first cycle, second cycle and single cycle degree programmes (1 CFU = 1 ECTS);
- According to MD 509, the Veterinary Medicine study plan consists of 300 CFUs and lasts 5 years, in compliance with EU directive 36/2005. The mean workload for a full-time student is 60 CFUs per year (5 years x 60 credits);
- MD 270 established that the percentage of time each student must dedicate to individual learning is determined at local level by each University;
- MD 270 established that, in order to obtain a degree in Veterinary Medicine, students must acquire the 300 CFUs distributed over a maximum of 30 exams;
- Finally, MD 270 established a system for the accreditation and periodical evaluation of the Universities.

The Quality Assurance System

One of the most relevant changes since the last EAEVE evaluation is the introduction of a national Quality Assurance System.

The National Quality Assurance System (QAS)

Italian Law 240 of 30 December 2010 and Legislative Decree 219 of 27 January 2012 set the principles of a national system for accreditation and periodical evaluation of Italian Universities. For these purposes, the same laws created a National Agency (ANVUR: Agenzia Nazionale di Valutazione del Sistema Universitario e della Ricerca) aiming to pursue the established goals. The role of ANVUR in the evaluation system was established and detailed in Presidential Decree (DPR) 76 of 1 February 2010.

Finally, MD 47 of 30 January 2013 established and detailed the:

- Requirements for accreditation of single Degree Programmes;
- Requirements for accreditation of Universities;
- Requirements for Quality Assurance;
- Number of students in each Degree Programme;
- Indicators and parameters for evaluation of research products;
- Indicators and parameters for evaluation of educational activities.

The accreditation process for each Degree Programme has three steps:

- An internal process of self-evaluation (Internal QAS), based on the local University system, producing a final written report to be evaluated by the different degrees of the QAS in the Athenaeum;
- An external evaluation of the internal QA reports, including a direct evaluation in loco, by a specifically appointed independent committee. The external evaluation process ends with a written report;
- The final analysis of the external evaluation committee report by the accrediting agency (ANVUR).

As established in the abovementioned laws, the internal self-evaluation process of each single Degree Programme comprises two main pillars:

1. The "Scheda Unica Annuale" (SUA-DP). In English, the approximate translation is: "All-inclusive Annual Profile", which:
 - Is a document produced by the DPC and the DPQAG, describing all the characteristics of the Degree Programme in detail;
 - Comprises restricted and public parts; the latter is published on the national website of the Ministry (Universitaly: <http://www.universitaly.it/>);
 - Has to be updated annually in line with any major changes to the Degree Programme;
 - Represents the basis for the operation of the Degree Programme Internal Quality Assurance System.
2. The Annual Review Report (ARR), in Italian "Riesame". The ARR is the fundamental part of the process of the Degree Programme Internal Quality Assurance System. The ARR:
 - Critically evaluates all the different aspects of the Degree Programme in detail;
 - Is prepared by the Degree Programme QA Group (DPQAG);
 - Is discussed and approved by the Degree Programme Board (DPB);
 - Is published annually by Alma Mater on the following website: <http://www.unibo.it/qualityassuranceen/Pages/defaulten.aspx>;
 - Constitutes the input for each action aimed to further develop and correct the curriculum.

The SUA and ARR are closely related and represent the two steps of the internal QA process. The SUA is reviewed and published at the beginning of each academic year and offers a detailed description of the different aspects of the DP. The ARR is prepared at the end of each academic year, comparing the information published in the SUA and the analysis of the Alma Mater QA Group (AMQAG) on the data gathered on the efficacy and the efficiency of the single DP.

The Alma Mater Quality Assurance System

<http://www.unibo.it/qualityassuranceen/Pages/defaulten.aspx>

Alma Mater Internal Quality Assurance System (IQAS) started quite in advance compared to the National System, representing a good starting point.

The Alma Mater's Internal Quality Assurance System aims to improve the quality of its Degree Programmes. The IQAS regularly gathers and analyses important information and, based on this, plans concrete improvement actions. It is to all extents and purposes a self-assessment system.

The Alma Mater's IQAS aims to:

- Guarantee that the quality of the teaching programmes is well documented, verifiable and assessable;
- Facilitate access to information, making it clearer and more understandable for students, families and stakeholders in the employment world;
- Promote a process of continuous improvement in Degree Programmes.

Details on the structure, aims and duties of the Alma Mater QAS are provided on the QA University website (http://www.unibo.it/qualityassurance/AllegatiHP/SistemaQA_AteneoUNIBO_Portale.pdf).

From the bottom to the top, different academic bodies, detailed in **Chapter two**, are involved in the QA process with different duties. They are the:

- Degree Programmes (specifically, the Degree Programme Coordinator [DPC], the QA Group of the DP, the Degree Programme Board [DPB]);
- Departments;
- Schools and the related Staff-Student Joint Committees (S-SJCs);
- "Presidio della Qualità" (University Presidium of QA) and the "Nucleo di valutazione" (Internal Evaluation Unit -IEU)
- Academic Senate and the Board of Governors (Consiglio di Amministrazione).

Detailed information on the working principles of the IQAS of the DPVM can be found in point "E" of the QA report 2013 (**Annex 1.9**).

The Degree Programme in Veterinary Medicine (DPVM 8206 and 8617) according to the IQAS.

After the National reform introduced in 2012, a major role at DP level is played by the DPC and DPQAG. According to the rules established by MD 47/2013, they prepare the abovementioned Scheda Unica Annuale (SUA) and the Annual Review Report (ARR). The ARR is discussed in the DPB and, after approval, sent to the Department for further approval. The next step of the ARR is the critical evaluation by the Staff-Student Joint Committee (S-SJC) and the final approval by the School of Agriculture and Veterinary Medicine (SAVM).

The final document is then sent to the Alma Mater Internal Evaluation Unit (which provides feedback to the DPVM and S-SJC) and, at a national level, to ANVUR (**Fig. 4.1**).

Currently (2013), the programme in Veterinary Medicine at the University of Bologna includes two study plans regulated by the MD 270:

- Curriculum 8617, active from AY 2012-13 (currently active: 1st , 2nd years)
- Curriculum 8206, active from AY 2009-10 (currently active: 3rd, 4th and 5th years)

Curricula 8617 and 8206 are very similar and share the same educational basis. The 8206 study plan had to be amended to the 8617 to meet further Ministry and University indications regarding the maximum number of courses and exams (30), and the number of credits for the English language course. Some subjects from the previous curriculum (8206) were joined to establish integrated courses. In the curriculum resulting from these changes, twice as many CFUs are dedicated to English (six instead of three) and the final number of exams corresponds to requirements.

The cultural and organisational basis of the two curricula have indeed remained very similar and, since the differences are really minor, all the numbers reported in the tables of this Chapter and the ratios are calculated considering the last curriculum (8617). The 8617 curriculum will be the only one still active in three years' time.

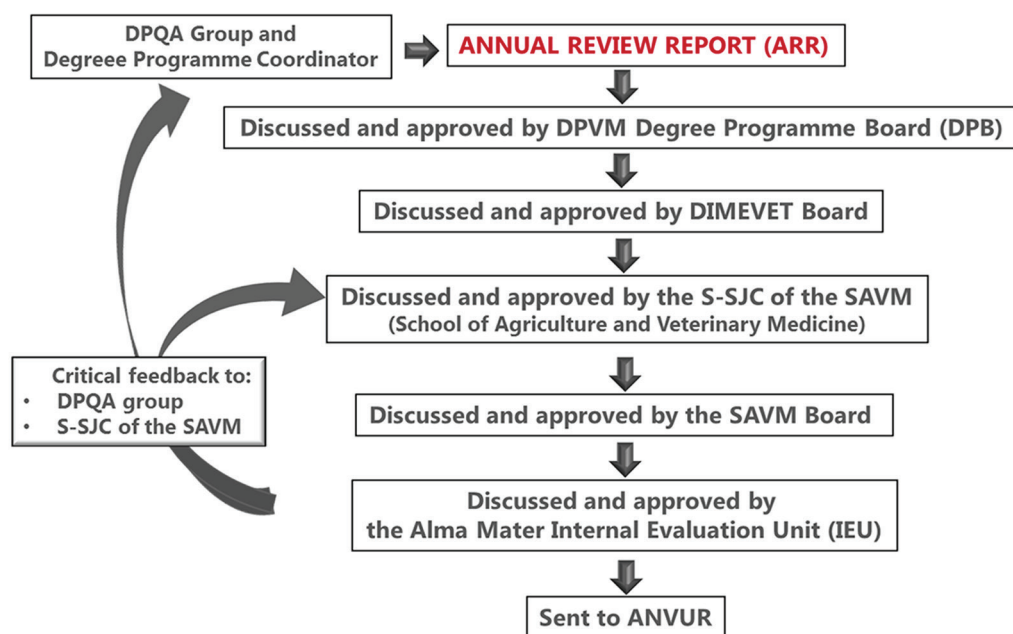


Fig. 4.1- Different steps of preparation, discussion, evaluation and approval of the ARR.

Describe the degree of freedom that the Faculty has to change the curriculum.

There is very little freedom to substantially modify the DPVM curriculum.

The national law (MD 270) established quite rigid parameters that have to be maintained within the curriculum. Specifically, in the Veterinary Medicine Degree Class, MD 270 grouped all learning activities into subject areas (see **Annex 4.1**).

- MD 270 established the minimum number of CFUs assigned to each subject area as follows:
 - 58 CFUs for basic subjects;
 - 130 CFUs for characterising subjects;
 - 12 CFUs for integrative subjects
 - 8 CFUs for elective subjects;
 - 30 CFUs for practical training;

Moreover, MD 270 established that a number of CFUs have to be assigned for the preparation of the dissertation and the study of a foreign (EU) language.

Furthermore, MD 270 also established the minimum number of CFUs assigned to each subject subclass within the same area. These are detailed in the abovementioned **Annex 4.1**.

- In compliance with legal provisions, the Italian curriculum of Veterinary Medicine does not have to include elective paths within the curriculum, the only exception to this are the 8 CFUs dedicated to optional subjects (see tables 4.2/4.3).

The degree of freedom of the former Faculty and, currently, the synergistic and sequential action of the DPVM, the DIMEVET and the SAVM, may be focused on:

- Having met the prescribed requirements, increase the weight of certain subject areas, increasing the number of CFUs for specific subjects;
- Modifying the type of activity of specific CFUs (*i.e.* practical versus theoretical activities);
- Differentiating the "hours of lessons/CFU" ratio (*i.e.* deciding how many hours for each CFU have to be dedicated to individual study, theoretical training and supervised practical training).

Hours of lessons/CFU are assigned in different ways according to whether CFUs concern basic subjects (where the student's study activities are favoured) or "characterising" (professional) subjects (where lectures and practical teaching are favoured). For details, see later in the paragraph 4.1.1 "core" and "optional" subjects.

Degree of freedom: actions taken by the Faculty to modify the curriculum according to the 2005 EAEVE suggestions

Within the restrictions of National law, the former Faculty had the possibility to make modifications to the curriculum. This was done taking in account the suggestions of the 2005 EAEVE evaluation report.

The new curriculum was built on the basis of the feedback from the main stakeholders who received a detailed questionnaire (**Annex 4.2:** Stakeholders' questionnaire).

Specifically, the two new Degree programmes (8206 and 8617) consider:

- A significant increase in the number of CFUs dedicated to professional practical and hands-on activities;
- The remodelling of the total number of in-class hours per CFUs;
- The remodelling of the theoretical/practical hours ratio for each CFU according to different subject areas (see next paragraph);
- An increase in the number of integrated courses comprising different subjects encompassing various related disciplines;
- The switch from subject-oriented to a species-oriented teaching;
- The introduction of 1 CFU of clinical teaching in the first year to increase the awareness of professional and problem-oriented issues ("Professional Practical Activity in the Veterinary Teaching Hospital");
- The introduction of 1 CFU dedicated to aquaculture;
- The introduction of 1 CFU dedicated to small ruminants;
- The introduction of extramural Professional Practical Training in clinical (mobile clinic), food safety and veterinary hygiene;
- The improvement in the knowledge of the English language. The current curriculum (8617) has doubled the credits dedicated to English.

Outline how decisions on curriculum matters and course content are taken within the Faculty. Outline how decisions are taken on the allocation of hours between the various subjects and on the balance between theoretical and practical teaching (Tables 4.1, 4.2 and 4.3).

The decision-making body in charge of taking decisions on curriculum matters and course contents is the Degree Programme Board (DPB) of the DPVM, composed of all the teaching staff involved and three student representatives.

The DPB and the Committees

The DPB receives and debates the suggestions of two committees (see **Chapter five** for details):

- The internal QA Group (DPQAG);
- The Department Teaching Committee (DTC).

Based on the issues raised either in the ARR or daily academic life, these two Committees draft proposals for further discussion, modification and approval by the DPB. Among its main teaching duties, the DPB of the DPVM:

- Discusses and approves the matters raised by the DPQAG and DTC concerning the updating of the Degree Programme Teaching Regulations (in Italian: Ordinamento and Regolamento didattico) and Syllabi;
- Consequently, decides on the final allocation of CFUs;

- Details the targets of the individual courses.

The ARR steers all efforts focused on improving the curriculum, including the topics and type of teaching activities of the single subjects. Both the QA and/or the Teaching Committees process the data from the ARR.

Syllabi

The syllabi represent a good example of the efforts made by the former Faculty to improve the quality of education, using its autonomous decision-making powers.

In 2009/2010, the former teaching Committee of the Faculty launched a huge project to develop the syllabi system, to avoid overlapping or missing subjects. The syllabus containing the details of the topics of all the lessons in each single course unit is now available (and downloadable) on the website. After one year, students actively participated in the critical review of the Syllabi, pointing out any weaknesses and discrepancies.

Approval of decisions concerning the DP curriculum: the Alma Mater hierarchy

The DPVM has the freedom to take decisions autonomously on specific issues of limited importance. For important matters, the approval of the DPB of the DPVM is not sufficient and validation by other bodies is required. As mentioned elsewhere, the current University reform has led to a system where the DPB of the DPVM represents the first step of a hierarchical ladder considering, in progression, the DIMEVET, the SAVM, the Internal Evaluation Unit ("Nucleo di valutazione") and, finally, the Academic Senate and the Board of Governors (Consiglio di Amministrazione).

The academic bodies, hierarchically at superior level, therefore, progressively validate the degree programme teaching regulation (in Italian: Ordinamento and Regolamento Didattico) and decisions concerning the curricula.

The previously described changes in the current DPVM study plan followed this process.

Number of hours/CFU

The number of hours per CFU dedicated to theoretical lessons and supervised practical training is not the same for all the subjects.

The former Faculty categorised the different subjects in order to objectively allocate a specific number of hours to each category. Differentiation was made according to the EAEVE classification and in compliance with the provisions of National law. Specifically, the "core subjects" were divided (a detailed description is provided in **Annex 4.3**) into:

- Basic subjects, in which each CFU corresponds to a maximum of 9 hours of in-class training (theoretical training and/or supervised practical training);
- Basic sciences, in which each CFU corresponds to a maximum of 11 hours of in-class training (theoretical training and/or supervised practical training);
- Characterising (professional) subjects (including the clinical sciences, animal production, food hygiene and public health), in which each CFU corresponds to a maximum of 12 hours of in-class training (theoretical training and/or supervised practical training).

CFUs of the "optional subjects" provided by the DPVM have a maximum of 9 hours of in-class training (theoretical training and/or supervised practical training).

To increase the amount of hands-on work, the last study plan has increased the number of CFUs for specific Professional Practical Training - PPT ("tirocinio") from 30 to 37. Each PPT credit corresponds to 18 hours of supervised practical training. Details on PPT activities are described below, in **Paragraph 4.1.3**.

The remainder of the CFUs (16 to 7 hours, according to the type of subjects) is considered used by the student for "home" studying.

In terms of hours/CFUs, the Alma Mater DPVM curriculum is organised as follows:

TYPE OF SUBJECT	CFUs	MAXIMUM TEACHING HOURS/CFU	MAXIMUM INDIVIDUAL STUDY HOURS/CFU
Basic Subjects	15	9	16
Basic Sciences	64	11	14
Characterising* (Professional) Subjects: (Clinical Sci., Animal Prod., Food Hygiene/Pub.Health)	149	12	13
Integrative Subjects*	12	9	16
Optional Subjects	8	9	16
Practical Professional Training ("Tirocinio")	37	18	7
English language**	6	-	25
Dissertation	9	25	-

* According to Italian Law (MD 270), subjects are split into different classes. "Characterising subjects" are those considered specific to certain subject areas, such as the area of Veterinary Medicine. "Integrative subjects" are those thought to provide complimentary contributions to the professional skills of the graduate. The Ministry defines the list of "integrative subjects" on a national basis.

** Students have to obtain level B1 in English within the first year, and level B2 before graduating.

English language is taught in e-learning mode through the University Linguistic Centre (CLA, Centro Linguistico di Ateneo) (<https://e-cla.unibo.it/bologna/course/category.php?id=1>). On a voluntary basis, students can also attend English courses organised by the CLA (AlmaEnglish project - <http://www.cilta.unibo.it/CILTA/AlmaEnglish/default>).

B1 and B2 levels are verified by computer-assisted exam managed by the CLA (<http://www.cilta.unibo.it/CILTA/Idoneitalinguistica/ProveIdoneita.htm>).

4.1.1 Power of subjects and types of training

4.1.1.1 Power of subjects

"Core" subjects taken by every student.

In the new study plans (8206 and 8617), the hours of training in professional subjects was increased to foster students' professional skills. The completion of this practical training, and the passing of a specific National (State) examination, is required for authorisation to practice as a veterinarian.

The curriculum content of the DPVM of the University of Bologna is structured in:

- "Core subjects" (taken by every student);
- "Optional subjects" (subjects that students may choose from the DPVM or any other degree programme of the entire Alma Mater);
- "Practical professional training" (mandatory intramural and extramural practical work).

The whole curriculum consists of a total of 300 CFUs. The majority of teaching activities cover "core subjects", which are detailed in **Tables 4.1b** and **4.2**.

"Electives" which each student must select from a list of permissible subjects.

"Elective Subjects"

The current study plan does not include "elective subjects" in different paths, and only 8 CFUs are dedicated to "optional subjects".

"Optional Subjects"

As detailed in the explanation before table 4.3, the DPVM offers a few optional subjects joined in an integrated course of eight CFUs. The DPVM runs specific optional courses each year. The courses that are not enrolled in by an adequate number of students, established by the DPB, will not run.

To complete the eight CFUs of optional subjects, students are also free to choose other subjects from different DPs of the Alma Mater. DIMEVET runs other DPs, including "Aquaculture and Fish Production Hygiene", "Animal biotechnology" and "Safety and Quality in Animal Production", and DPVM students may take optional subjects from these. Students can obtain CFUs classified as "optional" in several ways:

3. By choosing from the proposed DPVM activities listed in table 4.3;
4. By choosing any teaching activity running in other programmes at the Alma Mater;
5. By claiming credits already taken in previous DPs;
6. By submitting a certification of language competencies;
7. By requesting recognition of extra-curricular activities (qualifying activities carried out in facilities outside the Alma Mater).

In cases relating to points 3 and 5, the requests are submitted to the Department Teaching Committee and, finally, to the Degree Programme Board for approval.

The whole study plan 8617 is available at the website address:

<http://corsi.unibo.it/SingleCycle/VeterinaryMedicine/Pages/CourseStructure.aspx>.

Table 4.1b reports all the subjects in the study plan 8617.

Obligatory extramural work.

As mentioned above, several changes were made to comply with the 2005 EAEVE suggestions. Among them, obligatory extramural work was introduced as part of the practical professional training during the PPT activities, related to the large animals clinic and food safety. DIMEVET and the DPVM have a historical tradition of self-sufficiency in terms of structures providing appropriate professional training (see **Chapters five** and **six**). In recent years, according to the new Alma Mater guidelines, the DPVM decided to expose the students' to the professional environment. Measures were taken concerning extra-mural activities to ensure that this goal was achieved. These included:

- From spring 2010 – Mobile clinic activity. One day per week, a teacher of the DPVM takes small groups of students (up to 5) to selected farms in the countryside where they meet a bovine practitioner and share his daily professional activity;
- From autumn 2013 – Outsourced practical professional activities in food safety and veterinary hygiene, run through the collaboration of several DPVM tutors and veterinaries employed in the National Health Service (NHS). For two weeks, groups of four students take part in the daily activities of NHS veterinaries. Details are provided in the description of the PPT activities.

4.1.2 Undergraduate curriculum followed by all students

4.1.2.1 Curriculum hours

Table 4.1a - General Table of in-class curriculum hours taken by all students.

YEAR	THEORETICAL TRAINING			HOURS OF TRAINING SUPERVISED PRACTICAL TRAINING			OTHER (G)	TOTAL
	LECTURES (A)	SEMINARS (B)	SELF- DIRECTED LEARNING (C)	LABORATORY AND DESK BASED WORK (D)	NON- CLINICAL ANIMAL WORK (E)	CLINICAL WORK (F)		
First	409	4	0	53	46	6	4	522
Second	485	4	0	68	27	13	0	597
Third	557	10	0	66	53	13	8	707
Fourth	437	13	0	67	52	91	0	660
Fifth	185	32	75*	150*+30	177	460	4	1113
TOTAL	2073	63	75*	434*	355	583	16	3599

* The 9 CFUs allocated to the dissertation (9 CFUs X 25 hours = 225 hours) have been distributed as follows: 75 hours of self-directed learning and 150 hours of laboratory and desk work (for further details see table 4.4 and following comments).



Fig. 4.2 - Academic lecture at the DPVM. The percentage of this type of teaching activity was reduced in the new curriculum (8617).

Table 4.1b - General Table curriculum hours in the five years taken by all students (in bold the Integrated course [IC], in normal character the subjects making the integrated course; PPT: Practical professional training ["Tirocinio"]).

FIRST YEAR COURSES	CFUs	HOURS OF TRAINING	
		THEORETICAL	SUPERVISED PRACTICAL
IC Applied Physics, Computer Science and Statistics	8	37	8
<i>Information Technology Certificate</i>	3	-	-
<i>Statistics</i>	2	14	4
<i>Applied Physics</i>	3	23	4
IC Chemistry and Structural Biochemistry	7	57	14
<i>General Chemistry</i>	3	19	8
<i>Structural Biochemistry I</i>	2	22	-
<i>Structural Biochemistry II</i>	2	16	6
IC Veterinary Histology, Anatomy and Zoology	11	86	27
<i>Systematic Comparative Veterinary Anatomy I</i>	3	25	8
<i>Veterinary Zoology</i>	4	28	8
<i>Veterinary Cytology, Histology and Embryology</i>	4	33	11
IC Animal Breeding and Economics	12	109	12
<i>Animal Breeding</i>	3	31	5
<i>Veterinary Economics</i>	4	34	2
<i>Genetic and Genetic Improvement</i>	2	19	3
<i>Organisation and Management of Livestock Breeding Farms</i>	3	25	2
IC Clinical Veter. Biochemistry and Molecular Biology	6	52	14
<i>Clinical Biochemistry</i>	4	36	8
<i>Clinical Molecular Biology</i>	2	16	6
IC Systematic Comparative Veterinary Anatomy	9	68	38
<i>Practical Professional Activity in the Veterinary Teaching Hospital</i>	1	-	18
<i>Systematic Comparative Veterinary Anatomy II</i>	4	34	10
<i>Systematic Comparative Veterinary Anatomy III</i>	4	34	10

Table 4.1b continued.

SECOND YEAR COURSES	CFUs	HOURS OF TRAINING	
		THEORETICAL	SUPERVISED PRACTICAL
English Language Test B-2	6	-	-
IC Microbiology and Parasitology	9	81	22
<i>Parasitology and Mycology</i>	4	38	10
<i>Virology</i>	2	18	4
<i>Bacteriology and Immunology</i>	3	25	8
IC Topographic and Radio-Tomographic Vet. Anatomy	8	62	29
<i>Topographical Veterinary Anatomy I</i>	2	14	8
<i>Topographical Veterinary Anatomy II</i>	3	24	9
<i>Normal radiographic and tomographic veterinary anatomy</i>	3	24	12
Veterinary Physiology I	6	58	8
IC Food Hygiene and Safety	11	114	18
<i>Food Hygiene and Technologies</i>	4	41	7
<i>Food Safety and Traceability</i>	3	32	4
<i>Bromatology and Methods in Food Analysis</i>	4	41	7
IC General Pathology & Veterinary Pathophysiology	7	68	16
<i>General Pathology & Pathophysiology of Domestic Animals</i>	5	50	10
<i>Immunopathology and Veterinary Oncology</i>	2	18	6
IC Veterinary Physiology II, Ethology and Endocrinology	11	106	15
<i>Endocrinol., Phys. of Reprod. & Ethology of Dom. Animals</i>	5	48	7
<i>Veterinary Physiology II</i>	6	58	8

Table 4.1b continued.

THRID YEAR COURSES	CFUs	HOURS OF TRAINING	
		THEORETICAL	SUPERVISED PRACTICAL
IC Animal Nutrition and Feeding	10	98	22
<i>Feed Technology</i>	2	20	4
<i>Animal Nutrition</i>	3	32	4
<i>Companion Animal feeding</i>	2	18	6
<i>Large Animal feeding</i>	3	28	8
IC Clinical Meth., Clinical Pathology and Legal Medicine	8	66	19
<i>Clinical Methods in Veterinary Medicine</i>	3	26	10
<i>Methods for Veterinary Clinical Biochemistry</i>	2	16	6
<i>Legal Medicine, Animal Protection and Veterinary Legislation</i>	3	24	3
IC Physiopath. of Animal Repr. & Assisted Repr. Techn.	7	63	21
<i>Artificial Insemination and Assisted Reproductive Techn.</i>	2	18	6
<i>Physiopathology of Animal Reproduction</i>	3	27	9
<i>Veterinary Andrology</i>	2	18	6
IC Communicable Diseases and Epidemiology	12	116	22
<i>Parasitic Diseases</i>	4	40	8
<i>Companion Animals Infectious Diseases</i>	3	30	6
<i>Large Animals Infectious Diseases</i>	3	30	6
<i>Epidemiology</i>	2	16	2
IC Veterinary Pharmacology and Toxicology	8	80	8
<i>Veterinary Toxicology</i>	3	29	4
<i>Veterinary Pharmacology and Pharmacy</i>	5	51	4
Special Veterinary Pathology	10	90	30
<i>Special Veterinary Pathology I</i>	5	45	15
<i>Special Veterinary Pathology II</i>	5	45	15
IC Animal Production I	6	54	18
<i>Aquaculture and Small Species Breeding</i>	2	18	6
<i>Aviculture</i>	2	18	6
<i>Care and Management of Companion Animals</i>	2	18	6

Table 4.1b continued.

FOURTH YEAR COURSES	CFUs	HOURS OF TRAINING	
		THEORETICAL	SUPERVISED PRACTICAL
IC Food Inspection, Control and Certification	6	40	44
<i>Food Inspection, Control and Certification</i>	4	40	8
<i>PPT Fresh and Preserved Meat Insp., Control and Cert.</i>	2	-	36
IC Animal Production II	8	74	22
<i>Pig production</i>	3	28	8
<i>Cattle and sheep production</i>	3	28	8
<i>Animal Welfare and Production Quality</i>	2	18	6
IC Semeiotics Path. Anaesthesiol. & Vet. Surgical Med.	13	108	48
<i>Veterinary surgical Techniques</i>	3	24	12
<i>Veterinary Anaesthesiology</i>	3	24	12
<i>Semeiotics and Surgical Pathology of Companion Animals</i>	4	36	12
<i>Semeiotics and Surgical Pathology of Large Animals</i>	3	24	12
IC Communicable Diseases and Public Health	14	116	64
<i>Veterinary Public Health</i>	2	18	6
<i>Infectious Diseases, Control and Health Legislation</i>	5	50	10
<i>Avian Pathology</i>	3	30	6
<i>Diseases of Wildlife and Exotic Animals</i>	2	18	6
<i>PPT Diseases of Wildlife and Exotic Animals</i>	2	-	36
IC Semeiotics, Int. Med., Radiology & Diagnostic Imaging	12	102	42
<i>Diagnostic Imaging and Veterinary Radiology</i>	5	40	20
<i>Companion Animals Semeiotics and Internal Medicine</i>	4	36	12
<i>Large Animals Semeiotics and Internal Medicine</i>	3	26	10
Optional Subjects	8	See Table 4.3	

Table 4.1b continued.

FIFTH YEAR COURSES	CFUs	HOURS OF TRAINING	
		THEORETICAL	SUPERVISED PRACTICAL
IC Veterinary Clinical Surgery and Orthopaedics	11	47	115
<i>Veterinary Clinical Surgery</i>	4	32	16
<i>Veterinary Orthopaedics</i>	2	15	9
<i>PPT Veterinary Surgery</i>	5	-	90
IC Veterinary Clinical Internal Medicine and Therapy	14	56	154
<i>Companion Animals Clinical Internal Medicine and Therapy</i>	4	32	16
<i>Large Animals Clinical Internal Medicine and Therapy</i>	3	24	12
<i>PPT Internal Medicine and therapy</i>	7	-	126
IC Veterinary Obstetrics and Gynaecology	11	45	117
<i>Obstetrics-Gynaecology & Andrology in Companion Animals</i>	2	15	9
<i>Obstetrics-gynaecology & Andrology in livestock</i>	2	15	9
<i>Veterinary Perinatology</i>	2	15	9
<i>PPT Animal Reproduction</i>	5	-	90
IC Equine Internal medicine, surgery and therapy	7	39	57
<i>Equine internal medicine, and therapy</i>	2	15	9
<i>Equine surgery and therapy</i>	3	24	12
<i>PPT Equine Surgical Clinics</i>	2	-	36
IC Practice in Pathology & transmissible diseases	7	12	102
<i>Necropsy Techniques and Post Mortem Diagnosis</i>	2	12	12
<i>PPT veterinary Pathology</i>	2	-	36
<i>PPT Transmissible Diseases</i>	3	-	54
PPT Inspection of Poultry, Game Meat, Seafood, Milk and Dairy Products	3	-	54
PPT Animal Production	5	-	90
<i>PPT General Animal Production and Nutrition</i>	2	-	36
<i>PPT Special Animal Production and Husbandry</i>	3	-	54
Final Examination	9	See Table 4.4	

Table 4.2 - Curriculum hours in EU-listed subject taken by each student.

SUBJECT	HOURS OF TRAINING							TOTAL
	THEORETICAL TRAINING			SUPERVISED PRACTICAL TRAINING			OTHER	
	LECTURES (A)	SEMINARS (B)	SELF-DIRECTED LEARNING (C)	LABORATORY AND DESK BASED WORK (D)	NON- CLINICAL ANIMAL WORK (E)	CLINICAL TRAINING (F)	(G)	
1. Basic Subjects								
a) Physics	27	-	-	-	-	-	-	27
b) Chemistry	57	-	-	14	-	-	-	71
c) Animal Biology	28	-	-	8	-	-	-	36
d) Plant biology		-	-	-	-	-	-	0
e) Biomathematics	14	-	-	4	-	-	-	18
<i>1- Total number of hours</i>	<i>126</i>	<i>-</i>	<i>-</i>	<i>26</i>	<i>-</i>	<i>-</i>	<i>-</i>	<i>152</i>
2. Basic Sciences								
a) Anatomy (incl. histology and embryology)	164	-	-	2	54	-	-	220
b) Physiology	148	-	-	16	6	1	-	171
c) Biochemistry, cellular and molecular biology	52	-	-	-	-	-	-	66
d) Genetics (including molecular genetics)	25	-	-	-	-	-	-	28
e) Pharmacology and pharmacy	51	-	-	-	-	-	-	55
f) Toxicology (including environmental pollution)	29	-	-	-	-	-	-	33
g) Microbiology (incl. virology, bacteriology and mycology)	58	-	-	-	-	-	-	72
h) Immunology	15	-	-	-	-	-	-	19
i) Epidemiology (incl. scientific and tech. Information and doc. methods)	16	-	-	-	-	-	-	18
j) Professional ethics	8	2	-	-	-	-	-	10
<i>2- Total number of hours</i>	<i>566</i>	<i>2</i>	<i>-</i>	<i>63</i>	<i>60</i>	<i>1</i>	<i>-</i>	<i>692</i>

Table 4.2 - continued.

SUBJECT	HOURS OF TRAINING							TOTAL
	THEORETICAL TRAINING			SUPERVISED PRACTICAL TRAINING			OTHER	
	LECTURES (A)	SEMINARS (B)	SELF-DIRECTED LEARNING (C)	LABORATORY AND DESK BASED WORK (D)	NON- CLINICAL ANIMAL WORK (E)	CLINICAL TRAINING (F)	(G)	
3. Clinical Sciences								
a) Obstetrics	24	-	-	-	-	33	-	57
b) Pathology (including pathological anatomy)	166	-	-	12	42	36	-	256
c) Parasitology	72	-	-	12	12	-	4	100
d) Clinical medicine and a surgery (including anaesthetics)	304	18	-	21	18	295	-	656
e) Clinical lectures on various domestic animal, poultry and other animal species	60	-	-	6	6	24	-	96
f) Field veterinary medicine (ambulatory clinics)		-	-	-	4	10	-	14
g) Preventive medicine	29	-	-	7	10	-	-	46
h) Diagnostic imaging (including radiology)	68	5	-	10	-	50	-	133
i) Reproduction and reproductive disorders	84	-	-	6	9	56	-	155
j) Veterinary state medicine and public health	29	4	-	6	21	-	-	60
k) Veterinary legislation and forensic medicine	14	-	-	3	4	-	-	21
l) Therapeutics	33	2	-	3	3	45	-	86
m) Propaedeutics (including laboratory diagnostic methods)	32	-	-	13	4	3	-	52
<i>3- Total number of hours</i>	<i>915</i>	<i>29</i>		<i>99</i>	<i>133</i>	<i>552</i>	<i>4</i>	<i>1732</i>

Table 4.2 - continued.

SUBJECT	HOURS OF TRAINING							TOTAL
	THEORETICAL TRAINING			SUPERVISED PRACTICAL TRAINING			OTHER	
	LECTURES (A)	SEMINARS (B)	SELF-DIRECTED LEARNING (C)	LABORATORY AND DESK BASED WORK (D)	NON- CLINICAL ANIMAL WORK (E)	CLINICAL TRAINING (F)		
4. Animal Production								
a) Animal production	68	11	-	7	31	-	2	119
b) Animal nutrition	94	4	-	22	24	-	-	144
c) Agronomy	6	-	-	-	-	-	-	6
d) Rural economics	43	-	-	2	6	-	-	51
e) Animal husbandry	53	1	-	5	20	-	2	81
f) Veterinary hygiene	20	-	-	6	8	-	-	34
g) Animal ethology and protection	22	-	-	2	4	-	-	28
4- Total number of hours								
	306	16	-	44	93	-	4	463
5. Food Hygiene/Public Health								
a) Inspection, and control of animal foodstuffs or foodstuffs of animal origin and the respective feedstuff production unit	81	-	-	29	29	-	-	139
b) Food hygiene and technology	41	-	-	14	-	-	-	55
c) Food science including legislation	28	4	-	7	4	-	-	43
d) Practical work (including practical work in places where slaughtering and processing of foodstuffs takes place)	-	-	-	-	33	-	-	33
5- Total number of hours								
	150	4	-	50	66	-	-	270
6. Professional Knowledge								
a) Practice management	10	-	-	2	-	6	2	20
b) Veterinary certification and report writing	-	6	-	-	3	21	-	30
c) Career planning and opportunities	-	6	-	-	-	3	2	11
6- Total number of hours								
	10	12	-	2	3	30	4	61

“Optional subjects”

As previously outlined, the DPVM provides “optional subjects” aimed mainly to test new teaching methodologies. The aim of these courses is essentially to complete the student’s knowledge in some areas of specific interest. General information on this topic was provided in paragraph 4.1.1.

In AY 2013-14 the DPVM proposed a list of three optional subjects (part one and two), offering new teaching approaches in each one, to 4th and 5th year students (**Tab. 4.3**):

- Basic Sciences – Course on Animal behaviour, bridging basic and clinical subjects, the latter including neurological and endocrinological causes of behavioural changes;
- Public Health – Course focusing on the role and functions of the veterinary surgeon employed in the National Health Service;
- Clinical Sciences – Course focusing on the approach methodology to clinical cases according to the Problem-Oriented Approach. The course aims to improve self-directed learning, communication and methodology. In this course, run entirely in the IT lab, the students work in small groups with tutorial supervision. The groups of students work with different clinical cases, having to find all the information necessary for proper diagnostic work-up, diagnosis and therapy. At the end of the course, each group presents their specific case to the other students.

In addition to the classical “optional subjects”, in 2013 students were allowed to take optional CFUs in a new training project: “The European system of accreditation of veterinary education”.

Six students were selected for inclusion in the EAEVE working group in order to critically participate in the activities planned to prepare the self-evaluation reports and support the Commission’s visit.

The students’ learning outcomes are related to the three Dublin descriptors that consider the so-called transversal skills (*i.e.* ability to work in teams, find and process information, and analyse data).

Table 4.3: Curriculum hours in EU-listed subjects offered and to be taken as optional.

SUBJECT	HOURS OF TRAINING							TOTAL
	THEORETICAL TRAINING			SUPERVISED PRACTICAL TRAINING			OTHER	
	LECTURES	SEMINARS	SELF-DIRECTED LEARNING	LABORATORY AND DESK BASED WORK	NON-CLINICAL ANIMAL WORK	CLINICAL WORK		
(A)	(B)	(C)	(D)	(E)	(F)	(G)		
AY 2013-2014 Study Plan 8206								
(4th year)								
Basic Sciences								
Animal behaviour: morphophysiological and ethological aspects and behavioural disorders 1	12	8	-	-	4	-	-	24
Clinical Sciences								
Integrated approach to problem solving: companion animals	-	8	16	-	-	-	-	24
Public Health								
Role and activity of veterinary public health 1	17	-	-	-	7	-	-	24
(5th year)								
Basic Sciences								
Animal behaviour: morphophysiological and ethological aspects and behavioural disorders 2	6	26	-	-	4	-	-	36
Clinical Sciences								
Integrated approach to problem solving: companion animals	-	12	24	-	-	-	-	36
Public Health								
Role and activity of veterinary public health 2	24	-	-	-	12	-	-	36

Indicate the presence and disposition of an integrated curriculum. Describe the degree of integration present and the amount of time devoted for EU- and non-EU-listed subjects (Table 4.4).

Table 4.4: Curriculum hours in subjects not listed in Table 4.2 to be taken by each student, including Diploma work (final graduation thesis, or final graduation work).

SUBJECT	HOURS OF TRAINING							TOTAL
	THEORETICAL TRAINING			SUPERVISED PRACTICAL TRAINING			OTHER	
	LECTURES	SEMINARS	SELF-DIRECTED LEARNING	LABORATORY AND DESK BASED WORK	NON-CLINICAL ANIMAL WORK	CLINICAL WORK		
(A)	(B)	(C)	(D)	(E)	(F)	(G)		
Final graduation thesis	-	-	75	150*	150*	150*	-	225

* the type of supervised practical training depends on the subject

Under Italian Law, the qualification of Doctor in Veterinary Medicine is subject to the preparation and discussion of a written dissertation. Each student chooses their dissertation from topics pertaining to different areas of Veterinary Medicine, and consistent with the learning outcomes of the programme. The student prepares and writes the dissertation under the supervision of a teacher of the DPVM, guiding the student and checking the suitability of the work prior to the public discussion.

The supervising professor is also responsible for checking any improper citations or potential plagiarism, using the specific computer service run by the Alma Mater (<http://turnitin.com/>)

The dissertation is considered part of the educational process, and therefore the hours of training allocated (9 CFUs X 25 hours = 225 hours) have been distributed in table 4.4. As it is not possible to discriminate in each case between different categories of training, the total amount of training for the dissertation has been roughly distributed as follows:

- 75 hours of self-directed learning;
- 150 hours of supervised Practical Training (mainly laboratory but sometimes also non-clinical or clinical work according to the different subjects).

4.1.3 Further information on the curriculum

Provide the visiting team with highlights and any unusual or innovative aspects of the teaching programme, e.g. tracking and orientation programmes.

At the time of the Curriculum renovation, the FMVBol did not envisage the development of a system with different paths, but preferred to differentiate students' skills at postgraduate level. DIMEVET accepted the challenge to provide post-graduate education by developing two Professional Master's Programmes, and is currently working to establish internationally-accepted internship programmes.

Unfortunately, due to the lack of funding, the recent years the Alma Mater policy has not allowed the establishment of any "Specialisation Schools" (in Italian: Scuole di Specializzazione) in Veterinary Medicine, preventing the possibility to train significant numbers of postgraduate students (see **Chapter twelve** for details).

Veterinary Teaching Portal

One of the most innovative aspects, in terms of teaching methodology, was the establishment and implementation of the "Veterinary Teaching Portal" (VTP, in Italian: "Portale Didattico Veterinario") – <http://portaledidatticovet.unibo.it/>.

The VTP was implemented with specific Alma Mater funding to improve the teaching services for students. The VTP is a web platform hosting multidisciplinary and multimedia teaching materials from the teachers' daily professional (e.g. clinical) and research activities.

To facilitate the search of topics by the students, the VTP is organised in chapters, considering both the years of programme (from first to fifth) and the different areas (e.g. anatomy, pathology, surgery, animal productions and internal medicine).

The uploading of clinical cases and "transversal" multimedia materials aims to facilitate self-evaluation and self-directed learning. The access to VTP is free for students and teaching staff.

Other innovative aspects include:

- Greatly in advance of the National environment, two of the Departments of the former FVMBol and later DIMEVET chose to develop an ISO 9001 Certified Quality System to implement the quality and efficacy of its laboratory activities;
- The FVMBol and later DPVM have a long, strong history of students' exchange through the Erasmus project.

State the parts of the programme that must be attended as obligatory by the students and how the attendance is verified.

The whole curriculum, with the exception of the CFUs pertaining to the dissertation, requires the mandatory attendance of the students.

To date, there are no official policies stating the methods of verifying attendance. Teachers are free to verify attendance in the way they prefer. Most of them collect the students' signatures on paper, circulating a form among students during the lecture. The same methods are used for the practical training.

At the end of the course unit, teachers send the Student Administration office the log of the students that are accredited to sit the exam, having obtained the attendance certification. Students that have not obtained the attendance certification have to repeat the course unit.

Please provide specific information on the practical clinical training; If clinical training is be provided through obligatory clinical rotations in different areas, please give an outline description of how this is structured, in terms of:

- are such rotations a structured part of the training given to all undergraduate students?
 - the total number of days or weeks of such rotations;
 - the year(s) in which they occur;
 - the different areas covered and the time spent in each area;
 - whether attendance is full-time, for part of the day, and/or other (e.g. based on case needs);
 - the activities and case responsibilities that students are expected to undertake.
 - the group sizes in the clinical rotations
-

Organisation of the Practical Professional Training - PPT ("Tirocinio")

As mentioned above, to increase the amount of hands-on work for students, in the last two curriculums (8206 and 8617), the CFUs dedicated to specific practical professional training "Tirocinio" have been increased from 30 to 37. These CFUs are part of the "core subjects" detailed in table 4.2. Therefore, rotations are part of the "core "subjects".

Each PPT credit has changed the amount of hours dedicated to practical work from 15/CFU to 18/CFU.

Changes were not merely quantitative but also affected the subjects covered by the PPT. At the time of the 2005 EAEVE evaluation, each subject included in the PPT was worth 5 CFUs. Specifically, according to national law, these subjects were:

- Internal medicine;
- Surgery;
- Animal reproduction;
- Avian pathology;
- Food Hygiene;
- Animal production.

In the last two study plans, these subjects have changed. The value of Avian pathology was reduced and other subjects have been introduced, including: Pathology, Infectious and Parasitic (called together transmissible) Diseases, Wild and Exotic Animals.

The new PPT organisation

The new PPT organisation of the 8617 Curriculum is thoroughly detailed on the dedicated DPVM webpage (<http://corsi.unibo.it/MagistraleCU/MedicinaVeterinaria/Pagine/tirocini.aspx>) and can be summed up as follows:

- First year: 1 CFU of “practical activity in the VTH”. This CFU aims mainly to introduce the first year students to the world of the veterinary profession. In the first hours, students visit all the facilities and structures of the campus (*i.e.* Teaching Hospital, University Dairy Farm Unit, stables, diagnostic imaging unit, examining rooms...) and learn the first approaches to animals (*i.e.* how to handle them safely), while in the second part they are directly exposed and involved in the practical activities related to hospitalisation of pets and foals.
- Fourth year: In this specific year, the PPT is limited to 4 CFUs. Two CFUs cover the practical professional training in avian pathology and wild animals. The remaining two CFUs are dedicated to intramural practical professional training in Food Hygiene. Both activities are integrated with academic lectures in the pertaining subjects. Specific information on the PPT in Food Hygiene is provided in the following pages.
- Fifth year: The vast majority (32 CFUs) of PPT activities are taken in the fifth year. Most of the academic lessons end after the first two-month period to allow the attendance of the different practical professional activities (**Tab. 4.4a**). The fifth year PPT involves the following subjects:
 - Internal medicine (7 CFUs)
 - Surgery (7 CFUs)
 - Animal Reproduction (5 CFUs)
 - Pathology (2 CFUs)
 - Food hygiene (3 CFUs)
 - Transmissible Diseases (3 CFUs)
 - Animal production (5 CFUs)

In the fifth year, the practical professional activity very often integrates different subjects and is therefore organised in “periods”, or rotations. During each clinical rotation, students work in small groups with primary responsibilities under the supervision of a tutor, as detailed in the following pages. Each student has to attend the following rotations:

- Small Animals Internal medicine (1 month – intramural)
- Small Animals Surgery (1 month – intramural)
- Small and Large Animal reproduction (1 month – intramural)
- Large Animals Internal Medicine and Surgery (1 month – extra- and intramural)
- Animal production (1 month – intramural)
- Small and Large Animals Pathology (2 weeks – intramural)
- Food Hygiene and Public Health (2 weeks – extramural)
- Transmissible Diseases (2 weeks – extra- and intramural)

The detailed methods of attendance are reported in each PPT webpage (see below, “PPT Quality Assurance”). Briefly, most of the activities involve the presence of the students for at least half of the day (5-6 hours). The majority of shifts during the clinical rotations are 6 hours, but they can last overnight during the shifts in the emergency service. In most cases, the groups in the clinical rotations have no more than four students. Specifically, in Internal Medicine, Surgery and Reproduction the groups have two to four students. In the “Small and Large Animal Pathology” rotation groups have maximum six students and some activities in the “Transmissible Diseases” rotation include groups of maximum eight students.

Students’ activities are detailed on the specific webpage of each rotation (see below, “ PPT Quality Assurance”). Briefly, during the clinical rotations, students play an active part in the whole clinical process. As a general example, they:

- Take the history and examine the patient;
- Discuss the results of the examination and the possible differential diagnoses with the supervisor and, together, decide the diagnostic plan;

- Have the opportunity to perform ultrasound and take x-rays of the patient, as well as process blood/urine/faecal samples;
- Fill out the clinical record of the patient;
- Have a primary role in the management of hospitalised patients (nursing care, monitoring of general situation; administering therapies).

Students in the Surgery, Pathology and Reproduction rotations are primarily involved in specific procedures (for details, see the different syllabi on the specific webpage).

Table 4.4a: Details of the intramural activities of the Practical Professional Training (“Tirocinio”) Activities of the fifth year, including duration of the rotation, availability of rotations in the year, availability of students for each rotation, propaedeutic exams.

PPT	DURATION	PERIOD	STUDENTS' AVAILABILITY/PERIOD	PREPARATORY EXAMS
Animal reproduction (companion and large animals)	one month	from February to July (6 months)	20	Clinical Meth., Clinical Pathology and Legal Medicine
				Physiopath. of Animal Repr. & Assisted Repr. Techn
Clinical internal medicine (companion animals)	one month	from January to December (12 months)	10	Semeiotics, Int. Med., Radiology & Diagnostic Imaging
Clinical surgery and orthopaedics (companion animals)	one month	from January to November (10 months –August not included)	12	Semeiotics Path. Anaesthesiol. & Vet. Surgical Med.
Clinical surgery and internal medicine (Large Animals)	one month	from January to December (12 months)	12 (January-July) 8 (August-December)	Semeiotics, Int. Med., Radiology & Diagnostic Imaging
				Semeiotics Path. Anaesthesiol. & Vet. Surgical Med.
Pathology (companion and large animals)	two weeks	from January to December (August excluded)	6	Special Veterinary Pathology
Transmissible diseases (companion and large animals)	11 days on 4 weeks)	from January to July	16	Communicable Diseases and Public Health
Animal Production (companion and large animals)	one month	from January to December (9 months: August, October and November excluded)	16	Animal Production I & II

Professional Practical Training – PPT Quality Assurance

PPT Coordination” – PPT activities are coordinated by the “Professional Practical Training Coordinator” of the SAVM and DIMEVET (<http://www.agrariaveterinaria.unibo.it/it/scuola/organi/referenti-tirocinio/>). The Coordinator:

- Is in charge for the coordination and general PPT organisation;
- Coordinates the activities of the teachers in charge of each subject area involved in PPT;
- Drafts proposals to the DPB of the DPVM and to DIMEVET. Proposals deeply affecting the DIMEVET may be evaluated in advance by the Department Teaching Committee and are then sent to the Department Board for discussion and approval.

PPT Admission - Prior to attending each PPT period, student must provide evidence of their knowledge of the safety measures by completing the safety questionnaire and returning it to the tutor in charge. To be admitted to specific PPT activities, the students have to pass some preparatory exams, detailed in the study plan (<http://corsi.unibo.it/MagistraleCU/MedicinaVeterinaria/Documents/2013/Propedeuticit%C3%A0%20CdS%208617.pdf>)

The process of PPT organisation has been deeply affected by the Internal Quality Assurance System. QA methods have been considered in building the DPVM PPT webpage (<http://corsi.unibo.it/MagistraleCU/MedicinaVeterinaria/Pagine/tirocini.aspx>), which details:

- Areas of activities (subjects grouped according to the necessity of specific activities);
- Documents pertaining each single PPT;
- Registration methods;
- Useful material (including the video materials on the Teaching Portal);
- Student’s duties.

Each PPT activity has its own webpage (e.g. Internal Medicine: <http://corsi.unibo.it/MagistraleCU/MedicinaVeterinaria/Pagine/tirocinio-clinica-medica.aspx>) containing written, downloadable and printable (for example, in brackets is the webpage address of the PPT for Small Animals Internal Medicine) information for students, including:

- Information concerning safety procedures (<http://corsi.unibo.it/MagistraleCU/MedicinaVeterinaria/Documents/2013/tirocini/Principi%20e%20norme%20di%20sicurezza%20tirocinio%20AP.pdf>);
- The syllabus (<http://corsi.unibo.it/MagistraleCU/MedicinaVeterinaria/Documents/2013/tirocini/Syllabus%20TIROCINIO%20VET08.pdf>);
- The learning outcome assessment methods (day-one skills) (<http://corsi.unibo.it/MagistraleCU/MedicinaVeterinaria/Documents/2013/tirocini/SOP%20valutazione%20tirocinio%20bozza%20def%209%20dic.pdf>);
- The organisation of the period (timetable, structures involved, description of activities) (<http://corsi.unibo.it/MagistraleCU/MedicinaVeterinaria/Documents/2013/tirocini/Regolamento%20Tirocinio%20Clinica%20Medica%20%20P.A.%20vet08.pdf>);
- The teaching materials (<http://www.portaledidatticovet.org/tirocini-clinici.html>);
- The contacts of the tutors in charge.

Before the PPT, students receive a PPT Logbook (**Annex 4.4:** PPT logbook), where they have to collect tutors’ signatures to confirm their attendance and the achievement of specific competences. The PPT logbook is divided into two sections:

- Period of activities (to confirm attendance);
- Syllabi of the different subjects (to confirm the achievement of the required competences).

At the end of each PPT period, students have to complete a satisfaction questionnaire, which is downloadable from the webpage (for example, see the PPT evaluation document for Animal Production: <http://corsi.unibo.it/MagistraleCU/MedicinaVeterinaria/Documents/2013/tirocini/QuestionarioGradimentoTirocinioZootecnia.pdf>). The anonymous questionnaire has to be submitted

to obtain the attendance certificate. The teacher in charge of each PPT subject certifies that the students' personal PPT logbook has been completed as required.

Describe clinical exercises in which students are involved prior to the commencement of clinical rotations.

In each specific PPT webpage, the link "organisation" describes the activities of the different parts of the PPT in detail. Students are divided in small groups. As detailed in **Chapter six**, DIMEVET and DPVM have a tradition of self-sufficiency in terms of structures providing appropriate professional training. Consequently, many PPT activities are intramural.

Intramural work – clinical rotations

Prior the clinical rotations

Before being admitted to practical professional activities, students have been trained in clinical subjects especially during the third, fourth and fifth years. The syllabi of the specific courses describe the theoretical and practical training offered by each subject in detail (<http://corsi.unibo.it/MagistraleCU/MedicinaVeterinaria/Pagine/syllabi.aspx>). These activities are organised in the following way:

- In-class (in-lab) activities: approximately 2/3 (65%) of the lessons are theoretical training and 1/3 (35%) is supervised practical training;
- Supervised practical training is organised as follows:
 - Students are divided in four groups of approximately 20-25 students (according to the number of admitted first-year students);
 - Sessions of one/two hours per group of students, according to timetable needs;
 - Each student group is further divided, when possible and necessary, into smaller groups (usually four further groups of five/six students), working simultaneously at different workstations.

To summarise, the core subjects providing strict clinical background and training are:

Third year

- Integrated Course of Clinical Methods, Clinical pathology and Legal Medicine, providing training on:
 - The physical examination of small and large animals;
 - The basics of clinical pathology.

Fourth year

- Integrated Course of Semeiotics, Internal medicine, Radiology and Diagnostic imaging, providing training on:
 - The clinical approach to the main internal medicine problems of small and large animals;
 - Radiological and diagnostic imaging findings of the main internal medicine problems of small and large animals.
- Integrated Course of Semeiotics Pathology Anaesthesiology and Veterinary Surgical Medicine, providing training on:
 - The clinical approach to the main surgical medicine problems of small and large animals;
 - The basics of anaesthesiological procedures;
 - The basics on surgical procedures and techniques.

Fifth year

- Integrated Course of Veterinary Clinical Medicine and Therapy, providing training on:
 - The thorough clinical approach (including diagnostic and therapy) to the single case (small and large animal) affected by disorders pertaining the internal medicine disciplines;
- Integrated Course of Clinical Surgery and Orthopaedics, providing training on:

- The thorough clinical approach (including diagnostic and therapy) to the single case (small and large animal) affected by disorders pertaining the surgery disciplines;
- Integrated Course of Clinical Obstetrics and Gynaecology, providing training on:
 - The thorough clinical approach (including diagnostic and therapy) to the single case (small and large animal) affected by disorders pertaining the obstetric and gynaecological disciplines;
- Integrated Course of Equine Internal medicine, surgical clinics, pathology and therapy, providing training on:
 - The thorough clinical approach (including diagnostic and therapy) to the equine case affected by disorders pertaining the internal medicine and surgery disciplines.

In addition to the abovementioned courses, clinical background specifically oriented to pathology and transmissible diseases is provided in the courses of Special Veterinary Pathology (third year) and Transmissible Diseases and Epidemiology and Public Health (third and fourth year), both structured in the same way.

Outline the student involvement in the emergency and hospitalisation activities of the clinics.

The small animals clinical training in Internal Medicine, Surgery, Reproduction and Pathology is entirely intramural and is taken within the DIMEVET facilities (**Figs. 4.3, 4.4, 4.5, 4.6, 4.7**). These include the facilities described in **Chapter six**, and the activities of all DIMEVET services (detailed in **Chapters two** and **six**) constituting the teaching hospital (<http://www.ospedaleveterinario.unibo.it/>).

Students download all the specific information concerning clinical rotations during the professional practical training ("Tirocinio") directly from the website (<http://corsi.unibo.it/MagistraleCU/MedicinaVeterinaria/Pagine/tirocini-clinici.aspx>).

Students admitted for each rotation are subsequently divided into smaller groups (two to a maximum of five students) and are actively involved in the different activities of each area. During the month, the smaller groups rotate in order to be exposed to the different types of activities. An example of the "typical day" of the student in the small animals internal medicine PPT, is reported below (some students are involved in the duties overnight):

8.00 - 8.30 am – All students

- "Cage Round" with doctors on duty and staff discussion of the hospitalised and overnight emergency cases.

8.00 am - 2.00 pm – Group "A" (hospitalisation and emergency, morning)

- Care of hospitalised patients:
 - Examination and discussion with the tutor;
 - Compilation of the clinical records, including therapy;
 - Performance of therapeutic procedures.
- Examination of incoming new emergency cases:
 - Emergency procedures (with the tutor);
 - Hospitalisation if necessary.

8.30 - 9.00 am – All students except group "A" – Briefing in the VTH multimedia room

- Update and discussion of the hospitalised cases with teachers.

9.00 am - 4.00 pm – Group "B" (physical examination and clinical work-up)

- First examination of patient without previous dates:
 - Welcoming of the owner and patient;
 - Patient examination;
 - Discussion with the tutor including:

Differential diagnoses;
 Diagnostic work-up;
 Therapeutic strategies.

- Examination of patients referred for second-opinion examinations or speciality (following the same structure as for the first opinion exam):
 - Tuesday morning: neurology and/or dermatology;
 - Tuesday afternoon: endoscopy;
 - Monday-Friday: endocrinology, nephrology, gastroenterology.

9.00 am – 4.00 pm Group “C” (diagnostic imaging)

- Radiology:
 - Obtaining a radiogram;
 - Technical and semiological analysis;
 - Discussion and preparation of the report.
- Diagnostic imaging (ultrasound):
 - Performing an abdominal ultrasound;
 - Technical and semiological analysis;
 - Case discussion and preparation of the report.
- Cardiology:
 - Welcoming of the owner and patient;
 - Patient examination;
 - Discussion with the tutor including:
 - Differential diagnoses;
 - Diagnostic work-up;
 - Therapeutic strategies.

2.00 - 8.00 pm – Group “D” (hospitalisation and emergency, afternoon)

- Care of hospitalised patients:
 - Examination and discussion with the tutor;
 - Compilation of the clinical record, including therapy;
 - Performance of therapeutic procedures.
- Examination of incoming new emergency cases:
 - Emergency procedures (with the tutor);
 - Hospitalisation if required.

5.00 pm – “Briefing - Cage Round” with doctors on duty and staff

- Discussion of the hospitalised and overnight emergency cases

Thursday 5.00 - 6.00 pm (VTH multimedia room) with teaching staff, residents, PhD students and staff

- Journal clubs;
- Presentation of case reports.

8.00 pm – Group D

- “Handover” to the doctors and students on duty overnight.

All the details, including the students’ ethical rules, duties, timetables and activities, are published and downloadable from the website (the example here is the document referring to the small animal internal medicine activities:

<http://corsi.unibo.it/MagistraleCU/MedicinaVeterinaria/Documents/2013/tirocini/RegolamentoTirocinioClinicaMedicaPAVet08.pdf>

Clinical Training on Large Animals (LA) is provided through intramural and extramural activities. Intramural training is provided similarly to what described for the small animal internal medicine PPT (**Fig. 4.6**). Details are published and downloadable from the website: <http://corsi.unibo.it/MagistraleCU/MedicinaVeterinaria/Documents/2013/tirocini/TirocinioLargeAnimals.pdf>. During the "Large Animals" PPT period, students approach horses and cattle that are hospitalised and examined at the DIMEVET facilities. The Large Animals PPT rotation provides training in Internal Medicine and Surgery. Obstetrics and Gynaecology training on large animals is provided during a different rotation.



Fig. 4.3 - PPT during the companion animals clinical internal medicine rotation.



Fig. 4.4 - PPT during the companion animals clinical surgery and orthopaedics rotation.



Fig. 4.5 - PPT during the animal reproduction rotation.



Fig. 4.6 - PPT during the large animals clinical surgery and internal medicine rotation.



Fig. 4.7- PPT during pathology rotation.

Specify student participation in the activities of the mobile clinic and indicate whether or not the hours spent in the mobile (ambulatory) clinic are included in those in Table 4.2.

The hours spent in the mobile clinic are part of the official curriculum and are included in **Tab. 4.2**.

Starting from 2010, one day/week, the mobile clinic offers small groups of students (up to 5) the opportunity to take part in the daily activities of large animals practitioners on the field, in different stables in the countryside.

The activity usually starts in the morning. Students are taken by minibus to different stables where they meet the practitioners. Students perform hands-on activities, examining sick animals, performing a rectal examination, taking blood samples. The clinic is planned quarterly, and each visit involves administrative and teaching (medical records of observed cases) recording. Results are discussed with the practitioner. The DPVM supervisor further discusses the cases and encourages students to complete the clinical records of each case. The Large Animals Clinical Service (SARGA) keeps records.

Together with the satisfaction questionnaire, at the end of this rotation students have to complete an assessment form focusing specifically on the mobile clinic activity.

From AY 2013-2014, with the renewal of the PPT, mobile clinic activities also include visits to stables to address Welfare and Public Health issues. Details on this type of activity are provided in **Paragraph 4.1.4**.

4.1.4 Obligatory extramural work

These are training periods that are an integral part of the curriculum, but which are taken outside the Faculty. Please make a distinction in respect to the nature of the work, for instance work on farms, training in a veterinary practice or in Food Hygiene/Public Health with a commercial or government organisation. Please indicate the guidelines pertaining to this activity, and the manner by which it is assessed.

As previously mentioned, the extramural work in the DPVM is quite a small percentage of the total activities. At the time of the 2005 EAEVE visit, there was no extramural work in the curriculum. The reasons lie in the fact that the former FMVBol and the current DIMEVET have many facilities, including the slaughterhouse and the University Dairy Farm Unit, which provide appropriate training in non-clinical professional subjects.

Food Hygiene – Extramural activities – In the fifth year of the PPT, 3 further CFUs integrate the two CFUs of intramural practical training of the fourth year.

In contrast to the previous EAEVE evaluation, from January 2014, the training provided will be extramural. The change from intra- to extra-mural training was made not only to meet the specific EAEVE requirements but also to provide better exposure to the professional environment of vets employed in the National Health Service (NHS), in order to improve the chance of a proper job placement. Huge efforts were put into organising the agreement with the NHS structures adjacent to DIMEVET.

Currently, four provincial bureaus of the NHS (Bologna, Modena, Imola and Ferrara) are involved in the agreement, which is downloadable from the PPT extramural webpage (<http://corsi.unibo.it/MagistraleCU/MedicinaVeterinaria/Documents/2013/tirocini/ProtocolloOperativoAuslDimevet.pdf>).

The registration and organisation methods are described on the PPT webpage (<http://corsi.unibo.it/MagistraleCU/MedicinaVeterinaria/Pagine/tirocini-curricolari-esterni.aspx>).

The webpage contains:

- The copy of the agreement with the description of the activities;
- The information concerning safety procedures;
- The syllabi of the pertinent subjects;

- The learning outcome assessment methods;
- The period organisation;
- The teaching materials;
- The contacts of the tutors in charge (DPVM and NHS).

Briefly, the agreement considers:

- Groups of no more than 4 students spending two weeks (eight days) of external training taking part in the different activities of the NHS veterinaries (details on the activity are reported in **Tab. 4.5**);
- A syllabus of codified activities and learning outcomes, reported in the student PPT logbook and verified by the signature of the NHS tutor (**Annex 4.4**: PPT logbook);
- One or more NHS veterinaries acting as tutors during the different activities;
- One DPVM tutor, in charge of PPT extramural work and certifying that the training was done properly.

Details of the different types of food hygiene/public health extramural activities are provided in **Paragraph 1.4.5**.

Tab. 4.5 - Obligatory extramural work that students must undertake as part of their course. In this table are represented the activities pertaining to the extramural practical professional training in Food Hygiene Public Health.

NATURE OF THE WORK (ACTIVITIES)	MINIMUM PERIOD ²⁾		MAXIMUM PERIOD ²⁾		YEAR IN WHICH ¹⁾ WORK IS CARRIED OUT	
	HOURS	% OF TOTAL STUDY TIME	HOURS	% OF TOTAL STUDY TIME		
Slaughterhouse activities	12	(when compared to the "Food Hygiene/Public Health" hours 17.78%)	Not applicable		5 th	
Sampling activity in the framework of the official surveillance/control plan	6				1.33 %	5 th
Activity in facilities producing, processing, storing, delivering and selling foodstuff	12				5 th	
Official certification activities	6				5 th	
Veterinary urban hygiene	6				5 th	
On-field surveillance of infectious diseases	6				5 th	

4.1.5 Specific information of the practical training in food hygiene/public health

Describe arrangements for teaching in a slaughterhouse and/or in premises for the production, processing, distribution/sale or consumption of food of animal origin. Indicate the distance to slaughterhouses where students undergo training, and the species covered. Outline the structure and the frequency of these visits (group size, number of trainers, duration, etc.).

Food Hygiene Professional Practical Training

The Intramural Food Hygiene and food safety activities of the fourth year are detailed in the following webpage:

<http://corsi.unibo.it/MagistraleCU/MedicinaVeterinaria/Pagine/tirocinio-ispezione-controllo-e-certificazione-degli-alimenti-di-origine-animale.aspx>.

The former FVMBol and the current DPVM and DIMEVET have a historical tradition of teaching in the field of food hygiene. Due to the presence of an internal slaughterhouse and cheese factory, practical training was, until this present year, entirely intramural. The DIMEVET slaughterhouse works one-two days/week and is used mainly as bovine slaughterhouse. Occasionally sheep are also slaughtered there. The mean number of slaughtered bovine animals is 30, for a total of approximately 1320 per year.

During the second and fourth years (see **Tab. 4.2**), students carry out practical activities which provide the basis for practical professional training in the fourth and fifth years.

Briefly, the fourth year intramural food hygiene students' activities include:

- Training on safety in laboratories and slaughterhouses;
- Food hygiene activities in the DIMEVET slaughterhouse:
 - Ante-mortem clinical inspection including:
 - Audit of official documentation of the slaughtered animal;
 - Clinical evaluation;
 - Control of animal protection during transport, stunning, slaughtering.
 - Post-mortem examination including:
 - Hands-on approach to meat inspection: inspection of different organs of the slaughtered animals;
 - Selection, collection, packaging, recording, storage and transportation of samples from slaughtered animals for official control.
- Food hygiene activities in the DIMEVET cheese factory:
 - HACCP evaluation.
- Food hygiene activities in the laboratories including:
 - Laboratory evaluation of the food samples;
 - Evaluation of official labelling of food products;
 - Evaluation of fish freshness according to the Quality Index Method (QIM);
 - Laboratory report writing.

Extramural Food Hygiene activities aim to expose the student to the professional environment, taking part in the daily work of the NHS veterinarians, as specified in the above-described agreement.

Groups of no more than four students assist (and, whenever possible, perform) the different activities of the NHS veterinarian during a two-week period.

These activities include:

- Slaughterhouse activities (for details see the activities described in the intramural work in the

DIMEVET slaughterhouse) (**Fig. 4.8**);

- Sampling and official control in the framework of official surveillance/control plan. This activity aims to make the students able to adequately perform sampling and official control procedures in slaughterhouses, food-plants and delivery-plants, including mass-caterers, in compliance with NHS requirements;
- Official certification activities in compliance with NHS requirements.

Public Health Professional Practical Training

The PPT in Public Health is administered through intramural and extramural activities, including off-campus field trips to cattle and sheep/goat farms, kennels, catteries and veterinary services. The issues covered relate to farm and companion animal diseases as well as public health, and are detailed in the syllabus available on the webpage:

<http://corsi.unibo.it/MagistraleCU/MedicinaVeterinaria/Pagine/tirocinio-malattie-trasmissibili-e-condizionalita.aspx>.

Training on farm animal transmissible diseases and cross compliance includes intramural activities during which population health and cross compliance issues are discussed in depth using a problem solving approach, including:

- Animal welfare, biosecurity;
- Preventive medicine programmes;
- Disease monitoring and surveillance;
- Disease control in a population;
- Evaluation and application of diagnostic tests in a herd;
- Production record analysis as a diagnostic tool;
- Management related health issues in populations;
- Disease dynamics in a population;
- Disease outbreak investigation;
- Cost/benefit analysis of disease interventions;
- Current topics and events impacting population health and production.

The basic standards of animal health and welfare linked to direct payments for farmers, as well as the role of veterinarians in cross-compliance are discussed, according to the EU agricultural and rural development framework.

Extramural activities – During off-campus field trips, under the joined supervision of an NHS veterinarian and a DPVM teacher, students visit cattle and sheep/goat farms and:

- Fill out the biosecurity and animal welfare check lists;
- Perform (when and if needed) physical examinations, formulate hypotheses and differential diagnoses;
- Collect pathological samples to be analysed in the DIMEVET laboratories.

After the farm visit, each student:

- Compares the collected data on biosecurity and animal welfare with other students (consensus meeting), working in groups of maximum 8 students,
- Working in groups, prepares a defensible proposal for a complete preventive medicine and health programme in the visited livestock herd and flock;
- Sharing duties with colleagues in the working group, presents its proposals using power point presentations (template provided) to the whole class for critical discussion and evaluation.

Public Health laboratory activities include parasitological examinations of the samples collected in the visited farms as well as analyses on fish samples.

Training on companion animal transmissible diseases and public health – The aim of this part of the training is to familiarise students with the different roles of veterinarians in safeguarding companion animals and public health. Intramural activities, using the problem solving approach, include:

- In-depth discussions of clinical cases from the veterinary hospital;
- Determination of the proper samples to be collected and submitted for direct diagnosis.

During the laboratory activities, students work in small groups (max 4 students) to perform traditional (e.g. direct microscopic examination, bacterial and fungal isolation, disk diffusion method to evaluate antibiotic susceptibility of isolates) and biomolecular techniques (DNA extraction and PCR) to identify bacteria and parasites.

Extramural veterinary urban hygiene activities are carried out in collaboration with the local branch of the NHS, as specified above. Students take part in the NHS veterinarians' daily activities:

- Registration and identification of pets;
- Management of public rescue shelters (kennels and catteries);
- Management of synanthropic animals in urban areas.

At the end of this part of the public health training, students are able to perform and understand the main traditional and molecular diagnostic methods for transmissible diseases of pets and know the rules applied by the NHS for the control of stray dogs, cats and synanthropic animals in urban areas.



Fig. 4.8 - Food Hygiene PPT in the DPVM slaughterhouse.

Animal Production Professional Practical Training

The Animal Production practical professional training is organised through the exposure to different activities of that specific area. The University Dairy Farm Unit (UDFU), as well as the cheese factory for food safety, is of crucial importance in providing the students with the necessary training in dairy farming (**Fig. 4.9**).

The animal production training is organised on a monthly base, with 75 hours of activity. Twenty-five hours have to be done within the UDFU, in which students have to perform several activities, in order to acquire following skills:

- Correct milking procedure in the dairy to improve milk quality and prevent mastitis;
- Correct techniques to dry-off the cows to prevent mastitis during the dry period;
- Management of the calving and transition cow areas;
- Colostrum and milk administration to calves;
- Management of the rest areas to maintain the proper hygiene conditions;
- Management of healthcare, production and reproduction parameters, also using electronic tools;
- Monitoring common health activities, such as diagnosis and therapy;
- Quality control of feedstuff and rations (TMR) including physically effective fibre evaluation with sieves;
- Organisation of everyday activities and correct worker relationships;
- Body Condition Score evaluation.

Students have to attend a minimum of 50 hours of the following activities:

- Swine livestock visits – external farms;
- Dairy farm, Parmigiano-Reggiano cheese factory and forage dehydrating unit visits – external farms;
- Beef cattle, sheep and goat farm visits – external farms;
- Fish production plant – external (Cesenatico);
- Additive producer plant visits – external industry;
- Quality evaluation of poultry and rabbit production - internal activity;
- Canine ethnography – internal activity;
- Pet food evaluation and feline husbandry – internal activity;
- Aquarium – living and aquarium – fish welfare – external;
- Animal food origin - sensorial analysis for vets – internal activity;
- Dog Shows – external visit;
- Ration formulation and optimisation – internal activity.



Fig. 4.9 - Animal production PPT in the DIMEVET premises.

4.1.6 Ratios

These must be delineated from Tabs. 4.1, 4.2 and 4.3. For explanation about ratios, see the section 'Main Indicators' of Annex I. The indicator derived from the ratios established is the denominator when the numerator is set 1.

4.1.6.1 General indicators types of training

			DPVM	RECOMMENDED VALUES
R6:	$\frac{\text{Supervised practical training}}{\text{Theoretical training (A+B+C)}}$	$= \frac{1,372}{2,211} =$	0.621	Minimum value: 0.602
R7:	$\frac{\text{Laboratory and desk based work + non-clinical animal work (D+E)}}{\text{Clinical work (F)}}$	$= \frac{789}{583} =$	1.353	Maximum value: 1.809
R8:	$\frac{\text{Teaching load (A+B+C+D+E+F+G)}}{\text{Self directed learning (C)}}$	$= \frac{3,599}{75} =$	47.987	Recommended Range: 2.406 – 75.459

4.1.6.2 Special indicators of training in Food Hygiene/Public Health

			DPVM	RECOMMENDED VALUES
R9:	$\frac{\text{Total no. hours Vet. Curriculum curriculum}}{\text{Total no. curriculum-hours Food Hygiene/Public Health}}$	$= \frac{3,599}{326} =$	11.040	Recommended range: 0.657 – 89.390
R10:	$\frac{\text{Hours obligatory extramural work in Veterinary inspection}}{\text{Total no. curriculum-hours Food Hygiene/Public Health}}$	$= \frac{48}{326} =$	0.147	Recommended range: 0.074 – 0.847

4.2 COMMENTS

Please comment on the way in which the veterinary curriculum prepares the graduate for the various parts of the veterinary profession, especially under the specific conditions prevailing in your country/region.

The DPVM curriculum (the former 8206 and the very similar current 8617) of the Alma Mater was revised to match the suggestions from the EAEVE final report of the 2005 visit.

According to the European Union Directive 2005/36, which establishes the minimum standards in the degree programme for veterinary surgeons, the DPVM is structured to provide students with basic general training in all the main fields of the veterinary profession.

The structure of the new curriculum is still quite traditional and, according to the Italian law on health degree programmes, consists of a five-year single-cycle, not yet accepting the principles of the Bologna Declaration. Nevertheless, major emphasis was placed on facilitating the students' achievement of professional skills. As detailed in table 4.2, the current DPVM curriculum at the Alma Mater roughly distributes 4.5% of its contents in basic subjects, 20.5% in basic sciences, 51.4% in clinical sciences, 13.8% in animal production subjects, 8% in food hygiene and public health and 1.8% in professional knowledge.

The Alma Mater DPVM is structured in a progressive path starting from the preparatory subjects (basic subjects and basic sciences) and progressing to the different professional areas from the third to the fifth year. Much of the last year is dedicated to the practical professional activities, ensuring appropriate hands-on training. Students graduating in Veterinary Medicine at the Alma Mater DPVM are flexibly skilled in different areas, in order to be able to enter the labour market with the ability to adapt to different situations.

The Emilia Romagna Region and, more generally, Northern and Central Italy require veterinary surgeons trained in the classical areas of the veterinary field, such as companion and large animal clinics, animal production, public health and food hygiene. Our region, and Italy as a whole, is experiencing a decrease in the total number of classical production animals, such as cattle and swine. At the same time, equine breeding and equine sport activities are recording a dramatic decrease at national level. These factors are already producing a shortage of large animals and equine cases, which could represent a problem in the near future for hands-on training in large animals and equine clinics.

On the other hand, in the last years, new professional profiles, such as veterinary surgeons specifically trained in exotic animal clinics or animal behaviour are emerging. This represents a major challenge for the development of the curriculum in future.

Comment on the way the curriculum is structured and reviewed.

The new curriculum (the former 8206 and the very similar current 8617) was designed mainly to improve the weaknesses of the old curriculum on the basis of the:

- Suggestions of the EAEVE final report 2005;
- Requirements of MD 270/2004;
- Results of the questionnaire sent to stakeholders (2008);

The curriculum was reviewed according to the new mechanisms of the IQAS, described in detail in the "factual information" in the introduction of this Chapter.

The IQAS process has triggered a series of positive events, characterised by the increasing awareness of the need for a critical review of the different steps of the DPVM education process. In this perspective, the need to prepare, discuss and approve the ARR played a major role, as well as the subsequent need to convert put the action plan into practice.

It is worth emphasising that, since 2013, the results of the students' questionnaire on the quality of teaching have been publicly debated in the DPB.

DPVM teachers did not unanimously accept the IQAS process, as some of them were not used to continuous critical evaluation. Nevertheless, the vast majority of teachers positively evaluated the introduction of the QAS.

Comment on the major developments in the curriculum, now and in the near future.

The DPVM of the FVMBol was successfully evaluated by EAEVE in 2005. The official final report represented an important source of good advice for improving the DP. In designing the new curriculum, constant attention was paid to implementing the EAEVE suggestions.

The most important changes of the new curriculum have been summarised either in the introduction of SER-1 and in the "factual information" introducing this Chapter.

Major suggestions addressed by the EAEVE visiting team are reported here in italics and, immediately after, the action they have triggered is described.

- *The theoretical component of the veterinary course should be reduced and the amount of structured and compulsory "hands-on" practical work in small groups substantially increased in the first 4 years of study.*
 - The theoretical component of the new curriculum has been reduced and in the first 4 years of study the practical training is, in the vast majority of the subjects, not less than 33% of the total amount of assigned hours.
 - The former FVMBol Teaching Committee substantially tried to convince teachers of the need to split practical activities into small groups even in the first years. Currently, this goal has not yet been fully achieved.
- *There should be more systematic coordination and integration of teaching and curricular activities, both to formalise existing informal collaboration and to improve contact in some areas.*
 - The new curriculum established a large number of integrated courses, comprising different subjects, facilitating the interaction of teachers belonging to different areas.
 - The optional subjects offered by the DPVM aim to test new teaching systems based on integration.
 - There is an on-going discussion on the opportunity to change the curriculum to a more innovative and integrated structure.
 - Coordination of the teaching activities within each year of competence by 5 persons in charge. Main duties: interaction of teachers and students, preparation of lesson timetables.
- *Structured and compulsory extramural work should be incorporated into the veterinary course.*
 - Mobile Clinic activities and, above all, compulsory extramural training in Food Hygiene and Public Health have covered this gap.
- *A detailed and structured practical training programme should be prepared and offered to the students at the beginning of each one of trimesters so that each student is informed about the contents and aims of practical work in advance.*
 - Syllabi were introduced in 2010 for each subject, including practical activities. The professional practical training (PPT - "tirocinio") has been significantly restructured to meet the requirements of the IQAS: syllabi and methodologies for assessing the achievement of learning outcomes are clearly stated and downloadable from the website.
- *There should be teaching covering sheep and goat production.*
 - A specific subject on small ruminants (1 CFU) was introduced in the integrated course "Animal Production II".
 - Goats and sheep issues, as well as pig breeding and welfare are now better covered in the practical professional training.

- In 2013 a goat breeding facility was established on the campus premises for teaching purposes. It currently (31.12.2013) has ten females (eight pregnant) and one buck.
- *There should be a system for assessing the practical clinical competency of students to ensure they have acquired the required core skills during the training.*
 - The new organisation of the PPT in the different areas includes the mandatory presence of a syllabus detailing the learning outcomes and relative assessment methods.
- *The Faculty should have a clear species-group structure to its clinical training (i.e. a clear allocation of parts of rotations to farm animal work, another part to equines etc.).*
 - Most of the integrated courses of the new curriculum follow a species-oriented rather than subject-oriented organisation.
 - The species-oriented organisation is stressed in the PPT of the new curriculum, as demonstrated by the rotation in large animals and those pertaining small animals (i.e. Internal Medicine and Surgery).
- *The development of the cheese processing and poultry slaughtering establishments within the faculty should be encouraged.*
 - The cheese factory is currently active, and part of the theoretical and practical (including PPT) training focuses on this activity.
 - For economic reasons, it was not possible to establish poultry slaughtering on the campus.
- *Co-operation with the Competent Authority in the provision of training courses in the requirements of the new food hygiene Regulation should be investigated.*
 - The new compulsory structured extramural work was designed together with the competent NHS veterinary authorities.

The new perspectives for further improvement are currently under discussion, although the recent in-depth restructuring of the University system (see paragraph on "Factual information" and **Chapters one and two**) have slowed down the process of evaluation of innovative teaching aspects.

The introduction of the IQAS has reinforced all the activities oriented to obtaining critical feedback on education issues. The IQAS has triggered a process of critical self-evaluation focused on the planning of improvement actions.

Major development in the near future should include actions focusing on:

- Enhancing the flexibility of the curriculum, considering the possibility of more elective courses organised in learning paths;
- Achieving greater teaching efficacy. This includes the need to foster new innovative teaching methods (i.e. improving the problem-solving approach and working in groups with a tutor);
- Shifting from passive to active learning. The DPVM teaching staff are now starting to appreciate the importance of self-directed learning and the limitations of the traditional structure of the curriculum;
- Shifting to an even more integrated teaching structure, considering the organisation in blocks.

All the above-mentioned measures aim to reduce the delay in students' graduation to the Minimum Number of Years (MNY).- This will be accomplished as soon as our education system is able to avoid the delays for many students, currently starting from the third year.

Comment on the local conditions or circumstances that might influence the ratios in 4.1.6.

The circumstances or local conditions that might influence the ratios indicated in this Chapter are mostly related to the possibility to maintain:

- Adequate structures for practical professional training (i.e. modern VTH, dairy farm,

slaughterhouse, cheese factory). This partially depends on funding from the University and the national government;

- Adequate number of support and teaching staff: the PPT requires higher numbers of teachers and support staff. Improving or even maintaining adequate staff depends on adequate funding;
- Adequate caseload (see also **Chapter seven**) for the different species and activities. The DPVM has experienced the difficulty, due partially to cuts in funding and insufficient support staff, of having a suitable number of large animal necropsies. This problem is also expected in the near future, due to the significant crisis in equine breeding and sport activities.

4.3 SUGGESTIONS

If the denominators in 4.1.6 for your Faculty are not meeting the range as indicated in Annex I, Supplement A, what can be done to improve the ratios?

The Alma Mater DPVM meets the range of the denominators in 4.1.6.

Future actions will aim to further reduce the percentage of lectures in theoretical training and increase those of self-directed learning and practical training, reinforcing the role of students' active learning.



CHAPTER 5

TEACHING AND LEARNING: QUALITY AND EVALUATION

5 TEACHING AND LEARNING

5.1 FACTUAL INFORMATION

As of the Academic Year (AY) 2008/2009, a new curriculum of the Degree Programme in Veterinary Medicine (DPVM 8206) was developed according to Italian Ministerial Decree (MD) no. 270/2004 and subsequently modified, with minor details, in AY 2011/2012 (DPVM 8617).

The degree has legal recognition at European Level. As described in **Chapter four**, the DPVM aims to provide the scientific background and theoretical and practical knowledge required for the veterinary profession and the methodological and cultural bases required for lifelong learning.

The European Association of Establishments for Veterinary Education (EAEVE) evaluated and approved the DPVM for the second time in 2005. Therefore, the new curriculum aimed to match and achieve the EAEVE recommendations included in the 2005 final evaluation report. Consequently, the new DPVM offered more credits in hands-on practical activities and specific course units were subdivided following a species-oriented approach (e.g. companion animals and large animals).

The most relevant change, compared to 2005, was the introduction of Internal Quality Assurance System (IQAS) in the DPVM. The Quality Assurance (QA) System of the Alma Mater started in 2007, putting into practice the suggestions of MD 270/2004, and is structured in a system of internal QA. QA has progressively developed and, since 2013, is integrated in a national system, regulated by Legislative Decree (LD) no. 19 of 27 January 2012. The National Agency of Assessment for University and Research (ANVUR) is the Ministry Agency responsible for governing this process.

5.1.1 The teaching programme

5.1.1.1 Measures taken to ensure coordination

Describe the measures taken to ensure co-ordination of teaching between different departments, sections, institutes and services.

Structures (and competencies) related to the teaching programme

From AY 2012/2013, due to the effects of a profound reformation of the University system (Law no. 240/2010), the DPVM, previously managed by the Faculty of Veterinary Medicine, is now coordinated by the Department of Veterinary Medical Sciences (DIMEVET) and the School of Agriculture and Veterinary Medicine (SAVM). DIMEVET and SAVM have different competencies, as detailed below, and interact in the management of the DPVM (**Fig. 5.1**).

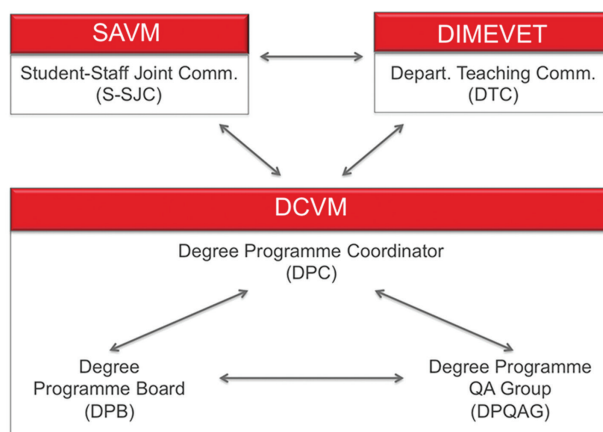


Fig. 5.1 - Diagram showing the relation between SAVM, DIMEVET and DPVM in the coordination of teaching activities.

The Department of Veterinary Medical Sciences (DIMEVET) and the Department Teaching Committee (DTC)

Following the reformation, the Departments play an important and autonomous role in the management and organisation of the teaching activities, while in the past their function was only related to research. The new Statute of the Alma Mater established that the Departments:

- Approve and transmit to the Schools of reference the Three-year Teaching Plan in agreement with the 3-year University Programming Document;
- Propose the establishment, activation, modification and deactivation of Degree Programmes and professional training activities;
- Contribute to the administrative and management support of educational activities coordinated by the Schools.

The Departments ensure that the teaching activity is thoroughly research-based. The presence of a single department, DIMEVET, resulting from the merger of three previous departments (for more details see **Chapter two**: Organisation), facilitates the management and implementation of teaching activities.

The Department Teaching Committee (DTC) is a DIMEVET Committee. DTC is composed of:

- The Head of DIMEVET (or his/her delegate), chairing the Committee;
- The Degree Programme Coordinators of the degree programmes under DIMEVET;
- One professor-member of the Student-Staff Joint Committee;
- Up to a maximum of three students (chosen by the students themselves among the student-members of the Department Board).

The DTC works in conjunction with the DPQAGs of the four degree programmes running under DIMEVET, proposing specific actions to the Department Board concerning the:

- Monitoring of the quality of the Degree Programme, according to the Alma Mater's Internal Quality Assurance System;
- Monitoring of the activities concerning the maintenance of the EAEVE "approved" status;
- Support and coordination of all teaching activities: student mobility, internships, internationalisation and practical training;
- Management and allocation of the specific budget for teaching activities.

The Head of DIMEVET may appoint the DIMEVET delegate for Education. The current DIMEVET delegate for Education is Prof. Gualtiero Gandini, former chairperson of the Teaching Committee of the FMVBol and currently representative member of DIMEVET in the Student-Staff Joint Committee of the SAVM.

The School of Agriculture and Veterinary Medicine (SAVM) and the Student-Staff Joint Committee (S-SJC)

In compliance with the Italian Law no. 240/2010, Alma Mater has reorganised its structure. The Faculties have disappeared and have been replaced by the Schools, each of them resulting from the unification of different Faculties.

In this framework, the School of Agriculture and Veterinary Medicine (SAVM), established in October 2012, functions as the connecting structure of all the educational activities of the degree programmes previously administered by the Faculties of Agriculture and Veterinary Medicine.

One of the most important committees of the Schools is the Student-Staff Joint Committee, playing an important role in assessing the function of the internal QA system of the different degree programmes, including the DPVM.

The Student-Staff Joint Committee (S-SJC) of the SAVM is composed of four professors, including the Dean of the School (or his/her delegate), chairing the Committee, the Vice-Dean, the Teaching Coordinator of the School, two researchers and six students appointed by the School Board.

The S-SJC has specific tasks (see art. 10 of “Regolamento di funzionamento della Scuola di Agraria e Medicina Veterinaria”, downloadable at the following web address:

<http://www.agrariaveterinaria.unibo.it/it/documenti/regolamento-di-funzionamento-della-scuola-di-agraria-e-medicina-veterinaria/@@download/file/ALLEGATO%2001%20-%20Regolamento%20Scuola%20AGRARIA%20E%20MEDICINA%20VETERINARIA.pdf> [only in Italian], related to the Quality Assurance of the different Degree Programmes run by the SAVM, in order to:

- Monitor, coordinate and improve the quality of teaching of the single degree programmes, including the DPVM;
- Provide technical support to the School Board for the establishment, changes and suppression of the degree programmes of the SAVM, including the DPVM;
- Provide an annual report to the School Board based on the critical evaluation of the self-evaluation report of all the degree programmes of the SAVM; the annual report of the S-SJC is sent to the Alma Mater Quality Assurance Group (AMQAG) which, based on the findings, undertakes specific actions to improve any weaknesses.

The Degree Programme in Veterinary Medicine (DPVM), the Degree Programme Board (DPB) and the Internal Quality Assurance System (IQAS) of the DPVM

The DPVM is led by the Degree Programme Coordinator (DPC).

The DPC:

- Is responsible for the implementation of the Degree Programme Board’s policies;
- Is responsible for the Internal QA System of the DPVM and supervises the normal execution and quality of the teaching activity;
- Liaises with DIMEVET and SAVM;
- Leads the DPVM QA Group to analyse and propose changes concerning all aspects related to the organisation of the teaching programme.

The Degree Programme Board (DPB) is the main authority within the DPVM. It is composed of all the teachers officially involved in the teaching activity (2013: 17 Full Professors, 33 Associate Professors, 36 Researchers) and three student representatives.

The organisation and the aims of the DPVM teaching programme are discussed, modified and approved by the Degree Programme Board (DPB), led by the DPC. The DPB, after full internal discussion, approves:

- The Degree Programme Regulation;
- The annual teaching planning, the All-inclusive Annual Profile (SUA) and the Annual Review Report of the DPVM;
- The contents of the different course units;
- The calendar for the final examinations;
- The students’ studies and educational activities performed abroad within the framework of international mobility programmes (Learning Agreements).

Internal Quality Assurance System (IQAS) of the DPVM

The following description represents a focus on those parts of the IQAS pertaining to what requested in the paragraph. A detailed description of the IQAS is provided in **Chapter four**.

Degree Programme Quality Assurance Group (DPQAG) of the DPVM

The Degree programme Quality Assurance Group (DPQAG) of the DPVM is appointed by the DPC and is currently composed of 5 teachers (3 professors and 2 researchers). The QA Committee works with the critical support of six students. The six students are selected following an interview after a call for applications. The DPQAG has the duty of:

- Periodically collecting and analysing all the data related to the teaching activities of the DPVM, such as the mean number of credits achieved per year by students, the number of students

- graduating according to schedule or the employment situation of graduates;
- Based on the above mentioned data, planning concrete improvement actions;
- Preparing the Annual Review Report (ARR, in Italian "Riesame"), that is the Degree programme's self evaluation report published every year to ensure the policy of transparency of the teaching activities and promote the continuous improvement of the Degree Programme.

The Annual Review Report (ARR)

The Annual Review Report (ARR) provides updated and critical information on the state of the art of the teaching activities of the DPVM. The ARR is the most important document of the IQAS and is the basis on which the DPB proposes changes in the teaching activities.

After a short introduction describing the methodology used to prepare the report itself, the ARR is structured in three main themes:

- A1 – the entrance into, the path and the exit from the DPVM;
- A2 – the student's experience;
- A3 – the passage into the professional world.

Each main theme is processed in the three sequential steps:

- Description of the result of previous actions;
- Analysis of the present situation – comments;
- Improvement actions proposed.

The ARR ends with a brief, structured Action Plan showing all the most important improvement actions proposed.

Committees and Coordinators

Both the DIMEVET and the DPVM may establish committees with specific tasks in order to monitor, coordinate and improve the quality of teaching. **Tab. 5.1** offers a summary of the composition and functions of the internal Committees and Coordinators, nominated by DIMEVET and DPVM, ensuring the management of the teaching activity and improving the quality of teaching.

Degree Programme Year Coordinator

The establishment of the Degree Programme Year Coordination started together with the activation of the new (8206) curriculum in AY 2008/09. The Year Coordinator, nominated by the DPC, helps the DPC in the following activities related to his/her specific year of the programme:

- Planning the timetable of the specific teaching activities;
- Facilitation of the interaction among teachers and students with the aim of improving the integration of teaching;
- Solving of specific problems.

As of 2012, at the beginning of each semester, the Year Coordinator chairs a meeting of all the teachers of the programme year to discuss all the main issues arising in the previous semester. Student representatives are usually invited to these meetings.

Tab.5.1. - Teaching Committees and Coordinators.

COMMITTEES		COMPOSITION AND FUNCTIONS
DEPARTMENT TEACHING COMMITTEE	Head of DIMEVET, 5- DPCs, member S-SJC, 3 Students Evaluation of the quality of education (Quality Assurance and indicators necessary for self-evaluation report). EAEVE monitoring, orientation, training, internationalization support. Attribution of resources derived from the specific "Teaching budget".	
ADMISSION COMMITTEE	1 President and 18 DIMEVET Teachers Supervise of the local procedure for the national selection of the incoming students, according to the Ministry of Education, University and Research (MIUR) regulation.	
LIBRARY SCIENTIFIC COMMITTEE	10 Teachers, Library Administrative Director, 1 Student Define the management policy of the library, the guidelines of scientific development of the Library, the coverage of the subject areas. Coordination with the University Library System	
COORDINATORS		FUNCTIONS
EAEVE WORKING GROUPS	Coordination of the two EAEVE working groups (SER1 and SER2). Interface with DIMEVET and SAVM. Act as Liaison Officer with the EAEVE Visiting Team (Prof. Gualtiero Gandini)	
INTERNATIONAL RELATIONSHIP	Coordination of student mobility (outgoing and incoming). Supervision for the selection and planning of experiences abroad and coordination for international relations in reference to the various types of activities (Prof. Giuliano Bettini)	
PROFESSIONAL PRACTICAL TRAINING	Advice and guidance for practical training activities. It ensures coordination and interface with organizations, companies and universities hosting the trainee (Prof. Gualtiero Gandini)	
COURSE YEAR	5 VM Teachers. Coordination of the teaching activities within the year of competence; interconnecting teachers and students, preparation of lessons timetable.	
TUTORIAL SERVICES	Support to administrative activities relating to transfers and course changes; support to students exhibiting difficulties in their studies and facilitation of the tutoring activities. (Prof. Paolo Clavenzani)	
GUIDANCE FOR PROSPECTIVE STUDENTS	Organization and coordination of the activities of guidance incoming future students (AlmaOrienta, Open Day, etc.). Provision of information on curriculum, educational objectives, educational activities, teaching activities, and future professional opportunities (Prof. Roberto Chiocchetti)	
DISABLED AND DYSLEXIC STUDENTS	Support to students with disabilities, facilitating connection with the University Service for disabled and dyslexic students. It acts monitoring critical situations and facilitating the tutoring of students by teachers specifically identified. (Prof. Paolo Clavenzani)	

5.1.1.2 The pedagogical approach

Describe the pedagogical approach of the institution. In particular, describe the use of newer approaches, such as problem-based learning, interactive assisted learning etc.

The primary educational efforts of the Degree Programme in Veterinary Medicine of the Alma Mater focus on the production of a Veterinary Surgeon for the achievement of the day-one skills required by the EAEVE.

The new curriculum was developed according to the principles of the "Bologna Declaration". The current curriculum of the DPVM encourages a critical approach obtained through the achievement of the learning outcomes as indicated by the "European Qualification Descriptors" (*i.e.* applying knowledge and understanding; making judgments; communication skills and learning skills).

The structure of the new curriculum is still quite traditional, envisaging the majority of the basic subjects and basic sciences in the first two years and, progressively, providing the more professional subjects in the last three years. Clinical and non-clinical professional (*i.e.* public health, food safety, animal production) subjects are taught mainly in the third and fourth years and lay the foundations for the fifth year, which is mainly organised in professional practical training or internships (PPT; in Italian called "Tirocinio").

Nevertheless, several changes were made after the 2005 EAEVE evaluation, in order to modernise the pedagogical approach and facilitate the achievement of professional practical skills. The most relevant are:

- Improvement of knowledge of the English language. The current curriculum has doubled the number of credits allocated to English language learning and the required threshold level has moved from B1 to B2;
- Reduction in the total number of examinations. This has also produced changes in the examination procedures aiming to shorten the time taken to graduate (see below);
- Partial switch from subject-oriented to species-oriented teaching. This is particularly clear in the integrated courses in the fourth and fifth years with the internal division among companion and large animals;
- Increase in the number of integrated courses comprising different modules encompassing different related subjects;
- Introduction of 15 hours of clinical teaching during the first year of the curriculum, to increase the awareness of professional and problem-oriented issues ("Practical Activity in the Veterinary Teaching Hospital");
- Increase in the number of hours of professional practical and hands-on activity. In the organisation of the new DPVM curriculum, and especially in the last year, emphasis was given to solving the need of an integrated approach to clinical cases;
- Introduction of the mobile clinic;
- Introduction of extramural practical professional training in food safety and veterinary hygiene;
- Introduction of optional courses testing new teaching approaches (*i.e.* working in groups on problem-solving tasks; computer-assisted learning);
- Continuous education of teachers through the organisation of seminars and events organised by DIMVET and/or SAVM. The last one was the seminar "Veterinary Education: how to make the programme efficient and promote active learning in students", held in May 2013 by Prof. Peter Van Beukelen, reporting on the experience of one of the most advanced veterinary schools in Europe: the Faculty of Veterinary Medicine of Utrecht – The Netherlands.
- Improvement of IT teaching facilities:
 - All the lecture rooms of the DPVM are computed-assisted;
 - A wireless network (ALMAWIFI), free for the students and staff, covers the whole campus area;

- Alma DL – Alma Mater Digital Library (Alma DL) is the Institutional store of the teaching and course materials in digital format for students;
- Proxy – All the resources are available by a Proxy service, free for students and teaching staff after proper login using their username and password;
- Purchase of e-Instruction's Classroom Performance System™ (November 2013) aimed to improve interaction and problem solving skills (clickers);
- Two multimedia labs entirely dedicated to students;
- Portale Didattico Veterinario - PDV (Veterinary Teaching Portal, VTP) is a web platform hosting multidisciplinary and multimedia teaching material from day to day professional (e.g. clinical) and research activities of the teachers (<http://portaledidatticovet.unibo.it/>).
- Establishment and further improvement of the Internal Quality Assurance System:
 - Introduction of the year coordinator;
 - Introduction of the syllabus for each course, precisely detailing the topics taught by the teachers in that specific course unit. Syllabi were made with the aim of avoiding duplication of (or, on the contrary, missing out) topics in different course units, and providing the students with the list of topics which are subsequently tested in the final examination. Syllabi are published on the website (link) and are explained and discussed by the teachers at the beginning of each course;
 - Introduction of policies describing the ways the examination is taken. These may vary between courses. For this reason, they are specifically detailed in the course catalogue as an example, here is the link to the course unit catalogue of the Special Veterinary Pathology I: <http://www.eng.unibo.it/PortaleEn/Academic+programmes/Teachings/dettaglio.htm?AnnoAccademico=2013&IdComponenteAF=341725>);
 - Public and official discussion at DPB level of the students questionnaires on the different teaching courses;
 - Revision of syllabi carried out with the collaboration of the students.

5.1.1.3 Course notes

Indicate the extent to which course notes are used to supplement or substitute for the use of standard veterinary textbook.

Students are strongly encouraged to use veterinary textbooks, both in Italian and in English. Suggested textbooks are indicated in the specific web pages dedicated to each single course unit. All course descriptions contain a reference list of textbook materials on which the course syllabus is based (listed in the form "Readings/Bibliography" of the course unit catalogue). Students are also taught and encouraged, especially in the last two years of the degree programme, to search for scientific papers published in international journals by using specific bibliographic databases, such as Pub Med.

In addition to the large availability of textbooks (library, website, purchase), students actively ask for course notes. The matter was debated several times in the DPB, since this practice was not considered in line with the concept of Evidence Based Medicine. At the beginning of the academic year, great effort is made by most teachers in explaining to students that course notes are just a way of integrating the textbooks and not to replace them.

Students appreciate having hand-outs, PowerPoint (ppt) or keynote presentations used in the lessons. The Alma Mater has implemented a specific web site, Alma DI - AMS campus, where teachers upload teaching materials and students can download them (<http://campus.cib.unibo.it/>). Most of the teaching material concerning the DPVM is available in advance on Alma DI - AMS campus and can be downloaded and printed by the students before attending the lessons.

5.1.1.4 Contractual arrangements supporting undergraduate teaching between the Faculty and outside bodies

Describe any established or contractual arrangement that support undergraduate teaching between the Faculty/Department and outside bodies.

DIMEVET and the DPVM have an historical tradition of self-sufficiency in terms of structures dedicated to the teaching of professional activities. At the time of 2005 EAEVE visit, the FVMBol had several well-structured facilities, including the teaching hospital, and was the only one in Italy with an internal slaughterhouse for teaching purposes. Moreover, the DPVM has a teaching farm, located 1 km from the campus, with approximately 140 dairy cows and a National Institute for Artificial Insemination for horses (in Italian: Istituto Nazionale per la Fecondazione Artificiale - INFA). The structures and the services of DIMEVET that are closely connected to the teaching activities of the DPVM are detailed in **Chapter six**. For the above-mentioned reasons, the DPVM of Bologna has been perceived as self-sufficient in providing adequate professional training for many years.

In recent years, according to the new Alma Mater guidelines, the DPVM decided to implement the students' exposure to the professional environment. A few measures were taken concerning extra-mural activities to achieve this goal, including:

- Since Spring 2010 – mobile clinic activity, run by the joint efforts of a DPVM tutor and three bovine private practitioners. One day per week, one teacher of the DPVM takes small groups of students (up to 5) to selected farms in the countryside, where they meet a bovine practitioner and share his daily professional activity;
- Since January 2014 – externalisation of practical professional activities related to food safety and veterinary hygiene, run with the collaboration of several DPVM tutors and veterinaries employed in the National Health Service (NHS). For two weeks, groups of four students take part in the daily activity of NHS veterinaries. Details are provided in **Chapter four**;
- Every year at the proposal of the DPVM teaching staff, the DPVM employs teachers from external national and international Institutions for cycles of seminars (each cycle is approximately ten hours) aiming to expose students to specific competencies;
- Alma Mater encourages students to establish specific agreements with other universities, private farms, veterinary clinics (**Annex 5.1**) to prepare the final dissertation for graduation. The same possibility is offered to post-graduate students, aiming to improve their professional skills and help job placement;
- Erasmus students' exchange programmes are greatly appreciated by the DPVM students, as detailed elsewhere. In addition to Erasmus projects, SAVM participates in agreements established between Alma Mater and foreign academic structures, offering students the opportunity to attend them.

5.1.1.5 General learning objectives

Describe the general learning objectives underlying the veterinary curriculum and how this is ensured.

Following the Directive 2005/36/EU on the recognition of professional qualifications, the requirements of the Alma Mater and the Bologna Declaration, the veterinary curriculum learning objectives are oriented to providing the scientific basis and theoretical-practical education for practicing the veterinary profession.

The learning objectives of the DPVM are fully in line with the EAEVE list of recommended essential competences at graduation: "Day-one skills". Graduates in Veterinary Medicine achieve the scientific background and theoretical and practical preparation required to exercise the veterinary surgery profession. Graduates have the methodological and cultural bases required for lifelong learning, as well as the methodological foundations of scientific research. The overall objectives of the DIMEVET and DPVM are detailed in **Chapter two**.

The learning outcomes are achieved through theoretical lectures and practical activities delivered in compliance with the teaching organisation, described in **Chapter four**, which has been certified twice by the European Association of Establishments for Veterinary Education (EAEVE).

The IQAS requires that general learning objectives be clearly reported and published on the DPVM website: <http://corsi.unibo.it/SingleCycle/VeterinaryMedicine/Pages/Presentation.aspx>.

A further requirement of the internal QA system is that the learning objectives of each specific subject are public and easily accessible to students. The contents and learning outcomes of each subject are clearly stated and published on the website of the DPVM:

<http://corsi.unibo.it/SingleCycle/VeterinaryMedicine/Pages/CourseStructure.aspx>.

5.1.1.6 Evidence of learning

Describe how the Faculty collects the data required to ensure students are equipped with these Day-one skills (evidence of learning).

Evidence that students have achieved their learning objectives is collected with examinations (oral and/or written) at the end of each course unit. Many subjects have progress tests held half way through the course, which count as a percentage of the final score. Students passing all compulsory courses have most probably acquired the required knowledge and skills.

Together with the more classical academic lectures, Day-one skills are ultimately acquired during the Professional Practical Training (PPT or "tirocinio").

Learning outcomes of the PPT are outlined in the relevant syllabi of the fifth year activities and are documented and certified in the student's personal PPT Logbook (**Annex 4.4**). Teachers and tutors certify the achievement of specific skills by directly signing the PPT logbook for that particular competence.

Other possibilities to indirectly check the acquisition of the learning outcomes are represented by the so called "Esame di Stato" or "qualifying examination" and by checking the percentage of employment of post graduate students after one, three and five years after graduation, available on the AlmaLaurea website (<http://www.almalaurea.it/en/>).

- "Esame di Stato" – After graduation, student must pass a further "qualifying examination", held together with representatives of the veterinary profession (*i.e.* private practitioners and NHS veterinarians) to qualify to practice in the veterinary field. The qualifying examination is actually made of oral and practical exams in the following subjects: internal medicine, surgery, obstetrics, avian pathology, food safety, public health and animal production.
- AlmaLaurea – The website of the "Inter-universities Consortium AlmaLaurea – connecting universities, labour market and professionals" (<http://www.almalaurea.it/en/>) offers the possibility to compare data detailing the different aspects of the post-graduate professional life of veterinary students from different Italian Schools.

5.1.2 The teaching environment

Describe the available staff development facilities, particularly in relation to teaching skills.

The introduction of the Alma Mater QA System has shown that most teachers require proper education to improve their teaching skills. Despite this evidence, Alma Mater has not yet planned consequent actions. Therefore, as well as for other courses, no specific staff development initiative is currently available for the staff involved in the DPVM.

In previous years (2009-12), the former Faculty of Veterinary Medicine developed some courses on its own to develop teachers' communication skills. One of these courses specifically focused on the teacher-student relationship during the examination.

DIMEVET indirectly encourages teachers to develop their teaching skills supporting the achievement of the Diplomate status in the different European Colleges.

DIMEVET and SAVM support the development of internationalisation projects, such as ERASMUS, permitting the exchange of teachers and facilitating the opportunity to acquire teaching skills, sharing the experience of other teaching programmes developed abroad. In AY 2013 the DPVM had 29 active Erasmus exchange agreements, for the exchange of 60 incoming and 56 outgoing students.

Describe the available system for reward of teaching excellence (e.g. accelerated promotions, prizes, etc.).

In addition to a letter of appreciation from the DPC to those teachers judged very positively by the students, no official reward system for teaching excellence is currently available.

The current University Reform Law (no. 240 of 30 December 2010) considers the development of a system to reward excellence. Such system however, still awaits a set of rules.

At the Alma Mater, the recent introduction of the QA System has had several effects, including those related to feedback on the quality of teaching. Students' opinions on the quality of teaching was systematically gathered and in 2013, for the first time, results have been widely discussed in the DPB outlining several deficiencies, including poor teaching skills. One of the last recommendations of the S-SJC of the SAVM to the Alma Mater concerned the introduction of appropriate learning opportunities for teachers.

Describe other measures taken to improve the quality of teaching and of learning opportunities.

Recognition of teaching weaknesses and planning of adequate countermeasures was one of the main tasks of the Teaching Committee of the former FMVBol.

In 2009, with the appreciation of the Alma Mater, the FMVBol began a pilot project of seminars for teachers, aimed at improving awareness of the modern concepts and techniques pertaining to education. Teachers were invited to attend a series of seminars focusing on different aspects of education (**Fig. 5.2**).

In 2010 and 2011/12, within the same project, cycles of seminars focused respectively on "efficient communication for education purposes" and "Learning to evaluate - communication during the oral examination".



Fig. 5.2 - Poster of the seminars "Imparare a insegnare" (Learn how to teach).

5.1.3 The examination system

According to the requirements of Italian Law no. 240, the new DPVM curriculum is completed after obtaining at least 300 credits (details in **Chapter four**), passing 30 exams and the final examination based on a written dissertation. Graduation is awarded with a final degree score, ranging from minimum of 66 to a maximum of 110. The scores obtained in each exam (ranging from 18 to 30) contribute to determining the final degree score, which is the sum of the weighted average of the exam scores, the score obtained for the dissertation plus possible merit awards.

Is there a central examination policy for the Faculty as a whole? By whom is it decided?

In 2009, the Board of the former Faculty of Veterinary Medicine approved a specific policy regulating student examinations. The policy was drafted by the former Teaching Committee of the Faculty, a joint committee composed of 5 teachers and 5 students, (**Annex 5.2**). Details are provided in the discussion of the next points.

In 2012, the DPVM approved policies concerning the preparation and evaluation of the final dissertation (**Annex 5.3**). The rules detailed in the policy are valid from AY 2013-14.

All students, working under a supervising professor, produce a final dissertation. The dissertation is very often the result of an experimental research. In this case, the student attends the laboratory or clinic facilities for several months or even more than 1 year of work. Alternatively, students can prepare a theoretical dissertation, writing an in-depth critical review on a topic chosen in agreement with the supervisor. In both cases, the students' work is mainly considered self-directed learning.

The policy on guidelines for the dissertation governs and describes:

- The administrative methods;
- The role of the supervising professor ("relatore");
- The composition of the final examination board;
- The editing of the manuscript;
- The evaluation and scoring;
- The ethical code.

Are there special periods (without teaching) during the year for examinations?

Examinations are held at the end of each semester, during dedicated periods called "exam sessions" or "exam windows". Before the beginning of the academic year, the exam session calendar, provided by the Alma Mater, and the exam dates are published on the DPVM website, the latter before the end of each semester.

Exam sessions may vary slightly according to the academic calendar of that specific year. Usually the "winter" exam session (after the first semester) starts at the end of December and finishes at the end of February, while the "summer" exam session starts in June and ends in the last days of September.

For each course unit, the Alma Mater guidelines suggest a minimum of six exam dates per year. According to the 2009 DPVM policy of the exam guidelines, students are allowed to sit the examination only during the exam session and, possibly, in one of the 4 dates chosen by the teacher during the semester of lessons on Friday afternoon.

Students who are "fuoricorso" (*i.e.* not aligned to the exam schedule) are those who at the end of the regular period of 5 years have not obtained the necessary number of credits to sit the final examination to obtain the degree. In the National system, it is quite normal to have "fuoricorso" students, since there is no obligation to finish one curriculum year according to schedule. "Fuoricorso" students can sit the examination at any period of the year. Teachers may set specific dates for "fuoricorso" student exams.

What form(s) of examination are used (written papers, multiple-choice questions, oral, practical, clinical examination, continuous assessment, etc.)?

According to the 2009 DPVM policy of the exam guidelines:

- The exam is public and is considered part of the education process;
- The exam can be done in written, practical or oral form. Teachers are free to choose the way to perform their exam, even if the policy encourages examining students in the most objective perspective, e.g. using a written examination. Written examinations may comprise multiple-choice questions, open questions, brief or extended reports.
- The exam methods must be clearly stated, notified to the students at the beginning of the course and are specifically detailed in the course catalogue (e.g. Special Veterinary Pathology I: <http://www.eng.unibo.it/PortaleEn/Academic+programmes/Teachings/dettaglio.htm?AnnoAccademico=2013&IdComponenteAF=341725>);

In the last three years, there is evidence of the increasing use of the written (practical or computer-assisted) examinations compared to the oral exam. Since in the last curriculum the reduced number of exams led to an increasing amount of information required to pass, the DPVM has actively encouraged progress tests to avoid the excessive slowing of the students' progress.

Is use made of external examiners?

The Italian law does not consider it mandatory to have external examiners. For each course, an examination board is appointed by the DPB including at least two teachers. In the case of an integrated course, the examination board comprises the teachers responsible for each part of the course.

How many retakes of an examination are allowed?

According to Italian law, there is no limit to the number of retakes of an examination: this underlies the phenomenon of the "fuoricorso" students.

Do students have to pass the examinations within a certain time?

No. The Italian law does not consider limits in the number of retakes and students may take all the time they need to sit an examination. However, financial support is not given to students if they do not comply with the established schedule.

Do students have to pass an examination before they can start other courses?

Before students are allowed to sit specific exams, they are required to have successfully passed other preparatory courses. The list of preparatory courses is published on the DPVM website. The list of preparatory courses is provided on the webpage: <http://corsi.unibo.it/MagistraleCU/MedicinaVeterinaria/Documents/2013/Propedeuticit8617.pdf>

5.1.4 Evaluation of teaching and learning

Describe the method(s) used to assess the quality of teaching and learning in the Faculty. Indicate whether the evaluation is a Faculty procedure, or one set up by individual departments, by students or by individuals. Describe the role of students in the evaluation of teaching and teachers.

Students play a primary role in the evaluation of the quality of teaching. Evaluation and assessment of the quality of teaching by students is increasingly becoming a pillar of the QA system of the Alma Mater. Historically, in spring 1997, the Alma Mater introduced a pilot scheme for the student evaluation of teaching. Subsequently, Law no. 370 of October 1999 introduced "periodic, anonymous evaluation of students' opinions on teaching activities".

Since then, the Alma Mater decided to achieve this goal through the direct administration of hard copies of a questionnaire to the students (**Annex 5.4**), made of:

- General and specific questions that students mark using a range of four possibilities, from “absolutely not” to “absolutely yes”;
- Free space where students can write comments on specific topics suggested in the form.

The questionnaire form is:

- Administered to the students at the end of each course unit,
- Collected immediately after students’ compilation;
- Sent to the Alma Mater Quality Assurance Group (AMQAG).

The AMQAG:

- Processes the data;
- Prepares and presents the results for statistical purposes and discussion;
- Sends the results of the questionnaire to:
 - The Head of Department (Analytical and Synthetic);
 - The DPC of the DPVM (Analytical and Synthetic);
 - The single teachers (only for their own course).

The results of the questionnaires are available on line on the dedicated Alma Mater website (<https://www.osservatoriostatistico.unibo.it/aggregate/default.htm>) either as DPVM averages or, on the intra-net, there are also the results of the individual teachers.

In 2012, the Alma Mater established that the results of the questionnaires must be discussed in the DPB. Results of the discussion must be included in the ARR and sent to the S-SJC of the SAVM for critical evaluation.

Furthermore, the DPC has the duty to contact the teachers with negative results in order to decide on any strategies to improve the specific situation. Results of these meetings have to be reported in the ARR report and sent to the S-SJC of the SAVM for critical evaluation.

Teachers with overall highest score receive formal written recognition by the Rector of the Alma Mater.

In addition to the students’ evaluation of the quality of teaching, each year the AMQAG (<http://www.unibo.it/qualityassuranceen/Pages/defaulten.aspx>) prepares a comprehensive report, the Annual Degree Programme Quality Report (ADPQR) on the teaching activities of the programmes, including the DPVM. The ADPQR provides updated information, which is important for the purposes of Quality Assurance and is published annually by the Alma Mater. The main aspects of the teaching programme are described in detail, with a view to assuring the principle of transparency and promoting self-assessment and a continuous improvement processes. The document is organised into five sections and a glossary:

1. Presentation and prospects (key information on the Degree Programme, including the expected learning outcomes, career opportunities and further studies);
2. Teaching and Learning (the updated course structure diagram with the full titles and listings of the course units and the latest published lecture timetable);
3. Resources and services (the list of teaching staff and their relative curricula, the offices, services and infrastructures available to students);
4. The Degree Programme in Figures (key data shows how many students are enrolled, how many have been assigned additional learning requirements, how many drop out after the first year, how many graduate in line with the programme schedule, the opinions of attending and graduating students on the teaching programmes and information concerning graduate employment).
5. Find out more: the quality of your Degree Programme.

The Annual Degree Programme Report 2013 of the DPVM is downloadable at the following website address: <http://www.unibo.it/qualityassuranceen/Reports2013/Report-8617-2013.pdf>.

5.1.5 Student welfare

Describe any measures taken to protect students from zoonoses (e.g. rabies) and physical hazards.

General safety training

From AY 2011-12, incoming students attend a compulsory course on "Safety and health protection in the university workplace". In this two-hour lecture the following basics in safety are presented:

- Rights and responsibilities of students;
- Safety signs;
- Personal protective equipment;
- Emergency plan;
- Emergency behaviour.

The students have to pass a multiple-choice test to demonstrate their understanding of the topics.

Further information is available on the DIMEVET website (<http://www.scienzemedicheveterinarie.unibo.it/it/sistema-sicurezza>).

Specific safety training

Before the practical teaching activities, when necessary, the teacher gives specific instructions on the task.

Specifically, before the Professional Practical Training ("tirocinio"), the students can download the specific SOPs on safety procedures from the website: <http://corsi.unibo.it/MagistraleCU/MedicinaVeterinaria/Pagine/tirocini.aspx> and they have to give evidence of learning through a written test, completed before starting the activities.

In case of experimental activities for the preparation of the final dissertation, the students receive additional training in advance. When and if necessary, students undergo a periodic medical check-up by the University's Occupational Medicine Department

Describe the facilities (not related to the teaching programme) which the establishment provides for students.

The Alma Mater provides different services in order to support the students in their studies and during their free time in Bologna and in the Campus Branches.

Scholarships, aid and benefits offered to students of University of Bologna

The University of Bologna offers to its students scholarships, fellowships, and a wide range of aids and benefits.

Merit-based incentives

The University of Bologna offers incentives to enhance the performance of deserving students. Students graduating from high school in 2013 with a grade of 100 with honours have full exemption from their annual tuition fees for the first year of their programme. For the full year, students must pay only the regional tax, stamp duty and insurance, equal to 158,46 EUR.

For students graduating from high schools operating under a different (non-Italian) system, full exemption is granted only in the case that the obtained grade corresponds exactly to 100 with ho-

nours, *i.e.* it represents the maximum attainable grade plus a further acknowledgement of exceptional performance equivalent to the honours of the Italian system.

Calls and reduced fee brackets

The reduced fees consist in the reduction of the tuition fees according to programme group for students of the Alma Mater meeting certain requirements relating to merit, income and enrolment.

Fee reductions are guaranteed according to the student's position in one of the five fee brackets linked to specific income requirements and, for students enrolled in years following the first year, also merit requirements.

The application may be made on-line, every year from July to September on the ER-GO website or at any CAF (Tax Assistance centres) office authorised by ER-GO Regional Authority for the Right to Higher Education (for further details see the ER-GO website: <http://www.er-go.it/index.php?id=5963>)

Exemptions for handicapped students and children of civil invalidity pension holders

Handicapped students with recognised invalidity of at least 66%, and students whose parents receive a civil invalidity pension, whatever their economic or merit status, are exempt from the payment of university fees.

Benefits for students managed by ERGO (Regional Authority for the Right to Higher Education)

ERGO offers the possibility to apply for education scholarships for enrolled students who meet the merit and financial requirements. ERGO also provides residential solutions, benefits for catering, international mobility, disabled students and loans.

Collegio Superiore: opportunities for International students

The Collegio Superiore offers specific grants for international students.

CUSB - University Sports Centre

Alma Mater offers the combination of sport and study through the University Sports Centre of Bologna (CUSB). This is directly connected to the University Sports Committee, which organises and manages sports at the University. Physical activities including courses, tournaments, and activities carried out for leisure or at a competitive level are an integral part of education. On the Ozzano campus, the "R. Preziosi" sports facility, located behind DIMEVET, is available for the students. The sports that can be practiced are: five-a-side football, volleyball, basketball, tennis and fitness.

Disabled and dyslexic students service

A support service established to respond to the needs of students with disabilities or learning disorders enrolled at the Alma Mater (<http://www.unibo.it/DisabledStudents/>).

The Service also works with different universities, regional agencies, and local institutions in the belief that, through strong networks of sharing and working together, we can take meaningful steps towards a university that is more accessible to everybody. At DIMEVET, there is a person in charge of the disabled students working in conjunction with the Alma Mater service.

Conventions for the cinema and theatre

Conventions and student discounts for entertainment are available for Alma Mater students.

The Psychological Support Service (SAP)

University students/young people who suffer from emotional and relational problems, affective and behavioural disorders, troubles in their academic or working life, can apply to the SAP. The Service is free for all students of the Alma Mater, regardless of their age, and for young people aged between

20 and 28 years resident in Bologna. Staff members are operators from the Department of Psychology.

Health care

Non-resident Students attending the DP can choose a general practitioner in Bologna as an alternative to that of their municipality of origin.

University Linguistic Centre

The Alma Mater offers different ways, free of charge, for improving and developing your knowledge of foreign languages, which along with computer proficiency, is a transversal skill that all students need to have regardless of their Degree Programme.

The Alma Mater Linguistic Centre runs courses in English, French, German, Spanish and Arabic lasting 50 hours, from elementary to advanced levels, open to students, teaching and support staff. The Alma Mater Linguistic Centre offers an e-learning platform for self-learning languages and Italian language courses for international students participating in university exchange programmes (Erasmus, Erasmus Mundus, Overseas, etc.) and for international students enrolled at the Alma Mater (degree programmes, single courses, Master's and PhD programmes).

University canteens and partner catering services

Students can take advantage of discounts and special promotions at the university canteens and in some catering services having an agreement with the university. The list of university canteens and partner catering services are available to the following web address: http://www.eng.unibo.it/PortaleEn/Students/Services+and+facilities/University_canteens_and_partner_catering_services.htm.

The students of the Alma Mater can apply to the municipality of Bologna for the "Carta Giovani" card (Youth Card), to obtain discounts and other promotions in many cafés, bars and restaurants in Bologna (for a complete list see the Carta Giovani website <http://cartagiovani.it/?q=english>).

URP – Public Relations Office

The University Public Relations Office supports access to and use of the Alma Mater facilities, offering direct contact from its front office as well as remotely via its call centre and e-mail service. The URP promotes and facilitates information and communication activities for students, providing general information and supporting specific needs of users.

The Guidance Service supports students in their choices throughout their studies, encouraging their active participation in the learning path.

International Students Desk

The desk provides support to international students enrolling in degree programmes. It provides study grants and other financial support (<http://www.unibo.it/internationalstudents>).

Tutoring

Tutors offer a point of reference for students during their university careers. Alma Mater has support tutors at the Schools and in the Student Residences, for degree programmes, internship guidance and for disabled and dyslexic students (<http://almaorienta.unibo.it/tutorato/>).

The tutor for guidance and acceptance for the SAVM – Ozzano Campus is Mr. Matteo Cochi (matteo.cochi@studio.unibo.it). The tutor is available at the Campus between July-December and provides support activities for student affairs, in particular providing information to newly enrolled students.

Job Placement

A new service providing concrete support to graduates wishing to make contact with the job market, according to their studies and aspirations. The service provides tools for active job seeking, including a job advertisement notice board and opportunities for direct meetings with different businesses.

Alma Orienta

The Alma Mater has dedicated a website called AlmaOrienta dedicated to guidance, internships and tutoring activities for students and graduates (<http://www.unibo.it/Guidance/>).

The Alma Mater offers students the opportunity of carrying out a part-time (150 hours) working activity at its structures and offices. Students are paid 7.50 Euros per hour. To apply, students must complete the application form available in the summer together with other ERGO scholarship forms.

DIMEVET and SVAM services

At the DIMEVET buildings, there is a Cafeteria which operates a low-price policy and several vending machines for coffees, drinks and snacks located in other places in the buildings. A self-service restaurant, "Il capolinea", close to DIMEVET offers a 25% discount for students. There is a photocopying service opposite DIMEVET. A rest room for students is available inside the buildings DIMEVET building.

One computer room with 13 computer workstations and two printers are available free of charge for the students. The SAVM runs an InfoPoint for students, a support service providing information on the DPVM.

Within the DIMEVET there are two students' associations, OMNIA and the Student Office, both with a dedicated space. The activities in which these associations are involved include:

- Co-ordinating student activities;
- Information on curricular and extra-curricular activities;
- Cultural and sport activities;
- Public relations with other student associations.

On the campus, during the springtime, the student associations organise football, volleyball, tennis and basketball tournaments as well as a half-marathon.

The traditional "Spring Festival" is held in June, at the end of the courses. This is an entertaining opportunity for teachers, students and guests to meet and take part in games, music, dancing and a buffet.

Other facilities available for the students in DIMEVET:

- Kindergarten for the children of university staff and students (**Fig.5.3**);
- Overnight accommodation for students involved in night-time activities at the Veterinary Teaching Hospital;
- Wireless internet access in all DIMEVET buildings.



Fig. 5.3 - Kindergarten for the children of university staff and students .

5.2 COMMENTS

Measures taken to ensure co-ordination

The recent profound renovation of the University system introduced by Italian Law 240/2010 was the basis of an important process to adapt the organisation of Italian Universities to meet the new requirements. In the past two years, the Alma Mater has faced important challenges concerning the suppression of the Faculties, the new role of Departments and the introduction of the Schools.

In this framework, the presence of a single Department has led to more efficient internal coordination. This was considered extremely positive because, in some cases, the new role of the Departments and Schools represented an unnecessary and excessive burden in bureaucracy, resulting in the slowdown of many processes of the daily academic life and, specifically, those pertaining to decision-making.

The introduction of the IQAS has offered a critical approach to many education issues and, more importantly, allowed us to focus on actions aimed at improvement. In the framework of the DPVM, the establishment of the ARR has represented a fundamental step in this process.

The IQAS has positively influenced the process of achievement of learning objectives and several procedures, including the examination system.

The vertical integration of subjects within the curriculum is to be encouraged, in order to emphasise to students the relevance of basic sciences in clinical studies, and vice versa.

The Teaching Environment

As in the whole of the Alma Mater, the teaching staff have not always perceived the new QA system enthusiastically. The average mentality of the academic staff is still quite traditional and extraneous to the QA process. In some cases, the QA methods are perceived as a limitation of teachers' freedom. There are still no procedures in place in Italy to reward excellence and academic progression is, in many cases, still a matter of seniority rather than meritocracy. To properly achieve the QA objectives, the overall impression is that it is crucial for Alma Mater to establish a system of continuing education for the teaching staff, aimed at improving their knowledge of new languages and methodologies.

Appropriate continuing education should be provided after specific periods (*i.e.* every five years) and, mandatorily, to new employed teaching staff. The DPVM has successfully experimented courses to improve teachers' awareness of education issues.

The Examination System

The DPVM of the FVMBol was successfully evaluated by EAEVE in 2005. As for other issues, comments and suggestions were very useful to stimulate and steer improvement. The EAEVE visiting team addressed some comments and suggestions on the examination system. Here we report on these in italics and, where possible, the action they have triggered:

There is no Faculty policy on examinations. It would be beneficial to have more external input into courses and their examinations, rather than these being somewhat internalised.

- In 2009 the DPVM developed an examinations policy (**Annex 5.2**). Methodologies for the examination of each subject are written and downloadable on the DPVM website. Unfortunately, there are no National policies stressing the need for external examiners.

It is unnecessarily lenient to permit students to elect when they take an examination and to repeat each examination without limit. The number of times that students can take examinations and the extent to which they can choose when to take these should be restricted.

- It is not possible for the DPVM to act appropriately on this issue, since the National system does not limit the number of times the students may sit the examinations.
- Currently, the DPB is debating on the usefulness of restricting the periods students can take examinations. The excessive length of the studies is a perceived, problem and students feel the restriction of the possibility to sit the exams as a further obstacle. We agree that the current way does not seem very efficient.

Students should have to have passed the examinations in relevant foundation subjects before being permitted to enrol for more advanced subjects.

- The current DPVM curriculum has a list of preparatory exams that students have to pass before they are allowed to sit other specific exams.

It would be beneficial to aim for an examination and teaching system that develops reasoning and understanding of veterinary knowledge.

- Starting from 2010, detailed syllabi and methodologies to assess the achievement of competencies were established.

The Faculty should consider having a system of external examiners to assess objectively whether the content of a subject is relevant and comprehensive and whether it is taught and learnt in a way that enables its effective use in subsequent studies or professional activity.

- The new curriculum was, for the first time, structured on the basis of the feedback from a questionnaire sent to the stakeholders. This is the first step of a process that should involve more intensively external examiners.

Further comments include:

- e-learning was not substantially developed because, as first step, the DPVM preferred to focus on the establishment of the "Portale Didattico Veterinario". The above-described teaching portal should represent the basis for further development of self-directed learning, including e-learning;
- The DPVM has strongly encouraged the adoption of written examinations. The process is quite slow since it's very difficult to change the habits of (especially the senior) teaching staff in the absence of proper continuing education and/or specific indications provided by Alma Mater. This means that the next steps include the refinement of the methods and settings of the written examination. Specific teacher training should be of great benefit.

5.3 SUGGESTIONS

Alma Mater should establish a continuing education system for teaching staff on issues concerning the QAS and the most advanced education concepts.

Alma Mater should establish a system to reward meritocracy and excellence in teaching.

Concerning the national requirements, the DPB of the DPVM should seek to improve the examination system, specifically in terms of regulating access to the exams.



CHAPTER 6

FACILITIES AND EQUIPMENT

6 FACILITIES AND EQUIPMENT

6.1 FACTUAL INFORMATION

6.1.1 Premises in general

Please give a general description of the site(s) and buildings occupied by the Faculty and include a map

The Department of Veterinary Medical Sciences (DIMEVET) of the Alma Mater Studiorum – University of Bologna is located in the municipality of Ozzano dell’Emilia, approximately 15 km east of the city centre of Bologna, on the road from Bologna to Rimini (**Fig. 6.1**).

For the sake of simplicity, and since not all structures belong to DIMEVET (further details are provided below) the complex of the buildings located in Ozzano dell’Emilia is referred to in this Chapter as “Veterinary Campus” (VC). The VC lies in the Ozzano dell’Emilia portion of the agricultural centre of the Alma Mater, which has a total surface area of approximately 300 hectares.

Other structures related to DIMEVET are:

- The Local Organisational Unit (LOU) in Cesenatico (FC), located approximately 100 km from Ozzano dell’Emilia, on the Northern Adriatic Sea (**Fig. 6.2**);
- The University Dairy Farm Unit (UDFU) and the Cheese Factory, situated approximately 1 km from the Veterinary Campus (**Fig. 6.1**);
- The Artificial Insemination Centre (AIC), located 22 km from the Campus, in the village of Cadriano (BO) (**Fig. 6.1**).



Fig. 6.1 - Map showing the DIMEVET geographical location, including UDFU and AIC.

The overall surface area of DIMEVET is 37290 m² and is divided as follows:

- | | |
|--|----------------------|
| • Ozzano dell’Emilia Veterinary Campus | 30741 m ² |
| • Cesenatico teaching/research unit | 1107 m ² |
| • University Dairy Farm and the Cheese Factory | 2676 m ² |
| • Artificial Insemination Centre | 2766 m ² |

Public transport, by bus, connects DIMEVET both to the centre of Ozzano dell'Emilia and the city centre of Bologna.

Ozzano dell'Emilia has a railway station, but unfortunately it is in the countryside, 2.5 km from the Veterinary Campus, with no direct public bus connection to the centre of the village or DIMEVET.

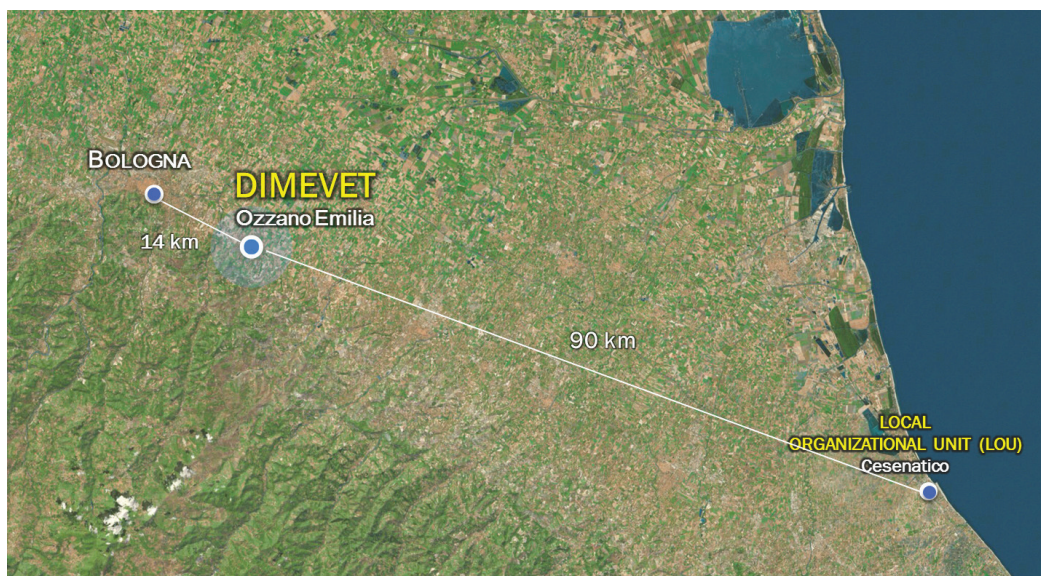


Fig. 6.2 - Map showing the DIMEVET and Cesenatico LOU geographical location.

The Veterinary Campus

The premises of the VC are quite recent, the oldest building dating back to 1991. Most of the buildings belong to DIMEVET. There are some exceptions, including the largest lecture halls in the central buildings, managed directly by the School of Agriculture and Veterinary Medicine (SAVM). The core complex comprises three buildings, externally appearing as a "figure 8-shaped" single unit.

The following facilities are located in the central building, connected by internal corridors:

- The central reception;
- The dedicated teaching areas (i.e. lecture theatres, study halls and IT lab);
- The central library;
- The cafeteria;
- The student association offices;
- The teaching and support staff offices;
- The administrative services of DIMEVET and SAVM;
- Most of the research and teaching laboratories of the various DIMEVET services.

Figs. 6.3a, 6.3b and 6.4 shows the main buildings of the Ozzano Veterinary Campus (the acronyms of the related services, detailed in the next paragraphs, are given in brackets):

- Central building;
- Veterinary Teaching Hospital (SARPA, SMI);
- Surgery (SCAR) and Reproduction (SRA) clinics, Diagnostic Imaging (SDIMM);
- Internal Medicine Clinic (SMI);
- Hospitalisation quarters for Equine Perinatology (SRA) and Large Animals (SARGA);

- Equine clinic and Equine stable (SARGA);
- Anatomy and Infectious disease facilities;
- Slaughterhouse;
- Animal breeding, physiology and pharmacology facilities;
- Incinerator.

The central building has two internal gardens and is surrounded by various other buildings, mostly dedicated to the practical activities including (the Italian acronyms of the related services, detailed in the next paragraphs, are given in brackets):

- The facilities of the Veterinary Teaching Hospital (VTH):
 - The companion animals emergency, hospitalisation and critical care service (SARPA);
 - The companion animals internal medicine service (SMI);
 - The companion animals anaesthesia & surgery service (SCAR);
 - The large and companion animals Reproduction Service (SRA);
 - The diagnostic imaging service (SDIMM);
 - The large animals emergency and hospitalisation Service (SARGA) and the production animals hospitalisation quarters;
 - The equine perinatology unit (SRA);
 - The equine stable (SARGA).
- The farming facilities (including the feed mill);
- The research facilities of the Physiology service;
- The practical training theatres;
- The DIMEVET slaughterhouse;
- The Avian Pathology premises;
- The goat breeding area;
- Area rented to spin-off enterprises;
- Service building shared with Biochemistry, Anatomy, Pathology services.

Premises are listed generally, as it is complicated to specifically identify the various structures and functions. Since 2005, many changes have occurred both in terms of organisation (*i.e.* the DIMEVET services were established to integrate activities which were previously offered separately) and renewal/transformation of the existing buildings. The above-described facilities also include:

- The service buildings (*i.e.* operating and lab gases, boiler room, air conditioning and purification systems);
- The crèche;
- The guestrooms and the porter's lodge;
- The incinerator.

The VC has adequate car parking for students, staff and customers.

Many of the campus buildings are now fitted with photovoltaic solar panels for green electricity generation.

The Local Organisational Unit (LOU) in Cesenatico (**Fig.6.5**), is divided as follows:

Teaching area – 3 classrooms, 1 student training lab, a library and 1 student information desk. They are primarily used by the students of the DP in Aquaculture and Ichthyopathology, as well as for other teaching activities such as masters programmes, seminars, workshops, training courses, etc.

Research area – 5 well-equipped labs (Nutrition, Fish quality, Food safety, Genetics Microbiology, Virology) for analysis and disease diagnosis on fish and facilities for experimental trials on freshwater species.

Marine research facilities – 4 fully-equipped indoor recirculation systems for experimental trials on marine fish to develop studies on anatomy, physiology, nutrition and feeding, reproduction, production science and genetics from larval stage to the growing size of the most important aquaculture marine species.



Fig. 6.3a - Main buildings of the Ozzano Veterinary Campus.



Fig. 6.3b - North west view.

- | | |
|--|----------------------------------|
| 1. Main building | 8. Practical training classrooms |
| 2. Veterinary Teaching Hospital | 9. Necropsy area |
| 3. Surgery area | 10. SAVM Vice Chairmanship |
| 4. Animal Reproduction area | 11. Head of DIMEVET |
| 5. Internal Medicine and Diagnostic Imaging area | 12. Bovine stable |
| 6. Equine Perinatology Unit | 13. Slaughterhouse |
| 7. Equine stable | 14. Pig stables |

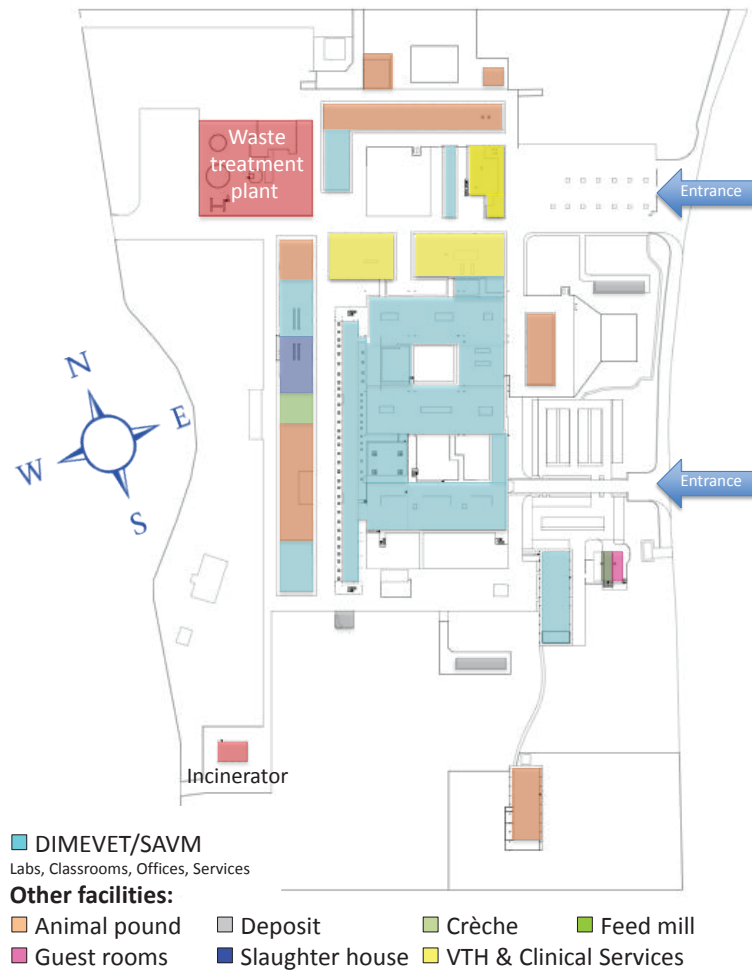


Fig. 6.4 - Veterinary Campus.

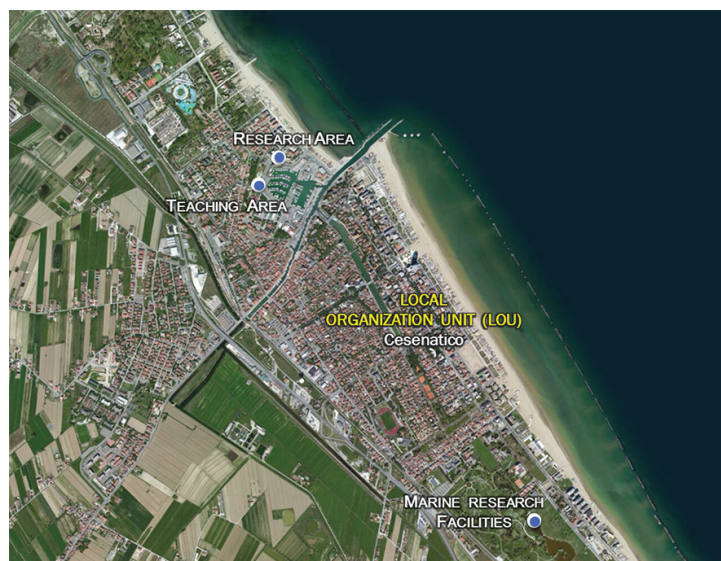


Fig. 6.5 - The DIMEVET local organisational unit in Cesenatico.

Works in progress at the Veterinary Campus

Various renovation works began in 2013 and are currently in progress at the time of writing this report. Some of them, *i.e.* the changes in the previous surgery clinic building, will profoundly affect the everyday organisation and distribution on the campus.

The following is a brief list of the most important recent renovation works, detailed in the relative **Paragraph 6.1.9**, and include:

- Radical transformation of the previous surgery and reproduction areas into a more integrated structure (on-going), including:
 - Examining rooms;
 - Diagnostic imaging area;
 - Surgical theatres.
- Construction of the pathology and anatomy dressing rooms for students (on-going);
- Renovation of isolation facilities for small and large animals;
- Wildlife and exotic veterinary centre (project approved, work starting in 2014).

Students' facilities and students' and staff's welfare in the Veterinary Campus

The veterinary campus has plenty of places available for students' self-directed studies. Students have access to dedicated study halls as well as flexible workstations (tables and seating) in various places around the campus. The library has workstations where students can study. The campus is equipped with Wi-Fi connection in all buildings.

The rooms available to students for free practical work include the anatomy room with practical material (*i.e.* bones and models). The Campus premises are surrounded by large green areas, with seats and tables where students can study or rest in warmer weather (**Fig. 6.6**).

Various non-academic facilities for veterinary students are available at the veterinary campus. There is a cafeteria where snacks and quick lunches are served on weekdays, automatic food and beverage dispensers and, very recently, a dedicated rest room has also been opened for students.

The students also have their own offices for the associations and groups.

Students' children have priority access to the crèche on the Veterinary campus.

The veterinary campus does not organise accommodation, but students can rent apartments in the adjacent areas. Private companies have built specific housing for students close to the campus.

The swimming pool and the gym are very close to the veterinary campus. The "Rosario Preziosi" sports centre (named after a young DIMEVET professor who passed away prematurely) is located close the central complex.



Fig. 6.6 - Green areas in the Veterinary Campus.

6.1.2 Premises used for clinics and hospitalisation

The information to be entered in Table 6.1 is the number of animals that can be accommodated, not the number of animals used. Certain premises may be used to accommodate different species of animal. If so, the same premises should be entered only once. Table 6.1: Places available for hospitalisation and animals to be accommodated regular hospitalisation.

The DIMEVET clinical activity is organised in Services (see **Chapter two** for details) that are under the direct final responsibility of the Head and Board of DIMEVET.

The DIMEVET Services were established mainly to ensure proper coordination between, education, research and territorial-related (*i.e.* clinical activities for client-owned animals) duties. The "Service" can be synthetically described as a functional structure of the Department:

- Run by Teaching staff and technicians, performing teaching/scientific activities, including specific tasks related to the type of the Service;
- Equipped with appropriate facilities and equipment to ensure regular activities.

The Regional Public Health Authority regularly authorises all the clinical services involved in VTH activity as well as the diagnostic laboratories.

In the DIMEVET organisation, the VTH is not a separate service, but is rather the result of the coordinated action of the clinical services, detailed in the **Paragraph 6.1.5**.

From a structural point of view, the VTH core building is building no. 2 (**Figs. 6.3a** and **6.3b**), hosting the companion animals 24-hours emergency service, the first consultation examining rooms and the hospitalisation facilities. The other clinical services of the VTH, including large and companion animals facilities, are mainly located in buildings no. 3, 4, 5, 6 and 7 (**Figs. 6.3a** and **6.3b**). A detailed description of each departmental service involved in the VTH is provided in **Paragraph 6.1.5**

	SPECIES/ANIMALS	N° . OF PLACES
Regular hospitalisation	Cattle	28
	Horses*	22 (9 ^{*1} +13 ^{*2})
	Small ruminants	30
	Pigs ^{*3}	106 (70 ^{*4} +36 ^{*5})
	Dogs ^{*6}	20
	Cats ^{*6}	9
	Farm animals and horses	6 (2+4) ^{*7}
Isolation facilities	Small animals (cats and/or dogs)	6
	Poultry	7 poultry isolators

Tab. 6.1 - Places available for clinics and hospitalisation.

* Places for horses hospitalisation belong to the Large animals Emergency and Hospitalisation Service^{*1} and the Animal Reproduction Service^{*2}.

^{*3} The number of places varies greatly according to animal size. (e.g. adult boars, sows plus litters, piglets). here a mean number of growing pigs has been calculated. Places belong to the Animal Production^{*4} and Physiology^{*5} Services. They are used both for research and teaching purposes. The Animal Production service can hospitalise more than 120 piglets.

^{*6} Dogs and cats are hospitalised in steel cages equipped for intensive care treatment and under the continuous supervision of the VTH staff.

^{*7} the number represents a combination of maximum 2 cattle/horses and/or maximum 4 small ruminants/pigs. Details are provided in **Paragraph 6.1.3**.

6.1.3 Premises for animals

Give a description of the facilities for rearing and maintaining normal animals for teaching purposes. If the Faculty has no farm of its own, please explain in the SER the practical arrangements made for teaching such subjects as animal husbandry, herd health, and the techniques of handling production animals.

Only a few farm animals are kept on the Veterinary Campus for teaching and research purposes (in Autumn 2013: approximately 10 dairy cows, 4 horses, 14 small ruminants and 70 pigs). Some farm animals, such as pigs, are kept in the Physiology and Animal Husbandry, Nutrition and Feedstuffs Services, mainly for research purposes.

In 2013, according to the EAEVE suggestions, a goat-breeding facility was established on the veterinary campus for teaching purposes, currently counting (31 December 2013) ten females (eight pregnant) and one buck.

There are no healthy dogs and cats hospitalised for teaching purposes. When needed, teachers or students bring their own animals to be used in basic training.

The following description concerns the premises for animals located outside and inside the Veterinary Campus. The former includes the University Dairy Farm, the Artificial Insemination Centre (AIC); the latter the Animal Husbandry, Nutrition and Feedstuffs Service and the Physiology Service. The isolation facilities for companion and large animals are briefly described in a separate paragraph.

Premises outside the Veterinary Campus

University Dairy Farm and Cheese Factory

The University Dairy Farm, located approx 1 km from the Department, covers approximately 2,200 m² and has been specifically designed for practical teaching and experimental activities (<http://www.scienzemedicaveterinarie.unibo.it/it/dipartimento/Scienzaelatte/stalla>).

The facility is run in strict compliance of national and regional legislation concerning milk production and environmental impact (Presidential Decree 54/97, Legislative Decree 626/94 and Regional Law 50/95) and in compliance with technical requirements and directives on livestock housing and breeding practices. Buildings and technical choices were made in order to guarantee high hygiene standards in the breeding/rearing areas and the service rooms to allow the production of high quality milk (**Fig. 6.7**).



Fig. 6.7 - University Dairy Farm (UDF).

The University Dairy Farm has:

- 72 places for dairy cows in free stalls;
- 8 places for pregnant cows (near term) in free stalls;
- 8 places for cows in tie stalls;
- 31 places with sloping bedding for pregnant and non-pregnant cows;
- 15 places for heifers (6-12 months approximately) on sloping bedding;
- 12 places for calves (2-6 months) on sloping bedding;
- 18 places in individual outdoor stalls for calves (up to approx 2 months).

Equipment includes automated feeding and ventilation systems with electronic detection of temperature and humidity (THI) and a video recording system for animal behaviour analysis. Cows are milked twice a day. Individual computerised devices gather multiple parameters (body weight, rumination time, locomotion activity, resting time, feed consumption, milk time, milk flow, milk yield, milk fat and protein percentages, SCC, milk conductivity and urea) on a daily basis, and are used for teaching and research purposes.

The Cheese Factory is further described in the **Paragraph 6.1.7.1**.

Artificial Insemination Centre (AIC)

(Istituto Nazionale di Fecondazione Artificiale – INFIA)

<http://www.ospedaleveterinario.unibo.it/clinica-dei-grandi-animali/infa>

The Artificial Insemination Centre (AIC) is a teaching and research facility where research, services and practical teaching activities related to animal reproduction, in particular equine reproduction, are performed. The AIC is a European Community approved Equine Artificial Insemination and Semen Production Centre (**Fig. 6.8**).

The specific equipment is detailed in the description of the equipment of the Animal Reproduction Service (**Paragraph 6.1.5**).

The buildings and facilities hosting the AIC consist of different bodies and, in particular, offices and laboratories covering an area of approximately 500 m² and a 90 m² classroom for 40 students. The premises include a cold store, measuring 4x4x2 m, for sperm cooling. The AIC has, over an area of 1358 m², 31 boxes for mares, six boxes for stallions, and a quarantine box. These facilities are located within an area of 12 hectares including 11 paddocks of different sizes, depending on their specific use, covering an area of about 15,000 m².



Fig. 6.8 - Artificial Insemination Centre (AIC).

Premises inside the Veterinary Campus

Animal Husbandry, Nutrition and Feedstuffs Service

(Servizio di Zootecnia, Nutrizione ed Alimenti – ZNA)

<http://www.scienzemedicheveterinarie.unibo.it/it/dipartimento/servizi/animal-husbandry-nutrition-and-feedstuffs-zna>

The service has:

- 2 post-weaning rooms for piglets equipped with flat-deck steel cages (capacity 140 piglets);
- 20 pens (5 rooms) for growing-fattening pigs (max. capacity 100 pigs);
- 1 room for fattening rabbits (capacity 250 rabbits).

The pig units are equipped with a video-recording system used to assess animal behaviour over a 24h period.

The service is further described in **Paragraph 6.1.5**.

The Physiology Service

(Servizio di Fisiologia – FIS)

<http://www.scienzemedicheveterinarie.unibo.it/it/dipartimento/servizi/physiology-service-fis>

The service has an “Experimental and Breeding Unit” with:

- 12 cages for groups of 4-6 pigs in 2 separate rooms;
- 8 farrowing crates for sows in 1 delivery room;
- 1 pig mating station with 3 single boxes for boars;
- 1 barrier class II (MOGM) room for gene delivery in swine;
- 1 room for experimental surgery in swine.

Central Veterinary Service for the protection of animals used for experimental purposes (CVS)

(Servizio Veterinario Centralizzato – SVC)

<http://www.agrariaveterinaria.unibo.it/it/scuola/le-strutture/servizio-veterinario-centralizzato-per-la-protezione-degli-animali-utilizzati-a-fini-sperimentali>

Brief description

The CVS, located on the Veterinary Campus, was established in 1993. The task of this service is to supervise procedures in all animal experimental facilities of the Alma Mater, in accordance with the present national (LD 116/1992) and EU legislation (Directive 2010/63/EU concerning the animal protection in experimental medicine). Specifically, the CVS safeguards animal welfare and health in order to prevent worthless and unnecessary pain, suffering and distress in the subjects employed in experimental procedures. Moreover, the CVS monitors the overall compliance of the experimental procedures ensuring that they are in accordance with “the general guidelines of animal care and use” and providing the necessary veterinary medical care to the animals. The CVS also carries out microbiological and environmental monitoring in the user and breeding establishments, using specific equipment suitable for this purpose.

The CVS strictly cooperates with the “Ethics and Scientific Committee” of the Alma Mater (the advisory and regulatory body established to evaluate the requests for authorisation and notifications of experiments) in order to check the experimental protocols regarding veterinary issues (e.g. origin of the animals, surgical procedures, anaesthesia and analgesia protocols, definition of appropriate humane end points, use of drugs, methods of euthanasia, etc.) and the formal aspects, prior to their notification to the national and regional Authorities.

Structures

The Alma Mater has 15 establishments authorised for breeding and/or using various animal species for experimental purposes: five of these are managed by DIMEVET. In the Veterinary Campus there are 4 establishments authorised for both laboratory (rabbit, rat, mouse, guinea pig, hamster) and farm animals (bovine, sheep, goats, swine, equine, birds), while one fish user and breeding establishment, with specific equipment, is authorised in the LOU of Cesenatico.

Staff

1 Associate Professor, 2 employed veterinarians and 1 administrative officer.

Isolation facilities

Companion animals

The VTH is equipped by a Companion Animal Isolation Unit (CAIU) for dogs and cats (and, if necessary other small mammals, *i.e.* rabbits and ferrets), to avoid contacts between hospitalised patients with suspected transmissible diseases and normal patients. The unit was designed for easy disinfecting, cleaning and disposal of waste products. Waste management is organised in order to ensure a separate process of removal.

The CAIU has three rooms:

- Anteroom, where staff change into protective clothing;
- Patient room, with dedicated cages (including separate cages for parvovirus infected dogs and cats), examination table, oxygen supply and emergency trolley;
- Cleaning room including a table with a bath for animals.

Farm animals and horses

The Veterinary Campus has isolation facilities for farm animals and horses. At the time of the 2005 EAEVE evaluation, the large animals isolation premises were in a different building. The functions of the former building were redefined, and in 2013 a new isolation facility was designed and built.

The new isolation facility for large animals was established in the building dedicated to the large animals hospitalisation. This facility includes a barn with a capacity of up to two adult large animals (cattle or horse). The same box was built flexibly, and can be modified to host calves or small ruminants or pigs if needed.

In addition to the box, a space is dedicated for sanitising equipment such as chains, pullers, buckets, halters, nipples or oesophageal tubes before and after each use. The space is also used for hand and boot washing, changing clothing and dressing in disposable protective coats or boots.

A biosecurity waste system for manure from patients with infectious diseases has been designed to ensure the separate handling of faeces, urine and straw used in the box. In fact, liquid (urine and washing water) is collected in a dedicated gully-hole, while solid waste is stored in a front-end dumpster; liquids and solids are then removed by a private waste removal service.

The avian isolation unit, located inside the MIPAV animal facilities, has 7 poultry isolators. They are normally used for *in vivo* experimental trials and can be also used to house birds affected by transmissible diseases in biological isolation conditions.

6.1.4 Premises used for theoretical, practical and supervised teaching

The same room should not be entered under two or more headings, even if it is used, for example, for both practical and supervised work.

Safety rules

DIMEVET strictly complies with all safety measures established by Italian legislation.

The Head of the Department appoints trained (fire and first aid emergency) supervisors among the academic and technical staff. Where and when appropriate, professionals from the specialised technical staff of the Alma Mater are involved to effectively manage the Quality Assurance of the internal health and safety system.

Plans are available for evacuation in the event of various emergencies (fire, earthquake, injuries, chemical accidents etc.) and first-aid kits and fire extinguishers are available. Fire drills are carried out periodically.

The laboratories and facilities are equipped with appropriate tools to ensure safe working conditions (cupboards, eye-wash fountains, emergency showers, as well as fire extinguishing equipment) and students are instructed in safety procedures prior to their involvement in any practical activity, which is always performed under staff supervision.

Technical staff of the "Service of Occupational Medicine, Prevention and Protection and Health Physics" of the Alma Mater regularly perform safety audits.

The premises for clinical work and student training are reported in **Tab. 6.2**.

Small animals	No. consulting rooms	12
	No. surgical suites	5
Equine and food animals	No. examination areas	4
	No. surgical suites	2
Exotic animals and birds	No. consulting rooms	1

Tab. 6.2 - Premises for clinical work and student training.

N°	HALL NAME	N. PLACES
1	Messieri (<i>Aula Magna</i>)	208
2	Chiodi	172
3	Gherardini	166
4	Lanfranchi	102
5	Medica Esterna.	94
6	Montroni	70
7	Borgatti	68
8	Falascini	52
9	Mensa	52
10	Antonelli	40
11	Cugnini	34
12	Diapason	15

Tab. 6.3 - Lecture facilities.

The lecture halls (with the exception of the “Diapason” and the “Medica Esterna”), are dedicated to deceased veterinary professors who played a significant role in the development of veterinary teaching at the University of Bologna (**Tab. 6.3**).

All the lecture halls are equipped with PC, video-projector, Internet and Wi-Fi-connection.

The Aula Magna “Messieri” was recently renovated with plugs for the connection of students’ notebooks. This hall is also equipped to host interactive activities using “clickers” (**Fig. 6.9**).



Fig. 6.9 - The Aula Magna “Messieri” .

The “Medica Esterna” hall is currently under renovation.

The rooms dedicated to group-work reflect the minor use of this teaching method in the curriculum. These rooms are mostly located in the internal parts of the former departments and still retain the names of the old structures. In some cases, these were old libraries (**Tab. 6.4**).

The rooms for practical and work group will be classified and renumbered after the reorganization of the services, planned for 2014 (**Tab. 6.5**).

The “E” (“exercise”) rooms are all equipped with computer, video projector and Internet connection and are structured to permit working in small groups of students. Specifically:

- E1 is a laboratory classroom for practical training, mainly for chemical, biochemical and biotechnological purposes. The classroom is furnished with laboratory benches, common pieces of equipment, and in particular:
 - 2 fume cupboards;
 - 2 laminar biohazard flow cabinets;
 - CO₂ thermostat;
 - Centrifuge;
 - Transilluminator;
 - Thermal cycler;
 - Electrophoresis equipment;
 - Microscopes (direct and inverted);
 - 4 UV-Vis spectrophotometers.
- E2 and E5 are equipped with, respectively, 20 and 28 microscopes (including one fluorescence microscope) and basic laboratory instrumentation, refrigerator and freezer to perform exams

of biological samples (*i.e.* blood, faecal material, urine, foods etc.) and microbiological cultures. The room is used for practical training in microbiology, parasitology, transmissible diseases, veterinary pathology.

- E3 and E4 are simply equipped for practical group work.

The "anatomy microscope room" contains 40 microscopes and is used for practical work in histology (**Fig. 6.10**).



Fig. 6.10 - The "Anatomy microscope room".

The "anatomy (macroscopic) room" has 8 anatomic tables and is equipped for students' autonomous self-study, using skeletons and bones of horses, bovines, dogs and cats, as well as "a secco" preparations of (equine and bovine) thoracic and pelvic limbs and joints of the different species. The room is also used by the students for supervised institutional practical activity.

The "Gross pathology room" (or necropsy room) has 6 anatomic tables and is used for teaching and diagnostic activities on cadavers of small and large animals and for pathology practices with slaughterhouse material.

The "Gross pathology room 2" is a subsidiary dissection room equipped with three anatomic tables and workbenches and is used when there is overload in the main necropsy room. In addition to pathology practices, this room is also available for practicing surgical procedures on cadavers.

The "IT Lab" is equipped with 22 workstations for students' individual or group work. This room is mainly used for practical work on diagnostic imaging and in clinical and pre-clinical problem-solving activity.

Tab. 6.4 - Premises for group work.

N°	ROOM NAME	N. PLACES
1	MIPAV* room	30
2	Physiology room	30
3	Internal Medicine room1	25
4	Wildlife Diseases and Ecology room	23
5	Pathology room	15
6	Avian Pathology room	15
7	VTH** multimedia room	15
8	Food Hygiene and Technology room	10
9	Internal Medicine Meeting room 2	10
10	Surgery room	10
11	Animal Reproduction Meeting room	10
12	Animal Production room	10
13	MIPAV* Meeting room	10
14	Pharmacology room	8

* MIPAV: Infectious, parasitic and avian diseases service (In Italian: Servizio di Malattie Infettive, Parassitarie ed Aviarie).

** VTH: Veterinary Teaching Hospital.

Tab. 6.5 - Premises for practical work.

N°	NAME	N. SEATS
1	E1	42
2	E2	35
3	E3	32
4	E4	32
5	E5	40
6	Anatomy microscope room	40
7	Anatomy room	40
8	Gross Pathology room	40
9	IT Lab. (20 work stations)	40
11	Multimedia Lab	10

Vehicles

To reach the external facilities for practical activities (*i.e.* Professional Practical Training), students use two minibuses (capacity 8 passengers) and 5 cars (capacity 4 passengers, two of them are low environmental impact electric vehicles) owned by DIMEVET.

For journeys involving larger numbers of students (*e.g.* visits to external farms) coaches are usually hired from private companies.

Veterinary Campus Museums

The veterinary campus museums are organised into five autonomous sections:

- Domestic animal anatomy;
- Veterinary pathology and teratology (**Fig. 6.11**);
- Surgical and obstetrics instrumentation;
- Parasitology;
- Wildlife.



Fig. 6.11 - Veterinary pathology and teratology.

The museums include collections of historical anatomical preparations, old surgical/obstetrical instrumentations and embalmed animals.

The Anatomy Museum of Domestic Animals was founded in 1882 and includes around 2000 preparations (models in paper-maché, plaster and dry preparations) of the various apparatus of domestic animals. The material is available for the students' self-directed learning.

The "GB Ercolani" Museum of Veterinary Pathology and Teratology was founded in 1863 and currently includes 4350 preparations including "a secco" exhibits and models in clay, plaster and wax reproducing pathological or teratological animals or organs. Students visit the museum during the third year, in the special pathology course units. Students can also visit the museum on their own by appointment.

6.1.5 Diagnostic laboratories and clinical support services

Diagnostic laboratories – Briefly describe the facilities available for clinical diagnostic work. Central clinical support services – Indicate the nature of these services and how they are organised (e.g. diagnostic imaging, anaesthesia, etc.)

Veterinary Teaching Hospital (VTH)

In the main clinical building (no. 2 in **Figs. 6.3a e 6.3b**) there is a large reception area where clients are met by staff and accompanied to each specific service.

As previously described, in the DIMEVET organisation, the VTH is a consortium of integrated services. The following DIMEVET Services are directly involved in and support the VTH activities (the Italian name and acronym are given in brackets):

- Emergency, and Critical Care Service – (Servizio di accettazione e ricovero dei piccoli animali; SARPA) (**Fig. 6.12**);
- Large animals Hospital and Emergency Service (Servizio di accettazione e ricovero dei grandi animali; SARGA);
- Internal Medicine Service (Servizio di medicina interna; SMI);
- Surgery and Anaesthesiology Service (Servizio di chirurgia, anestesia e rianimazione; SCAR);
- Animal Reproduction Service (Servizio di riproduzione animale; SRA);
- Clinical Pathology Service (Servizio di patologia clinica veterinaria; SEPAC VET);
- Diagnostic Imaging Service (Servizio di diagnostica per Immagini; SDIMM);
- Centralized Drug Service (Servizio di farmacia centralizzata; SFC).
- Other Services involved in the VTH activity are:
- Pathological Anatomy Service (Servizio di Anatomia Patologica; APS);
- Infectious, Parasitic and Avian Diseases service (Servizio di Malattie Infettive, Parassitarie ed Aviarie; MIPAV).



Fig. 6.12 - Veterinary Teaching Hospital.

The Clinical records system

The VTH and DIMEVET are connected through a computer programme network (Fenice[®], Zaksoft) allowing the exchange of patient information between operators in the various laboratories and clinics.

For each patient, it is possible to store data, and clinical images (e.g. radiology, ultrasound, endoscopy). The programme is structured in clinical records, distinguished according to the various needs of the different services, and has controlled access.

The students have access to the system with a password to display the clinical cases for training purposes.

In the following description, the Services are reported with their English name. In order to avoid confusion, the Italian acronym is maintained.

Clinical services of the Veterinary Teaching Hospital

Emergency and Critical Care Service of Companion Animals

(Servizio di accettazione e ricovero dei piccolo animali: SARPA)

<http://www.scienzemedicheveterinarie.unibo.it/it/dipartimento/servizi/emergency-and-critical-care-service-sarpa>

Brief description

SARPA operates 24 hours a day, 365 days a year, providing first opinion and emergency care to the patients presented to the VTH. Following triage and first intervention, the service continues to provide care to patients requiring stabilisation in the intensive care unit (ICU) or follow up treatment in the small animal ward with the support of the other specialist services of the small animal hospital. SARPA can accommodate up to 29 patients in the different areas of the small animal VTH (ICU, small animal ward, isolation unit). All the activities involve the students in much of the clinical work.

Facilities

- 3 consulting rooms;
- 1 emergency room;
- 1 ICU room;
- 1 canine hospitalisation ward;
- 1 feline hospitalisation ward;
- 1 isolation unit for hospitalisation of patients affected by infectious diseases;

Main Equipment

- Cages: 23 patients; isolation cages: 6 patients;
- Oxygen cage: 1 or 2 patients, depending on the size;
- Intensive care ventilator;
- Multi-parameter monitors (ECG, NIBP, SpO₂, capnography, temperature);
- On-site transfusion service;
- In-house laboratory facilities;
- In-house imaging facilities;

Staff

3 Assistant Professors, 1 employed veterinarian, 3 technicians, 9 staff-clinicians.

Large Animals Hospital and Emergency Service

(Servizio di Accettazione e Ricovero dei Grandi Animali SARGA)

<http://www.scienzemedicheveterinarie.unibo.it/it/dipartimento/servizi/sarga>

Brief description

SARGA is the Service of the VTH that receives, admits, manages the emergencies and cares for large animal patients during hospitalisation, including equine and farm animals, affected by medical and surgical disorders. Until 2011 SARGA also included reproduction and neonatology services and staff.

The Service runs a 24-hour service for hospitalised and emergency patients (the latter through an emergency phone number). Both activities involve the students in most of the clinical work. Concerning the diagnostics, therapeutics, internal medicine, anaesthesiology and surgery on large animals, the Service staff cooperate with the other Services of the VTH (SDIMM, SCAR, SMI, SRA). The service staff are also involved in the hospitalisation of young and adult cattle from farms mainly located in the region Emilia-Romagna

The changes in progress in the Facilities imply three different situations.

Former Facilities and Equipment until the end of 2013

- Two equine consulting rooms with surgical stocks;
- One cattle consulting room with surgical stocks;
- One sterile surgical theatre for large animals;
- Two recovery boxes;
- One room for radiology, endoscopy and surgery in large animal standing surgery;
- Treadmill area;
- Ultrasound, fluoroscopic and radiographic instruments, video-surgical tower (arthroscopy, tenoscopy, laparoscopy and thoracoscopy);
- Fourteen boxes for equine hospitalisation, 15 for bovine patients.

Future (from 2014)

- One equine consulting room with surgical stocks for consulting, radiology, endoscopy and standing surgery;
- One cattle consulting room with surgical stocks;
- One sterile surgical theatre for large animals;
- Two recovery boxes;
- Treadmill area;
- Ultrasound and radiographic instruments, video-surgical tower (arthroscopy, tenoscopy, laparoscopy and thoracoscopy).
- Eleven boxes for equine hospitalisation, 28 for bovine/calves; isolation area for farm animals. Adult cattle or calves are hospitalised in separate barns or external loose housing.

Equipment

Tools for clinical investigation and treatment of the most common internal organ diseases. Diagnostic imaging is performed by the corresponding service of the teaching hospital.

Surgery is performed by the SARGA service.

Staff

1 Full Professor, 1 Associate Professor, 1 Assistant Professor, 3 staff-clinicians, 1 Technician. Temporary scholarships and technicians are assigned to complete the staffing levels for all duties in specific seasonal periods.

Internal Medicine Service

(Servizio di Medicina Interna: SMI)

<http://www.scienzemediciveveterinarie.unibo.it/it/strutture/internal-medicine-service-smi>

Brief description

The Internal Medicine Service deals with all the problems relating to small and large animals, providing patients with the most updated and tested professional skills for the best diagnostic and therapeutic management of the diseases of dogs and cats.

For this purpose, the SMI also works in close collaboration with the other Services of the VTH, and also operates with the specialist skills ensured by the Operative Units of Cardiology, Dermatology, Endocrinology, Gastroenterology, Neurology, and Nephrology/Urology.

The service accepts referral cases and first opinion cases. The first opinion cases are managed in cooperation with the SARPA.

Referral consultations are offered in following specialties (a brief description of the activities of each referral consultation is provided in our website pages, linked below):

- Cardiology
<http://www.ospedaleveterinario.unibo.it/clinica-dei-piccoli-animali/unita-operativa-di-cardiologia>
- Dermatology
<http://www.ospedaleveterinario.unibo.it/clinica-dei-piccoli-animali/unita-operativa-di-dermatologia>
- Endocrinology
<http://www.ospedaleveterinario.unibo.it/clinica-dei-piccoli-animali/unita-operativa-di-endocrinologia>
- Endoscopy
<http://www.ospedaleveterinario.unibo.it/clinica-dei-piccoli-animali/unita-operativa-di-endoscopia>
- Gastroenterology
<http://www.ospedaleveterinario.unibo.it/clinica-dei-piccoli-animali/unita-operativa-di-gastroenterologia>
- Nephrology and urology
<http://www.ospedaleveterinario.unibo.it/clinica-dei-piccoli-animali/nefrologia-e-urologia>
- Neurology
<http://www.ospedaleveterinario.unibo.it/clinica-dei-piccoli-animali/unita-operativa-di-neurologia>
- Oncologic surgery
<http://www.ospedaleveterinario.unibo.it/clinica-dei-piccoli-animali/unita-operativa-di-oncologia>

The staff also supports the SARGA first opinion consultation service for equine and production animals cases affected by disorders pertaining the Internal medicine area.

The endoscopy unit is run in the SMI. This service performs endoscopy for gastroenterological, pneumological, urological and gynaecological problems. This service works on pets, horses and cattle. Two people from the SCAR are also part of the endoscopy unit. This allows the endoscopy unit to be also involved in laparoscopic, thoracoscopic, and arthroscopic activities.

Facilities

- 3 consulting rooms for small animals;
- 1 consulting room for large animals.

Equipment

- Pentax videoendoscope;
- Storz fiberscope;
- Storz arthroscope 0° and 30°;
- Cardioline digital ECG;
- Cardioline Holter Monitoring;
- Ecography/ecodoppler Philips 1U22 (shared with SDIMM);
- PetMAP graphic for blood pressure measurement (oscillometric);
- Doppler ultrasonic transducer (Minidop ES-100VX, Hadeco, Japan);
- Glucometers Optium Xceed (Abbot) for glucose and BHB measurements.

The staff also supports the SARGA first opinion consultation service for equine and production animals cases affected by disorders pertaining the Internal medicine area.

Staff

1 Full Professor, 3 Associate Professors, 4 Assistant Professors, 1 Technician, 5 staff-clinicians (PhD Students or teaching tutorial contracts).

Surgery and Anaesthesiology Service

(Servizio di Chirurgia, Anestesia e Rianimazione: SCAR)

<http://www.scienzemedicheveterinarie.unibo.it/it/dipartimento/servizi/scar-1>

The Service includes 3 main operative units:

- Anaesthesia and resuscitation unit
<http://www.ospedaleveterinario.unibo.it/clinica-dei-piccoli-animali/unita-operativa-anestesia-e-rianimazione>
<http://www.ospedaleveterinario.unibo.it/clinica-dei-grandi-animali/anestesia>
- Large animal surgery unit
<http://www.ospedaleveterinario.unibo.it/clinica-dei-grandi-animali/chirurgia>
- Small animal surgery is further divided into:
 - General surgery
<http://www.ospedaleveterinario.unibo.it/clinica-dei-piccoli-animali/chirurgia-generale>
 - Orthopaedics
<http://www.ospedaleveterinario.unibo.it/clinica-dei-piccoli-animali/unita-operativa-di-ortopedia>
 - Neurosurgery
<http://www.ospedaleveterinario.unibo.it/clinica-dei-piccoli-animali/unita-operativa-di-neurochirurgia>
 - Oncologic surgery
<http://www.ospedaleveterinario.unibo.it/clinica-dei-piccoli-animali/unita-operativa-di-oncologia>
 - Ophthalmology
<http://www.ospedaleveterinario.unibo.it/clinica-dei-piccoli-animali/oftalmologia>
 - Dentistry
<http://www.ospedaleveterinario.unibo.it/clinica-dei-piccoli-animali/odontostomatologia>

Brief description

The Service offers first opinion and referral consultation as well as surgical treatment of patients requiring conventional surgical interventions on soft and hard tissues. The Service covers the analgesia or anaesthesia assistance to surgical procedures or invasive diagnostic techniques.

- Anaesthesia and resuscitation unit – general anaesthesia, locoregional anaesthesia, central and peripheral blocks, continuous peripheral nerve blocks, post-operative pain treatment;
- Small animals units – surgery of gastro-intestinal, urinary and respiratory systems, both with traditional and laparoscopic/thoracoscopic techniques; thyroid, pancreatic and adrenal gland surgical pathologies; hernia surgery; oncological and neuro surgeries; orthopaedic surgery for osteosynthesis with different techniques; reconstruction of articular ligaments, correction of dysplastic and growth diseases; diagnostic and operative arthroscopy;
- Large animal surgery unit – abdominal surgery for colic syndrome and caesarean surgery; orthopaedic surgery for fractures, joint diseases and techniques of reparative medicine, particularly for tendon injuries; arthroscopy, thoracoscopy and laparoscopy;
- Emergency service – emergency surgery service 24 hours a day (small and large animals).

Facilities

Until the end of 2013 the Surgery had:

- 4 consulting rooms for small animals;
- 1 consulting room for large animals;

- 4 surgical theatres for small animals;
- 1 surgical theatre for large animals.

The renovation of the whole surgical premises was planned and is currently in progress. In future the new facilities will include (see **Paragraph 6.1.9** for details):

- 4 consulting rooms for small animals;
- 1 consulting room for large animals;
- 4 surgical theatres for small animals;
- 1 surgical theatre for large animals;
- 4 "surgical" rooms for practice exercise and experimentation/research.

Main equipment

- Four surgical rooms equipped with Anaesthetic machines provided with automatic ventilation system and continuous monitoring of cardiovascular and respiratory systems;
- Videoendoscope for diagnostic and operative procedures;
- ForceTriad equipment with Ligasure: it guarantees a reduction of the operative time, reduced blood loss, a significant reduction in the use of suture threads and/or haemostatic clips, resulting in rapid healing, less pain in the postoperative period;
- Surgical microscope for ophthalmic surgery and microsurgery;
- Arthroscope for diagnostic and operative procedures;
- Fluoroscopic equipment;
- PEMF therapy-pulsed electromagnetic field (bioresonance);
- Dental unit with Intraoral X-ray equipment;
- Oculist Unit with Slit-lamp biomicroscope and retinoscope with camera; Phaco-emulsifier.

Staff

1 Full Professor, 2 Associate Professors; 5 Assistant professors, 2 technicians, 7 staff-clinicians.

Animal Reproduction Service

(Servizio di Riproduzione Animale - SRA)

<http://www.scienzemedicheveterinarie.unibo.it/it/dipartimento/servizi/animal-reproduction-service-sra>

Brief description

The Service includes 4 operative units:

- Small animals unit – specialising in gynaecology, andrology, obstetrics and reproduction in small animals
<http://www.ospedaleveterinario.unibo.it/clinica-dei-piccoli-animali/unita-operativa-di-riproduzione>
- Large animals unit – specialising in gynaecology, andrology, obstetrics and reproduction in ruminants and equines
Ruminants reproduction: <http://www.ospedaleveterinario.unibo.it/clinica-dei-grandi-animali/riproduzione-nei-ruminanti>
Artificial Insemination Centre (Istituto Nazionale di Fecondazione Artificiale – INFA): <http://www.ospedaleveterinario.unibo.it/clinica-dei-grandi-animali/infa>
- "Stefano Belluzzi" equine perinatology unit – specialising in peripartum management and neonatal care in equine species
<http://www.ospedaleveterinario.unibo.it/clinica-dei-grandi-animali/neonatologia>
- Laboratory of Animal Reproduction and Biotechnology – specialising in assisted reproductive techniques and embryo technologies in domestic animals. It also provides mesenchymal stem cells for regenerative medicine applications

<http://www.ospedaleveterinario.unibo.it/clinica-dei-grandi-animali/laboratorio-di-riproduzione-e-biotecnologie-animali>

Brief description of the SRA activities

Small and large animals units: clinical diagnosis and diagnostics, medical and surgical therapy of genital tract pathologies; infertility treatment; contraception; artificial insemination and assisted reproduction; pregnancy diagnosis; pregnancy monitoring, assistance at delivery and neonatal care in small and farm animals; ovum pick up in equine and bovine species; twin reduction by transvaginal ultrasound-guided aspiration in mares; superovulation and embryo transfer in bovines; oocyte transfer, flushing and embryo transfer in mares, endoscopic insemination in mares and bitches.

Emergency service: specialist emergency service 24 hours a day (Small animals and Equine perinatology units).

Laboratory of animal reproduction: in vitro embryo production through IVM, IVF or ICSI, and IVC in domestic animals; genetic rescue; gametes and embryo cryopreservation; isolation, culture and cryopreservation of mesenchymal stem cells from different tissues; semen extender preparation for domestic animals; oestrous cycle monitoring; sperm standard and advanced evaluation.

"Stefano Belluzzi" equine perinatology unit: pregnancy monitoring and mare assistance at delivery and post-partum; 24 hour assistance of sick foals. Furthermore, 24 hours admittance of sick foals born at stud farms requiring intensive care and/or continuing assistance.

Facilities (see also National Institute of Artificial Insemination)

- 1 consultation room for small animals;
- 1 consultation room for artificial insemination in small animals;
- 1 consultation room for large animals (with stock);
- 1 surgical room for small animals, small ruminants and equine neonates;
- 1 room for neonatology in small animals (neonatal incubator, cage for oxygen therapy);
- 5 boxes for peripartum monitoring in small animals.

"Stefano Belluzzi" equine perinatology unit:

- 2 boxes 4.20 x 6.30 m for neonatal intensive therapy (lamp, oxygen, rubber floor, gate to divide the mare from the foal, mats on the walls in the foal's side);
- 3 boxes 3.15 x 4.20 m for neonatal intensive therapy (rubber floor, gate, mats, 1 box with oxygen);
- 1 box with stock for mare evaluation, treatment of maternal rejection, and adoption of orphan foals;
- 7 normal boxes;
- 3 paddocks.

Main equipment (included those at the National Institute of Artificial Insemination - INFA)

- Video-endoscope, endoscope, portable ecography equipment;
- Surgical instruments and sterilizers;
- Artificial insemination instruments;
- Microscopes (optical, phase contrast, stereo, and fluorescence), micromanipulation station;
- Computer Assisted Sperm Analyzer (CASA);
- Flow cytometer (BD FACSCalibur);
- NucleoCounter SP-100;
- Gametes, embryo and cells cryopreservation instruments, cryogenic containers;
- Automatic machine for filling and sealing straws;
- Analytic balance, pH-meter, osmometer;
- Centrifuges;
- Laminar flow hood, CO₂ incubators, temperature controlled incubators, PCR;

- Transport incubator, aspirating pump;
- Neonatal incubator and infant warmer;
- Dinamap PRO 100 sphygmomanometer;
- 2 Abbott 2-ways infusion pumps, 2 Braun 1-way infusion pumps;
- DVM Rapid Test™ turbidimetric immunoassay system for serum IgG determination.

AIC and SRA Staff

1 Full Professor, 3 Associate Professors, 3 Assistant Professors, 4 Technicians, 8 staff-clinicians.

Diagnostic Imaging Service

(Servizio di Diagnostica per Immagini: SDIMM)

<http://www.scienzemedicheveterinarie.unibo.it/it/dipartimento/servizi/diagnostic-imaging-service-sdimm>

Brief description

The SDIMM provides imaging services for all animal species, including companion, large and exotic animals. The service provides high quality, compassionate clinical care to patients through the use of medical imaging technology. Our services include digital computed radiography, fluoroscopy, and ultrasonography.

Facilities

The premises currently dedicated to Diagnostic Imaging include:

- Two ultrasound examination rooms (one shared with SARPA in the VTH);
- Two radiological rooms;
- One digital recording room.

After the on-going refurbishment, the current premises will be moved to the renovated area. The SDIMM new premises include (see **Paragraph 6.1.9** for details):

- One large animal x-ray investigation room;
- Two companion animal investigation rooms;
- Two ultrasound examination rooms;
- One CT-scan room;
- One MRI room;
- One digital recording room.

Main equipment

- 1 digital radiographic system (Fuji Film system);
- 1 General and cardiology Ultrasound Machine Philips iU22 (shared with the SMI);
- 1 General and cardiology Ultrasound Machine HD 1500 (Shared with SARPA in the VTH);
- 1 High Frequency X-ray Machine – Raffaello – HF/4;
- 1 Multipurpose digital and film radiography and fluoroscopy system with remote-controlled tilting table;
- 1 Portable High Frequency X-ray Machine for large animals;
- 1 C-arm based interventional fluoroscopy.

Staff

1 Full Professor, 1 Associate Professor, 1 Assistant Professor, 3 staff-clinicians, 1 technician.

Veterinary Clinical Pathology Service

(Servizio di Patologia Clinica Veterinaria: SEPAC VET)

<http://www.scienzemedicheveterinarie.unibo.it/it/dipartimento/servizi/veterinary-clinical-pathology-service-sepac-vet>

Brief description

SEPAC VET aims to evaluate the main laboratory parameters for companion animals, farm animals, exotic and laboratory animals.

On a routine basis and within the 24h emergency service, the service performs haematology, chemistry, electrophoresis, urine and faecal analysis, cytology, endocrinology, serology and genetics.

The SEPAC VET premises are divided into 4 distinct areas:

- Haematology and Cytology lab area;
- Chemistry lab area;
- Urinalysis and Faecal examination area;
- Endocrinology and Phoresis lab area.

The emergency lab is equipped with instrumentation for automated blood count, chemistry and blood gas analysis. A separate operative unit performs clinical genetics.

Main equipment

- Siemens ADVIA 2120 haematology system;
- Abbott Cell-Dyn 3700 blood cell counter;
- OLYMPUS AU 400 clinical chemistry analyser;
- SeBIA Hydrasys electrophoretic system;
- Siemens IMMULITE-One analyser (drugs and endocrinology);
- IDEXX Vetstat Electrolyte and blood gas analyser;
- IDEXX Vetlab station and Coag Dx;
- 4 microscopes.

Staff

1 Associate Professor, 1 Assistant Professor, 2 employed veterinarians, 1 technician.

Centralized Drug Service

(Servizio di Farmacia Centralizzata – SFC)

<http://www.scienzemedicheveterinarie.unibo.it/it/dipartimento/servizi/centralized-drug-service-sfc>

Brief description

The SFC aims to standardise the type and use of drugs used in DIMEVET in order to ensure continuous therapeutic care of patients and provide medicine and medical supplies for educational and research purposes. The SFC acquires, stores and distributes drugs and medical supplies to veterinarians working at DIMEVET.

Staff

1 Assistant Professor, 2 Technicians.

Education and clinical activities in the VTH also include the involvement of other services and structural units, such as:

Pathological Anatomy Service (Certified ISO 9001)

(Servizio di Anatomia Patologica: APS)

<http://www.scienzemedicheveterinarie.unibo.it/it/dipartimento/servizi/pathological-anatomy-service-ap>

Brief description

The activity of the Pathology service is mainly based on examinations carried out on necropsy and biopsy material to which histology, cytology, histochemistry and immunohistochemistry are applied. The staff follows different research programmes regarding the pathology of infectious diseases and

tumours in swine, bovines, wildlife, small animals and fishes. In addition to undergraduate teaching, continuing education in pathology is offered to post-graduate students.

Facilities

Autopsy room

- 5 steel tables for necropsy of small animals;
- 1 steel table for necropsy of large animals;
- 2 cooling 0-4 °C rooms (walk-in fridges) where carcasses and organs are stored for short periods before and after examination;
- 1 cooling -20°C room (walk-in freezer) where carcasses for autopsy practices are stored for medium-long periods;
- Overhead track system to transport carcasses from outside to inside and to/from the cooling rooms;
- 4 electric hoist systems to lift carcasses;
- 1 scales (up to 200 kg);
- 2 water powered sterilisers for knives and other instruments;
- Electric saws for bones (1), skull (1) and ribs (1);
- Live video-projection system (360° video camera with remote control unit, wireless microphone system, video-projector) that connects the autopsy room with the adjacent Aula Montroni;
- 4 rugged waterproof notebooks used by students to directly record the post-mortem findings on-line during the autopsy practices.

Until 2013, students accessed the autopsy room through the adjacent Aula Montroni (anatomic theatre). Separate male and female changing rooms for student and staff with direct access to the autopsy room were designed in 2013 and are currently under construction.

Laboratories

- The equipment needed to process samples for histology, cytology, immunohistochemistry, electron microscopy and molecular pathology (e.g. automated vacuum tissue processor, automated stainer for histology, microtomes and ultramicrotome, centrifuges, ...);
- Multi-head microscope (5 stations);
- Image analysis system for morphometric investigations on tissues.

Infectious, Parasitic and Avian Diseases Service (Certified ISO 9001)

(Servizio di Malattie Infettive, Parassitarie ed Aviarie – MIPAV)

<http://www.scienzemedicheveterinarie.unibo.it/it/dipartimento/servizi/mipav>

Brief description

The Infectious, Parasitic and Avian Diseases Service, provides diagnostic services at the request of the medical and surgical clinics of the VTH and private veterinary clinics. Diagnostic tests are available for the most common infectious and parasitic diseases in companion and farms animals as well as wild and exotic species.

In the service laboratories, teaching and support staff as well as PhD researchers and post-doc students perform: virological tests and bacteriological diagnostic techniques using direct procedures (microscopic examination and bacteriological culture, virus isolation, PCR, identification of antigens by immunoenzymatic and haemagglutination technique), or serological diagnostic techniques, mainly through ELISA and immunofluorescence; antibiograms, fungal culture and identification of yeasts and moulds of veterinary interest; copro-parasitological service for the diagnosis of protozoa and helminths.

The diagnostic activity is also performed on research samples. Thanks to this activity, the MIPAV Service also provides a good teaching environment for students of DPVM both for their training and for their dissertation work.

The MIPAV service is divided into 9 Laboratories, all ISO 9001 certified. The following paragraphs offer a description of the main equipment of each laboratory. A brief description of the activities can be found in the dedicated DIMEVET web pages:

Laboratory of Avian Pathology

<http://www.scienzemedicheveterinarie.unibo.it/it/dipartimento/servizi/mipav/avian-pathology-lab>

Equipment

Avian animal facilities include 7 poultry isolators used for in vivo experimental trials on viral pathogenicity, vaccine safety, vaccine efficacy, vaccine cross-protection and viral interspecies transmission studies; CO₂ incubator, biocabinet biohazard, microtome, tissue sectioner for organ culture, cryostat.

Laboratory of Bacteriology

<http://www.scienzemedicheveterinarie.unibo.it/it/dipartimento/servizi/mipav/bacteriology-lab>

Equipment

Refrigerators and -20°C / -80°C freezers; Incubators; Modified Atmosphere Systems; Cryogenic Storage Systems; Light and fluorescence microscopes; Laminar Flow Hood; Centrifuge; equipment for bacteria molecular analysis.

Laboratory of Fish Pathology (ITT)

<http://www.scienzemedicheveterinarie.unibo.it/it/dipartimento/servizi/mipav/fish-pathology-lab>

Equipment

Refrigerators and Freezers; Incubators; Light and dissecting microscopes; equipment Nikon NIS Elements imaging software; Chemical fume hoods; Centrifuges and Mini centrifuges; Micropipettes; Horizontal/vertical Electrophoresis Systems; Thermoblock for DNA extraction; Thermal cyclers; Transilluminators.

Laboratory of Mycology

<http://www.scienzemedicheveterinarie.unibo.it/it/dipartimento/servizi/mipav/mycology-lab>

Equipment

Biosafety cabinet, incubators, microscopes with and without image acquisition system, thermal cycler, refrigerators and freezing.

Laboratory of Parasitology and Parasitic Diseases

<http://www.scienzemedicheveterinarie.unibo.it/it/dipartimento/servizi/mipav/parasitology-and-parasitic-diseases-lab>

Equipment

Microscopes, centrifuges, refrigerators and freezers, electronic scales.

Laboratory of Pathogens Ecology (ECO)

<http://www.scienzemedicheveterinarie.unibo.it/it/dipartimento/servizi/mipav/pathogens-ecology-lab>

Equipment

The laboratory is equipped for molecular biology, viral isolation, serology and ELISA serology, diagnostic necropsy and clinical diagnostics, minor surgery. (Biological safety Cabinets, PCR equipments and laminar flow Cabinet for PCR, Ultra freezer -80°C, necropsy room equipment, Clinical / Surgical equipment)

Laboratory of Serology

<http://www.scienzemedicheveterinarie.unibo.it/it/dipartimento/servizi/mipav/serology-lab>

Equipment

CO₂ incubator, Refrigerated incubator, Spectrophotometer, centrifuges.

Laboratory of Virology

<http://www.scienzemedicheveterinarie.unibo.it/it/dipartimento/servizi/mipav/virology-lab>

Equipment

The research group makes use of advanced technology for research in genomic and proteomic fields using computer technology; its laboratories are fully equipped to carry out identification and molecular characterisation of pathogenic agents. The virology laboratory has biosafety level two (BSL-2) containment facilities fully equipped with CO₂ incubators, microscopes and safety cabinets for cell culture and virus isolation, centrifuges, incubators, reverse microscope; digital cameras for microscopes.

Staff

2 Full Professors, 7 Associate Professors, 9 Assistant professors, 6 PhD students, 7 contract researchers and 2 scholarship holders; the support staff include 8 technicians involved in diagnostic, research activities, clearing and sterilisation procedures, lab waste disposal, etc.

Biosafety Level 3 Laboratory (BL3)

The DIMEVET BL3 Laboratory was designed in accordance with guidelines of the Italian Ministry of Health. This facility has special engineering and containment features that allow investigators to work safely with level 3 classified pathogens and GMOs. The lab has been designed to safely perform virological and microbiological researches as well as diagnostic procedures if needed.

Equipment

- Class II biological safety cabinet;
- Passbox;
- Door interlocks;
- Autoclave;
- CO₂ incubator;
- Refrigerator;
- Freezer;
- Thermostat;

Researchers from DIMEVET as well as from Alma Mater or other Institutions can perform their experiments in this facility. The procedure to do so is as follows:

- Request for permission, submitted officially by the head of the research group;
- Schedule of activities, in line with previous bookings;
- Assurance that all research staff follow BL3 guidelines and safety procedures.

A laboratory supervisor supports the workers on first access, to provide them with laboratory keys/badges and to provide information on admission, safety and operating procedures concerning the laboratory equipment.

The Mobile clinic Unit

The mobile clinic was established in 2010, aiming to offer to small groups of students (up to 5) the opportunity to take part in the daily activities of large animal practitioners in the field, in different stables across the country (**Fig. 6.13**).

The mobile clinic was therefore conceived as a "light" structure with the main purpose of taking students in the field, and currently consists of vehicles (9-seater minibus or car) and a trailer suitably equipped to permit clinical field activities. Equipment is deliberately kept to a minimum and generally includes:

- Disposable boots and coats;
- Material for blood sampling;
- Material for bandages.

Records of the activities are kept by SARGA and SRA.

Staff

Staffing of the Mobile clinic unit activities has been modified during 2013. Until autumn 2013, the staff consisted of the rotation of 9 Professors (employed at the SARGA, SRA and SMI), 1 staff-clinician and 3 veterinary practitioners working in the field of farm animal medicine and surgery. Currently, the new curriculum has modified the methods of professional practical training (PPT), focusing the extramural clinical mobile activity on one Associate Professor (SARGA), one Staff-clinician and 3 veterinary practitioners working with bovine and farm animal species.



Fig. 6.13 - Mobile Clinic Unit.

Transfusion medicine Unit (large and small animals)

<http://www.ospedaleveterinario.unibo.it/clinica-dei-piccoli-animali/medicina-trasfusionale>

Brief description

The unit works with volunteer donor dogs, cats and equines (and possibly bovines) to provide blood and blood products for treating blood disorders or transfusions for surgical needs. The Transfusion Medicine Unit provides an on-site transfusion service to critically ill patients and receives referral cases 24 hours a day, 365 days a year.

Blood is collected routinely in the VTH consulting rooms. After collection, blood components are separated and stored in freezers and refrigerators located in the Transfusion Medicine Laboratory.

Main equipment and Instrumentation used – centrifuges, refrigerators, freezers and blood bag sealer.

Staff (employed in SARPA, SARGA and SMI)

1 Associate Professor, 3 Assistant Professors; 1 veterinarian technician, 7 staff-clinicians.

Exotic animals Unit

<http://www.ospedaleveterinario.unibo.it/clinica-dei-piccoli-animali/unita-operativa-di-medicina-della-fauna-selvatica-ed-esotica>

Brief description

The exotic animals unit provides care for medical and surgical problems and diseases in wildlife and exotic patients presented to the VTH.

The main species treated are rabbits, guinea pigs, hamsters, rats, gerbils, domestic and exotic birds, tortoises and turtles, snakes, amphibians and wildlife animals. More diagnostic procedures are performed in the Laboratory of Pathogens Ecology (ECO) for molecular diagnostics, virological, serological and post mortem examinations.

Main facilities – 1 examination room equipped for specific surgery.

The unit will be primary involved in the future creation of the Wildlife Veterinary Centre (CVF Centro Veterinario Fauna). Details can be found in **Paragraph 6.1.9**: Future changes.

Staff

1 Assistant Professor, 3 Staff-clinicians.

The following description pertains to Services which, due to the specificity of their duties and services, are only rarely involved in supporting the VTH clinical activities. These are:

Pharmacology and Toxicology Service (Certified ISO 9001)

(Servizio di Farmacologia e Tossicologia – FT)

<http://www.scienzemedicheveterinarie.unibo.it/it/dipartimento/servizi/pharmacology-and-toxicology-ft>

Brief Description

The Service performs qualitative and quantitative chemical tests for the study of:

- Kinetics, distribution in tissues and residual depletion of veterinary pharmaceutical products;
- Hepatic and extrahepatic metabolism of drugs and toxins;
- The state of contamination of foodstuffs of animal origin by mycotoxins.
- Further activity pertains to environmental (including wild animals) toxicological monitoring.

Equipment

- High performance liquid chromatography (HPLC) with autosampler and diode array detector and fluorescence detector;
- Ultracentrifuge.

Staff

1 Full Professor, 1 Associate Professor, 2 Assistant Professors, 2 staff-veterinarians, 2 technicians.

Laboratory of Analytical Bio-Agroalimentary Chemistry (Certified ISO 9001)

(Laboratorio di Chimica Analitica Bio-Agroalimentare: CABA-Lab)

<http://www.scienzemedicheveterinarie.unibo.it/it/dipartimento/servizi/cabalab-english>

The Laboratory of Analytical Bio-Agroalimentary Chemistry (CABA-Lab) carries out research activities in the field of residues and contaminant detection in food and provides analytical support for veterinary-biomedical research.

CABA-Lab's main activities are:

- Methodological development, essentially based on Mass Spectrometry (LC-MS/MS);
- Technological transfer of methods, developed and validated according to international criteria;
- Analysis by chromatographic techniques on request.

Equipment

- Ultra performance liquid chromatographer coupled with a triple quadrupole spectrometer (UPLC-MS/MS);
 - Liquid chromatographer (HPLC) coupled with different detectors (DAD, FL);
 - Gas chromatographer (GC) coupled with different detectors (FID, NPD).
- Staff: 1 Associate Professor, 1 Assistant Professor, 1 technician, 2 staff-veterinarians (PhD student or fellowships).

Animal Husbandry, Nutrition and Feedstuffs Service (ISO 9001)

(Servizio di Zootecnia, Nutrizione ed Alimenti – ZNA)

<http://www.scienzemedicheveterinarie.unibo.it/it/dipartimento/servizi/animal-husbandry-nutrition-and-feedstuffs-zna>

The Animal Production Service performs the following activities for teaching and research purposes as well as on behalf of third parties:

- Research on animal (including aquatic animals and pets) husbandry, breeding, feeding and nutrition;
- Analyses of feeds and pet-foods;
- Assessments of the quality (chemical composition, physical analysis, sensory profile) of animal-derived foods (meat, milk, eggs, fish and shellfish);
- Microbiological and chemical tests on matrices such as gastro-intestinal contents and faeces of ruminants and monogastric animals;
- Animal welfare assessment;
- Economic analyses applied to animal husbandry and the agricultural sector.

Equipment

The laboratories are equipped with the following instruments:

- Equipment for proximate feed analyses (moisture, crude protein, crude oils and fats, ash and crude fibre) and for the determination of starch, protein and fibre fractions;
- Atomic absorber for the determination of trace elements;
- Two gas chromatographers and a HPLC;
- NIR;
- Two spectrophotometers;
- A calorimeter bomb;
- A fermentation system designed to reproduce in vitro rumen and intestinal fermentations;
- Equipment for molecular biology assays.

Students are allowed to take part in all laboratory activities only under the direct supervision of one or more staff members and only after a training course on safety and laboratory rules.

Staff

5 Full Professors, 5 Associate Professors, 6 Assistant Professors, 4 technicians, 17 staff-veterinarians

Other DIMEVET Services:

Normal Veterinary Anatomy Service (Certified ISO 9001)

(Anatomia Normale Veterinaria – ANV)

<http://www.scienzemediciveveterinarie.unibo.it/it/dipartimento/servizi/anatomia>

Brief description

The ANV is divided in two operative units: Unit of Veterinary Anatomy and Unit of Molecular Anatomy. The ANV service is active on two fronts: teaching and research.

Teaching takes place in the context of the degree programmes in Veterinary Medicine, Animal Biotechnology, Aquaculture and Ichthyopathology.

The research activities deal mainly with the study of the nervous and digestive systems in different species of veterinary interest and are carried out in laboratories of histology, cytology, histochemistry, immunohistochemistry and image analysis. The labs are usually attended by students to prepare the experimental part of their dissertations.

Facilities

- Anatomical room with:
 - 8 tables for dissection of small animals or parts of large animals;
 - 1 electric movable hoist to lift carcasses;
 - 2 cooling -20°C rooms (walk-in freezer) where carcasses for dissections are stored for medium-long periods;
 - 1 cooling 4°C room (walk-in fridge) where carcasses and organs are stored for short periods before and after examination;

- 1 video-projector;
- 1 PC.
- Microscopic room with 40 microscopes;
- Histology and cytology laboratory provided with standard equipment and reagents;
- Histochemistry and immunohistochemistry laboratory provided with standard equipment and reagents.

Staff

4 Associate Professors, 4 Assistant Professors, 3 Technicians, 5 staff-veterinarians (PhD Students, Fellowships)

Biochemistry Service

(Servizio di Biochimica – BIOCHIM)

<http://www.scienzemedicheveterinarie.unibo.it/it/strutture/biochemistry-service-biochim>

Brief description

Basic biochemistry laboratory activities, spanning from enzymatic assays and kinetic analyses to the quantification and identification of lipophilic compounds (organic xenobiotics, fatty acids, peroxidation products) in feed, animal tissues, cells and sub-cellular preparations, are addressed and applied to emerging topics in aquaculture, zootechnics, eco-toxicology, animal and human health and food quality. Research activities focus mainly on farm animals and cover in vivo and in vitro approaches.

Equipment

- Ultracentrifuge equipped with fixed-angle and swinging rotors;
- Super-centrifuge;
- Sonicator;
- Gas-chromatographer equipped with Solid-Phase Micro-Extraction (SPME) apparatus;
- Spectrophotometers.

Staff

4 Assistant Professors, 2 Technicians

Veterinary Clinical Biochemistry service

(Servizio di Biochimica Clinica Veterinaria – BioClinVet)

<http://www.scienzemedicheveterinarie.unibo.it/it/dipartimento/servizi/veterinary-clinical-biochemistry-bioclinvet>

Brief description

The primary mission of clinical biochemistry is to serve quantifiable chemical parameters in order to facilitate clinical diagnosis and therapy. In this regard, the advancement of clinical application through biomarker discovery is the main research goal. The team has long standing experience in the fields of: metallomics, genomics, proteomics and transcriptomics.

Equipment

- Electrophoresis equipment;
- AAS flame and furnace;
- UV-vis spectrophotometers;
- Refrigerated centrifuge and ultracentrifuge;
- Molecular biology equipment.

Staff

1 Full Professor, 1 Associate Professor, 1 Assistant Professor, 2 staff-veterinarians (PhD student or research fellows)

Hygiene and Food Technology Service

(Servizio di Igiene e Tecnologia Alimentare – IA)

<http://www.scienzemedicheveterinarie.unibo.it/it/dipartimento/servizi/higiene-and-food-technology-service-ia>

Brief description

The Food Hygiene and Technology unit is organised in 3 Laboratories. They carry out research to develop detection methods for biological contaminants, assess the safety of meat, fish and milk and other foods and evaluate the risks associated with food production at pre-harvest and post-harvest steps of the animal production chain. The Food Hygiene and Technology unit also works to support food industries in the development of food safety control procedures. Studies are done to evaluate food products during their shelf life.

Equipment available

Analytical instruments include 2 real-time PCR thermocyclers and Pulsed Field Gel Electrophoresis equipment, Potentiostat.

Staff

1 Full Professor, 1 Associate Professor, 2 Assistant Professors, 3 lab technicians.

6.1.6 Slaughterhouse facilities

Describe briefly the slaughterhouse facility to which the Faculty has access, including distances from the Faculty and level of activity.

This fully functional abattoir is able and authorised to slaughter cattle and sheep with a slaughtering capacity of over 1000 units of livestock per year (approximately 1000 cattle and 150 sheep), although the slaughterhouse has obtained the oval health mark of the European Community (IT B334G EC) and can therefore slaughter an unlimited number of these animals. Usually, carcasses are intended to be placed on the market for sale in Italy; however, the carcasses may be marketed in all Countries of the European Community.

The abattoir has the following facilities (**Fig. 6.14**):

- Slaughter hall;
- 3 refrigeration rooms (28, 63, 75 m²), capacity 35-40 bovine carcasses;
- Changing rooms;
- Veterinary office;
- Food business operator's office.



Fig. 6.14 - Slaughterhouse.

Slaughterhouse Service

Objectives – Slaughtering of animals (mainly bovines) from external herds or from DIMEVET. The slaughterhouse service provides organs and tissues at the request of DIMEVET teachers and students.

Staff involved – The slaughterhouse is run by a private company.

Frequency of work – Slaughtering usually takes place every Friday morning throughout the year.

Students are also trained by Public Veterinary Officers who carry out their duties performing inspection activities at large export abattoirs, including facilities for swine and poultry. The practical training outside the Department is organised in small groups with the collaboration of the Local Veterinary Services (AUSL) of the district of Bologna, Ferrara, Modena and Imola. The students spend approximately 45 hours (3 CFU) participating in inspections, surveillance, audits and sampling activities for detection of residues and contaminants with the Veterinary Officers. These activities, in addition to the slaughterhouses, concern processing plants and the distribution of food products.

6.1.7 Foodstuff processing units

Describe briefly any access that the Faculty has to foodstuff processing units.

6.1.7.1 Cheese factory

The cheese factory is part of DIMEVET. It is located close to the University Dairy Farm, approximately one kilometre from the Veterinary Campus (**Fig. 6.15**).

The cheese factory is run in cooperation with a private company involved in the production and distribution of dairy products.

The cheese factory processes cow and water buffalo milk. Despite its small size, it is EU approved and is characterised by a low level of automation, allowing the slow processing of cheese for teaching purposes.



Fig. 6.15 - Cheese factory.

The main products are:

- Fresh and matured "pasta filata" cheeses (mozzarella and caciocavallo) obtained from water buffalo and cow raw milk;
- Cow and water buffalo yoghurt;
- Cow cheeses with a short maturing (1 month) made from pasteurised milk;
- Ricotta cheese.

Equipment

The dairy owns instruments for rapid determination of cryoscopic index, inhibitory substances, aflatoxins, phosphatase, peroxidase, lactic acid, fat, protein and lactose content. For microbiological analyses, the cheese factory is supported by the laboratory of food microbiology located in the main building of the Department.

Researchers and students have free and continuous access (Monday to Friday, 8.00 a.m to 5.00 p.m.) to the cheese factory for teaching and research purposes. Twice a week, on request, researchers have the right to the exclusive use of the plant for research purposes.

6.1.7.2 Honey extraction laboratory

The honey extraction laboratory is located at DIMEVET and is run by a beekeeper under a 3-year leasing agreement, free of charge.

The laboratory is equipped with an uncapping tray, honey extractor, stainless steel tank and strainer. Apiaries (indicatively 5 apiaries but their number depends on several, unpredictable, factors such as mortality rate and bee swarming) are located on DIMEVET land, allowing students to follow the entire honey production cycle.

6.1.7.3 Other foodstuffs

To allow students to visit other types of foodstuff processing laboratories not present on the Campus, the teachers organise trips to local foodstuff processing plants (including Parma Ham and Parmigiano-Reggiano processing plants), run by some of the most important Italian companies (e.g. Inalca Modena for beef, Italcarni for pork, Amadori for poultry products and Granarolo for milk and dairy products).

Concerning seafood, teachers organise visits to the Rimini and Cesenatico fish markets (species: cuttlefish, squid, mullet, cockles and hake).

6.1.8 Waste management

Briefly describe the systems and equipment used for disposing of waste material; cadavers, carcasses, biological waste of different types, excreta, etc.

Waste management is concerned with separating waste collections and monitoring waste flows, as well as working to ensure the correct and economical disposal of all waste.

Veterinary waste consists of both hazardous and non-hazardous waste, which must be segregated, classified, described, packaged, labelled and disposed of in compliance with statutory requirements. Waste storage and disposal are handled according to the specific rules and limits of Alma Mater Waste Management System (NUTER) aligned to legal standards and committed to the principle of "Avoidance, is better than recycling, is better than disposal".

At DIMEVET, special waste handling and delivery are governed by a management procedure (PG 7.5.3-02 Gestione dei rifiuti speciali) in the framework of the Department's ISO 9001 system.

All waste, responsibly stored and disposed of, is handled or dealt with by authorised staff. External waste contractors appointed by Alma Mater are in charge of collecting special waste for disposal. Appropriate records are kept of all waste that is transferred to contractors.

For chemical and biomedical waste (biowaste), there are temporary storage sites at DIMEVET which allow materials to be kept safely until collection (usually once a week).

Liquid and solid infectious materials are sterilised by autoclaving and then boxed in special, appropriately labelled containers. Materials that cannot be autoclaved are disposed of after bleaching.

Radioactive waste has a specific disposal procedure, with dedicated temporary storage and a different specialised external waste contractor. Records and responsibilities are also independently managed.

The wastewater purification plant sanitises swine sewage and the water used to wash the slaughterhouse.

Animal dung and excrement is collected in a dedicated area.

For a description of the waste management system in isolation facilities, please refer to the dedicated paragraph.

Cadavers and carcasses are disposed of in the internal incinerator.

6.1.9 Future changes

Outline any proposed changes in the premises that will have a substantial effect on the Faculty, and indicate the stage which these have reached.

As previously mentioned, radical changes to the DIMEVET structure are in progress, specifically involving the clinical area and the students' welfare.

On-going changes

- **Pathology and Anatomy changing rooms for students**

2014 (the plans date back to 2013) is expected to see the completion of the anatomy and pathology student changing rooms. These rooms offer appropriate facilities for students entering or exiting the anatomy and pathology practical training halls. The rooms, equipped to host 25 students, with separate male and female facilities, have lockers, hangers, a system for washing boots and showers.

- **Complete renovation of the previous surgery/obstetrics area – new surgical and diagnostic imaging premises**

Late 2013 saw the start of work to renovate the area previously dedicated to the activities of the surgery and reproduction clinic. The work involves the complete refurbishment of the structure, previously divided according to the criteria of the old institutes.

The former subdivision was obsolete, and no longer suited to modern integrated clinical work. The aim was therefore to obtain an operative clinical unit, with integrated services, closely connected to the VTH building hospitalisation facilities. Details are provided in the map of the project (**Annex 6.1**).

The on-going refurbishment process involves the complete rebuilding of three different areas:

- Equine and large animal surgery;
- Companion animals surgery;
- Diagnostic imaging.

The new equine and large animals surgery premises will include:

- One fully equipped surgery theatre for equine and large animals;
- Two anaesthesia boxes;
- One consulting room for large animals;
- Changing rooms for surgeons and students.

The new companion animals surgery premises will include:

- Four fully equipped surgery theatres;
- Four pre-surgical theatre rooms;
- One large room for anaesthetic procedures;
- Changing rooms for surgeons and students;

- Two new consultation rooms.

The new diagnostic imaging premises will include:

- Two fully equipped x-ray examination rooms for companion animals;
- One fully equipped x-ray examination room for equine and large animals;
- Two ultrasound examination rooms for companion animals;
- One endoscopic examination room for companion animals;
- One digital recording room;
- One room prepared for CT scans;
- One room prepared for MRI;
- Appropriate premises for anaesthesia for diagnostic imaging purposes.

The on-going refurbishment will also affect the current arrangement of the small animal reproduction service (SRA).

Future changes

Wildlife Veterinary Centre (WVC)

The major future change involves the building of the Wildlife Veterinary Centre (WVC). The project started in 2012 and was definitively approved in 2013 (**Annex 6.2**).

The aim of the project is to build a clinical care facility for of wild and/or exotic patients presented to the VTH.

The WVC is expected to act as a reference point for veterinary medicine students, providing a unique opportunity to work with an uncommon variety of exotic and wildlife species and apply their clinical skills following diagnostic and therapeutic procedures in direct contact with hospitalised animals.

The service can accommodate up to 50 patients in different wards equipped with tanks, terrariums, aviaries and cages. The Wildlife Veterinary Centre is a reference service for medical and surgical problems and diseases in wildlife and exotic species. The WVC is also equipped to support Wildlife Recovery Centres, the Emilia Romagna Region, National and regional parks and private individuals. The activity includes clinical and surgical management, diagnosis and treatment of diseases of species such as:

- Rabbits, guinea pigs, hamsters, rats, gerbils etc.;
- Domestic and exotic birds (parrots, canaries, doves, etc.);
- Tortoises and turtles (Caretta, Testudo, Trachemys, Chelodina, etc.);
- Snakes (Lampropeltis, Boa, Python etc.);
- Amphibians (Xenopus etc.);
- Wildlife (wild mammals, birds, reptiles).

Diagnostic procedures occur in the Laboratory of Pathogen Ecology (ECO) for molecular diagnostics, virological, serological and post mortem examination.

Facilities

- 1 Reception;
- 1 Exam rooms for exotic pets;
- 1 Exam rooms for wildlife;
- 1 X-ray room;
- 1 Operating room;
- 1 Exotic pets ward;
- 1 Reptiles ward;
- 1 Wild birds ward;

- 1 Wild mammals ward;
- 5 Large aviaries;
- 4 Large pens for deer and bovinds;
- 1 Pen for wolves.

Main equipment

- Clinical and surgical equipment
 - 3 Tanks for sea turtles, 5 large aviaries for eagles, 5 pens and cages for wild mammals, small cages and boxes;
 - Oxygen cage: 1 patient;
 - Intensive care ventilator;
 - Incubators and terrariums for birds, reptiles;
 - Surgical anaesthesia equipment and tele-anaesthesia equipment (gun, darts);
 - Surgical room equipment and specific instruments for surgery in reptiles, mammals and birds;
 - In-house imaging facilities (Radiography, Ecography);
 - Monitors (ECG, SpO₂, temperature).
- Diagnostic laboratory equipment

The ECO laboratory is equipped for molecular biology, viral isolation, serology and ELISA serology, diagnostic necropsy and clinical diagnostics, in wildlife (Biological safety Cabinets, PCR equipment and laminar flow Cabinet for PCR, Ultra freezer -80°C, necropsy room equipment)

Physiology Service and “Experimental and Breeding Unit” (FIS)

Since the facilities are old and require maintenance, and experimental activities are increasing in intensity, in 2012 the Service planned and began a major restructuring of the stables and experimental surgery room.

The experimental surgery room was completely renovated (floors, walls, equipment) and expanded by incorporating an adjacent room in 2013. The room with the computer station for the management of experimental animals and stables was also established.

Four farrowing crates in the delivery room were connected to a system for collecting the excrements from pigs inoculated with GMMOs (Class II Barrier) in order to expand the capability to host treated animals. The air conditioning system in this room was also renovated.

In 2014 the FIS is planning to divide each room (two) for conventional pigs into two separate rooms and completely renovate the air conditioning system. This will also allow for the performance of diversified experiments.

The boar stables and semen collection area will be renovated to host 3 boars in optimal welfare conditions.

The corridors leading to the different rooms of the stable will be varied according to the planned activities.

6.2 COMMENTS

Comment on the adequacy of the buildings in general for undergraduate teaching.

The comment of the visiting team in the EAEVE final report of 2005 on the adequacy of buildings was the following:

The Faculty of Veterinary Medicine of Bologna University has modern and well-planned premises situated on a suitable campus. There is generally enough space available for its activities (i.e. teaching,

group work and practical work, administrative, departmental and sectional offices, stables for animals, the Faculty Farm, the veterinary teaching hospital and all the related facilities). The space available is, in general, used efficiently.

A suitable range of up-to-date equipment is available for the teaching and research activities of undergraduate students. However, in some Sections and/or Departments, some of the equipment is rather old [...] and should be updated at the earliest convenience.

The management, depreciation and maintenance costs of such a large structure with such a vast availability of instrumentation are high and are difficult to meet, given that public administration does not always aside the funds necessary to cover such costs. The personnel required to manage and correctly maintain the structure and instrumentation is kept in the bare minimum, and therefore part of the work is performed by teaching staff and volunteers.

There was satisfactory provision with regards to health, safety and animal welfare.

In 2013, DIMEVET still perceives its structures as more than satisfactory, especially when faced with a decrease in the number of students admitted each year (allowing better use of the facilities) and when compared to the average Italian situation.

The maintenance costs of the structure are high and the shortage of funding experienced in the past few years represents an important negative factor. To counterbalance this trend, DIMEVET is making its own efforts to raise the efficiency of the VTH and collect the necessary funds to try to be self-sufficient. Alma Mater is bearing some of the costs of the renovation and maintenance (see **Chapter three** for details).

Compared to 2005, the situation in terms of amount of support staff has not changed. Part of the work is still performed by the teaching staff and volunteers.

Comment on the adequacy of the equipment in general for undergraduate teaching.

At the time of the 2005 EAEVE evaluation, with some rare exceptions, the FVMBol had adequately modern and complete equipment for teaching and research, including a CT scan.

In 2013, DIMEVET continues to make huge efforts to maintain appropriate equipment. As described in detail in this Chapter, the ultrasound and x-ray equipment have been radically renovated, as well as equipment in many other services.

Unfortunately, when the CT scan became obsolete, it could not be changed immediately. The DIMEVET strategic plan planned to invest its resources in the renovation of the clinical structures, including the building of new facilities for the Diagnostic Imaging Service. For logical reasons, the purchase of advanced diagnostic imaging equipment, including CT scan and MRI, will follow the establishment of new, appropriate, facilities.

Significant measures have been taken to improve student welfare and safety in the different services, especially preparing and administering appropriate standard operating procedures, according to the QAS.

The IT lab is increasingly being used and the Wi-Fi coverage of the whole area permits the use of laptops in different teaching situations, e.g. in small group discussions.

Rooms for practical and group work are considered appropriate, even though the number of small rooms equipped for group work could (and should) be increased.

Comment on the maintenance of buildings and equipment.

At the time of 2005 EAEVE evaluation the visiting team's comments were satisfactory:

The clinical buildings are modern and satisfactory in terms of their space, organisation, layout, and cleanliness. There is suitable equipment for both clinical treatment and teaching. Organisation of clinical activities assures continuity and consistency of service.

Some EAEVE comments focused on weaknesses of the DPVM. They included:

Although several fields of clinical specialisation are covered, there is no-one dealing with the other areas at a high level. A cost-effective way of extending the specialised clinical services that the Faculty is able to offer could be to invite specialist practitioners to work there one day or half a day per week.

- Compared to 2005, the DIMEVET has developed and strengthened its clinical areas of specialisation. The number of European Diplomates has grown significantly and DIMEVET supports the strategy to facilitate residency programmes, with the ultimate aim of having more Diplomates.
- It has not been possible to involve specialist practitioners in specific clinical fields, due to the strong resistance of the former heads of the Clinical Department and senior teaching staff of the clinical services.

The clinical teaching and service activity seems to cover adequately small animal work. However, clinical work in the large animal field, particularly with regard to farm animal species, seems very under-emphasised [...] This needs to be integrated, both in terms of merging surgery, internal medicine and obstetrics farm animal work, and in combining this with animal production activities. The aim should be to have a single cohesive group dealing with on-farm production animal health in a holistic way.

- The mobile clinic activity started in 2010 and has partially covered the gap on farm animals. The activity of the mobile clinic should be further strengthened and expanded.
- Over the years, the FVMBol and DIMEVET have attempted in different ways to join people and services dealing with large animals. These efforts have resulted in only partial success, mainly due to the difficulty of merging different senior personalities working in these subject areas.
- Currently, the Large Animals Hospitalisation and Emergency Service (SARGA) joins internal medicine and surgical competencies in the equine and farm animals field. Training in clinical reproduction and the related clinical service (SRA) operate on a more independent basis.

The 2005 EAEVE report stressed the “insufficient caseload” of the Equine clinic and the necessity to develop “an on-site clinic of a high standard”.

- The Equine caseload is currently within the EAEVE limits. The Large Animals Hospitalisation and Emergency Service (SARGA) is facing the problem of an adequate caseload. As mentioned elsewhere (comments in **Chapter four**), the dramatic crisis at national level in the Equine Breeding and Medicine field makes it difficult to obtain a large number of cases. Furthermore, the shortage of funding prevents the provision of appropriate support and teaching staff in that area.

6.3 SUGGESTIONS

If you are unhappy with any situation, please list any improvements you would make in order of preference.

Several suggestions made by the EAEVE visiting team in 2005 still need to be addressed by DIMEVET and the DPVM. Therefore, they still fit with our suggestions and are here again proposed:

- The staff providing clinical services and teaching in the VTH should be strengthened to provide greater coverage of specialist areas.
- Highly qualified external practitioners should be involved in the clinical services of the VTH, providing specific services one day per week.
- The farm animal clinical/health activity should be strengthened as a service activity, integrating production aspects and providing a herd-health advisory service.
- The equine clinical work should be improved and strengthened in terms of clinical service and caseload.



CHAPTER 7

ANIMALS AND TEACHING MATERIAL OF ANIMAL ORIGIN

7 ANIMALS AND TEACHING MATERIAL OF ANIMAL ORIGIN

7.1 FACTUAL INFORMATION

7.1.1 Anatomy

Indicate the materials that are used in practical anatomical training, and how these are obtained and stored.

The anatomy labs take place in a dissecting room where the students are divided in 6-8 groups of 3-4 students each.

For practical training in anatomy, fresh and frozen material is generally used. The dissecting room is equipped with two -20°C cold stores and one at +4°C, to store cadavers and specimens.

Cadavers of dogs and cats come from the local crematory, while horse limbs and heads are usually removed from the cadavers after necropsy and frozen for practical lessons.

Fresh cattle, pig, and horse organs, as well as chickens, are obtained from regional slaughterhouses.

The numbers of animals and organs used in each of the last three academic years are reported in **Tab. 7.1**. Organs include hearts, lungs, larynges, kidneys, uteruses, ovaries, livers, spleens, intestines and forestomach, depending on the theoretical lectures.

During practical training, students personally dissect the available cadavers and organs under teacher supervision.

Furthermore, complete skeletons, bones and "a secco" (dry) preparations of joints and muscles are available to students during and outside the teaching schedule. They are encouraged to practice also on their own, using textbooks, notes and the pictures uploaded in the Veterinary Teaching Portal (VTP).

200 histological preparations are used during practical lessons for histology and microscopic anatomy. All the histological specimens are available to each student for direct study and in the VTH. A dedicated room, equipped with 40 microscopes, is used for direct training (see **Chapter six** for details).

Tab. 7.1 - Material used in practical anatomical training during the last 3 years.

	2013		2012		2011	
	DOG	CAT	DOG	CAT	DOG	CAT
Live animals	1		1		1	
Cadavers	87	57	89	78	103	61
Specimens	39	17	8	23 intestines, 2 lungs	13	13 intestines, 7 lungs
Normal diagnostic imaging complete studies	48 radiogram 4 ultrasounds	intestines intestines	48 radiograms 4 ultrasounds	intestines	48 radiograms 4 ultrasounds	intestines

	2013		2012		2011	
	EQUINE	RUMINANTS	EQUINE	RUMINANTS	EQUINE	RUMINANTS
Live animals	1		1		1	
Cadavers	1 (foal)	5 calves	2 foals	5 (3 calves)	4 foals	3 calves
Specimens	1 head 6 kidneys 4 livers 6 lungs	30 hearts, 32 lungs, 19 kidneys, 24 uteruses, 23 livers, 48 ovaries, 20 intestines	7 thoracic limbs, 1 head, 4 spleens, 9 kidneys, 4 livers, 3 digestive app. 4 lungs	30 hearts, 30 lungs, 33 kidneys, 40 uteruses, 19 livers, 14 ovaries, 30 spleens 3 digestive app.	17 thoracic limbs, 2 pelvic limbs, 5 heads, 1 vertebral column, 5 spleens, 4 kidneys, 2 livers, 1 intestine, 1 lung, 1 heart	34 hearts, 32 lungs, 30 kidneys, 22 uteruses, 14 livers, 14 ovaries, 10 spleens
Other		13 foetuses		2 foetuses		2 foetuses

	2013			2012			2011		
	OTHER	SWINES	RABBITS CHIKENS	SWINES	RABBITS CHIKENS	SWINES	RABBITS CHIKENS		
Cadavers			1 66		2 30		8 26		
Specimens			44 kidneys 30 lungs 30 larynges 40 uteruses 38 ovaries 30 spleens 21 livers 4 intestines			32 kidneys 32 lungs 30 larynges 23 uteruses 22 ovaries 20 spleens 14 livers			

7.1.2 Pathology

Tab. 7.2a - Number of necropsies during the last 3 years.

SPECIES		2013	2012	2011	AVERAGE
Food-producing animals:	Cattle	14	9	8	36.3
	Small ruminants	2	2	4	
	Pigs	61	0	9	
Equine		18	7	10	11.7
Wild mammals*		57	3	9	23
Poultry		200	120	123	456
Wild birds		313	213	231	
Rabbits		159	6	3	
Companion animals:	Dogs	123	107	125	193.3
	Cats	88	63	74	
	Ornamental Fishes#	34	199	187	
Lab animals	Rodents	2	5	6	4.3
Farmed and wild Fishes#		3955	3297	3496	3582,6
Wild reptiles	Turtles	1	1	3	1.7

*Wolves, foxes, porcupines, wild pigs, hares, deer, coypus and badgers

#Fish were not considered in ratios

Indicate the nature and extent of any additional sources of material for the teaching of necropsies and pathological anatomy, including slaughterhouse material.

To face the objective difficulty of obtaining equine and large animals cadavers, in addition to the whole-body necropsies listed in **Tab. 7.2**, organs and pathological specimens were obtained from nearby slaughterhouses once a week and used for hands-on practice (lungs, hearts, livers, kidneys, spleens and other viscera of pigs, cattle, horses and small ruminants) for a total of 2045 kg in 2013, 1176 kg in 2012 and 1507 kg in 2011.

Cadavers on which necropsies are carried out come from:

- Hospitalised animals which died in the DIMEVET teaching hospital or clinical services;
- Diagnostic necropsies referred by practitioners;
- Diagnostic necropsies referred by owners;
- Necropsies for teaching purposes referred by practitioners;
- Necropsies for insurance companies or legal expertises;
- Pigs collected for teaching purposes from a pig farm (Unipig, Modena)*;
- Rabbits collected for teaching purposes from a rabbit farm (Martini, S.M. Codifiume, Ferrara)*;
- Wild mammals (mainly deer and wild boars) found dead or hunted in the province of Bologna and submitted by the wildlife voluntary guards (in agreement with wildlife authorities) to DIMEVET for necropsies and for practical teaching*;
- Food animals collected and delivered for incineration, examined for teaching and disposed free of charge (agreement with the company that operates the incinerator)*;
- Horses examined for teaching and disposed free of charge (agreement with horse practitioners)*;
- Small animals (dogs and cats) which died in animal shelters in the province of Bologna examined for teaching and disposed free of charge (agreement with the regional health service)*;

- Animals (small and large) found dead in the municipalities of Ozzano Emilia and Bologna examined for teaching and disposed free of charge (agreement with the municipalities)*;
- Fish collected for teaching purposes from DIMEVET farms and facilities.

*(Actions taken in 2013 to collect more animals for Pathology rotation)

Necropsies are performed by students themselves in small groups (4-5 students per cadaver) during practical training in the courses of Special Pathology (III year) and Autopsy (V year) and autonomously (1 student per cadaver) during the Pathology rotation (Practical Professional Training [PPT] – V year). During the Pathology rotation, students have to write the necropsy findings directly on an Autopsy Report Form using waterproof laptops near the dissection table (**Annex 7.1**)

Where necessary, a closed-circuit television system connecting the necropsy room with the neighbouring Aula Montroni allows students to safely attend autopsies of large animals.

Slaughterhouse material is used during practical training in the Special Pathology courses (III year; twice a week) and in Pathology rotation (V year).

The number of animals slaughtered into the DIMEVET abattoir is given in **Tab. 7.2b**. Students attend slaughtering procedures as well as post mortem examinations.

Tab. 7.2b - Food-animals slaughtered in the DIMEVET abattoir.

SPECIES	2013	2012	2011	AVERAGE
Cattle	1467	1374	1559	1466.6
Small ruminants	229	372	129	243.3
Equines	13	11	16	13.3
TOTAL	1709	1757	1704	1723.3

Histopathology slides demonstrating the main pathological processes are used in the practices of General Pathology (66 sets). Students attending Pathology rotations participate in daily diagnostic activities (cytology and histology) and examine available sets of clinical cases. In addition to the direct hands-on activity, students can find pictures of histological and pathologic specimens in the dedicated webpage of the VTP.

7.1.3 Animal production

Indicate the availability of food-producing animals for the practical teaching of students on the site of the institution and on other sites to which the institution has access.

On the site of the institution

The University Dairy Farm has 157 animals. Specifically (31 December 2013):

- 77 lactating cows;
- 10 dry cows;
- 33 heifers (> 1 year old);
- 37 calves and young heifers (<1 year old).

In 2013, DIMEVET established a goat breeding facility on the premises, counting 10 pregnant female goats and one buck.

On other sites to which the institution has access

DIMEVET has agreements with different farms (listed below) aiming to allow students to visit breeding farms of different species. Usually, these farms are visited during practical activities in the course units and during the practical professional training in Animal Production.

FARM NAME	LOCATION	ANIMALS REARED	NUMBER OF ANIMALS
Allevamento Hombre Panini	Baggiovara (MO)	Dairy cows	500
Azienda Amadori	Portofuori (RA)	Sows	5,000
Azienda BIO SAN CARLO	Serramazzoni (MO)	Dairy cows	60
Azienda CLAI	Bagnara di Romagna	Sows	400
Azienda del gruppo CARLI	Torello San Leo (Rimini)	Rabbits for breeding and fattening	4,000
Azienda del gruppo EUROVO	Mordano (BO)	Laying hens on the ground	150,000
Azienda LEM	Varignana (BO)	Dairy cows, Beef cattle, Cow-buffalo Sheep Donkeys Pony	125 450 30 20 3 1
Azienda Pelloni	Castelfranco Emilia (BO)	Dairy cows	600
Azienda VICENTINI CARNI	Salizzole (VR)	Beef cattle	1,000
Azienda agricola Bagnolo S.S	Conselice (RA)	Beef cattle	1,000
Azienda agricola F.Ili CARETTI	S. Giovanni in Persiceto (BO)	Dairy cows	300
Azienda agricola La Pioppa	Moglia (MN)	Beef cattle and weaning calves	2,000
Azienda agricola Remelli	Valeggio sul Mincio (MN)	Dairy cows	400
Azienda Veronesi	Verona	Broilers	10,000
Azienda Ca' Domenicali	Sassoleone (BO)	Game birds	200
UNIPIG S.c.a.r.l	Castelfranco Emilia (MO)	Sows	2,000
Allevamento Minotti Ivo	Russi (RA)	Sows	1,500

7.1.4 Food hygiene/public health

Indicate the availability of farm animals and products of animal origin for the practical teaching of students in veterinary public health, food hygiene, inspection and technology.

The Veterinary sanitary control of animals for slaughter takes place in the local slaughterhouse. Students learn to perform ante-mortem inspections of animals and post-mortem inspections of cattle. The fifth year of the new curriculum (from February 2014) requires the intramural food hygiene activity to be supported also by some days of extramural activity. No specific data is available for this activity, which was not present in 2013.

Tab. 7.3 - Material used for intramural practical activity in Food Hygiene/Public Health.

PRODUCTS	2013	2012	2011	AVERAGE
Visceral organs from food producing animals	from 120 cattle	from 120 cattle	from 120 cattle	from 120 cattle
Blood from food producing animals	100	100	100	100
Faeces from food producing animals	100	100	100	100
Processed products of different kinds* (n. of products)	40	40	40	40
Fish	24 trout 12 mackerel	24 trout 12 mackerel	24 trout 12 mackerel	24 trout 12 mackerel
Poultry	200 smears from fresh intestines	120 smears from fresh intestines	120 smears from fresh intestines	146,7 smears from fresh intestines
TOTAL	396	316	316	342.7

7.1.5 Consultations and patient flow services

7.1.5.1 Consultation

State the number of weeks, in the course of the year, during which the clinics are open. State the number of consultation days each week.

The Veterinary Teaching Hospital (VTH) is currently open to public 24 hours per day, 365 days/year.

It is worth underlining that the VTH allows students to perform rotations of their specific practical professional training (PPT), throughout the year. Students also attend the VTH in the summer and during Christmas holidays, and are asked to do regular shifts overnight.

State the consultation hours.

The normal opening time of the VTH is from 9.00 am to 4.00 pm, Monday to Friday. Outside of that time, patients are accepted directly by the Emergency and Critical Care Service, either as emergency cases or first consultations. In this way, the VTH also accepts patients during the weekends.

7.1.5.2 Patient flow

The number of animals to be stated are for all disciplines combined (medicine, surgery, reproduction, etc.). In **Tab. 7.4a** only animals coming into the Faculty should be included. Animals studied in practical teaching outside the Faculty should be entered in the section entitled "Ambulatory Clinic". The term "consultation" refers to those patients which come in and go out during daily consultation hours. "Hospitalisation" refers to those patients which are retained in the clinic as "in patients" following presentation.

The number of animals presented to the VTH in the last 3 years is given in **Tab. 7.4a**.

Consultation numbers reported were based on the acceptance records.

It is worth noting the positive trend, especially considering the difficult economic period, in companion animal numbers and the substantial activity on exotic species.

The number of bovine consultations includes the obstetrical-gynaecological examination of the 85 dairy cows at the University Dairy Farm performed during the PPT weekly Reproduction Rotation.

Since students do part of their PPT training at the Artificial Insemination Centre (which is part of DIMEVET, as detailed in **Chapter six**), the number of hospitalised horses includes animals referred to the AIC nearby (see details in **Tab. 7.4b**).

Tab. 7.4a - Number of cases: a) received for consultation, and b) hospitalised at DIMEVET in the last 3 years.

SPECIES		NUMBER OF CASES						AVERAGE
		2013		2012		2011		
		A	B	A	B	A	B	
Food producing	Bovine	624	23	932	11	1015	4	875.3
	Ovine, caprine	3	1	1	4	1	2	
	Porcine	-	1	-	2	1	1	
Poultry		190		120		120		156.7
Rabbits		16		15		9		
Equine		23	248	20	261	18	302	290.7
Companion animals/exotics	Canine	5043	657	4794	593	4056	444	5195.7
	Feline	1456	345	1251	227	919	272	1490
	Other° (birds+exotics)	178		137		67		127.3

In completing **Tab. 7.4a**, especially when considering the bovine cases, it was assumed that the total number of cases may not be equal to the total number of animals, since one patient could be considered as more than one single case, both because the same patient can be examined more than once in a year, and also because it may have to be examined by different specialists (internal medicine, surgery, reproduction, large animal). This was the case of the dairy cows at the University dairy farm, examined several times during the year by different students to assess the status of their reproductive system.

A consistent number of animals (**Tab. 7.4c**) are also housed in the facilities of the Animal Husbandry, Nutrition and Feedstuffs Service for research and teaching purposes. They are frequently used during lectures (large animal clinics and animal production) to demonstrate non-invasive procedures of clinical examination, physiological functions related to nutrition and feeding, and animal behaviour.

Research projects on animals housed at DIMEVET premises generally involve students (dissertations or PhD theses; see **Chapter thirteen** for details). It should be reminded that all research procedures

are carried out after the approval of the Ethical Committee of the Alma Mater, in accordance with LD 116/92, guaranteeing the animals' welfare.

Animals used for teaching or research purposes were not considered in the ratios, as they are permanently housed in DIMEVET.

Tab. 7.4b - Horses hospitalised (also included in the Table 7.4a) and activities performed with students at the DIMEVET Artificial Insemination Centre (AIC) during the last 3 years.

HORSES	HOSPITALIZED			ACTIVITIES PERFORMED WITH STUDENTS			
	2013	2012	2011	2013	2012	2011	
Mares	70	70	85	AI* or examinations	350	350	400
Foals	35	30	39	Semen collections	200	150	150
Stallions	3	5	7	Doses of refrigerated semen	170	150	200
TOTAL	108	105	131				

Tab. 7.4c - Number of animals hospitalised at DIMEVET for research/teaching activities in the last 3 years.

SPECIES	NUMBER OF CASES			AVERAGE
	2013	2012	2011	
Food producing	Bovine	2	2	2
	Ovine, caprine	16	14	13
	Porcine	236	108	59
Poultry	81	65	384	176.7
Equine	23	24	22	23

7.1.6 Vehicles for animal transport

State the number and nature of the Faculty vehicles that can be used to bring sick animals to the clinics

Currently, DIMEVET has two vehicles that are used on regular basis to bring sick animals to the Clinics on the Veterinary campus in Ozzano. They are:

- IVECO Daily: animal transport truck for horses and production animals.
- Nissan Trade: animal transport truck for porcine and ovine.

7.1.7 On-call emergency service

Outline what emergency service is available (full-time, 24 h service, ON-CALL or 8-22 h duty) and discriminate for species.

At the VTH, full-time emergency care services are provided 24/7 for companion animals.

Since 2011, the new-founded DIMEVET has acknowledged the strategic teaching role of a well-structured emergency service and strongly enhanced the 24-hour Emergency and Critical Care Service for companion animals, investing in personnel, equipment and facilities.

DIMEVET has increased the number of staff-clinicians, re-organised the Service (SARPA), and rebuilt the isolation facilities, to ensure appropriate care also for emergency patients with contagious diseases.

Overnight emergency surgery is currently possible due to the on-call availability of surgeons and anaesthesiologists. In 2012 and 2013, there were respectively 30 and 35 emergency overnight and weekend companion animals' surgeries.

As a consequence, the number of patients admitted has increased significantly: a separate registration of the clinical records of patients admitted outside of the normal consultation timetable started in 2012 and shows a positive trend (517 consultations in 2012 and 1019 in 2013).

An on-call emergency care service is active 24/7 for equine and large animals and for companion animal reproduction (the latter, since March 2013).

7.1.8 On farm teaching and outside patient care

7.1.8.1 Ambulatory (mobile) clinic

The Ambulatory (Mobile) Clinic is defined as a unit which provides on-call outside services to farms and other institutions and is generally operated on a commercial basis. State the number of hours of operation per week. Is emergency service provided 24 h/day, 365 days per year? What is the degree of student participation (include duties)? State the number, the type and the seating capacity of the vehicles used to transport students working in the ambulatory (mobile) clinic. State the approximate number of sick animals (specify cattle, swine, equine, poultry or small ruminants, others) seen by the ambulatory clinic per year during the past three years (Table 7.5a). State the average number of visits in a year made by the ambulatory clinic to farms and other institutions.

DIMEVET does not run an Ambulatory Clinic providing on-call outside services to large animal farms on a commercial basis.

The FVMBol (and, subsequently, DIMEVET) decided not to activate this type of activity mainly for two reasons:

The progressive financial restraint experienced in the last 5-10 years has obliged the DIMEVET to plan the allocation of resources very carefully, it and preferred to join the activities of veterinary practitioners in the field through a "lighter" concept of mobile clinic (details are provided in Chapters 4 and 6);

The DIMEVET policy, especially in a period of economic crisis, is to collaborate rather than compete with private practitioners. The Equine and large animals clinics at the VTH mainly work on referred cases, as only 10% of cases are primary.

7.1.8.2 Other on farm services and outside teaching

If there is no on duty Ambulatory (Mobile) clinic, a Faculty may have defined contracts with farms or other institutions to allow for outside teaching and patient care. Similarly, a Faculty may provide herd-health services. Please indicate if and to what extent this applies to your Faculty. If applicable please provide no. of patients seen on outside teaching.

DIMEVET has an official agreement with three bovine practitioners working in the countryside close to the Veterinary Campus. On a weekly basis, as part of the teaching activities of the Large Animals rotation, DIMEVET teaching staff accompany small groups of students (4-6) to join the daily clinical activities of one of these 3 practitioners in different farms.

During the PPT rotation of Animal Production, students (in small groups) perform extramural clinical activities on sows and boars at pig farms in order to recognise the heat signs. Students' activities consist of:

- Assisting the exposure of sows to the boar;
- Recognising the heat signs;
- Performing back pressure tests;
- Performing semen evaluation and artificial insemination;
- Performing ultrasound diagnosis of pregnancy.

To enhance the possibility for students to share the clinical activity on horses, the DIMEVET Large Animals Hospital and Emergency (SARGA) provides veterinary services to two different traditional horse races ("Palio"): in Faenza (Emilia Romagna region, since 2008) and in Ascoli Piceno (Marche region, since 2012). The official agreement includes all the procedures related to the veterinary service in horse competitions. During these activities, (under the supervision of the SARGA staff) small groups of students perform clinical examinations, limb radiographic studies, clinical assistance and blood sampling for anti-doping investigations before, during and after the race and trials.

Tab. 7.5a - Number of patients examined on extramural teaching in the last 3 years.

SPECIES		2013	2012	2011	AVERAGE
Food-producing animals	Cattle	731	771	627	1002.3
	Small ruminants	0	0	0	
	Pigs	300	290	288	
Equine		69	47	23	49.5

Tab. 7.5b summarises all the visits to farms and other institutions performed with students in the last 3 years.

Tab. 7.5b - Number of visits to farms and other institutions in the last 3 years.

SPECIES		2013	2012	2011	AVERAGE
Food-producing animals (heard health visits)	Cattle	62	80	82	85.7
	Small ruminants	1	1	1	
	Pigs	10	10	10	
Dogs (breeding farm)		/	1	1	0.7
Poultry (flocks)		6	13	16	12.7
Rabbit (production units)		1	1	1	

DIMEVET uses the following vehicles for student transportation during the extramural PPT activities:

- Fiat Scudo (9 seats);
- Renault Trafic Passenger (9 seats).

For smaller groups, a Volkswagen Touran may also be used. Biological material is transported using a specifically adapted Fiat Doblò.

Other vehicles include environmental low-impact cars:

- Fiat Panda, methane-powered;
- Renault Kangoo electric-powered.

7.1.9 Other information

Indicate any notable additional outside sources of material for clinical training purposes, such as animal charities, animals awaiting slaughter, etc.

In order to improve its territorial and social role (see **Chapter one**: Objectives), DIMEVET has adopted the same policy as the former FVMBol to have agreements with the territorial establishments.

In this regard, in the last two years DIMEVET has signed official agreements with the Province of Bologna and with Emilia Romagna Region:

- The agreement with Bologna Province and Provincial Health Service (AUSL) aimed to offer first assistance to stray (not client-owned) dogs and cats hit by cars in the area. Through this activity, in the first year approximately 15 cases were managed;
- The agreement with Emilia Romagna Region is more complex and focuses on different topics:
 - Specific opportunities for shelter dogs and cats requiring second-opinion (specialist) consultation. Through this activity, approximately 45 cases are managed on a yearly basis;
 - Wild animals first-aid care;
 - Regional surveillance and establishment of an official register on tumours in domestic animals;
 - Promotion of pet therapy activities.

In 2013, to increase the number of autopsies of food animals, different agreements were signed with farmers, establishments and private practitioners (see **Paragraph 7.1.2** for details).

Indicate how the level of clinical service that is offered by the Faculty (in small companion animals, equines and production animals) compares with outside practices in terms of facilities, hours of service, equipment, expertise, responsiveness, etc.

Companion animals

In the field of companion animals, the professional level of private veterinary clinics in Emilia Romagna, and in particular in the Bologna area, is considered high. Many structures employ a large number of veterinarians, have good facilities with excellent equipment and offer 24-hour emergency services.

DIMEVET is engaged in maintaining an adequate, if not superior, level of services both in terms of professional competence and excellence in premises and equipment.

With this objective, in recent years DIMEVET has implemented the 24-hour emergency service and encouraged the development of different areas of specialisation. As a consequence, the number of European Diplomates employed at DIMEVET and residency programmes has increased significantly (currently, nine European Diplomates are involved in the clinical activities of VTH).

The common perception among the staff is that the companion animals services of the VTH offers a good service in terms of facilities, hours of service, equipment, professional knowledge and internal quality assurance.

Equipment

The VTH still lacks specific instrumentation, such as advanced diagnostic imaging equipment including Computed Tomography (CT) and Magnetic Resonance Imaging (MRI). The old CT scan, active at the time of the 2005 EAEVE visit, was dismantled in 2008 and not replaced. The DIMEVET policy was oriented to anticipating a series of structural actions, aimed at creating new integrated clinical premises, including the new unit of advanced diagnostic imaging. Purchase/renting of CT and MRI are foreseen in the near future.

Horses and large animals

DIMEVET is aware that the equine and large animals clinical services are suffering from the following cumulative negative effects:

- The last five years have left a profound mark in the economic situation, particularly affecting horse breeders and cattle farmers;
- In contrast to other countries, Italian farmers are historically very reluctant to send cattle to the University VTH and pay for diagnostic procedures and treatments;
- Despite the "Parmigiano Reggiano" production, cattle breeding is constantly decreasing in the Emilia Romagna Region.

In this specific situation, an appropriate equine caseload was reached by including the activities of the AIC and the bovine including the activity in the University Dairy Farm.

Some niche entities suffer the negative trend less. The "Stefano Belluzzi" Equine Perinatology Unit is unique in the north of Italy and receives cases through referral from Emilia Romagna, Tuscany, Marche, Veneto, and Friuli regions. Every year, the Unit is attended by 60-80 volunteer students and 5-10 boarder students, supporting the teaching staff during activities, especially with critically ill neonates.

DIMEVET is aware of the difficulties in investing money to adequately promote equine and large animal clinical services. Nevertheless, a radical transformation of the premises dedicated to horses is currently in progress and the reorganisation of the bovine stable is almost finished. One of the major weaknesses that DIMEVET is facing is the difficulty in financially supporting the necessary strengthening of the equine and large animal teaching and support staff.

Provide an indication in percentage terms of the proportion of cases that are primary (i.e. first opinion), and referrals (provide a breakdown by species, if helpful). If the Faculty has a particular aim or policy as regards this mix, describe it.

DIMEVET currently has (and would like to maintain) a mixed system of referral and first opinion cases, convinced that this is the best background for teaching clinical disciplines.

The VTH website hosts specific information for the referring veterinarians including downloadable forms for referrals (<http://www.ospedaleveterinario.unibo.it/per-il-medico-veterinario>),

Accordingly, clinical activities are mainly on referred cases rather than on first opinions: 80-90% for large animals, 69% (2011), 63% (2012) and 78% (2013) for companion animals.

Indicate what areas of clinical specialisation are covered, and the extent of the coverage (for example, a veterinarian with a particular specialisation may see patients in the clinic for one day a week, 3 afternoons, etc.).

Currently, as shown in table 7.6a, the VTH staff covers many specialized areas. All the specialty services offered by VTH are described in details in the dedicated webpages for practitioners and owners either for small companion animals (<http://www.ospedaleveterinario.unibo.it/clinica-dei-piccoli-animali>) and for equine and large animals (<http://www.ospedaleveterinario.unibo.it/clinica-dei-grandi-animali>).

As already mentioned, the DIMEVET policy is to support the specialisation of its staff in all the possible ways, with special attention to residency training programmes (see **Chapter twelve** for details).

The extent of coverage of a specific discipline, detailed in **Tab. 7.6.a**, depends mainly on the caseload. Therefore, some units work five days per week while others may take referral consultations only one day per week.

Some specialisation areas still have to be covered or could be better covered. The suggestion of the EAEVE visiting team in 2005, to have high professional level of specialist private practitioners working

in the VTH on specific days, was not accepted by the senior members of the clinical area and is still waiting to be achieved.

In Equine and large animals there is much less subdivision of specialisation. The equine neonatology unit and the equine reproduction activity represent good examples of specialisation in the equine field.

The Nephrology/Urology file was introduced in the Fenice® Software in September 2012.

It is worth stressing that every clinical examination is performed with students.

To ensure the best organisation of the day and the best participation of students, for small animals the appointments are reported in the software programme (Fenice®, see below).

Tab. 7.6b shows the amount of diagnostic laboratory work. Data is shown according to the different types of exam and cover the different domestic species.

Tab. 7.6a - Number of visits to farms and other institutions in the last 3 years.

SPECIALIZATIONS	DAYS/WEEK	SMALL ANIMALS + EXOTICS			LARGE ANIMALS		
		2013	2012	2011	2013	2012	2011
Andrology	2	130	120	133	4	0	0
Anaesthesiology	5	1374	1063	924	46	50	50
Cardiology	1	113	132	131	1	1	1
Dentistry	2	177	169	97	0	0	0
Dermatology	1	51	55	65	0	0	0
Endocrinology	5	121	76	63	0	0	0
Endoscopy	2	227	152	151	5	7	19
Gastroenterology	1	34	39	26	0	0	0
Neonatology	5	41	1	0	38	45	42
Nephrology/Urol.	5	197	64	0	0	0	0
Neurology	5	331	321	331	1	1	2
Obstetrics/Gynaec.	5	333	263	303	36	13	18
Ophthalmology	5	271	217	221	1	0	0
Radiology	5	1613	1501	1257	116	51	21
Surgery	5	757	639	621	154	59	68
Ultrasound	5	2666	1961	1483	98	81	110

Tab. 7.6b: Number of laboratory tests overall performed in the different domestic species.

LAB. TEST	2013	2012	2011
Bacteriology	359	288	255
Biochemistry	4735	6482	4786
CSF examination	45	34	29
Cytology	314	436	448
Haematology	4358	4685	3023
Histology	1054	936	863
Hormones	2310	2495	1703
Immunohistology	78	128	85
Mycology	136	131	220
Parasitology	367	353	326
Serology	625	611	432
Urinalysis	1816	1419	1192
Virology	132	216	121

Indicate the relationship the Faculty has with outside practitioners (in small companion animals, equines and production animals) in terms of matters such as referral work, providing diagnostic or advisory services for private practitioners, practitioners participating in teaching, holiday or 'seeing practice' work for students, feedback on the level of clinical training. Describe (if applicable) any other relationships with outside organisations that are routinely used to provide students with training (in particular practical training) in other clinical subjects (e.g. pathology work, interaction with state veterinary work).

The DIMEVET policy is to avoid economic competition with practitioners. Great care is taken to ensure that fees are not too low compared to those of private practitioners.

The recently improved 24-hour service aims to offer support to private practitioners. The ultimate goal of becoming a point of reference for many colleagues is reinforced by the transparent policy in the matter.

The daily work on referral cases is the basis on which the VTH staff provide advisory or diagnostic support to colleagues from private practices.

DIMEVET has several agreements with private clinics for the management of clinical cases requiring specific equipment. These include agreements with:

- Veterinary hospital "i Portoni Rossi" (cases requiring MRI);
- Veterinary clinic "dell'Orologio" (cases requiring CT and radiotherapy).

From 2014, the veterinary staff of National Health Service will provide extramural professional practical training (PPT) on Public Health and Food Hygiene issues to students, as detailed in **Chapter four**.

Provide an outline of the administrative system(s) used for the patients, e.g. in terms of how case records are kept, how data are retrieved, whether systems are centralised, etc.

Historically, the FVMBol has a strong tradition of keeping clinical records. Registers of the clinical activity date back to the early 20th century. Since that period, clinical records have been meticulously stored and preserved.

The former Veterinary Clinical Department and DIMEVET found it to be of strategic importance to have an advanced, digital storing system for clinical records, which are currently stored using advanced digital technologies (Fenice®).

The first digital records date back to 1992 and, to date, Fenice is connected to approximately 50 different points in DIMEVET, maintaining patient records and ensuring the collective management of all clinical, imaging, laboratory, microbiological and pathological data concerning each single patient.

Fenice is a centralised system that works via a server and a network, allowing staff members and students to retrieve data of interest, including laboratory findings and diagnostic imaging or pathological images.

When the patient comes to reception, their personal data is recorded in Fenice by the support staff. Consultations, surgery, blood and diagnostic investigations, pathological and microbiological results and follow up are subsequently noted on the original record, keeping all the patient data in one single file.

Fenice is extremely useful for teaching purposes and is routinely used in the discussion of clinical cases with students.

Fenice is organised into folders, belonging to different areas. The most important concern:

- Pathology: 2
- Surgery: 12
- Diagnostic Imaging: 9
- Internal Medicine: 9
- Infectious, Parasitic and Avian Diseases: 11

- Veterinary Teaching Hospital (Emergency and Hospital): 11
- Animal Reproduction : 7
- Clinical Pathology : 11
- Folders for students: 5

Undergraduate training using cadavers or animal parts

In addition to pathology, undergraduate training in specific disciplines (e.g. surgery) widely uses cadavers and/or animal parts. Specifically, canine and feline cadavers are used to train surgical procedures and interventions (e.g. tracheotomy, mastectomy, laparotomy, orthopaedic surgery, urethrostomy, excision of cutaneous tumours) in the following course units:

- Veterinary Surgery;
- Veterinary Surgical Techniques;
- Veterinary Surgery (Professional Practical Training);
- Physiopathology of Animal Reproduction;
- Veterinary Andrology.

During this training, students work autonomously in groups of 4-5 persons per cadaver. Collectively, around 150 animals are used per year for these practices. Bovine urinary bladders (70 per year), bovine guts (10 per year), bovine uteri (30 per year) and horse legs (70 per year) are used to train in surgical sutures and other procedures in the course units "Veterinary Surgical Techniques" and "Physiopathology of Animal Reproduction".

7.1.10 Ratios

See the section 'Main Indicators' in Annex Ia for the figures needed for calculating ratios. Give the figures for numerators and denominators.

Tab. 7.7 - Ratio expressing the mean number of animals available for clinical training (in the DIMEVET clinics or examined during extramural activities) in the last three years, divided by the mean number of students graduating annually in the last three years .

			DPVM	Recommended values
R11:	$\frac{\text{No. of food-producing animals seen at the Dept.}}{\text{No. of students graduating annually}} = \frac{875.3}{120} =$		7.294	Minimum value: 0.758
R12:	$\frac{\text{No. of individual food-animal consultations outside the Dept.}}{\text{No. of students graduating annually}} = \frac{1002.3}{120} =$		8.353	Minimum value: 8.325
R13:	$\frac{\text{No. of herd health visits}}{\text{No. of students graduating annually}} = \frac{85.7}{120} =$		0.714	Minimum value: 0.326
R14:	$\frac{\text{No. of equine cases (into and outside the Dept.)}}{\text{No. of students graduating annually}} = \frac{340.2}{120} =$		2.835	Minimum value: 2.700
R15:	$\frac{\text{No. of poultry/rabbit cases}}{\text{No. of students graduating annually}} = \frac{156.7}{120} =$		1.306	Minimum value: 0.407
R16:	$\frac{\text{No. of companion animals seen at the Dept.}}{\text{No. of students graduating annually}} = \frac{6813}{120} =$		56.775	Minimum value: 48.061
R17:	$\frac{\text{Poultry (flocks)/rabbits (production units) seen}}{\text{No. of students graduating annually}} = \frac{12.7}{120} =$		0.106	Minimum value: 0.035

Tab. 7.8 - Animals available for necropsy

			DPVM	Recommended values
R18:	$\frac{\text{No. necropsies food producing animals + equine + wild animals}}{\text{No. of students graduating annually}} = \frac{71}{120} =$		0.592	Minimum value: 1.036
R19:	$\frac{\text{No. poultry/rabbits + wild birds}}{\text{No. of students graduating annually}} = \frac{456}{120} =$		3.800	Minimum value: 0.601
R20:	$\frac{\text{Necropsies companion animals}}{\text{No. of students graduating annually}} = \frac{193.3}{120} =$		1.611	Minimum value: 1.589

7.1.11 Other species

Bees

From 2010 to 2013, the elective course unit "Bee superorganism: biology and pathology" ran in the old curriculum (0487), consisting of 30 hours' teaching (26 hours of academic lessons and 4 hours of practical training in an apiary and in the honey extraction laboratory). From 2013, in the new curriculum (8206) a new optional integrated course has been activated ("Role and activities of Veterinary Public Health"), including a section entitled "Sanitary Control in Beekeeping", (total 12 hours: 9 hours of academic lessons and 3 hours of practical training in an apiary and in the honey extraction laboratory). During practical activities, the students, supported by a beekeeper and equipped with protective clothing, have the opportunity to directly examine an apiary and handle the combs, as the basis of clinical examination of the hive. In the honey extraction laboratory, students practically perform the basic operations of honey extraction, starting from some honeycombs provided by beekeepers.

A few students have already based their final dissertation on studies carried out in the apiary, in collaboration with the Council for Research and Experimentation in Agriculture - Research Unit of sericulture and apiculture (CRA-API).

Aquaculture

Fourth year students attend the core subject "Aquaculture" within the integrated course of "Animal Production II", where they have the opportunity to acquire theoretical and practical bases on aquaculture, rearing techniques, feeding, reproduction, larval rearing and fish quality. DIMEVET has a Local Organisational Unit (LOU) in Cesenatico, 90 km east of Ozzano Emilia, entirely devoted to aquaculture activities. Students may choose to carry out practical training in this unit and/or prepare their experimental dissertations on a wide range of aquaculture topics.

Students also have the opportunity to attend the DIMEVET Fish Pathology Lab at the veterinary campus of Ozzano on a voluntary basis, to receive training in fish diseases and fish-borne parasitic zoonoses, also for preparing their dissertations.

Wild and exotic animals

Students attend the activities at the Exotic Animals Unit, which has a large caseload of wild and exotic reptiles (sea turtles, tortoises, snakes and lizards), wild and exotic birds (received from Wildlife Rescue Centres, mainly raptors) or Canary, Parrots, Mynah birds etc. and wild mammals (Wolves, Badgers, Foxes, Roe and Fallow deer). Students perform practical training during the fourth year, and, on a voluntary basis, in the preparation of their final dissertation. The main activities attended by students include necropsies of wild birds and clinical examination of exotic and wild animals. Furthermore, in the educational museum of wildlife (five hundred and fifty preserved animals), students can actively increase their ability to identify wild species.

The construction of the new building (starting in 2014) to host the Wildlife Veterinary Centre will allow the opportunity to hospitalise wild and exotic animals, and enhance the experience of students in handling these animals.

7.2 COMMENTS

Feel free to comment on all data provided in this Chapter. Comment on major developments in the clinical services, now and in the near future. Comment on local conditions or circumstances that might influence the ratios in Tables 7.7 and 7.8.

With the exception of R18, the ratios indicated in this Chapter are quite satisfactory. The overall impression for future years is that the ratios should further improve, due to the reduction of the number of admitted students.

Many issues deserve comments, starting from the suggestions reported in the final report of the EAEVE visiting team in 2005 including:

The amount of material available for pathology teaching should be increased through an active effort to bring more material (e.g. euthanized animals from practitioners and animal charities, 'fallen stock') to the Faculty for necropsy.

The average number of food and large animals necropsies (R18) is below the lower limit. This is mainly due to the lack of a suitable transport vehicle and the reluctance of farmers to demand necropsies when there is a free health facility in the area (Istituto Zooprofilattico Sperimentale). This limit was overcome in past years by collecting several hundred kilos of viscera from local slaughterhouses and allowing students to assist in slaughtering and post mortem examinations in the internal abattoir.

However, in preparation for the new curriculum which includes practical training in pathology in the fifth year, since 2013-2014 several strategies have been implemented to increase the number of autopsies on food animals (detailed in **Paragraph 7.1.2**), including agreements with farmers and food animals practitioners; re-organisation of carcass management before disposal. These actions have led to a significant increase from 2011 to 2013. The R18 ratio calculated only for 2013 should be within the range. These strategies will be continued in the coming years. In addition, it should be noted that the R18 ratio is calculated on the number of graduating students, which will decrease substantially in the forthcoming years, as in academic years 2012/13 and 2013/14, and continuing in the future, the maximum number of new enrolled students has dropped to 90.

The small animal caseload should be increased, in particular to reverse the current downward trend in the caseload. The amount of animals from shelters that are treated and the scope of the treatment provided should be increased as part of the effort to bring more teaching material in.

The caseload of small companion animals is currently considered appropriate, both in terms of quantity and quality. The DIMEVET policy of reinforcing the 24 hours emergency service and implementing the areas of specialisation has significantly increased the number of first-opinion and referred cases.

Considerable and specific measures should be taken to increase the farm animal caseload (see also Suggestions 6.2.3.2 and 6.2.3.3).

The mobile clinic activity aimed to increase the caseload of farm animals.

Other measures included:

- The rationalisation of professional practical training at the University Dairy Farm (mainly involving the Animal Reproduction Service);
- The recent reorganisation of the bovine clinic premises at the Veterinary Campus in Ozzano;
- The recent reorganisation of large animals professional practical training, now including Public health issues on herd management and welfare.

Animal parts (heads, limbs) should be retrieved from slaughterhouses for use in undergraduate training in particular procedures and techniques.

This goal was accomplished, as previously described at the end of **Paragraph 7.1.9**: Other information.

A solution should be sought to increase the current inadequate numbers of horses, sheep and pigs seen for clinical diagnosis and treatment by students.

Sheep and pigs

The new curriculum has dedicated a part of the core subjects of the Animal Production area to small ruminants and pigs. Furthermore, from the current year practical professional training activities in public health and herd/flock management have begun, specifically dedicated to sheep and goats. As previously mentioned, the PPT includes specific activities with pigs.

DIMEVET has set up a small goat breeding facility on the campus, dedicated to teaching activities, as detailed in **Chapter four**. From next 2014, goats hospitalised at DIMEVET will be assisted during peripartum activities by teachers and students during the Reproduction rotation (February-July).

Horses

The general impression is that, despite numerous efforts, it is very difficult for DIMEVET to maintain an adequate equine caseload.

The last five years have been marked by a general economic crisis. The equine market, and particularly that connected to races and betting, has suffered a dramatic decrease. The main consequence has been that a significant number of breeders have reduced the number of broodmares or even gone out of business. In the Emilia Romagna region, the most popular equine breed is the Trotter-Standardbred, one of the most affected by the crisis together with the Thoroughbred. The number of Italian Standardbred newborn foals dropped from 3197 in 2011 to 2113 in 2013 (-34%). In the same period, Thoroughbred foals dropped from 1127 to 640 (-44%) (official source: A.N.A.C.T, National Association of Standardbred Breeders). This is one of the greatest causes of the slight decrease in the equine caseload by the VTH, the Equine Perinatology Unit and the Artificial Insemination Centre at DIMEVET.

The low numbers of sheep, goats and pigs received for consultations or hospitalised at the VTH are balanced by an increasing number of animals of this species hospitalised at DIMEVET for research/teaching activities (**Table 7.4c**) or seen during outside teaching (**Tab. 7.5a**).

7.3 SUGGESTIONS

If the denominators in Tables 7.5 and 7.6 for your Faculty are not meeting the range as indicated in Annex I, Supplement A, what can be done to improve these ratios?

Necropsies

- Maintaining and improving the measures taken in 2013, considering that the new curriculum envisages professional practical training in Pathology during the last year.

Large animals caseload

- Improving the activities of the mobile clinic. Action should focus on funding the need for dedicated staff-clinicians;
- Reducing the bureaucracy required to start extramural work and external relations.

Covering of specialty areas

- Permitting high level private practitioners (i.e. European Diplomates) to work on a regular basis (i.e. one day/week) in the VTH. This should enhance the caseload in certain areas with obvious benefits for the students, and will start a virtuous circle leading to increased knowledge and training of young postgraduate students in those specific areas.



CHAPTER 8
LIBRARY AND
LEARNING RESOURCES

8 LIBRARY AND LEARNING RESOURCES

8.1 FACTUAL INFORMATION

The “G. B. Ercolani” Central Library was established by Rector’s Decree of 17/07/1991 and was opened in June 1992 for teaching and research purposes. The Library provides resources related to all the scientific-disciplinary areas represented in the Department.

The only library of DIMEVET, it manages both bibliographic services and some book and journal collections stored in the Departmental Services. The main body of bibliographic resources is located in the Central Library, on the ground floor of the Department. All bibliographic resources are indexed and catalogued and are easily available to users (**Fig. 8.1**).



Fig. 8.1 - “G.B. Ercolani” Central Library.

8.1.1 Library and other information technology services

Give a general description of the library/libraries of the Faculty/University that are available to students.

The “G. B. Ercolani” Library is part of the Library System of the University of Bologna (Sistema Bibliotecario di Ateneo - SBA <http://www.biblioteche.unibo.it/portale/servizi-informativi>) which is coordinated and supported by the Alma Mater Documentary and Departmental Support Division.

Sistema Bibliotecario di Ateneo (<http://biblioteche.unibo.it/sba>) — The University Library System coordinates the activities of the institutions devoted to the selection, acquisition, development, management, promotion and conservation of the University’s library-document heritage. The SBA organises and coordinates the access to electronic resources (databases and electronic journals) through cooperation with internal bodies (Divisions, Sectors, Libraries and Work Groups) and the computer services managed by the Alma Mater Centre for development and maintenance of IT services (Cesia). It also contributes to funding bibliographic and full text databases and finances access to e-journals. The University Library System coordinates the Libraries of all the various subjects, classifying and dividing them into 5 macro-areas.

The Ercolani Library belongs to the Medical Macro-Area of the Library System.

Indicate how the library/libraries are managed (e.g. library committee).

The Library is managed by the Library Administrative Director, and by the Library Scientific Committee, chaired by a professor of the Department. The Director supervises the Library activities and services, drafts the budgets and accounts. The Scientific Committee coordinates and supervises the cultural and scientific choices of the Library.

The Scientific Committee is composed of 11 members: the Administrative Director, the Chairperson of the Scientific Committee, one professor or researcher for each subject area, and a student representative (DPVM).

The University Library System was reorganised in 2013. From October 2013, the Veterinary Medicine Library and the Aquaculture Library (located in the LOU in Cesenatico) are branch libraries of an Inter-departmental Library. In accordance with the new Library System Regulation, the composition of the Committee has been modified. The Scientific Committee is now composed of 13 members: the Administrative Director, the Chairperson of the Scientific Committee, one professor or researcher for each subject area, two staff representatives, one student representative (DPVM), one representative of the School and one representative of the University Library System's Scientific Committee. The new Committee will take office in 2014.

Main Library

Is this specific to the veterinary training establishment?

Yes.

Is this common to two or more establishments?

No.

The Library could be also used by the students of other Veterinary Science Degree Programmes of running in the Department.

Library staff

Number full-time employees:

6

Full time equivalents of part time employees:

4 part time employees; 3 FTE

The Library employs students on a part-time basis at the circulation desk during opening hours. Since 2011/2012, about 24 students and year have been supporting the library services, for a total of about 2771 hours/year.

Library resources

The collections (both in print and electronic format) respond to teaching and research needs; since 1995 the Faculty has been subscribing to all journals deemed to be of interest.

The Library resources include all more recent material that was previously kept at the Libraries of the old Departments. The older back issues of the journals and the less recent monographs are still located in some store facilities in the Departmental Services.

Number of journals received each year as hard copies	217
Number of full access electronic journals	
Directly subscribed	86
Subscribed by the SBA with partial the or full contribution of the Library	5250
Books (total number of copies)	20575
Textbooks (in Italian)	1037
Textbooks (in English)	251
Antique books	408
Databases	313

Availability for online literature search

313 bibliographic databases, 7 of which are specific to agro-veterinary sciences, are accessible through the University network (<http://www.biblioteche.unibo.it/portale/servizi-informativi/risorse-elettroniche/banche-dati>; <http://www.biblioteche.unibo.it/acnp>).

Availability of textbooks

Textbooks recommended by teachers for the preparation of specific exams are available in more than one copy. Books are laid out on open shelves and can be consulted directly by users. Some texts may be borrowed for up to 15 days and during the weekend. Loans may be renewed for another 7 days.

Furthermore, hundreds of veterinary textbooks are freely downloadable as e-books by UNIBO users from CRCnetBASE, Elsevier and OIE.

Naldo Maestrini Historical Collection

The Naldo Maestrini Historical Collection comprises partly antique volumes (pre-1830) and partly more modern publications. The Collection was assembled in 1994 following the donation of the "Antique Library of Veterinary Medicine" by the late Prof. Naldo Maestrini. Subsequently, the Historical Collection was enlarged with the donation of antique books from:

- The library collections belonging to the Section of Anatomy (1997);
- The section of Animal Breeding, Nutrition, Feed and Food (2000) of the former Department of Veterinary Morphophysiology and Animal Production;
- The Section of Infectious and Parasitic Diseases (1999) of the former Department of Veterinary Public Health and Animal Pathology.

All the volumes of the Maestrini Collection have been included in the national catalogue (SBN), listing the material dating from 1830 or earlier in the antique catalogue, and the remainder in the modern catalogue.

The Maestrini Collection includes a total of 2422 volumes, as well as other materials such as edicts, posters and calls for applications for funding and programmes on animal-health issues.

Number of student reading places.

86

There are a number of study rooms at DIMEVET where students can use their own books.

Library opening hours.

During term-time: Monday to Friday, from 8.30 am to 6.45 pm.

During vacations opening hours are subject to change, but they are planned and promptly published on-line at the beginning of the year. In 2012 the library closed for 16 days.

Library's services and facilities.

The Library offers the following services and facilities, some of which are run in cooperation with the Alma Mater.

- Services of the Library
 - Website for communicating with Users (<http://www.biblioteche.unibo.it/veterinaria>);
 - Access and circulation services (requests, borrowing, renewals, returns and document delivery);
 - On-line application for textbook ordering by teachers and students
 - Access to the wealth of textbooks, scientific books and specialist journals;
 - Self-service photocopying of the available material (where permitted by law);
 - Internet stations open to the public for on-line research of material useful for study, research and cultural development;
 - Computer literacy courses for students, PhD students, researchers, professors and technical staff on the use of electronic resources and bibliographic databases of veterinary interest;
 - Reference services.
- Services in cooperation with University
 - Access to on-line databases and electronic resources available from the University of Bologna (<http://www.biblioteche.unibo.it/portale/servizi-informativi/risorse-elettroniche/banche-dati>; <http://www.biblioteche.unibo.it/acnp>);
 - Open search;
 - WiFi Internet connection throughout the Library;
 - Online References: <http://www.chiedialbibliotecario.unibo.it/>;
 - Document Supply and Inter-Library Loan (DS-ILL); Internet delivery (ILL/DD):
NILDE — The Library uses Nilde software (Network Inter-Library Document Exchange) for Document Supply services and Inter-Library Loans. NILDE was designed in 2001 by the CNR (National Research Council) for the library of Bologna and automatically manages Document Supplies and Inter-Library Loan, ensuring fast and effective document locating, requesting and supplying (<https://nilde.bo.cnr.it/learn.php>);
Subito-British Library — In addition to NILDE, the Library has subscribed to other international DD/ILL services, including Subito (<http://www.subito-doc.com/>) run by a consortium of Libraries in the German Area (Germany, Austria and Switzerland) and the British Library's Document Supply Service (<http://www.bl.dss.uk/BLDSS/>).

Access: the Library system provides on-line access to full text articles (via intranet and Internet through Proxy authentication) to all professors, researchers, staff and students.

Access to the Ercolani Library is through identification badge. It serves approximately 1100 students and 200 professors, researchers and technical staff, mainly belonging to DIMEVET, but occasionally also by other Departments of the Medical-Biological Area (approximately 120 users).

ACCESS TO LIBRARY	2012	2013
Professors and researchers	218	210
PhD/research fellows/graduate visitors	453	525
Students	10970	9601
Technical staff	68	66
External users	112	104
Other	249	196
TOTAL	12070	10702

LOANS	2012	2013
Local loans (15 days)	7008	6453
Local loan renewal for a further 7 days	512	670
Consultations of books for daily loan	415	362
Interlibrary loans		
From other libraries	18	8
To other libraries	33	41

PAPER INTERLIBRARY EXCHANGE VIA NILDE	2012	2013
From other libraries	860 (arrived 725)	418
To other libraries	798	568

The Library's IT infrastructure.

- 6 stations for public access to Internet, to consult catalogues and view documents;
- 6 staff stations for everyday work equipped with Microsoft Office and specific library software;
- 1 computer for the Document Delivery service;
- 3 computers devoted to circulation services;
- printers for use by staff;
- 2 TV + VCR desks for watching audio-visual material.

Indicate how the facilities are used by students.

Students have access, using their identification badge, to all services and facilities.

The greatest use of the Library by students is related to the retrieval of material useful for the preparation of exams or final dissertations. For the preparation of exams, particularly in the more vocational subjects, they mainly loan specific textbooks or search for relevant and updated information through electronic resources.

Students can suggest books for purchase using the on-line form accessible from the homepage of the Library website. The Head Librarian checks the relevance for the subject areas covered by the Library.

If the book is already present, the need for additional copies is assessed by comparing the number of available copies with the demand for loans.

When preparing their final dissertations, students also access on-line databases and other electronic resources. As mentioned above, all institutional users and students can also access the electronic resources of the University from computers outside the University network, through Proxy authentication. This way students can access all electronic facilities from their own home or elsewhere.

Despite the wide range of services offered, it must be stressed that some students still use the library simply as a study room.

Subsidiary libraries of the Department

Please describe the subsidiary (e.g. Departmental) libraries of the Faculty, and arrangements for student access.

There are 11 stores (deposits) corresponding to the libraries of the old Institutes (now Services) that merged into DIMEVET, where back issues of journals and the less recent monographs (before 1995) are stored.

These resources are available by appointment, as these Collections are not supervised by full-time staff.

Indicate whether the main library holds a list of individual books of the subsidiary libraries.

The Central Library has catalogued all the bibliographic resources (printed books and printed and/or on-line journals) which can be easily searched through the University's OPAC (http://sol.unibo.it/SebinaOpac/Opac?locale=en_GB) and the Italian union catalogue of journals (<http://acnp.unibo.it/cgi-ser/start/en/cnr/fp.html>).

Describe any other information services and how they are supported and how student access is regulated.

Proxy Resource

This service allows authorised users of the University (professors, researchers, technical staff, students and any accredited collaborators) to use all the University intranet resources with restricted access from an external workstation. Access is enabled by Proxy authentication.

Self-learning resources

On-line resources for self-learning are accessible from the home page of the Degree Programme website (<http://corsi.unibo.it/MagistraleCU/MedicinaVeterinaria/Pagine/default.aspx>).

e-learning-platform

The "Veterinary Teaching Portal"
(<http://portaledidatticovet.unibo.it/>)

This web-based learning platform, created as part of the "Special projects for improvement of teaching and student services" sponsored by the Alma Mater, contains multimedia educational materials to support the Degree Programme in Veterinary Medicine.

The "Veterinary Teaching Portal" (VTP) hosts multi-disciplinary educational contents designed and produced to satisfy the need for students to have free access to supplementary material related to practical teaching activities. All the materials digitally stored in the VTP are original and expressly

produced on a voluntary basis by DIMEVET teachers with the collaboration of young vets paid with scholarships. The material stored in the VTP consists of multimedia contents related to the practical teaching within the DPVM, e.g. videos of clinical or laboratory procedures, image galleries (normal histology, histopathology, cytology, radiography, ultrasonography, surgical instruments, animal breeds, etc.), 3D animation of bones, searchable database of pathology images, self-evaluation tests.

The Veterinary Teaching Portal started in 2009 and is still an on-going project. It currently features more than 300 web pages, approx. 1500 images and 350 videos. Since 2012, VTP has been integrated into teaching at DPVM, and is highly appreciated by students, as demonstrated by the positive feedback and continuous increase of the contacts (more than 250,000 page views from January 2012 to date) (Fig. 8.2).



Fig. 8.2 - The "Veterinary Teaching Portal "

Alma-DL

(<http://campus.unibo.it/>)

Alma DL (Alma Mater Digital Library) is the Institutional web repository managed by the University of Bologna where teaching staff can deposit lecture slides (i.e. PowerPoint) or notes. Students access the site using their personal login and password, and can download the material. Almost all DPVM teachers provide lecture notes or slides through this system.

Information Technology and Laboratory Service

(<http://www.agrariaveterinaria.unibo.it/it/scuola/uffici/servizio-informatico-laboratori-sede-ozzano-emilia>)

The information services of the library are supported by the IT Laboratory Service (ITLS), which also manages all the computer systems of the Department and the School. In particular, ITLS supervises the computer lab and ensures the proper use of equipment and multimedia teaching resources. It manages the information services of the School, provides technical support to staff and students, and provides assistance to all computer facilities on campus. The ITLS employs three staff full-time.

Other important activities of ITLS, managed in collaboration with the Alma Mater Information Service (CESIA), include the maintenance of the local network and information security. Furthermore, the ITLS

staff contribute to the development and maintenance of software for managing teaching resources and services.

Multimedia rooms

Computer Lab (capacity 21): equipped with 21 personal computers.

Computer Room (capacity 14): equipped with 14 personal computers.

The multimedia rooms are open:

Monday - Thursday 9.00 a.m. – 6.00 p.m.

Friday 9.00 a.m. – 3.00 p.m.

Students have free access to multimedia rooms during opening hours.

8.2 COMMENTS

Please comment on the adequacy of the books and accessible journals, of the opening hours and of the provision of reading spaces and support personnel.

A survey administered to library users has outlined the following results:

- The opening hours (51 hours per week) seem to satisfy the demand, although some students ask for longer opening hours, particularly during weekends. Currently, it is not possible to guarantee the library opening at the weekend, though it has to be noted that all the electronic resources are available to students 24/7 through Proxy authentication.
- The resources are adequate for the demand:
 - Italian textbooks used by students are available in several copies;
 - Books for research and consultation are purchased at the suggestion of the teaching staff;
 - The library has subscriptions for almost all scientific journals on veterinary subjects (printed and/or on-line);
 - The library offers a good service for the use of the available e-journals and databases;
 - The document delivery service is very efficient; requests for scientific papers are usually executed within one or two days.
- The Library is well managed and the staffing is adequate.

Although the services and resources offered by the library are abundant, well organised and easy to access, it should be noted that there are many more potential users than actual "physical" users. Perhaps the availability of Internet resources through the Proxy service leads to in a lower number of library users.

The Library's weaknesses are space and funding: there is a lack of room to efficiently store all the collections. As far as funding is concerned, in the last five years there has been a 27% cut in funding.

Please comment on the Faculty's provision of IT -facilities and the approach to self-learning, and on the further developments in this area.

Internet access is adequate, thanks to coverage of the Wi-Fi through all departmental spaces. The Proxy Resource, freely available to institutional users, offers access to bibliographic resources also from home.

The web-based learning platform "Veterinary Teaching Portal" was specifically created to support self-directed learning of DPVM students. The project was implemented with special funding obtained through a university competition, allowing the department to purchase the necessary hardware and software components and pay a salary to some post-graduate students to design the platform, deve-

lop the contents and put them on the web. The project is in progress, and obviously needs continuous maintenance. Nevertheless, the Alma Mater has not renewed the funding for "Special projects for improvement of teaching and student services", so the future of VTP will be affected by the supply of specific funds to support it.

8.3 SUGGESTIONS

DPVM has to encourage students to make a greater use of Library resources and services, such as international textbooks and scientific journals throughout the whole degree programme, in order to help them to understand the importance of keeping up-to-date and developing concepts in a critical manner, using different study materials. This practice was introduced in some optional courses, according to the "Problem Oriented Approach" concept, and should be extended to all the course units.

DIMEVET and/or SAVM should include the maintenance of the Veterinary Teaching Portal as one of their objectives in the forthcoming School-Department Integrated Strategic Plan 2014-16.



CHAPTER 9

STUDENT ADMISSION AND ENROLMENT

9 STUDENT ADMISSION AND ENROLMENT

9.1 UNDERGRADUATE COURSES

The Alma Mater Quality Assurance System annually provides a critical analysis of the DPVM data in its Annual Degree Programme Quality Report (ADPQR), which is available on-line: <http://www.unibo.it/QualityAssuranceEn/Reports2013/Report-8617-2013.pdf> (see **Chapter five** for further details).

Since much data requested in this Chapter refers to the calendar year, while the ADPQR is based on academic years, some issues may not match.

9.1.1 Undergraduate student numbers

Table 9.1 asks for numbers of undergraduate students in the veterinary training institution. This means students enrolled for undergraduate training and paying the corresponding tuition fees (if applicable), except for those students who do not participate in the teaching offered. Some veterinary curricula require students to successfully complete all courses presented in an academic year before they can start the subjects in the following year. In other establishments students have to complete all the subjects in the curriculum before graduating, but can do so in a more flexible way. In the latter instance, it may be difficult – perhaps impossible – to place some of the students in a specific year of the programme. If this is so, Table 9.1 may: Be omitted, or be an approximate figure, or be calculated by reference to the course of year that corresponds to the largest number of subjects taken.

The population of the students attending the Degree Programme in Veterinary Medicine at the Alma Mater is shown in **Tab. 9.1**.

Tab 9.1 - Undergraduate student composition in year prior to visitation (2012/2013).

TOTAL NUMBER OF UNDERGRADUATE STUDENTS	1060
"In course" students*	622
"Off-course" students*	438
Total number of male students	310
Total number of female students	750
FOREIGN STUDENTS	62
- from EU countries	22
- from non-EU countries	40

* In Italy students are classified as "in course" and "off-course" (fuoricorso) students. "In course students" are those who proceed regularly in their studies, sitting exams according to schedule and graduating within the proper time. "Off-course" students are those who are not aligned to the exam schedule and take longer than envisaged to obtain the necessary number of credits to graduate. In the National system it is quite normal to have "fuoricorso" students, since there is no obligation to finish one curriculum year in the due time. "Fuoricorso" students can sit exams at any time of year. Teachers may set specific dates for the "fuoricorso" students' exams.

In any case, please indicate the minimum no of years (MNY) allowed to successfully complete the curriculum.

The minimum number of years to successfully pass the curriculum is five.

While there is a lower limit, there is no upper limit, as students are allowed even to leave for whatever reason and come back after a few years to complete their studies.

9.1.2 Student admission

State the minimum admission requirements.

In case of Italian students, a 5-year high school Diploma (upper Secondary Education Certificate) is required (see **Fig 2.1**). Any other school certificate awarded in other countries after 12 years of schooling, and that are valid for admission to university in that country, is considered valid (MIUR Circular 18/05/2011). Foreign students must possess an equivalent certificate (MIUR Circular 18/05/2011) and sit an exam to assess their knowledge of the Italian language before sitting the entrance exam. Admission doesn't require a specific type of Diploma, so the scientific preparation and knowledge of the students applying to the Degree Programme is quite heterogeneous.

Indicate whether there is a limit to the number of students admitted each year.

Since academic year 1989/1990, the degree programme is subject to restricted access.

In the last few years the total number of new students accepted has been progressively reduced. In contrast to other Faculties, the FVMBol spontaneously decided to reduce the number of students in order to provide better training and comply with the request of the statutory bodies to reduce the number of veterinary surgeons in Italy. Specifically, in Bologna since AY 2005/2006, the 150 places for Italian or EU citizens and foreign students with equivalent qualification have been reduced to 90. The number of places available to non-EU students has not been modified.

Currently, 90 EU students are admitted (including those from the Military Academy) and a maximum 15 of non-EU students (including 5 for students from the People's Republic of China - Marco Polo project).

Describe how the number of government-funded student places is determined.

Each Degree Programme Board proposes the number of EU and non-EU students to the Academic Senate to be enrolled in the first year. The number depends on the teaching potential, availability of facilities and the future opportunities for professional employment. The proposed number is then notified to the Ministry of University and Research (MIUR), which decides whether or not accept it, also considering the EAEVE approval. Finally, the MIUR determines, by decree, the total number of students that can be enrolled at national level and assigns a specific number to each University. Major reductions in the number of students are seen in those Faculties that are not EAEVE-approved.

Outline any selection process (or criteria) used in addition to the minimum admission requirements.

Admission to the Veterinary Medicine Degree Programme is based on a selection process regulated by MIUR. A national admission test is prepared by MIUR, with the support of a Commission whose members are appointed by Ministerial Decree. The test is administered to students in each Italian University on the same day. The 2013 test was composed of 60 multiple-choice questions, to be answered in 100 minutes, on the following subjects:

- General knowledge (5);
- Logical thinking (25);
- Biology (12);
- Chemistry (12);
- Physics and Mathematics (6).

A ranking list is drawn up on the basis of the score obtained in the test and only the highest-ranking students can enrol.

In evaluating the test, the following criteria are taken into account:

- Test score (maximum 90 points):
 - 1.5 points for each correct answer;
 - minus 0.4 points for every wrong answer;
 - 0 points for each question not answered.
- Assessment of the high school curriculum (maximum 10 points)

In any case, to be admitted, students (EU and non-EU) must obtain a minimum score of at least 20 points.

Since 2011/2012, a single ranking list has been drawn up for the Universities of Bologna, Parma, Milan and Padua; from 2013/2014 the ranking list is drafted at national level. In the last three years, this process has extended the time taken to assign and enrol students to the various universities, seriously penalising students who enrol late and have lost much of the first semester of classes.

For this reason, the entrance exam, which until 2013 was held in September, will from 2014 will be held in April.

Describe whether students applying for and/or starting veterinary training have an equal or very variable knowledge base in scientific disciplines from their previous studies.

Students have quite variable knowledge in scientific subjects due to the heterogeneity of their previous studies.

Describe any circumstances under which extra students may be admitted to the undergraduate veterinary course.

Since Academic Year 2001-2002, the University of Bologna has established an agreement with the Military Academy of Modena for the preparation of Veterinary officers, and each year reserves a number of positions (usually two) for cadets.

Outline any changes foreseen in the number of students admitted annually. If applicable, describe how the Faculty plans to adjust to these changes.

As mentioned above, during recent years the national number of students admitted has been reduced (due to the increasing risk of unemployment among veterinarians in Italy) by MIUR, on the basis of the requests of professional stakeholders/statutory bodies including the Italian National Federation of Veterinarians (FNOVI) or other veterinary practitioners' associations. The current number of 90 students admitted per year is considered appropriate for the available resources.

Table 9.2 asks for the numbers of undergraduate students admitted to the Faculty over the last five years. Apart from the 'standard' intake, the Faculty may also be taking in students as transfers from other courses, privately funded students, etc. Please indicate any supplementary intake of this kind in the last column of the table.

Tab 9.2 - Intake of veterinary students in the past five years.

ACADEMIC YEAR	NUMBER APPLYING FOR ADMISSION			NUMBER ADMITTED "STANDARD" INTAKE		OTHER ENTRY MODE	
	TOTAL	EU	NON-EU	EU STUDENTS	NON-EU STUDENT*	MILITARY ACADEMY STUDENTS	TRANSFERRED STUDENTS* +
2013-2014	818	806	12	88	1	3	13
2012-2013	692	685	7	100	1	2	10
2011-2012	716	705	11	100	6	2	21
2010-2011	731	723	8	125	8	2	30
2009-2010	623	616	7	125	6	2	19
AVERAGE	716	707	9	107.6	4.4	2.2	18.6

9.1.3 Student flow

Table 9.3 establishes to what extent students make progress in their studies. To this end, we look at the students who were admitted initially and which year they have reached after the MNY (see page 63) has elapsed.

The data reported in **Tab. 9.3** specifically considers the number of students attending the different years of the DPVM in AY 2012/2013. Due to the particular Italian situation, Table 9.3 is necessarily different from what requested by the EAEVE SOP. Data shown in this table do not allow to draw any indication of the student flow, as students have access to the following year regardless of the number of CFUs earned. The decrease in the number of students enrolled to the 1st and 2nd years, is related only to the decrease in the number of admitted students, as established by MIUR.

Note: the number of students attending each year may not match the number of admitted students for that year because of distribution of transfer students (incoming and outgoing).

Tab. 9.3 - Number of students attending each DPVM year in 2012/2013 and total number of undergraduate veterinary students (including "fuoricorso" students indicated as >5th year).

	NUMBER OF STUDENTS PRESENT AFTER ADMITTED YEAR 1	NUMBER OF ADDITIONALLY ADMITTED STUDENTS*
1st year (2012/2013)	108	0
2nd year	103	6
3rd year	139	4
4th year	140	0
5th year	122	0
>5th year	438	-
Number of undergraduate veterinary students	1060	-

The two following tables show the number of students graduating annually over the past five years (**Tab. 9.4**) and the duration of studies (**Tab. 9.5**).

Tab. 9.4 - Number of students graduating annually over the past five years.

YEAR	NUMBER GRADUATING
2013	125
2012	123
2011	111
2010	139
2009	121
AVERAGE	123.8

Tab. 9.5 - Average duration of studies (distribution of students in years).

DURATION OF ATTENDANCE (YEARS)	NUMBER OF STUDENTS		
	YEAR 2013	YEAR 2012	YEAR 2011
MNY (5)	15	37	15
MNY+1	32	18	27
MNY+2	27	23	24
MNY+3	20	10	17
MNY+4 and >4	31	35	28

The data reported in **Tab. 9.5** show that approximately 50% of students graduate after 6/7 years of study and only 10-20% graduate on schedule.

These values refer to the previous Degree Programme. No students have yet graduated from new system, which started in AY 2009/2010, therefore it is not possible to predict at this time whether there will be an improvement in the average time to graduate.

Describe the requirements (in terms of completing subjects and examinations) for progression to a subsequent year of the course.

In the progression of their studies, students have to follow a recommended path, as some exams are preparatory to others. However, there are no particular requirements for progressing to a subsequent course year, except for the knowledge of English. Since AY 2012/2013, in fact, students enrolled to the first year must have achieved level B1 in English in order to progress to the second year. According to Italian law, no other restrictions are considered.

In the last two years, in order to limit the number of students who take an excessively long time to complete their studies, the number of credits acquired is continuously monitored by the Internal Quality Assurance System, year by year, and in case of very low achievement of CFU, potential causes are examined and possible corrective actions are implemented.

Describe the academic circumstances under which the Faculty would oblige students to leave the course.

With the exception of spontaneous withdrawal, according to Italian law, students are only obliged to leave the programme if they fail to sit exams for 8 consecutive years.

9.2 COMMENTS

Comment on standard of the students starting the course.

The 2005 EAEVE final report commented on the high number of new students and their highly variable background knowledge. Specifically: "It would be highly desirable to reduce the intake further, in particular since the strong need to revise the proportion of practical work in the course will substantially increase the staff workload" and "It would be beneficial to improve the selectivity of the entrance process so that all the student intake has an adequate grounding in the basic subjects that form the foundation of veterinary studies".

The present number of 90 students starting the course represents a significant improvement when compared to the 150 of 2005, and it is considered adequate to the structures, facilities, number of lecturers and support staff, including the availability of animals required for appropriate practical and clinical work.

The DPVM has no possibilities to plan adequate actions to reduce the variability of the background knowledge due to the rules of the national selection system. Enrolled students mainly come from high school (about 82%), with medium-high final mark, but sometimes their approach to university studies is still inadequate.

The selection process is probably not fully appropriate for selecting the best students for the veterinary profession, as does not provide the possibility to assess students' motivation for their choice and their real ability to practice.

A national commission is currently working to identify a new selection process, in order to select the more motivated students with a good attitude for the veterinary profession.

Comment on the ability of the Faculty to satisfactorily decide the number of students it can accept.

The Degree Programme Board proposes the number of students to be admitted, but the final number is determined by MIUR. The current number is considered adequate.

Comment on the factors that determine the number of students admitted.

The number of admitted students proposed by DPVM is determined considering the structure and resources of DIMEVET.

On a national basis, the negotiation with the professional stakeholders is becoming increasingly important, focusing on the opportunities for the professional employment of new graduates.

Comment on the adequacy of the facilities and teaching programme to train the existing number of students.

The facilities and teaching potential are considered adequate to the number of students currently enrolled in the last year. The reduction of the overall number can improve the quality of practical teaching activities.

Comment on the progress made by students in their studies, and the Faculty's ability to ensure that satisfactory progress is maintained.

According to the 2005 EAEVE final report: "Students take a very long time on average to complete their studies. This is a burden on a Faculty and measures should be taken to improve the situation".

The excessive duration of studies is still considered the main problem of the Degree Programme. The action plans of the ARRs in the last two years consider different actions (see details in the following paragraph "Suggestions") to reverse the trend (see **Annexes 1.8** and **1.9**).

In order to evaluate the effectiveness of the changes of the new DPVM, which started in 2009, the CFUs obtained by students in the new curriculum were monitored. The 2013 analysis showed an improvement in the acquisition of CFUs during the first year of the course. However, the benefits are progressively lost during the course of the studies. At the end of the third year, only 52% of students gained CFUs for that year. This percentage decreases again at the end of the fourth year.

The Degree Programme Board is discussing further measures, including changes in the examination system which is perhaps currently too lenient because it imposes no academic rigour in terms of restricting the time or number of repeated exams.

Comment on the percentage of students that will eventually graduate.

The number of students graduating on schedule is too low and reflects the excessive duration of the studies. Depending on the efficacy of the measures described above, the situation should improve.

9.3 SUGGESTIONS

If you are not satisfied with the situation, please state in order of importance any suggestions that you may have concerning this Chapter if you feel unhappy about the number of students admitted or the drop-out percentage and reason, if known.

The dropout rate in 2013 was 7.8%, lower than in previous years. This data is not considered of particular concern due to the current selection and enrolment methods.

The Italian university selection system permits applications to different DP entrance exams at the same time. Moreover, it usually takes a very long time (over two months) to obtain final confirmation of admission, so students admitted to DPVM could receive a late authorisation to enrol to another DP. These facts may cause transfer to other DPs (mainly Medicine).

As mentioned in the above comments, the average duration of studies is the main problem of the DPVM. In the light of the results obtained from the monitoring of the CFUs, a number of corrective actions were then identified. They include:

- Continuous monitoring of CFU earned by students each year;
- Discussion of all the possible problems that emerged for each year of the programme;
- Regulation of enrolment by transferring from other universities ;
- Improvement in organisation by:
 - Clarifying the timetable of lessons and introductory exams;
 - Prompt planning of exams;
 - Further reduction in teaching hours for each CFU;
 - Check on the consistency between CFU and Syllabi for each course unit.



CHAPTER 10
ACADEMIC AND
SUPPORT STAFF

10 ACADEMIC AND SUPPORT STAFF

10.1 FACTUAL INFORMATION

Historically in the Italian University system, there are two upper levels of teaching staff: Full Professor (FP) and Associate Professor (AP). The entry level is called "Ricercatore" (Researcher).

Although Italian law clearly states that the main task of Researchers should be research, in fact they are almost constantly involved in teaching activities.

For this reason "Researchers" are included in the teaching staff in **Tab. 10.1** and referred to as "Assistant Professors" in **Tab. 10.2**.

Pursuant to Italian Law 240/2010, the role of "Permanent Researcher" was replaced with "Fixed-term Researcher" (Ricercatore a tempo determinate-RTD) with a three-year contract. Briefly, two types of positions are considered:

- Junior Researcher: three-year project-based contract, renewable for a further two years;
- Senior Researcher: three-year contract. After this, the national qualification is required to become Associate Professor.

Current Italian legislation (Law 230/2005) states that full-time Full Professors and Associate Professors must perform no less than 350 hours of teaching activities per year, including lectures, exams and participation in collective bodies of the establishment and related activities.

The guidelines established by the Alma Mater according to Italian law state that teaching activities should be primarily a responsibility of Full and Associate Professors, who must perform at least 120 hours of lectures/academic year. The involvement of Researchers in teaching activities is encouraged but should be lower (60 hours/academic year for a permanent Assistant Professor).

Currently, there are 87 teaching staff (**Tab. 10.1**) involved in the DPVM (17 Full Professors, 37 Associate Professors, 33 Assistant Professors). Part-time professors (2) are calculated as 0.67 FTE. 4 AP are not part of DIMEVET (**Tab. 10.2**).

Additional DIMEVET Teaching staff (22) involved in teaching activities in other DPs of the School (Animal Biotechnology, Animal Production and Wildlife Management, Aquaculture and Ichthyopathology, Safety and Quality of Animal Production) are considered in **Tab. 10.2**.

Two Full Professors on sabbatical are not considered for the ratios.

In addition there are 5 contracts for teaching support (3 at the Veterinary Teaching Hospital, one in the Pathological Anatomy Service and one in the Infectious, Parasitic and Avian diseases Service). These contracts are calculated at 0.2 FTE/contract.

Outline how the allocation of staff to the Faculty is determined. Outline how the allocation of staff to the departments within the Faculty is determined.

Since the FVMBol was suppressed in 2012 and replaced by DIMEVET, the following description focuses on the allocation of staff to and within DIMEVET.

Several national laws and administrative decrees govern the employment of university personnel, although the autonomy of each University permits a certain degree of freedom in allocating its annual budget assigned by the Ministry.

Italian Law 240/2010 suppressed the Faculties; currently, the process of allocating financial resources for the employment of teaching and support staff, originates from the Ministry of Education, University and Research (MIUR) and primarily involves the universities and the Departments.

At national level, in the past few years the university system has experienced a consistent shortage of funding. Considering that staff costs represent approximately 90-95% of the total budget available

for the University System, it is easy to understand the reasons why, in the last 5-10 years, the various Italian Governments have introduced severe limitations in proceeding with new recruitment. This policy has clearly had a negative impact on both the renewal and reinforcement of teaching staff.

The main principles to be respected by each university for the allocation of staff budgets assigned by the Ministry depend on:

- The three-year Strategic Plan;
- Financial sustainability;
- The annual obligatory budget limits (the responsibility of this lies with the Ministry of the University).

Tab. 10.1 - Personnel in the establishment provided for veterinary training.

	BUDGETED POSTS (FTE)		NON-BUDGETED POSTS (FTE)		TOTAL (FTE)	
	VS	NVS	VS	NVS	VS	NVS
1. Academic staff						
Teaching staff (total FTE)	68.67	17.67			68.67	17.67
Research staff (total FTE)						
Others (contracts to teaching support) (FTE)			1		1	
TOTAL FTE	68.67	17.67	1		69.67	17.67
TOTAL FTE (VS + NVS)	86.34		1		87.34	
2. Support staff						
a) responsible for the care and treatment of animals	13				13	
b) responsible for the preparation of practical and clinical teaching.	10				10	
c) responsible for administration, general services, maintenance, etc.	26				26	
d) engaged in research work	20				20	
e) SAVM Administrative Staff	12.8				12.8	
<i>Total support staff</i>	<i>81.8</i>				<i>81.8</i>	
3. TOTAL STAFF	168.14		1		169.14	

In Table 10.2 supply information on the allocation of personnel to the various departments. The technical term 'Departments' refers to the component academic units of the veterinary Faculty and may have another name (e.g. 'Institute'). The titles of the academic staff grades in the table may differ from country to country, and should be modified to suit your particular situation.

Tab. 10.2 - Allocation of academic (veterinary surgeon and non veterinary surgeon) teaching staff – expressed as FTE – and support staff to the various departments.

ESTABLISHMENT NAME	ACADEMIC TEACHING STAFF						SUPPORT STAFF					
	FULL PROFESSOR		ASSOCIATE PROFESSOR		ASSISTANT PROFESSOR		TEACHING SUPPORT CONTRACT		TECHNICAL	ANIMAL CARERS	ADMIN.	
	VS	NVS	VS	NVS	VS	NVS	VS	NVS	(B+D+E)	(A)	(C)	
DPVM												
DIMEVET/SAVM	15	1.67	25.67	7	28	5	1	-	30	13	38.8	
Other Departments*	-	-	-	4	-	-	-	-	-	-	-	
Other DPs												
DIMEVET	-	-	2.67	3	8	8	0.2	-	2	2	2	
Total Staff	15	1.67	28.34	14	36	13	1.2	-	32	15	40.8	
TOTAL OF ACADEMIC TEACHING AND SUPPORT STAFF (FTE)	109.21						87.8					

Tab. 10.3 - Ratios students/staff.

		DPVM	Recommended values
R1:	$\frac{\text{n}^\circ \text{ undergraduate veterinary students}^{(1)}}{\text{n}^\circ \text{ total academic FTE in veterinary training}^{(2)}} = \frac{622}{87.34} =$	7.122	Maximum value: 8.381
R2:	$\frac{\text{n}^\circ \text{ undergraduate students at Dept.}^{(3)}}{\text{n}^\circ \text{ of total FTE at Dept.}^{(4)}} = \frac{748}{197.01} =$	3.797	Maximum value: 9.377
R3:	$\frac{\text{n}^\circ \text{ undergraduate veterinary students}^{(1)}}{\text{n}^\circ \text{ VS FTE in veterinary training}^{(2)}} = \frac{622}{69.67} =$	8.928	Maximum value: 11.057
R4:	$\frac{\text{n}^\circ \text{ veterinary students graduating annually}^{(5)}}{\text{n}^\circ \text{ VS FTE in veterinary training}^{(2)}} = \frac{120}{69.67} =$	1.722	Maximum value: 2.070
R5:	$\frac{\text{no. total FTE support staff in veterinary training}^{(2)}}{\text{no. total FTE academic staff in veterinary training}^{(2)}} = \frac{81.8}{87.34} =$	0.937	Recommended range: 0.505 – 1.907

⁽¹⁾ See Tab 9.3 "Fuoricorso" students, since they are no longer attending lessons, were not considered (1060 – 438 = 622).

⁽²⁾ See Tab 10.1.

⁽³⁾ The total number of undergraduate students attending all the DPs of DIMEVET (DPVM 622+ DP Aquaculture & Ichthyopath. 78 + DP Safety & Quality Animal Prod. + DP Animal Biotec 13 = 748).

⁽⁴⁾ See Tab 10.2 (Total of academic teaching and support staff-FTE 109.21 + 87.8 = 197.01).

⁽⁵⁾ See Tab 9.4 (average of the last three years).

Teaching staff

Within the annual budget, the Alma Mater defines the amount of resources for recruitment of teaching staff (Full, Associate and Assistant Professors) and allocates part of the budget to each Department. In the past, resources were distributed mainly according to the turnover deriving from the retirement of senior professors.

Very recently, the Alma Mater has introduced a new system for the distribution of the budget to the Departments, oriented more towards meritocracy. The new system for allocating budget resources, as assessed by the Board of Governors, is based on:

- 66% – objective criteria of teaching and research merit of the Departments;
- 33% – simple turnover needs.

At Departmental level, DIMEVET distributes the budget between the different Subject Areas (Settori Scientifico Disciplinari-SSD). Distribution is based on requirements including:

- The weighted number of teaching hours per teacher in each specific subject area;
- The establishment of new Programmes and/or Course Units,
- The retirement of senior professors;
- The research activities;
- Clinical and territorial-related activities.

Until recently, the process was based on systematic consultations between the Dean (currently the Head of the Department) and the senior representatives of the various subject areas, to draft a joint proposal for discussion and approval by the FVMBol (currently the DIMEVET) Board.

Recently, DIMEVET acknowledged the importance of defining general and meritocratic criteria used in combination with the above-mentioned requirements. The current work, recorded in the minutes of several DIMEVET Board meetings, aims to define a set of rules to be introduced in the forthcoming new integrated three-year Strategic Plan for Departments and Schools 2014-2016 (**Annex 10.1**)

Support staff

Different mechanisms apply to the employment of support staff. Alma Mater provides a certain amount of overall budget, and the Department Boards officially apply for resources. Each Department drafts a plan of requests ranked according to internal priorities. Finally, Alma Mater allocates the personnel units, balancing the different Department applications with the main areas of activity such as administrative, librarians, computing and laboratories. The General Director (head of administration) of the Alma Mater is responsible for assigning the requested staff to the Departments.

Indicate whether there are difficulties in recruiting or retaining staff.

Recruiting staff

The main difficulties experienced by the University system in recruiting new staff depend principally on:

- The severe shortage of budget and the consequent reduction in turnover;
- The excessive burden of bureaucracy in the staff recruitment process;
- The low average salary, which is not attractive for candidates from foreign countries.

The severe cuts in financial resources made by the various governments in the last 10 years has clearly had a negative impact on the renewal and reinforcement of teaching staff. These difficulties are worsened by the fact that the National University System, along with the whole Italian Public Administration, relies on staff with permanent employment contracts. Temporary positions are admitted,

but they are limited to a certain ratio (for instance, in Italian universities, no more than 20% of the support staff can be employed with a temporary contract).

Furthermore, the staff recruitment process is by open public competitive selection. To avoid the previous subjectivity of criteria expressed by the Boards appointed to recruit new teaching staff, the Ministry has adopted a new two-step system regulated by more objective criteria and considering:

- A national selection process, based on the objective recognition of scientific qualifications;
- Local open competitive examinations published by each University.

Candidates are required to pass the national open competition in order to apply for the local open competition.

At the time of writing this report, the new system is producing the first professors qualified at national level. Unfortunately, this process has been shown to be highly time-consuming and, hence, it potentially discourages researchers from considering a job in an Italian university.

The low salary, compared to foreign establishments, represents a significant discouraging factor to attract young candidates from foreign countries. This negative factor becomes even more evident in the recruitment of full professors, preventing the possibility to have "new blood" from different experiences.

Finally, even in the case of non-structured personnel employed on temporary contracts, the Italian law produces unnecessary difficulties in the possibility to renew this type of contract (*i.e.* those for young staff clinicians in the VTH). The result is that DIMEVET sometimes has to invent puzzling solutions in order to employ junior staff clinicians.

Retaining staff

Concerning the permanent teaching staff, the Italian employment system is definitely inflexible, and permanent positions are not easily exchangeable with other similar job opportunities. The result is a rigid situation, where staff start and end their careers in the same place. Therefore, among the permanent teaching staff, retaining is not a problem.

On the other hand, it must also be stressed that working at DIMEVET may represent a fully satisfactory condition, due to the presence of very good facilities, instruments, labs and stables along with well qualified technicians.

Like other similar establishments, DIMEVET has severe difficulties in retaining talented junior staff, selected and trained during their post graduate experiences (PhD courses or temporary contracts as staff clinician), due to the extreme difficulty in opening new positions.

Describe (if appropriate) any relevant trends or changes in staff levels or the ability to fill vacancies over the past decade.

Since the last EAEVE evaluation in 2005 several changes have been introduced in the organisation and it may be difficult to compare the situation at that time with the FVMBol and the current situation in DIMEVET.

Roughly, it can be stated that in 2005 the FVMBol had:

- 26 full professors
- 29 associate professors
- 45 assistant professors

In 2013, DIMEVET has:

- 19 full professors
- 39 associate professors
- 49 assistant professors

The data shows that, in spite of years of financial restraint, DIMEVET has been able to maintain and even increase the number of teaching staff. There is a shortage of full professors and there has been an increase in the number of associate and assistant professors.

With the sole exception of a reduction in staff in the biochemistry area, the balance between the other disciplines areas has been maintained.

From the support staff perspective, despite shortages in the total number, there has been an increase in the percentage of technicians with higher qualifications.

Currently, DIMEVET suffers both from the lack of nurses supporting clinical activities and qualified technicians employed in imaging and labs (*i.e.* microbiology).

Indicate whether it is easy to employ additional staff from service income (e.g. from revenues of clinical or diagnostic work).

As previously mentioned, Italian law makes it extremely difficult to maintain temporary positions. Apart from teaching activities, temporary contracts can only be signed as part of a scientific project, which can last no more than three or four years. Therefore, it is quite difficult to employ additional staff for any type of job.

Describe the regulations governing outside work, including consultation and private practice, by staff working at the establishment.

In compliance with national law and official internal guidelines, the Alma Mater allows professors and technicians to work outside under specific conditions. Staff members have to apply for each single activity and an appointed Committee of the Alma Mater assesses each application. The specific forms are available online on the UNIBO intranet website.

Describe the possibilities and financial provisions for the academic staff to attend scientific meetings.

In the event of participation in scientific meetings, the academic staff are entitled to reimbursement for travel and accommodation expenses according to a table which is differentiated by position. The funds used for these purposes are those allocated for research, and specifically belong to each single member of the academic staff.

Describe the possibilities and financial provisions for the academic staff to go on a sabbatical leave

Leave of absence for study of a limited duration and longer term leave (sabbaticals) are permitted without any variation in salary, but must be approved by the DIMEVET Board, provided that the teaching activity is temporarily covered by other staff members.

10.2 COMMENTS

10.2.1 Number of personnel employed

At present, DIMEVET has a reasonable academic staff/student ratio. The average age of the DIMEVET teaching staff has fallen significantly over the last 10 years and is considered particularly low when compared to other Italian establishments.

Despite the good student/teaching staff ratio, practical work in small groups requires higher numbers of teachers/tutors and there should be more flexibility and financial support for temporary positions, such as staff-clinician positions. Residency training and internships should not only be theoretically encouraged but should receive more substantial funding.

Although the overall number of support staff is perceived as adequate, the significant lack in certain areas, such as nurses in the clinical premises, negatively affects the quality of the work and demands excessive voluntary work from staff clinicians and students.

10.2.2 Remuneration levels

Teaching and non-teaching personnel salaries are fixed by law and are the same throughout all subject areas in the Italian public university system. Only very recently, Italian law has considered the possibility to reward meritocracy, but this concept has not yet been implemented. Italian professors have very limited controls in terms of timetable and prospective goals. The system does not encourage active persons to work at their best. The wages of Italian professors, even considering the differences in the cost of living between Italy and many other Western- or Northern-European countries, are exceptionally low. Salaries are significantly low especially when considering the temporary positions, the support staff and PhD students.

10.2.3 Difficulties in recruiting and retaining staff

The main difficulties in recruiting academic staff are described above. Budget shortages, low salaries and administrative bureaucracy are perceived as the most significant obstacles for proper recruitment.

Job security and the lack of controls over working times are certainly considered as positive factors, but the low salary is certainly not attractive. For example, veterinaries employed in the National Health Service are much better paid.

10.2.4 Percentage of veterinarians in the academic staff

DIMEVET has a very high percentage of veterinaries – 79% (69/87) – among its teaching staff. It is noticeable that many teachers of basic sciences, such as Biochemistry, Anatomy and Physiology, are veterinarians. This leads to a focused, veterinary-oriented teaching also in the so-called basic subject areas.



CHAPTER 11

CONTINUING EDUCATION

11 CONTINUING EDUCATION

11.1 FACTUAL INFORMATION

Please describe the role of the Faculty in providing continuing education.

The Italian Environment

Currently there is legal basis for mandatory Continuing Education (CE) for Italian veterinarians.

Continuing education oriented to Public Health and Food Hygiene veterinarians is provided by Universities, territorial branches of the NHS and, to a lesser extent, by private companies.

Conversely, post-graduate clinical CE oriented to private practitioners, is highly developed and mostly provided by private companies working nationally, since historically Italian Universities were not very competitive in providing appropriate continuing education in that area.

The many reasons included bureaucracy (making it difficult to provide flexible and appropriate assistance to the organisation teams), insufficient financial rewards and, finally, inadequate “professional appeal” of some teachers, especially in the clinical area. The profound renovation of the veterinary clinical world in the '90s was perceived much better by private organisations than universities. This produced a better level of specialisation in some highly qualified private practitioners rather than in the academic teaching staff (*i.e.* European Diplomates) and, consequently, resulted in the development of a very efficient private system providing continuing education.

Eventi Veterinari (EV) is the largest Italian company providing CE, supported on scientific issues by some of the main associations of private practitioners: SCIVAC (Italian Companion Animal Veterinary Association), SIVE (Italian Association of Equine Practitioners) and SIVAR (Italian Association of Large Animals Practitioners).

SCIVAC has been working in the CE field for 30 years, providing a significant amount of CE opportunities (<http://cms.scivac.it/it/eventi>). SCIVAC owns 18 specialist companies involved in the veterinary clinical area (<http://cms.scivac.it/it/societa-specialistiche>).

Several DIMEVET professors cooperate with SCIVAC and other companies providing CE, and are actively involved as directors and/or lecturers of CE courses. Furthermore, DIMEVET staff members are frequently invited to lecture at local seminars organised by practitioners and industries. These additional activities are not reported in the table and annexes attached.

DIMEVET

The current DIMEVET policy focuses primarily on establishing an appropriate organisation for undergraduate teaching and, thereafter, ensuring progress in post-graduate continuing education.

DIMEVET has always sought national and international collaboration in supporting CE events, organised both on the veterinary campus and elsewhere.

From the international point of view, it is worth mentioning the organisation of the ESVN-ECVN Neuroscience Advanced Courses in 2010 and 2014. These biennial courses, held once in USA and once in Europe, provide two weeks’ “full immersion” CE for ECVN and ACVIM (neurology) residents waiting to sit the exam. The Ozzano Veterinary Campus was chosen for both the 2010 and 2014 European editions.

Similarly, DIMEVET in Summer 2014 will host the two-week ECVP/ESVP Summer School.

From 2012, the courses were evaluated by the participants, who completed a questionnaire to assess:

- The quality of the presentation(s);
- The quality of the teacher(s);

- The practical relevance;
- The perception of the usefulness of the education provided;
- The quality of the facilities.

Between 2011 and 2013, DIMEVET teaching staff organised 149 courses and seminars, for a total of 714 hours of continuing education. In addition to CE education for private practitioners, every year DIMEVET organises a number of seminars for PhD students. The seminars are advertised on the DPVM website homepage and are open to all postgraduate students and DIMEVET teaching staff.

Similarly, seminars for rotating students are open to postgraduate students and private practitioners, and are advertised on the DPVM website homepage. Seminars occasionally involve international lecturers, guests of the DIMEVET.

- CE provided by DIMEVET in 2011-2013 is divided into the following categories:
- CE for veterinary surgeons and postgraduate students: 65 courses for a total of 425 hours (**Tab. 11.1**; Courses organised at DIMEVET for veterinary surgeons and private practitioners);
- CE for PhD students: 47 seminars for a total of 198 hours (**Annex 11.1**: Seminars organised at DIMEVET for PhD and other postgraduate students);
- CE for undergraduate and post-graduate students: 37 seminars for a total of 91 hours (**Annex 11.2**: Seminars organised at DIMEVET for undergraduate and postgraduate students);
- CE for postgraduate students in the framework of the agreement between DIMEVET and the Emilia Romagna Region, as described in chapter 12.

Under the agreement with the Emilia Romagna Region, teachers were involved in lecturing outside DIMEVET in CE courses for NHS veterinarians. Specifically:

- How Histology Helps the Planning of Therapeutic Strategies in Canine and Feline Mammary Carcinomas (4 and 22 May, 2 July 2012);
- Presentation on data input for the Regional database on animal tumours (4 and 22 May, 2 July 2012);
- Assessment of damages by predator in livestock (20-21 November 2012);
- West Nile Disease (19 June 2013).

Tab. 11.1 - Courses organised at DIMEVET for veterinary surgeons and private practitioners.

2011	TITLE OF COURSE/SEMINAR	TOTAL N ^o . OF HOURS
9-11 February	The use of statistics in biomedical research	18
25-26 February	Equine Perinatology	14
10 March	Veterinarians: workers or unemployed?	3
20 March	Dogs in the third millennium: social enrichments, environmental and natural fresh diet	8
1 April	Security management at the University of Bologna, figures and responsibilities	2
1 April	Health management of aquatic organisms at the exhibition parks	9
7-8 April	Seminar of neurosurgery of the dog and cat	12
13 April	Vets vs. Testudo. Do you know how to recognise them? Do you know how to cure them?	2
14 April	Inspection of the game hunted and the hunter education	4
17 May	Morphology and genetics in cats	3
26-28 May	VIII Meeting of the Italian Association of Veterinary Morphologists (AMV)	13
6 July	Genome sequence systems and 454 technology	1
10 September	Contrast enhanced ultrasound (CEUS) in veterinary medicine: technique and clinical applications	9
13-16 September	IVUSS (International Veterinary Ultrasound Society) Annual Meeting	13
30 September - 1 October	Wild and exotic pets: from semiotics to molecular biology	12
24 October	Lead and ethylene glycol poisoning in domestic and wild animals	3
27 October	Toxicosis and poisoning in wildlife: experience at the Veterinary Toxicology Unit of Caceres (Spain)	2
1-3 December	Experimental biology and nutrition: the science of living matter. Joint National Conference: 84 th SIBS Conference, 5 th ARNA conference	21
2-3 December	Flexible and rigid endoscopy of the digestive, respiratory and genital tract in small animals	18
6 December	Critical phases of the life of the dairy cow and role of the rumen	7
10-11 December	Workshop on Sialography	10
15 December	Food-born parasitic zoonoses in Eastern Europe	4
16 December	Recent developments in the application of new generation vaccines in the avian field	6

2012	TITLE OF COURSE/SEMINAR	TOTAL N ^o . OF HOURS
14 March	Echinococcosis: epidemiology, control, biotechnology and economics	4
17 March	Introduction to veterinary acupuncture	8
27-29 March	Prof. Keith Thompson: Bone and joint pathology in domestic animals	8
16 April	New vaccine approach to canine Leishmaniasis	3
8 May	Sperm quality and its relationship to stallion fertility	1
9 May	Methods of preparation and clinical application of blood components in veterinary medicine	3
14-16 May	Diagnostic Imaging of the Horse	10
15-16 May	Wet lab on Equine Perinatology	14
17 May	Specialist databases	3
21 May	The Veterinary Profession: E.N.P.A.V. and Professional Associations	2
23 May	Bees and their many virtues	5
30 May	Surveillance of Leishmaniasis in Emilia Romagna	5
1 June	Workshop on Veterinary Public Health	4
5 June	Clinical and pathological findings in canine parvovirus and coronavirus	2
7 June	Bovine reproduction	2
21 June	Updates in cytology	3
13 October	Veterinary Acupuncture: Biophysics in Energetic Medicine	7
30 October	Marine mammals and other megavertebrates in the Adriatic: are we close to the limit?	2
16 November	SIVSANC Seminar	4
18 November	5 th Course in Aquariums	6
23 November	Surveillance of Leishmaniasis in Emilia-Romagna	5
28 November	Quality, environmental sustainability, and food security in livestock production	2
6 December	Allergies and intolerances: clinical approach and nutrition	3
10-11 December	Ocular Pathology Seminars	6
14-15 December	Flexible and rigid endoscopy of the digestive, respiratory and genital tract in small animals	18

2013	TITLE OF COURSE/SEMINAR	TOTAL N ^o . OF HOURS
31 January	Urogenital surgery in the mare	3
13 March	EndNote Web and online digital archives	3
19 April	Genetically modified lines: technical aspects and management	8
20 April	XIII SIAV day of veterinary acupuncture	7
7 May	Nutrition of the critically ill patient	3
14 May	Veterinary Education: how to make the programme efficient and promote active learning of students	4
15 May	Enzymes	2
20 May	Morphology and genetics in cats	3
24 May	External fixation in small animals treatment of mandibular fractures by external factor	6
29 May	Transfusion medicine	6
31 May	Molecular basis and methods of classification of the coat in dogs and cat	2
20 June	News from the gut: neural stem cells, glia and diseases	2
26-27 June	Flexible and rigid endoscopy of the digestive, respiratory, genital and urinary tract in small animals	18
11-14 September	17th ESDAR Convention (European Society for Domestic Animal Reproduction)	16
10 November	2 nd Course of Herpetology	8
30 November	Feeding in equine reproduction	7
9 December	From the forest to the living room: biology, management and domestication of the wolf and wild cat	3

11.2 COMMENTS

Comment on the quality of the continuing education programmes in which the Faculty is involved. Comment on the degree of participation of veterinarians in the continuing education programmes in which the Faculty is involved.

DIMEVET considers CE an important tool for establishing relations with practitioners and veterinarians in the Public Health Service. The CE activity of DIMEVET is considered to be of good quality, and the organisers of the various courses were, on average, very satisfied with the feedback and the number of participants.

To date, the major weakness of the DIMEVET CE system is the lack of specific planning and a dedicated CE committee. Currently only the organisers of each single course evaluate feedback from questionnaires. The introduction of the IQAS has stressed the need to avoid extemporary initiatives and shift towards an organised system with the main task of managing:

- Interaction with external stakeholders;
- Opportunities to start joint ventures with private companies;
- Choice of subjects;
- Participants' feedback;
- Planning of future activities.

11.3 SUGGESTIONS

DIMEVET should:

- Establish a committee to plan and organise CE activities;
- Increase the number of joint ventures with private companies providing CE to veterinarians.

Alma Mater should:

- Encourage teachers to provide postgraduate CE;
- Plan appropriate financial rewards;
- Reduce the level of bureaucracy needed to start any initiative.



CHAPTER 12

POST-GRADUATE EDUCATION

12 POST-GRADUATE EDUCATION

This heading covers all further training leading to a diploma — special postgraduate studies, PhD courses, research training programmes, and national or European College specialised qualifications. Please provide details of all postgraduate training opportunities in tabular form under “Factual Information”.

12.1 FACTUAL INFORMATION

The Department of Veterinary Medical Sciences (DIMEVET) of the Alma Mater currently offers the following postgraduate educational opportunities:

- Resident Training Programmes (concerning: Neurology, Internal Medicine, Animal Reproduction and Animal Pathology);
- Professional Master’s Programmes (Veterinary Ultrasonography and Aquaculture and Ichthyology);
- PhD School in Veterinary Science;
- Research Fellowships.

12.1.1 Postgraduate Clinical Training (Interns and Residents)

Indicate whether students involved in this training receive a grant or a salary. Indicate any programmes that are certified by the European Board of Veterinary Specializations.

DIMEVET Diplomates

One of the recent approved DIMEVET strategies is the increase in the number of Diplomates in the teaching staff. With this objective, DIMEVET positively views all efforts made to start a residency programme, either internally or by joining foreign institutions. The number of European Diplomates in the DIMEVET teaching staff has increased since 2005. In 2013, DIMEVET started to fund residency programmes.

Tab. 12.1 lists the European Diplomates of a Veterinary College recognised by the European Board of Veterinary Specialisations (EBVS) who are staff members of the DIMEVET.

DIMEVET STAFF	COLLEGE
Cinzia Benazzi	European College of Veterinary Pathology (ECVP)
Barbara Brunetti	European College of Veterinary Pathology (ECVP)
Carolina Castagnetti	European College of Animal Reproduction (ECAR) (Equine Reproduction)
Federico Fracassi	European College of Veterinary Internal Medicine (ECVIM-CA)
Gualtiero Gandini	European College of Veterinary Neurology (ECVN)
Arcangelo Gentile	European College of Bovine Health Management (ECBHM)
Barbara Merlo	European College of Animal Reproduction (ECAR) (Biotechnology)
Giovanni Poglayen	European Veterinary Parasitology College (EVPC)
Carlo Tamanini	European College of Animal Reproduction (ECAR)
Marcello Trevisani	European College of Veterinary Public Health (ECVPH)
Daniele Zambelli	European College of Animal Reproduction (ECAR) (Small Animal)

Approved residency training programmes

Currently, there are four approved Residency training programmes at DIMEVET, including:

- European College of Veterinary Neurology (ECVN);
- European College of Veterinary Internal Medicine (ECVIM);
- European College of Animal Reproduction (ECAR);
- European College of Veterinary Pathology (ECVP).

Approved residency training programmes currently active under the supervision of a DIMEVET staff member (Tab. 12.2).

Tab. 12.2 - List of approved residency training programmes currently active under the supervision of a DIMEVET staff member.

COLLEGE	NO. OF RESIDENTS	YEAR (STATUS)	SALARY
European College of Veterinary Neurology (ECVN)	2	1 st & 2 nd	2
European College of Veterinary Internal Medicine (ECVIM-CA)	1	1 st	1
European College of Bovine Health Management (ECBHM)*	1		1
European College of Veterinary Pathology (ECVP)**	5	1 st & 2 nd	5

* The resident works under the supervision of a DIMEVET professor, but in another establishment (University of Naples)

** These residency programmes originate from an agreement between DIMEVET and the University of Milan. Residents share their activities between the veterinary campus in Ozzano and Milan.

Residency training programmes involving staff members (residents) of DIMEVET currently active under the primary supervision of Diplomates from foreign establishments (Tab. 12.3).

Tab. 12.3- List of Residency training programmes involving staff members (residents) of DIMEVET currently active under the primary supervision of Diplomates from foreign establishments

COLLEGE	NO. OF RESIDENTS	YEAR (STATUS)	SALARY
European College of Veterinary Internal Medicine (ECVIM-CA)	1 (Cardiology)	2 nd	1
European College of Veterinary Anaesthesiology (ECVA)	1	5 th	1

One DIMEVET staff member has concluded his ECVS residency programme (Large Animals) and is going to sit the Diploma examination.

All the residents in training receive a salary. The salary originates from different funds (*i.e.* PhD scholarships or teaching and tutorial contracts) partially or completely supporting the training period. To date, there is no specific funding for residency programmes.

Internship programmes

DIMEVET is currently planning to start internship programmes comparable to those of foreign institutions. A pilot project began in 2012 with two internal medicine internships.

The current role and work of the eight staff clinicians working in the Internal Medicine Service (SMI) and the Emergency and Critical Care Service (SARPA) is fully equivalent to that of an internship, since they are acting under the strict supervision of tutors. Specific policies and procedures to properly regulate this type of activity, making it equivalent to European internships, are currently being established and approved by DIMEVET.

“Laureato Frequentatore” (Attending graduate)

Historically, DIMEVET offers post-graduate students the opportunity to attend the Departmental clinical services for a maximum of one year in order to further study a specific veterinary area under the guidance of a university tutor. The persons involved are called “Laureato Frequentatore”, they require insurance coverage and do not receive funding or payment. They are free to attend occasionally or continually.

Professional Master’s programmes

DIMEVET offers post-graduate students the opportunity to attend Professional first or second level Masters programmes. Compared to the European situation, where “Master Level ” is considered the two or three year programme after bachelor level according to Bologna Declaration, in Italy the Masters programmes run parallel to first and second cycle degree programmes (**Fig. 2.1, Chapter two**).

To clarify: a first level Professional Master is open to graduates from a first cycle degree programme (DP), while a second level Professional Master is open to graduates from a second cycle (or single cycle DP, such as DPVM) DPs.

In 2013 DIMEVET ran the following Professional first or second level Masters programmes:

Two-year second level Professional Master in Ultrasonography of small animals (Coordinator: Prof. Mario Cipone);

First level Professional Master in Aquaculture and Ichthyopathology (Coordinator: Prof. Marialetizia Fioravanti).

Post-graduate Specialisation Schools (“Scuole di specializzazione”)

In Italy, the “Scuole di specializzazione” (run by Universities) are the only establishments entitled to issue official qualifications acknowledging specialisation in specific areas. Until last year, DIMEVET hosted three Schools of Veterinary Specialisations in:

- Food Inspection;
- Clinical Medicine of Domestic Animals;
- Animal Health, Livestock and the Science of Animal Breeding.

For political and financial reasons, from the current AY (2013-2014) the Alma Mater decided not run the Veterinary post-graduate school.

12.1.2 Research education programmes

Indicate the number of research students enrolled in different programmes. Indicate when and where and whether the students require a grant or salary.

12.1.2.1 PhD School in Veterinary Science

(<http://www.eng.unibo.it/PortaleEn/Academic+programmes/Research+doctorates/default.htm>)

The three-year PhD School in Veterinary Sciences began in 2010, when four previous PhD Programmes decided to join under a single Doctoral Programme. The PhD School in Veterinary Sciences has different training objectives depending on the curriculum chosen by the student. Students can choose to perform their research work in four areas, focussing on:

- Basic Sciences;
- Animal Production and Food Safety;
- Public Health;
- Clinical Sciences.

Following the process of IQAS of the Degree Programmes, the PhD School revised its policies and procedures in order to improve the level of research scientific and internationalisation.

The most significant changes include:

- Establishment of new rules for entrance exams;
- Credentials admitted for the final thesis: need to have published (or evidence of accepted publication) at least two papers in a peer-reviewed journal;
- Regular (twice yearly) analytical review of the state of the project;
- Strong encouragement to produce a research project involving foreign institutions.

The PhD Board supports the involvement of foreign teachers and stimulates the acquisition of the grade of European Doctor.

The number of PhD students enrolled in the PhD Veterinary Sciences School is given in **Tab. 12.4**.

Eight-two percent of veterinary graduates enrolled as PhD students in the last four years. DIMEVET also takes part in the PhD School of General Medical and Services Sciences, run by the Alma Mater together with the Departments of Medical and Surgical Sciences (DIMEC) and Biomedical and Neuro-motor Sciences (DIBINEM).

Tab. 12.4 - List of PhD students divided per year.

YEAR OF ACTIVATION	NO. OF POSITIONS*	NO. OF POSITIONS WITH SCHOLARSHIP GRANTED BY ALMA MATER
2011 (26 th cycle)	22 (16)*	11
2012 (27 th cycle)	25 (22)*	12
2013 (28 th cycle)	16 (13)*	8
2014 (29 th cycle)	22 (19)*	9+1

*the number of positions that were subsequently won by veterinary surgeons is shown in brackets

12.1.2.2 Research fellowships

Research fellowships are agreements between the research fellow and DIMEVET focused on the development of a project and generally co-funded by the Department and the Alma Mater. These contracts usually have renewable terms. All research fellows receive a salary for research development. All the specific research programmes co-funded by Alma Mater are generally addressed to PhD graduates, and at least 90% of these positions are occupied by Veterinary Medicine graduates.

The number of research students enrolled in Research Fellowships in DIMEVET, all full-time is listed in **Tab. 12.5**.

Tab. 12.5 - List of DIMEVET fellowships divided per year

YEAR OF ACTIVATION	NO. OF POSITIONS	DURATION (MONTHS)
2012	18	13 (12m); 2 (18m); 3 (24m)
2013	17 (+6)	11 (12 m); 1 (15m); 1 (20m); 1 (23m); 3 (24m) (6 are presently next to start)

12.2 COMMENTS

Comment on the number of postgraduate diplomas/titles awarded annually. Comment on the percentage of veterinarians participating in postgraduate research training programmes.

Residency and Internship programmes

Concerning residency programmes and European Diplomates, the Italian situation is very different compared to other European countries. For a long time, academia was very reluctant to join the training programmes and activities run by European Colleges, with the final result that many European Diplomates in Italy were employed in private practices rather than in Universities.

The current national effort aims to reverse this trend. DIMEVET was one the Italian veterinary establishments that invested in increasing the number of European Diplomates of Veterinary Colleges in its staff (see **Chapter one: Objectives**), either supporting training programmes of young clinical teachers abroad or starting internal training programmes. The first results include the increase in the number of European Diplomates, and the starting of intramural training programmes.

DIMEVET has planned to design internship activities in 2014, detailing policy and procedures. This action will finally regulate the training of part of the clinical staff, currently involved in activities that are almost identical to those defined in an Internship programme.

The establishment of internship programmes will make applications to post-graduate learning opportunities offered by the VTH more attractive.

PhD School in Veterinary Sciences

The PhD School in Veterinary Sciences is the result of the merger of four different PhD programmes, and depends on DIMEVET for support and organisation.

The PhD School has greatly improved the rules detailing the expected activities of its PhD students.

The periodical public review of the state of the art of the scientific activity of the PhD students has greatly improved the level and continuity of the research work.

DIMEVET is satisfied with the number of PhD students graduating each year.

Eighty-two percent of veterinary graduates enrolled as PhD students in the last four years, this figure is considered satisfactory.

12.3 SUGGESTIONS

Underline the need to increase the number of Diplomates in the teaching staff in the next Strategic Plan.

Increase funding for residency programmes, with the ultimate aim of increasing the number of DIME-VET European College Diplomates.



CHAPTER 13

RESEARCH

The details requested under this heading relate only to research experience offered to students during their undergraduate training, for example through project work.

13.1 FACTUAL INFORMATION

Indicate the involvement of undergraduate students in research, including the time spent, percentage of students involved and outcome required.

One of the major aims of DIMEVET is to educate veterinary students to apply more advanced scientific knowledge to improve their professional skills, as well as learn how to read and critically analyse the content of lectures, textbooks and scientific articles.

The Alma Mater Three-Year Strategic Plan 2010-2013 states that the goal of improving the quality of learning should also be obtained through the transfer of research results into educational activities. Accordingly, as the academic staff are actively involved in their research projects both as teachers and researchers, they apply their latest research knowledge in lecturing and educating students to think and critically evaluate all knowledge and data. Every teacher includes the most important scientific issues in that field in his/her lectures.

The library runs a free course on bibliographic search methods, aiming to increase students' confidence in the use of the main web-based scientific databases (e.g. PubMed, Scopus and ISI web of knowledge).

In addition to lectures, all undergraduate students have the possibility for direct, personal experience in research. In fact, as a compulsory part of the curriculum (9 credits), students have to produce a dissertation (Tesi di Laurea) under the supervision of a teacher or researcher. The oral presentation of the dissertation to a Graduation Board represents the final step for any undergraduate student to officially become a Doctor in Veterinary Medicine (DVM). General guidelines are provided on the DPVM website (<http://corsi.unibo.it/MagistraleCU/MedicinaVeterinaria/Pagine/prova-finale.aspx>). From AY 2012-13, specific guidelines concerning the preparation and discussion of the dissertation were also approved by the DPVM and are currently published and downloadable from the website (<http://corsi.unibo.it/MagistraleCU/MedicinaVeterinaria/Documents/2012/Linee%20guida%20prova%20finale%20LMCU.pdf>) (see also **Chapter five** for further details).

At least seven teachers, including the tutor, form the Graduation Board, and graduation sessions are planned at the beginning of each academic year. A copy of the dissertation must be submitted at least two weeks before the graduation session, and a member of the Graduation Board chosen by the Chairman must critically examine it. The dissertation discussion involves an oral presentation of approximately 20 minutes, followed by questions posed to the candidate by the Graduation Board members. After discussion, the Graduation Board allocates a score to the dissertation (up to 9 points), which is added to the average of marks obtained for curriculum exams (final graduation score).

Students can decide whether to undertake a critical review work ("Tesi compilativa") or experimental work ("Tesi sperimentale"). The topic is chosen from a range of proposals set by the teachers.

- In the "Tesi compilativa" (Review work), after a thorough investigation of the available literature in bibliographic databases, students report on the state of the art of a specific topic relevant to basic or applied veterinary sciences.
- In the "Tesi sperimentale" (Experimental work), in addition to the literature investigation, students actively participate in the phases of a research project under the supervision of their tutor, including study planning, sample collections, analysis and discussion of results. The experimental work can be carried out entirely within the DIMEVET laboratories or in part in external facilities, including private clinics, farms, slaughterhouses, zoos, and natural parks. A high percentage of students (about 10%) go abroad to carry out part of their experimental work

using specific funding made available by the School. The production of a “Tesi sperimentale” obviously requires much more time than a “Tesi compilativa”; nevertheless several students prefer the former opportunity, as it offers the chance to have contact with the real work field and understand the role of research in topics considered fundamental for their future employment. A weakness of this time spent preparing experimental work is the risk of extending the time to graduation.

Students generally select the topic of their dissertation between the end of the third year and the end of the fourth year, by direct contact with teachers to define the specific project/subject the student will be involved in. The choice of tutor and topic is done on the basis of personal preferences, also referring to the research topics available on the website of each laboratory (<http://www.scienzemedicheveterinarie.unibo.it/it/dipartimento/servizi/Servizi-e-Laboratori>) and on the personal website of each professor.

As detailed in **Tab. 13.1**, the vast majority of veterinary students graduate following the presentation of an experimental dissertation (76.5%). This figure reflects the contact of a significantly high percentage of students with the Research field.

Tab. 13.1 - Number of (experimental and review) dissertations according to EU subject research areas (Basic sciences, food safety and public health, clinical sciences and animal productions) in 2011-2013.

	BASIC SCIENCE	PUBLIC HEALTH AND PATHOLOGY	CLINICAL SCIENCES	ANIMAL PRODUCTION	TOTAL
Experimental work	58	92	90	30	270 (76.5%)
Review work	12	18	36	17	83 (23.5%)
TOTAL	70	110	126	47	353

13.2 COMMENTS

Comment on the opportunities for students to participate in active research work.

As previously widely detailed, the dissertation represents the main opportunity for undergraduate students to actively participate in DIMEVET research work. In addition to this significant opportunity, students with a personal interest in specific matters (e.g. surgery, internal medicine, pathology) may ask to attend these services as “intern students”, independently of their dissertation work. In that way, they have the possibility to have contact with scientific principles and methodologies, through their participation to scientific meetings, journal clubs and seminars.

Twice a year the PhD students of the Doctoral School exhibit the results of their current research activity and are available for discussion with undergraduate students and staff members, with the aim of disseminating information about the research topics running at DIMEVET. The aim of the School is also to develop students’ interest and enthusiasm in new and updated knowledge and to improve their skills as professional veterinarians after graduation (life-long learning). Confirmation of this lies in the number of veterinary graduates who apply for PhDs.

13.3 SUGGESTIONS

Will students be given more opportunity to participate in research activities? If so, how will this be done?

Every year students can apply for a grant to partially cover travel and living expenses for producing their dissertation abroad. This is an excellent opportunity for both students and researchers, to establish or strengthen scientific ties and agreements. It would be desirable to increase the budget available for this activity.



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