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Self Evaluation Report 2010 Stage one



Faculty of Veterinary Medicine University of Parma, Italy



Contributors

| Chap. 0 Introduction | Attilio Corradi, Francesca Miduri |
|--|---|
| Chap. 1 Objectives | Attilio Corradi, Francesca Miduri |
| Chap. 2 Organization | Attilio Corradi, Francesca Miduri, Alessandro Bernazzoli |
| Chap. 3 Finances | Paolo Martelli (in collaboration with Maria Dramis) |
| Chap. 4 Curriculum | Attilio Corradi, Ezio Bottarelli, Alberto Sabbioni, Barbara Bertoli |
| Chap. 5 Teaching and learning: quality and evaluation | Paola Superchi, Ezio Bottarelli |
| Chap. 6 Facilities and equipment | Rino Panu, Attilio Corradi (in collaboration with Manuela Malaggi, Rosario Martino Aricò, Luca Pelosi, Ernesto Mario Zambini) |
| Chap. 7 Animals and Teaching material of animal origin | Enrico Parmigiani, Attilio Corradi |
| Chap. 8 Library and learning resources | Fausto Quintavalla |
| Chap. 9 Student admission and enrollment | Ezio Bottarelli (in collaboration with Cristina Grossardi) |
| Chap. 10 Academic and support staff | Attilio Corradi, Alberto Sabbioni, Roberta Saleri, Antonella Fusari |
| Chap. 11 Continuing education | Antonio Ubaldi, Antonella Fusari |
| Chap. 12 Post-graduate education | Franco Brindani, Irene Alpigiani |
| Chap. 13 Research | Paolo Borghetti (in collaboration with Giacomo Gnudi, Enrico Bigliardi, Antonio Cacchioli, Manuela Zanardi, Ezio Bianchi, Giulio Grandi, Simone Taddei, Federico Righi) |
| Editorial Staff | Nicola Franchini, Francesca Miduri, Ezio Bottarelli |

Linguistic revision

Laura Helen Kramer



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List of acronyms used

| ANMVI | National Association of Italian Veterinarians |
|-----------------|--|
| APA | Provincial Association of Farmers |
| AUSL | Regional/National Health Service |
| CAT | Computer Assisted Tomography |
| CINECA | Inter University Consortium for the Automatic calculation of the North-East of Italy |
| CIP | Elective subjects (Corsi integrati professionalizzanti) |
| CNR | National Research Council |
| CUN | University National Council |
| DAH | Department of Animal Health |
| DAPF | , Department of Animal Production, Veterinary Biotechnologies, Food Quality and Safety |
| DCB | Degree Course Board |
| DD | Document Delivery |
| EBVS | European Board of Veterinary Specialisation |
| ECPHM | European College of Porcine Health Management |
| ECTS | European Credit Transfer System; 1 ECTS = 25 hours of learning activity |
| EFSA | European Food Safety Authority |
| FR | Emilia-Romagna |
| FC | Faculty Council |
| FII | Funds for Research coming from University |
| FTF | Full Time Fauivalent |
| FVMUP | Faculty of Veterinary Medicine, University of Parma |
| | Inter-library Loan |
| ISS | National Health Institution Istituto Superiore di Sanità |
| IT | Information Technology |
| IZSI FR | Zoo-prophylactic Institute of Lombardy and Emilia Romagna |
| ICE | |
| | Degree course in Livestock Science and Animal Production Technologies |
| | |
| MD | Ministerial Decree |
| MELR | Multifunctional Educational Laboratory Building |
| MILC | Mille Possarch Contro |
| | Ministry of Hoalth |
| | Ministry of Lipiversity and Research |
| MIUN | Ministry of Dublic Education |
| | Medical Veterinary and Pharmacoutical Riotachnologies |
| | Medical, veletiliary and Filannaceutical Biolectinologies |
| NULDE | Natural Interlationary Degree |
| NILDE | Network Interlibrary Document Exchange Ministerial Degree n. 500/1000 regulating the Old Curviculum for the Veterinery Degree |
| 00-2001 | Ministerial Decree h. 509/1999 regulating the Old Curriculum for the veterinary Degree |
| OFF OPAC CDN | Ordinary Financing Fund |
| OPAC SBN | Central Institute for the Catalogue of Italian Libraries |
| PEC | Pedagogical/Educational Committee |
| PPS | Processing Plants |
| KEK | Emilia komagna Region |
| SBN | National Library System |
| SDS | Scientific Disciplinary Sectors |
| SIVLP | Italian Union of Veterinary practitioners |
| SOP | EAEVE Standard Operating Procedures |
| SIE | Degree course in Equine Science and Technology |
| IAR | Administrative Regional Court |
| IC TCC | Trainingship Committee |
| TRACA | reaching Coordination Commission |
| IPASA | Degree course in Animal Production Technology and Food Safety |
| ULC | University Learning Credits |
| UNIPK | University of Parma |
| VCME | Veterinary Continuing Medical Education |
| VPN | Virtual Private Network |
| VTH | Veterinary Teaching Hospital |

Chapter 0

Introduction









Chapter 0

Introduction

Please provide an outline of the main features of the history of the Faculty in the period since the last evaluation visit or, if there has not been a previous visit, in the last ten (10) years. It should cover: he main organisational changes; New regulations relating to teaching; New buildings or major items of equipment; Main changes to the study programme; Important decisions made by the management of the Faculty, or by the authorities responsible for it; Major problems encountered by the Faculty, whether resolved or not

0.1 Historical background of the Faculty of Veterinary Medicine of the University of Parma (FVMUP)

Towards the middle of the XVIII century, given the success and benefits of the French experience in animal husbandry, the Italian Zooiatric Schools were born. European countries at this time were motivated in forming such Schools for various reasons: their governments played an active role in agriculture which was considered both economically and socially the most important resource for the State; to solve the problems concerning animal diseases, especially those with zoonotic threat; it was necessary to furnish armies with personnel skilled in raising, acquiring and caring for horses which were at the time the main mode of labour and transport. The Parma duchy, rich as its animal population was, could not remain indifferent to these needs. So in the year 1770 Ferdinando I of Borbone, then Duke of Parma, decided to begin a School of Zooiatrics. A young parmesan scholar named Giuseppe Orus, the son of French parents in the service of don Ferdinando, was sent to Alfort. This was already one of the most famous Schools in Europe. Here Giuseppe Orus learned veterinary practices and taught them once he returned to Italy. However, he discovered that changes within the government had put an end to plans for the teaching of Veterinary Medicine in Parma.

In 1814, with the fall of the Napoleonic state, all rights and properties were returned to the University of Parma together with complete independence from the University of Paris. At this time, Maria Luigia, the wife of Napoleon I, was head of the government of Parma, Piacenza and Guastalla duchy which was known for its farsightedness. Maria Luigia declared the reinstatement of all Schools within the University and added new ones, including the teaching of veterinary medicine. A young man from Reggio Emilia was chosen to occupy the chair of zooiatrics. Professor Mario Luigi Melchiore Benvenuti was already lecturer of veterinary clinical medicine at the School of Milan. He was called to Parma on 1814, to join the staff of the Faculty of Medicine-Surgery-Pharmaceutics as professor of veterinary medicine where he was considered a fine teacher. He remained as chair of veterinary medicine until his death on September. 30th 1839.

In 1841, Maria Luigia decided to open public exams for those interested in teaching veterinary medicine in Parma. Unfortunately, no one qualified enough was present to sit the exam. In 1843, another public exam was held, this time to choose young doctors with degrees in surgery to go elsewhere, sponsored by the government, in order to study zooiatrics. Two winners were Pietro Delprato and Francesco Lombardi who were sent to Milan to attend the two-year course held there. The course in veterinary medicine began officially in 1845 under the direction of Prof. Pietro Delprato, one of Benvenuti's most esteemed students, who directed the School during the first ten years. The School was a great success and both the government and the breeders in the area were quite satisfied with the service offered. In all total, 2 852 animals were treated (1 602 horses, 899 cattle, 343 dogs, 3 pigs, 2 sheep, 1 deer and 2 rabbits). 2 479 of these patients were completely cured, 176 improved, 136 could not be saved and 61 had to be put down. It should be remembered, however, that the majority of those animals that were put down had diseases which are contagious to humans such as strangles (horses), rabies (dogs), etc. or were used by the students for practical experience.

In 1891, the Boselli decree was approved which brought together all regulations concerning the direction of Italian Superior Veterinary Schools under a uniform code.

From 1900 -1922, the history of the veterinary School at Parma more or less paralleled that of the other Schools in the country. In 1931, with Royal Decree n° 1227 dated August 28th, all veterinary institutes were officially included in the Italian University system. The sight of the veterinary School were in Borgo Carissimi, in the centre of Parma.

The Faculty in Parma was continuing to improve the facilities of the School in order to meet the demands of the new University environment. The Faculty dedicated more time and resources to teaching activities and practical applications, together with a marked interest in research, particularly on varying themes important at the time, which are documented by numerous publications. In 1949, under the Dean of the Faculty A. Marcato, the first School of specialization was instituted in "Preservation and hygiene of alimentary products of animal origin". During the sixties, the buildings and facilities that made up the Faculty in Borgo Carissimi (in the city centre) had become obsolete. The University Rector Prof. Gian Carlo Venturini, the Deans of the veterinary Faculty Prof. Italo Vaccari and Prof. Delfo Artioli, the administrative director of the University Albino Arduini, proposed a new sight on which to construct a completely new Faculty on 42000 square meters next to the public abattoir at Cornocchio, only a few kilometres from the city centre. In 1973, all Institutes of the Faculty were installed in the new School. (Cabassi E. and Liuzzo G. 1995, L'insegnamento Medico Veterinario a Parma, Graphital Ed.).

FVMUP has been a member of EAEVE since 1988.

0.2 The City of Parma and its territory

Parma is a deeply European city. Over the centuries, it has been the centre of relations between the main European capitals, a role that became particularly significant after the Farnese period and before Maria Luigia, in the mid-eighteenth century, thanks to Duke Philip of Bourbon, who was the son of the king of Spain and who was married to Louise Elisabeth, Louis XV's daughter. This land has always been a crossroad for cultures and races. Marcel Proust used to describe it as "mauve in colour and sweet" and Stendhal chose it as the setting for his famous Charterhouse.

For centuries, Parma has been a centre of attraction for tourists who love the arts, music and good food. Antelami, Correggio, Parmigianino, Verdi, Toscanini are world-famous and still exercise their force of attraction through the remarkable works they left behind.

Statistics show that Parma ranks among the first European cities for its quality of life. Quality of life does not just mean economic wealth, but also social security and the enjoyment of the numerous activities it offers: music and theatre performances (there are ten theatres), concerts, cinemas, museums and libraries, art exhibitions, international antique (Gotha and Mercanteinfiera) and modern antique fairs, the most important national and international food fair (Cibus), gourmet restaurants serving excellent tasty regional dishes, and numerous sports facilities. Public and private health services are both of a very high quality.

Due to historical, climate and environmental circumstances, Parma is famous worldwide for several typical food products. Both its agricultural and food-producing capacity, and the proverbial demand and refinement of its inhabitants, allowed Parma to become the seat of the European Food Safety Authority (EFSA) in 2002.

The most famous gastronomical products are Parma Ham and Parmigiano-Reggiano.

0.2.1 Parma ham

In Italian there is a distinction between prosciutto crudo (literally "raw ham"), which is cured and what English speakers call "prosciutto", and prosciutto cotto ("cooked ham"), which is similar to what English speakers call "ham".

The production of genuine prosciutto di Parma is the story of a special relationship between man and nature. Since Roman times, the unique conditions of the Parma region have made it possible to produce the highest quality prosciuttos that have been appreciated by gourmets for centuries. "Prosciutto" is from the Latin perexsuctum meaning "dried" - an indication of the purity of Parma prosciutto production and its ancient roots. The processing of prosciutto di Parma has an ancient tradition. It was in 100 BC that Cato the Censor first mentioned the extraordinary flavour of the air cured prosciutto produced around the town of Parma in Italy; the legs were left to dry, greased with a little oil and could age without spoiling. A tasty meat was obtained which could be eaten over a period of time while maintaining its pleasant flavour. Even earlier, in 5 BC, in the Etruscan Po river valley, salted preserved pork legs were traded with the rest of Italy and with Greece. The similarity between present-day Prosciutto di Parma and its "ancestor" is evident. Fortunately the taste has not been lost with the passing of time: nowadays the tradition of prosciutto di Parma is as strong as ever.

The Parma ham is stamped by the "Consorzio di tutela del Prosciutto di Parma" with a five-cornered crown, indicating that the ham has been cured and controlled for no less than 12 months. It is considered "sweet" for its delicate taste, distinguishing it from the other kinds of ham produced in Europe. Its origin is very old: the pork meet manufacture is already mentioned and appreciated by the Romans and it will improve along the centuries until today's excellence. The Prosciutto di Parma is produced on Parma hills, especially around Langhirano. Every year 10 millions of pieces are cured.

0.2.2 Parmigiano-Reggiano cheese

Parmigiano-Raggiano is one of a category of hard and long ripened cheeses, called "grana", because of their grainy texture. They are made throughout northern Italy and for centuries a war was waged over whose grana was considered the most prestigious. It is not known exactly when the production of Parmigiano-Reggiano cheese started; however, there is documentary evidence confirming that Parmigiano-Reggiano che-

ese was being produced in the Parma area of Italy at least seven hundred years ago. Over the years, Parmigiano-Reggiano found fame all over Europe. In Italy, Boccaccio dreamt of a huge pile of grated Parmigiano-Reggiano in his Decameron of 1348, in France it is said that Moliere would eat nothing else in the final years of his life and in England, Samuel Peyps hastily buried his Parmigiano-Reggiano to save it from the Great Fire of London.

Parmigiano-Reggiano, a world famous cheese, known for its excellent nutritional properties, can only be produced within a delimited area between Parma, Reggio Emilia, Modena and two small parts of Mantova and Bologna's Provinces. Its name originates from the lands where it was born and which still remain its major producers.

Data of the territory

Tables 0.1 to 0.3 report the livestock farms and food industry resources currently present in the Province of Parma and in neighbouring Provinces of the Emilia-Romagna (ER) region.

| | Parma | | Piacenza | | Reggio Emilia | | Modena | |
|---------------------|-------------|------------------|-------------|------------------|---------------|------------------|-------------|------------------|
| SPECIES | n° of farms | n° of animals | n° of farms | n° of animals | n° of farms | n° of animals | n° of farms | n° of animals |
| Bovine | 1 889 | 150175 | 1106 | 81734 | 1736 | 142463 | 1 488 | 93165 |
| Swine | 160 | 169235 | 105 | 123 823 | 310 | 332962 | 256 | 338828 |
| Small ruminants | 323 | 7130 | 177 | 4761 | 310 | 5662 | 223 | 6575 |
| Equine | 939 | 4216 | 817 | 4450 | 1267 | 5218 | 1219 | 4104 |
| Poultry | 21 | 320950 | 32 | 72760 | 33 | 434690 | 32 | 670400 |
| Other avian species | 4 | 400 | 33 | 3 0 1 0 | 18 | 20509 | 10 | 300 |
| Rabbit | 0 | 0 | 8 | 6000 | 18 | 20895 | 225 | 26000 |
| Bees | 615 | 12520 (hives) | 429 | 7 194 (hives) | 636 | 10756 (hives) | 625 | 14003 (hives) |
| Game Fowl | 64 | 351500 | 8 | 15200 | 13 | 20393 | 2 | 5 000 |
| Fur | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 000 |
| Fish | 22 | / * | 0 | 0 | 44 | / * | 48 | / * |

Table 0.1: Livestock resources in different Provinces of ER * not indicated

| | Parma | Piacenza | Reggio Emilia | Modena |
|-------------------------|-------|----------|---------------|--------|
| Beef | 16 | 25 | 19 | 24 |
| Poultry (and others) | 0 | 2 | 2 | 2 |
| Rabbit | 0 | 1 | 1 | 2 |
| Game Fowl | 0 | 0 | 0 | 1 |
| Fish | 9 | 2 | 4 | 8 |
| Milk and Dairy Products | 310 | 53 | 176 | 127 |
| Eggs | 4 | 3 | 4 | 5 |
| Honey | 53 | 38 | 61 | 78 |

Table 0.2: Slaughterhouses/Dairy processing plants/etc. in the Province of Parma and in neighbouring Provinces of the ER region.

| | Parma | | Piacenza | | Reggio Emilia | | Modena | |
|---------------|------------------------|--------------------------|------------------------|--------------------------|------------------------|--------------------------|------------------------|--------------------------|
| SPECIES | Slaughtered animals | Dissected meat (tons) |
| Bovine | 12877 | 2837 | 3774 | 16970 | 145 889 | 23759.92 | 199211 | 171550.9 |
| Equine | 3275 | / | 99 | / | 6699 | 360 | 49 | / |
| Swine | 1 094 356 | 173364 | 12215 | 730 | 27330 | 21205.51 | 1471622 | 478123.9 |
| Sheep | 243 | 25 | 85 | / | 2787 | 91 | 2829 | 1 |
| Goats | 94 | 1 | 146 | / | 8 | / | 22 | / |
| Rabbit | / | / | 12 400 | / | 318925 | 22.3 | 1119674 | 10.8 |
| Avian species | / | 631 | 687 036 | 572 | 738762 | 10599 | 1458786 | 193.7 |
| Fowl | / | 1 | 1 0 6 3 | / | / | / | / | / |
| Other | / | / | 3 | / | / | / | / | / |

Table 0.3: Number of slaughtered animals and amount of dissected meat (in tons) in the Province of Parma and in neighbouring Provinces of the (ER) region.

0.3 The main organisational changes since 1992

The first EAEVE full evaluation of the Faculty of Veterinary Medicine of the University of Parma took place in May 1992.

The major organisational changes carried out from this first visit focused on correcting the primary deficiencies, as suggested by the EAEVE Commission (Prof. Lage from Portugal; Dr. Marion from Belgium; Prof. Toma from France; Prof. Van den Bergh from Netherlands), including:

- improvement in practical and clinical training
- improvement in practical training in obstetrics
- training in epidemiology.

In 2000, following changes in the University organization, two departments were for-

med (substituting the previous "Institutes"): the Department of Animal Health (DAH) and the Department of Animal Production, Veterinary Biotechnologies, Food Quality and Safety (DAPF) (see Chapter 4).

0.3.1 New regulations relating to teaching & main changes to the study programme since 1992

Many changes have been made in the curriculum for the degree in veterinary medicine since the last visit by the EAEVE in 1992. For example, the Ministerial Decree 25/02/1993 foresaw several important new modifications to the degree course, including:

- programmed admission for enrolling in the academic year 1995-1996 (limited to 110 Italian students and 10 foreign students)
- compulsory attendance for all teaching activities
- four years of instruction with subjects required by all students (4 100 hours and 32-33 exams)
- "professional modules" offered by the Faculty and chosen by each student in the fifth year (for FVMUP these included Breeding technology and pathology of large animals, Hygiene and quality of alimentary products of animal origin, Health and well-being of companion animals).

Major reorganization of the Italian university educational system was introduced by the Ministerial Decree (MD) of the Ministry of University and Research (MiUR) no. 509 from 1999 (MD 509) and subsequently reformed with MD 270 in 2004. MD 509 replaced traditional undergraduate courses lasting 4 and 5 years with a two-level system: the 1st level degrees last 3 years (professional degrees), and the 2nd level (specialist) degrees last a further 2 years, introduced the University Learning Credits (ULC) and established that the individual work cannot be less than the half of the total amount of ULC hours except that in the case of activities such as experimental and practical learning. However, more recently, MD 270 has modified this latter indication, and it has established that the fraction of time that each student must dedicate to individual learning is determined by the Teaching Regulation defined by each University.

Currently in FVMUP, 1 ULC corresponds to 25 hours of learning commitment (lectures/practical and individual work) for each student; thus in FVMUP 1 ULC corresponds to 1 ECTS. Hereafter, within this document, we will use the ECTS acronym.

0.3.2 New buildings or major items of equipment since 1992

Since the last visit to FVMUP in 1992 (Dean Prof. Giovanni Ballarini), several new buildings and major items of equipment have been added to the existing facility (for

further detail, see Chapter 6). These include:

- 1992 Food Hygiene and Meat Inspection Laboratories
- 1998 Educational Computer room
- 1999 Renovation of buildings according to safety standards
- 2001 Cafeteria
- 2001 Modernization of Electrical system
- 2001 Equine stud farm
- 2002 Reconstruction of the old surgery building and equipment
- 2002 Reconstruction of Main Library building
- 2003 Construction of Obstetric Clinic buildings and equipment
- 2004 Laboratory of Infectious diseases
- 2004 Laboratory of Parasitology
- 2004 Construction of Endocrinology and Pharmacology building
- 2004 Installation of Multimedia Video-projectors in the Lecture Halls
- 2005 Construction of the Veterinary Teaching Hospital (VTH) and equipment
- 2005 Pharmacology and Toxicology equipment
- 2005 Construction of Large Animal stables
- 2009 Installation of Wi-Fi access to internet in all Faculty buildings for teaching/ Support Staff and students

0.3.3 Important decisions made by the management of the Faculty, or by the authorities

As stated above, the Faculty has addressed the observations and suggestions made during the 1992 visit and, whenever possible, improvements have been carried out. In the years following the visit, the University directed most of its attention and investments to the construction of the Veterinary Teaching Hospital (VTH) and the latest development of our Veterinary Faculty is the re-activation of the 24-hour service. A group of young veterinarians, named Veterinary Residents, have been selected to be on duty during the night. Personnel on night duty includes one Veterinary Resident and two students in professional clinical training "TIROCINIO".

Funding has recently been approved for several projects which are underway at the moment (see Chapter 6). These include:

- large animal isolation
- living quarters for 24 hr service personnel
- heifer stable

- clinical lecture hall (85 seats)
- 2 lecture halls (23 seats each)
- renovation and restructuring of: Multifunctional lab 1 and 2 and necropsy room

• renovation of teaching and research facilities with respect to safety standards. More recently (July 2010), the University of Parma's Board of Governors, have allocated 2 200 000 euro (resolution n° 479/28817, Board of Governors 29th July 2010) for the construction of a Multifunctional Educational Laboratory Building (MELB - see Chapter 3).

0.3.4 Major problems encountered by the Faculty, whether resolved or not

The major problems still faced by the FVMUP are common to most Italian Veterinary Universities:

- the trend, started last year, of a reduction in funding from the Government, with increased difficulties in hiring teaching and technical staff
- the low level of decisional autonomy at Faculty level
- the student profile, with students mostly highly motivated for small animal medicine and for livestock animals and not for other specialities of veterinary medicine.

Chapter 1

Objectives









Chapter 1

20

Chapter 1.

Objectives

1.1 Factual information

Indicate whether there is an official list of the overall objectives of the Faculty. If this is the case, please indicate these.
Who determines the official list of objectives of the Faculty?
By what procedure is this list revised?
Do you have a permanent system for assessing the achievement of the Faculty's general objectives? If so, please describe it. If there is no official list, please indicate the objectives that guide the Faculty's operation.

1.1.1 Objectives of the Faculty

The Faculty of Veterinary Medicine of the University of Parma (FVMUP) is currently located in the immediate north-western outskirts of the city, a strategic position that allows collaboration with several important external facilities like the Slaughterhouse, the National Health Service, the Feed Meal Manufacturing, the Zooprophylactic Institute and the Municipal shelter, all of which are within a 2 km radius from the Faculty. The mission of the FVMUP is clearly stated in its Teaching Regulation (Annex 1.1 - RAD model). This states that the mission of the FVMUP is "to benefit society through the education of veterinarians and the protection of animal health and of consumers. This includes the diagnosis, treatment, prevention and understanding of animal diseases; the conservation of livestock resources; the promotion of public health and the advancement of medical knowledge through professional and graduate education, research and service in the broad discipline of veterinary medicine."

In particular, the overall objective is to provide high-quality education to all students in veterinary medicine and to offer post-graduate courses in a broad spectrum of Veterinary fields (learning, problem solving), as well as continuing education. In all cases, the effort is to develop the practical aspects of veterinary medicine and related services so as to guarantee the health and welfare of both animals and humans. More specifically, the mission of the Faculty is to:

- 1. provide an excellent, comprehensive professional curriculum that educates students in the broad field of veterinary medicine, encourage critical and analytical thinking and prepare students for life-long learning and professional growth
- 2. promote growth and excellence in research in order to improve the health of animals, assure the wholesomeness of food animal products and contribute to the understanding of basic mechanisms or animal models of disease
- 3. provide an intellectual and physical environment that fosters creativity and enhances scholar activity
- 4. educate future academics and research scientists by involving graduate and post-graduate students in high quality teaching and research programs
- 5. provide continue education, extension services and consultation
- 6. become the main scientific and professional reference for veterinarians and for society in the Emilia-Romagna Region as well as in neighbour Regions.

The prime objective of the Faculty is the 5-year curriculum necessary to obtain the degree in Veterinary Medicine (see Chapter 4).

The specific academic objectives during the degree course in Veterinary Medicine are the following:

- essential theoretical knowledge of basic subjects and basic sciences, within the framework of future professional application
- ability to detect and critically assess the state of health, disease and welfare of the individual animal and animals in breeding and production, including aquatic organisms
- knowledge of human-related zoonosis. Knowledge of mechanisms in pathology, physiopathology and immunopathology as well as organ and systemic pathology
- adequate knowledge of the laws, regulations and administrative provisions related to the veterinary profession
- adequate clinical and other practical experiences under appropriate supervision.

Graduates must also have the ability to prepare medical and surgical procedures aimed at eliminating disease or illness:

- knowledge of epidemiology, diagnosis, prophylaxes, therapy and control of infectious and parasitic diseases of animals
- ability to detect and critically assess the state of health, food hygiene, quality and alterations of animal products which can negatively affect human health; they must also know the production and transformation processes of animal products
- · knowledge of animal nutrition, feeding and breeding improvement techno-

logies

- ability to detect and critically assess the impact of animal breeding on the environment
- · ability to plan, enact and control public veterinary health care plans
- ability to manage and control the production chain of animal products and their safety
- written and oral mastery of at least one European Union language in addition to Italian.

Graduates in veterinary medicine deal with the protection of animal health and human health (zoonosis, food borne) and contribute to protecting the environment. Other than private veterinary practice, veterinary graduates can work in the Department of Public Health (National Health System, Zooprophylactic Institutes), Armed Forces, public and private industry (livestock, pharmaceutical, feed and processing of animal origin foods) and in research centres.

The academic activity in the disciplines related to basic learning includes in-depth study of the subjects of chemistry, biochemistry, anatomy and physiology, which are all necessary for the understanding and intervention in biological phenomena.

Collateral teaching objectives have been identified by the FVMUP in order to fulfil the professional and cultural needs of the society.

Other Degree Courses

The following degree courses see a direct or indirect involvement of the Faculty:

- 3-year Degree course in Equine Science and Technology (STE) (it will be closed next year)
- 3-year Degree course in Animal Production Technology and Food Safety (TPA-SA) (it will be closed next year)
- 3-year Degree course in Livestock Science and Animal Production Technologies (LAPT). New institution, only the first two years are at the moment active
- 2-years Degree Course in "Medical, Veterinary and Pharmaceutical Biotechnologies" (MVPB) coordinated by the Faculty of Medicine and Surgery.

International Co-operations

Improving the quality of teaching is also considered an important objective at FVMUP. Therefore the Faculty is highly active in establishing co-operation with European and non-European countries aimed at the improvement of teaching methods and the development of research in veterinary science. To this end, the FVMUP has stipulated international agreements with the University of:

- Pontificia Universidad Catolica Argentina "Santa Maria", Buenos Aires, Argentina
- Universidad de Buenos Aires, Argentina
- Universidad Nacional de La Plata, Brazil
- Universidade Federal De Minas Gerais, Pampulha Belo Horizonte, Brazil
- Universidade Federal Do Rio Grande Do Sul (UFGRS), Porto Alegre, Brazil
- Univille Universidade Da Regiao De Joinville, Joinville, Brazil
- Universitè De Montreal, Montreal, Canada
- Universidad de la Republica de Montevideo, Uruguay

- Fundacion Universitaria Juan De Castellanos, Tunja, Colombia
- Universitatea De Stiinte Agricole Si Medicina Veterinaria Cluji-Napoca, Cluji-Napoca, Romania
- Chulalongkorn University, Faculty of Veterinary Sciences, Bangkok, Thailand
- Cornell University Ithaca, New York, USA

The FVMUP is also an active member of the LLP/ ERASMUS programs with the Veterinary Schools of:

- Barcelona
- Bern
- Budapest
- Cordoba
- Extremadura
- Hannover
- Lyon
- Madrid Alfonso X "El Sabio"
- Madrid Complutense
- Thessaloniki
- Toulouse
- Valencia Cardenal Herrera
- Zaragoza
- Zurich

The Faculty Coordinator for the LLP/ ERASMUS programs is Prof. Attilio Corradi, from the Department of Animal Health.

Another important teaching objective of the FVMUP is the organisation of postgraduate continuing education courses. In the 2009-2010 academic year the Faculty offered a wide range of opportunities including the European College of Porcine Health Management (ECPHM) Residency Program, one Master courses, 3-year Specialisation Schools (see Chapter 12). The following is a list of post-graduate educational opportunities:

- a 3-year International Master course on "Food Technology" (second level degree), activated in collaboration with the Universidad de Buenos Aires, Faculdad de Agronomia (UBA) (see Chapter 12.1.5)
- one European College of Porcine Health Management (ECPHM) Residency Program
- three 3-years Postgraduate Veterinary Specialisation School in:
 - animal health, breeding and livestock production. This School has recently signed a cooperation agreement between FVMUP, ANMVI (National Association of Italian Veterinarians) and the Peoples' Friendship University of Russia, Faculty of Agronomy (see Chapter 12)
 - swine Pathology
 - food Inspection and Public Health.

With regards to research training, the FVMUP is organised to provide a constantly updated training in the broad field of Basic and Applied Veterinary Science. To fulfil this objective, the Faculty offers research opportunities consisting in PhD positions in:

- national and European Legislation on Food safety and control
- experimental and Comparative Immunology, and Immune-Pathology
- domestic animal Orthopaedics
- animal production, Veterinary Biotechnology, Food quality and safety
- animal Health, breeding and livestock productions.

For research fellowships see Chapter 12.

Do you have a permanent system for assessing the achievement of the Faculty's general objectives? If so, please describe it. If there is no official list, please indicate the objectives that guide the Faculty's operation

1.1.2 Systems for assessing the achievement of the Faculty's objectives

1.1.2.1 Faculty performance indicators

All decisions, including those regarding the revision of the Faculty objectives, are taken by the Faculty Board under the supervision of the Dean. Revision of the overall

objectives is carried out at regular intervals. Every 3 years the FVMUP (along with all the other faculties of the University of Parma) discusses a target programme to implement the University Strategic Plan and its policy programme. The University of Parma monitors the performance of all its faculties using unbiased performance indicators (e.g., number of completed degrees, employment ratios for graduates, number of PhD diplomas achieved, number of publications, amount of research funding, etc.). Following this assessment, the target programme re-defines all the Faculties' objectives and plans their implementation.

1.1.2.2 Degree Course performance indicators

The two Faculty bodies which play a major role in assessing how effectively a Faculty accomplishes its teaching objectives are the Faculty Board and the Degree Course Board (see Chapter 2). Among the indicators that are considered important at the Faculty level, the FVMUP includes the teaching quality assessment system, the examination rates of the students, the reports of the teaching staff, and the fallout from contacts between the Faculty and non-academic private and public health sectors.

1.1.2.2.a Assessing teaching quality

Towards the end of each semester questionnaires are anonymously filled out by all students. These questionnaires are not aimed only at evaluating teachers, but also Faculty's premises and organisation as well as services offered. The answers from these questionnaires are processed and the results used by the Faculty to improve its organisation and services and by the President of the Degree Course (and the Dean too, if necessary) to address problems and issues related to quality of teaching. For further information on how teaching quality is assessed the reader is referred to Chapter 5.

1.1.2.2.b Examinations and their passing rates

Examinations can be oral, practical or written, or a combination of the above, and are normally taken at the end of each course. However, periodic assessments can also take place throughout the course. The grading of the courses is expressed in thirtieths, 18/30 being the lowest passing score (for more details see Chapter 4).

1.1.2.2.c Reports of the teaching staff

Every three years Teaching Staff is required to submit to the Faculty Board a report encompassing research and teaching performance. In order for a report to be approved, the amount and quality of teaching are highly considered, while for scientific production particular attention is given to the papers published in peer-reviewed journals, as well as whether or not they result from high-standard collaborations. Although such reports historically have not been relevant enough for Teaching Staff members to lose their jobs or to see their salaries being curbed, two considerations should be made in this respect:

- 1. at the FVMUP, these reports have always been presented by the Dean and discussed in details, sometimes even in a lively way. This has put pressure especially on younger academicians who are striving to do their best in order to avoid having their shortcomings being addressed in front of the entire Faculty Board
- 2. the Italian Ministry for Public Administration, Prof. Renato Brunetta, has recently launched a "crusade" against state workers who do not work hard enough, implementing a number of new regulations meant to improve working efficiency as well as speed up identifying candidates who might lose their job or see their salaries curbed. Although this has not significantly impacted on the Italian University system, some Universities have already set up minimum standards for publication threatening those who do not reach those minimum standards to be precluded from the (so far automatic) national biannual salary increase (based on inflation rate).

1.2 Comments

In your view, to what extent are the objectives achieved? What, in your view, are the main strengths and weaknesses of the Faculty?

The training objectives of our Faculty are currently being met for the most important facets of the Veterinary profession, such as Clinics, Animal Health and Production, Hygiene and Food Technology. They are also being fulfilled for the various aspects of biological and biomedical scientific training which are needed for a proper practice of the characteristics included in the recommendations enumerated by EAEVE and Italian authorities.

The Faculty 's leading strengths are:

- its inclusion in a University of great prestige and with a long tradition
- the average age of its staff members is fairly low
- a limited, programmed number of students (< 60)
- in the last years the Faculty of Veterinary Medicine of Parma is classified many times in the top five of Faculty ranking in the Censis survey

- its collaboration with the Municipal Slaughterhouse and with the Zooprophylactic Institute of Parma and the other of the Lombardy and Emilia Romagna Regions
- its collaboration with other Faculties, such as Faculty of Medicine and Surgery, Faculty of Pharmacy through interdisciplinary projects (the Degree Course in Medical, Veterinary and Pharmaceutical Biotechnologies)
- the possibility for online access to a large number of scientific journals through the University Library system (see also Chapter 8)
- the excellent relationship between professors and students
- its inclusion in a geographic area (North Italy) of leading importance in the country for animal production and general economic conditions
- broad and heterogeneous international relationships (Erasmus, Socrates, Leonardo projects).

The Faculty's most significant weaknesses are:

- the fact that, unlike human hospitals, veterinary teaching hospitals are not included in the National Health System as this would make it easier to have clinical positions paid on the regional budget
- the fact that the hours spent by the Teaching Staff within the professional training "TIROCINIO" activity are not officially recognized and therefore not included in the personal teaching work load of academic 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.

- The University should recognize in the personal teaching work load of academic staff the hours spent in the professional training ("TIROCINIO") activity.
- The University/ MiUR should give the FVMUP the tools to reward the best evaluated teachers.
- National/Regional Health Authorities should recognize the Veterinary Teaching Hospital as part of the health system.

Chapter 2

Organization









Chapter 2.

Organization

2.1 Factual information

Details of the Faculty

The Faculty of Veterinary Medicine of the University of Parma is one of University of Parma's twelve Faculties: Agriculture, Architecture, Economics, Pharmacy, Law, Engineering, Arts & Philosophy, Medicine and Surgery, Veterinary Medicine, Psychology, Political Sciences, Mathematics-Physics and Natural Sciences. The official University address is the following:

University of Parma Via Università, 12 43121 - Parma (Italy) University Web site: http://www.unipr.it Prof. Gino Ferretti Rector: Tel. +39 0521 034200/201/363 Fax +39 0521 034357 e-mail: rettore@unipr.it **Deputy Rector:** Prof.Carlo Chezzi Tel. +39 0521 034230 e-mail: carlo.chezzi@unipr.it Administrative Director: Dott. Rodolfo Poldi Tel. +39 0521 034151 Fax +39 0521 034361 e-mail: rodolfo.poldi@unipr.it

2.1.1 Details of the Faculty of Veterinary Medicine of Parma

| Name of the Faculty: | Facoltà di Medicina Veterinaria |
|----------------------|---|
| Address: | 10, Via del Taglio, 43126 Parma (Italy) |

| Telephone: | +39 0521 032601/032807/032603/032600 |
|------------|--------------------------------------|
| Fax: | +39 0521 032602 |
| Web site: | http://medvet.unipr.it |
| e-mail: | vetpres@unipr.it |
| Dean: | Prof. Attilio Corradi |

2.1.2 Competent authority

The Rector of the University of Parma is the competent authority overseeing the FV-MUP as outlined in diagram 2.1. The Rector is Prof. Gino Ferretti, who is from the Faculty of Engineering, and he has been in charge since 2000. The Statute of the University of Parma is available in both Italian and English at the following address: *shortcut url*: http://tinyurl.com/vetpr-11

real url: http://www.unipr.it/ects.php?info=Guidaateneo&tipo=a0910&ID=7&lang=en

2.1.3 Organs of the University of Parma

The central Organs of the University of Parma are:

- the Rector
- the Deputy Rector
- the Academic Senate
- the Board of Governors
- the Board of Auditors
- the Administrative Director
- the Central Administration

2.1.3a - The **Rector** is the legal representative of the University. He/she promotes, coordinates and implements all activities aimed at achieving the institutional purposes of the University.

In particular, the Rector:

- 1. issues directives aimed at guaranteeing the good functioning of all structures, the correct application of regulations and the adoption of organisational criteria to define levels and range of responsibility
- 2. guarantees that the following principles are respected: autonomy of the University, freedom of teaching and research and the rights of staff and students
- 3. summons and chairs the Academic Senate and the Board of Governors, coordinating the activities and supervising the execution of their deliberations
- 4. guarantees the respect of the laws, the Statute and the regulations
- 5. enters into agreements in matters concerning teaching, research, culture, ad-

ministration, finance, accounting and any other agreement or contract that lie within his/her responsibility

- 6. issues the University Statute and regulations, including internal regulations for each body
- 7. draws up and suggests to the Academic Senate a framework programme for the University's multi-year development plan
- 8. draws up and submits programmes for the annual plan of activities, consistent with the multi-year plan, to be approved by the Academic Senate
- 9. prepares the budget to be approved by the Academic Senate and the Board of Governors
- 10.draws up, at the beginning of each academic year, a report on the 'State of the University'
- 11.enacts decrees, if necessary, to act on behalf of the Academic Senate or the Board of Governors, to whom they will be usually submitted for approval in the following meeting
- 12.in consultation with the Board of Governors, the Rector may appoint and dismiss the Administrative Director
- 13.carries out all other duties as designated by the Statute, by the University Regulation and by the laws.

In the exercise of his/her duty, the Rector may be assisted by Delegates, appointed among professors of his/her University by his/her decree, where tasks and responsibilities are specified. Representatives report directly to the Rector concerning their tasks. The Rector is elected from among the full-time full professors by an electorate composed of professors and the representatives of the students and technical-administrative staff (their vote accounts for 10% of the professors' vote). He/she is elected for four years and he/she cannot be re-elected more than once consecutively. However, the Rector of the University of Parma has been re-elected three times because of a change in the University Statute.

The election is proclaimed by ministerial decree.

The Rector's mandate is incompatible with that of Faculty Dean, of Head of Degree Course and of Head of Department.

At FVMUP there are two PRO-RECTORS. Prof. Paolo Martelli (Pro-Rector for Building) and Prof. Sandro Cavirani (Pro-Rector for International programs- LLP/ERASMUS).

2.1.3b - By decree the Rector appoints the **Deputy Rector**, choosing him/her from among full-time full professors, who replace him/her when he/she is absent or unable to preside and in the case of untimely end of his/her mandate and until the new

Rector is elected. The Deputy Rector is a member of the Board of Governors and the Academic Senate.

2.1.3*c* - The Academic Senate represents the collective governing body, which plans the development of the University and co-ordinates teaching and research. This body defines the fundamental lines along which the University develops its teaching and research activities.

The Academic Senate comprises:

- the Rector, who shall act as its Chairperson
- the Deputy Rector, who shall act as its Chairperson in the absence of the Rector
- the Faculty Deans
- six Heads of Department belonging to different research groups, appointed by all members of the Department Board
- three student representatives elected by all students. They are elected for two years and may not participate in any meeting that discusses matters concerning professors
- the Administrative Director.

Elected members of the Academic Senate are appointed by Rector's decree and may not be re-elected consecutively more than once. The Administrative Director of the Board of Governors also acts as Secretary to the Senate and may be supported by other members of staff. Excluding the positions of Rector, Deputy Rector and Administrative Director, members of the Academic Senate may not also be members of the Board of Governors.

The Rector summons the Academic Senate at least every three months or at the request of at least one third of its members.

2.1.3d - The Board of Governors acts in line with the planning guidelines of the Senate, and is the body that deliberates and supervises the administrative, financial, budgetary management of the University, except for specific delegation to other teaching, service or research structures.

It is composed of representatives of the academic staff and representatives of external organizations and institutions. It is in charge of general administration, financial affairs and property management.

The Board of Governors comprises:

- the Rector, who shall act as its Chairperson
- the Deputy Rector, who shall act as its Chairperson in the absence of the Rector
- the Administrative Director
- four representatives of the full tenured professors, one of which is Prof. Antonio

Ubaldi, from the Department of Animal Health of the FVMUP

- four representatives from the associate professors
- four representatives from the researchers and assistant lecturers
- three representatives from the Support Staff administrative area
- three representatives from the Support Staff technical area
- four student representatives, elected by all students
- the Mayor of Parma or one of his/her permanent delegates
- the President of the Province or one of his/her permanent delegates
- one representative of the Ministry of Instruction, University and Research, appointed by the Minister
- one representative of the Emilia-Romagna Region, appointed by its President.

The Board of Governors is elected for four years. Student representatives are elected for two years. Members of the Board are appointed by Rectorial Decree and cannot be re-elected consecutively more than once.

2.1.3e - The **Board of Auditors** is an internal body of the University, comprises five members chosen from the List of Chartered Auditors, with proven experience in administration or accounting or legal or university regulation management. The Board of Auditors checks administration and accounting management in accordance with the University General Regulation. Members of the Board of Auditors are appointed by the Rector, in consultation with the Board of Governors. They are elected for four years.

2.1.3*f* - The Administrative Director supervises the administrative and accounting services. He/she participates in the Academic Senate with a consultation vote and is a member of the Board of Governors.

2.1.3*g* - The **Central Administration** is divided into 6 management areas and 25 Sections.

2.1.3h - **Departments** are the organisational structures of one or more research areas that have the same objectives or methods. Departments are established by Rectorial Decree, as proposed by the Teaching Staff who would like to be part of them, and are approved by the Academic Senate and by the Board of Governors. Should the Rector so ask, Faculties may express their opinion about the institution of a new Department. Should the institution of a Department imply the suppression of operating Departments, the opinion of the latter is required. Proposals for the institution of

a Department are submitted to the Rector and shall be supported by at least twelve professors.

The Department:

- promotes and coordinates research activities, also entering into agreements with public and private bodies
- proposes the institution of and organises PhD courses
- cooperates with the Faculty in organising teaching and training activities
- expresses opinions and makes proposals to the Faculties on the institution and assignment of professors' and researchers' posts and on locus temporary contracts within its range of scientific disciplines
- asks the governing University bodies for premises and for staff and financial resources, depending on management and development needs of its teaching and research activities and on the training of its administrative and technical staff.

Departments have financial, administrative and contractual autonomy and may be divided into Units, Services and Laboratories, with the specification of the areas and staff assigned to each structure.

The Teaching Staff is free to choose the Department to which they prefer to report/join, on the condition that they belong to one Department only.

Bodies of the Department are:

- the Head
- the Department Board
- the Department Commission.

The **Head** is elected by the Board, normally from among full-time full professors and is appointed by Rectorial Decree. He/she is elected for four years and cannot be reelected consecutively more than once. Should he/she be re-elected, he/she is entitled to be a member of the Academic Senate for the next four years.

The Head chooses from among Department professors an Assistant Head, who can act on his/her behalf whenever he/she cannot be present. The Assistant Head is appointed by Rectorial Decree and his/her mandate end with the Head's mandate.

The Head is responsible for the Department organisation and administration. He/she can be assisted by the Administrative Secretary, who is in charge of the executive administration and accounting. The Head is conferred office allowance, as defined by the Board of Governors.

The **Department Board** plans and manages the Department activities. The Board is composed of all full-time and associate professors, of researchers and of the Support

Staff representatives (10% of professors) and of the Administrative Secretary, who is also the Board Secretary. Other participants include students' representatives such as PhD students, specialisation and scholarship students. Their number and election procedures are defined by the internal Regulation of each Department. The Department Board, when composed only of professors and researchers, decides on professors' request to join in it, and has to give reasons for any refusal. Should the request be repeated and the Board give negative response, the issue is forwarded to the Academic Senate, which settles the argument.

The **Department Commission** is its executive body. It assists the Head and comprises members elected from among tenured professors, researchers and administrative and technical staff and the Administrative Secretary. The Commission, elected after the Head, continues in office until the Head mandate is over. Composition, election procedures and running of the Commission are defined by the Department Management Regulation.

Another important Departmental centre for the FVMUP is the **Veterinary Teaching Hospital** (**VTH**) (see Chapter 4) that was established in 2005 in order to allow the veterinary departments to provide integrated services through it. It is composed only by members of the Teaching and Support Staff of all the two departments of the FVMUP, and its main function is to provide health care related service to support teaching activities.

2.1.3*i* - Other important bodies at the University of Parma are:

- the Heads of PhD Schools' Council
- the Heads of Medical Specialization Schools' Council
- the Scientific Committee of the University of Parma
- the Teaching Committees of the University of Parma
- · the Council for administrative and technical staff
- the Students' Council
- the University Evaluation Unit
- the Equal Opportunities Committee
- the Legal Affairs Office
- the University Sports Committee
- the University Veterinary Service
- the Animal Ethical Committee.

The FVMUP hosts the University Veterinary Service, currently coordinated by Prof, Giuseppe Zannetti. This Service controls the welfare and the state of health of the
experimental animals involved in University researches, in order to avoid pain and unnecessary suffering. It also controls the correct performance of experimental procedures and assures veterinary consulence and assistance.

The FVMUP also hosts the Animal Ethical Committee whose President is Prof. Franco Brindani. This Committee controls, assesses and addresses the proposals, send to the University, regarding experimental animals.

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

2.1.4 Appointment of Faculty's elected officials

The **Dean** represents the Faculty, summons and chairs the Faculty Board and the Dean's Board, executes deliberations, monitors teaching activities within the Faculty, drafts the annual report on teaching activities in the Faculty and carries out all other duties to which he/she is entitled by the Statute, by other University regulations and by the law.

The Dean is elected for four academic years from among full-time full Professors and is appointed by Rectorial Decree. He/she cannot be re-elected more than once consecutively.

Those entitled to vote for the election of the Dean are: all the members of the Faculty Board, including researchers of the Faculty who are not members of the Faculty Board. The Dean is elected by absolute majority of entitled voters in the first vote; or by absolute majority of effective voters in the second vote, or by relative majority of effective voters in the third vote.

The **Head of Department** is responsible for the Department organisation and administration. He/she can be assisted by the Administrative Secretary, who is in charge of the executive administration and accounting (for more details see point 2.1.3h).

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

The University of Parma, as all Italian's Universities, depends directly from the Ministry of the University (MiUR). The current Minister of the Education, University and Research is On. Dr. Maria Stella Gelmini. A diagram (figure 2.1) shows how the Faculty relates to the University and the Ministry.



Figure 2.1: Relation between the Faculty, the University and the Ministry (MiUR).

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

The internal administrative structure of the FVMUP is illustrated in a diagram in figure 2.2



Figure 2.2: Internal administrative structure of the FVMUP. (Legend: DAH: Department of Animal Health; DAPF: Department of Animal Production, Veterinary Biotechnologies, Food Quality and Safety; VTH: Veterinary Teaching Hospital; MILC: Milk Research Centre)

Describe, briefly, the responsibilities, constitution and function of the main administrative bodies (councils, committees, etc)

2.1.6 Main administrative bodies of the FMVUP

The organisation, administration and function of the Faculty of Veterinary Medicine at the University of Parma are very similar to those of most veterinary teaching establishments in Europe. The bodies of the Faculty of Veterinary Medicine of the University of Parma are:

- the Faculty Board
- the Degree Course Board (DCB)
- the Dean's Board
- the Departments
- the Joint Committee for Education (JCE)
- the Pedagogical/Educational Committee (PEC).

2.1.6a - The Faculty's most important functional body is the **Faculty Board** composed by the Dean, who acts as Chairperson, all the Full Professors in service, all the Associate Professors in service, all the Assistant Professors, the Administration Secretary and 9 students' representatives. The Faculty Board coordinates and decides all Faculty activities and verifies their efficiency. In particular the Faculty Board:

- plans and coordinates spending of funds allocated for teaching, in consultation with the relevant Degree Course Boards and with the Department Boards, as far as their office is concerned
- proposes amendments to Specialisation course programmes belonging to the Faculty, after consultation with Course and Department Boards concerned
- coordinates and guides teaching activities verifying their quality and effectiveness, also in consultation with Joint Committee for Education
- initiates courses as specified by the Course Programme of the Faculty, considering proposals from Degree Course Boards and having consulted the relevant Departments
- asks for and assigns Teaching Staff posts and foreign language assistant posts, in consultation with the involved Departments, and also following proposals from Degree Course Boards
- assigns teaching posts for course subjects by appointing them by means of temporary contracts and closed-term contracts under private law, as stated by the University statute
- approves the Teaching Regulation and the University Organisation Rules
- approves the Annual Report on the Teaching Activity of the Faculty, prepared by the Dean and based on the reports of Degree Course Boards
- prepares and approves the development plans
- carries out all responsibilities to which it is entitled by the law in force, by the Statute and by the University Regulation
- submits to the governing bodies the requests for areas and resources depending on management and development needs for its activities.

The Faculty Board is convened by the Dean whenever necessary, at least 4 times a year.

2.1.6b - In Faculties with several courses, **Degree Course Boards** (DCB) are established. The Faculty Board may decide to merge two or more Course Boards.

Members of the Course Board are: all Professors (Full and Associate) and Assistant professors teaching in the Course, five student representatives.

The Faculty Organisation Rules define election procedures of student representatives and representatives of the administrative and technical staff in the Degree Course Board. Representatives of administrative and technical staff are elected for four years; student representatives are elected for two years. The University Teaching Regulation defines responsibilities of the Degree Course Board.

The Head of DCB is elected by the Board from among all tenured professors of the Faculty teaching an official subject. The Head of Course is appointed by Rectorial Decree. He/she is elected for four years and cannot be re-elected more than once consecutively.

2.1.6*C* - A **Joint Committee for Education** (JCE) assesses the quality, the effectiveness and eventually expresses further proposals to achieve the educational objectives. For more information on composition and function of the JCE see also Chapter 5.1.1.1.

2.1.6d - A **Pedagogical/Educational Committee** (PEC) elaborates the programme of the single courses, plans the ECTS distribution/course and assigns ECTS for each degree course. The PEC also identifies adequate teaching methodologies for the achievement of the educational objectives and plans the proposed teaching activity of student elective courses. It develops and up-dates the instruments (e.g. Portfolio) which ascertain the achievement of skills as regards to knowledge and learning, and coordinates with the Student Secretariat (see Chapter 5.1.1.1).

2.1.6e - The **Dean** of FVMUP, actually in charge, is Prof. Attilio Corradi (Department of Animal Health). He represents the Faculty, summons and chairs the Faculty Board and the Dean's Board, ensures the implementation of decisions, supervises teaching activities of the Faculty, reports on the teaching activities of the Faculty and carries out all other responsibilities to which he/she is entitled by the Statute, by the laws and by other provisions. The Dean designates a **Vice-Dean** from among Full-time full professors, who may substitute him/her in all his/her offices whenever he/she cannot be present. The Vice-Dean is appointed by Rectorial Decree. The Vice-Dean of the FVMUP is Prof. Sandro Cavirani (Department of Animal Health).

The Dean receives an office allowance as defined by the Faculty Board. The Faculty Organisation Rules may provide for a Faculty Commission, chaired by the Dean, for its constitution and instituting procedures.

Procedures for election of the Dean are provided by the Faculty Organisation Rules. Prof. Attilio Corradi is also a Rector-delegated member of the **Technical Committee of EUROPASS**. EUROPASS is a provincial office whose tasks are:

- the creation of a structural link with the European Food Safety Authority (EFSA)
- the management of relationships and cooperation between EFSA, Universities, research centres
- the creation and support of relationships between EFSA and public and private facilities and laboratories.

EUROPASS is composed of the Emilia-Romagna Region, Provinces of the region, Chamber of Commerce of Parma, Regional unions of the Chamber of Commerce, and the University of Parma. The Head is the President of the Parma Province, Vincenzo Bernazzoli.

Its goals are mainly to:

- become the direct intermediator for EFSA on a local level
- allow those public and private realities of the "regional system" that are interested, to take full advantage of the opportunities offered by EFSA
- promote regional specialization in the agricultural and food sector within the international market.

2.1.6*f* - The **Dean's Board** is ruled by the Faculty Board.

Members of the Dean's Board are the Dean, the Vice-Dean, and the Heads of Boards of the other teaching structures. Possible participation of the representatives of the Specialisation Courses is regulated by the Faculty Organisation Rules.

2.1.6*g* - There are 2 **Departments** at the FVMUP, but in the short term, all the Departments of the University will be reorganized. The departmental constitution, name of Director and the subjects taught by the Teaching Staff members belonging to each department are listed in Table 2.1.

| Name of Department | Subjects taught by Teaching Staff members within the Department | Head of Department |
|--|---|------------------------|
| Animal Health | Basic Sciences (Anatomy, To- xicology, Pharmacology and Endocrinology, Microbiology, Immunology, Epidemiology) Clinical Sciences (Surgery, Preventive medicine, Clinical Medicine, Obstetrics and Re- productive disorders, Veteri- nary State medicine and Public Health, Parasitology, Patholo- gy, Radiology and Diagnostic Imaging) Animal Production (Rural economics) Food Hygiene (Food Inspection) | Prof. Sandro Cavirani |
| Animal Production, Veterinary Biotechnologies, Food Quality and Safety | Basic Subjects (Biomathematics and Informatics) Basic Sciences (Biochemistry, Physiology) Animal Production (Animal production, Animal nutrition, Animal Husbandry, Milk technologies, Functional foods and human nutrition) Food Hygiene (Food safety) | Prof. Afro Quarantelli |

Table 2.1: Name, subjects taught by the Teaching Staff members belonging to, and name of the director for the 2 Departments present at the Faculty of Veterinary Medicine of the University of Parma.

2.1.6h - Other Faculty Commissions at the FVMUP, are:

- the Faculty Committee
- the Committee for the preparation of the EAEVE visit
- the Erasmus-Socrates Commission (LLP/ERASMUS programs)
- the Postgraduate Education Commission
- the Continuing Education Commission (Specialization Schools)
- the Commission for Internationalization
- the Commission for the Relations with the local territory
- the Tutorage Commission
- the professional training "TIROCINIO" Commission
- the Commission for the evaluation of facilities for extramural activity
- the Commission for 1st year entrance examination for the degree course in Ve-

terinary Medicine

- the Commission for Italian language for foreign students
- the Commission for Student's Career, 1st year
- the Commission for Student's Career, 2nd-5th year.

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

2.1.7 - In the running of the Veterinary Faculty, veterinarians, research institutions as well as local/Regional Veterinary Chamber have their say in the life of the Veterinary School. Private practitioners are involved, as contract professors, in the professional training ("TIROCINIO") where they train and supervise undergraduate students on practical skills both at the Faculty premises or on the field (see Chapter 4).

Over the years, the FVMUP has activated several agreements of collaboration, including those aimed at sharing knowledge and teaching resources (e.g. with the AUSL of Modena – newsletter InforMO, for the realization of a specialist scientific collaboration), research and service supply sectors, with Zoo-prophylactic Institute of Lombardy and Emilia Romagna (IZSLER), with regional National Health Service (AUSL), with the Army Logistic Command of Grosseto, with the Slaughterhouse of Parma and with the Region of Emilia Romagna (RER).

In particular, the agreement with the RER concerns:

- specialist assistance for stray pets housed in the region's municipal shelters
- specialist assistance in regional Rehabilitation Centres of wild animals
- establishment of a regional point of reference for the scientific and sanitary consulence to the Pet Therapy Centres
- establishment of a Regional Service for monitoring tumours in domestic animals
- drafting of a feasibility study for the achievement of Forensic Veterinary Medicine Regional Service
- lifelong learning and professional continuing education
- collaboration and exchange of technical-scientific information.

Another Agreement for student exchange between Cornell University (Ithaca, New York - USA) and FVMUP has been activated (see Annex 2.1).

2.2 Comments

Add any comments on the organisation and functioning of the Faculty that you feel useful for completing the description.

The organisation of the Faculty of Veterinary Medicine of Parma closely resembles that of all Italian Faculties, because organisation is defined by MiUR at the national level. Major problems include:

- the strict and formal organisation, which does not allow rapid decisions and changes. However, current Committees are adequate for the necessities of the Faculty
- 2. control at the Department level is limited and it could be more efficient.

2.3 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.

Increasing research and service activity in public and private veterinary clinical and non-clinical fields, strictly related to the territory.

FVMUP staff should be able to apply for research funding to the Ministry of Health. Also the FVMUP Teaching Staff and researchers can not perform direct research activity, by law, for specific infectious diseases (BSE) and these facts affects also the services offered within the VTH.



Finances









Chapter 3.

Finances

3.1 Factual information

The University of Parma is State-funded. Every year the Italian Ministry of Education, University and Research (MiUR) provides it with an institutional fund (called Ordinary Financing Fund: OFF) used by the Universities to cover almost all the expenses for Teaching and Support Staff.

Currently, according to the legislation in existence since 1995, the total amount of staff-related expenses of each University should not exceed 90% of its OFF. In case of overflow, the University is penalised with a reduction in the possibility to fund new positions in replacement of retired staff members. Over the last several years, the University of Parma has approached or even gone beyond this limit. As a consequence, a decrease in new positions for Teaching and Support Staff, as well as in the number of promotions, have been applied. The current Government has also passed a recent "austerity" law (133/2008), that includes major cuts to the State-funded University OFF since 2009 and that will continue up to 2013.

The rough percentages of reductions for the OFF foreseen for the next years are the following:

| 2009 | -1% |
|------|-------|
| 2010 | -3% |
| 2011 | -5% |
| 2012 | -6,5% |
| 2013 | -7% |
| | |

Afterward the OFF will remain the same as in 2013.

3.1.1 General Information

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

The general financing system of the University of Parma gives the Faculty of Veterinary Medicine the possibility to follow the stated mission, although a number of difficulties and restrictions progressively increased because of the national and international financial crisis.

The administration of the State University follows on the National Public Administration rules and is based on the OFF (70%), on the tuition fees of the students (no more than 20%) and on other sources of income (research, diagnostic activities etc.).

Operating and teaching costs (derived from the OFF and tuition fees) are covered directly by the Central Administration of the University. Conversely, general expenses are covered jointly by the Central Administration of the University, the Dean's Office and the Departments (Table 3.1).

| Expenditure items | Central administration of the University | Dean's office | Departments |
|--------------------------------------|--|---------------|-------------|
| Heating | • | | |
| Gases (technical gases) | • | | • |
| Water | • | | |
| Electricity | • | | |
| Disposal of chemical waste | • | | • |
| Disposal of biological waste | • | | • |
| Cleaning | • | | |
| Telephone | | • | • |
| Teaching equipments | | • | |
| Animals feeding costs and management | | | • |
| Gardening | • | | |
| Maintenance of facilities | • | | |

Table3.1: Institutions in charge of covering general expenses of the Faculty of VeterinaryMedicine and its Departments at the University of Parma.

Research funds allocated to the Departments derive from:

- public funding such as Ministries (MiUR; Ministry of Health; Ministry of Agricultural), National Research Council (CNR), the Emilia-Romagna Region, Parma Municipality and the European Union
- private Funding
- pharmaceutical Companies
- nutritional and Feeding Companies

- clinical and diagnostic services (Veterinary Teaching Hospital, Diagnostic Laboratories, etc)
- food and feed analyses services.

The financial data presented in this document keep into account the fact that the teaching budget is managed by the Central Administration of the University of Parma, while research funds are managed by the Departments.

How the allocation of funding (including public funding) to the Faculty is determined, and by what body.

Academic positions are assigned through public national search processes to meet the Faculty's teaching needs. Theoretically, the number of teaching members depends on the number and type of courses offered by the Faculty and on the number of students enrolled. Support Staff (technicians and administrative personnel) depend on the departments and they are recruited on the basis of the number of Professors/department.

The cost for academic Teaching Staff is paid by the University. The allocation of the new academic positions was decided by the Academic Senate based upon the number of retired professors during the preceding year minus a percentage of the budget feeding a special general fund used by the central administration to balance the recruitment among the Faculties, mainly the "New Faculties". Due to the recent budget constraints set by the MiUR, the University and, as a consequence, the Faculty have limited possibilities for new recruitment and for upgrading of the academic positions.

With regard to operating costs and general expenses for teaching activities, the University of Parma allocates to the Dean's Office and to the Departments funding for the support of teaching activities without considering any implementation of the teaching activity and practical hands-on training. This amount of budget partially covers the costs for:

- management of Faculty and Dean's office
- · maintenance of teaching and laboratory equipment
- up-keep and maintenance of farm animals
- general expenses for the Veterinary Teaching Hospital (VTH)
- improvement of the teaching infrastructure.

The Faculty and Department Boards decide how to allocate the funds assigned by the University for the teaching activities.

Moreover, the income from the clinical activities provided by the Veterinary Teaching Hospital is mainly devoted to covering the expenditures for practical training activities and for the improvement of the teaching equipment for practicals.

The main goal of the above mentioned academic bodies that are in charge of the allocation of the financial resources is to assign adequate support for the improvement of the quantity and quality of practical training.

The funds for the 'international activity' (LLP/ERASMUS programs) of the Faculty are managed by the Central Administration and partially by the Departments.

The resources for research transferred from the University (Local Funds for Research - FIL) to the Departments of the Faculty are limited and in the last 2 years have been significantly reduced (-46%) in accordance with the financial restriction operated by the MiUR. The amount of FIL that the Faculty receives is assigned by the University of Parma Council for Scientific Research to the Scientific Committee of Agricultural and Veterinary Sciences and is then allocated to the individual teachers. The sum assigned for research, to each professor or researcher is based on evaluation of the quality of his/her research output in the last three years. The professors and researchers are placed into four classes of merit according to the evaluation of research quality.

In addition please 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.

The resources for the support of teaching activities transferred by the University to the Departments are calculated on the basis of a pro capita amount according to the numbers of Professors and Researchers. At present, the transfer of financial resources to the FVMUP is not strictly calculated on the basis of the number of students enrolled into the Veterinary Medicine Degree Courses.

The total budget available is not very high considering the cost foreseen for practical activities, but currently other sources of income cover these expenditures sufficiently. The funds for Research come to the Departments from University (FIL), MiUR, Ministry of Agriculture and Ministry of Health, Regional funds and Private contracts agreements. The cooperation between the Faculty and private Companies can be improved in order to attract private income for research.

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).

Currently, the FVMUP offers three courses, so that not all the resources available to the Faculty are supporting the costs of the Veterinary Medicine Degree Course as shown in figure 3.1. However, approximately 72% (VM) of the budget assigned to the Faculty is used for the Veterinary Medicine Degree Course.



Figure 3.1: Proportion of staff commitment to the different degree courses. VM = Veterinary Medicine L38 = Livestock Science and Animal Production Technologies BIO = Medical, Veterinary and Pharmaceutical Biotechnologies

According to the national Rules, the Italian Universities have financial autonomy only theoretically. In fact, the amount of the income deriving from the fees paid by the students must not exceed 20% of the general expenditures of the University. So that the possibility for any Faculty to either increase or decrease the tuition fees is very limited. At the University of Parma, tuition fees paid by the students in Veterinary Medicine (Table 3.2) are 11% lower than those paid by the students enrolled in the Faculty of Medicine and Surgery and 12% higher than those paid for the enrollment to the Faculties of Law, Economics and Humanities. These differences are due to a considerable amount of lab activities and practical training. The general policy of the University of Parma is mainly based to keep the tuition fees as limited as possible in respect to the "right of education" stated by the Constitution of the Italian Republic. Moreover, the

tuition fee per student is calculated also based on family income, in order to support the education of students from families that do not have a large income (see the caption of Table 3.2). The annual tuition fee for a student enrolled in the Degree Course of Veterinary Medicine ranges from 980 \square to 1 336 \square .

However, the high expenses needed to efficiently run the course in Veterinary Medicine, mainly for lab material, equipments and practical training, as well as for the maintenance of the facilities (VTH, laboratories), demand a higher tuition fee, particularly compared to courses in the Humanities.

In the three years considered in this report the tuition fees have increased by approximately 2%. This proportion takes into account to the national programmed inflation rate, only.

| FACULTY | Year 2007/2008 | Year 2008/2009 | Year 2009/2010 |
|---|----------------|----------------|----------------|
| Faculty Of Veterinary Medicine | 953.45 | 967.49 | 980.09 |
| Faculty of Agronomy | 953.45 | 967.49 | 980.09 |
| Faculty of Architecture | 953.45 | 967.49 | 980.09 |
| Faculty of Economy | 844.53 | 856.73 | 867.67 |
| Faculty of Pharmacy | 953.45 | 967.49 | 980.09 |
| Faculty of Law | 844.53 | 856.73 | 867.67 |
| Faculty of Ingeneering | 953.45 | 967.49 | 980.09 |
| Faculty of Humanities | 844.53 | 856.73 | 867.67 |
| Faculty of Medicine And Surgery | 1 06245 | 1078.35 | 1092.61 |
| Faculty of Psycology | 898.97 | 912.09 | 923.87 |
| Faculty of Sciences (Mathematics, Physics And Biology) | 953.45 | 967.49 | 980.09 |
| Faculty of Political Sciences | 844.53 | 856.73 | 867.67 |
| Biotechnology - Interfaculty (Medicine And Surgery, Veterinary Medicine And Pharmacy) | 1 062.45 | 1 078.35 | 1 092.61 |

Table 3.2: Annual tuition fee of the Faculties of the UNIPR.

According to the total income of the family, the student tuition annual fee is increased as follow:

- $< 28000 \square$ no additional charge
- 28000 to 38000 □ charge of 206.58
- 38001 to 75000 □ charge 256.58
- > 75000 □ charge 356.58

How the allocation of funds within the Faculty is decided and what are the mechanisms for funding major equipment and its replacement?

Any special project aimed at implementing the quality of the teaching activities is proposed by the Dean of the Faculty in cooperation with the Dean's Board (made up of Professors and Students of the Faculty Board). Moreover, in case of equipment belonging to the Departments, it is the Department Board that decides to allocate funding. In the last few years the Central Administration has devoted to the Faculty of Veterinary Medicine or to the Departments the following funds for special projects aimed at upgrading the teaching facilities and equipment:

- mobile unit for clinical activities on farms (35 000 □)
- CAT (150 000 □)
- truck for large animal transport (30 000 □).

In 2009-2010, a larger budget has been planned to support rising expenses for practical hands-on training on farm animals in private farms and veterinary hospitals and clinics around Parma. For this reason, the FVMUP recently asked for and received from the University further funding for animal maintenance (feeding costs, bedding) as well as for activities related to practicals (increased amount for non-permanent teaching staff). The Departments have also covered a part of these costs in their budgets by using income from the services provided by the Veterinary Teaching Hospital and clinical activities.

Since 2004, other income used to support teaching activities has been provided by the Parma Municipality and regional National Health Service (AUSL) through a contract agreement aimed at providing services for the control of the stray cat and dog population. Moreover, in 2010, thanks to an agreement with Emilia Romagna Region, a contract of 40 000.00 □/year for three years has been obtained to support activities (see Chapter 2.1.7).

Equipment for research is purchased and maintained by the Departments using research grants and University funds. New initiatives, such as a central departmental lab (department of Animal Health), can be funded on request to the central Administration of the University. - The mechanism(s) for funding capital expenditure (e.g. building work, major items of equipment) and how decisions are taken in this matter.

- The mechanism(s) to provide the necessary support for building maintenance and how decisions are taken in this matter.

All capital expenditures, defined as major investments for facilities, buildings, new equipments (and their replacements) are managed directly by the Board of Governors (central Administration), who takes into account the needs of the faculties based on available budget, on the possibility or not to rent facilities by agreements (rather than purchasing/building) on the long term liability and on project financing.

The cost for recurrent building maintenance in the time period under examination (2007-2009) has been approximately 0,9% of the value of the real property of the Faculty of Veterinary Medicine (13 000 000 □). It must be stated that, in line with the rules of the State University Administration, the expenses for recurrent maintenance of buildings must not exceed 1.5% of the total budget.

Construction of new buildings is regulated by the University building plan and depends on the needs of all faculties of the University of Parma.

In 2003-2005 the Veterinary Teaching Hospital was constructed to meet the needs of the FVMUP with an investment of 1 375 000 \Box for building and 500 000 \Box for furniture, new equipment and upgrading of existing ones. In 2008 the boxes for horses have been renewed and doubled in number (125 000 \Box).

A project for new buildings especially devoted to improve the facility of the Veterinary Teaching Hospital and a Multifunctional Educational Laboratory Building (MELB - teaching labs and two new dissection rooms) for 2.2 million \Box has been approved by the Board of Governors of the University (resolution n° 479/28817, July 29th 2010) and the constructions were expected to start on 2010, but it will start early on 2011. The delayed construction of these facilities of the FVMUP as well as in other sites of the University (i.e. the University Campus, site of the scientific and technological Faculties) is a direct consequence of the reduction of the funds transferred from the Ministry of University (State) to the UNIPR within the national budget of the Ministry specifically devoted to construction of students' guesthouse (living quarters 24h) within the VTH, the improvement of the facilities for bovine and small ruminant allocation, the Large Animal isolation facilities, the renewing and updating of some existing Lecture Halls and labs.

The cost for equipment maintenance and their upgrading is paid by the departments and the non recurrent maintenance cost for buildings are covered by the University funds via a special branch (Construction Area) which is in charge and manages all activities.

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.)? Clinical or diagnostic work, research grants, other (please explain).

As for all faculties, the FVMUP must give the Central Administration of the University of Parma a percentage of any revenue it receives, even if these revenues, for example from research grants, clinical and diagnostic activities, etc. are managed by the Departments. The percentage depends on the type of fund received; it varies from 0% (for financial resources used exclusively to pay salaries, scholarships, research grants, new equipment, etc.) up to 13% (for third party services such as clinical and diagnostic works).

Please indicate whether students: Pay tuition/registration fees, How much these are, How they are decided, How the funds are distributed.

Students of the FVMUP pay their annual tuition fees twice a year. The individual tuition fees paid for by the students enrolled in different degree courses of the Faculty of Veterinary Medicine are reported in table 3.1. The amount of the fee paid for by a student of the Veterinary Medicine Degree Course is the same of the fee paid by a student of the other courses of FVMUP. Every year, the Board of Governors, based on advice from the Academic Senate, decides the amount that should be paid as tuition fees. Every year the Central Administration decides the allocation of funds to each department on the basis of the teaching staff.

3.1.3 Overview of income (revenue) and expenditure

A detailed description of the income of the last 3 years of the Dean's Office and Departments is reported in Table 3.3, Fig. 3.2a, Fig. 3.2b and in Annex 3.1 The same type of data referring to the FVMUP is summarised and shown in the following tables. The main income of the FVMUP is represented by the OFF used by the Central Administration to pay salaries and wages for permanent teaching and Support Staff of the Faculty (approximately 87%). The budget allocated by the University to the Faculty is mainly used to cover teaching costs. The income for research (public and private) is on average approximately 4% of the total amount of revenues. Such income is managed by the Departments and used to pay for researches, fellowships, PhD grants and all the other costs related to research activity. Public funds are always higher than those available from private enterprises. The trend could be modified by improving and enhancing cooperation with private Companies (Slaughterhouses, Feed and Food Processing Plants, Farmer Associations, Pharmaceutical Companies). Income from third party services corresponds to approximately 6% of the total amount of the total budget. Such income is likely to increase in the short-medium term thanks to new services and extended consultation hours (including the 24-hr emergency service) provided for by the VTH.

| YEAR | By the State to the University | By the University to the Dean's office and departments | Income from any other source to the Dean's Office | Public income for Research | Private income for Research | Income for services provided | TOTAL |
|------|-----------------------------------|--|---|-------------------------------|--------------------------------|---------------------------------|---------|
| 2009 | 7272370 | 168547 | 19500 | 273249 | 58600 | 470335 | 8262601 |
| 2008 | 6855719 | 158237 | 14214 | 232020 | 62 000 | 514809 | 7836999 |
| 2007 | 6762988 | 315.16* | 34654 | 281 907 | 19772 | 504223 | 7918060 |

Table 3.3: Incomes of the FVMUP.

* The difference as compared to the subsequent years is due to a special fund for VTH and for teaching activities



Figure 3.2a: Sources of total income of the Faculty (Dean's Office and Departments) of Veterinary Medicine at the University of Parma (2007 - 2009).



Figure 3.2b: Sources of income of the Faculty (Dean's Office and Departments) of Veterinary Medicine at the University of Parma (2007-2009), not including funds from the State to the University of Parma for salary.

INCOME

Unfortunately, because of the growing financial difficulties of the Italian State University due to the National policy on Education and Research, the budget allocated for the year 2010 to the Faculty (Dean's Office and Departments) has been reduced. Generally speaking, the consequence of this decision led and will lead to a significant reduction of human resources, considering that personnel hired with short term contracts cannot be paid by finances transferred from the Central Administration to the Faculty. However, with its own financial resources, the VTH has funded contracts with Support Staff/tutors involved in the 24 hrs/7 days services in order to continue to fulfil its mission.

A detailed description of the expenditures of the last 3 years referred to the Faculty of Veterinary Medicine is reported in Table 3.4, Fig. 3.3a and Fig. 3.3b. Expenditure for salaries and wages of teaching and Support Staff (permanent and non-permanent) represent the greatest expense (about 87%) of the budget of the FVMUP. The costs for research represent around 5-6% of the total amount of the expenses, and expenses for the VTH represent around 5-6% of the total budget.

The expenses for building maintenance (0.9% of the real property value) are not sufficient to maintain the infrastructures of the Faculty in an optimal fashion, and are not sufficiently related to the real value of the buildings and with their actual maintenance needs, considering that the Faculty is in existence since 1966 and 1972. Because of the financial difficulties of the University, maintenance of the buildings is often provided only in emergency situations and are carried out directly by the Construction Area of the Central Administration.

The expenses for heating, cooling, gardening, water, energy, etc are approximately 550 000.00/year. The detail are shown in Annex 3.1.

| YEAR | Expenses for teaching and Support Staff + external staff for teaching | Expenses for the functioning of the establishment | Expenses for animal teaching hospital and practice | Expenses for research | Other expenses (diagnostic labs) | TOTAL |
|------|---|---|--|-----------------------|-------------------------------------|---------|
| 2009 | 7304370 | 154547 | 408213 | 440916 | 149423 | 8457460 |
| 2008 | 6876719 | 147323 | 478580 | 401 677 | 128859 | 8033158 |
| 2007 | 6797688 | 168547 | 380452 | 399721 | 81332 | 7827740 |

Table 3.4: Expenditures (€) of the Faculty (Dean's Office and Departments) of the University of Parma.





Figure 3.3a: Itemized expenses of the Faculty (Dean's Office and Departments) of Veterinary Medicine at the University of Parma (three years 2007 - 2009), including salaries.



Figure 3.3b: Itemized expenses of the Faculty (Dean's Office and Departments) of Veterinary Medicine at the University of Parma (2007 – 2009), not including salaries.

3.2 Comments

The upcoming new Rules for reorganization of the Italian University system and the debate about it makes any future planning on the set up of the local administration and management difficult. The possibility to obtain funding for research and to become more attractive to sources of funding other than the State (private, industry, EU) leading to improved economic efficiency depends primarily on increasing scientific activities. In this context the FVMUP is currently devoting its efforts to:

- development of innovative research projects supporting young researchers, mainly increasing the number of PhD students
- improvement of the numbers of the residency students and of the grants for post-graduated students involved in clinical and research activities in the fields of the Faculty's expertise
- a balanced ratio between teaching hours and time spent for research activities
- an increase of the enrolment of young, qualified academic staff replacing retired professors
- an increase in the number of tutorial external Teaching Staff (Contract Professors) supporting students during lab work, training activities and mainly clinical practice in the field
- cooperation with external institutions that represent a valuable resource for the practical training offered to students
- increasing of the internalisation of the courses provided in English language.

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.

From a financial point of view the situation of the Faculty it is not completely satisfactory. Due to the limitation of the public funding from the Ministry of Education, University and Research the possibility of a real change in terms of efficiency and optimization of the finances by the Faculty is limited and with minimal perspective in the short-medium term. Therefore, in order to achieve the goals listed above the suggestions should be:

- increase in the tuition fees paid by the students mainly addressed to support the cost of extramural practical training (but this possibility is limited by current National legislation)
- agreement with the University of Parma to increase the finances for funding Teaching Staff dedicated to practical training coming from a increased of the tuition fee (e.g. 200 □/student/year x 500 enrolled students = 100 000 □/year)
- prepaid fee for test admission (100 \square) x 400 applications = 40 000 \square /years
- use of Teaching Staff and laboratory facilities located in the University Campus for basic subjects
- enhancement of the interest of Institutional, private enterprises and citizens towards the Faculty through the promotion and development of VTH, laboratory services and consultations
- creation of multidisciplinary research groups for a competitive application to national and international projects in veterinary sciences
- full time optimization of the VTH facilities by increasing the involvement of high qualified practitioners in clinical activities
- the university should be increase more funds for practical training
- the agreement with the Municipality and ER region will increase clinical cases as well as necropsy on companion animals.



Curriculum









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.

Higher education in Italy has undergone major reform to align itself with the European model outlined in the following European agreements: Sorbonne (1998), Bologna (1999), Prague (2001), Berlin (2003) and Bergen (2005).

Since 1999, Italian university studies have been fully reformed to meet the objectives of the "Bologna process".

Restructuring of the Italian university educational system was regulated by the Ministerial Decree (MiUR) n° 509 from 1999 (MD 509).

MD 509 replaced traditional undergraduate courses lasting 4 and 5 years with a twolevel system: the 1st level degrees last 3 years (professional degrees), and the 2nd level (specialist) degrees last a further 2 years. However, degree courses in Medicine and Surgery, Pharmacy, Veterinary Medicine, Architecture and Law do not follow the twolevel system and have maintained degree courses with a curriculum structure lasting 5 (Pharmacy, Architecture, Law and Veterinary Medicine) or 6 (Medicine and Surgery) years.

MD 509 also introduced the University Learning Credits (ULCs). The ULC represents the measure of the amount of student working load regarding training and individual work necessary for each student with an adequate basic preparation to achieve the learning objectives established for any particular university course. One ULC corresponds to overall 25 hours of learning commitment (lectures/practical and individual work) for each student. The average workload of a full time student is conventionally fixed at 60 ULCs per year. At the FVMUP 1 ULC corresponds to 1 ECTS, then within this document, we will use the ECTS acronym instead of ULC.

MD 509 established that individual work cannot be less than the half of the total amount of ECTS hours except in case of activities such as experimental and practical

learning. However, the most recent educational reform, introduced with MD 270, has modified this latter indication and has established that the fraction of time that each student must dedicate to individual learning is determined by the Teaching Regulation defined by each University.

At the Faculty of Veterinary Medicine of Parma, the amount of time to be dedicated to individual learning for each ECTS is in the range between 17 hours (basic subjects) and 0 hours (pre-professional internship and professional training). MD 270 establishes that in order to obtain a degree in Veterinary Medicine students must acquire 300 ECTS, in five years, distributed in a maximum of 30 examinations.

The Degree in Veterinary Medicine at the University of Parma is now in a transitional phase and it is moving from the curriculum as established by the MD 509, to the one regulated by the MD 270.

In FVMUP the Curriculum established by the MD 509 was activated on 2001 while the Curriculum established by the MD 270 is active from 2009.

Hereafter, within this document, we will indicate the curriculum established by the MD 509 with the acronym "OC-2001" (Old Curriculum, 2001) and the curriculum established by the MD 270 with the acronym "NC-2009" (New Curriculum, 2009).

During the academic year 2010/11, the 1st and 2nd year of the curriculum follow the NC-2009, while the 3rd, 4th and 5th years are still under OC-2001. We plan to pass over to NC-2009 one year at a time; therefore the NC-2009 will be fully operative by 2013/14.

The present Chapter will illustrate the NC-2009. The OC-2001 is summarized in the Annex 4.1.

In 2000, the scientific/cultural disciplinary areas of the Italian university educational system ("Scientific-Disciplinary Sector" SDS, Table 4.0b) were defined by Ministerial Decree.

In accordance with the importance and the extension of the decisions, the decisional process for the NC-2009 application develops itself by the appointment of four levels; each level has (or may have) its own specific consulting body. The four levels are the following (in parenthesis the consulting body):

- the Degree Course Board (Degree Course Teaching Committee; consulting: optional)
- the Faculty Board (Faculty Teaching Committee; consulting: compulsory)
- the Academic Senate (University Teaching Committee; consulting: compulsory)
- the Ministry (University National Council; consulting: compulsory).

Every decision, before reaching its maximum level, must be approved by all the subordinate levels, one after the other: so each level can impede any decision. Describe the degree of freedom that the Faculty has to change the curriculum. »

As stated before, in order to obtain the degree in Veterinary Medicine students must acquire 300 ECTS, in 5 years, distributed in a maximum of 30 examinations. The NC-2009 also establishes the minimum number of ECTS assigned to each area of UE-listed subjects or activities (Table 4.0a).

ECTS can be acquired not only by passing the exams, but also after the acquisition of specific abilities developed during pre-professional internship and professional training such as, named respectively, "ORIENTAMENTO" and "TIROCINIO".

| Subjects/activities | Minimum ECTS to be assigned according to the law | ECTS assigned at FVMUP |
|--|--|----------------------------------|
| a. Basic courses of which: a.1 Basic subjects a.2 Basic sciences | 54 | 79 23 56 |
| b. Professionalizing courses of which: b.1 Clinical sciences b.2 Animal production b.3 Food hygiene | 130 | 139 103 20 16 |
| c. Integrative subjects of which: c.1 Basic subjects c.2 Basic sciences c.3 Clinical sciences c.4 Animal Production c.5 Food Hygiene | 12 | 17 4 1 12 0 0 |
| d. Elective subjects | 8 | 8 |
| e. Pre-professional internship "ORIENTAMENTO" of which: e.1 Basic subjects e.2 Basic sciences e.3 Clinical sciences e.4 Animal production e.5 Food hygiene | not indicated | 15 0 0.5 12.5 1 1 |
| f. Professional training "TIROCINIO" of which: f.1 Clinical Sciences f.2 Animal production f.3 Food hygiene | not indicated | 30 20 5 5 |
| g. Thesis | not indicated | 9 |

| h. Foreign language | not indicated | 3 |
|--|------------------|-----|
| Total minimum ULCs as required by regulation | 204 | |
| Total free ULCs available to the Faculty | 96 | |
| Total curricular ULCs | 300 | 300 |

Table 4.0a: Minimum ECTS assigned to subjects or activities and curricula operating in the Faculty of Veterinary Medicine of the University of Parma (FVMUP)*.

* Teaching activity is assigned to areas of discipline that are divided into basic and professionalizing subjects. There are also integrative courses, elective courses and professional training. ECTS are assigned as well to the preparation of the final year thesis and the study of a foreign (EU) language.

As shown in Table 4.0a, the curriculum requires a minimum of 204 ECTS, leaving 96 ECTS free for the Faculty to organize its own curriculum.

NC-2009 requires a greater allocation of ECTS to professionalizing subjects and leaves more ECTS free for vocational training in clinical subjects. This has allowed the FV-MUP to design its curriculum of studies within the boundaries set by the new law, but with a certain amount of freedom.

One of the main goals of this new curriculum has been to increase the number of hours in practicals in clinical courses. A number of ECTS for implementing this strategy have been taken from integrative subjects and assigned to different clinical courses (80 hours for Clinical Medicine, 80 hours for Obstetric and Animal Reproduction and 80 for Surgery, total=240 hours). 15 ECTS have also been assigned to the pre-professional internships "ORIENTAMENTO" (375 hours), while others have been assigned to intramural/extramural professional trainings "TIROCINIO" (750 hours).

NC-2009 permits activation of integrative subjects which include vocational training in professionalizing disciplines. Integrative subjects are designed annually and are aimed at assigning the right number of ECTS to each discipline in order to assure the students' learning skills, knowledge and experience in integrated disciplines. A part of the ECTS assigned to Integrative courses can also be used to increase knowledge in sanitary emergencies and re-emergence of animal diseases, zoonosis and risk assessment (e.g. BSE, Avian flu, dioxin, Blue tongue, West Nile fever, etc).

The distribution of ECTS for Integrative subjects (min 12 ECTS) can be changed each year. The Faculty Board at FVMUP has currently assigned 17 ECTS, 12 of which (240 hours) are used to increase practicals in clinical science EU-listed subjects (as above aforementioned).

Each year the Faculty Board proposes and approves the "Teaching Program" (Manifesto degli Studi) which establishes the list of the courses (Core and Elective subjects) and their organisation in teaching modules (number of hours of theoretical or practical teaching, hours of Elective Subjects, hours of pre-professional internship and of profes-

sional training).

The "Teaching Program" is then approved by the Academic Senate and becomes part of the "Teaching Program" of the University of Parma.

Outline how decisions on curriculum matters and course content are taken within the Faculty. »

Preceding the implementation of any reform/changes/etc, the Dean holds several meetings with the pertinent Commissions of the Faculty (Chapter 2), in order to decide what criteria to adopt for drawing up the yearly curriculum in according to Directive 36/2005/EU.

The curriculum has been developed following the guidelines of the European School of Veterinary Medicine "Manual 2007 Standing Operating Procedures" (SOP 2007), under the aegis of the 'European Association of Establishment for Veterinary Education".

The Degree Course Board, followed by the Faculty Board, unanimously voted to apply SOP 2007 in November 2008. This decision was preceded by consultation with the Provincial Veterinary Medical Associations (Ordine dei Medici Veterinari della Provincia di Parma and Ordine dei Medici Veterinari della Provincia di Reggio Emilia), National Health (Veterinary) Services, Zooprophylactic Institutes and with the trade unions of private and public veterinary practitioners.

In order to design the new curriculum, careful assessment of Teaching and Support Staff and of agreements for extramural activity was carried out.

The NC-2009 defines scientific-disciplinary sectors (SDS) which must be included in the curriculum, in accordance with the Directive 36/2005/EU. Table 4.0a shows the number of teaching staff belonging to the different SDS at the FVMUP, and the corresponding EU listed subjects.

Appropriateness of infrastructure, adequacy of facilities and inventoried equipment were also decisive for structuring the new curriculum, and the economic and productive context (pets, livestock farms, and food industries) also played an important role in setting the maximum number of students to enrol every year (see Chapter 9).

Practical extramural activities were assessed and developed for pre-professional internships "ORIENTAMENTO" and professional training "TIROCINIO" using a network of agreements with local practitioners, institutional partners (State Veterinary Officers), livestock farmers and food industry.

The Academic Senate of Parma approved and adopted the NC-2009 in November

| SDS | Teaching Staff (number) | EU-listed subjects |
|---|----------------------------|----------------------|
| VET/01: Anatomy | 7 | 2a |
| VET/02: Physiology | 4 | 2b |
| VET/03: Pathology | 5 | 3b |
| VET/04: Food Hygiene | 6 | 5a,5b,5c,5d |
| VET/05: Microbiology, Epidemiology and Infectious Diseases | 7 | 2g,2h,2i,3e,3g,3k,4f |
| VET/06: Parasitology and Parasitic Diseases | 2 | 3с |
| VET/07: Pharmacology | 2 | 2e,2f,3m |
| VET/08: Internal Medicine | 7 | 2j,3d,3l,3m,3n |
| VET/09: Surgery | 7 | 3f,3h,3n |
| VET/10: Obstetrics and Gynecology | 3 | 3a,3j |
| AGR/17: General Animal Husbandry and Genetic Improvement | 1 | 2d, 4a,4e |
| AGR/18: Animal Feeding and Nutrition | 3 | 4b |
| AGR/19: Special Animal Husbandry | 4 | 4a,4e, 4f, 4g |
| AGR//01 Rural Economy | 2 | 4d, 4c |
| BIO/05 Animal Biology | 1 | 1c |
| BIO/10 Chemistry, Biochemistry, Molecular Biology | 3 | 1b, 2c |
| BIO/12 Clinical Biochemistry | 1 | 2c |
| ING-INF/05 Informatics | 1 temporary | not listed |
| MAT/06 Biomathematics | 1 temporary | 1e |
| FIS/07 Physic | 1 temporary | 1a |
| BIO/01 Plant Biology* | 1 affinity | 1d |

2008 and the University National Council approved the proposed curriculum at the FVMUP in March 2009.

Table 4.0b: SDS, number of teachers and EU- listed subjects (Faculty Board November 13th, 2008). * taught by a Professor of Animal Production (affinity for the specific teaching).

Note

Field veterinary medicine (3i) is taught during professional training "TIROCINIO".

Professional knowledge (6a, 6b, 6c) are compulsory and are taught in a common educational trail as seminars, inside Elective subjects,' by State Veterinary Officers, practitioners and representatives of Veterinary Professional Association as seminars.

70 Chapter 4

Legend of EU-listed subjects

| | Basic subjects |
|----|--|
| 1a | Physics |
| 1b | Chemistry |
| 1c | Animal biology |
| 1d | Plant biology |
| 1e | Biomathematics |
| | Basic Sciences |
| 2a | Anatomy (incl. histology and embryology) |
| 2b | Physiology |
| 2c | Biochemistry, cellular and molecular biology) |
| 2d | Genetics (incl. molecular genetic) |
| 2e | Pharmacology and pharmacy |
| 2f | Toxicology (incl. environmental pollution) |
| 2g | Microbiology (incl. virology, mycology and bacteriology) |
| 2h | Immunology |
| 2i | Epidemiology (incl.scientific and technical information and documentation methods) |
| 2j | Professional ethics * |
| | Clinical Sciences |
| 3a | Obstetrics |
| 3b | Pathology (incl. pathological anatomy) |
| 3c | Parasitology |
| 3d | Clinical medicine |
| 3e | Clinical lectures on various domestic animal, poultry and other animal species |
| 3f | Surgery (incl. Anaesthesia) |
| 3g | Preventive Medicine |
| 3h | Diagnostic imaging (incl. Radiology) |
| 3i | Field veterinary medicine (ambulatory clinics) |
| Зј | Reproduction and reproductive disorders |
| 3k | Veterinary state medicine and public health |
| 31 | Veterinary legislation and forensic medicine |
| 3m | Therapeutics |
| 3n | Propaedeutics (incl. laboratory diagnostic methods) |
| | Animal Production |
| 4a | Animal production |
| 4b | Animal nutrition |
| 4c | Agronomy |
| 4d | Rural economics |
| 4e | Animal husbandry |

| 4f | Veterinary hygiene** |
|----|--|
| 4g | Animal ethology and protection |
| | Food hygiene and Public Health |
| 5a | Inspection, and control of animal foodstuffs or foodstuffs of animal origin and the respective feedstuff production unit |
| 5b | Food hygiene and technology |
| 5c | Food science including legislation |
| 5d | Practical work (including practical work in places where slaughtering and processing of foodstuffs takes place) |
| | Professional knowledge |
| 6a | Practice management |
| 6b | Veterinary certification and report writing |
| 6c | Career planning and opportunities |

Teaching Course

The allocation of ECTS to each subject within the degree course is an important aspect in designing and defining the curriculum. Italian legislation has not been very precise on this aspect and the NC-2009: a) gave a general indication to avoid a fragmentation of learning activities, and b) limited the number of examinations/evaluations to a maximum of 30.

The Faculty Board at the FVMUP has therefore decided that courses can either be mono-disciplinary or integrated. The latter is composed of modules and individual modules of an integrated course may belong to different areas of discipline. Each integrated course has a Coordinator that is assigned each year by the Faculty Board, and usually is taught each by a different teacher.

Propaedeutical

The curriculum is structured in order to provide balanced curricular advance based on progressive difficulties of knowledge and skills. The curricular progression of the student is based on the principle of prerequisites (propaedeutical) to be respected, as established by Faculty regulation. Propaedeutics are listed in Table 4.0c.

| Exam | Year, semester | EU-listed Subjects | Propae- deutic to | Exam | Year, semester | EU-listed Subjects |
|---|-------------------|-----------------------|----------------------|---|-------------------|-----------------------|
| Applied physics - Mathematic applied to | 1 1 | 12.10 | \rightarrow | General Zootechnics and genetic improvement | II, 1 | 2d, 4a, 4e |
| Medical and biological information technology | 1, 1 | | \rightarrow | Physiology I - Ethology | II, 1 | 4g, 2b |
| Chemistry propaedeutic to biochemistry | l, 1 | 1b | \rightarrow | Veterinary Biochemistry | l, 2 | 2c |
| Listalagu Embrualagu | | | \rightarrow | Anatomy | I, 2 | 2a |
| Zoology | I, 1 | 2a, 1c | \rightarrow | General Zootechnics and genetic improvement | II, 1 | 2d, 4a, 4e |
| Veterinary Biochemistry | I, 2 | 2c | \rightarrow | Physiology I - Ethology | II, 1 | 2b, 4g |
| A | | 2 | \rightarrow | Special Zootechnics | III <i>,</i> 1 | 4a, 4e, 4f, 4g |
| Anatomy | 1, 2 | 2a | \rightarrow | Physiology I - Ethology | II, 1 | 2b, 4g |
| General Zootechnics and genetic improvement | II, 1 | 2d, 4a, 4e | \rightarrow | Special Zootechnics | III, 1 | 4a, 4e, 4f, 4g |
| Physiology I - Ethology | II, 1 | 2b, 4g | \rightarrow | Physiology II - Endocrinology | II, 2 | 2b |
| | II, 1 | 2g, 2h, 2i | \rightarrow | General Pathology - Animal Physiopathology - Veterinary Immunopathology | II, 2 | 3b |
| | | | \rightarrow | Inspection and food of animal origin control | IV, 2 | 5a, 5c |
| Microbiology and immunology - Veterinary Epidemiology | | | \rightarrow | Infectious disease I - Veterinary policy and public health | III, 2 | 3e, 3g, 3k, 3n |
| | | | \rightarrow | Infectious disease II - Avian Pathology | IV, 1 | 3a, 3b, 3e, 3f,3n |
| | | | \rightarrow | Pharmacology - Toxicology - Chemotherapy | III, 1 | 2e, 2f, 3m |
| | II, 2 | 2b | \rightarrow | Animal Feeding and nutrition - Feeding and Feed techniques | III, 1 | 4b |
| Physiology II - Endocrinology | | | \rightarrow | General Pathology - Animal Physiopathology - Veterinary Immunopathology | II; 2 | 3b |
| | | | \rightarrow | Pharmacology - Toxicology - Chemotherapy | III, 1 | 2e, 2f, 3m |
| Parasitology and parasitic diseases | II, 2 | 3с | \rightarrow | Inspection and food of animal origin control | IV, 2 | 5a, 5b, 5c |
| | | | \rightarrow | Pathological Anatomy I - Pathological Anatomy II - Necroscopic Technique | III, 1&2 | 3b |
|--|----------------|---------------|---|--|----------|-----------------------|
| General Pathology - | | | \rightarrow | Infectious disease I - Veterinary policy and public health | III, 2 | 3e, 3g, 3k, 3n, 4f |
| Animal Physiopathology - Veterinary Immunopathology | II, 2 | 3b | \rightarrow | Diagnostic imaging - Veterinary Radiology - Surgical pathology | III, 2 | 3f, 3h |
| | | | \rightarrow | Medical Pathology - Medical Semeiology | IV, 1 | 3d, 3n |
| | | | \rightarrow | Obstetrics | IV, 2 | 3a, 3j |
| | | | → Medical Pathology - Medical Semeiology | | IV, 1 | 3d, 3n |
| Pharmacology - Toxicology - Chemotherapy | III <i>,</i> 1 | 2e, 2f, 3m | \rightarrow | Surgical Semeiology - Operative Medicine - Anaesthesiology - Surgery | IV, 2 | 3f, 3n |
| | | | \rightarrow | Obstetrics | IV, 2 | 3a, 3j |
| Diagnostic imaging - Veterinary Radiology - Surgical pathology | III, 2 | 3f, 3h | \rightarrow | Surgical Semeiology - Operative Medicine - Anaesthesiology - Surgery | IV, 2 | 3f, 3n |
| Medical Pathology - Medical Semeiology | IV, 1 | 3d, 3n | \rightarrow | Clinical Medicine | IV, 2 | 3l, 3m |
| | | | \rightarrow | Surgery | V, 1 | 3f |
| Topographic anatomy | II, 1 | 2a | \rightarrow | Clinical Medicine | IV, 2 | 3l, 3m |
| | | | \rightarrow | Obstetrics | IV, 2 | 3a, 3j |
| Pre-professional internship "ORIENTAMENTO" | I,2 to V, 1 | | \rightarrow | Professional training "TIROCINIO" | V, 2 | |

Table 4.0c: Exam Propaedeutics

Exams (See also Chapter 5.1.3).

Examinations are performed by different Exam Commissions specific for each of the 30 curricular exams (Table 4.0d). Exam Commissions are chaired by the President. For Integrated courses, the President is usually the Coordinator or the oldest Professor in service. Exam Commission members as well as the President, are nominated by the Dean. Profit is expressed out of thirties, minimum is 18/30 and the maximum is 30/30. In particular, when the student has a very high knowledge and/or capabilities, the Exam Commission can decide to attribute the honour (*laude*): 30/30 *cum laude*. The President has the responsibility to register the result of the exam on-line or on hard copy, and transcribe it in the booklet of student called "Libretto dello Studente". Every year three exam sessions are scheduled: 1 in winter and 2 during summer which

correspond to the interruption between the first and second semester and at the end of second semester. During Christmas and Easter holiday, teachers can set an additional date for exams. Therefore, for each exam the total number of dates, mandatory (7) and optional (2), are variable from a minimum of 7 to a maximum of 9.

The regular student does not perform exams during semesters while if the student is enrolled as repeater or off-course can do it (see paragraph "State the parts of the programme that must be attended as obligatory by the students and how the attendance is verified"; see also Chapter 9).

| Subjects/activities | MD 270 exams |
|---|-------------------|
| a. Basic courses of which: a.1 Basic subjects a.2 Basic sciences | 3 8 |
| b. Professional courses of which: b.1 Clinical sciences b.2 Animal production b.3 Food hygiene | 13 3 2 |
| d. Elective subjects | 1 |
| e. Pre-professional internship"ORIENTAMENTO" | Portfolio |
| f. Professional training "TIROCINIO" | Libretto diario |
| g. Thesis | Degree Commission |
| h. Foreign language | Knowledge |

Table 4.0d: Number of exams or other form of verification of knowledge or skills in relationship to EU-listed or non EU listed subjects or activities.

Thesis (see also Chapter 13)

The thesis is an obligatory, non EU-listed subject and is the final exam before the student's graduation. Every year 6 thesis sessions are scheduled where students present and discuss the thesis.

The final graduation thesis is presented and discussed by the student in front of Degree Commission "Commissione di Laurea" chaired by a President and composed by at least 7 professors. The thesis is presented as structured scientific work and is prepared independently by the student under the supervision of a Professor, called Relatore, of a related scientific field. The Dean designs a professor, called Controrelatore, who is committed to examining the thesis before the presentation. Profit is expressed out of 110, minimum is 66/110 and the maximum is 110/110. In particular, when the student has a very high knowledge and competences, the President can propose to the members of Degree Commission the honour (*laude*) which is assigned only in case of unanimity: 110/110 *cum laude*.

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 allocation of hours to ECTS has been determined by the distribution of different activities in which students must be engaged. The Faculty Board has decided to assign less theoretical teaching hours per ECTS for basics subjects in comparison to vocational courses. The Faculty Board has also proceeded to not assign teaching hours for practical activities to basics subjects except for Chemistry, Biochemistry and Molecular Biology.

As previously shown, the Faculty Board has considered assigning more hours to practicals in professional courses as highly strategic, including pre-professional internships "ORIENTAMENTO" and professional trainings "TIROCINIO".

Basic subjects' have minimum 8 hours/ECTS (physics, biomathematics) to a maximum of 9 hours/ECTS (animal biology, plant biology) of theoretical teaching. Theoretical teaching of basic science (including chemistry, biochemistry and molecular biology), clinical science, animal production and veterinary food hygiene/public health have 12 hours/ECTS. Practical teaching is not expected for some basic subjects (physics, animal biology, plant biology, and biomathematics) and also for rural economics and agronomy (Integrated courses), while 12 hours/ECTS are scheduled for laboratory deskwork in Informatics / Information Technology (IT).IT. Practicals in basic science (including chemistry, biochemistry and molecular biology), Clinical science, Animal Production and Food Hygiene/Public Health have 20 hours/ECTS. For the pre-professional internships "ORIENTAMENTO" and professional trainings "TIROCINIO" the ECTS is considered totally practical, therefore 25 hours/ECTS are foreseen. The remaining ECTS hours are considered spent by the student for at home studying.

> 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) »

Some non-EU listed subjects are included in the NC-2009 curriculum at FVMUP: Informatics (44 hours), Foreign Language (24 hours), Safety at work (4 hours) and the final year "Thesis" (225 hours) for a total of 297 hours (Table 4.4). The total amount of curricular hours of EU-listed subjects (4 353 hours) (Table 4.1) plus Elective subjects (32 hour) and minus non EU-listed subjects (72 hours) is equal to 4 313. The percentage of non EU-listed subjects is equal of 6.88 of the curriculum.

4.1.1. Power of subjects and types of training

4.1.1.1 Power of subject

- » "Core" subjects taken by every student;
- » "Elective subjects" which each student must select from a list of permissible subjects;
- » Obligatory extramural work.

The NC-2009 curriculum in the Veterinary Degree comprises a total study load of 300 ECTS (1 ECTS = 25 hours reaching a total of 7 500 hours). Core Subjects cover 4 353 hours, Elective subjects 32 hours and thesis 225 hours.

During the academic year 2010/11, the 1st and 2nd year of the curriculum are activated according to NC-2009, while the 3rd, 4th and 5th year courses are still in accordance with OC-2001 (Annex 4.2).

Each year the Faculty activates Elective subjects (Corso Integrato Professionalizzante named CIP), in order to increase the educational offer taking into consideration requirements in various veterinary professional skills. CIPs consist of 64 hours of activity, of which 32 are taught in a common part (seminars) held by practitioner or Veterinary State Officers regarding EU-listed Professional knowledge subjects (6a, 6b, 6c). This common part must be attended by all the students. For the remaining 32 hours, students choose one of the six CIPs currently activated by Faculty and listed in Tables 4.3a to 4.3f or in an Elective Subject in mono-disciplinary or integrated courses taught at the University of Parma (consistent with the educational mission of Veterinary Me-

dicine), or in courses of University partners in LLP/Erasmus.

Extramural work is a compulsory practical activity that students must take in pre-professional internships "ORIENTAMENTO" and professional trainings "TIROCINIO".

Table 4.2 reports the Curriculum hours aggregated by EU-listed subjects taken by each student (professional trainings "TIROCINIO" included and Elective subjects (CIP) excluded). Tables 4.2a.1 to 4.2a.5 report the Curriculum hours aggregated by Faculty-listed subjects taken by each student (see paragraph 4.1.2.2).

4.1.1.2 Types of training

- » There cannot be absolute distinction between the terms used to distinguish between different types of training. Overlap is inevitable. The following descriptions are derived from the definitions presented in the section 'Main Indicators' of Annex I.
- » <u>Lectures</u> convey theoretical knowledge. Lectures are given to an entire or partial annual intake of students. Teaching may be with or without the use of teaching aids or of demonstration animals or specimens. The essential characteristic is that there is no active involvement of the students in the material discussed. They listen and do not handle.
- » <u>Seminars</u> (sometimes called <u>tutorials</u> or <u>supervised group work</u>) are teaching sessions directed towards a smaller group of students during which they work on their own, or as a team, on part of the theory, prepared from manuscript notes, photocopied documents, articles and bibliographic references. Information is illustrated and knowledge extended by the presentation of audio-visual material, exercises, discussions and, if possible, case work.
- » <u>Self directed learning</u> are sessions of individual students making use of defined teaching material provided by the Faculty (eg e-learning)

4.1.1.2.1 Theoretical training

 Lectures convey theoretical knowledge. Lectures are given to an entire or partial annual intake of students. Teaching may be with or without the use of teaching aids or of demonstration animals or specimens. The essential characteristic is that there is no active involvement of the students in the material discussed. They listen and do not handle.

This paragraph covers the total number of hours of lectures and seminars provided to each student in a given academic year for the EU-listed subjects.

Lectures and seminars can be carried out with different teaching tools, including informatics and computer devices, objects or anatomical models used by a teacher to clarify or animate a subject.

For many courses, on-line lectures are available, but hours assigned to self-directed learning are not yet included in the curriculum. Therefore this subject is difficult to estimate. Below is the list of the Courses with online teaching material for the degree course in Veterinary Medicine. This material is available for authenticated users in the section "Teaching material" achievable at the Faculty's Home page-medvet.unipr.it.

- Animal feeding and nutrition- Feeding and Feed techniques (Animal Production EU-listed subjects)
- Pathological Anatomy I II Necroscopic techniques
- Plant biology
- Veterinary medical clinic
- Food of animal origin microbial control and relative legislation
- Diagnostic imaging Veterinary radiology Surgical pathology
- Endocrinology
- Veterinary epidemiology (this is a comprehensive online course and self-evaluation tests free at www.quadernodiepidemiologia.it)
- Pharmacology Toxicology Chemotherapy
- Applied physics Basic Mathematic applied to biomedical sciences Medical and biological information technology
- Physiology II Endocrinology
- Food hygiene and technology
- Microbiology and Immunology
- Veterinary clinic neurophysiology (shortcut url: http://tinyurl.com/vetpr-13; real url: www2.unipr.it/~dondi/Neuro/didattica_it.htm)
- Parasitology and parasitic diseases

- General pathology Animal physiopathology Veterinary immunopathology
- Medical pathology- medical semeiology
- Veterinary medical therapy Forensic medicine, legislation and animal protection
- General Zootechnics and genetic improvement (Animal Production EU-listed subjects)
- Special Zootechnics (Animal Production EU-listed subjects).

4.1.1.2.2 Supervised practical training

- » Laboratory and desk based work. Includes teaching sessions where students themselves actively perform laboratory experiments, se microscopes for the examination of histological or pathological specimens. It also includes work on documents and idea-formulation without the handling of animals, organs, objects or products (e.g. essay work, clinical case studies, handling of herd-health monitoring programmes, risk-assessment computer-aided exercises).
- » Non-clinical animal work. These are teaching sessions where students themselves work on normal animals, on objects, products, carcasses etc. (e.g. animal husbandry, ante mortem and post mortem inspection, food hygiene, etc.) and perform dissection or necropsy.
- » Clinical work. These are strictly hands-on procedures by students which include work on normal animals in a clinical environment, on organs and clinical subjects including individual patients and herds, making use of the relevant diagnostic data. Surgery or propaedeutical hands-on work on organ systems on cadavers to practice clinical techniques are also classified as clinical work.

Supervised practical training

Generalities

Our teaching system is compatible with SOP 2007 declarations:

 laboratory and desk based work includes teaching sessions where students themselves actively perform laboratory experiments and use microscopes for the examination of histological or pathological specimens. It also comprises the work on documents and idea-formulation without the handling of animals, organs, objects or products (e.g. essay work, clinical case studies, handling of herd-health monitoring programmes, risk-assessment computer-guided exercises)

- non-clinical animal work is characterised by teaching sessions where students themselves work on normal animals, on objects, products, carcasses etc. (e.g. animal husbandry, ante mortem and post mortem inspection, food hygiene, etc.) and perform dissection or necropsies
- clinical work are strictly hands-on procedures performed by students, which include work on normal animals in a clinical environment, on organs and clinical subjects including individual patients and herds, making use of the relevant diagnostic data. Surgery or propaedeutical hands-on work on organ systems, on cadavers to practice clinical techniques are also classified as clinical work.

4.1.2 Undergraduate curriculum followed by all students

» This section makes a distinction between curriculum hours to be taken by every student and those offered as Elective subjects or within a given track. Specific information is also requested on subjects other than those specified in table 4.2.

4.1.2.1 Generalities

The Degree in Veterinary Medicine is structured in 5 years, 2 semesters per year for a total of 10 semesters. The first two years of the veterinary degree mainly concern basic subjects and basic sciences, and to a lesser extent clinical sciences and animal production EU-listed subjects. Lectures and practical classes are organised by the Faculty, and aim to provide a preclinical and also an initial training relevant to the practice of veterinary medicine.

The third, fourth and fifth years comprise lectures, practicals and clinical rotations. Clinical sciences, animal production, food hygiene and public health lectures and practical classes are organised by the Faculty, and aim to provide a clinical and a nonclinical education relevant to the practice of veterinary medicine.

During preclinical education and professional courses students must undertake more in-depth professional internship "ORIENTAMENTO" for a total of 13 weeks and professional training "TIROCINIO for a total of 24 weeks for acquiring and refining the "day-one skills". Professional courses are organised by the Faculty with both intramural (VTH) and extramural placements during vacations, where students gain further practical experience.

The 1st to the 9th semesters last 13 weeks Each. The 10th semester is lecture-free, lasts 24 weeks, and is completely filled by professional training "TIROCINIO". During summer vacation (June to September) students take pre-professional internships "ORIEN-TAMENTO", lasting 2 (1st and 2nd year) or 3 weeks (3rd and 4th year). The pre-professional internship "ORIENTAMENTO" in the 5th year is included in the regular semester and is spent at the VTH.

At the FMVUP, the duration of teaching activity for the entire Degree Course is 151 weeks.

The core educational week goes from Monday to Friday (presently semester 1 to 4 are active; when the NC-2009 will be fully activated, semesters 1 to 9). Usually theoretical teaching is given during the morning classes, while in the afternoon practicals are taken in the laboratories or at the VTH.

Theoretical classes begin at 8:30 a.m. and finish at 12:30 a.m. or 1:30 p.m. Laboratory activities and practicals begin at 1:30 or 2:30 p.m. until 4:30 or 6:30 p.m. The effective teaching hour lasts 50 minutes.

Elective subjects are planned in the 8th semester (32 hours, common part, professional knowledge) and 9th (32 hours, non- clinical and clinical subjects) and last 13 weeks each.

Professional training "TIROCINIO" is related to clinical (4 paths) and non-clinical (2 paths) veterinary education. Non clinical professional training "TIROCINIO" lasts from Monday to Friday. Professional training for clinical "TIROCINIO" is organised seven days a week, including nights for emergency and clinical care of hospitalised patients.

A mobile clinical service will be offered giving professional clinical trainings "TIRO-CINIO", and it is active morning and afternoon from Monday to Friday.

4.1.2.1 Curriculum hours

In Table 4.1 the curriculum hours taken by all students is reported.

| | | | | Hours of tra | ining* | | | |
|-----------------|----------|----------------|----------------------------|------------------------|-----------------------------|------------------|--------------|-------|
| | Th | neoretical tra | ining | Supervised | l practical trair | ning | | |
| | Lectures | Seminars | Self- directed learning | Laboratory and desk | Non-clinical animal work | Clinical work | Other (G) | Total |
| Year | (A) | (<i>D</i>) | (C) | (D) | (E) | (F) | | |
| 1 st | 472 | | | 82 | 73 | 38 | 5 | 670 |
| 2^{nd} | 582 | | | 91 | 133 | 16 | 30 | 852 |
| 3^{rd} | 510 | | | 70 | 32 | 183 | 41 | 836 |
| 4^{th} | 438 | 32^ | | 49 | 0 | 346 | 40 | 905 |
| 5^{th} | 144 | | | 10 | 238 | 675 | 23 | 1 090 |
| Total | 2 1 4 6 | 32^ | 0 | 302 | 476 | 1 258 | 139 | 4 353 |

Table 4.1: General table of curriculum hours (EU-listed and non EU-listed) taken by all students (pre-professional internship "ORIENTAMENTO" and professional training "TIROCINIO" included; Elective subjects [CIP] and Thesis excluded).

Note

hours rounded off

(G) "Other" category includes: video-tapes, extramural teaching (visit livestock farms).

^ hours taught during the common part of the Elective Courses activated in the Faculty.

These hours must be taken by all students.

Four additional hours (extra curriculum) on Safety at Work compulsory for all students are taught at 1st year.

| Subject | | Hours* | | | | | | | | | | | |
|---------------------|-----------------|-----------------|------------------------------------|---|------------------------------------|-----------------------------|--------------|-------|--|--|--|--|--|
| | Tł | neoretical tr | aining | Supervised | Supervised practical training | | | | | | | | |
| 1. Basic Subject | Lectures (A) | Seminars (B) | Self - directed learning (C) | Laboratory and desk based work (D) | Non-clinical animal work (E) | Clinical training (F) | Other (G) | Total | | | | | |
| a) Physics | 24 | | | | | | | 24 | | | | | |
| b) Chemistry | 42 | | | 10 | | | | 52 | | | | | |
| c) Animal biology | 32 | | | | | | 5 | 37 | | | | | |
| d) Plant biology | 18 | | | | | | | 18 | | | | | |
| e) Biomathematics** | 24 | | | | | | | 24 | | | | | |
| 1. Total | 140 | | | 10 | | | 5 | 155 | | | | | |

Table4.2: Curriculum hours in EU-listed subjects taken by each student (pre-professional
internship "ORIENTAMENTO" and professional training "TIROCINIO" included;
Elective subjects [CIP] and Thesis excluded)[continued]

rounded off

** information technology (non-EU-listed) excluded (see Table 4.4)

Note

| Subject | | Hours | | | | | | | | | | | | |
|---|-----------------|-----------------|------------------------------------|---|------------------------------------|-----------------------------|--------------|-------|--|--|--|--|--|--|
| | Th | neoretical tr | aining | Supervised | d practical trair | ning | | | | | | | | |
| 2. Basic Sciences | Lectures (A) | Seminars (B) | Self - directed learning (C) | Laboratory and desk based work (D) | Non-clinical animal work (E) | Clinical training (F) | Other (G) | Total | | | | | | |
| a) Anatomy (incl. histo- logy and embryology) | 192 | | | 20 | 107 | | 6 | 325 | | | | | | |
| b) Physiology | 180 | | | 8 | 22 | | 10 | 220 | | | | | | |
| c) Biochemistry, cel- lular and molecular biology | 96 | | | 50 | | | 10 | 156 | | | | | | |
| d) Genetics (incl. mo- lecular genetics) | 30 | | | | | | | 30 | | | | | | |
| e) Pharmacology and pharmacy | 36 | | | | | 23 | | 59 | | | | | | |
| f) Toxicology (incl. en- vironmental pollution) | 24 | | | | | 22 | | 46 | | | | | | |
| g) Microbiology (incl. virology, mycology and bacteriology) | 24 | | | 15 | | | | 39 | | | | | | |
| h) Immunology | 12 | | | 5 | | | | 17 | | | | | | |
| i) Epidemiology (incl. scientific and technical information and docu- mentation methods) | 36 | | | 20 | | | | 56 | | | | | | |
| j) Professional ethics * | 6 | | | | | | | 6 | | | | | | |
| 2. Total | 636 | | | 118 | 129 | 45 | 26 | 954 | | | | | | |

Table 4.2: Curriculum hours in EU-listed subjects taken by each student[continued]

| Subject | | Hours | | | | | | | | | | | | |
|--|-----------------|-----------------|-----------------------------------|---|------------------------------------|-----------------------------|--------------|-------|--|--|--|--|--|--|
| | Th | eoretical tr | aining | Supervised | d practical trair | ning | | | | | | | | |
| 3. Clinical Sciences | Lectures (A) | Seminars (B) | Self- directed learning (C) | Laboratory and desk based work (D) | Non-clinical animal work (E) | Clinical training (F) | Other (G) | Total | | | | | | |
| a) Obstetrics | 24 | | | | | 100 | | 124 | | | | | | |
| b) Pathology (incl. pathological anatomy) | 216 | | | 33 | 20 | 75 | 7 | 351 | | | | | | |
| c) Parasitology | 72 | | | 20 | 12 | 38 | | 142 | | | | | | |
| d) Clinical medicine | 114 | | | | | 235 | | 349 | | | | | | |
| e) Clinical lectures on various domestic ani- mal, poultry and other animal species | 42 | | | 7 | | 15 | | 64 | | | | | | |
| f) Surgery (incl. anaesthesia) | 144 | | | | | 248 | | 392 | | | | | | |
| g) Preventive Medicine | 54 | | | | | 72 | | 126 | | | | | | |
| h) Diagnostic imaging (incl. radiology) | 48 | | | | | 95 | | 143 | | | | | | |
| i) Field veterinary me- dicine (ambulatory cli- nics) | | | | | | 25 | | 25 | | | | | | |
| j) Reproduction and reproductive disorders | 84 | | | | | 150 | | 234 | | | | | | |
| k) Veterinary state medi- cine and public health | 24 | | | | | | 5 | 29 | | | | | | |
| l) Veterinary legislation and forensic medicine | 24 | | | | | | 28 | 52 | | | | | | |
| m) Therapeutics | 42 | | | | | 138 | 15 | 195 | | | | | | |
| n) Propaedeutics (incl. laboratory diagnostic methods) | 30 | | | 32 | | 20 | | 82 | | | | | | |
| 3. Total | 918 | | | 92 | 23 | 1 2 1 1 | 55 | 2 308 | | | | | | |

Table 4.2: Curriculum hours in EU-listed subjects taken by each student[continued]

| Subject | Hours | | | | | | | | | | | |
|---|-----------------|-----------------|-----------------------------------|---|------------------------------------|-----------------------------|--------------|-------|--|--|--|--|
| | Th | eoretical tr | aining | Supervised | d practical trair | ning | | | | | | |
| 4. Animal Production | Lectures (A) | Seminars (B) | Self- directed learning (C) | Laboratory and desk based work (D) | Non-clinical animal work (E) | Clinical training (F) | Other (G) | Total | | | | |
| a) Animal production | 60 | | | 10 | 80 | | | 150 | | | | |
| b) Animal nutrition | 84 | | | 8 | 37 | | | 129 | | | | |
| c) Agronomy | 12 | | | | | | | 12 | | | | |
| d) Rural economics | 36 | | | | | | | 36 | | | | |
| e) Animal husbandry | 12 | | | | 50 | | | 62 | | | | |
| f) Veterinary hygiene | 24 | | | | 23 | | | 47 | | | | |
| g) Animal ethology and protection | 12 | | | | 13 | 3 | 7 | 35 | | | | |
| 4. Total | 240 | | | 18 | 203 | 3 | 7 | 471 | | | | |
| 5. Food Hygiene / Public Health | | | | | | | | | | | | |
| a) Inspection, and con- trol of animal foodstuffs or foodstuffs of animal origin and the respective feedstuff production unit | 108 | | | 16 | 25 | | 13 | 162 | | | | |
| b) Food hygiene and technology | 18 | | | 16 | 13 | | 13 | 60 | | | | |
| c) Food science including legislation | 24 | | | 13 | | | 21 | 58 | | | | |
| d) Practical work (in- cluding practical work in places where slaugh- tering and processing of foodstuffs takes place) | 6 | | | 7 | 75 | | | 88 | | | | |
| 5. Total | 156 | | | 32 | 113 | | 47 | 368 | | | | |
| 6. Professional Knowledge | | | | | | | | | | | | |
| a) Practice management | | 12 | | | | | | 12 | | | | |
| b) Veterinary certifica- tion and report writing | | 12 | | | | | | 12 | | | | |
| c) Career planning and opportunities | | 8 | | | | | | 8 | | | | |
| 6. Total | | 32 | | | | | | 32 | | | | |

Table 4.2: Curriculum hours in EU-listed subjects taken by each student Note

[continued]

* Hours teached during the common part of the Elective Course. These hours must be taken by all students

** additional non-EU-listed subject

| Course | Semester | Lectures (A) | Seminars (B) | Self- directed learning (C) | Laboratory and desk based work (D) | Non-clinical animal work (E) | Clinical training (F) | Other (G) | A+B+C | D+E+F+G | Total |
|---|----------|--------------|--------------|--------------------------------|---------------------------------------|---------------------------------|-----------------------|-----------|-------|---------|-------|
| Veterinary normal anatomy (I semester) | 1 | 42 | | | | 20 | | | 42 | 20 | 62 |
| Chemistry propaedeu- tic to biochemistry | 1 | 60 | | | 20 | | | | 60 | 20 | 80 |
| Applied physics - Mathe- matic di base applied to biomedical sciences - Medical and biological information technology | 1 | 80** | | | 12*** | | | | 80 | 12 | 92 |
| Histology Embryology - Zoology | 1 | 80 | | | 20 | | | 5 | 80 | 25 | 105 |
| Veterinary normal anatomy (II semester) | 2 | 42 | | | | 40 | | | 42 | 40 | 82 |
| Veterinary biochemistry | 2 | 78 | | | 30 | | | | 78 | 30 | 108 |
| Plant biology- Zootechnical production economy- Rural economy | 2 | 66 | | | | | | | 66 | 0 | 66 |
| Foreigner language English | 2 | 24 | | | | | | | 24 | 0 | 24 |
| Pre-professional internship "ORIENTAMENTO" (Basic Sciences- Clinical Sciences)* | 2 | | | | | 13 | 37 | | 0 | 50 | 50 |
| TOTAL 1 st year | | 472 | 0 | 0 | 82 | 73 | 37 | 5 | 472 | 198 | 669 |

Table 4.2a.1: Curriculum hours aggregated by <u>Faculty-listed</u> subjects taken by each student (Thesis excluded).

FIRST YEAR (hours rounded off)

Note

student must take during summer vacation

** of which 32 non-EU listed (Information technology)

*** non EU-listed (information technology)

| Course | Semester | Lectures (A) | Seminars (B) | Self- directed learning (C) | Laboratory and desk based work (D) | Non-clinical animal work (E) | Clinical training (F) | Other (G) | A+B+C | D+E+F+G | Total |
|--|----------|--------------|--------------|--------------------------------|---------------------------------------|---------------------------------|-----------------------|-----------|-------|---------|-------|
| Topographic anatomy | 1 | 60 | | | | 34 | | 6 | 60 | 40 | 100 |
| Physiology I - Ethology | 1 | 96 | | | 3 | | 3 | 14 | 96 | 20 | 116 |
| Microbiology and im- munology - Veterinary Epidemiology | 1 | 72 | | | 40 | | | | 72 | 40 | 112 |
| Physiology II - Endocrinology | 2 | 96 | | | 5 | 22 | | 3 | 96 | 30 | 126 |
| Parasitology and parasitic diseases | 2 | 72 | | | 20 | | | | 72 | 20 | 92 |
| General Pathology - Animal Physiopat- hology - Veterinary Immune-pathology | 2 | 72 | | | 13 | | | 7 | 72 | 20 | 92 |
| General Zootechnics and genetic improve- ment | 1 | 66 | | | 10 | | | | 66 | 10 | 76 |
| Special Zootechnics | 2 | 48 | | | | 40 | | | 48 | 40 | 88 |
| Pre-professional in- ternship "ORIENTAMENTO" (Clinical Sciences - Animal productions)* | 2 | | | | | 37 | 13 | | | 50 | 50 |
| TOTAL 2 nd year | | 582 | | | 91 | 133 | 16 | 30 | 582 | 270 | 852 |

Table 4.2a.2: Curriculum hours aggregated by Faculty-listed subjects taken by each student,
SECOND YEAR (hours rounded off)[continued]

Note

*: student must take during summer vacation

| ••• Chapter 4 | |
|---------------|--|
|---------------|--|

| Course | Semester | Lectures (A) | Seminars (B) | Self- directed learning (C) | Laboratory and desk based work (D) | Non-clinical animal work (E) | Clinical training (F) | Other (G) | A+B+C | D+E+F+G | Total |
|---|----------|--------------|--------------|--------------------------------|---------------------------------------|---------------------------------|-----------------------|-----------|-------|---------|-------|
| Feeding and nutrition - Feeding and Feed techniques | 1 | 84 | | | 8 | 12 | | | 84 | 20 | 104 |
| Pathological Anatomy I - Necroscopic Techniques | 1 | 72 | | | 10 | 10 | | | 72 | 20 | 92 |
| Pharmacology - Toxicology - Chemotherapy | 1 | 72 | | | | | 45 | 15 | 72 | 60 | 132 |
| Food Hygiene and technology | 2 | 72 | | | 32 | | | 8 | 72 | 40 | 112 |
| Pathological Anatomy II - Necroscopic Techniques | 2 | 60 | | | 10 | 10 | | | 60 | 20 | 80 |
| Diagnostic imaging - Veterinary Radiology - Surgical pathology | 2 | 78 | | | | | 70 | | 78 | 70 | 148 |
| Infectious disease I - Veterinary policy and public health | 2 | 72 | | | 10 | | 5 | 5 | 72 | 20 | 92 |
| Pre-professional in- ternship "ORIENTAMENTO" (Clinical Sciences - Food Hygiene / Public Health)* | 2 | | | | | | 62 | 13 | | 75 | 75 |
| TOTAL 3 rd year | | 510 | | | 70 | 32 | 182 | 41 | 510 | 325 | 835 |

Table 4.2a3: Curriculum hours aggregated by Faculty-listed subjects taken by each student,
THIRD YEAR (hours rounded off)[continued]

Note

* student must take during summer vacation

| Course | Semester | Lectures (A) | Seminars (B) | Self- directed learning (C) | Laboratory and desk based work (D) | Non-clinical animal work (E) | Clinical training (F) | Other (G) | A+B+C | D+E+F+G | Total |
|--|----------|--------------|--------------|--------------------------------|---------------------------------------|---------------------------------|-----------------------|-----------|-------|---------|-------|
| Infectious disease II- Avian pathology | 1 | 84 | | | 14 | | 6 | | 84 | 20 | 104 |
| Obstetrics - Artificial insemination | 2 | 60 | | | | | 80 | | 60 | 80 | 140 |
| Medical Pathology - Medical Semeiology | 1 | 84 | | | 15 | | 65 | | 84 | 80 | 164 |
| Veterinary medical therapy- Forensic me- dicine, legislation and animal protection | 1 | 60 | | | | | 25 | 15 | 60 | 40 | 100 |
| Inspection, and control of animal foodstuffs | 2 | 84 | | | 20 | | | | 84 | 20 | 104 |
| Surgical Semeiology - Operative Medicine - Anaesthesiology - Surgery | 2 | 66 | | | | | 70 | | 66 | 70 | 136 |
| Elective subject^ | | | 32 | | | | | | 32 | | |
| Pre-professional in- ternship "ORIENTAMENTO (Clinical Sciences - Food Hygiene / Public Health)* | 1 &2 | | | | | | 100 | 25 | | 125 | 125 |
| TOTAL 4 th year | | 438 | 32 | | 49 | | 346 | 40 | 470 | 435 | 905 |

Table 4.2a.4: Curriculum hours aggregated by Faculty-listed subjects taken by each student,
FOURTH YEAR (hours rounded off)[continued]

Note

* student must take during regular semester and during summer vacation

 $^{\wedge}\,$ common part of the Elective Course (CIP), to be taken by all students

| Course | Semester | Lectures (A) | Seminars (B) | Self- directed learning (C) | Laboratory and desk based work (D) | Non-clinical animal work (E) | Clinical training (F) | Other (G) | A+B+C | D+E+F+G | Total |
|--|----------|--------------|--------------|--------------------------------|---------------------------------------|---------------------------------|-----------------------|-----------|-------|---------|------------------------|
| Surgery | 1 | 48 | | | 10 | | 40 | 10 | 48 | 60 | 108 |
| Clinical medicine | 1 | 48 | | | | | 40 | | 48 | 40 | 88 |
| Obstetrics | 2 | 48 | | | | | 20 | | 48 | 20 | 68 |
| Pre-professional internship "ORIENTAMENTO (Clinical Sciences) | 1 | | | | | | 75 | | | 75 | 75 |
| Elective subject (CIPs)* | 1 | | | | | | | | | | (*) |
| Professional training "TIROCINIO" | 2 | | | | | 238 | 500 | 12 | | 750 | 750 |
| TOTAL 5 th year | | 144 | | | 10 | 238 | 675 | 23 | 144 | 945 | 1089 (1121°) |

Table 4.2.a5: Curriculum hours aggregated by Faculty-listed subjects taken by each student,FIFTH YEAR (hours rounded off)[continued]

Note

* 32 hours, variously distributed depending on CIP (see Table 4.2.a6).

° comprehensive of 32 hours of Elective subjects taken by all the students

Elective Subjects (Corsi integrati professionalizzanti:CIP)

A CIP is an elective course that every student must take before the beginning of "TI-ROCINIO". As aforementioned, CIPs are planned in the 8th (32 hours, common part) and 9th semester (32 hours), last 13 weeks and are taught in parallel with the core courses. Common parts includes EU-listed subjects regarding Professional knowledge (6a, 6b, 6c) and are taught as seminars by State Veterinary Officers, practitioners and representatives of Veterinary Professional Association.

CIPs are designed to be practice training in specific clinical or non-clinical vocational disciplines (9th semester).

The student must submit an application within September 30th for the CIP (9th semester) which she/he intends to choose from among the following:

Type a) integrated courses or modules activated by the Faculty or within the University of Parma;

Type b) Mono-disciplinary courses or integrated courses, concerning the educational mission of veterinary medicine, activated in the University of Parma;

Type c) integrated courses or modules activated by University Partners within the pro-

gram of student mobility LLP/Erasmus.

For the CIP organised by the Faculty of Veterinary Medicine of Parma the student must submit an application indicating the ranking of choice (1 to 6) for the non-clinical and clinical CIPs.

The allocation of the student into CIP organised by the Faculty is awarded for merit. For each CIP, the Degree Course Board appoints a CIP Coordinator each year who is responsible to assess the commitment made by individual students in meeting predefined educational objectives for each course.

CIP Coordinators, Teaching Staff and/or Contract Professors verify the presence of each student daily and her/his involvement in practical activities.

The assessment of individual modules is considered evidence in progress and is expressed with an informal assessment from each teacher, while the acquisition of the specific skills is expressed by a mark of X/30.

| Course | Semester | Lectures (A) | Seminars (B) | Self- directed learning (C) | Laboratory and desk based work (D) | Non-clinical animal work (E) | Clinical training (F) | Other (G) | A+B+C | D+E+F+G | Total |
|---|----------|--------------|--------------|--------------------------------|---------------------------------------|---------------------------------|-----------------------|-----------|-------|---------|-------|
| Small and large animals surgery | 1 | | | | | 4 | 28 | | | | 32 |
| Microbiological control of food of animal and legislation | 1 | | | | 4 | 28 | | | | | 32 |
| Laboratory diagnostic of diseases of animals | 1 | | | | 24 | | | 8 | | | 32 |
| Health management of food-producing animals | 1 | | | | | 8 | 16 | 8 | | | 32 |
| Internal medicine and patient clinical management | 1 | | | | 4 | | 24 | 4 | | | 32 |
| Animal production and breeding techniques | 1 | | | | | 32 | | | | | 32 |

Table 4.2a.6. Curriculum hours aggregated by Faculty-listed subjects taken by each student. <u>Elective courses</u> (CIP) held during the 5th year. In this table the common part to be taken by all the students during the 4th year is excluded.

Note

* the distribution of the 32 hours depends on the CIP selected by the student. See Table 4.2a.6 for details.

| | Hours | | | | | | | | | | |
|-------------------------|----------|----------------------------|--------------------------------------|-----------------------------|------------------|-------|--|--|--|--|--|
| | Theoreti | cal training | Supervise | | | | | | | | |
| Subject | Seminars | Self- directed learning | Laboratory and desk based work | Non-clinical animal work | Clinical work | Other | | | | | |
| Basic subjects | A* | B* | C** | D** | E** | F** | | | | | |
| | | | | | | | | | | | |
| Basic sciences | A | В | С | D | E | F | | | | | |
| | | | 12 | 4 | | | | | | | |
| Clinical sciences | А | В | С | D | E | F | | | | | |
| | | | 20 | 8 | 68 | 20 | | | | | |
| Animal production | А | В | С | D | E | F | | | | | |
| | | | | 32 | | | | | | | |
| Food hyg./Public health | А | В | С | D | E | F | | | | | |
| | | | | 28 | | | | | | | |
| Professional knowledge | A | В | С | D | E | F | | | | | |
| | 32 | | | | | | | | | | |

Table 4.3: Curriculum hours in EU-listed subjects offered to be taken as <u>Electives</u>*

Note
* common part to be taken by all the students

** total of C+D+E+F columns = 192 hours to be subdivided in 6 Elective Courses CIPs (32 hours each).

| | | Hours | | | | | | | | |
|-------------------|----------|-----------------|------------------------|-----------------------------|------------------|--------------|------------------------------|--|--|--|
| | Theoreti | cal training | Supervise | d practical trai | | | | | | |
| | Seminars | Self - directed | Laboratory and desk | Non-clinical animal work | Clinical work | Other (F) | Hours to be taken by each | | | |
| Subject° | (A) | (B) | based work (C) | (D) | (E) | | student | | | |
| Basic Sciences | | | | | | | 4 | | | |
| EU-Subject 2a | | | | 4 | | | 4 | | | |
| Clinical Sciences | | | | | | | | | | |
| EU-Subject 3f | | | | | 14 | | 28 | | | |
| EU-Subject 3h | | | | | 14 | | | | | |
| Total | 0 | 0 | 0 | 4 | 28 | 0 | 32 | | | |

Table 4.3.a: Curriculum hours in EU-listed subjects to be taken as <u>Elective subjects</u> for CIP "Small and large animals surgery" (*).

Note

in order to complete the elective subject the hours indicated in the table must taken after completing the ones in Table 4.3

2a: Anatomy (incl. histology and embryology); 3f: Field veterinary medicine (ambulatory clinics);
 3h: Diagnostic imaging (including radiology)

| | | Hours | | | | | | | | | |
|---------------------------------|-----------------|------------------------------------|---|------------------------------------|-------------------------|--------------|---|--|--|--|--|
| | Theoreti | cal training | Supervised | d practical trair | ning | | | | | | |
| Subject° | Seminars (A) | Self - directed learning (B) | Laboratory and desk based work (C) | Non-clinical animal work (D) | Clinical work (E) | Other (F) | Hours to be taken by each student | | | | |
| Basic Sciences | | | | | | | | | | | |
| EU-Subject 2f | | | 4 | | | | 4 | | | | |
| Food hygiene / Public health | | | | | | | | | | | |
| EU-Subject 5a | | | | 10 | | | | | | | |
| EU-Subject 5b | | | | 10 | | | 28 | | | | |
| EU-Subject 5c | | | | 8 | | | | | | | |
| Total | 0 | 0 | 4 | 28 | 0 | 0 | 32 | | | | |

Table 4.3.b: Curriculum hours in EU-listed subjects to be taken as <u>Elective subjects</u> for CIP "Food of animal origin microbial control and relative legislation"(*).

Note

* in order to complete the elective subject the hours indicated in the table must be completed with the ones in Table 4.3

 2f: Toxicology (including environmental pollution); 5a: Inspection, and control of animal foodstuffs or foods tuffs of animal origin and the respective feedstuff production unit; 5b: food hygiene and technology; 5c: Food science including legislation

| | | | | Hours | | | |
|-------------------|----------|-----------------|------------------------|-------------------|----------|--------------|---------------------------|
| | Theoreti | cal training | Supervised | d practical trair | | | |
| | Seminars | Self - directed | Laboratory and desk | Non-clinical | Clinical | Other (F) | Hours to be taken by each |
| Subject° | (A) | (B) | based work (C) | (D) | (E) | | student |
| Basic Sciences | | | | | | | |
| EU-Subject 2i | | | 4 | | | | 8 |
| EU-Subject 2f | | | 4 | | | | |
| Clinical Sciences | | | | | | | |
| EU-Subject 3b | | | | | | 8 | 24 |
| EU-Subject 3n | | | 16 | | | | |
| Total | 0 | 0 | 24 | 0 | 0 | 8 | 32 |

Table 4.3.c: Curriculum hours in EU-listed subjects to be taken as <u>Elective subjects</u> for CIP "Laboratory diagnostic of animals' disease (*)".

Note

* in order to complete the elective subject, data specified in this table must be added to those of Table 4.3

 2f: Toxicology (including environmental pollution); 2i: Epidemiology; 3b: pathology (including pathological anatomy); 3n: Propaedeutics (including laboratory diagnostic methods).

| | | Hours | | | | | | | | |
|-------------------|----------|-----------------------------|------------------------|-----------------------------|------------------|--------------|---|--|--|--|
| | Theoreti | cal training | Supervise | d practical train | | | | | | |
| | Seminars | Self - directed learning | Laboratory and desk | Non-clinical animal work | Clinical work | Other (F) | Hours to be taken by each student | | | |
| Subject° | (A) | (B) | (C) | (D) | (E) | | student | | | |
| Animal Production | | | | | | | | | | |
| EU-Subject 4a | | | | 12 | | | | | | |
| EU-Subject 4b | | | | 12 | | | 32 | | | |
| EU-Subject 4e | | | | 8 | | | | | | |
| Total | 0 | 0 | 0 | 32 | 0 | 0 | 32 | | | |

Table 4.3.d: Curriculum hours in EU-listed subjects to be taken as <u>Elective subjects</u> for CIP "Animal production and breeding techniques" (*).

Note

* in order to complete the elective subject the hours indicated in the table must be completed with the ones in Table 4.3a

° 4a: Animal production; 4b: Animal nutrition; 4e: Animal husbandry

| | | | | Hours | | | |
|-------------------|----------|--|------------------------|--------------|----------|--------------|------------------------------|
| | Theoreti | Theoretical training Supervised practical training | | | | | |
| | Seminars | Self - directed | Laboratory and desk | Non-clinical | Clinical | Other (F) | Hours to be taken by each |
| Subject° | (A) | (B) | based work (C) | (D) | (E) | | student |
| Internal Medicine | | | | | | | |
| EU-Subject 3a | | | | | 4 | | |
| EU-Subject 3d | | | | | 10 | | |
| EU-Subject 31 | | | | | | 4 | 32 |
| EU-Subject 3m | | | | | 10 | | |
| EU-Subject 3n | | | 4 | | | | |
| Total | 0 | 0 | 4 | 0 | 24 | 4 | 32 |

Table 4.3.e: Curriculum hours in EU-listed subjects to be taken as <u>Elective subjects</u> for CIP "Internal medicine and patient clinical management" (*).

Note

 in order to complete the elective subject the hours indicated in the table must be completed with the ones in Table 4.3a

3a: obstetrics; 3d: clinical medicine and a surgery (including anaesthetics); 3l: Therapeutics; 3m: Propaedeutics (including laboratory diagnostic methods); 3n: Propaedeutics (including laboratory diagnostic methods).

| | | Hours | | | | | | | | | |
|-------------------|-----------------|------------------------------------|---|------------------------------------|-------------------------|--------------|---|--|--|--|--|
| | Theoreti | cal training | | | | | | | | | |
| Subject° | Seminars (A) | Self - directed learning (B) | Laboratory and desk based work (C) | Non-clinical animal work (D) | Clinical work (E) | Other (F) | Hours to be taken by each student | | | | |
| Animal Production | | | | | | | | | | | |
| EU-Subject 3a | | | | | 4 | | | | | | |
| EU-Subject 3b | | | | 8 | | | 20 | | | | |
| EU-Subject 3j | | | | | 4 | | 32 | | | | |
| EU-Subject 3k | | | | | | 8 | | | | | |
| EU-Subject 3i | | | | | 8 | | | | | | |
| Total | 0 | 0 | 0 | 8 | 16 | 8 | 32 | | | | |

Table 4.3.f: Curriculum hours in EU-listed subjects to be taken as <u>Elective subjects</u> for CIP "Health management of food producing animals" (*).

Note

* in order to complete the elective subject the hours indicated in the table must be completed with the ones in Table 4.3a

3a: Obstetrics; 3b: Pathology; 3j: Reproduction and reproductive disorders; 3k: Veterinary legislation and forensic medicine; 3i: Field veterinary medicine (ambulatory clinics)

| | | Hours of training | | | | | | | | | |
|----------------------------|-----------------|-------------------|----------------------------------|---|------------------------------------|-------------------------|--------------|-------|--|--|--|
| | Th | eoretical t | raining | Supervise | ed practical tra | ining | | | | | |
| Subject | Lectures (A) | Seminars (B) | Self Directed learning (C) | Laboratory and desk based work (D) | Non-clinical animal work (E) | Clinical work (F) | Other (G) | Total | | | |
| Final Graduation Thesis | | | | | | | 225 | 225 | | | |
| English language | 24 | | | | | | | 24 | | | |
| Information technology | 32 | | | 12 | | | | 44 | | | |
| Safety at work | | 4* | | | | | | 4* | | | |
| Total | 60 | 4* | | 12 | | | 225 | 297 | | | |

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).

Note

* Extra-curriculum hours compulsory for all students taught at 1st year.

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.

The most important curricular innovation is the introduction of the pre-professional internships "ORIENTAMENTO" (see below) and of the Career "Portfolio" (Annex 4.2). The purposes of the pre-professional internships "ORIENTAMENTO" is to prepare the student to professional trainings "TIROCINIO. During pre-professional internship the student must acquire basic skills and competences as listed in SOP 2007 i.e. "day one skills" which will be refined during professional trainings "TIROCINIO". Student's basic "day one skills" are certified in a booklet named "Portfolio" (Annex 4.2). "Portfolio" refers to the basic "day one skills acquired by the student during semesters 1 to 9. "Day-one skills" will be refining during the 10th semester which will be certified on the "Libretto Diario".

The teaching method is characterised by a balanced practical workload, which allows students to learn and acquire specific skills in different professional veterinary fields, in a coordinated and progressive way.

Practical hands-on training is performed under the supervision of Internship Coordinators, Teaching Staff and Contract Professors.

Internship Coordinators, Teaching Staff and/or Contract Professors verify daily the presence of the student and her/his involvement in the "day one skills" activities and certify the abilities acquired on the "Portfolio".

Pre-professional internship ("ORIENTAMENTO")

Pre-professional Internships ("ORIENTAMENTO") are compulsory practical activities, both intramural and extramural, that every student must carry out during summer vacations (10 weeks).

Extramural pre-professional Internship or professional training can take place at any facility approved by the Faculty Board.

Proposals for pre-professionals Internships "ORIENTAMENTO" submitted by the students themselves are not accepted.

All Pre-professional Internship "ORIENTAMENTO" activities, intramural and extramural, are certified in the "Portfolio".

Each year, the Degree Course Board appoints Internship Coordinators (staff member

of the FVMUP) for the "ORIENTAMENTO". The Board can also nominate consultants called "Contract Professors" that support Teaching Staff in pre-professional internship activities.

Internship Coordinators and/or Contract Professors certify student skills in the "Portfolio" (Annex 4.2).

Organisation of pre-professional Internship "ORIENTAMENTO"

The practical activities of pre-professional internship "ORIENTAMENTO" (375 hours) are organised at the end of second semester (year 1 to 4) in three summer rounds (June to September), each lasting 2-3 weeks, in intramural (VTH) and extramural activities (extra-Faculty clinical facilities, laboratories, livestock farms, slaughterhouses and food industries).

In able 4.4a are reported the summer round organised in the academic year 2009-2010.

| Rounds | Start | Finish |
|-----------------|------------|------------|
| 1 st | 28/06/2010 | 10/07/2010 |
| 2 nd | 26/07/2010 | 07/08/2010 |
| 3 rd | 06/09/2010 | 18/09/2010 |

Table 4.4a: Date of start and finish of "ORIENTAMENTO "academic year 2009-2010.

In the 1st year the student spends 1 week in the VTH and 1 week in the Municipal shelter and cat shelter of Parma, and acquire specific competence in animal handling, surface anatomical landmarks, clinical anatomy, animal behaviour (Table 4.4b). Students are divided into groups of 10-11, and then further dived in two groups of 5-6 each.

| Table 4.4b: Disciplines in | which obligatory | pre-professional | internship called |
|----------------------------|------------------|--------------------|-------------------|
| ORIENTAMENTO | is performed for | the students at th | e FVMUP |

| FIRST YEAR (academic years: 2009/2010 and 2010/2011) | Where the training is performed | Hours |
|---|--|-------|
| anatomy and clinics | Intramural (Anatomy and Clinics) VTH | 25 |
| | Extramural (Clinics) Municipal shelter (Parma) 0.6 Km | 25 |

The contract professors (extramural) for the pre-professional internship "ORIENTA-MENTO" are:

- VALENTINA BONINI (Clinics and Parasitology Municipal shelter) consultant for companion animals
- BARBARA GALLUCCIO (Clinics and Parasitology Municipal shelter) consultant for companion animals

| SECOND YEAR (academic year: 2010/2011) | Where the training is performed | Hours |
|---|---|-------|
| PARASITOLOGY | Intramural Parasitology Laboratory | 13* |
| | Extramural Municipal shelter (Parma) 0.6 Km | 13* |
| ANIMAL PRODUCTION | Extramural Cow dairy farm "La Paganina (Roccabianca - Parma) 27 Km, 33 min. | 25 |

* hours rounded off

The contract professors (extramural) for the pre-professional internship "ORIENTA-MENTO" are:

- FAUSTO FRANZONI (Animal Production Cow dairy farm "La Paganina") consultant for cattle
- GIUSEPPE MARENZONI (Animal Production Cow dairy farm "La Paganina") consultant for cattle.

| THIRD YEAR (academic year: 2011/2012) | Where the training is performed | Hours |
|---|--|-------|
| PATHOLOGY | Intramural Pathology Unit | 25 |
| DIAGNOSTIC IMAGING | Intramural VTH | 25 |
| INFECTIOUS DISEASE AND FOOD HYGIENE AND PUBLIC HEALTH | Extramural Zooprophylactic Institutes | 25 |

| FIFTH YEAR (academic year: 2013/2014) | Where the training is performed | Hours |
|---|---------------------------------|-------|
| SURGERY | VTH | 25 |
| CLINICAL MEDICINE | VTH | 25 |
| REPRODUCTION AND REPRODUCTIVE DISORDERS | VTH | 25 |

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

According to the Faculty regulation, attendance to all academic activities is compulsory. Before the beginning of each semester, the Student Secretariat of the Faculty sends a list of students enrolled in the specific year to each teacher, in order to check their attendance.

Attendance at theoretical lectures is monitored and/or checked by the teachers in the manner deemed most appropriate. Many teachers collect student signatures in the classroom.

Attendance at practical classes is also compulsory and it is checked, usually, by requiring the student to sign a register.

For the Elective course "CIP", pre-professional internship and professional training "ORIENTAMENTO" and "TIROCINIO", the attendance is monitored and/or checked as described previously.

Finally, with a view to coordinating teaching, the Faculty Board appoints Coordinators for each integrated course of the Veterinary Medicine curriculum. The Coordinator of each integrated course sends a written communication to the Student Secretariat of the Faculty, immediately after the end of each course, listing the names of students who have not complied with the requirements of attendance for all modules related to the course. The certificate of attendance is essential for the student to sit the final exam. The student who has not obtained the certificate of attendance for a single course of a given year, must enrol as "repeating"the following year, and the attendance at this course is compulsory (see Chapter 9).

» 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

Generalities

Clinical rotation has been activated during the OC-2001. Based on the good results obtained, such clinical activity is maintained and will be improved in NC-2009.

Clinical rotation is an obligatory, full time, intramural and extramural, student standard practice. Training includes work on large and small, diseased or healthy animals for clinical teaching aims. Cadavers or isolated organs are used for necropsy and clinical-pathology investigation (sample collections, fine-needle aspiration, etc).

Pathological and non-pathological biological fluids are used for laboratory work. Cadavers or isolated anatomical regions (e.g. isolated limbs), are used in order to learn methods of examination and surgical techniques (e.g. suturing, troncular anaesthesia, approaches to surgical techniques).

Students participate in the management of day hospital activities in companion animals and large animals diseased, or patients hospitalized at the Veterinary Teaching Hospital (VTH), as well as in the mobile clinic service, with a VTH vehicle beginning November 2010. Students can only begin professional training "TIROCINIO" after having completed pre-professional internships "ORIENTAMENTO".

Each area of professional training "TIROCINIO" is under the direct control of a Coordinator, Teaching Staff and Contract Professors with a low teacher: student ratio (1:1 to 1:5), and does not exceed six months, as indicated by Directive 36/2005/EU.

The competencies and skills acquired by the students during periods of professional trainings "TIROCINIO" are also certified in the "Libretto Diario."

The skills are periodically checked, by the Coordinators, Teaching Staff and/or Contract Professors, to permit an accurate assessment of student veterinary aptitude.

At the VTH, hands-on clinical activity by the students includes dealing with small animals (dogs and cats), large animals (cattle, horses and pigs), and exotic species.

Students are actively involved in the examination, diagnosis and care of patients.

Professional training "TIROCINIO"

Students, after completing experiences provided by the pre-professional internships "ORIENTAMENTO" and certified in the "Portfolio" (Annex 4.2), must acquire an additional 30 ECTS of professional trainings "TIROCINIO" (1 ECTS= 25 hours) corresponding at 750 hours of practical, hands-on training in the 10th semester, lecture-free, of veterinary curriculum .

"TIROCINIO" is organized during the 5th academic year from March to September of the following year, and replicates 6 times in order to subdivide students in small groups.

Professional training "TIROCINIO" (Table 4.4e), as aforementioned last 24 weeks, 4 weeks for each of the following 6 subjects (4 clinical and 2 no-clinical), as follows:

- 1. Clinical medicine
- 2. Surgery, Anaesthesiology and Diagnostic Imaging
- 3. Obstetrics and Animal Reproduction
- 4. Pathology, Infectious Diseases (Avian pathology included), Parasitic Diseases
- 5. Food Hygiene and Public Health
- 6. Animal Production.

| Professional training "TIROCINIO" subject | Type of activity | SDS* | hours n° | Hours intramural + extramural |
|--|------------------|----------------------------|----------------|----------------------------------|
| Internal Medicine | Clinical | VET/08 | 125 | 100 + 25 |
| Surgery Anaesthesiology and Diagnostic Imaging | Clinical | VET/09 | 125 | 100 + 25 |
| Obstetrics and Animal Reproduction | Clinical | VET/10 | 125 | 100 + 25 |
| Pathology, Infectious Diseases (included Avian pathology), Parasitic Diseases | Clinical | VET/03 VET/05 VET/06 | 50 50 25 | 125 + 0 |
| Food Hygiene and Public Health | non Clinical | VET/04 | 125 | 25 + 100 |
| Animal Production | non Clinical | AGR/17 AGR/18 AGR/19 | 125 | 25 + 100 |

Table 4.4c: Professional training "TIROCINIO" per student.

* Scientific Disciplinary Sectors, listed in Table 4.0b

During professional training "TIROCINIO", the student finishes her/his professional training and refines professional abilities.

The method of teaching is characterized by continuous full-time training, intramural and extramural, with an active participation by the student:

- intramural clinical activities (clinical medicine, surgery, diagnostic imaging, obstetric and animal reproduction) at VTH and related facilities (labs, mobile clinic) on small and large animals as well exotics
- extramural professional trainings on large animals in collaboration with veterinary practitioners (cattle and equine consultants), nominated Contract Professors
- intramural and extramural activities of meat inspection and food hygiene (cattle, horse and swine slaughterhouses, milk, egg, beef, pork industries as well as fish industries)
- intramural and extramural activities Animal Production (dairy cow farms, pig fattening farms, poultry flocks, fodder, wildlife) (see paragraph "obligatory extramural activity" in this Chapter).

Students involved in intramural Animal Production training are also involved in extramural training under the supervision of Contract Professors that work in specific areas of Animal Production.

Students during the intramural professional training in Animal Production "TIROCI-NIO" are involved by the Teaching Staff and by Support Staff in solving problems related to:

- calculation of the composition of rations for large and small ruminants, pigs, horses, dogs and cats by means of a specific program installed in PCs in the computer room
- management of genetic indexes in dairy cattle, by means of a specific program installed in the computer room
- recognition of the main breeds of cattle, sheep, goats, pigs, horses, dogs and cats, followed by a self evaluation trial
- morphological evaluation of cattle and horses.

Professional Trainings "TIROCINIO" (CLINICAL ROTATIONS)

As aforementioned students must attend 4 professional clinical trainings "TIROCI-NIO" of which 3 (clinical rotations) at VTH and mobile clinic (Clinical Medicine; Surgery Anaesthesiology and Diagnostic Imaging; Obstetrics and Animal Reproduction), and another 1 inside Faculty labs and diagnostic facilities (Pathology, Infectious Diseases -included Avian pathology - Parasitic Diseases). As of November 2010, attendance in the VTH during week-days is from 8:30 a.m. until 1:30 p.m. Afternoon emergency and intensive care starts at 1:30 p.m. and ends at 8:00 p.m. Students on night duty start their shift at 8:00 p.m. and finish at 8:30 the following morning. 24-hr service is active every night and on week-ends 49 weeks per year.

Professional training "TIROCINIO" in Clinical Medicine

<u>Attendance at Clinical Medicine (intramural)</u> *Students' training: 100 hours* Place: VTH

Generalities

Students take part in the examination, diagnosis and medical treatment of patients referred intramural (VTH) for a total of 100 hours and other 25 hours extramural (mobile clinic).

Students are divided equally into 3 groups of 3-4 persons each. Two groups operate at VTH and one group in mobile clinic.

Students participate with Teaching Staff and Contract Professors to record the case history and share in basic physical examination and laboratory testing (e.g. biological matrix collection, basic methods in clinical pathology, electrocardiogram) of the patients. Results are discussed with Teaching Staff or Contract Professors for formulating a diagnosis through a path of differential diagnosis. Students become "tutors" of animals and accompany them in the path of professional consultations: Clinical Chemistry, Clinical medicine Neurology, Cardiology, Dermatology, Ophthalmology. Students participate also in administration of therapy. (See also Chapter 6.1.6b.1 to 6.1.6b.5).

Students, daily, perform monitoring of vital signs (rectal temperature, pulse and breathing), and participate in additional diagnostic procedures and medical therapy in hospitalized patients. Animals that need intensive care and/or hospitalization are managed by students under supervision of Teaching Staff and Contract Professors.

Students participate to the final visit and attend the discharge the patients (treatment and advice of veterinarian).

These activities include practicals/field work on small animals (dogs and cats), large animals (cattle, horses and pigs) and exotic species.

Students participate at "INTRAMURAL CLINICAL TRAINING ON CATTLE" for multidisciplinary clinical activities (see below). <u>Attendance to Clinical Medicine (extramural)</u> *Students' training: 25 hours* Place: mobile clinic on the territory

Professional activities on cattle and pigs include assessment of livestock health (metabolic disease, infectious disease and parasitic diseases), study of outbreaks and prophylactic measures adopted (vaccination plan, control and therapy against parasites, ect.), biological matrix collection for laboratory diagnosis.

Professional training "TIROCINIO" in Surgery, Anaesthesia, Diagnostic Imaging

Generalities

Students take part in the examination, diagnosis and surgical treatment of patients referred intramural (VTH) for a total of 100 hours and other 25 hours extramural (mobile clinic)

Students are divided equally into 4 groups of 2-3 persons each. Groups receive professional trainings at VTH and mobile clinic: 1 group attends surgery, 1 group attends Anaesthesia and emergency care, 1 group attends diagnostic imaging service and 1 group attends the mobile clinic. At the end of professional training periods the groups rotate.

These activities include practicals/field work on small animals (dogs and cats), large animals (cattle, horses and pigs) and exotic species.

Attendance to Surgery and Anaesthesia (Intramural)

Students' training: 75 hours

Place: VTH

Anaesthesia and emergency care (1 group of students)

Students participate in the preparation of the patient and help to compile medical records. Students control the pre-anaesthetic patient preparation and study a correct anaesthesiology and control pain protocol for every animal and try to place the endo-tracheal tube and the intravenous catheter. Students participate in the monitoring of the patient during the general anaesthesia and during the pre and the post-anaesthetic steps. Students learn the management of traumatized patients (first aid management of haemorrhage, wounds, internal organ damage, breathing difficulties and cardiac arrest) and assist in formulating therapeutic protocols for hospitalized animals. Students learn the resuscitation procedures.

Group of students acquire or refine the following skills: sedation and pre-anaesthesia in small and large animals; general gas anaesthesia in dog, cat, horse; loco-regional analgesia in cows and horses; therapy and pain control of hospitalized animals; emergency approach to all common domestic animal species.

Surgery (1 group of students)

Group of students:

participate in the initial clinical examination of the patient; help to prepare the surgery room, the surgical dressing, the surgical patient and the surgical field; do main orthopaedic and traumatic surgical procedures and surgical procedures on soft tissues as assistants; learn superficial and soft tissues diaeresis and synthesis; learn principles of sterilization of surgical equipment, principles of aseptic surgery and of postoperative room cleaning; learn to do limb bandaging and immobilizing of small and large animals and participate to the monitoring of the patient during the postoperative steps.

Students acquire the following skills: semeiologic exam of the surgery patient (dog, cat, horse, ruminant); surgery of small and large animals (soft tissues, orthopaedic and traumatology, ophthalmology, neurosurgery).

Students participate at "INTRAMURAL CLINICAL TRAINING ON CATTLE" for multidisciplinary clinical activities (see below).

Attendance to Surgery and Anaesthesia (extramural)

Students' training: 25 hours

Place: mobile clinic on territory (1 group of students)

Bovine surgery. podiatry and abomasal displacement reduction are performed by Contract Professors, in cow dairy farms Equine surgery: in field.

<u>Attendance to Diagnostic Imaging</u> *Students' training: 25 hours* Place: VTH (1 group of students)

During the week of professional training "TIROCINIO" the student spends halftime in radiology facilities and halftime in ultrasound (US) service. In accordance with the amount of clinical work referred to radiology and US, students move from one diagnostic facility to the other.

Daily training in radiology

Students, as they start their training period in radiology, review the use of personal protective equipment (lead gloves, apron, thyroid shields, lead glasses), the dosimeter, learn how to use the technique chart of the X-ray unit and review the different types of radiographic cassette. Students must be able to recognize positive contrast medium preparations (barium sulphate, iodinated contrast medium). Students are not allowed

to stay in the radiology room during the X-ray exposure.

Routinely students are invited and advised to position the animal for any particular radiographic study requested during the daily routine work in the clinic, measure the anatomical region to be imaged and set the exposure values (technique chart). Centering and collimation of the area of interest to be radiographed is made by the students under the advice and control of the teacher;

Film labelling is done by students. Darkroom administration is done by students and the teacher together. Students are invited to discuss film quality and the radiological signs suggestive of any diseases.

Daily training in ultrasound service

Students are invited to locate all the equipment, which is needed for the ultrasound examination (clipper, gel, cotton, liquid antiseptic, etc.). Students are advised to prepare the area for US examination and set the US unit for the examination (patient ID). Ultrasound training with phantom (fruit/vegetables in fluid-gel preparations) for echoguided fine needle aspirate/biopsy is arranged for each student at least once during the US training period.

Professional training "TIROCINIO" in Obstetrics and Animal Production

Generalities

Students take part in the examination, diagnosis, surgical and obstetric treatment of patients referred intramural (VTH) for a total of 100 hours and other 25 hours extramural (mobile clinic)

Students are divided equally into 4 groups of 2-3 persons each. Groups receive professional training in large animal obstetrics and animal reproduction (2 groups) and in small animal obstetrics and animal reproduction (1 group) and 1 group attend to mobile clinic. At the end of professional training period the groups rotate.

These activities include practicals/field work on small animals (dogs and cats), large animals (cattle, horses).

Attendance at Obstetrics and Animal Reproduction

Students' training: 100 hours

Place: VTH

Equine Obstetrics and Reproduction (1 group of students)

During the horse-breeding season, the students participate in equine reproduction activities:

Semen Collection Procedure. Students participate in all the gynaecological and ultrasound examinations of the mares hospitalised for artificial insemination with fresh, cooled and frozen semen. Furthermore, students:

perform rectal palpation and ultrasound gynaecological visit on an individual basis and participate to the pharmacological therapies for oestrus induction and ovulation control and artificial insemination, therapeutic post-ovulation infusion; where necessary, they participate in the Caslick's surgery;

take part in doing ultrasound pregnancy diagnosis. Where necessary they participate in twins' pregnancy reduction. In pregnant mares close to parturition, calcium investigation in colostrum for prediction of the delivery time is performed;

milk the mares for milk collection and mare's assistance during delivery;

give assistance and first care to the newborn. In case of neonatal and perinatal pathologies, students give their support for diagnosis and therapies.

In case of embryo transfer procedures, they are involved in the several part of the program.

After the end of the horse breeding season students carry out the same activities on the stallions and mares permanently present in the Faculty.

Bovine Obstetrics and Reproduction (1 group of students)

Students take very active part in performing the general examination of the cows. Students milk cows and execute the California Mastitis Test (CMT). Moreover, under the supervision of a clinician, they carry out a gynaecological and ultrasound examination of cow genital tract.

Students participate at "INTRAMURAL CLINICAL TRAINING ON CATTLE" for multidisciplinary clinical activities (see below).

Students participate to clinical management of calves hospitalised. Students actively participate in care assistance, feed and therapies under the supervision of Teaching Staff during the weekend.

Students participate during the different phases of a bovine embryo transfer program.

Small Animals Obstetrics and Reproduction (1 group of students)

Students participate as first assistant in the operation of ovariohysterectomy and orchiectomy in cats weekly programmed according to an agreement with Municipal shelter and cat shelter.

Students take part at obstetric clinical activities as consultations on pets or patients of the VTH. When necessary, students participate actively to fertility tests in dog and to artificial insemination of the bitch. Students also attend to ultrasonography pregnancy diagnosis as well as pseudopregnancy diagnosis in dog and cat. Students participate in caesarean section in the dog and the cat. Students take part to dog prostate gland diseases diagnosis and therapies.

Attendance to Obstetrics and Animal Reproduction (extramural)

Students' training: 25 hours

Place: mobile clinic on territory (1 group of students)

Place: mobile clinic:

- Bovine (gynaecological examination, artificial insemination).
- Equine (gynaecology and andrology).

INTRAMURAL CLINICAL TRAINING ON CATTLE

Recently, the FVMUP has begun a unique programme entitled "INTRAMURAL CLI-NICAL TRAINING ON CATTLE" (Multi-disciplinary clinical activities) where students spend time during their TIROCINIO to carry out specific activities related to bovine health.

Intramural clinical rotation on cattle is repeated every week. Teachers from Clinical Sciences and Animal Production EU-listed subjects.

The programme details are as follows:

Wednesday

Morning

At arrival, cattle (minimum 4, maximum 8) are identified (auricular mark) and recovered at the Large Animal Clinic of the VTH.

Clinical exam (vital signs). Exam of mammary gland with undergraduates involved. Students apply the protocols for bovine mastitis diagnosis under supervision of Teaching Staff or Contract Professors. Students participate in the clinical examination of the udder (palpation and macroscopic evaluation), and then they collect a sample of milk to make the count of the somatic cell by CMT and pH. Afterwards the students collect milk samples with aseptic procedures. These samples are then referred to the laboratory of bacteriology, where the same students perform the bacteriological examination by striking the milk on solid medium blood agar and Mc Conkey. The same students follow the test with the reading of the plates and the identification of the bacterial colonies growth after 24 hours (staining, conventional biochemical tests). Students also collect blood, from the coccigeal vein, in order to obtain sera for sero-logical tests (Clinical sciences).

Cattle milking (Animal Production)

Afternoon

Gyneacological examination.
Thursday

Morning

Evaluation of vital signs. Students perform serological examination of the sera previously collected and on other sera referred to the laboratory, under the supervision of Teaching Staff and Contract Professors. According to the typology of the examinations requested, they can perform serum neutralisation, ELISA, indirect immunofluorescence and follow the tests until reading. Interpretations of results are discussed. Cattle milking, BCS and cow morphological evaluation

Afternoon

Faecal sampling of cattle by rectal examination Faecal consistency is evaluated and the presence of any macroscopically visible parasites recorded. Students then carry out fresh smears and flotation for diagnosis of endoparasites and must formulate the correct therapeutic approach.

Friday

Morning Evaluation of vital signs, rectal palpation and ultrasound examination

Afternoon Rectal palpation

Saturday/Sunday

Evaluation of vital signs

Monday

Morning. Evaluation of vital signs and surgical examination

Afternoon. Surgery practical activities

Tuesday

Morning

Compilation of the "Module 4" (requested by law) and sending cattle to slaughterhouse of Parma.

Pathological exams of viscera under supervision of teaching staff.

For each cattle, a personal case history is opened during the reception and for subsequent professional visits.

Professional training "TIROCINIO" in Pathology, Infectious diseases and Parasitic diseases

Generalities

Students take part in necropsies and laboratory diagnostic activities for a total of 125 hours

Students are divided equally into 3 groups of 3-4 persons each. Groups receive professional training in diagnostic activities: 1 group attends pathology, 1 group attends Infectious diseases, avian pathology included, and 1 group attends parasitology. At the end of professional training periods the groups rotate.

These activities include practicals on cadavers and biological matrix of companion, large animals and exotics.

Students' training: 125 hours

Place: necropsy room and lab facilities

Students take part in necropsy and histopathology/cytopathology diagnostic routine activities (50 hours). Infectious diseases laboratory and field diagnostic activities. Vaccination field programmes (50 hours).

Formulation of therapeutic protocols based on commonly diagnosed Parasitic diseases (25 hours).

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

Prior the commencement clinical rotation at the VTH and consultations, students must finish the period of pre-professional internship "ORIENTAMENTO" and the acquired skills by the student are recorded on "Portfolio" (Annex 4.2).

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

Starting November 2010, emergency and hospitalization activities have again been expanded to 24 hours a day and 5th year students participate at the emergency and hospital activities.

During weekdays students are involved in professional training "TIROCINIO", un-

der supervision of Coordinators, Teaching Staff, Contract Professors and Veterinary Residents. Veterinary residents are practitioners that collaborate with Teaching Staff. Students take part in emergency care of patients and in hospital activities. Hospital services overnight as well as on holidays are performed steadily by rounds of 8 Veterinary Residents selected through a competition of licenses. All are consultants for small animals and two are also professionals for large animals. Students involved in professional training "TIROCINIO" take also part at emergency and hospital services both overnight and holidays supervised by Veterinary Residents.

The work of the Contract Professor and Veterinary Residents is coordinated daily by the Professional training Coordinator and by the Unit Heads.

» 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 Mobile clinic, with a vehicle owned by VTH, has been operative since November 2010.

Presently there is only a very preliminary experience related to Elective subject courses and professional training in effect from June 2010, under supervision of Contract Professors. The programme of visits is scheduled for clinical training sessions of surgery, obstetrics and animal reproduction, clinical medicine and preventive medicine in livestock farms.

Students are divided into groups of maximum 5 persons. Every student spent 75 hours in mobile clinic activities during professional trainings "TIROCINIO" (see above).

Students will participate to clinical activities under the supervision of one member of the Teaching Staff or a Contract Professor. The Coordinator, Teaching Staff or Contract Professors and clinical activities are daily reported on the "Libretto Diario".

Professional activities on cattle and pigs include assessment of livestock health (metabolic disease, infectious disease and parasitic diseases), study of outbreaks and prophylactic measures adopted (vaccination plan, control and therapy against parasites, ect.), biological matrix collection for laboratory diagnosis.

Students during professional training in obstetrics and animal reproduction will evaluate cow reproductive tract using rectal palpation and ultrasonography (ovarian cysts, early pregnancy diagnosis, embryonic death, etc.). Students will learn about the material and methods used in artificial insemination.

Students during professional training in surgery will participate with Teaching Staff or Contract Professor in clinical surgical activities: physical examination, diagnosis, anaesthetic protocols, and surgery. Open (surgical) and closed (percutaneous) techniques used to correct left or right abomasum displacement (LRA and RDA). Podiatry (digital and interdigital dermatitis, foot rot, lameness).

VTH provides an authorized truck for large animal transport from the livestock farms to the Hospital (owner or practitioners) for consultation and hospitalization.

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.

Generalities

Extramural placement training is an important part of veterinary degree programs which provides students with valuable learning experiences in private and public practice as well as slaughterhouses, livestock farms and food industries. The extramural practical activities are performed in the field by teaching staff (including consultants nominated Contract Professors).

Students must take extramural work as indicated in the curriculum. . Extramural work is compulsory for clinical and non-clinical activities, including pre-professional internship "ORIENTAMENTO" and professional training "TIROCINIO". Students must take extramural work for refining the basic theoretical knowledge and practical training received at the Faculty. Students must acquire, on the field, specific competences as indicate in "day-one skills" therefore the aim is to prepare the students to gain first-hand knowledge of veterinary practice.

Table 4.5 summarizes the obligatory extramural work that students must undertake as part of their course during the academic year 2010/11.

| | Minimum period ² | | Maximum period ² | | Year in which |
|---|-----------------------------|---------------------------|-----------------------------|---------------------------|-------------------------------------|
| Nature of work | Hours | % of total study time* | Hours | % of total study time* | work is carried out ¹ |
| Pre-professional internship "Ori- entamento" (Basic Sciences-Clinical sciences) | 25 | 3.73 | | | 1 |
| Pre-professional internship "Ori- entamento" (Animal production) | 25 | 4.40 | | | 2 |
| Pre-professional internship "Ori- entamento" (<i>Clinical Sciences</i>) | 13° | 4.40 | | | 2 |
| Pre-professional internship "Ori- entamento" (Food Hygiene / Public Health) | 13° | 1.50 | | | 3 |
| Pre-professional internship "Ori- entamento" (Clinical Medicine) | 25 | | | | |
| Pre-professional internship "Ori- entamento" Obstetrics-Animal reproduction) | 25 | 8.29 | | | 4 |
| Pre-professional internship "Ori- entamento" (Surgery) | 25 | | | | |
| Professional training "Tirocinio" (Clinical Sciences: Obstetrics and Animal reproduction) | 25 | | | | |
| Professional training "Tirocinio" (Clinical Sciences: Internal medicine) | 25 | | | | |
| Professional training "Tirocinio" (Clinical Sciences: Surgery, Anaesthesia and Diagnostic Imaging) | 100 | 25.23 | | | 5 |
| Professional training "Tirocinio" (Animal production) | 100 | | | | |
| Professional training "Tirocinio" (Food Hygiene - Public Health) | 100 | | | | |
| Total | 426 | 9.79 | | | |

Table 4.5: Obligatory extramural work that students must undertake as part of their course. Note

if these periods of extramural work take place during vacations, then the preceding academic year should be entered in the last column of Table 4.5

² where applicable

* calculated per each year on the total of study time comprehensive of all activities (from Table 4.1)

** calculated on the total of the five years of course (from Table 4.1)

° hours rounded off

Currently extramural work is operating for the students of the 1^{st} and 2^{nd} year.

4.1.5 Specific information on 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.

Professional training in slaughterhouses

Practical training in slaughterhouses includes the following student activities related to the obtaining of fresh meat (beef, horse and pork):

- ante-mortem inspection. Identification of animals and official checking of paperwork. For cattle bovine registry
- supervision of Food Chain Information
- animal welfare. Inspection of slaughterhouse hygiene and of animals; inspection of animal health status, monitoring of animals during slaughter and transport. Inspection of stunning and bleeding methods
- inspection and monitoring of all subsequent stages of slaughter and carcass cutting
- post-mortem inspection. Visual inspection of external surfaces and additional inspection of carcasses and waste, including palpation and incision
- specified hazardous material and other animal by-products. Monitoring of removal, separation and, where appropriate, labelling of products in batches already inspected ante-mortem. Collection and referral of samples to the laboratory; surveillance programmed for Bovine spongiform encephalopathies (BSE)
- laboratory diagnosis and monitoring for notifiable diseases in slaughterhouses, for example trichinosis in pigs
- monitoring of the cold chain for fresh meat (refrigeration of carcasses)
- recording activities in slaughterhouse logbook. Explanation by the official veterinarian. Production and issuing of reports, control sheets, and veterinary certificates.

Professional training at Food Industries and Official Veterinary Inspections.

Students accompanied by a Contract Professor (including State Veterinary Officers), visit various food plants and take part in relevant official inspection activities, including:

- sample collection
- inspection of sanitary conditions in retail outlets (fisheries, butchers)
- sanitary inspection of food industries (meat cutting rooms, central kitchens, etc.)
- sanitary inspection of restaurants and catering establishments.

 Indicate the distance to slaughterhouses where students undergo training, and the species covered.
Outline the structure and the attendance of these visits (group size, number of trainers, duration, etc.).

In details, professional training in "TIROCINIO of Food Hygiene" provides 25 hours intramural and 100 hour extramural.

The structures involved are those currently are used for OC-2001 (Annex 4.1) and are listed below.

Professional training at slaughterhouses: 60 hours

Group of students, 4-5 each one; take part in veterinary meat inspections under the supervision of Contract Professors that are State Veterinary Officer.

The slaughter facilities (bovine, equine and swine species), where the students spend part of the extramural professional training "TIROCINIO" in food hygiene and public health are listed below:

Two pig slaughterhouses and one cattle/horse abattoir are utilised, namely:

- Macello Di Parma, Strada del Taglio, 6/a, 43126 Parma (PR). The slaughterhouse is nearby the Veterinary Medicine Faculty of Parma and the Faculty has shares of the society (cattle and horses slaughterhouse) - 0,1 Km
- Sassi Fratelli (S.p.A.) Industria Macellazione, Strada della Selva, 96, 43056 Torrile (PR) Pig slaughterhouse and cutting plant - 14 Km, 17 min
- Macello Annoni S.r.l., Via Madonna dei prati, 100 Busseto (PR). Pig slaughterhouse - 38 Km, 35 min.

In detail, practical training at slaughterhouses includes the following student activities related to the inspection and control of fresh meat (beef, horse and pork), to be placed on the market:

- ante-mortem inspection:
 - identification of animals and official checking of paperwork. Documents control related to bovine registry
 - · evaluation of relevant food chain information
 - animal welfare. Inspection of the animals and their health status, monito-

ring them after the journey at their arrival at the abattoir

- inspection of stunning and killing procedures according to humane slaughter criteria
- post-mortem inspection:
 - · inspection and monitoring of cutting and boning operation of the carcass
 - visual inspection of external surfaces and additional inspection of carcasses and waste products, including palpation and incision
 - specified hazardous material and other animal by-products. Monitoring of removal, separation and, where appropriate, labelling of products in batches
 - collection and referral of samples to the competent laboratory; surveillance programme for Bovine Spongiform Encephalopathies (BSE) application
 - · laboratory diagnosis and monitoring for notifiable diseases in slaughterhouses, for example trichinosis in pigs
 - monitoring of the cold chain for fresh meat (refrigeration of carcasses), during storage, transport and maturation were applicable
 - recording activities in slaughterhouse logbook. Bureaucratic documents filling.

Food Industries and Official Veterinary Inspections: 40 hours

Students, in Professional training in Food Hygiene and Public Health "TIROCINIO" receive a total of 40 hours practical training in veterinary inspections at food establishments and food industries.

Small groups of students (maximum 5 persons) accompanied by a State Veterinary Officer enrolled as a Contract Professor, visit various food industries and take part to relevant official inspection activities, such as:

- sample collection of food matrices
- inspection of sanitary conditions in retail outlets (fisheries, butchers)
- sanitary inspection of food industries (meat cutting rooms, central kitchens, etc.)
- sanitary inspection of restaurants and catering establishments.

Some of the main industries, which may be visited, are:

- milk farm and dairy factories:
 - Latteria Sociale S. Lucio Soc. Coop. A R.L., Via G. Adorni S. Vitale B., 7, Sala Baganza (PR) 27 Km;, 33 min
 - · Parmigiano-Reggiano cheese consortium, Parma Section 5 Km, 7 min
 - Parmalat, Via delle Nazioni Unite 4 Collecchio, (PR) 13 Km; 23 min
- ham factories:
 - · Brendolan, STAB: Via Roma 58 43013 Langhirano (PR) 27 Km; 35 min
 - · Fratelli Emiliani, via Don G.Corchia, n 14- Langhirano (PR) 27 Km; 37 min

- · Italfine srl, Via Provinciale, 46 Beduzzo di Corniglio (PR) 40 Km; 56 min
- · Raw, cooked and dry cured ham products companies

- · Zuarina, Cascina in piano, 2 Langhirano (PR) 25 km; 30 min
- eggs and product thereof:
 - · Parmovo, Strada sabbiata 22/A Colorno (PR) 19 Km. 21 min.

4.1.6 Ratios

Ratios are delineated from data reported in Table 4.1 to 4.4. The figures for the denominators are defined as follows:

| Figure | Type of activity | Hours | Data from |
|--------|--------------------------------|--------------------|-------------------|
| А | Lectures | 2146 | Table 4.1 |
| В | Seminars | 32 | Table 4.1 |
| С | Self directed learning | 0 | - |
| D | Laboratory and desk based work | 302 CIP excluded | Table 4.1 |
| E | Non clinical animal work | 476 CIP excluded | Table 4.1 |
| F | Clinical work | 1 258 CIP excluded | Table 4.1 |
| G | Other | 364 CIP excluded | Table 4.1 and 4.4 |

| R# | Variables | Values | Denomin. | Range (from SOP 2009) |
|------------|--|--------------------|----------------|--------------------------|
| R6 | Theoretical training (A+B+C) | 2 146 2 036 | 1 0.949 | 0.51 - 0.36 |
| R 7 | Clinical Work (F) Laboratory and desk based work + non clinical animal work (D +E) | 1 258 778 | 1 0.618 | 1.88 - 2.21 |
| R8 | Self directed learning (C) ¹ Teaching load (A+B+C ¹ +D+E+F+G) | 2 890 7 500 | 1 2.595 | 0.51 - 7.87 |

¹ this Self directed learning includes "home study" not reported in Table 4.1

4.1.6.2 Special indicators of training in food hygiene/ public health

| R# | Variables | Values | Denomin. | Range (from SOP 2009) |
|-----|---|------------------|-----------------|--------------------------|
| R9 | Total n° <i>curriculum</i> -hours Food Hygiene / Public Health ² Total n° hours veterinary <i>curriculum</i> ¹ | 368 4 353 | 1 11.829 | still open |
| R10 | Total n° <i>curriculum</i> -hours Food Hygiene / Public Health ² Hours obligatory extramural work in Veterinary inspection ³ | 368 113 | 1 0.307 | still open |

Note

Origin numerators, denominators:

¹ Total as derived in Table 4.1

² Total as derived in Table 4.2, Subject 5

³ Figures to be taken from Table 4.5

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
- \cdot the way the curriculum is structured and reviewed
- \cdot the major developments in the curriculum, now and in the near future
- the local conditions or circumstances that might influence the ratios in 4.1.6.

Out of the 7 500 (300 ECTS) total hours of the curriculum, 2 890 are reserved for selfstudy. Of the remaining 4 610 hours, 4 353 are assigned to core curriculum (see Table 4.1) and 257 to Elective subjects and Thesis (see Table 4.4 and Tables 4.3b to 4.3g). Ouy of the 4 353 core curriculum hours, 4288 are EU-listed (Table 4.2) and are distributed as follows:155 (3.61%) to Basic Subjects, 954 (22.25%) to Basic Sciences, 2 308 (53.82%) to Clinical sciences, 471 (10.98%) to Animal Production, 368 (8.58%) to Food Hygiene / Public Health; and 32 (0.75%) to Professional Knowledge. The remaining 65 hours are distributed in non EU-listed subjects (Foreign language, 24 hours; Information technology, 44 hours). Small differences are due to rounding up.

Students receive widespread theoretical professional veterinary training that allows graduates to be skilled and competent in many areas: Veterinary Medicine, Food Hygiene and Public Health, Animal Production, Animal Health and Welfare.

Graduates in Veterinary Medicine at the University of Parma can enter into the labour market and are able to adapt to the different professional profiles required in the Region as well as in the Country.

The syllabus ensures that an adequate level in essential veterinary disciplines is taught in core subjects, and the amount of practical training is considered adequate for students to learn day-one skills.

In the NC-2009 curriculum, hours of practicals oriented to vocational courses as well as to pre-professional internship and professional training have been increased with respect to OC-2001 (Annex 4.1). The Faculty Board has considered strategic increasing practicals/practice in order to increase "day-one skills". Extramural pre-professional Internship "ORIENTAMENTO" and Professional training "TIROCINIO" are considered strategic because they: a) expose students to the professional reality, b) let the students practice large animal clinical procedures which are relevant for acquiring day-one skills and c) allow the students to perform professional activity in an integrated manner.

As aforementioned, graduates in veterinary medicine have many job opportunities in private veterinary fields but nowadays, the possession of the degree is not sufficient itself for entering in the National Health Service "Servizio Sanitario Nazionale". In fact, to enter in the National Sanitary Service the veterinarian must be in possession of a 3-year post-degree specialization diploma achieved in one of the following three areas: 1) Animal Health, 2) Food hygiene of animal origin products and their derivatives, 3) Livestock hygiene and livestock products hygiene.

Presently, three Specialization Schools are active in the Faculty, (see Chapter 12).

Knowledge is advancing in private and public veterinary medicine and the professional growing need continuing lifelong education, essential for students and practitioners as well as Veterinary State Officers. The Faculty annually organizes meetings regarding Lifelong education in favour to practitioners or Veterinary State Officers (see Chapter 11).

Obtaining permission to visit and/or have the students get some hands-on training experience in pig farms is fairly difficult due to farmers fearing contamination from outside visitors.

Comparison NC-2009 to OC-2001.

The following basilar differences can be highlighted:

- the increase of the total number of teaching weeks (from 136 to 151)
- the increase of teaching weeks is related to an increase of clinical practicals/ practice hours
- an improvement of relationship with the territory (practitioners, livestock farms, food industries, slaughterhouses etc.)

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?

A new target of the curriculum is to promote on-line self-learning and autonomous work. The on-line access to clinical cases as well as other clinical and non-clinical educational strategy can help students improve their classroom sessions and add interactivity to the same. Self-learning approach can reduce theoretical learning pressure as well as workload and therefore support students in their curricular progression.

Chapter 5

Teaching: quality and evaluation









Chapter 5.

Teaching and learning: quality and evaluation

5.1 Factual information

5.1.1 The teaching programme

Describe the measures taken to ensure co-ordination of teaching between different departments, sections, institutes and services. Describe the pedagogical approach of the institution. In particular, describe the use of newer approaches, such as problem-based learning, interactive computer-assisted learning, etc. Indicate the extent to which course notes are used to supplement or substitute for the use of standard veterinary textbooks. Describe (if applicable) any established or contractual arrangements that support undergraduate teaching between the Faculty and outside bodies, e.g. farms, breeding centres, practitioners, state veterinary services, factories/processing plants, outside laboratories, etc. Briefly describe how these arrangements work out in practice in terms of the contact this provides for all students or for selected students. Describe the general learning objectives underlying the veterinary curriculum and how this is ensured. Describe how the Faculty collects the data required to ensure students are equipped with these Day-one skills (evidence of learning).

5.1.1.1 Measures taken to ensure co-ordination of teaching between different departments, sections, institutes and services

Teaching coordination is assured by the Pedagogical/Educational Committee (PEC). The Pedagogical/Educational Committee is chaired by the Dean and it is composed of seven teachers, of which four currently from the Animal Health Department, three from the Department of Animal Production, Veterinary Biotechnology, Food Quality And Safety and two students (appointed by the Faculty Board on 22/11/2005).

For each semester and year the PEC:

- plans the programme of the single courses, together with the appointed teachers of the course, taking into account the determined preparatory disciplines. Departments and sections attend to teaching planning and assure that classrooms, facilities and expendable material are made available
- plans the ECTS distribution/course and assigns ECTS for each degree course. ECTS allow the student to acquire the necessary knowledge "to know" (theoretical activity) and "to know how to do" (practical activity), as well as the teaching schedule
- identifies, together with the appointed teachers, adequate teaching methodologies to the achievement of the educational objectives and learning assessment conditions
- plans the teaching activity proposed for elective courses
- processes the instruments (e.g. Portfolio, Annex 5.1), which ascertain the achievement of student skills as regards to knowledge and learning
- in cooperation with the Students Secretariat, schedules the dates for student enrolment subsequent to the first year, students' transfer to other degree courses, the beginning and ending dates of lessons, pre-professional internships "ORI-ENTAMENTO" and professional trainings "TIROCINIO", examination and graduation dates, etc.

To propose or organize eventual changes to the Teaching Regulations, PEC submits its proposals to representatives of several public agencies and professional organizations (*step one*) (Veterinary surgeons associations, Ministry of Health, the National Health Service, Provincial Association of Farmers (Associazione Provinciale Allevatori - APA), Italian Union of Veterinary practitioners (Sindacato Italiano Veterinari Liberi Professionisti - SIVLP) (Union- Last meeting date on 24/10/2008).

Having taken into account these suggestions and verifying their procedural feasibility, PEC submits the Teaching Regulation to the Joint Committee for Education (JCE) (*step two*), which is composed of three teachers, one from the Animal Health Department, two from the Animal Production, Veterinary Biotechnology, Food Quality And Safety and three students (appointed by the Faculty Board). The JCE is renewed every two years.

JCE assesses the quality and effectiveness and eventually expresses further proposals to achieve the educational objectives.

The Teaching Regulation is finally approved by the Degree Course Board (DCB) (*step three*) and by the Faculty Board (*step four*), thus becoming operational.

5.1.1.2 The pedagogical approach of the institution

Knowledge and understanding

Course attendance is compulsory to allow the student achieve knowledge and understanding.

Teachers meet the students out of the lesson timetable, according to the published schedule on the website: Visiting hours:

shortcut url: http://tinyurl.com/vetpr-01

real url: http://medvet.unipr.it/cgi-bin/campusnet/docenti.pl /Search?format=8;title=R icevimento%20studenti

From the academic year 2005/06, registration to subsequent years of the course following enrolment in the first year depends on a minimum number of passed examinations (see table 9.5a).

Applying knowledge and understanding

The student acquires the skills, knowledge and comprehension during the whole curriculum path. In the first four years and in the first semester of the fifth year, pre-professional internship "ORIENTAMENTO" (15 ECTS, 375 hours) is planned in order to prepare the student for the professional training "TIROCINIO" (30 ECTS, 750 hours) of the second semester of the fifth year.

The student has the opportunity to use computer science programmes and electronic supports computed also by teachers, as well to face and solve practical problems, to conjugate knowledge and skills (see Table 5.1).

| Course name | IT Programmes, electronic supports, websites | Where |
|---|--|--|
| Diagnostic Imaging - Veterinary Radiology - Surgical Pathology | www.veterinaryradiology.net (Teaching and learning about diagnostic imaging - Dr. Allison Zwingenberger) | PC - Teaching Hospital |
| | www.vetradiology.ca (Ontario veterinary College) | PC - Teaching Hospital |
| Microbiology and Immunology - Veterinary Epidemiology | Excel (problem-solving) Self evaluation test | Faculty web page-on line teaching www.quadernodiepidemiologia.it |
| Histology Embryology- Zoology | www.ateneonline.it/studenti multiple choice self evaluation interactive tests Imagines in PowerPoint for assessment | Also on private student's PC |
| General Zootechnics and genetic improvement (Animal Productio EU-listed subjects) | WINTHOR PEDIGREE VIEWER | PC IT classroom PC IT classroom |

| Feeding and Nutrition - Feeding techniques (Animal Productio EU-listed subjects) | SMWIN | PC IT classroom |
|--|--|------------------------------|
| Pathological Anatomy I e II- Post-mortem examinations techniques | http://w3.vet.cornell.edu/nst/nst. Self assessment images | Also on private student's PC |
| Training (V anno) | Clinical cases management programme | PC - Teaching Hospital |

Table 5.1: Science programmes and electronic supports

Day-one skills

In the students' Portfolio, day-one skills are documented and periodically verified through practical tests. In the Portfolio the acquired activities and the teachers' signature (involved in the activity) are indicated.

Communication skills

Each year the Faculty organizes advanced education meetings, seminars with national and international speakers, day's study on basic and specialist veterinary subjects, etc. (Table 5.2), in cooperation with continuing professional education activities for veterinary practitioners (see Chapter 11) or with the Veterinary Students' Association "Il Mattone" (literally "The Brick") On these occasions students have the possibility to assess their own communication skills, listening to and taking part in the discussion, as well as reporting practical experience achieved during the degree course. Communication skills are evaluated during examinations, training exams and graduation examinations.

"Il Mattone" is a student association founded by the University of Parma Veterinary Faculty. Its aim is to support student activities and study and to encourage cultural, sport and recreational activities committed to the students of veterinary medicine.

| 18/09/2010 | WHORKSHOP "Spleen echography in dog and cat" |
|------------|--|
| 07/06/2010 | SEMINAR "Utilizzo dei dati aziendali per una corretta gestione delle man- drie di vacche da latte |
| 06/05/2010 | CONFERENCE "Le origini del Purosangue: da cavallo da guerra del Me- dioevo a cavallo da corsa" |
| 14/05/2010 | SEMINAR "Latte e prodotti derivati tra tradizione e innovazione" |
| 22/04/2010 | SEMINAR "Innovazione ed efficacia nella gestione delle ferite: risultati di una ricerca italiana a base di sostanze naturali" |
| 16/04/2010 | SEMINAR "Situazione epidemiologica della rabbia in Italia" |
| 02/12/2009 | The Veterinary Students' Association, in collaboration with the University of Parma, organizes a meeting related to the "Dog aggressiveness" |
| 29/09/2009 | CONFERENCE "Genomic and Functional Genomic approach for the inve- stigation of phage-host relationship" |

| 26/03/2009 | SEMINAR OF DERMATOLOGY DI DERMATOLOGIA. "Otite: utilità della citologia auricolare e dell'otoendoscopia" |
|------------|--|
| 19/03/2009 | SEMINAR OF DERMATOLOGY. "Esami dermatologici di base" |
| 22/01/2009 | REFRESHER COURSE. "Malattia di Lyme: dalla zecca all'uomo, dalla di- agnosi alla cura". |
| 18/01/2009 | SEMINAR OF OFTALMOLOGY. "Occhio al segno clinico: come interpre- tare i sintomi delle più frequenti patologie oculari del cane e del gatto" |

Learning skills and making judgments

The student is provided with the instruments for acquiring learning skills and making judgment.

At enrolment, each student is assigned with an e-mail account to:

- broaden in depth study, using the databases within the University network (see Chapter 8)
- get Internet access
- use of mailing service
- contact Teachers, tutor students, Students Secretariat, Dean's office
- get free access to the University libraries (see Chapter 8)
- ask for photocopies of articles from national and international journals and examine CDs, VHSs, DVDs at the General Library of the Faculty "F. Gianelli" (see Chapter 8).

Internet activities can be carried out any time either from personal computer of the Faculty or personal laptops, connected to the University network through the WI-FI service in all the facilities. The student can be helped by the technical staff of the General Library of the Faculty.

The learning skills achieved is assessed throughout the course through the examinations and the graduation Dissertation. The making judgment is verified on examinations.

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

Many of the texts recommended by the teacher/s on the web page "Course Programmes" (*shortcut url*: http://tinyurl.com/vetpr-02; *real url*: http://medvet.unipr.it/cgi-bin/ campusnet/corsi.pl/Search?title=In%20ordine%20alfabetico), are available at the Central Library of the Faculty for consultation or loan (*shortcut url*: http://tinyurl.com/ vetpr-03; *real url*: http://medvet.unipr.it/cgi-bin/campusnet/home.pl/View?doc=biblio/ servizi.htm). Maximum loan duration is 21 days, renewable for further 7 days at staff's discretion, depending on the requests.

For 20 courses, students can take advantage of teaching material (pictures, trasparen-

cies slides, notes, diagrams, information sheets, etc.) offered at the Faculty website (*shortcut url*: http://tinyurl.com/vetpr-04; *real url*: http://medvet.unipr.it/cgi-bin/cam-pusnet/didattica.pl/Search).

Almost all the above mentioned resources represent an integration to textbooks. In only nine cases the online teaching material replaces textbooks.

Moreover, students are offered:

- CDs, VHSs, DVDs at the Central Library of the Faculty (see Chapter 8)
- Anatomical models (Anatomy Museum).

5.1.1.4 Arrangements that support undergraduate teaching between the Faculty and outside bodies

Contractual arrangements with outside bodies

The Faculty has agreements with public and private facilities, which allow the student to carry out practical activity in the professional disciplines (*shortcut url*: http:// tinyurl.com/vetpr-05; *real url*: http://medvet.unipr.it/cgi-bin/campusnet/documenti.pl/ Show?_id=ffb1;sort=DEFAULT;search=tirocinio;hits=6).

Extramural pre-professional internship or professional training can take place at any facility approved by the Faculty Board. Proposals for pre-professional internship "ORI-ENTAMENTO" or professional training "TIROCINIO" submitted by the students themselves are not accepted (for more details see Chapter 4, paragraph 4.1.3).

Proposals are evaluated by the Trainingship Committee (TC) (TIROCINIO Commission) and then approved by the Faculty Board. The TC, founded in 2007 by the Faculty Board is composed of training coordinators. They evaluate the facilities based on:

- presence of a veterinary practitioner at the facility, nominated by the Faculty as contract professor
- facility capacity: number of students per activity period, based on space, general services, teaching material available, educational/teaching activity, etc. Update
- facility capability to achieve the students' educational objectives the teacher, coordinator of the trainingship/discipline, is responsible for the student's achievement of the educational objectives.

At the end of the activity period, the students having completed the Animal Production "ORIENTAMENTO" or "TIROCINIO" comment upon the experience in the facility through a questionnaire (pivotal study, see Annex 5.2). Every year, based on the students' assessment, the Trainingship Committee decides whether or not to renew the agreement with the facility.

Learning activity abroad

The Faculty offers the students the possibility to carry out learning activity abroad.

The Faculty has agreements with Faculties of Veterinary Medicine of other EU Member States within the LLP/Erasmus programs (European Credit Transfer System, ECTS) and the "Interuniversity cooperation programme". Students who have completed at least 100 ECTS can participate in the LLP/Erasmus exchange programme. Bilateral agreements are currently in effect with: Barcelona, Bern, Budapest, Cordoba, Extremadura, Hannover, Lyon, Madrid (2), Thessaloniki, Toulouse, Valencia, Zaragoza and Zurich (see Chapter 1). Students who wish to go abroad on the ERASMUS programme and take exams must be authorised by the Degree Course Board (DCB), which also approves any study programme variation. Students can only apply for a maximum of 80 ECTS to be obtained in a year or 40 ECTS per semester stay..

The LLP/Erasmus Program Commission of the Faculty was established in 2006, and renewed in 2008. The Commission for Internationalisation was instituted on the 22/11/2006.

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

See paragraph 5.1.1.2

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

The Faculty is able to verify student achievement of "day-one skills" through the "Portfolio". Day-one skills are achieved during the pre-professional internships "ORIEN-TAMENTO" (15 ECTS) scheduled from 1st to 9th semester of the curriculum and the professional trainings "TIROCINIO" (30 ECTS), carried out in the 10th semester of the course.

Date, achieved skill, and teacher signature involved in the activity, are stated in the Portfolio.

5.1.2 The teaching environment

Describe the available staff development facilities, particularly in relation to teaching skills. Describe the available systems for reward of teaching excellence (e.g., accelerated promotion, prizes, Describe other measures taken to improve the quality of teaching and of learning opportunities).

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

No particular staff development facilities in relation to teaching skills are currently available.

From October to November 2010 a course on Health & Safety at Work is organized for Support Staff.

5.1.2.2 The available systems for reward of teaching excellence (e.g., accelerated promotion, prizes, etc.)

The quality of teaching is one of the parameters considered for career advancement. Career progression occurs through a public competition by the Ministry of Education, University and Research (MiUR). Assessment of teaching quality is evaluated by a national commission nominated by MiUR.

5.1.2.3 Other measures taken to improve the quality of teaching and learning opportunities

The Degree Course Board (DCB) elects a reference teacher for each of the first 8 semesters and a reference supervisor for each of the first 4 years of the degree course, to quickly solve eventual difficulties connected with teaching and learning. For the 10th semester the reference teachers are represented by the professional training "TIROCI-NIO" coordinators.

Any problems are communicated by the reference teachers to the Degree Course President, Joint Committee for Education or other Faculty Commissions. It is their task to address the problems and also to encourage the students to take advantage of their reference tutor and their student tutor (See paragraph 5.1.5.).

5.1.3 The examination system

Describe the examination system of the Faculty, in particular: • Is there a central examination policy for the Faculty as a whole? If 'yes', by whom is it decided? Are there special periods (without teaching) during the year for examinations? What form(s) of examination are used (written papers, multiple-choice questions, oral, practical, clinical examination, continuous assessment, etc.)? Is use made of external examiners? How many retakes of an examination are allowed? Do students have to pass the examination within a certain time? Do students have to pass an examination before they can start other courses?

5.1.3.1 Is there a central examination policy for the Faculty as a whole?

There is not a central examination policy at FVMUP and each professor can decide how to perform the exam. However, some basic rules have been agreed upon and must be followed by every teacher. These rules have been determined by the University of Parma and the FVMUP: a) the form of examination has to be presented at the beginning of the year together with the course program; b) the exam format also has to be described to the students at the beginning of the course. Only course teachers are responsible for defining and reviewing questions of written exams.

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

The on-course students are obliged to attend the lessons, therefore the exams take place during periods when lessons are suspended ("examination sessions").

Usually the examination sessions last 30 days and are scheduled in three periods by the Academic Senate:

- first session in January-February (for each exam two exam sessions within at least 15 days between one session and the other)
- second session in June-August (for each exam three exam sessions within at least 15 days between one session and the other)
- third session in September-October (for each exam two exam sessions within at least 15 days between one session and the other).

Moreover all the off-course and repeater students (See Chapter 9) have two additional (optional) exam sessions, respectively, at the Christmas (3rd session extension) and Easter (1st session extension) festivities.

The exam sessions are scheduled monthly for off-course and repeater students.

In each session, the exam session beginning date is planned.

Students can sit any exam within all the exam sessions scheduled in the calendar. During each exam session, on-course students can sit any number of exams, without restriction, for all courses for which he/she has the attendance certificate (see also Chapter 4.1).

5.1.3.3 What form(s) of examination are used?

Currently, several types of examination are used alone or in combination:

- oral test
- objective and/or structured written test (for the assessment of cognitive objectives)
- multiple choice test
- practical exam (for the assessment of clinical competences and operative practical skills)
- modelling tests.

The exam evaluation is marked on a scale of 30. The exam is passed if the student achieves at least 18 out of 30. The examination Commission can also assign honour, (laude) but the decision must be unanimous.

5.1.3.4 Is use made of external examiners?

No external examiners are used.

5.1.3.5 How many retakes of an examination are allowed?

Students can retake examinations for an unlimited number of times.

5.1.3.6 Do students have to pass the examination within a certain time? No.

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

Students cannot enroll in the following year if they have not take the minimum number of exams scheduled for that year (table 9.5a) and they must respect the order of certain exams that are considered preparatory (propaedeutics).(see also chapter 4.1 and table 4.0c).

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. Indicate the use of external evaluators. Describe the role of students in the evaluation of teaching and teachers. Describe the follow-up given to the evaluation.

The quality of teaching and learning is evaluated by:

- the University Evaluation Unit of the University of Parma
- "Almalaurea" (an interuniversity consortium supported by MiUR). It is the most important database of the graduates in Italy, consulted by national and international agencies and companies, which are looking for qualified personnel. "Almalaurea" follows the monitoring of the curricula and analyses characteristics and performances of the graduates, comparing the different degree courses, study venues, and faculties. It also analyses the effectiveness of the educational offer of the degree courses through the monitoring of the professional outlet
- faculty
- students

The institutional task of the departments is to propose the institution and organisation of the PhD courses, as well as to cooperate with the Faculty to the organization of the teaching activities and professional education in their competence sectors, but not to evaluate teaching.

Currently the following systems of teaching assessment are activated:

- student Questionnaire (Annex 5.3) organized by the University Evaluation Unit of the University and submitted to the student at the end of each course. Results, processed by reviewers external to the Faculty, are consigned to the Dean. The Dean examines them and decides whether to have up the teacher responsible of the teaching course for explanation, or sending directly the results back to him/her
- Currently the Dean sends to every teachers, in a sealed envelope, the personal results and where necessary the Dean invites the teacher, or the teachers cooperating in an integrated course, for clarification
- online questionnaire edited by "Almalaurea", addressed to final year students. The University takes part in the "Almalaurea" consortium. Results are processed by external reviewers. "Almalaurea" provides annual reports, which the

PEC takes into account when the teaching regulation has to be reassessed

student questionnaire edited by Animal Production section (pivotal study) (Annex 5.2) to be filled out by students who have carried out practical activity in the facilities in agreement with the University. The results are used to assess the renewal of the agreement with the facility.

Student Questionnaire edited by «Il Mattone» student union. The results obtained per course are delivered to the Dean. PEC uses the results to reassess the teaching regulation. The document is available at the following addresses:

shortcut url: http://tinyurl.com/vetpr-18

real url: http://www.unipr.it/arpa/facvet/eaeve/mattone.pdf

5.1.5 Student welfare

Describe any measures taken to protect students from zoonoses (e.g. rabies) and physical hazards. Describe the facilities (not related to the teaching programme) which the establishment provides for students. Describe the guidance offered by the Faculty (or its parent institution) for students with problems (social problems, study problems) as well as for future career development or job selection.

Students must learn, first of all, current regulations regarding the safety of the working environment to be able to access the facilities where the theoretical and practical teaching activity is carried out (<u>D.LGS 9 aprile 2008 n.81</u>). Each year lessons (4 hours) are carried out in the Faculty by the Office for Prevention and Protection (http://www.unipr.it/arpa/spp/), in collaboration with a Contract Professor, in veterinary medicine safety that all students are required to attend. Students must then take a written multiple choice test to demonstrate aptitude in the subject.

The same office carried out periodic inspections (at least once a year) of the existing facilities in the Faculty, in order to identify eventual risk factors and verify the environmental safety.

Students must follow precise hygienic rules whenever they come into contact with animals in order to prevent zoonosis and they must be provided with personal protection devices, which may vary depending on the activity involved (VTH, necropsies, livestock farms, slaughterhouses, Food industries). (Chapter 6).

Internet access

All the Faculty facilities are WI-FI connected. Twenty-three internet access locations are available in the Faculty, of which 8 in the General library and 15 in the Information Technology (IT) laboratory.

Bulletin Board and Forum

In the Website of the Faculty a bulletin board (*shortcut url*: http://tinyurl.com/vetpr-17; *real url*: http://medvet.unipr.it/cgi-bin/campusnet/bacheca.pl), where the students can post personal ads, provided that they are relevant with one of the categories in the list, and a Forum (*shortcut url*: http://tinyurl.com/vetpr-07; *real url*: http://medvet.unipr.it/cgi-bin/campusnet/forum.pl/Search?search=tipologia:F;format=1;sort=U1;m ax=1000), where the more different subjects may be coped with, are available. The Forum is not chaired, so the students can freely express themselves on any topic. However the Forum is managed by supporting staff, which includes a reference teacher in order to keep the participation fair.

Sport and recreational activities

Students can take advantage of the University Sports Centre (Centro Universitario Sportivo - C.U.S. Viale Usberti, 95 - University Campus). Student sports facilities, competitive and amateur sport activities, etc. are managed by CUS.

CUS advertises preparatory courses to the sport practice (horse riding, aerobic gym, gymnastic, golf swimming, volleyball, basketball, pre-ski gym, bodybuilding, tennis, martial arts, modern and Latin American dance, track and field events, fencing, rifle-range, rugby, ping pong, triathlon) and numerous interfaculty tournaments with national and international faculties. It organizes activities and shows, not necessarily sportive, for disabled students.

Social problems

From the academic year 2006/2007, the Faculty has participated in a research project with the Psychology Department of the University of Parma, aimed to assess over time the motivations for the choice of University and Faculty, course satisfaction, learning of social skills, etc.

From the first to the third year of the course, the same questionnaire is submitted to the students. Results processed by the Psychology Department are used by the Tutorage Commission which can perform teaching support activities. The questionnaire is available at the following addresses: *shortcut url*: http://tinyurl.com/vetpr-19; *real url*: http://www.unipr.it/arpa/facvet/eaeve/psicologia.pdf

<u>Tutorage</u>

Tutorage aims to orient and support the students throughout the study course, to make them attend to the educational process, and to facilitate courses attendance, through initiatives connected to individual necessity, attitudes and demands (L.341/90, art. 13: Reform of Teaching Regulation of Universities Riforma degli ordinamenti didattici universitari).

Tutorage activity is carried out by teachers and is also addressed to disabled students (regulation approved by the Faculty Board on the 21/2/2000 amended by Degree Course Board on the 8/6/2004).

Disabled students can take advantage of a tutor committed to them.

Tutorship is a student right. However, students are not obliged to attend their tutors.

• Tutor assignment.

At enrolment, first year students are randomly assigned a tutor of the first year. Its second year, students choose the tutor among the teachers of the last three years, giving three preferences.

• Student Tutors.

Each year, students enrolled in the 2nd, 3rd, and 4th years of the course, PhD students and specialising graduates may become student tutors. They are selected through a public competition based on criteria fixed by DCB, following the Tutorage Commission proposals. Currently the Tutorage Commission is composed of 3 teachers, 1 from DAH and 2 from DAPF.

The head of the Tutorage Commission must report on its activities to the University. Student tutors respond to the needs of the students, report on the use of various teaching and Information Technology (IT) instruments in the Faculty, on services and benefits supplied by the University, on the degree course characteristics and on the individual teaching subjects, providing also administrative assistance. Their activity is carried out through personal contact with the students on a scheduled time or through electronic email (tutorato.medvet@unipr.it).

Disable students, working students and students with scholarships can attend to public competitions of the University of Parma to take advantage of contributions or partial or total exemptions from the tax payment.

All the students enrolled in the second to fifth years can compete for part-time working positions within the University which are remunerated activity ("part-time cooperation"), for a maximum of 150 hours per year. Such cooperation refers to administrative, technical, laboratory, vigilance, porter services and library activities.

Future career development and job selection

The Faculty establishes the Schools of Specialisations, improvement courses, first level national University masters, first level international university masters, national intra and inter Faculty PhDs and international PhDs (see Chapter 12).

Undergraduate students in Veterinary Medicine can register to "Almalaurea", com-

pleting the online questionnaire and consigning the receipt of completion to the Students Secretariat of the Faculty. The graduate acquires visibility in the world of work, entering his/her own *Curriculum vitae*. According to the XII "Almalaurea" report (Bologna, 28/05/2010 - *shortcut url*: http://tinyurl.com/vetpr-14; *real url*: http:// www."Almalaurea".it/info/convegni/bologna2010/index.shtml), where questionnaire completed by the graduates of all the faculties, which offer a Veterinary Medicine degree course, are compared. In 2009 the time to enter in the world of work for graduates coming from the Faculty was 3.5 months, clearly below the national average (4.4 months).

The Faculty participates in the University of Parma Career days (last *Career day,* 06/05/2010) where graduates in Veterinary Medicine can evaluate possible opportunities in the work field.

5.2 Comments

Please give general comments about the quality of the teaching programme under the above headings.

It can be generally stated that the quality of teaching is good. As regard to the practical teaching lack of facilities works are in progress.

The Faculty has always worked to optimize the students and graduates welfare. It can be honestly said that the Faculty cares about students and graduates.

5.3 Suggestions

The setting up of a Faculty commission is planned for evaluating and monitoring the entire examination process, including the percentages of passing/failing students. The questionnaire used for the evaluation of professional training "TIROCINIO" in Animal Production, which has shown to be helpful for the Coordinator of Tirocinio to evaluate the renewal of extramural practical activity contracts, will be extended to all the facilities that, in the future, will be involved in the clinical and non-clinical preprofessional internship "ORIENTAMENTO" and professional training "TIROCINIO".

Chapter 6

Facilities and equipment









Chapter 6.

Facilities and equipment

6.1 Factual information

The Faculty of Veterinary Medicine of Parma (FVMUP) is located in the area of Cornocchio (Figure 6.1), Via del Taglio 10. The Faculty is 3 km far from the city centre, where is also located the Administrative Building of the Rector of the University of Parma. The Faculty is within easy reach of the city centre and the train station by public transportation (bus 6) and is close to the highway (3 km) and to the "Giuseppe Verdi" airport (1.5 km). The Faculty is also easily accessible by bicycle from any part of the city.



Figure 6.1: Map of the city of Parma and surroundings

DISTANCES

| Faculty - Airport: | km 1.6 |
|---------------------------|-------------------------------|
| Faculty - Railway Station | km 3.5 by car, km 2.5 walking |
| Faculty - Campus | km 9.0 |
| Faculty - A1 Highway exit | km 6.3 |

The Faculty (1) is within walking distance to Parma's Slaughterhouse (3), the Zooprophylactic Institute (5), the Feed Meal Manufacturing (4), and Municipal dog and cat shelter "Lilli e il vagabondo" (2) (Km 0,6) (Fig. 6.2).



Figure 6.2: Faculty of Veterinary Medicine and related educational facilities

Public Slaughterhouse, Zooprophylactic Institute and Municipal shelter "Lilli e il vagabondo" are partners in Faculty's educational network for pre-professional internship "ORIENTAMENTO", practical vocational courses and professional training "TIROCI-NIO".

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 Faculty was built in the present location on 1963 and was completed on 2005 with the construction of the Veterinary Teaching Hospital. The Faculty has an extension of approx. 42 000 sq meters and consists of 14 educational and research buildings and the premises of the two Departments.

The entrance of the VMFP is open from 7:00 am until 8:00 pm. Outside these hours, the Faculty entrance is open only for VTH emergency (H24) and for authorized persons with personal magnetic badge. Parking for students and visitors is available both inside the Faculty and outside of the main entrance. Inside the Faculty there are parking places reserved to the Teaching and Support Staff.

The general layout of the Faculty is shown in Figures 6.3a and 6.3b.



Figura 6.3a: General layout of the Faculty (aerial view). Coordinates: N 44.81918, E 10.30984



Figura 6.3.b: General layout of the Faculty (one-level planimetry

LEGEND

- B 01: Dean Office and Secretariat
- **B 02:** Lecture Halls (A and B), Educational Laboratories of Dissecting Anatomy and Microscopic Anatomy, Veterinary Anatomy Unit (DAH) and Animal Production Unit, (DAPF)

B 03:

- Entrance Est (B 03 E): access to Lecture Halls, Infectious Diseases Unit and Internal Medicine Unit (DAH) and Educational Laboratory of Haematology
- Entrance North (B 03 N): access to Lecture Halls (C and G)
- Entrance West (B 03 W): access to Lecture Hall (M) and Educational Laboratories of Multifunctional 2 and Avian Pathology
- Entrance Sud (B 03 S): access to Lecture Halls (N and O)

B 04:

- Entrance Sud (B 04 S): access to Lecture Halls (D and E), Educational Laboratories of Multifunctional 1, Computer, Rural Economics, Parasitology, Microbiology and Immunology, Toxicology, Food Hygiene and Surgery Units (DAH), and Informatics Sciences, Biochemistry, Physiology, Food Science Units (DAPF)
- · Entrance Est (B 04 E): access to Unit of Microbiology and Immunology (DAH)
- Entrance North (B 04 N): access to Units of Pathology (DAH) and Food Science (DAPF)
- B 05: (Veterinary Teaching Hospital): surgery facilities
- B 06: (Veterinary Teaching Hospital): Large Animal enclosures
- **B 07**: (Veterinary Teaching Hospital): Hospitalization and small animal isolation
- B 08: Central Library
- **B 09**: Central heating system room
- **B 10**: Central heating system room
- **B** 11:
 - Entrance North (B 11 N): access to Endocrinology and Pharmacology Unit
 - Entrance West (B 11 W): access to Obstetrics and Reproduction Unit
 - · Entrance Sud (B 11 S): access to Student lounge, Student office and Cafeteria
- **B 12**: Lecture Hall, and Laboratories of the Food Hygiene Unit, Food Science Unit and Pathology Unit
- **B 13**: Necropsy room
- **B 14**: Animal enclosure (veals)
- **B 15**: Experimental animals room (not for educational purposes)
- **B 16**: (Veterinary Teaching Hospital): medical, obstetrical and radiological facilities, office and service rooms
- **B 17**: Horse semen collection
- P 18: (PADDOCK 1)
- P 19: (PADDOCK 2)
- **B 20**: (Veterinary Teaching Hospital): Large animals isolation
- **B 21**: Inflammable storage room and technical Gases
- **B 22**: Inflammable storage room and technical Gases
- **B 23**: Inflammable storage room and technical Gases

6.1.2 Buildings

Note. In the maps, colors identify the typology of facilities according to the following codes:

| Museum |
|---|
| Library - Reading room Meeting room - Student lounge |
| Lecture hall |
| Teaching laboratory |
| Teaching and research laboratory |
| Experimental animal room |
| Veterinary Teaching Hospital |
| Animal enclosures |
| Undergoing restructuring |
| Office - Secretariat - Reception - Technical service room - Heating system building Warehouse - Workshop - Refrigerator/freezer room - Manure storage |
| Common space - Elevator - Box room - Archive - Garage Electrical cabinet - Dressing room - Shower room - WC |

B 01 (EDIFICIO 14 01 known as "Presidenza e Segreteria Studenti")

This one-storey building (Fig. 6.4, total surface area 200 sq m) contains the Dean's Office and the Student Secretariat Office. Dean's Office is open from Monday to Friday, 9:00 - 12:00. The Dean also receives by appointment outside these hours. The Secretary Office is open on Monday, Tuesday, Wednesday, and Friday 9:00 - 12:00, Thursday 9:00 - 13:00.



Figure 6.4: Map of B 01.

B 02 (EDIFICIO 14 02 known as "Anatomia Normale e Zootecnia")

This building (Fig. 6.5a, Fig. 6.5b, Fig. 65.c, total surface area 2350 sq m), arranged on three levels (basement; ground floor; first floor), contains lecture halls, offices and research and educational laboratories of Veterinary Anatomy (DAH) and Animal Production (DPBF) Units.

The basement (Figure 6.5a) contains:

- the residence of the custodian, total surface area of 90 sq m
- common Veterinary Anatomy and Animal Production facilities: a 5 sq m refrigerated (+05°C) room and a 6 sq m freezing (-20°C) room
- premises and equipments of Veterinary Anatomy Unit:
 - · 175 sq m Veterinary Anatomy Museum 1 (002) with 25 seats and 24 show-
cases for anatomic preparations

- · 41 sq m laboratory (001) for anatomical preparations
- 80 sq m dissecting anatomy room (027); this room is equipped with 2 laboratory counter and 6 anatomic dissecting tables, each one serves fivestudent station
- a 53 sq m microscopic anatomy room (028) equipped with 32 microscopes
- a 25 sq m experimental room (024)
- premises (facilities) and equipments of Animal Production Units:
 - a 17 sq m changing room with toilets and shower
 - six (total surface area of 207 sq m) research and educational Feed Analysis laboratories. Feed Samples preparation lab. (018), In vitro Fermentation and Protein Digestion lab. (020), Proximate Analysis and Fibrous Fraction lab. (029), Spectrometry lab (030), Extractions and Chromatography lab.(017), Gas-Chromatography lab (023)], each laboratory can host 10 students
 a 3 sq m research laboratory (022).



Figure 6.5a: Map of B 02 basement.

The ground floor (Figure 6.5b) contains:

- classrooms: a 133 sq m lecture hall A (002) with 120 seats, and a 90 sq m lecture hall B (032) with 90 seats
- toilettes, including facilities for disabled persons
- facilities and equipments of Veterinary Anatomy Unit:
 - a 64 sq m Veterinary Anatomy Museum 2 (001) with showcases for anatomic preparations; this room can hold 20 visitors
- premises of Animal Production Units:
 - a 17 sq m changing room with toilets
 - ten offices (total surface area of 211 sq m)
 - a library (022) and reading room (022 bis) with 21 seats (total surface area of 39 sq m)
 - a 54 sq m research and educational milk and dairy products testing laboratory (005), for a ten-student group
 - a 9 sq m research laboratory of food molecular biology (008)
 - a 39 sq m research and educational Mineral testing laboratory (009), for a ten-student group.



Figure 6.5b: Map of B 02- ground floor.

The first floor (Figure 6.5c) houses:

- two 38 sq m Administrative Offices of Department of Animal Health (DAH);
- facilities and equipments of Veterinary Anatomy Unit as follows:
 - seven offices (total surface area of 151 sq m)
 - a 17 sq m changing room with toilets and shower
 - a library (002) and a reading room (003) with 15 seats (total surface area of 62 sq m); in the library is housed the first veterinary anatomy book of CARLO RUINI edited in the 1618
 - a 20 sq m microscopic research room (011)
 - a 42 sq m research and educational laboratory of Histology (012), for a 12-student group
 - a 28 sq m research and educational laboratory of Hard Tissues (016), for a 10-student group
 - a 21 sq m Immuno-histochemical research laboratory (017).



Figure 6.5c: Map of B 02- first floor.

B 03 (EDIFICIO 14 03 known as "Clinica Medica e Malattie Infettive")

This building (Fig. 6.6a, Fig. 6.6b, Fig. 6.6c, total surface area of 1 869 sq m), arranged on three levels (basement, ground floor, first floor), contains the lecture halls, offices and research and educational laboratories of Infectious Diseases and Medicine Units (DAH).

The basement (Figure 6.6a) contains:

- lecture halls:
 - a 63 sq m lecture hall M (003) with 64 seats
 - · a 30 sq m lecture hall N with 23 seats (under construction)
 - a 30 sq m lecture hall O with 23 seats (under construction)
 - a 64 sq m Multifunctional room 2 (014) for a 24-student group
- facilities and equipments of Infectious Diseases Unit:
 - · a 63 sq m Avian pathology room (016) for 25-student group
 - a 43 sq research and educational Biotechnology Laboratory (002) for a 6-student group
 - a 21 sq m room containing freezers.



Figure 6.6a: Map of B 03- basement.

The ground floor (Figure 6.6b) contains:

- technical office (total surface area of 10 sq m) and a 12 sq m dressing room with toilets
- lecture halls:
 - · a 63 sq m lecture hall C (030) with 95 seats
 - a 97 sq m Clinical Lecture Hall G (024) with 85 seats
- facilities of Infectious Diseases Unit:
 - five offices (total surface area of 103 sq m)
 - a Library (024) with 12 seats (total surface area of 42 sq m)
 - a 17 sq m changing room with toilets
 - · a 21 sq m reception
 - a 42 sq m research and educational Bacteriology Laboratory (022) for a 6-student group
 - two (total surface area of 63 sq m) research and educational Virology Laboratories 1 (003) and 2 (004), each for a 6-student group
 - a 20 sq m research and educational Centrifuges laboratory (005) for a sixstudent group
 - four (total surface area of 82 sq m) research Laboratories (008, 009, 011, 012) for glassware and media preparation.



Figure 6.6b: Map of B 03- ground floor.

The first floor (Figure 6.6c) contains facilities and equipments of Medicine Unit:

- ten offices (total surface area of 200 sq m)
- a library (026) and a reading room (027) with 10 seats (total surface area 61 sq m)
- a 16 sq m dressing room with toilets
- a 45 sq m Haemathology and Clinical Chemistry Laboratory (014) for a 12-student group. In this laboratory a microscope equipped with video-camera and connected to a monitor for student teaching and discussion is available
- a 21 sq m radiology room (009)
- a 20 sq m dark room (016).



Figure 6.6c: Map of 1B 03- first floor.

B 04 (EDIFICIO 14 04 known as "Padiglione Ispettivo")

This building (Fig. 6.7a, Fig. 6.7b, Fig. 6.7c, total surface area 3500 sq m) is arranged on three levels (ground floor, first floor, second floor), each subdivided in two branches (A and B). It contains lecture halls, common premises, offices and laboratories of Rural Economics, Parasitology, Microbiology and Immunology, Pathology, Toxicology, Food Hygiene and Surgery Units of the Department of Animal Health (DAH), and Informatics Sciences, Biochemistry, Physiology and Food Science Units of the Department of Animal Production (DAPF).

Ground Floor

The Ground Floor (Figure 6.7a) contains:

- a 184 sq m lecture hall D (055) with 165 seats
- a 130 sq m lecture hall E (022) with 126 seats
- toilets, including facilities for disabled persons (total surface area 25 sq m)
- the offices and laboratories of the above Units are also hosted in branches, **A** and **B**.

Branch A contains:

- two (total surface area of 266 sq m) administrative offices of Department of Animal Production (DPBF)
- a 94 sq m Multifunctional room 1 (020) for a 36-student group
- a 57 sq m computer room (018) with 15 seats
- a 20 sq m dressing room with toilets and shower
- the Units of Economics, Parasitology and Informatics Science:
 - the Economic Science Unit contains 4 offices-laboratories (total surface area of 75 sq m)
 - the Parasitology Unit contains a 24 sq m office and a 45 sq m research and educational laboratory (019)
 - the Informatics Science Unit houses a 31 sq m office-laboratory.

Branch B contains:

The Microbiology and Immunology Unit:

- four offices (total surface area of 65 sq m)
- two changing room with toilets (total surface area of 17 sq m)
- two (total surface area of 51 sq m) research laboratory (048, 050), equipped

with analytical scales, a laminar flow hood, PCR instruments, a ventilated chemical cabinet

two (total surface area of 75 sq m) research and educational laboratories (049, 051), equipped with a glassware washer, a distillatory, two autoclaves, three incubators, a CO₂ incubator, a laminar air vertical flow, a -80°C freezer, freezers and refrigerators, two optical microscopes, two water bath, a microliter-centrifuge, a thermal cycler, and a stereomicroscope.

The Pathology Unit:

- four offices (total surface area of 63 sq m)
- a 7 sq m changing room with toilets
- a 36 sq m library/reading room (032), with 8 seats
- three (total surface area of 107 sq m) research and educational laboratories of Histopathology 1 (052) for a 6-student group and 2 (053) for a 4-student group and of Immunopathology and cellular culture (054), with a capacity for an 8-student group.



Figure 6.7a: Map of B 04 - ground floor.

First Floor

The First Floor (Figure 6.7b) contains offices and laboratories of Biochemistry, Physiology, Toxicology, Food Hygiene and Food Science Units. This floor is arranged in two branches, **A** and **B**.

Branch A contains:

The Biochemistry and Physiology Units:

- four offices (total surface area of 69 sq m)
- three (total surface area of 41 sq m) research laboratories (007, 010, 011) with warm room, cold room and hormone assays equipment
- two changing room with toilets (total surface area of 19 sq m)
- a 45 sq m research and educational laboratory of Protein Biochemistry and Molecular Biology (004) for a 12-student group
- a 32 sq m research and educational laboratory of Protein Purification and Radiometric Detection (005) for a 10-student group; this laboratory is equipped with Radioisotope (β and γ) counters, a Fast Polypeptide Liquid Chromatography (FPLC) and an Ultracentrifuge
- a 19 sq m research and educational laboratory of Spectrophotometry lab. (006) for a 10-student group, equipped with a fluorescence spectrophotometer
- a 35 sq m research and educational laboratory of Animal Cell Culture (012) for a 10-student group
- a 31 sq m research and educational laboratory of Molecular Band Multilabel Detection (014) for a 10-student group, equipped with Multilabel Plate Reader, Fluorescence, Time-resolved Fluorescence, Luminometer, Absorbance.

The Diagnostic and Experimental Toxicology Unit contains:

- two offices (total surface area of 34 sq m)
- a 48 sq m research laboratory of Toxicology (002)
- a 44 sq m research and educational laboratory of Laboratory Diagnostics (003) for a 10-student group.

The Branch B contains:

The Unit of Food Hygiene:

- 5 offices (total surface area of 84 sq m)
- a 8 sq m changing room with toilets
- 24 sq m library and reading room (043) with 10 seats
- a 16 sq m research laboratory of microbiological culture medium (033)
- two (total surface area of 92 sq m) research and educational laboratories of

Food Microbiology 1 (034) and 2 (035), each for an 15-student group. These laboratories are equipped with a laminar flow hood suitable for Class III agents, and a MINI-VIDAS set for microbiological and immunofluorescence analysis.

The Unit of Food Sciences:

- 5 offices (total surface area of 71 sq m)
- a 22 sq m library (048), with 10 seats
- a 16 sq m dressing room with toilets
- three (total surface area of 100 sq m) research and educational Food Analysis Laboratories [A (036), B (037) and C (049)], each for a 4/8-student group.



Figure 6.7b: Map of B 04 - first floor.

Second Floor

The second floor (Figure 6.7c) contains three 71 sq m administrative offices of the Department of Animal Health (DAH) and the Surgical and Radiological Units. *The Surgical and Radiological Units contains:*

- nine offices (total surface area of 388 sq m)
- two changing room with toilets (total surface area of 19 sq m)
- a 73 sq m library (005) with 15 seats
- a 45 sq m reading room (004) with 15 seats.



Figure 6.7c: Map of B 04 - second floor.

B 08 (EDIFICIO 14 08 known as "Biblioteca Veterinaria")

This one-floor building (Figure 6.8, total surface area 353 sq m) houses the Central Library, experimental animal rooms and garages.

Central Library is composed of:

- a 159 sq m reading room (001) equipped with bookshelves and 90 seats; including a computer room with 8 workstations
- a 6 sq m PC room with 2 seats
- 22 sq m toilets
- a 18 sq m photocopy room
- a 15 sq m book consulting room
- a 25 sq m administrative office.

Experimental animal rooms:

- a 32 sq m experimental hen-house
- a 15 sq m experimental animal laboratory (rabbits, rats)
- a 15 sq m store room for anatomical preparations preserved in formalin buffered solution.

Garages:

• two garages (total surface area 32 sq m).



Figure 6.8: Map of B 08.

B 09 and B 10 (BUILDINGS 14 09 and 14 10 known as "Centrale termica")

These buildings (Figure 6.9) contain heating system.



Figure 6.9: Map of B 09 and B 10.

The B 11 (EDIFICIO 14 11 known as "Ex Mensa")

This one-storey building (Fig. 6.10, total surface area of 704 sq m) can be subdivided in 5 distinct parts:

- 1. the Obstetrics and Reproduction Unit (DAH)
- 2. the Endocrinology and Pharmacology Unit (DAH)
- 3. the student room
- 4. the student office
- 5. the cafeteria.

The Obstetrics and Reproduction Unit contains:

- 7 offices (total surface area of 103 sq m)
- two dressing room with toilets and shower (total surface area of 17 sq m)
- a 65 sq m library and reading room (024) with 25 seats

- a 23 sq m research and educational laboratory (028) for equine semen manipulation and bovine and ovicaprine embryo manipulation, for a 6-student group
- a 22 sq m research and educational laboratory of Seminology (027) for a 6-student group.

The Endocrinology and Pharmacology Unit contains:

- 5 offices (total surface area of 72 sq m)
- two dressing room with toilets (total surface area of 20 sq m)
- three (total surface area of 58 sq m) research and educational laboratories [endocrinology (039a), pharmacology (039b), toxicology (040)], each for a sixstudent group
- a 41 sq m library and reading room with 20 seats.

The 158 sq m student room (006) contains:

- seven tables with a total of 42 seats
- two 20 sq m changing room with toilets.

The student office (total surface area of 12 sq m).

The cafeteria (total surface area of 185 sq m) offers a service of bar-cafeteria.



Figure 6.10: Map of the B 11.

B 12 (EDIFICIO 14 12 known as "Ex lavorazione Carni")

This one-storey building (Figure 6.11, total surface area of 193 sq m) contains a lecture hall and research and educational laboratories of Food Hygiene (DAH), Food Sciences (DPBF) Units.

Lecture hall:

- a 40 sq m lecture hall (001) with 25 seats
- a 7 sq m dressing room with toilets

Laboratories:

- a 59 sq m research/educational Laboratory of Molecular Biology (002) for a 15-student group
- a 7 sq m research LCHS laboratory (011)
- two (total surface area of 80 sq m) research and educational laboratories of GC (007) and Element Analysis (008), each for a 4-student group
- a 15 sq m freezer room.



Figure 6.11: Map of B 12.

B 13 (EDIFICIO 14 13 known as "Sala Anatomica")

This one-floor building (Figure 6.12, total surface area of 200 sq m) contains the facilities for necropsy and laboratories:

- a 93 sq m necropsy room (001), with 6 dissection tables, for a total of 30-student group
- an office (total surface area of 5 sq m)
- a 21 sq m changing rooms (female and male) and toilets
- a 13 sq m refrigerated room
- four (total surface area of 55 sq m) research and educational laboratories (under construction).



Figure 6.12: Map of B 13.

B 14 (EDIFICIO 14 14 known as "Vitellaia")

This one-storey building (Figure 6.13, total surface area of 471 sq m) contains 10 box stalls for calves used for teaching purposes.



Figure 6.13: Map of B 14.

B 15 (EDIFICIO 14 15 known as "Stabulario")

This 65 sq m one-storey Building (Figure 6.14) contains the experimental rooms for sheep, goats or piglets. These animals are not used for educational purposes. This building includes:

- a room fitted out with an extractor hood suitable for perfusion (physiologic buffer solution) and fixation (paraformaldheyde 4%) of whole animals or of anatomical pieces
- on the right: seven 2 sq m box stalls, each for one animal
- on the left: 1 room for working tools and feedstuff.



Figure 6.14: Map of B 15.

B 17 (EDIFICIO 14 17 known as "Sala Monta - Rinco")

This one-storey building (Figure 6.15, total surface area of 221 sq m) contains:

- a 130 sq m room where examination of mares and semen collection form stallions is carried out, with a mounting station and a phantom
- six boxes for horses of 12 sq m each.



Figure 6.15: MAP of B 17.

P18 (known as PADDOCK 1)

This area (Fig. 6.16), consisting of 450 sq m, is used for exercising and training horses.



Figure 6.16: Map of P 18.

P 19 (known as PADDOCK 2)

Animal shelters for avian species. These animals are normally used for teaching purposes.

THE VETERINARY TEACHING HOSPITAL (VTH)

The Veterinary Teaching Hospital (VTH) is hosted in five separate buildings (B 16, B 5, B 6, B 7, and B 20). In these structures clinical examinations, day-hospital and surgical procedures are normally performed during week-days.

B 16 (EDIFICIO 14 16 Veterinary Teaching Hospital known as "Ospedale Veterinario")

This 720 sq m building (Fig. 6.17a, Fig. 6.17b, total surface area 720 sq m) houses clinical facilities for Internal medicine, Obstetrical and Animal Reproduction, Diagnostic Imaging (X-ray, Ultrasound) facilities for small and large animals on the ground floor, and resting rooms, dressing rooms, toilets and administrative offices on the 1st floor.

The ground floor (Figure 6.17a) contains:

- a large waiting room for small animal (total surface area 44 sq m) where clients are met by personnel
- toilettes (total surface area 14 sq m)
- reception (total surface area 14 sq m)
- a 14 sq m small animal triage (022), for a six-student group, where clients are directed to the appropriate specific service
- four (total surface area of 55 sq m) examination rooms of the Internal Medicine (027), Neurology and neurophysiology (026), Obstetric and Animal Reproduction (025) and Cardiology and echocardiography (024), each for a 6-student group
- a 10 sq m surgical preparation room (013)
- a 24 sq m small animal obstetric surgery room (012), for a 5-student group, and a 6 sq m room (010) for washing, autoclaving and sterilizing surgical instruments
- a 10 sq m room (018) for drug storage
- Rx room (007), ultrasonography room (009) and and CAT room (003) (total surface area 74 sq m), each for a 4, 4 and 2-student group, respectively
- a 8 sq m dark room (004) for 5-student groups
- an 8 sq m room (006) for Rx film reading, for 5-student groups
- a 44 sq m large animal examination room (002), for a 5-student group
- a 44 sq m cattle examination room (001), for 5-student group.

The service of Surgical Unit is located in B 05.



Figure 6.17a: Map of B 16 - ground floor.

The first floor (Figure 6.17b) houses:

- two (total surface area of 27 sq m) living rooms (014, 015)
- a 13 sq m administrative office
- three dressing rooms (total surface area of 47 sq m)
- toilettes also for disabled person
- a 26 sq m meeting room (012).



Figure 6.17b: Map of B 16 - first floor.

B 05 (EDIFICIO 14 05-Veterinary Teaching Hospital known as "Chirurgia e Radiologia")

This 381 sq m one-storey building (Figure 6.18) contains the surgical facilities:

- a waiting room (007) for small animal (total surface area 20 sq m)
- a reception room (total surface area 8 sq m)
- two (total surface area of 24 sq m) examination rooms (006, 008) for small animal (each contains a 6-student group)
- a 7 sq m drug storage room (009)
- a 16 sq m small animal surgical preparation room (013), for a 6-student group
- two dressing rooms (total surface area of 16 sq m)
- a 21 sq m sterilizing surgical room (022)
- a 20 sq m medical preparation room (019)
- a 20 sq m soft tissues surgical room (017), for a 6-student group
- a 22 sq m orthopaedics surgical room (018), for a 6-student group
- a 45 sq m large animal surgical room (021) with awakening box, for a 6-student group (video connected with classroom)
- a 67 sq m large animal radiological room (001), for a 15-student group.



Figure 6.18: Map of B 05.

The 06 (BUILDING 14-06 - Veterinary Teaching Hospital known as "Stabulari grandi animali")

This one-storey shed (Figure 6.19) houses the boxes for large animals and small ruminants or pigs and it is used for hospitalization of clinical cases or teaching purposes. It is composed of:

- twenty-one horse boxes (each 14 sq m, total 294 sq m), for adult horses or mares with foal (the second box stall on the right line (south gate) under the tunnel is equipped with a 360° video camera connected with living room for students in professional clinical training "TIROCINIO" involved in Emergency h24, Intensive care and hospitalization (delivery and new-born foal assistance included)
- four large box stalls and paddocks for 8-10 cattle (total surface area 18 sq m each)
- three box stalls (16 sq m total) for 3 pigs or more piglets (8) or 3 small ruminants;
- one manure storage
- one Support Staff room
- one works.



Figure 6.19: Map of B 06.

The B 07 (EDIFICIO 14 07 Veterinary Teaching Hospital known as "Sala travaglio")

This building (under partial construction) contains:

- a store-frozen room for waste material
- 24-hr Service, containing:
 - two bed rooms for one veterinarian and one or two students; one living room (total surface area: under construction)
 - a 9 sq m therapy intensive room
 - · a 6 sq m magazine room
 - · a 15 sq m dog hospitalization room
 - · a 12 sq m cat hospitalization room
 - a 31 sq m isolation room for small animals.



Figure 6.20: Map of B 07 [draft].

B 20 (EDIFICIO 14 20 known as "Isolamento Grandi Animali")

This one-storey building (Fig 6.21, under construction) contains two isolation rooms for large animals (1 horse, 1 cattle).



Figure 6.21: Map of B 20.

MOBILE STRUCTURES

- Mobile clinic (Opel Vivaro), 6 seats, with basic clinical equipment, for large animal clinical professional training
- Minibus (Mercedes VITO), 7 seats, for non-clinical professional training
- Truck (Iveco- Daily) for livestock animals and horses transport
- Van (Fiat Doblò) for transport of live small animals, ovi-caprine, piglets and calves.

6.1.3 Premises used for clinics and hospitalization

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.

The majority of clinical activities take place in the Veterinary Teaching Hospital located in B 16, B 05 and B 07 buildings, where clinical examinations, day-hospital and surgical procedures are performed during week-days.

Small animals are hospitalized in the 24-hr Service located in the B 07, while large animals are hospitalized in the stables located in B 06 and in B 17 (Table 6.1).

| Structure | Species | n° of places |
|-------------------------|-------------------------|--|
| | Cattle | 16 located in B 06 |
| Regular hospitalisation | Horses | 21 located in B 06 6 located in B 17 |
| | Small ruminants or pigs | 3/8 animals (depending on size) located in B 06 |
| | Calves | 10 located in B 14 (under construction) |
| | Dogs | 14 located in B 07 |
| | Cats | 11 located in B 07 |
| | Other | |
| Isolation facilities | Farm animals and horses | 3 located in B 20 (under construction) |
| | Small animals | 3 (dogs), 8 (cats), located in B 07 |
| | Other | |

Table 6.1: Places available for hospitalization and animals to be accommodated

6.1.4 Premises

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.

The Faculty itself has no farm facilities, however four cows are permanently housed and other four/eight (See Chapter 4 - intramural clinical rotation on cattle) are housed weekly in stables of the Faculty. Three mares also are housed and maintained exclusively for teaching purposes. A stallion is maintained to provide artificial insemination to mares.

There are a number of livestock farms near the Faculty that are partners of the Faculty where the students, divided in small groups (maximum 12 students per group), carry out attend part of their practical training in animal production EU-listed subjects, under direct supervision of Teaching Staff and/or Contract Professors.

The students are taken to the Livestock farms with a minibus (MERCEDES VITO) or bus.

Livestock farms where the students are sent for their practical training in Animal Production:

CATTLE

- Azienda Agricola Bellucci Claudio, Via Paganine 35/3 41100 PORTILE Modena. 200 dairy cows (72 Km, 48min)
- Az. Agr. LA CÀ di Casolari Luciano, via Casa Martini 686 Località Selva -41100 Modena. 230 dairy cows (98 Km, 01h26min)
- Azienda Agroalimentare Biologica Hombre s.r.l., via Corletto Sud 320 41100 Modena. 200 dairy cows (64 Km, 52min)
- Allevamento Paganina Società Agricola s.r.l., via Strada Paganina 9 43010 Roccabianca (PR). 700 dairy cows (27 Km, 33min)
- Caseificio Sociale Santa Rita Società Agricola Cooperativa (Aziende Ferrari,

Ezincri, Giberti, Biosancarlo, Bioselva). 250 dairy cows and 250 calves (99Km, 01h24min)

- Azienda Agricola CANDIA BIO, Località Sant'Andrea San Polo Torrile Parma. 70 dairy cows (18 Km, 23 min)
- Azienda Agricola VECCHI, Località Malandriano. 100 dairy cows (17 Km, 19 min)
- Allevamento BOLDINI, Basilicanova Parma. 250 dairy cows (24 Km, 29 min)
- Allevamento Due MARETTI, Loc. Valera Parma. 200 dairy cows (7 Km, 12 min)
- Allevamento BOCCHI, Loc. Cornocchio PARMA. 200 dairy cows (3Km, 5 min)
- Allevamento LALATTA, Loc. Fraore Parma. 400 baby-beef. (5 Km, 7 min)

BUFFALO

 Allevamento CONTE BORROMEO, Loc. Cascina BORROMEO - GRUMELLO CREMONESE - Cremona. 250 buffalos (93 Km, 1h12min)

SHEEP

• Azienda Gaudenzi, Lesignano Bagni - PR. 300 sheep (28 Km, 36 min)

SWINE

- Societa' Agricola S. Antonio S.S Cascina Bellavere S.N., San Paolo (Bs). 500 pigs (111Km, 01h14min)
- Società Agricola 3C Az., S. Maria Pralboino (BS). 110 pigs (94Km, 01h05min)
- Az. Agr. Cà Emilia Besenzone (PC). 500 pigs (51Km, 48min)
- Az. Agricola Girasole Campagnola, Emilia (RE). 360 pigs (50 Km, 48min)
- All. La Badia di Pietro Silva, Via Badia Panocchia. (Km 15, 25 min)

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.

| Small animals | n° consulting rooms | 11 Nine in B 16 -ground floor: Triage (022) Internal medicine (027) Neurology and Neurophysiology(026) Obstetric and Animal Reproduction (025) Cardiolology and Echocardiography (024) Radiology (007) Ultrasonography (009) Large Animal radiological and ultrasound room (003) Two in B05: Surgery 1 (006) Surgery 2 (008) |
|----------------------------|-------------------------|--|
| | n° surgical suits | 3 One in B 16-ground floor: <i>Small Animal Obstetric surgery room (012)</i> Two in B5: <i>Soft tissue surgery (017)</i> <i>Orthopedics (018)</i> |
| Equine and Food animals | n° examination areas | 5 Two in B 16-ground floor: Cattle examination and standing surgery room (001) Large animal examination room (002) Large animal ultrasound and radiology (003) One in B 05: Large animal radiological room (001) One in stables tunnel B 6 One in B 17: Mare gynaecological and ultrasonographic examination and semen stallion collection room (001) 1 |
| | n° surgical suites | One in B 05: Horse surgical room (021) |
| Other | | |

Table 6.2: Premises for clinical work and student training

| Lecture hall | n° seats | Video projector/Microphone | Building |
|---------------------------------|----------|----------------------------|----------------------|
| A (002) | 120 | Yes/Yes | B 02 ground floor |
| B (032) | 90 | Yes/No | B 02 ground floor |
| C (030) | 95 | Yes/No | B 03 ground floor |
| D - Aula Magna (055) | 165 | Yes/Yes | B 04 ground floor |
| E (022) | 126 | Yes/Yes | B 04 ground floor |
| G - clinical lecture hall (024) | 85 | Yes/Yes | B 03 ground floor |
| I (001) | 25 | Yes/No | B 12 |
| M (003) | 64 | Yes/No | B 03 basement |
| Ν | 23 | Yes/No | B 03 basement |
| 0 | 23 | Yes/No | B 03 basement |

Table 6.3 shows the Faculty Lecture Halls classes in Veterinary Medicine and other degree courses.

Table 6.3: Premises for lecturing

Educational laboratories are listed in Table 6.4, and Research-Educational Laboratories are listed in Table 6.5.

| Room | Function | Places | Building |
|------|---------------------------|--------|---------------------|
| 1 | Dissecting Anatomy (027) | 30 | B 02 - basement |
| 2 | Microscopic Anatomy (028) | 32 | B 02 - basement |
| 3 | Multifunctional 1 (020) | 36 | B 04 - ground floor |
| L | Computer (018) | 15 | B 04 - ground floor |
| F | Necropsy (001) | 30 | B 13 |
| 6 | Multifunctional 2 (014) | 24 | B 03 - basement |
| 7 | Avian pathology (016) | 25 | B 03 - basement |
| 8 | Haematology (014) | 12 | B 03 - first floor |

Table 6.4: Educational Laboratories

| Laboratory n° | Function (Room) | Places | Building |
|---------------|---|------------------|----------------------|
| 1 | Histology Laboratory (012) | 12-student group | B 02 first floor |
| 2 | Hard Tissues Laboratory (016) | 10-student group | B 02 first floor |
| 3 | Milk and dairy products testing Laboratory (005) | 10-student group | B 02 ground floor |
| 4 | Mineral testing Laboratory (009) | 10-student group | B 02 ground floor |
| 5 | Feed Samples preparation Laboratory (018) | 10-student group | B 02 basement |
| 6 | In vitro Fermentation and Protein digestion Laboratory (020) | 5-student group | B 02 basement |
| 7 | Proximate Analysis and Fibrous Fractions Laboratory (029) | 10-student group | B 02 basement |
| 8 | Spectrometry Laboratory (030) | 6-student group | B 02 basement |
| 9 | Extractions and Chromatography Laboratory (017) | 10-student group | B 02 basement |
| 10 | Gas-Chromatograph Laboratory (023) | 10-student group | B 02 basement |
| 11 | Parasitology Laboratory (019) | 4-student group | B 04 ground floor |
| 12 | Preparation Laboratory (049) | 8-student group | B 04 ground floor |
| 13 | Bacteriology Laboratory (051) | 8-student group | B 04 ground floor |
| 14 | Histopathology 1 Laboratory (052) | 6-student group | B 04 ground floor |
| 15 | Histopathology 2 Laboratory (053) | 4-student group | B 04 ground floor |
| 16 | Immunopathology e Cellular Culture Laboratory(054) | 8-student group | B 04 ground floor |
| 17 | Molecular Biology and Multilabel Detection Laboratory (014) | 10-student-group | B 04 first floor |
| 18 | Animal Cell Culture Laboratory (012) | 10-student-group | B 04 first floor |
| 19 | Spectrophotometry Laboratory (006) | 10-student group | B 04 first floor |
| 20 | Protein Purification and Radiometric Detection Laboratory (005) | 10-student group | B 04 first floor |
| 21 | Protein Biochemistry and Molecular Biology Laboratory (004) | 12-student group | B 04 first floor |
| 22 | Diagnostic Laboratory (003) | 10-student group | B 04 first floor |

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| 23 | Microbiology 1 Laboratory (034) | 15-student group | B 04 first floor |
|----|---|------------------|----------------------|
| 24 | Microbiology 2 Laboratory (035) | 15-student group | B 04 first floor |
| 25 | Food Analysis Laboratory A (036) | 8-student group | B 04 first floor |
| 26 | Food Analysis Laboratory B (037) | 8-student group | B 04 first floor |
| 27 | Food Analysis Laboratory C (049) | 4-student group | B 04 first floor |
| 28 | Molecular Biology Laboratory (002) | 15-student group | B 12 |
| 29 | Gas-Chromatography Laboratory (GC) (007) | 4-student group | B 12 |
| 30 | Elemental Analysis Laboratory (008) | 4-student group | B 12 |
| 31 | Laboratory of seminology (027) | 6-student group | B 11 |
| 32 | Semen shipping Laboratory (028) | 6-student group | B 11 |
| 33 | Endocrinology Laboratory (039a) | 6-student group | B 11 |
| 34 | Toxicology Laboratory (039b) | 6-student group | B 11 |
| 35 | Pharmacology Laboratory (040) | 6-student group | B 11 |
| 36 | Biotechnology Laboratory (002) | 6-student group | B 03 basement |
| 37 | Virology 1 Laboratory (003) | 6-student group | B 03 ground floor |
| 38 | Virology 2 Laboratory (004) | 6-student group | B 03 ground floor |
| 39 | Bacteriology Laboratory (022) | 6-student group | B 03 ground floor |
| 40 | Haematology Laboratory (014) | 12-student group | B 03 first floor |
| 41 | Centrifuges Laboratory (005) | 6-student group | B 03 ground floor |

Table 6.5: Research and Educational Laboratories

Please give a brief description of health and safety measures in place in the premises for practical work and in the laboratories to which undergraduate students have access. European Directive 89/391/CEE, known as the Mark Directive, sets out measures to promote improved security and safety for workers, while Italian Law 626 on the Prevention of Work Place Risks outlines key preventive activities and provides a series of measures to be introduced in public and private facilities with a view to improving working conditions and reducing the risks of working place. Every student enrolled in Veterinary Medicine Degree attend a 4-hours course with final exams on the main risks within the facilities of the Faculty as well as on farms and in slaughterhouses. The University's Environmental Protection and Prevention service is responsible for the management of the equipment required for protection, evacuation and fire-fighting. All major areas are equipped with fire extinguishers, extractor fans and collection facilities for biological and chemical waste (in the relevant laboratories); all waste is regularly monitored and removed.

Laboratories are equipped with extraction systems, bio-safety measures and laminar flow chambers (where required). Emergency eye-bathing devices are available in laboratories.

Students are required to wear individual protection devices (DPI). Student must wear gloves, protective goggles and masks, and are informed of the basic measures to be implemented in order to comply with good laboratory practice. Use of appropriate clothing is compulsory in laboratories, the necropsy room, the dissecting room and the VTH.

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.)

6.1.5a Diagnostic Laboratories

As a support to animal owners and veterinarians for clinical investigations, the FV-MUP offers the services of Parasitology, Infectious Diseases, Pathology, Clinical Chemistry as well as a member of Clinical services (see over). These services tend to cater for clients and veterinarians of Parma Province and its Municipality.

In the Faculty there is also a non-clinical laboratory of Food Hygiene Microbiology accredited according EC 882/2004 regulation.

6.1.5a.1 Parasitology Diagnostic Service (DAH).

The Parasitology and Parasitic Diseases Diagnostic Service offered through the Parasitology unit of DAH provides diagnoses of parasitic diseases relevant to animal production and public health on a wide range of animal species. An associate professor in Veterinary Parasitology and a Researcher (both diplomats of the Eurupean Veterinary Parasitology College) are responsible for the service. The Veterinary Parasitology Laboratory, located in the ground floor of the 03 Building, is equipped for preparing faecal examinations, staining cytological specimens and histological slides, in-vitro analyses and molecular biology, for both routine diagnostic and research activities. Instruments include:

- Leica RM2155 Automatic microtome/histology line
- BECKHAM refrigerated centrifuge PK 121R
- OPTECH IB2FL Inverted and fluorescence microscope
- TKA Laminar flow hood
- SANYO MCO-15AC CO2 incubator
- GeneAmp® PCR System 9700 Thermo cycler.

The routine activity of the Parasitology laboratory is aimed at the diagnosis of common parasites of large and small domestic animals. Samples are brought in by general practitioners, as well as by colleagues from the Veterinary Teaching Hospital. Depending on the season and on the species considered, samples can have very different nature: faeces, urine, blood, skin and ear scrapings. They are examined with the following standard procedures:

- flotation with different flotation solutions (NaCl, Zinc Sulphate, Sucrose)
- sedimentation
- McMaster counting technique
- modified Knott test for microfilariae detection
- direct examination of skin/ear scrapings
- rapid ELISA kit for detection of parasite antigens in faeces
- Baermann technique

• staining of faecal smears with modified Ziehl-Neelsen for Cryptosporidium spp. The approximate number of diagnostic samples (faeces, blood, urine, skin scrapings) is about 400/year. The animal species considered include dog, cat, and cattle.
6.1.5a.2 Infectious Diseases Diagnostic Service (DAH)

Diagnostic Service is operated by 4 Teaching Staff and 2 Support Staff and 2 VTH consultants.

The Service of Microbiology and Infectious Diseases is run by the Infectious Diseases Unit.

The service is carried out in the laboratories located at the ground floor and at the basement of the building B 03. The head of the Service is a professor of Infectious Diseases. Bacteriology and serology are performed using routine methods, and bio-molecular techniques (PCR) are also applied. One budgeted technician works full time for this service.

The diagnostic service of the Section of Infectious Diseases of Animals began in 1964. To date, the diagnostic activity concerns mainly bovine infectious pathologies (direct and indirect diagnosis of the main respiratory, reproductive and enteric diseases of cattle); and the most common bacterial and fungal diseases of the other animal species. Bacterial identification by microscopic and biochemical testing, evaluation of antibiotic sensitivity by Kirby-Bauer method are also performed.

Samples are referred mainly from practitioners, from the Veterinary Teaching Hospital or private owners. During practicals, each student performs bacteriological diagnostic investigations on poultry, pigs and calves specimens, and serological examination on bovine sera.

Cultural and serological diagnostic investigations performed by the Infectious Disease Section from 2007 to September 2010 are listed in Table 6.5a.

List of the diagnostic tests routinely available.

- microscopic and cultural bacteriology and mycology
- antimicrobial sensitivity test
- serological tests for *Chlamydophila abortus* (ELISA)
- serological tests for *Mannheimia haemolytica* (ELISA)
- serological tests for *Mycoplasma bovis* (ELISA)
- serological tests for Bovine Parainfluenza Virus type 3 (ELISA)
- serological tests for Bovine Respiratory Syncytial Virus (ELISA, indirect immunofluorescence test)
- serological tests for *Mycobacterium paratuberculosis* in serum and milk (ELISA)
- serological tests for *Coxiella burnetii* in serum and milk (ELISA)
- serological tests for Bovine Viral Diarrhea Virus in serum and milk (ELISA: total antibodies and antibodies against NS2-3, serum neutralization test)
- serological tests for Bovine Herpesvirus type 1 in serum and milk (ELISA: total antibodies and antibodies against gE, serum neutralization test)
- serological tests for Bovine Respiratory Coronavirus (serum neutralization test)

- serological tests for Bovine Herpesvirus type 4 (indirect immunofluorescence test)
- serological tests for Neospora caninum (indirect immunofluorescence test)
- serological tests for Brucella abortus
- serological tests for *Leptospira*: sv *Hardjo*, sv *Copenhageni*, sv *Pomona*, sv *Bratislava*, sv *Canicola*, sv *Tarassovi* (microagglutination test)
- detection of Failure of Passive Transfer (FPT) on calves sera (sodium solfite test) and colostrum (immunochromatography)
- detection of Bovine Viral Diarrhea Virus in serum, whole blood, plasma, milk, leucocytes extracts, ear notch, organ extracts and blood clots (ELISA, PCR: traditional and Real Time)
- detection of *Mycoplasma bovis* (ELISA)
- detection of *Clostridium difficile* (ELISA)
- isolation of Bovine Viral Diarrhea Virus (cell culture)
- isolation of Bovine Herpesvirus type 1 (cell culture)
- isolation of Bovine Respiratory Syncytial Virus (cell culture)
- isolation of Bovine Herpesvirus type 4 (cell culture)
- identification of *Clostridium perfringens* antigens from faeces (immunochromatography)
- identification of α , β and ε toxins of *Clostridium perfringens* from faeces (immunochromatography)
- identification of Escherichia coli K99 from faeces (immunochromatography)
- identification of Bovine Rotavirus from faeces (immunochromatography)
- identification of Bovine Coronavirus from faeces (immunochromatography)
- identification of Bovine Respiratory Syncytial Virus antigens from lung tissues (immunochromatography).

| | | 2007 | | | 2008 | | | 2009 | | (1 | 2010 Jan - 20 Se | p) |
|---------|-------------------|----------|--------|-------------------|----------|--------|-------------------|----------|--------|-------------------|----------------------------|--------|
| SPECIES | antibio- grams | cultures | sera | antibio- grams | cultures | sera | antibio- grams | cultures | sera | antibio- grams | cultures | sera |
| Bovine | 83 | 95 | 39.874 | 182 | 205 | 31.458 | 240 | 272 | 35.437 | 140 | 147 | 15.699 |
| Equine | 6 | 6 | | 3 | 3 | | 2 | 2 | | 9 | 10 | |
| Dogs | 171 | 207 | 25 | 258 | 289 | 31 | 79 | 95 | 29 | 204 | 227 | 7 |
| Cats | 157 | 198 | | 134 | 151 | | 81 | 94 | | 30 | 35 | |
| Pigs | | | | | | | | | | 27 | 32 | |
| Rabbit | | 3 | | | 5 | | 4 | 4 | | 1 | 1 | |
| Birds | 15 | 23 | | 12 | 18 | | 16 | 22 | | 22 | 25 | |

Table 6.5a: Cultural and serological diagnostic investigations performed by the Infectious Disease Section from 2007 to September 2010.

6.1.5a.3 Pathology Diagnostic Service (DAH)

Pathological Anatomy Diagnostic Service, operated by 4 Staff Pathologists and 1 Support Staff, is provided by the Pathology Unit. Pathological anatomy is itself divided in subspecialties, the main ones being surgical pathology, cytopathology and forensic pathology. The techniques used are gross examination, histopathology, histochemistry, immunohistochemistry and cytopathology. Flow immunophenotyping is used in experimental immunopathology.

Cadavers for necropsy, biopsies or body fluid collections for clinical pathology are referred to the Pathological Anatomy Diagnostic Service from practitioners and from the VTH.

A diagnostic service also supports State Veterinary Officers working in slaughterhouses to identify particular unusual lesions or diseases.

A necropsy room within Faculty is utilized for post mortem examinations and collection of necropsy samples. The necropsy room contains 4 stainless steel tables for small and medium size animals, necropsy instruments, and necessary equipment for two simultaneous necropsies. The necropsy room will include down draft large animal necropsy tables.

Photographic equipment is available in the necropsy room and provides immediate documentation as well as publication quality examples of gross necropsy findings. Necropsy performed in 2010: see Chapter 7.

A total of 1700 histopathological and cytopathological slides were examined in 2010.

Instruments include:

Rotative Microtome Leica Rm 2155, Inclusion apparatus Medite TBS 88, Immunostainer Ventana Nexes IHC, Flow hood for formalin-fixed sample processing, Flow hood for histopathology staining, Histoline ATP 700 Tissue Processor, Cryostat Micron HM 500, Microscope Nikon Eclipse E 800 equipped with Image Analyzer Nikon Digital, Real-Time PCR thermo-cycler Step-One.

6.1.5a.4 Biochemistry

In recent years, ongoing collaboration has been established between the laboratory of Veterinary Biochemistry (DAPF) and the VTH, for the development of laboratory procedures and clinical applications of so called "platelet derivatives" (platelet rich plasma, platelet gel) and mesenchymal stem cells in canine, feline and equine medicine. In particular both platelet derivatives and mesenchymal stem cells have been applied in orthopaedic surgery, deep soft tissue and skin lesions, and ophthalmology. The same Laboratory has developed expertise bird sexing by PCR (Table 7.3, poultry).

Instruments and techniques include:

Cell culture facilities: inverted and fluorescence microscopes, laminar flow hoods, CO₂ incubator.

Molecular Biology Lab: thermal cycler, nucleic acids preparation, manipulation and analysis.

Protein biochemistry Lab: FPLC purification system, centrifuges, ultracentrifuge, fluorimeter, spectrophotometer.

6.1.6 Services offered by the Veterinary Teaching Hospital

6.1.6b Clinical Services: the Veterinary Teaching Hospital

At the Faculty of Veterinary Medicine of Parma (FVMUP), the Veterinary Teaching Hospital (VHT) has been organized as a Departmental Centre providing services related to teaching. The Director of the VTH is Prof. Maurizio Dondi. The VTH is managed by Teaching Staff, Contract Professors and Veterinary Residents with the active participation of students in professional training "TIROCINIO". The VTH has a Statute and Policies and Procedures which have been formally accepted by the Rector of the University of Parma. The VTH offers a relevant number of clinical services mostly for small and large animals, including internal medicine, neurology and clinical neurophysiology, cardiology and endocardiographiy, dermatology, ophthalmology' anaesthesiology, emergency and intensive care, obstetrics and animal reproduction, diagnostic imaging, surgery and mobile clinic (the mobile clinic starts November 2010 for clinical livestock and horses service).

The laboratories of haematology and clinical chemistry, parasitology, infectious diseases and pathological anatomy support VTH in diagnostic activities.

VTH is equipped with: endoscopy, ultrasonography, echocardiography, electromyography, electroencephalography, and X-ray.

A 24-hr Emergency Service is available for small animals and large animals. All services are supervised by the VTH Management Board. High quality veterinary care and professional support to practitioners in referrals cases is performed. First opinion cases are also performed. Many animals come from the Municipality of Parma, but also from the rest of the Emilia Romagna Region as well as from neighbouring Regions (Veneto, Lombardy, Liguria, and Tuscany).

All services are meant to be designed specifically for teaching activity; therefore 1-5 students are always present, attending patients and performing medical, surgical, obstetrics and animal reproduction procedures during clinical rotations.

An emergency laboratory with basic equipment for Haematology and Clinical Che-

mistry is located in the VTH (B 03 first floor 014). VTH clinical workflow is shown in Annexes 7.1 and 7.2.

6.1.6b.1 Clinical Chemistry Diagnostic Service (DAH)

A fully equipped Laboratory for Haemathology and Clinical Chemistry is located on the first floor of the B 03 building (first floor 014) providing support for the handling of clinical cases of the VTH.

6.1.6b.2 Internal Medicine Service

The Internal Medicine Service provides high quality care in the fields of small animal gastroenterology, endocrinology, pneumology, nephrology and urology. Large animal service is also performed. This service is operated by 7 clinicians (Teaching Staff and Contract Professors).

6.1.6b.3 Neurology and Clinical Neurophysiology Service

The Neurology and Clinical Neurophysiology Service provides high quality care for small animal patients with neurologic conditions. This service is provided by two staff member in internal medicine. In the three-year period (January 2008 - October 2010) a total of 273 of electromyography or electroencephalography (EEG or EMG) and 328 neurological examinations starting 2008 were performed.

6.1.6b.4 Cardiology and Echocardiography Service

The Cardiology and Echocardiography Service provides high quality care in the field of small and large animal cardiology. This service is operated by one Teaching Staff and a Contract Professor with a special competence in cardiology. In the three-year period (January 2008- October 2010) a total of 1 175 cardiological examinations comprehensive of echocardiography, echo Doppler and electrocardiography were performed.

6.1.6b.5 Dermatology Service

The Dermatology Service provides high quality care in the fields of small animal dermatology. This service is operated by one Contract Professors with a special competence in dermatology.

6.1.6b.6 Ophthalmology Service

Veterinary Ophthalmology Service provides medical care for companion animals and horses, comprehensive education to clients, and maintains a close relationship with both clients and referring veterinarians. Eighty percent of cases are referred and 20%

are first opinion cases.

Examination procedures: Schirmer tear test, fluorescein and Rose Bengal staining, applanation tonometry, gonioscopy, slit lamp examination (bio-microscopy), naso-lacrimal flushing, direct and indirect ophthalmoscopy, electroretinogram, conjunctival cytology and biopsies, blood pressure measurement-Doppler and external ocular photography.

6.1.6b.7 Anaesthesiology Service

The Anaesthesiology Service provides high quality care in the fields of small and large animal anaesthesia and care for post-surgical patients until they have fully recovered from anaesthesia. Three staff anaesthesiologists operate this service.

In the three-year period (January 2008- October 2010) a total of 1412 anaesthesias were performed.

6.1.6b.8 24-hr Emergency Service and Intensive Care

The 24-hr Emergency Service and Intensive Care is a new service started this year, which provides a continuous monitoring of surgical, medical and obstetrics patients requiring constant care throughout the night and week-ends. The service will be operative daily from 08:00 p.m. until 08:00 a.m. of the following day, week-end included. During this time small and large animals patients admitted to the VTH are constantly monitored, and owners coming in with animals in emergency are accepted. The service is provided by a team of 8 Veterinary Residents (see Chapter 4). The night team on duty is composed by one budgeted veterinarian (Veterinary Resident) and 2 students. Out of the 8 Veterinary Residents who participate in this service, 1 staff member in surgery, 1 in medicine and 1 obstetric and animal reproduction are available every night or week-end for emergencies or immediate consultation.

6.1.6b.9 Clinical Obstetric and Animal Reproduction Service

The Clinical Obstetric and Animal Reproduction service is certified as a National Public Stud Equine Centre for fresh semen production, centre for equine A.I. with fresh and frozen semen, warehouse for deposit of domestic animals semen. The Clinical Obstetric and Animal Reproduction Unit is also a centre for collection and transfer of fresh and frozen embryos of domestic animals. Two stallions (one belonging to the National Association of Standard bred Breeder) are present for all the year. Starting at mid-February, each stallion's semen is collected three times a week (Monday, Wednesday and Friday) with the active participation of the fifth year students during professional training "TIROCINIO". Semen is evaluated in collaboration with the stu-

dents and after dilution the mares present in the Faculty are breed. Students also participate in semen refrigeration, packaging and posting all over the Country.

During the last three years respectively 108, 59 and 52 semen collections were performed (mean 73/year) and 355 semen doses were sent (mean 118/year).

The service also includes induction of oestrus, grouping of ovulation and A.I for mares during every breeding season.

The number of ultrasonographic examinations for ovulation control and early pregnancy diagnosis for the last three years have been respectively 423 in 2008, 250 in 2009 and 46 in 2010, all performed with the assistance of the students in professional training. Foaling and post-natal assistance and care to the foals are carried out. Gynaecological and ultrasonographic examinations in hospitalised cows were performed by the students in pre-professional and professional training "TIROCINIO" (data: 599, 231, and 344 respectively in 2008, 2009, and 2010).

DAH has a contract with the municipality of Parma for the neutering and spaying of dogs and cats housed at the town shelter. Students actively participate as first assistance to the surgeons during cat and dog ovaryhysterectomy and orchiectomy. Every year more than 300 animals underwent spaying/neutering. The same clinical activity is also performed on companion animals coming to the VTH.

6.1.6b.10 The Diagnostic Imaging Service

Four radiologists operate in Diagnostic Imaging Service.

• Radiology: thorax, abdomen examination, orthopaedic examination, contrast study (mostly performed): urography, cistography, uretrography, gastro-intestinal study, fistulography, mielography.

Students participate in the preparation of the patient, they measure the anatomical part to be examined, use the technique cart of the radiological unit, and center the anatomical part to be examined in the primary X-ray beam. Student also marks the film with the patient's ID, and develops the film in the darkroom. Due to safety reason (radioprotection regulation), students are not allowed to be present in the X-ray room during the X-ray exposure of the patient.

• Ultrasonography: examination of the abdomen, thorax, muscolo-skeletric apparatus, superficial lesion, thyroid/parathyroid gland, lymph nodes, eye. Contrast studies with II generation contrast medium of focal and diffuse parenchymal lesions.

Students participate in the preparation of the patient (clipping, gel application), positioning. In some cases, especially with the small animal (dogs and cat) of the dog pound, they begin the ultrasound examination under the teacher's supervision. Students participate also to the weekly session of the ultrasonographic examination of the udder in the cow. They participate to the practical session, and under the teacher's supervision they perform the ultrasonographic examination of the udder. Both in radiology and ultrasonography, the collected images are discussed with all the students. X-ray case load: 1 471 cases in 2008, 1,821 in 2009 and 1 775 in 2010 (updated Novembre 17th). Ultrasonography case-load: 450 in 2007, 708 in 2008, 877 in 2009, and 979 in 2010 (updated September 30th). In approximately a 15-20% of cases, both a radiographic and ultrasonographic examination were performed. A CAT will be installed in March 2011.

6.1.6b.11 Surgery Service

The surgery unit is active every day during the normal opening time of the teaching hospital for first opinion and referral cases in small and large animal. Most of the patients are small animals (cats and dogs). General surgery (abdominal, thoracic, soft tissue, oncological etc) is available every day of the week and 70% of the cases are referred and 30% are first opinion cases.

A small animal orthopaedic service is active generally three times a week during the normal opening time of the teaching hospital on appointment. 90% of cases are refereed (total hip replacement, tibial plateau leveling ostetomy, tibial tuberosity advancement, arthroscopy, complex fractures, fracture complications etc) and 10% are first opinion cases.

6.1.6b.12 Mobile clinic service

Starting November 2010 a mobile clinic, equipped for clinical livestock service, will be also available. Before 2010, however, Contract Professors in extramural clinical activities have carried out extramural training in livestock medicine (Chapter 7).

6.1.7 Slaughterhouse facilities

Describe briefly the slaughterhouse facility to which the Faculty has access, including distances from the Faculty and level of activity.

The FVMUP is a minority shareholder of the Municipal slaughterhouse of Parma. In 2009, 9 000 heads of cattle anf 4 500 horses were slaughtered. Students attend meat inspection procedures, including ante and post mortem inspection of slaughtered animals.

Furthermore the students are sent out to various public and private slaughterhouses

(with which the FVMUP has formal agreements) for their practical training, including other animal species.

SLAUGHTERHOUSE

The slaughter facilities (bovine, equine and swine species), where the students spend part of the extramural professional training "TIROCINIO" in food hygiene and public health are below listed:

- Macello di Parma Srl, Strada del Taglio 6/a 43126 Parma (PR) (the slaughterhouse is close to the Veterinary Medicine Faculty of Parma and The Faculty has shares of the society) - (cattle and horses slaughterhouse)
- Sassi Fratelli (S.p.A.) Industria Macellazione, Strada della Selva 96 43056 Torrile (PR) tel. 0521 815641 - (pigs slaughterhouse and cutting plant) (16 Km 9 min)
- Macello Annoni S.r.l., Via Madonna dei prati 100 Busseto (PR) (pigs slaughterhouse and cutting plant) (29 Km, 38 min)
- Nostranello Sanfelice, Via Battisti 65 Gadesco Pieve Delmona (CR) (poultry slaughterhouse and cutting plant) (74 Km, 50 min).

6.1.8 Foodstuff Processing Unit

Describe briefly any access that the Faculty has to foodstuff processing units.

There is no foodstuff processing in the FVMUP.

Students are sent to various public and private foodstuff processing units (with which the FVMUP has formal agreements) for their practical training through educational visits organized in public and private food processing plants (PPs), in collaboration with Veterinary State Officers nominated Contract Professors.

Each student during his/her own practical training in Food Hygiene and Inspection (5th year) takes part in all inspective procedures in various foods PPS, with particular regard to those which process food of animal origin (meat products, dairy products, fish products; see list below). Moreover, regarding veterinary public health, food hygiene, inspection and technology, students have the possibility to directly follow routine activity in public veterinary services and laboratories (AUSL and Zooprophylactic Institutes), through various agreements between FMVUP and these facilities located throughout the entire Italian territory.

Dairy and cheese factories:

- Caseificio Sociale Santa Rita Società Agricola Cooperativa (Aziende Ferrari, Ezincri, Giberti, Biosancarlo, Bioselva). (99 Km, 01h24min)
- Latteria Sociale S. Lucio Soc. Coop. A R.L., Via G. Adorni S. Vitale Baganza 7 Sala Baganza (PR) - (20 km, 25 min)
- Parmigiano-Reggiano cheese consortium Parma Section (5 km, 7 min)
- Parmalat, Via delle Nazioni Unite 4 Collecchio (PR) (17 km 23 min)
- Latteria Soresina Soc. Coop. Arl, Via dei Mille 26015 Soresina (CR) (97 km, 1h16min)
- Caseificio Sociale Santa Rita Soc. Agr. Coop, Via Pompeano 2290/1 Fraz.
 Pompeano 41028 Serramazzoni (Modena) (90 km, 1h26min)
- Caseificio CPL Consorzio Produttori Latte, located in Baganzolino (PR) (7,5 km, 12min)
- Centro Lattiero Caseario, via Torelli 17 Parma
- Caseificio Santa Vittoria, located in Fiorenzuola (PC) (47 Km, 36 min)
- CIZ (Consorzio per l'Incremento Zootecnico, La Serra, San Miniato (PI) (217 Km, 2h19min)
- Istituto Sperimentale Italiano Lazzaro Spallanzani, località "La Quercia" Rivolta d'Adda (CR) - (134 Km, 1h32min)
- Laboratorio di Tecnologie della Riproduzione "Avantea", via Porcellasco 7/F -(CR) - (72 Km, 51 min).

Ham factories:

- Brendolan, STAB: Via Roma 58 43013 Langhirano (PR) (24 Km, 35 min)
- Fratelli Emiliani, via Don G. Corchia 14- Langhirano (PR) (25 Km, 37 min)
- Italfine srl, Via Provinciale 46 Beduzzo di Corniglio (PR) (38 Km, 56 min).

Raw, cooked and dry cured ham products companies:

• Zuarina, Cascina piano 2 - Langhirano - (25 Km, 37 min).

Fresh meat cutting plants:

• JBS, Via Spilamberto 30/c - Castelvetro (MO) - (61 Km, 50 min).

Eggs:

• Parmovo, Strada sabbiata 22/A - Colorno (PR) - (18 Km, 21 min).

Honey producers' associations and laboratories:

 Conapi and Apishare, Via del Lavoro 20 - Monterenzio (BO) - (128 km, 1h38min).

Feed mill:

 Carra Mangimi Spa, Via Alessandrini 4 - 43058 Bogolese di Sorbolo (Parma) (7,5 Km, 15 min).

FOOD HYGIENE MICROBIOLOGY

The introduction of quality system as a requirement for accreditation of testing laboratories determined in the staff of the Section of Food Inspection to review old laboratory practices and to follow international standard methods. Food testing is required to evaluate food safety in terms of microbiology, mycotoxins, pesticide and other chemical residues, toxic metals, additives and packaging materials.

According to the Regulation (EC) 882/2004 on "Official controls performed to ensure the verification of compliance with feed and food law, animal health and animal welfare rules", sampling and analysis methods used in the context of official controls shall comply with relevant Community rules or with internationally recognised rules and/or protocols. Moreover, recognised high quality standards promote the international harmonisation of food standards for facilitating international food trade.

Since March 2010, the section of Inspection of Food of animal origin achieved the certification for the accreditation ISO 17025:2005 of the Food Microbiology Laboratory (list of the acknowledged laboratories, No 0087), by the assessment and acknowledgment body ACCREDIA. The ISO 17025:2005 accreditation attested by the national accreditation body recognises the laboratory's professional competence and states that the conformity assessment satisfies the criteria established by harmonised standards. Accreditation of the Food Microbiology Laboratory enables the Department of Animal Health to supply external services for food business operators, supporting microbiological analysis according to Food Hygiene EU Regulations. Quality assurance is guaranteed in the laboratory through the validations of testing methods, analytical data quality control, staff qualification, data on uncertainty measurement, registration of verifying methods and management of out of control data.

The compulsory external quality assessment not only assesses the laboratory bias but also checks the validity of the whole quality system. The laboratory regularly participates in proficiency testing which are relevant to the scope of accreditation.

The ISO standards accredited are listed in Table 6.5b. The laboratory equipment are reported in Table 6.5c.

| Matrix | Parameter - Food Microbiology | Standard |
|--------------|----------------------------------|-------------------------|
| | Colony- count technique at 30°C | UNI EN ISO 4833:2004 |
| Food product | Listeria monocytogenes detection | UNI EN ISO 11290-1:2005 |
| Food product | Escherichia-coli O157 detection | ISO 16654:2001 |
| | Salmonella spp. detection | UNIEN ISO 6579:2008 |

Table 6.5b: List of the accredited parameters of the Laboratory of food microbiology.

Among the equipment commonly in use in a laboratory of microbiology, the horizontal laminar flow cabinet, class II type B2, represents certainly a top performing and high quality tool, whose use is attested for biological safety level, BSL-2. Agents of moderate potential hazard for laboratory personnel and/or the environment, which may be handled with this cabinet, are associated with human disease, as for example *Escherichia coli* strains, including verocytotoxing-producing *E. coli* O157:H7).

| | Equipment | Quantity |
|------------------------|--|----------|
| | Horizontal laminar flow cabinet, class II type B2 with UV filter | 1 |
| | Laminar flow cabinet with UV filter | 3 |
| | Incubators | 3 |
| | Freezer -20°C | 1 |
| | Ultra freezer -80°C | 1 |
| | Mini Logger | 7 |
| | Data Logger | 1 |
| | Stomacher | 1 |
| | Autoclave | 1 |
| Food Microbiology | Water baths | 1 |
| Laboratory of analysis | Vortex | 1 |
| ISO 17025 accredited | pH-meter | 1 |
| | Precision scale | 2 |
| | Analytical scale | 1 |
| | Thermometers | 2 |
| | Hand pipettor | 8 |
| | Micropipettes | 10 |
| | Phase contrast microscope | 1 |
| | Mini-VIDAS equipment | 1 |
| | Drying Oven | 1 |
| | Water distiller | 1 |
| | Refrigerators | 5 |

| | Polymerase Chain Reaction (PCR) thermo cycler | 1 |
|-------------------------|---|---|
| | Water bath | 1 |
| | Electrophoresis tray | 1 |
| | Transilluminator | 1 |
| | Laminar flow hoods with UV filter | 2 |
| Biomolecular | Heater dry plate | 1 |
| Microbiology Laboratory | Vortex | 1 |
| | Micropipettes | 8 |
| | Microwave | 1 |
| | Refrigerator | 1 |
| | Photographic cone | 1 |
| | Digital photographic camera | 1 |

Table 6.5c: List of equipment available.

Based on the epidemiological findings of zoonotic pathogens and in line with European data on food borne diseases, research fields of the section of Food Inspection are focused on the prevalence of pathogenic micro-organisms such as *Salmonella enterica*, thermotolerant *Campylobacter*, *Listeria monocytogenes*, verocytotoxin producing *Escherichia coli*, *Yersinia enterocolitica* and *Vibrio paraheamolyticus* in food of animal origin (fresh and processed meat, raw milk, dairy products and fishery products). Foodborne microorganisms detected in food samples may also be tested for virulence properties and antibiotic resistance by Polymerase Chain Reaction (PCR) techniques.

6.1.9 Waste Management

Describe briefly the systems and equipment used for disposing of the waste material: cadavers, carcasses, biological waste of different types, excreta, etc.

The waste management policy of the University of Parma is based on current European legislation (CE Law n° 1774/2002; animal by-products - CATEGORY 1 - adopted by Italy with law n° 254/2003, and art. 24 of law n. 179/2002). Carcasses, viscera as well as any kind of animal waste or biological byproducts produced during teaching, research, and diagnostic services in the necropsy hall, in the VTH or in the research laboratories of the FVMUP, are disposed of once or twice a month through an incineration process performed outside of the Faculty by the following authorized

private company: Dusty Rendering, Località Bruzzo, Frazione Santa Croce, 43010 Polesine Parmense, Parma.

This process is paid by the Department of Animal Health.

Table 6.6 shows the total amount of animal waste disposed in the period 2007-2009.

| Years | Weight (Kg) |
|---------------------|-------------|
| 2007 | 14500 |
| 2008 | 11700 |
| 2009 | 13000 |
| September 30th 2010 | 9600 |

Table 6.6: Total amount of animal waste disposed in the period 2007-2009

Carcasses, organs and biological samples from the VTH, the dissecting rooms, the operating theatres, the necropsy rooms and the research laboratories are collected by the authorised waste collector at the request of any Department or Service. Hazardous waste is kept in sealed drums in a freezing chamber until collected by the authorised company.

In the Necropsy room, carcasses and viscera are normally stocked in a refrigerating (9 sq m) or a freezing room (3 sq m, -16°C), depending on timing of use and type of processing.

After use and prior to disposal, the material is stocked exclusively in 2 bins (700 Kg each) in the freezing room for only animal by-products - CATEGORY 1 - (CE Law n° 1774/2002).

The viscera as well as any kind of animal waste, whole carcasses of small/young animals are closed within large dedicated storage bins (700Kg each); larger carcasses (adult bovines, equines etc.) are dissected and placed into bins.

All material to be disposed of is always accompanied by the necessay official documents.

The collection of chemical waste and laboratory material is carried out on request, in compliance with the established protocol which requires identification of waste by means of correct labelling and proper packaging, using materials supplied by the waste management service.

Hazardous waste disposal procedure

Biological samples produced from the research laboratories (European waste code 180202, wastes whose collection and disposal is subject to special requirements in

order to prevent infection) are collected by a special plastic waste bucket, with safety lock and carried out every week by the authorized company.

Chemical waste produced from the research laboratories (European waste code 160506, laboratory chemicals, consisting of or containing dangerous substances, including mixtures of laboratory chemicals) are collected by approved polyethylene tanks from 20 liters, stored in an outdoor warehouse and carried out once a year by the authorized company.

All containers used to accumulate Hazardous Waste have a completed label, including date, European waste code, type of waste and amount.

6.1.10 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.

Recently (June 2010), the University of Parma's Board of Governors has allocated 2 200 000 euro (Resolution n° 479/28817, Board of Governors 29th July 2010) for the construction of a Multifunctional Educational Laboratory Building (anatomic room, necropsy room, microscopic laboratory, chemistry laboratory, microbiology/cell-culture laboratory, information technology laboratory). Construction is expected to start early in 2011 and is scheduled to be completed by the second semester of 2012.

6.2 Comments

Comment on the adequacy of the buildings in general for undergraduate teaching. Comment on the adequacy of the equipment in general for undergraduate teaching. Comment on the maintenance of buildings and equipment.

Given its current location, the FVMUP is strategically placed with regard to the availability of areas devoted to the rearing and management of livestock animals as well as slaughterhouses, animal shelter and food industries facilities.

The premises and equipment in general represent extraordinary strength in terms of the layout and function of areas specifically intended for teaching and research.

The University's Environmental Protection and Prevention service provides safe and efficient management of chemical and biological waste collection, using clearly-de-fined protocols.

The facilities for animal housing and recovery at the FMVUP were created for and are managed to ensure the presence of numerous animal species, in full compliance with current regulations on ethics and animal welfare.

6.3 Suggestions

If you unhappy with any situation, please list any improvements you would make in order of preference.

The Faculty intends to improve the Large Animal facilities and must now obtain approval and financing by the University for this.

The maintenance of first-class facilities and the provision of appropriate equipment represent a financial challenge. To meet that challenge, the aim is to undertake funded research projects and information-transfer activities which will enable laboratory equipment to be improved.



Animals and Teaching Material of Animal Origin









Chapter 7.

Animals and Teaching Material of Animal Origin

7.1 Factual information

Article n. 8 of the national law n. 116/1992 that regulates the protection of animals used for experimental or scientific purposes (in application of the EU Directive n. 609/1986), establishes that "...the National Ministry of Health authorises experiments for teaching purposes only in case of absolute need and whenever it is not possible to utilise other demonstrative systems". The Faculty of Veterinary Medicine of Parma has decided not to authorise these kinds of experiments, opting for the use of alternative non-invasive teaching methods. Therefore, experiments with animals for teaching purposes are not performed in any of its courses. Healthy animals are only shown to students and, if handled, are never caused suffering or stress. Any therapeutic treatment is performed only on diseased animals, with the aim of curing disease and improving health and welfare status. Diseased animals are also used for clinical teaching purposes.

Patient flow data are updated untill October 31st 2010.

» Indicate the materials that are used in practical anatomical training, and how these are obtained and stored.

7.1.1 Anatomy

Dissection is the key method through which veterinarians and veterinary surgeons acquire scientific knowledge of the animal body, as well as being the initiation process that introduces students into the veterinary profession.

Practical anatomical training is performed using live animals, fresh organs and frozen stored material, as well as plastic or historical anatomical preparations. (see Table 7.1).

Live animals

Anatomical teaching on live horses and cows housed in the Faculty is performed. As of June 2010, anatomical teaching is also performed on dogs and cats that are brought to the VTH for routine visits during the pre-professional internship "ORIENTAMEN-TO". Anatomical practical activity on live animals regards: body surface characteristics, anatomic planes, directional terms and identification of anatomical regions. The reference terms are those indicated by *Nomina Anatomica Veterinaria* 2005.

During the year, practical sessions on live animals are performed in 2 groups of 30 students each, for a total of 3 hours the 1st year (subject: Anatomy) and of 6 hours in the 2nd year (subject: Topographic anatomy).

During the pre-professional internship "ORIENTAMENTO", 1st-year students are divided into groups of 10-15 that each spend 12 hours in the VTH during summer vacation, where they can test the anatomical knowledge on live animals (see Chapter 4).

Fresh material

Cadavers and viscera of domestic animals are normally used for dissections during practical sessions in anatomy and topographic anatomy.

Cadavers of large animals (calves, sheep and pigs) deceased due to non-infectious diseases, coming from livestock farms in the Parma and other surrounding provinces are used for anatomy dissection.

Obtaining horse cadavers for anatomic dissection is very difficult. Therefore, dissection is performed on equine foetuses collected from mares slaughtered in the Municipal slaughterhouse, next to the Faculty (see Chapter 6). Post-mortem or refrigerated, non-pathological organs of cattle and horse are also provided by the slaughterhouse, partner to the Faculty.

Whole cadavers of dogs and cats which have been euthanized for humane reasons or which had died spontaneously for non-infectious diseases, are obtained from dog/cat shelters located in Parma or in surrounding areas.

Cadavers or organs are preserved using two methods of storage: refrigeration or freezing. Histological slides are also obtained from above mentioned biological matrix (cadavers or organs).

Practical teaching in Embryology is scheduled in the second semester of the first year. The students are divided into two groups of 30 each and groups work for 2 hours for 1 week.

Practical embryology training takes place in the Dissection room (B 02 basement - 027). During the year, practical sessions on cadavers or isolated organs are performed by two groups of 30 students each, for a total of 3 hours/week for the entire 1st year (subject: Anatomy) and 3 hours/week for 10 weeks in the second year (subject: Topo-

graphic anatomy).

Practical anatomical training takes place in the Dissection room (B 02 basement - 027).

Histological and Microscopic Anatomy slides

Histology

Practical training in histology is scheduled in the first semester of the first year. Before the practical course begins, students spent 2 hours in the research and educational laboratory for hard (B 02 first floor - 016) and soft tissues (B 02 first floor - 012) (see Chapter 6) and practical demonstration is offered to 6 groups of 10 students each. The remaining 18 hours of practical activities are spent in microscopy laboratory (B 02 basement 028).

The students are divided into two groups of 30 each and groups work 2 hours every week for 9 weeks.

The day of histology laboratory activity is organised in two practical sessions. The first group of students begins at 2:00 p.m. till 4:00 p.m. and the second group starts at 4:00 p.m. till 6:00 p.m.

Microscopic anatomy

Practical activities in microscopic anatomy (organs, apparatus and system) are scheduled in the second semester of the first year.

The students are dived in two groups of 30 each and groups work 2 hours every week for 10 weeks (B 02 basement 028). The day of microscopic anatomy laboratory activity is organised in two practical sessions. The first group of students begins at 2:00 p.m. till 4 p.m. and the second group starts at 4:00 p.m. till 6:00 p.m.

Computer-assisted teaching

Interactive DVDs (2 hours) are shown in preparation to dissection room activities. Titles are the following: "Visceral anatomy of the horse" (Edagricole Ed.) and" Visceral anatomy of the dog" (Edagricole Ed.).

Video presentations take place in Lecture Hall A.

Stored material

The collection of historical and recent anatomic material is located in the Veterinary Anatomic Museum next to the Dissection Room.

The Veterinary Anatomic Museum is open on week-days, from 8:30 a.m. to 6:00 p.m., and first and second year students are encouraged to attend regularly. Students have free access to the Museum where they can study directly on dry anatomical preparation, bones and plastic organs.

The museum's historical collection is also used by teachers during demonstrations.

Teaching laboratories

The Veterinary Anatomic Museum has n° 25 stations available for the students for selflearning. The Veterinary Anatomic Museum has complete skeletons of several animal species, including exotic and wild animals, as well as marine mammals. This collection constitutes the heritage of the museum, but is also part of the teaching and educational material available to the students.

Numerous syndesmological, myological, angiological and splachnological specimens, dating from the 18th -20th century are also preserved, but, due to their high historical value, they are not used for practical teaching.

The Dissection Room has 6 dissection tables where students, arranged in groups of 5, dissect cadavers or anatomical regions under supervision of the Teaching Staff (B 02 basement - 027).

The Microscope Laboratory (B 02 basement - 028) has 32 workstations each equipped with conventional educational microscopes (Olympus, Zeiss and Nikon).

Slide sets of normal tissues/organs of domestic animals are available for each workstation. Slide sets are used during teaching demonstrations.

| | dog | | ruminant | | equine | | other | |
|----------------------------|------|------|----------|------|--------|------|-------|------|
| live animals | 2010 | 2009 | 2010 | 2009 | 2010 | 2009 | 2010 | 2009 |
| cadavers | 9 | 10 | 12 | 2 | 15 | 62 | 58 | 38 |
| specimen | 30** | 30** | 72** | 72** | 67** | 67** | 52** | 52** |
| other* | | | 31* | | 41* | | 6* | |
| eg ultrasound | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| computer assisted teaching | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |

Table 7.1: Material used in practical anatomical training 2009-2010 Note

viscera

** complete skeletons, bony preparations, myological preparations, plastic anatomical models, plastic preparations

7.1.2 Animal Physiology

Live animals

Animals used for practical physiology training come from animals reared in the Faculty (horses and cows) or visited at the VTH (dogs and cats).

Fresh material

The ovaries and uteri of cows, horses and sows are obtained from the slaughterhouses that are partners of the Faculty.

Laboratory

Laboratory sessions are performed in research and educational laboratories. Practical sessions are performed with 3-4 groups of 15-20 students each, once a week during the 2nd year (1st and 2nd semesters).

Starting October 2010 students visit cows in dairy farms near the Faculty. The healthy animals are used for non-invasive teaching and when handled, are never in a suffering or stressed conditions.

Students are also involved in: i) blood sampling (morphological difference between serum and plasma and clot formation; blood volume determination; fragility test; RBC count; WBC count; Hct determination; Buffer capacity of plasma) (B02 basement – 028); ii) overview of neurophysiology of dog/cat (in collaboration with the colleagues of Clinical Sciences subjects, students are trained to perform some parts of the neurological examination in normal dogs/cats in the VTH (cranial nerve; postural, motor pathways, motor reflex); iii) vital function (pulse heart rate and temperature measurements in dogs, horses and cattle; evaluation of urine; determination of typical mixing contractions of the fore stomach; observations and recording of reeding behaviour, moving and rest behaviour, occurrence of abnormal behaviour and/or signs of discomfort) (livestock farms); v) in vitro reproduction evaluation (ovary, follicles and corpus luteum, uterus evaluation) in cattle, mare and sow; vi) simulation of hormone immunoassays (ELISA and RIA) (B 04 first floor 005, 012 and 014).

7.1.3 Pathology

» Indicate the nature and extent of any additional sources of material for the teaching of necropsies and pathological anatomy, including slaughterhouse material.

Pathological Anatomy

Practical training in histopathology (26 hours) and gross pathology (26 hours) takes place mainly in the two semesters of the 3rd year.

For histopathology, slides are projected with a digital micro imaging device in the Multifunctional laboratory 1 (B0 basement 020) and are also are available to students for self-assessment. Slides, prepared from most common species (dog, cat, bovine, small ruminants, equine, swine and avian), include samples of common pathological alterations (degeneration, necrosis, inflammation and neoplasia) in order to give students a complete picture of pathological processes (general pathology, histopathology). Gross pathology is performed on cadavers and/or on isolated fresh organs collected from slaughterhouses in partnership with the Faculty:

- Macello di Parma Srl, Strada del Taglio 6/a 43126 Parma (PR) The slaughterhouse is nearby the Veterinary Medicine Faculty of Parma and the Faculty has shares of the society - (cattle and horses slaughterhouse) - 0,2 Km
- Unipeg Industria Macellazione, Via Due Canali 13 42100 Reggio Emilia (cattle slaughterhouse and cutting plant) (23 Km, 32 min)
- Bertana S.p.A., Str. Stat. Bergamasca San Martino In Beliseto 98 26022 Castelverde (Cremona) - (pigs) (79 Km, 58 min).

Students during professional training "TIROCINIO" spend part of the period of training in the pathology facilities. Dead animals coming from livestock farms, private veterinary clinics and from the VTH are followed by the students during necropsies.

Students participate in collecting case history and clinical data and take notes of major lesions in order to prepare a final report to submit to the teacher on duty. Students participate actively in the necropsy, opening major cavities, examining organs, and then discussing macroscopic lesions with the pathologist on duty. Students also collect samples for additional exams (bacteriology, virology, toxicology) and for histology.

Practical sessions of cytology and histopathology are given on cytological specimens and formalin fixed paraffin-embedded tissues coming from archived material, necropsies and from the histopathology diagnostic service. Biopsies or fine needle aspirations come from practitioners operating in veterinary clinics and from the VTH for diagnosis.

Pathological material entering the necropsy room is discharged according to European laws (i.e. EC Regulation 1774/02).

Facilities used: necropsy room (B 13 - 001); histopathology is performed in the Multifunctional laboratory 1 (B 04 basement 020).

| | Numb | | | | | |
|-----------------------------|---------------------------------|------|------|---------|--------|--|
| Species | 2010 at 31 st Oct | 2009 | 2008 | Average | | |
| | Cattle | 202 | 63 | 31 | | |
| Food-producing | small ruminants | 0 | 6 | 1 | 1.40 7 | |
| animals | Pigs | 44 | 45 | 57 | 149.7 | |
| | other farm animals | 0 | 0 | 0 | | |
| Equine | | 2 | 1 | 1 | 1.33 | |
| Poultry | | 151 | 153 | 103 | 127.0 | |
| Rabbits | | 1 | 1 | 2 | 137.0 | |
| Companion animals/exotic | Dogs | 26 | 66 | 55 | 67.3 | |
| | Cats | 17 | 22 | 14 | | |
| | other* | 0 | 2 | 0 | | |

Table 7.2: Number of necropsies over the past 3 years

* wild boar (n=1), hare (n=1)

During the Academic Year 2009-2010, 147 cows from the intramural clinical rotation were examined at the Municipal slaughterhouse by students during the professional training "TIROCINIO" (see Chapter 4). These animals are added in in necropsies performed during 2010

| SPECIES | 2007 (weight kg) | 2008 (weight kg) | 2009 (weight kg) | Oct 31st 2010 (weight kg) |
|---------|----------------------------|----------------------------|----------------------------|--|
| Pigs | 1 763.7 | 1 425.0 | 1 239.0 | 844.0 |
| Equids | 1 694.0 | 2210.0 | 1 962.0 | 1 429.0 |
| Cattle | 2 794.0 | 3 369.5 | 1 914.0 | 1 296.0 |

Table 7.2a: Organs 2007-2010, Livestock slaughtered animals (mostly heart, lung, thyroid, diaphragm, liver, spleen, kidney and adrenals, mammary gland, testes, uterus and ovary, equine legs while less fore stomach, stomach, intestine, pancreas, equine and swine brains)

INFECTIOUS DISEASE

Practical teaching activity in infectious diseases and avian pathology is aimed at giving students specific skills in the fields of bacteriology and serology, together with a clear comprehension of the anatomy and pathology of avian species.

Students come from the 3rd and 4th year course, about approximately 60-80 students for year. They are divided into 4 groups of 15-20 students each. Each student attends to practical training, for a total amount of 24 hours/student/year during the 3rd year course (2nd semester) and the 4th year course (1st semester).

Live animals

Sera and pathological samples (milk, urine, faeces, whole blood, swabs, exudates, hairs) used for practical training in infectious diseases of mammals and avian species come from the VTH, private practitioners, livestock farms and private owners who send samples to our laboratory for diagnostic purposes from different areas of Northern Italy. Students perform ELISAs, Indirect Immunofluorescence, Serum Neutralization tests and Rose Bengal Test on sera. Pathological samples are streaked onto bacteriological media and then incubated; the day after students comes for the reading of plates.

Embrionated eggs come from a private hatchery or from a SPF hatchery of the Zooprophylactic Institute of Lombardy and Emilia Romagna. Students perform inoculation with methilene blue of embrionated eggs, euthanized previously by freezing for a couple of hours before examination.

Students perform a simulation of the intradermal tubercolin test with sterile saline solution on cows owned by the Faculty of Veterinary Medicine.

During the professional training "TIROCINIO", students have learned to carry out diagnostic test for mastitis (milk cell count and evaluation of pH by CMT) on 119 of the cows housed for intramural clinical rotation (see Chapter 4).

Fresh materials

Pathological organs (lung, liver, spleen, heart, kidney, bowel) of bovine or swine, and poultry (mainly not pathological carcasses) come from private livestock farms or private practitioners in Parma Province or other Provinces of Emilia Romagna Region or Northern Italy. Fresh material is used immediately or is preserved until use by refrigeration or freezing. Students perform bacteriological examination on viscera, and necropsies on poultry (1 bird for each student).

Microscopy

Culture slides are prepared by teaching staff or directly by students during training,

to perform staining procedures (Ziehl-Neelsen staining) during the third year course. Indirect Immunofluorescence slides are previously prepared by teachers or technicians and directly by students during training of the 4th year course.

Computer assisted teaching

Besides the fresh organs, images of pathological viscera from mammals and avian species are shown to students during lectures. A teaching video regarding bovine infectious mastitis is shown to students during practical training of the 3rd year course.

Teaching laboratories

Practical teaching is performed in a Laboratory located at the basement level of the Clinica Medica-Malattie Infettive B-03 building, equipped with 10 benches for a total of 24 workstations, 5 washbasins, 10 bunsen, 10 microscopes. There, students perform serological and bacteriological training. Another laboratory, located at the basement level, is dedicated to the practical training in avian pathology (necropsies and inoculation of embrionated eggs). Laboratory sessions are also done in the research laboratories located at the first floor of the Clinica Medica-Malattie Infettive building, particularly in the dark room, equipped with one fluorescence microscope, to read the immunofluorescence slides.

Facilities used: diagnostic and educational laboratories (B 03 -014 and 0-16).

VETERINARY PARASITOLOGY AND PARASITIC DISEASES

During practical activity in the 2nd year, students are divided into groups of approximately 15 students who work in the Multifunctional room 1 (B04 -020). Activities include morphological identification of parasites and evaluation of biological samples (faeces, blood, skin scrapings; portfolio n° 28-32) in order to allow students to practice diagnostic techniques in parasitic diseases. There is a total of 9 hours practical activity/student. Macro and microscopic identification of endo/ecto-parasites is carried out on parasites belonging to collections prepared either from cadavers/organs (in cooperation with Pathological Anatomy, slaughterhouses in the area, etc.) and/or from samples sent to the Parasitology Unit for diagnosis. The entire collection covers major parasitic groups, including samples of nematodes, cestodes, trematodes, protozoa and arthropods. Samples come from food-producing animals, pets and wild animals. Besides the practical teaching provided during the course of Parasitology and Parasitic Diseases in the 2nd year, students spend a variable part of their time in the Laboratory of Parasitology during 5th year professional clinical training "TIROCINIO". One or more of the students enrolled in "TIROCINIO" may be involved in practical activity in Parasitology, under the supervision of the Teaching Staff of the Parasitology unit, that

can include faecal sampling of large animals (i.e. cattle, horse) by rectal examination (faecal consistency is evaluated and the presence of any macroscopically visible parasites recorded). Students then carry out fresh smears and flotation for diagnosis of endoparasites (portfolio n° 31-32). Finally, students must formulate the correct therapeutic approach. Other activity, based on patient load and frequency, may include clinical evaluation of companion animals (i.e dog, cat) affected by the more common parasitic diseases. These include heartworm disease (students must carry out echocardiography evaluation of parasite load and radiological evaluation of lung patterns), leishmaniosis (students must carry out blood samples, fine needle aspirates, etc. portfolio n° 28), mange (students must carry out skin scrapings and identify the mite involved; portfolio n° 30), endoparasites (students must screen all incoming patients by faecal flotation; portfolio n° 31-32), etc.

TOXICOLOGY

Practical activities are scheduled during the 3rd year 1st semester.

The students are arranged in groups of 6 and learn to identify various toxins: strychnine, zinc phosphide, oxalates, methaldehyde. Each practical session last 4 hours and is performed in the research and educational laboratory (B 11 039b) of the Endocrinology and Pharmacology Unit of the DAH.

7.1.4 Animal production

 » Indicate the availability of food-producing animals for the practical teaching of students: a) on the site of the institution;
 b) on other sites to which the institution has access.

Students take part in the pre-professional internship "ORIENTAMENTO" and professional training "TIROCINIO" on food-producing animals within the Faculty and in a network of private livestock farms in partnership with the Faculty. Training regards breeding and genetics, morphological evaluation, nutrition, rearing techniques and animal welfare, live animals.

Inside the Faculty

- A In the stables, 4 cows are permanently housed, while another 4-8 arrive each week for a week-long stay, for clinical and non-clinical teaching purposes.
- *B* Poultry house: visited weekly by the students.

Animals available at the stables facilities of the Faculty (B06).

| Animal category | 2008 | 2009 | 2010 |
|--------------------|------|------|------------|
| Dairy cattle | 3 | 4 | 4 + (4-8)* |
| Calves | | | 40 |
| Poultry and Turkey | 40 | 40 | 40 |

Table 7.2b: Number of animals available on the site of the institution of the University of Parma for practical training to students in Veterinary Medicine.

* four cows are permanently present and other 4-8 are weekly rotating

| Animal category | 2008 | 2009 | 2010 |
|-----------------|------|------|------|
| Dairy cattle | 7 | 7 | 1 |
| Calves | 7 | 7 | 1 |
| Heifer | 7 | 7 | 1 |
| Pig | | | 4 |
| Horses | 1 | 1 | 1 |

Table 7.2c: Number of formal agreements signed by the Faculty of Veterinary Medicine of the University of Parma with private farms and breeding centres in 2008-2009-2010.

Students are divided into groups of maximum 5 persons and taken from the Faculty to the livestock farms partners of the Faculty using a minibus "Mercedes VITO".

Training performed:

- A Herd history
 - Evaluation of the performance sheets collected in the farm
 - Evaluation of adult cow and replacement animal health status
 - Evaluation of herd productive and reproductive performance
 - Sensorial evaluation of farm forages and samples collection for laboratory tests.
- *B* Activities carried out in Total Mixed Ration (TMR) feeding farms
 - TMR particle size distribution evaluation by Penn State Particle Separator on samples collected in different sites of the bunk of high- and low-producing cows

- BCS evaluation on cows in the different stages of lactation/productive phases
- Scoring, pH measurement and particle size determination of faeces collected from representative samples of animals in the different stages of lactation/productive phases.
- C Activities carried out in traditional feeding system farms
 - BCS evaluation on cows in the different productive phases
 - Scoring, pH measurement and particle size determination of faeces collected from a representative samples of animals in the different productive phases.

Livestock farms included in the network of partners of the Faculty are as follows:

External cattle farms used for practical teaching, A.Y. 2009/10

- Caseificio Sociale Santa Rita Società Agricola Cooperativa (99Km, 1h24min.) Composed of 4 farms. Total 250 milking cows for Parmigiano Reggiano cheese production. Subjects: nutrition, animal husbandry, milk quality. Visits n=9
- Paganina Società Agricola a r.l. (27 Km, 33min.). Dairy cows (n=850), heifers and calves (n=850). Subjects: nutrition, animal husbandry, milk quality. Visits: n=2.

External swine farms used for practical teaching, A.Y. 2009/10

In all the farms listed below, the teaching activity is focused on the following areas: animal husbandry, human resource management, animal management and grouping/ flow strategy.

- Societa' Agricola S. Antonio S.S Cascina Bellavere S.N. San Paolo (Bs) (111Km, 1h14min) 500 animals, heavy pigs & farrowing facility. Animal husbandry, human resources management, animal management and grouping/ flow strategy. Total visits n=3
- Società Agricola 3C Az. S. Maria Pralboino (BS) (94Km, 1h 05min) 1100 animals, heavy pigs and farrowing facility. Visits n=2
- Az. Agr. Cà Emilia Besenzone (PC) (51Km, 48min) 800 animals, farrowing facility & heavy pigs. Visits n= 2
- Az. Agr. Il Girasole Campagnola Em. (RE) (50Km, 48min) 360 animals, heavy pigs & farrowing facility. Visits n=1.

External Poultry farms used for practical training A.Y. 2007/08, 2008/09, 2009/10

• Fll.i Panarotto Villa Sesso - Reggio Emilia (turkey) - (Km40, 45min).

7.1.5 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.

Veterinary students attend the academic courses "Food hygiene and technology", (held at the 3rd year) and "Food of animal origin inspection and control" (held at the 4th year). At the last year students can choose to attend "Microbiological food control and relative legislation", as professional Elective subject course.

For the above mentioned academic courses, students are involved in practical teaching in the pursuance of the course at the third year and fourth year. During the first semester of the fifth year, students carry out the practical teaching of the optional Elective subject, at the end of which the common compulsory professional training "TIROCI-NIO" of the fifth year will start.

Students attending the pre-professional internship ORIENTAMENTO, the Elective course "Microbiological food control and relative legislation" and the TIROCINIO practical training are involved in the activities of the Section of Food Hygiene and Public Health, where the accredited Laboratory of Food Microbiology¹ is located, and where bio-molecular and chemical laboratories are placed. An abattoir is located nearby the Faculty of Veterinary Medicine, giving to teachers the opportunity to show offal and carcasses to the students during their practical teaching activity.

Activities in which students are involved in food hygiene and technology are focused on food microbiology and chemistry. Food microbiology practical learning is mainly based on the enumeration of hygiene indicators bacteria and on food-borne microorganisms detection in different food matrices (fresh meat and meat preparations, fish and fishery products, milk and dairy products, eggs and products thereof). Food-borne pathogens typing is based on biochemical and molecular characterisation of isolates such as *Salmonella enterica*, *Listeria monocytogenes*, verocytotoxin-producing *Escherichia coli*, *Yersinia enterocolitica*, *Staphylococcus aureus* and thermotolerant *Campylobacter*. Chemical studies are focused on lipid oxidation, food composition and development of new preservation techniques of food of animal origin.

In the laboratories students take part to research projects as well as to routine samples analyses. Food samples come from private clients, food factories, slaughterhouses and stores.

¹ UNI CEI ISO/IEC 17025 "General requirements for the competence of testing and calibration laboratories" accredited by the assessment and acknowledgment body (ACCREDIA-ORL) of the national health institution, Istituto Superiore di Sanità

Third year and fourth year

Students' practical work during the 3rd year, first semester training lessons is based on the following activities, which are directly carried out by the student:

- Food sampling for microbiological analyses
- pH and a_w determination
- Solutions and media preparation for microbiological analyses
- enumeration of aerobic coloniesat 30°C, *Enterobacteriaceae* and *Staphylococcus aureus*
- Detection and identification of *Salmonella enterica* and *Listeria monocytogenes* in food of animal origin, such as raw milk and cheeses, fresh and minced meat, meat preparation, "ready to eat products", fish and fishery products, and eggs
- Characterisation of verocytotoxin-producing *Escherichia coli* by PCR analysis.

The practical activity is organised in groups of 12-16 students each. Each group is divided in four subgroups of 3-4 students. The students are involved for a total of 18 hours each of laboratory activity.

During the course of "Inspection and control of food of animal origin", which is held at the fourth year, the students are provided with principles of the Community legislation on food safety. The slaughtering techniques of cattle, pigs and poultry are acquired and animal welfare aspects during transport and at slaughtering and the relative legislation are also emphasised. Students are divided in 8 groups of approximately 7/8 students. A total of 8 practical activities are planned and each of them lasts 4 hours. Students are also involved in the following activities: audits of good hygiene practices and hazard analysis and critical control points (HACCP)-based procedures. Practical work during the fourth year:

- Evaluation of a slaughterhouse facility requirements
- *Ante* and *post mortem* inspection in pigs and in cattle at a slaughterhouse (each student directly performs at least one *ante* and *post mortem* inspection and participates the activity of the Veterinary Officers at the slaughterhouse)
- The students visit the poultry slaughterhouse and discuss together with the inspector officer, the official controls, which must be implemented
- Species identification of the main fishery species and more common frauds
- Freshness evaluation of the commercially more relevant fishery species.

Fifth year professional training "TIROCINIO"

The professional training "TIROCINIO" (5th year) on Food Hygiene and Public Health is carried out by students in intramural and extramural regime for a total of 6 weeks. Half of the period (three weeks) is spent inside the Faculty of Veterinary Medicine, while the remaining half is spent outside the Faculty (by National Veterinary Service Agencies "AUSL" and National Laboratories called "Zoo-prophylactic Institutes") to totally reach an amount of 187 hours. During the year, six rounds (see Chapter 4.1.3) of professional training "TIROCINIO" are planned. Each group of students per round is constituted by 5-11 students. The programme of the inside training will deepen the knowledge of the practical teaching held during pre-professional internship "ORIEN-TAMENTO" at the third and fourth years, with the possibility for the students to take active part to microbiological activities (as part of research projects on progress or of the routine works). Students may also follow discussion groups presented by Teaching Staff and residents (PhD students). During the training period students may be taken for a visit to some food industries, depending on the period of the year and on the availability of the companies. Some of the food industries recently visited by the students are listed below.

Milk farm and dairy factories:

- Latteria Sociale S. Lucio Soc. Coop. A R.L., Via G. Adorni S. Vitale B. 7 Sala Baganza (PR) - Distance: 27 Km, 33 min
- Parmigiano-Reggiano Consortium, Parma Section Distance: 5 Km, 7 min
- Parmalat, Via delle Nazioni Unite 4 Collecchio (PR) Distance: 17 Km, 23 min

Ham factories:

- Brendolan, STAB: Via Roma 58 43013 Langhirano (PR) Distance: 24 Km, 35 min
- Fratelli Emiliani, via Don G. Corchia 14 Langhirano (PR) Distance: 25 Km, 37 min
- Italfine srl, Via Provinciale 46 Beduzzo di Corniglio (PR) Distance: 38 Km, 56 min

Raw, cooked and dry cured ham products companies:

• Zuarina, Cascinapiano 2 - Langhirano - Distance: 25 Km, 37 min

Fresh meat cutting plants:

• JBS, Via Spilamberto 30/c - Castelvetro (MO)- Distance: 61 Km, 50 min

Eggs:

• Parmovo, Strada Sabbiata 22/A - Colorno (PR) - Distance 18 Km, 21 min

The extramural part of the professional training "TIROCINIO" (5th year) is carried out in facilities such as National Veterinary Services and Laboratories (AUSL and Zooprophylactic Institutes) throughout the Italian territory, in agreement with the Faculty. Students take part in the following practical activity in different facilities.

At slaughtering facilities:

- evaluation of plant production process
- structural, hygienic, functional and management requirements assessment
- hygiene at slaughter and staff hygiene
- ante and post mortem inspection visit
- health identification marking
- official sampling
- inspection and Audit activities
- GMP, SSOP and HACCP management control at bovine and equine slaughtering
- animals' welfare during restraining, stunning and killing practices.

At food industries (dairy factories; raw, cooked and dry cured ham products companies; fresh meat cutting plants; eggs and products thereof factories; and honey companies):

- production process of the several processing types
- structural, hygienic, functional and management requirements assessment
- staff and processing hygiene
- GMP, SSOP and HACCP applied to different processing types
- identification marking
- official sampling
- inspection and Audit activities.

The slaughter facilities (bovine, equine, swine and avian species), where the students spend part of the extramural "TIROCINIO" in meat inspection, are listed below:

- Macello Di Parma Srl, Strada del Taglio 6/a 43126 Parma (PR). The slaughterhouse is nearby the Veterinary Medicine Faculty of Parma and the Faculty has shares of the society (cattle and horses slaughterhouse) - 0.1 Km
- Sassi Fratelli (S.P.A.) Industria Macellazione, Strada della Selva 96 43056 Torrile (PR). Pig slaughterhouse and cutting plant - 14 Km, 17 min
- Macello Annoni S.r.l., Via Madonna dei prati 100 Busseto (PR). Pig slaughterhouse - 38 Km, 35 min
- Poultry slaughterhouse and cutting plant of Nostranello Sanfelice, Via Battisti 65 Gadesco Pieve Delmona (CR) 74 Km, 50 min.

7.1.6 Consultations and patient flow services

- 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.

- State the consultation hours.

Consultation of companion animals and large animals (horses and cows) take place at the VTH.

VTH is open 49 weeks/year, 5 days a week.

Beginning with November 2010, attendance in the VTH during week-days is from 08:30 a.m. until 01:30 p.m. Afternoon emergency service starts at 01:30 p.m. to 08:00 p.m. Students on night duty start their shift at 08:00 p.m. and finish at 08:30 a.m. the following morning. The emergency and intensive care services are open 24 hours a day, 7 days a week.

VTH clinical workflow is shown in Annexes 7.1 and 7.2.

7.1.6.1 Patient flow

The number of animals to be stated are for all disciplines combined (medicine, surgery, reproduction, etc.). In Table 7.3 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" (Table 7.4). 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.

| Species | | Number of cases | | | | | | | |
|----------------------------------|---------------------------------|------------------------------------|-----|---------|-----|---------|----|---------|--|
| | | 2010 September 30 th | | 2009 | | 2008 | | Average | |
| | | а | b | а | b | а | b | | |
| | bovine | 704 | 147 | 107 | 24 | 8 | 8 | | |
| Food- | ovine, caprine | 0 | 0 | 4 | 4 | 1 | 2 | 3 58.0 | |
| producing animals | porcine | 24 | 21 | 10 | 10 | 0 | 0 | | |
| | other farm animals* | 0 | 0 | 0 | 0 | 0 | 0 | | |
| Equine | | 194 | 75 | 444 | 38 | 731 | 70 | 517.3 | |
| Poultry | | 21 | 0 | 61 | 0 | 16 | 4 | 45.0 | |
| Rabbits | | 12 | 1 | 15 | 0 | 4 | 1 | 45.0 | |
| Companion animals / exotic | canine | 1 977 | 68 | 2 1 2 3 | 152 | 4 5 5 0 | 0(| | |
| | feline | 599 | 4 | 605 | 37 | 4 5 5 9 | 96 | 3 435.3 | |
| | other (reptiles, amphybians) | 17 | 0 | 13 | 0 | 7 | 16 | | |

Table 7.3: Number of cases: a) received for consultation, and b) hospitalised in the Faculty clinics, in the past three years. (September 30th 2010)

| | 2008 | 2009 | 2010 | Mean |
|--------|------|------|------|------|
| Bovine | 0 | 63 | 47 | 36.7 |

Table 7.3a: Cows visited (Obstetrics and Animal Reproduction) at slaughterhouse stables (from 2008 to 2010)

7.1.7 Vehicles for animal transport

State the number and nature of the Faculty vehicles that can be used to bring sick animals to the clinics.

Since November 2010, VTH has a truck for the transportation of livestock animals and horses which is at the disposal of the farmers or horse owners who require it. The animals are brought to the hospital of the Faculty for diagnostic services or for surgical therapy that cannot be carried out in the field.

VTH has also a minivan for the transportation of small ruminants and pigs of medium size.

7.1.8 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.

An emergency service is always active during consultation hours. A 24-hr emergency service has been activated, beginning November, 2010. This service is operated by one veterinary resident and 2 students who are on duty from 01:30 p.m. until 8:30 a.m. of the following day, providing intensive care for patients undergoing surgery during the day or needing continuous care for medical reasons, as well as answering small and large animal emergency calls from outside.

Veterinary Resident operating in VTH 24/7emergency care service, are trained by an intensive course lasting 8 hours.

7.1.9 In farm teaching and outside patient care

7.1.9.1 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 7.4). - State the average number of visits in a year made by the ambulatory clinic to farms and other institutions.
Consultations with the mobile clinic started in November 2010 and therefore a trial period is necessary to determine the most feasible schedule.

Before November 2010, students in the professional training "TIROCINIO" accompanied Prof. Parmigiani (Obstetrics and Animal Reproduction) to a number cow dairy farms that form a network of partners of the Faculty.

The students in professional training "TIROCINIO" are actively involved in clinical as reported in "day-one skills".

| Species | | Number of cases | | | A |
|---------------------------------|---------------------|-----------------|------|-------|---------|
| | | 2010 | 2009 | 2008 | Average |
| | cattle | 162** | 158 | 1 063 | 461.0 |
| Food-producing animals | small ruminants | 0 | 0 | 0 | |
| | pigs | 0 | 0 | 0 | |
| | other farm animals* | 0 | 0 | 0 | |
| Equine | | | 8 | 8 | 5.3 |
| Poultry (n° of flocks)° | | 3 | 2 | 1 | 2.0 |
| Rabbits (n° of producing units) | | 0 | 0 | 0 | 2.0 |
| Other* | | 0 | 0 | 0 | |

Table 7.4a: Number of cases seen by the Ambulatory (mobile clinics) in the past three years Note

indicate species
 January 1st to May 31st

Farm: F.Ili Panarotto - Villa Sesso - Reggio Emilia: turkey (Km 40, 45 min)

VTH Mobile Clinic Service date November 2010. Before Teaching Staff provided personally using the own car.

7.1.9.2 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

During 5th-year professional training "TIROCINIO" in Animal Reproduction, students (2-5 students/ group) take part in various practical sessions on dairy farms and in slaughterhouse stables, under the supervision of Contract Professors (2009-2010). Activities include: artificial insemination simulation, early pregnancy diagnosis, post-partum care, basic surgery of the reproductive tract and monitoring of mastitis. Facilities include "Azienda Agricola tenuta Marinella (SP) - 1000; Fratelli Lovati which is a dairy farm with 2000 cows (academic years 2007-2008, 2008-2009, 2009-2010) and in dairy farms producing Parmigiano-Reggiano cheese close to the Faculty and served by Contract Professors (2009-2010).

Students during professional training "TIROCINIO" in Bovine surgery course (2-5 students/ group) take part in various practical sessions at dairy farms in podiatry. In particular, diagnosis and therapy of foot diseases and abdominal surgical reduction of Left or Right Abomasal Dislocation (LAD or RAD) were performed.

| Species | | Num | A | | |
|------------------------|---------------------|------|------|------|---------|
| | | 2010 | 2009 | 2008 | Average |
| Food-producing animals | cattle | 798° | 0 | 0 | 352.00 |
| | small ruminants | 0 | 0 | 0 | |
| | pigs | 258 | 0 | 0 | |
| | other farm animals* | 0 | 0 | 0 | |
| Equine | | 84° | 0 | 0 | 28.0 |
| Other* | | 0 | 0 | 0 | |

Table 7.4b: Number of patients seen on outside teaching in the past three years (September 30th 2010).

Note

indicate species

operated by Contract Professors (see 4.1.3 - Extramural clinical rotation); data starting from 1st June.

| Name of Livestock Farm | Animal species | n° of animal breeded | Kind of production | Number of visits |
|--|----------------|-------------------------|---|---------------------|
| Az. Agr. Bellucci Claudio | Bovine | 130 | Milk for Parmigiano- Reggiano cheese | 6 |
| Az. Agr. LA CÀ di Casolari Luciano | Bovine | 220 | Milk for Parmigiano- Reggiano cheese, other kind of cheese and yougurt | 6 |
| Az. Agroalimentare Biologica Hombre | Bovine | 290 | Milk for Parmigiano- Reggiano cheese | 13 |
| TOTAL | | | | 25 |

Table 7.4c: Visit to dairy cows farms - academic year 2007-2008

| Name of Livestock Farm | Animal species | n° of animal breeded | Kind of production | Number of visits |
|--|----------------|-------------------------|---|---------------------|
| La Paganina | Bovine | 700 | Milk for Parmigiano- Reggiano cheese | 5 |
| Az. Agr. LA CÀ di Casolari Luciano | Bovina | 220 | Milk for Parmigiano- Reggiano cheese, other kind of cheese and yougurt | 5 |
| Az. Agroalimentare Biologica Hombre | Bovine | 290 | Milk for Parmigiano- Reggiano cheese | 6 |
| Caseificio Sociale Santa Rita Società Agricola Cooperativa | Bovine | 250 | Milk for Parmigiano- Reggiano cheese | 10 |
| TOTAL | | | | 26 |

Table 7.4d: Visit to dairy cows farms - academic year 2008-2009

| Name of Livestock Farm | Animal species | n° of animal breeded | Kind of production | Number of visits |
|--|----------------|-------------------------|---|---------------------|
| La Paganina | Bovine | 700 | Milk for Parmigiano- Reggiano cheese | 2 |
| Caseificio Sociale Santa Rita Società Agricola Cooperativa | Bovine | 250 | Milk for Parmigiano- Reggiano cheese | 9 |
| TOTAL | | | | 11 |

Table 7.4e: Visit to dairy cows farms - academic year 2009-2010

| Name of Livestock Farm | Animal species | n° of animal bred | Kind of production | Number of visits |
|--|-------------------|----------------------|--------------------|---------------------|
| Societa' Agricola S. Antonio S.S Cascina Bellavere S.N. San Paolo (Bs) | Swine | 500 | Parma Ham | 3 |
| Società Agricola 3C Az. S. Maria Pralboino (BS) | Swine | 1 1 0 0 | Parma Ham | 2 |
| Az. Agr. Cà Emilia Besenzone (PC) | Swine | 800 | Parma Ham | 2 |
| Az. Agr. Il Girasole Campagnola Emilia (RE) | Swine | 360 | Parma Ham | 1 |
| TOTAL | | | | 8 |

Table 7.4f: Visit to pig farms - academic year 2009-2010

| Year | Number of visit |
|-------|-----------------|
| 2008 | 26 |
| 2009 | 25 |
| 2010 | 19 |
| TOTAL | 70 |

Table 7.4g: Total visits from 2008 to 2010

7.1.10 Other informations

Indicate any notable additional outside sources of material for clinical training purposes, such as animal charities, animals awaiting slaughter, etc. 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 faci-

lities, hours of service, equipment, expertise, responsiveness, etc 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. 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.)

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). 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.

During pre-professional internships students are given placements at a number of centres and companies with whom the university has signed undergraduate internship agreements. Centres may be public (Municipal shelter, Zooprophylactic Institute) or private (e.g. slaughterhouses, farms). Centres with which agreements were in force in October 2010 are shown in Chapter 4.

7.1.11 Ratios

See the section 'Main Indicators' in Annex Ia for the figures needed for calculating ratios. Give the figures for numerators and denominators. The ratios should then be expressed by taking the numerator as 1.

Table 7.5. Animals available for clinical training (in the clinics of the Faculty or seen through the Ambulatory clinic) as ratio to the number of students in last full year of clinical training.

| R# | Variables | Values | Denomin. | Range (from SOP 2009) |
|-----|--|--------------------|-----------------|--------------------------|
| R11 | Number of students graduating annually ^a Number of food producing animals seen at Faculty ¹ | 73.2 358.0 | 1 4.891 | 2.47 - 1.73 |
| R12 | Number of students graduating annually ^a Number of herd health visits ^{3,4} | 73.2 487.8 | 1 6.664 | 2.56 - 1.02 |
| R13 | Number of students graduating annually ^a Number of herd health visits ^{3,4} | 73.2 23.3 | 1 0.318 | 0.20 - 0.09 |
| R14 | Number of students graduating annually ^a Number of equine cases ¹ | 73.2 517.3 | 1 7.067 | 1.78 - 0.92 |
| R15 | Number of students graduating annually ^a Number of poultry/rabbit cases ¹ | 73.2 45.0 | 1 0.615 | 0.58 - 0.37 |
| R16 | Number of students graduating annually ^a Number of companion animals seen at the Faculty ¹ | 73.2 3435.3 | 1 46.930 | 48.74 - 37.94 |
| R17 | Number of students graduating annually ^a Poultry (flocks) / Rabbit (producion units) seen ^{2,3} | 73.2 | 1 0.027 | 0.07 - 0.02 |
| R18 | Number of students graduating annually ^a Number of necropsies food producing animals + equines | 73.2 151.0 | 1 2.063 | 0.75 - 0.46 |

| R19 | Number of students graduating annuallyª Number of poultry / rabbits1 | 73.2 137.0 | 1 1.872 | 0.26 - 0.12 |
|-----|--|-------------------|----------------|-------------|
| R18 | Number of students graduating annually ^a | 73.2 | 1 0.919 | 1.26-0.89 |

Note

a see see Table 9.4 1 Table 7.3, average 2 Table 7.4a & 7.4b, average

3 where applicable use or add information provided in Chapter 7.1.9.2 4 see 7.1.9.1

7.1.12 Other species

Indicate how the Faculty deals with fish and other food producing species

Students of the 3rd year also have the opportunity to acquire theoretical knowledge of fish and honey in courses in Food Hygiene and Public Health. Theoretical principles of fish breeding are treated in Animal Production courses.

Wild and exotic animals are received by the VTH for diagnostic or clinical purposes. In particular, the FVMUP has a caseload of reptiles. Although the overall number is still not relevant, the trend is on the increase and responds to the growing demand of the outside public and to the tendency to consider new species as household pets.

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 7.5 and 7.6.

The 24-hours Emergency Service within the VTH started its activity on November 2010, while mobile clinic service date November 2010. VTH is looking forward to the establishment of this service because few private clinics are equipped to hospitalize cases and provide emergency service during the night and on week-ends. Those who cannot provide these services tend to be reluctant to send their clients to those private clinics that do provide these services, as they fear losing the client each time. This should not be the case with the VTH.

A similar opportunity exists with equine neonatology; a field in which the majority of practitioners are really looking forward to the establishment of a 24-hr service for problems related to foaling mares and foals. Therefore, the activity of the emergency service should lead to a progressive increase in the number of overall clinical cases of small animals and equine.

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?

The Faculty needs to stabilize the emergency h 24 and mobile clinic services. Furthermore, the number of Teaching Staff for clinics should be increased. Finally, is very important that the VTH should be considered a clinical support structure by local practitioners and not as a competitor.

We are aware that the R15 ratio concerning the number of poultry/rabbit cases is particularly low. Among the initiatives planned by the faculty, we will be stipulating a working agreement with the Parma Racing Pigeons Association.

Chapter 8

Library and learning resources









Chapter 8.

Library and learning resources

8.1 Factual information

The Library of the Faculty of Veterinary Medicine of Parma was founded in 1975 and dedicated in 2009 to the memory of Prof. Francesco Gianelli (the first Director) and from then on was denominated General Library (hereafter "Library").

The main body of bibliographic resources is located in the General Library, although some sections still maintain small decentralized areas of activity. However, the entire body of bibliographic resources is indexed in the General Library and is easily available to users.

The access to the Library is free for institutional users (students, teachers, and researchers, technical and administrative staff) and Honorary Fellows.

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 Faculty Library is one of the seven Central Libraries of the University of Parma. The University Library system is composed by a central body "Library sector" (Settore Biblioteche) which supervises central Libraries, Department Libraries, Interfaculty Libraries.

The Veterinary Medicine Library is autonomous in deciding the use of funding, but is strictly connected to the economic resources supplied by the University.

Indicate how the library/libraries are managed (e.g. library committee)

The Faculty Board appoints a Library Committee, which is renewed every three years.

It consists of a Director and a Library Board, which is in turn composed by six Teaching Staff members from different disciplinary areas, one representative of the students of the Faculty of Veterinary Medicine, and the chief-librarian as permanent member (table 8.1).

| Director | Library Committee |
|--------------------|---|
| Fausto QUINTAVALLA | Ezio BOTTARELLI Pier Giovanni BRACCHI Antonio CACCHIOLI Filippo Maria MARTINI Andrea SUMMER Paola SUPERCHI Giuseppe ZANNETTI Edoardo POGGI (Student) Mariangela SORENTI |

Table 8.1: Library Board

The Director chairs the Library Board, supervises the Library activities, and drafts the budget. The Library Board is responsible for the coordination and the final check of the cultural and scientific choices on purchasing and service of the Library.

8.1.2 Library Staff

The Library is managed by three people working in the Library either full time or as a shift of their normal weekly working hours (table 8.2).

| Name | Function | n° of hours/week working at the Library |
|--------------------|---------------------|--|
| Mariangela SORENTI | Chief Librarian | 36 |
| Giovanna OLIVIERI | Reference Librarian | 36 |
| Angelo AMPOLLINI | Technical librarian | 36 |

Table 8.2: Name, function and number of weekly hours of work for personnel of the "Prof. F. Gianelli" Library

The Library also hires a certain number of students as part-time workers (150-hours service) in order to guarantee coverage during the Library's opening hours.

8.1.3 Library Resources

The Library receives basic financial support from the University for the purchase of national and international journals, of books and of other teaching material. The figure attained is sufficient for subscription renewal of periodicals and for purchase of monographs and books. Some purchases are carried out in a cooperative manner (CIPE), managed by the Libraries sector. Proceeds resulting from photocopying service cover the incurred expenses for the facility management.

The staff of the Faculty is asked annually to propose titles of books and journals, which they wish to, have in the library. The Library also receives a list of all the textbooks listed in the Faculty's study guide and purchases at last three copies. As a matter of fact, the acquirement of new books proposed by students and personnel belonging to the Department is centralized in the Library.

All the books and journals are catalogued and indexed in the electronic catalogues (SBN/OPAC and ACNP/SFX).

The bibliographic resources of the Library (both those stored in the central facility and in Departments' Sections) amount to approximately 1,435 books, 15,805 total annual journals, of which192 periodicals and other 130 VHS-type videotapes or DVDs. All the resources are generally available "on line" in the Library web site (*shortcut url*: http://tinyurl.com/vetpr-21; *real url*: http://medvet.unipr.it/cgi-bin/campusnet/home.pl/View?doc=biblio/home.htm) and printable in "Catalogo dei Periodici della Facoltà di Medicina Veterinaria" and in ACNP archive (Archivio Collettivo Nazionale dei Periodici).

8.1.4 Access, reading places, on-line Literature Search

The General Library provides a service to the academic staff, students, veterinary practitioners and Public Health veterinarians. From 2008 the Library cooperates with the European Food Safety Authority (EFSA) located in Parma, for bibliographic searches. During the academic year the Library organizes a course focused on database use and bibliographic search for PhD students. Users are supported if necessary by the personnel responsible for the instruments' use (OPAC, Databases). Moreover the Library attends to a network, organized by the Libraries in Parma (University, State and Municipal Libraries). The Library carries out an inter-library loan (ILL) locally and with the National territory.

Users have access to two self-service photocopying machines, with a magnetic card, and can make photocopies of journal articles free of charge if a professor has authorised them.

Moreover students have access to all library front-office services:

- information service
- consultation service
- loan service
- reference and Digital Reference Services
- document Delivery service
- interlibrary Loan service
- teaching Material Reproduction service
- information Literacy Service
- digital Library: in- and off-campus access service
- internet navigation and computerized services.

The Library is a wireless environment and the users can navigate with their personal laptops, and can also access the vast amount of scientific electronic resources made available by the University of Parma.

The Library is composed of:

- one room for consultation of books and journals and at the moment, time dedicated to personal study (14.70 m²)
- one computer room (12.00 m²) equipped with 8 computers for on-line research
- two smaller rooms for viewing VHS-type videotapes or DVDs (4.20 m²)
- one room for technical-administrative management (38.70 m²)
- one book consultation room (170.74 m²)
- one room for photocopy machine (17.6 m²).

The Library offers 102 reading seats, 13 bibliographic consultation stations and 2 video stations with 4 seats.

The on-line literature search service allows the students and the staff member to use the resources listed here below:

- E-Journal
- NILDE
- Data Base Service.

8.1.4a E-Journal

Library users have access to the electronic journals that have been subscribed to or are available through a University of Parma Catalogue of Electronic Journals called SFX, which comprehends 20 000 titles on veterinary medicine subjects. Access to the Cata-

logue is possible from all workstations connected directly to the University network or through a virtual private net, inside the public network-internet (VPN).VPN allows the institutional users, prior authorisation, to use the bibliographic consultation service from any position through an access key. The VPN connection is reserved to students, teachers, and the technical and administrative staff of University of Parma, to all who have a contract for research or teaching with the University, and to contract professors and occasional users admitted to the Library services. It is possible to see a list of the journal pertinent to Veterinary Sciences at the following link:

shortcut url: http://tinyurl.com/vetpr-10; real url: http://medvet.unipr.it/cgi-bin/campusnet/home.pl/View?doc=biblio/periodici.htm

8.1.4b NILDE

The Library employs the software NILDE (Network InterLibrary Document Exchange) for Document delivery and Interlibrary Loans. The software NILDE allows libraries to send, receive and deal with requests of Document Delivery, with the advantage to have an immediate registration of all transactions that intervened in a standard way. The software NILDE was created by the Library of the National Research Council (CNR) of Bologna within the project BiblioMIME, which was developed in the years 2000-2002 with the aim to set a net of technologically advanced services of Document Delivery among libraries, based on transmission through the Internet. NILDE was developed as an experimental project, but later on it became a working tool that is being used every day by a large network of university libraries, research institutions, public and local agencies. Libraries subscribing to NILDE pay a yearly fee of approximately 200 \Box through which they can get any document for free.

8.1.4c Data Base Service

The The University Data Base Service allows to access 21 data bases of which nearly 6 are on biomedical, food law and food technology subjects. These databases work on different platforms: CSA, EBSCO, ISI, OVID, etc.

The General Library cooperates with the DspaceUnipr update. DspaceUnipr is the institutional deposit of the PhD theses of the University of Parma. This project aims to make the scientific production and teaching at the University more visible. It is addressed to teachers, students and University personnel, with the objective to organise and to manage the research activity, didactics and service output, allowing the on line access and preserving them.

Relevant data regarding the "F. Gianelli" Library activities are reported in table 8.3.

| Question/information | Answer | | |
|--------------------------|---|----------|-------------|
| Is this specific to the | yes | | |
| Is this common to two | no | | |
| Full time equivalents | 0.362 | | |
| Number of full-time e | 3 | | |
| Number of journals re | 192 | | |
| Numbers of full acces | 18 | | |
| Availabilities for onlin | Yes (21 databases) | | |
| Availability of textboo | oks | | yes |
| Number of student re | ading places | | 102 |
| | weekdays | | |
| weekends | | | closed |
| Library opening hour | during vacations | weekdays | 8:30 -18:30 |
| | (August: closed one weeks) (Christmas holidays: 2 weeks) | weekends | closed |

Table 8.3: Relevant data of the Library.

8.1.5 Services

The Main Library provides the following services:

- free access to the patrimony of textbooks, scientific books, and specialised journals
- information service (front office)
- consultation service. Bibliographic material may be read on site and students may get it on their own. The Library provides the users with facilities for using its collections: photocopying facilities, and computers for accessing on Library's online catalogue and internet
- loan service. Through the operations of the loan service students may check out books from the library for a period of 21 days. The loan period for a book can be extended, also by e-mail, unless another user has requested it. The Library offers an evening and on weekend loan service. In 2009 1,195 loans were supplied, with a monthly average of 99 books/month, placing the General Library as the more virtuous of the University
- reference and Digital Reference Services. The library provides assistance to users in understanding what information is available here and where it can be accessed
- document Delivery (DD) service. DD office supplies copies of journal articles

or other documents which are unavailable in the library, but may be acquired from other libraries free of charge or with fee

- interlibrary Loan (ILL) service. ILL office supplies books, which are unavailable in the library, but may be borrowed from other libraries free of charge or with fee
- teaching Material Reproduction service. Service supplies reprography of teaching material that professors show during their lectures
- information Literacy Service. Information literacy forms the basis for lifelong learning. The service provides, through training courses, a set of abilities to locate, evaluate, and use the needed information
- digital Library. Library and computerised room provide the students with facilities for bibliographic digital resources use
- internet navigation and computerised services. Internet, e-mail access, nonbooks material consultation and some programs are available at the computerised room with staff support service. These services require a username and password for access
- self-service photocopying of the materials available (whenever permitted by law)
- on-line research and distribution of bibliographic information
- archiving the purchased material from the subsidiary libraries.

8.1.5a Other services

The general Library publishes the "Annals of the Faculty of Veterinary Medicine of Parma" (ISSN 0393-4802) through the Editing Committee (tab. 8.4). Currently the Editing Committee is composed by the Library Director and by five teachers, elected by the Faculty Board, in different disciplines of the Faculty of Veterinary Medicine of Parma.

| Responsible Director | Editing Committee |
|----------------------|--|
| Fausto QUINTAVALLA | Ezio BOTTARELLI Sandro CAVIRANI Sergio GHIDINI Andrea SALGHETTI |

Tab. 8.4: Annals Editing Committee

The Annals are published once a year, starting from 1981. The Annals publish original studies carried out by teachers of the Faculty of Veterinary Medicine of Parma, also those in collaboration with teachers from other Italian and foreign Universities. The Annals represent a true document of Faculty life, study and research. Currently, thir-

teen volumes are available online at the following *url*: http://www.unipr.it/arpa/facvet/ annali/. Starting from 2010 "Annals of the Faculty of Veterinary Medicine of Parma" are only available online, and are included in the CABI Full-Text Repository.

8.1.6 Subsidiary libraries of the Faculty

Please describe the subsidiary (e.g. Departmental) libraries of the Faculty, and arrangements for student access.

The Faculty of Veterinary Medicine of Parma has different small reference libraries (subsidiary libraries) where books and journals preceding 1975 are stored. The subsidiary Department (Animal Health, and Animal Production, Veterinary Biotechnologies, Food Quality and Safety) libraries are located in the following sections:

- section of Clinical Surgery
- section of Clinical Medicine
- section of Veterinary Anatomy
- section of Anatomical Pathology
- section of Infectious diseases
- section of Microbiology
- section of Inspection foodstuffs of animal origin
- section of Diagnostic and experimental toxicology
- section of Endocrinology and Veterinary Pharmacology
- section of Resources of the territory
- section of Clinical Obstetric and Gynaecological
- section of Parasitology
- section of Radiology and diagnostic imaging
- section of Veterinary biochemistry
- section of Veterinary physiology
- section of Computer science and biomathematics
- section of Safety foods
- section of Food science and nutrition
- section of Dairy science technologies
- section of Livestock Science and Quality of Livestock Productions.

The subsidiary libraries function mainly as study rooms for the students and deposit

areas for various specialist books and journals related to research activities carried out in each sections. In these libraries are also placed the years of the journals preceeding the year of the General Library establishment.

Students freely access to these subsidiary libraries when the housing section is open to public.

Indicate whether the main library holds a list of individual books of the subsidiary libraries.

The Library holds the list of books, periodicals (visible on-line) and other documents resident in the subsidiary libraries and manages books and periodical loans. In these subsidiary libraries proceedings, abstracts and publications by teachers and researchers belonging to the section are collected and stored.

Some subsidiary libraries keep ancient tests from as far back as the XVIII-XIX centuries. Books and journals of these reference libraries are archived at the following link: *shortcut url*: http://tinyurl.com/vetpr-08;

real url: http://medvet.unipr.it/cgi-bin/campusnet/home.pl/View?doc=biblio/home.htm and print in "Catalogo dei Periodici della Facoltà di Medicina Veterinaria".

Describe any other information services and how are they are supported and how student access is regulated

In the subsidiary libraries, users may also, apart from consulting tests, copy the material (according to the rules).

The students have access to the reference library if a professor has authorised them.

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.

Periodically the Library personnel invite the users to reply to a survey to assess the level of the offered service. The following comments are from these surveys.

The Library offers all authorised users a complete and good service for using the databases and e-journal available. The document delivery is efficient and request for copies of scientific papers are usually accomplished in 2 working days. Internet access is easy and adequate, thanks to the Wi-Fi service.

With regard to opening hours, it is noteworthy that students are never in the Faculty on weekends. The possibility to access to resource access from anywhere deletes the need to be physically at the Library.

Sometimes space is insufficient because many students use the Library to study, and at times the room is noisy.

Library personnel are extremely efficient and are able to respond to all requests made by users.

> Please comment on the Faculty's provision of IT-facilities and the approach to self-learning, and on the further developments in this area.

As describe in suggestion of chapter 4 the Faculty intend improve the self learning approach...

8.3 Suggestions

In general, users ask for an extension of the week-day opening hours and especially larger spaces. Moreover students ask for a larger number of copies of books to be loaned, and to be consulted directly at the Library.

Chapter 9

Student admission and enrolment









Chapter 9.

Student admission and enrolment

9.1 Undergraduate courses

9.1.1 Undergraduate student number

» Table 9.1 asks for numbers of undergraduate students in the veterinary training institution.

| Total number of undergraduate students | 579 |
|--|-----|
| Regular | 321 |
| Repeater | 124 |
| Off-course | 134 |
| of which | |
| Total number of male students | 185 |
| Regular | 98 |
| Repeater | 35 |
| Off-course | 52 |
| Total number of female students | 394 |
| Regular | 223 |
| Repeater | 89 |
| Off-course | 82 |

| Foreign students total number | 14 |
|-------------------------------|----|
| from EU-countries | 10 |
| Regular | 4 |
| Repeater | 0 |
| Off-course | 6 |

| from non-EU countries | 4 |
|-----------------------|---|
| Regular | 2 |
| Repeater | 0 |
| Off-course | 2 |

Table 9.1: Undergraduate student composition in veterinary training (Academic year 2009/10)

Table 9.1 reports the total number of registered students in the degree course in Veterinary Medicine who have regularly paid tuition fees for the academic year 2009/10. They are divided into sex and country of origin. Four categories of students are shown:

- a. Regular: these are students who are usually on track with their exams, who can enrol in the following year of the degree course and who must attend all teaching activities assigned to them.
- Repeater: these students repeat one or more years of the course. They cannot repeat the same year more than four times.
 Usually, students repeat a year because:

Usually, students repeat a year because:

- even though they have regularly attended the year's course, they did not pass the minimum number of exams required for passing to the following year (see Tab. 9.5a) within the third exam session (which takes place in December/January during the Christmas holidays)²
- 2. they did not obtain the attendance signature for one or more subjects (see Chapter 4); they are obliged in this event, they must attend the teaching activities of the missing course/courses and may follow other teaching activities again at their discretion.
- c. Off-course: students who have attended the five scheduled years, but who have not graduated within the month of April of the year subsequent to the fifth, since:
 - 1. they did not pass all the foreseen exams
 - 2. they did not obtain the required ECTS (for example they lack credits in TI-ROCINO).

In case a), they do not attend teaching activities, while in case b), they must attend the missing activities. The off-course students pay an identical registration fee as the regularly registered ones.

In table 9.1a the distribution of the students who were in an off-course position in the academic year 2009/10, related to the year off-course is reported.

² Students who, by September 30th of each year, lack only 1 exam to reach the required number of exams in order to pass into the next year (see Tab. 9.5a), may enrol in the following year "under condition". These students must pass the missing exam within the third session (December/January); otherwise they are registered as Repeaters.

| year off-course | 1 ^a | 2 ^a | 3 ^a | 4 ^a | 5 ^a | 6 ^a | 7-10 ^b | 11-14 ^c | >14 ^d |
|-----------------|----------------|----------------|----------------|----------------|----------------|----------------|-------------------|--------------------|------------------|
| n° of students | 56 | 23 | 8 | 10 | 10 | 3 | 2 | 7 | 15 |

Table 9.1a: Distribution of the students, who were in an off-course position in the academic year 2009/10, related to the number of years off-course.
 a = NC-2009 b = OC-2001 c & d = older curricula

While Table 9.1 reports the total number of students enrolled in the degree course in Veterinary Medicine, Table 9.1b reports the total number of undergraduate students enrolled in all the degree courses taught at the Faculty (Veterinary Medicine, Animal Production Technology and Food Safety, Equine Science and Techniques, Livestock science and animal production technology), and those enrolled in the master degree course interfaculty Medical, Veterinary and Pharmaceutical Biotechnologies.

| | Veterinary Medicine | Animal Production Technology and Food Safety | Equine Science and Techniques | Zoothecnic Sciences and animal production Technologies | Medical, Veterinary and Pharmaceutical Biotechnologies | Total |
|--|------------------------|--|--|--|---|-------|
| total number of undergraduate students | 579 | 104 | 157 | 108 | 74* | 1 022 |

Table 9.1b: Total number of undergraduate students at the Faculty (Academic year 2009/10) * the number indicated in the table corresponds to one third of the real number of registered students to this degree course, as three different faculties participate in the degree course (Medicine, Pharmacy, Veterinary Medicine).

» Indicate the minimum number of years (MNY) allowed to successfully pass the curriculum.

The required minimum number of years necessary to complete the curriculum is 5.

Additional information

In the Italian University system the maximum number of years at disposal to complete the curriculum is unspecified. One student can indefinitely stay in the off-course position, provided that:

- a. he/she regularly pays the annual tuition fee
- b. he/she takes an exam of his/her choice every 8 years; the outcome (negative or positive) is not important, what does matter is the regular registration of the exam.

9.1.2 Student admission

» State the minimum admission requirements.

- A minimum requirement for taking the admission examination for the degree in Veterinary Medicine is the possession of a 5-year secondary School diploma. This applies to Italian citizens (including those who acquired a diploma abroad), foreigners legally residing in Italy, anyone coming from the EU member states and from Norway, Island and Liechtenstein (EEC Regulations nos. 1408/71, 1612/68 and 574/72 and Commission Regulation n° 307/1999); Switzerland (Bilateral Agreement 21.6.1999 and 17.04.2002); Republic of San Marino (Treaty of Friendship and Good Neighbour, 31st March 1939, ratified by Law of 6th June 1939, N.132)
- 2. there are a certain number of places reserved for non-EU citizens; this number is determined each year by the Ministry of Education, University and Research (MiUR, www.miur.it), based on bilateral or multilateral agreements.

For all the Italian Veterinary Medicine Faculties admission to the degree course is ordered by MiUR. Each year, the Ministry establishes the following values for each Italian Faculty, through a specific decree:

- a. the maximum number of Italian/EU citizens admissible in the first year of the degree course
- b. the maximum number of non EU citizens admissible in the first year of the degree course
- c. candidates selection conditions.

Principles for the calculation of maximum number of students admissible

The maximum number of students that the Faculty feels is admissible to the first year is proposed by the Faculty to MiUR. The proposed number is determined considering the available resources, both in terms of facilities and of teachers, in order to offer quality teaching and training to the students.

The final number of students admissible to the first year, however, is then set by MiUR. MiUR considers data that the Faculty enters into a centralised database each year regarding the so-called "Educational potential" of the Faculty. This data include: (1) lecture halls (number and capacity of lecture halls available for lessons); (2) teaching, scientific, and support facilities for practical activities and training (number of laboratories used for teaching and available equipment, capacity of the premises where the practical educational activity is carried out, supporting and tutorship staff); (3) personnel (teaching and technical staff).

For many years MiUR restricted itself to approving the number proposed by each Faculty. Recently, however, MiUR has begun to take into account other parameters that are not directly dependent on the Faculty, such as the total number of students accepted to the different Veterinary Medicine degree courses activated in Italy. The real demand for veterinarians in the different Italian regions Italy is probably an important parameter: recently this demand for veterinary practitioners in the labour market was estimated by a working group composed of MiUR technicians, representatives from the national board of veterinarians and Deans from several faculties of veterinary medicine.

Beginning in the academic year 2002/03, the FMVUP voluntarily decreased the number of admissible students proposed by MiUR, in order to increase the teaching quality and student/teacher ratios. The number proposed by the Faculty decreased from 115 (academic year 2002/03) to 80 (academic year 2010/11), corresponding to a 30% decrease.

Starting from the academic year 2007/08, proposals from other Italian faculties also began to generally decrease. This has also been followed by a reduction of the maximum number of students admissible to the first year approved by MiUR for FMUVP of nearly 37% (from 112 in 2003/04 to 71 in 2009/10).

In Table 9.1c the maximum number of students admissible to the first year in the last seven academic years is reported.

| | 2003/04 | 2004/05 | 2005/06 | 2006/07 | 2007/08 | 2008/09 | 2009/10 |
|------------------|---------|---------|---------|---------|---------|---------|---------|
| Assigned by MiUR | 112 | 100 | 83 | 83 | 79 | 79 | 71 |
| - EU | 110 | 98 | 81 | 81 | 77 | 77 | 68 |
| - non EU | 2 | 2 | 3* | 3* | 3* | 3* | 3* |
| Occupied | | | | | | | |
| - EU | 110 | 98 | 81 | 81 | 77 | 77 | 68 |
| -non EU | 2 | 1 | 1 | 0 | 1 | 0 | 3 |

Table 9.1c: Maximum number of students admissible to the first year (EU and non-EU citizens), in the last seven academic years.

Note

 places reserved for non-EU citizens can be reassigned only to non EU citizens as transfer. No applications have so far been received.

^{*} from academic year 2005/06, one place has been reserved for citizens from Chinese Popular Republic. No applications have so far been received.

» Describe how the number of government-funded student places is determined.

No places financed by the State are foreseen.

» Outline any selection process (or criteria) used in addition to the minimum admission requirements.

The selection process is carried out through a multiple choice test developed by MiUR. Since the beginning of this selection process based on an admissions exam, the number of applicants has always far exceeded the number of available places (Table 9.1d).

| | 2005/06 | 2006/07 | 2007/08 | 2008/09 | 2009/10 |
|---|---------|---------|---------|---------|---------|
| EU Candidates | | | | | |
| Applicants for the admission test | 305 | 356 | 440 | 402 | 453 |
| Applicants attending the test | 285 | 306 | 352 | 312 | 378 |
| Available places | 81 | 81 | 77 | 77 | 68 |
| ratio assigned places/attended candidates | 0.28 | 0.26 | 0.22 | 0.25 | 0.18 |
| non-EU Candidates | | | | | |
| Requests for the admission test | 2 | 1 | 1 | 0 | 3 |
| Candidates attending the test | 1 | 0 | 1 | 0 | 3 |
| Available places | 1 | 2 | 2 | 2 | 3 |

Table 9.1d: Number of candidates and available places per academic year.

* upon MiUR request, starting from the academic year 2005/06, one post for non- EU candidates was reserved for citizens from the Chinese Popular Republic. No request for this position has ever been presented.

Candidate requirements and selection conditions

EU candidates. Candidates coming from EU countries must own 5 year secondary School diploma. Admission to the first year is based on performance in the multiple choice test, which is the same for each Faculty and developed by MiUR. Unsuccessful candidates can indefinitely repeat the admission test without limitations. The admission procedure is regulated by MiUR and it is the same for each Faculty. Tests for all the faculties of Veterinary Medicine take place once a year, on the same day and at the same time, in general in the first week of September. Therefore candidates can take

only one test once a year at the Faculty of their choice. The successful candidates can only enroll in the Faculty where the admission test was taken.

Non EU candidates. Procedures are identical to those described for EU candidates, with the following differences:

- a. candidates must possess a level of study equivalent to a 5 year Italian diploma
- b. prior to taking the admission test, candidates must pass an Italian language exam
- c. candidates are placed in a reserved list.

The Italian Language exam is carried out several days before the multiple choice admission test. The language examination consists of an interview and comprehension of a scientific text. The exam is carried out by a Commission of elected by the Faculty Board.

Test administration conditions

Every year the Faculty Board appoints the President and the members of the Admission Commission to the first year of the Veterinary Medicine degree course. The Commission has the task to arrange operative details and assure that the admission test is managed according to the rules established by MiUR.

From an operative point of view, the test is carried out as follows:

- the University of Parma collects the sealed case, containing the sealed envelopes with the admission test to be given to the candidates, from the" Inter University Consortium for the Automatic calculation of the North-East of Italy" (CINECA) in Bologna. It happens on the day before or on the same day of the test, under the supervision of ministerial staff. The University takes any precaution to assure the transport and material conservation in terms of safety. Material is consigned to the President of the Commission for the 1st year enrolment in degree course in Veterinary Medicine, nearly two hours prior the test execution. Few minutes before the beginning of the test, the sealed cases are opened and so are the sealed envelopes, thus distributed to the candidates. Each candidate receives one envelope containing:
 - a. instruction sheet
 - b. bar code mark module with the personal data of the candidate (name and surname)
 - c. bar code mark module for the test answer registration
 - d. bar code sheets containing the multiple choice questions
 - e. username and password for entering the MiUR/CINECA website, where the candidate may verify the outcome of his/her own test.

Test lasts two hours. During the test no candidates can leave the room. At the end all the material included the sealed envelope not used, is immediately returned to CI-NECA jointly with a report by the President of the Commission. Identification sheets

(see point b) remain to the University. At this stage MiUR, after having verified that all the scheduled procedures are observed, authorise CINECA to calculate the score and to send them to the University.

The University takes care of matching the bar code with the candidate name, and coveys the list to the President of the Commission of the Faculty. Finally the Faculty publishes on the website the two lists, one for EU candidate and one for non EU candidates.

Test structure

The admission test is identical for all the Italian faculties, and it consists of 80 multiple choice questions (I correct answer, 4 distracters) on the following topics: logic and general knowledge, biology, chemistry, physic and mathematic. Proportion of the questions varied for each topic along the years. The admission test in the academic year 2009/10 was composed by 40 questions of general knowledge, 18 in biology, 11 in chemistry and 11 in physics and mathematics.

An example of 5 questions from the admission test of the academic year 2009/10 for each topic is available at the following addresses:

shortcut url: http://tinyurl.com/vetpr-20

real url: http://www.unipr.it/arpa/facvet/eaeve/testamm.pdf

The complete admission test in Italian is available on the MiUR website at the following address: http://admissionoprogrammato.MiUR.it/compiti/CompitoVeterinaria2009.pdf (admission 25th march 2010).

Score calculation

According to the rules established by MiUR, the score is calculated as follows:

- one point for each exact answer
- minus 0.25 points for each wrong answer
- 0 points for each unanswered question.

Therefore the theoretically achievable score fluctuates in a range between 80 (all exact answers) and -20 (all wrong answers).

In the published list for each candidate both the total score and the score obtained for each of the four topics of the test are indicated.

In the event of an equal score between 2 or more candidates, the mark received from the secondary School diploma prevails. In case of parity, the scores obtained in general knowledge, biology, chemistry, physics and mathematics respectively, prevails. In the event of a persisting equal score, the younger candidate is admitted.

It must be underlined that there is no set passing score required for admission. In fact, all the candidates who are in the first "X" positions on the list are admitted to the first year, where X equals the maximum number of admissible students established by MiUR, independently from the score obtained. Thus the passing score is different from one Faculty to another.

» 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.

Candidates previous knowledge

As previously mentioned, the basic knowledge of candidates accepted into the first year is variable since they come from secondary Schools with different courses of studies.

Additional information

Students who passed the admission test to the degree course, but who received a score lower than 50% for the questions in Biology and/or Chemistry and/or Physics and/ or Mathematics, are admitted with a so-called "educational debt" for the corresponding disciplines. This lack of preparation must be corrected before the student can sit for the first year exams. The Degree Course Board in Veterinary Medicine activates extra-curricular teaching activities which are compulsory for these students and are carried out during the first semester of the first year of the course. This teaching activity is carried out by full and associate professors or researchers belonging to the Faculty. The students' outcome is evaluated during the final exam of the course for which the student presents the educational debt. (See below).

- a. Applied Physics-Basic Mathematics applied to Biomedical Science- Medical and Biological computer Science.
- b. Chemistry preparatory to Biochemistry.
- c. Histology Embryology-Zoology.

» Describe any circumstances under which extra students may be admitted to the undergraduate veterinary course.

Admission of extra-students

No extra students have ever been admitted to the first year of the course.

In subsequent years, the total number can be and has been exceeded only in the following cases:

a. temporary admission of foreign students in the Socrates/Erasmus programme or of students coming from foreign faculties in agreement with the Faculty of Veterinary Medicine of Parma. As from today this has never occurred for the first year of the course; b. temporary admission to the first year of the students, who have appealed to the Administrative Regional Court (Tribunale Amministrativo Regionale - TAR), against the outcome of the admission test. As the judgement may pass even months after the presentation of the appeal, such students are admitted to the first year "Under condition". Then admission is either rejected or approved, based on the TAR judgement. As from today this event has never occurred.

Additional information

The foreign students entering the Erasmus programme are registered exceeding the scheduled number and can only attend the requested teaching activities, prior to the authorisation either of the Faculty of origin and of destination.

» Outline any changes foreseen in the number of students admitted annually. If applicable, describe how the Faculty plans to adjust to these changes.

Changes foreseen in the number of students admitted annually

As previously mentioned, the Faculty has no influence regarding the real number of students to be accepted every year to the Veterinary Medicine degree course. Even though the University has allocated notable financial resources to the Faculty, mainly focused on future improvement of facilities, in the future the number of students admissible to the first year proposed by the Faculty, probably will not be modified. Any available resources will be exploited to improve and increase in time teaching and the services offered to students (See chap. 6).

 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.

| Academic year | Number of candidates applying for admission | | Number of s ted by stand | tudents admit- ard admission | Number of students admitted by other entry mode |
|------------------|---|----------|-----------------------------|---------------------------------|---|
| | EU | extra-EU | EU | extra-EU | 0 |
| 2009/10 | 378 | 3 | 68 | 3 | 0 |
| 2008/09 | 312 | 0 | 77 | 0 | 0 |
| 2007/08 | 352 | 1 | 77 | 1 | 0 |
| 2006/07 | 306 | 0 | 81 | 0 | 0 |
| 2004/05 | 285 | 1 | 81 | 1 | 0 |
| Average | 326.6 | 1.0 | 76.8 | 1.0 | 0 |

Table 9.2: Intake of veterinary students in the past five academic years.

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 minimum number of years (MNY) has elapsedable

| Year | n° of students present after being admitted to 1 st year | Number of additionally admitted students | Total |
|-----------------|---|---|-------|
| 1 st | 70 | 9* | 79 |
| 2 nd | 62 | 36* | 98 |
| 3 rd | 62 | 23* | 85 |
| 4 th | 72 | 56* | 128 |
| 5^{th} | 55 | 0* | 55 |
| $>5^{th}$ | 134** | 0 | 134 |
| Total | 455 | 124 | 579 |

Table 9.3: Student flow and total number of undergraduate veterinary students (academic year 2009/10)

Note

* repeater students (See paragraph 9.1.1)

** off-course students (See paragraph 9.1.1).

| Status | n° of students | % |
|---|----------------|-------|
| 1 st year | 0 | 0.0 |
| 2 nd repeating | 5 | 5.1 |
| 3 rd repeating | 3 | 3.0 |
| 4 th | 4 | 4.0 |
| 4 th repeating | 5 | 5.1 |
| 5 th | 5 | 5.1 |
| Off course | 30 | 30.3 |
| Graduated | 28 | 28.3 |
| Transferred to other Degrees in University of Parma | 5 | 5.1 |
| Dropped out or transferred to other Universities | 14 | 14.1 |
| Total | 99 | 100.0 |

Table 9.3a: Status (follow up) in June 2010 of the 99 (98 EU + 1 extra-EU) students who began their studies in academic year 2004/06.

| Year | n° of student graduating |
|---------|--------------------------|
| 2006 | 104 |
| 2007 | 88 |
| 2008 | 70 |
| 2009 | 56 |
| 2010 | 48 |
| Average | 73.2 |

Table 9.4: Number of students graduating annually over the past 5 academic years.

| Duration of attendance* | n° of student graduated** | % | cumulative % |
|-------------------------|---------------------------|-------|--------------|
| 0* | 16 | 28.6 | 28.6 |
| 1 | 17 | 30.4 | 59.5 |
| 2 | 11 | 19.6 | 79.1 |
| 3 | 5 | 8.9 | 88.0 |
| 4 | 3 | 5.4 | 93.4 |
| 5 | 2 | 3.6 | 97.0 |
| >5 | 2 | 3.6 | 100.0 |
| Total | 56 | 100.0 | |

Table 9.5: Duration of the studies for students graduating during academic year 2008/09.

* years matching the minimum number of years allotted to the curriculum

** figures include students who graduate by the month of April following the stated academic year

Describe the requirements (in terms of completing subjects and examinations) for progression to a subsequent year of the course.

The student, to be accepted to the following year, must:

- a. have obtained the attendance certificate of all the teaching activity of the reference year
- b. have passed the minimum number of exams, as indicate din Tables 9.5a and 9.5b.

A temporary derogation to the provision referred to point b), exists. In fact, as previously stated, (See 9.1.1), the students who, as far from the 30th of September, lack in only one exam to achieve the scheduled number in Table 9.5a, are registered to the following year "Under condition". It means that they have to pass the missing exam before the end of the third exam session, which takes place in December/January, during the Christmas holidays. On the contrary, they have to register as "repeaters" to the year of the course already attended.

| Enrolling to year | Number of exams required* | Cumulative number of exams in curriculum | % of the total number of exams required for enrolling |
|----------------------|------------------------------|--|---|
| 2 | 4 | 6 | 66.7 |
| 3 | 10 | 14 | 71.4 |
| 4 | 15 | 20 | 75.0 |
| 5 | 20 | 26 | 76.9 |

Table 9.5a: Number of exams required to pass to the following year (Ministerial Decree (MD) 509) * the English language test is not part of the calculation.

Describe the academic circumstances under which the Faculty would oblige students to leave the course.

As previously indicated in paragraph 9.1.1, the student has to take an on choice exam at least every 8 years. Non compliance with this provision represents the only reason for the registration reset to the degree course.

9.2 Comments

Comment on standard of the students starting the course.

9.2.1 Standard of the students starting the course

As mentioned previously, the standard of the students starting the course is heterogeneous since they come from secondary Schools with different courses of study. This is particularly true regarding subjects like biology and chemistry, which are not taught in some secondary Schools. This undoubtedly can affect the quality of learning in the basic subjects and cause the student to fall behind in his/her student career.

To intervene, the Faculty offers a one-week preparatory course for the admission exam. This consists of lessons in biology, chemistry, physics/mathematic. The course is given by the official Teaching Staff of the Faculty and is usually divided into biology, 3 hours; chemistry, 6 hours; mathematics and physics, 10 hours, for a total time of 24 hours. The different distribution of time amongst the above mentioned topics is based on the grade of deficiency of the candidates observed in the previous years' tests. For the academic year 2009/10, the course took place at the Faculty form 31st of August to the 3rd of September.

As illustrated above, the Faculty also identifies students' educational deficiencies through the "Educational debt" programme (see point 9.1.2.5).

Comment on the ability of the Faculty to satisfactorily decide the number of students it can accept.

9.2.2 Ability of the Faculty to decide the number of students it can accept

Currently, the Italian Faculties of Veterinary Medicine can only propose the number of students eligible to the first year of the course annually to MiUR, which has the final decision. As stated previously, starting from the academic year 2002/03, the Faculty of Parma began voluntarily to adapt the number of students accepted to the first year to its own educational potential. Compared to the academic year 2002/2003, the

proposed number by MiUR is in fact decreased of nearly 30%: from 120 (academic year 2002/2003) to 80 (academic year 2009/2010). In the same period, the number of places approved by MiUR for the Faculty of Veterinary Medicine of Parma decreased by nearly 40% (from 120 to 71).

Comment on the factors that determine the number of students admitted.

9.2.3 Factors determining the number of students admitted

As previously stated (see paragraph 9.1.2), MiUR takes into account several factors, all of them not clearly expressed, to establish the number of students accepted to the first year.

However, starting from the academic year 2007/2008, MiUR has paid particular attention to:

- data regarding the so-called "educational potential" of the Faculty, related to lecture halls, teaching, research staff and supporting facilities for practical activities and training, teaching and technical administrative staff. This data is inserted into a centralized database each year by every Faculty. In particular: number and capacity of the classrooms for lessons; number of laboratories used for teaching and their equipment, teaching and technical staff; supporting and tutorship staff
- capacity of those premises used for practical training
- total number of students admitted to the different Veterinary Medicine degree courses activated in Italy. This parameter is established by a working group composed by MiUR technicians, veterinary medicine professional registry representatives and by veterinary medicine Deans, taking into account the real request of veterinary practitioners in the labour market in the different Italian regions.
Comment on the adequacy of the facilities and teaching programme to train the existing number of students.

9.2.4 Adequacy of facilities/teaching programme

Five lecture halls with a capacity of not less than 90 students are available for theoretical training (see Chapter 6). Four lecture halls are sufficient for the Veterinary Medicine degree course, since the fifth year consists of solely practical activity which is carried out in small groups of students (see Chapter 4). In all the five lecture halls audiovisual and audio amplification systems are present. Shortly, the construction of a new 85-seat teaching lecture hall and of two 23 seat lecture halls each is foreseen. Practical teaching activities are generally carried out in group of students, thus they are almost always performed in smaller rooms, or in the section laboratories, or at the Veterinary Teaching Hospital (VTH). Apart from the facilities already available, the construction of a 24-seat laboratory for microbiology, infectious diseases and in-vitro studies (B 03 basement 014), together with the necropsy room (B13 - 001), is foreseen shortly.

It must be remembered that lecture halls available for the Faculty are also used for the first and second year activities of the triennial degree course in Livestock science and animal production technology, as well as for the third year of the degree courses in Equine Science and Techniques and Animal Production Technology and Food Safety (these last 2 courses will close at the end of the academic year 2010-2011). Therefore, careful planning of the teaching schedule is necessary, taking into account that the calendar year is almost identical.

Currently the Information Technology (IT) laboratory has an insufficient number of places. However the construction of a new IT laboratory is foreseen in the new teaching complex (second semester of 2012) (see Chap. 6).

The study programme is scheduled so that the hours of practical activity and clinical training increase with the progression of the student's career; this leads to a reduction of the number of students/group, thus there are fewer problems related to lecture hall capacity and equipment availability. However, more groups with less students in each necessarily leads to higher workload for the teaching and Support Staff. For this reason, It would be necessary to hire more personnel, especially for the courses in the third, fourth and fifth years, in which increased practical teaching on animals is carried out. To solve this problem, 55 contract professors, mostly veterinary practitioners, have been hired on a part-time basis starting from the academic year 2009/10, (see Chap 10, Tab. 10.4).

Comment on the progress made by students in their studies, and the Faculty's ability to ensure that satisfactory progress is maintained.

9.2.5 Progress made by students in their studies

Currently, 134 out of 579 students (23.1%) are off-course and 124 (21.4%) are repeaters, for a total of 44.6% of students that have fallen behind in their student career (Tab. 9.1). This figure is undoubtedly elevated. However, Universities and Faculties have no legal basis to prevent students from enrolling as repeaters (maximum 4 times for each year of the course) or as off-course (unlimited period). This may cause the students to be less motivated, because they know that an eventual delay in their student career progression is not harmful. Moreover, a certain number of off-course students are represented by working students of those who already have another professional activity and they continue to enrol (and eventually graduate) for personal satisfaction, regardless of the time necessary. This is indirectly demonstrated by the fact that nearly 30% of the off-course is 5 years or more behind in their studies (Tab. 9.1a).

The Faculty undertook the following initiatives to control and remove the potential obstacles in the students' career progression:

- institution of the Pedagogical/Educational Committee
- institution of a permanent Tutorship, carried out by teachers and graduate students, to help and advice students; the service is organised by the Tutorship Commission (see chap.5)
- critical case analysis is carried out every six months by the Dean in cooperation with the Students Secretariat. The Dean himself/herself contacts those students who are gravely behind with their exams to discuss the reasons for the delay and to find eventual solutions
- assignment of a student advisor from among the Faculty teachers for each semester or year (see chap.5).

Comment on the percentage of students that will eventually graduate.

9.2.6 Percentage of students graduating

The number of graduates has clearly and progressively declined in the last five years (Tab. 9.4). In fact from 100 graduates of the academic year 2004/05, the Faculty graduated 56 in the academic year 2008/09. This corresponds to a decrease of 44%. This flow is undoubtedly the result of the reduction of the students admitted to the first year in the course in recent years (tab. 9.1b). For the next 5 years, a mean of about 60 graduates/year is expected; such estimation is based on the total number of currently enrolled students. More long term estimates are difficult to make as they will rely on the number of places assigned to the Faculty by MiUR.

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:
1) the number of students admitted; (2) the drop-out percentage and reasons, if know; (3) the average duration of studies; (4) other aspects.

9.3.1 Number of students admitted

In the last years a considerable reduction of the students admitted to the first year of the Veterinary Medicine degree course has occurred. Unfortunately, this decrease could lead to a reduction of resources to be assigned to the Faculty in the future, especially in terms of teachers and Support Staff. In fact, one of the main parameters used by the University for the distribution of resources is represented by the number of enrolled students.

9.3.2 Drop out percentage and reasons

The total percentage of students who drop out is summarised in Table 9.6

| Duran automation | | A II | | | | | |
|---|-----------|-------------|---------|----------|---------|-----------|--|
| Drop out reason | I | II | 111 | IV | ≥V | An years | |
| Transfer to Veterinary Medicine Course in other University | 6 | 5 | 0 | 3 | 0 | 14 (18.2) | |
| Transfer to other Degree Course in other University | 4 | 2 | 1 | 2 | 0 | 9 (11.7) | |
| Transfer to other Degree Course at University of Parma | 11 | 6 | 0 | 2 | 1 | 20 (26.0) | |
| Unknown | 27 | 5 | 0 | 2 | 0 | 34 (44.1) | |
| Total* | 48 (62.3) | 18 (23.4) | 1 (1.3) | 9 (11.7) | 1 (1.3) | 77 (100) | |

Table 9.6: Drop outs during last 5 academic years (2004/05 to 2008/09)* in brackets percentage

This drop out however is partially balanced out by in-coming transfer of students (see table 9.6a).

| | Year of course | | | | A 11 | |
|---|----------------|----|---|----|------|-----------|
| | I | II | | IV | ≥V | All years |
| Transfer to Veterinary Medicine Course from cor- responding Course in other Italian Universities | 0 | 10 | 5 | 0 | 4 | 19 |

Table 9.6a: Transfers of students coming in from other Veterinary Medicine degree courses of other Italian venues during last 5 academic years (2004/05 to 2008/09)

An analysis of table 9.6 indicates that the total percentage of *drop outs* in the last five academic years is approximately 18.5%. A transfer to other degree courses is likely due to a bad initial choice by the students. The passage of students to a Veterinary Medicine degree course at another University is very low, indicating satisfaction on the part of those students who chose the Faculty in Parma. Finally, it is more than likely that *drop out* rates depend mostly on personal reasons (familiar, financial, health etc.), of the individual student situation rather than to deficiencies in the teaching offer or curriculum organization.

The Veterinary Medicine degree course at the University of Parma is very attractive to students coming from other regions of Italy. Indeed, a considerable percentage of Parma graduates come from outside of the Province of Parma or even from regions other than Emilia Romagna (Tab. 9.7).

| Graduates residence | 2006 | 2007 | 2008 | 2009 |
|--|-------|-------|-------|-------|
| Province of Parma | 16.2 | 13.6 | 18.6 | 16.1 |
| Other Provinces of the Emilia-Romagna Region | 26.7 | 14.8 | 21.4 | 19.6 |
| Other Regions | 56.2 | 63.6 | 54.3 | 64.3 |
| Abroad | 1.0 | 8.0 | 5.7 | 0.0 |
| Total | 100.0 | 100.0 | 100.0 | 100.0 |

Table 9.7: Graduates in Veterinary Medicine from 2006 to 2009, divided for residence (data from: "Almalaurea")

9.3.3 Average duration of studies

The percentage of students who graduate within the minimum number of years (MNY) scheduled to complete the curriculum is low. In fact in the academic year 2008/09, 16 students out of 55 (29.1%) graduated at the end of the fifth year. However, it must be considered that another 17 students (30.9%) graduated within the sixth year of the course. So, the duration of studies is nearly 6 years for 60% of the students.

This situation depends on several different factors, none of which is easy to resolve: heterogeneity in the basic preparation supplied by secondary Schools plays a certain role, and this affects the first year of study, impeding some students in passing certain exams. The most common reason students fall behind is that they do not achieve the minimum number of exam required for enrollment in the subsequent year of study (Tab. 9.5a). Thus, students must repeat the year. However, it is important to remember that this minimum requirement, that may be considered a handicap to the students' progression, on the other hand assures that students enrolling in subsequent years have the necessary preparation, basic knowledge and training to go forward.

In order to reduce the number of failures on the part of students taking final exams, it is necessary to increase the importance of practical competencies during final evaluation. This would increase the students' interest in practical teaching and improve their performance at the exam. We are planning an ad-hoc a mixed teachers-students Faculty Commission. Chapter 10

Academic and Support Staff









Chapter 10.

Academic and Support Staff

10.1 Factual information

Definitions of some vocabulary used in this chapter:

Teaching staff. The Teaching Staff involved in Veterinary Medicine Degree is represented by budgeted full professor (n=22, of which 1 extra-Faculty) and budgeted associate professors (n=25, of which 1 extra-Faculty). In calculating Indicator Ratios, full professors and associate professors are weighted 1 FTE (Full Time Equivalent) each when they work full time, or 0.5 FTE when they work part-time. At the present, only one professor works part-time. It is understood fact that "teaching" staff will also do research.

Research staff. In Italian Universities, in addition to the above two teaching levels, there is another level which, in theory, has not any teaching obligation and therefore has been historically designed as "Researcher". However, "researchers" have always been required to provide some amount of teaching, which usually increases with seniority. The term "researcher" may be equivocal, because its meaning is generally associated with research, while in Italy <u>researchers are undoubtedly part of the teaching staff</u>. In our Faculty this category is represented by budgeted researchers (n=18 of which 1 extra-Faculty). The FTE for researchers has been calculated as follows. First, the (a) mean teaching load for Teaching Staff and the (b) mean teaching load for Research staff have been calculated. Then, the FTE for Research staff has been calculated by the number of Researchers of the Faculty.

Others. This category include staff hired when the total teaching load for a discipline exceeds the maximum teaching load admissible, mainly for practical supervised teaching activities. They are all non-budgeted staff. They depend on additional financing and not on the allocation of budgeted posts from public money, such as contract professors coming outside the Faculty (n=53). The category "Others" also includes post-graduate PhD students, fellowship and other kinds of the research grant recipients holders. All the above staff are taken into consideration only when their teaching load is >10 hours. The FTE for Others has been calculated as follows. First, the (a) mean teaching load cumulated for Teaching Staff and Research staff has been calculated. Then, the (b) mean teaching load for others staff has been calculated. The total FTE for Others has been calculated with the rate b/a multiplied by the number of

others at the Faculty.

During the academic year 2009/2010, the Faculty staffs were involved in the five degree courses reported below:

- 1. Veterinary Medicine
- 2. Livestock science and animal production technology (three years course of first level, only active the first year)
- 3. Equine science and Technology (three-year degree course, the second and third years are currently active; the course will cease to exist in two years time)
- 4. Animal production technology and food safety (three-year degree course, the second and third years are currently active; the course will cease to exist in two years time)
- 5. Medical, veterinary and pharmaceutical biotechnology (interfaculty degree course, in cooperation with the Faculty of Medicine and Pharmacy).

Table 10.1 shows the academic and Support Staff composition (in FTE), involved in teaching and training activity in the Veterinary medicine degree course. The complete list of the Teaching staff involved in the degree course in Veterinary Medicine, along with a brief profile of the research activity is available here:

shortcut url: http://tinyurl.com/vetpr-15

real url: http://www.unipr.it/arpa/facvet/eaeve/teachingstaff.pdf

» Table 10.1 Personnel in the establishment provided for veterinary training.

| | Budgeted posts (FTE) | | Non-bu posts | dgeted (FTE) | To (F1 | tal FE) |
|--|-------------------------|-------|-----------------|-----------------|-----------|------------|
| 1. Academic staff | VS | NVS | VS | NVS | VS | NVS |
| Teaching Staff(total FTE) | 34.50 | 12.00 | - | - | 34.50 | 12.00 |
| Research staff (total FTE) | 8.13 | 2.18 | - | - | 8.13 | 2.18 |
| Others (please specify) (FTE) | - | - | 14.52 | 1.74 | 14.52 | 1.74 |
| Total FTE | 42.63 | 14.18 | 14.52 | 1.74 | 57.15 | 15.92 |
| Total FTE (vs + NVS) | 56.81 | | 16.26 | | 73.07 | |
| 2. Support Staff | | | | | | |
| a. Responsible for the care and treatment of animals. | 2.24 | | 3.17 | | 5.41 | |
| <i>b</i> . Responsible for the preparation of practical and clinical teaching. | 14.24 | | 1.22 | | 15.46 | |
| <i>c</i> . Responsible for administration, general services, maintenance, etc. | 13.26 | | 4.35 | | 17.61 | |
| d. Engaged in research work. | 15.90 | | 1.75 | | 17.65 | |
| e. Support to teaching (pc rooms, video, etc), librarians. | 5.05 | | 2.11 | | 7.16 | |
| Total Support Staff | 50. | .69 | 12. | .60 | 63.29 | |
| 3. Total staff | 10 | 7.5 | 28. | .86 | 136 | .36 |

Table 10.1: Personnel in the establishment provided for veterinary training during the academic year 2009/10.

Note

Teaching Staff= full professor and associate professors (both budgeted)

Research staff = researchers (budgeted)

Others = graduate PhD students and professors (non-budgeted, considered only when the teaching load is >10 hours).

Table 10.1 shows the Teaching Staff divided in budgeted / non budgeted and on the base of teaching as veterinary training or extra-veterinary training.

| | Budgeted posts | Non-Budgeted posts | Total |
|---|-----------------------|--------------------|-------|
| Academic staff in veterinary training (from Table 10.1) | 56.81 | 16.26 | 73.07 |
| Academic staff at Faculty, extra veterinary training | 2.57 | 4.52 | 7.09 |
| Academic staff in Faculty | 59.38 | 20.78 | 80.16 |

Table 10.1a: Faculty Teaching Staff (FTE), involved in veterinary training, academic year 2009/10.

Primary tasks of the full and associate professors are teaching and research. The primary assignment of researcher is research, but as previously mentioned, they are also strongly involved in teaching with a load which is, on average, roughly half compared to that of the teaching staff.

Support Staff FTE calculation considered the possible involvement of the same person in more than one activity specified in Table 10.1. For example, Support Staff employed in clinical subjects, laboratories or personnel assigned to animal care, spend part of the working time in supporting the practical teaching, and sustaining research in the remaining time. In the clinical practicals, the division between the two activities is subtle, but an effort was made to quantify the time committed to the two activities. Moreover, difference in the Support Staff working hours was considered, taking 1656 full time hours per year for the FTE calculation. This was reduced in percentage for the part time staff.

Prof. EMERITUS: Prof. Giovanni Ballarini ex Dean of the Faculty.

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

| Department | Academic teaching staff | | | | | | | |
|--|-------------------------|-----|---------------|----------------|------------------------|------|-------|------|
| | Full Professor | | Asso profe | ciate ssors | tte Drs Researchers | | Otł | ner* |
| | VS | NVS | VS | NVS | VS | NVS | VS | NVS |
| Animal Health | 14.5 | 1 | 15 | 1 | 5.85 | 1.06 | | |
| Animal Production, Veterinary Biotechnologies, Food Quality and Safety | 2 | 3 | 3 | 5 | 2.28 | 0.56 | 14.52 | 1.16 |
| Extra-Faculty Departments | | 1 | | 1 | | 0.56 | | 0.58 |
| Total | 16.5 | 5 | 18 | 7 | 8.13 | 2.18 | 14.52 | 1.74 |

Table 10.2: Allocation of academic (veterinary surgeon VS, and non veterinary surgeon NVS)teaching - expressed as FTE - and Support Staff to the two Departments of the Faculty.

| Department | Support Staff | | | | | |
|--|---------------|---------------|----------------|--|--|--|
| | Technical | Animal carers | Administration | | | |
| | (b + d + e)* | (a)* | (c)* | | | |
| Animal Health | 21.45 | 2.15 | 3.93 | | | |
| Animal Production, Veterinary Biotechnologies, Food Quality and Safety | 10.44 | | 3.83 | | | |
| Dean office | | | 4.83 | | | |
| Other | | | | | | |
| Librarian | 3.00 | | | | | |
| Security | 0.30 | | 1.15 | | | |
| Cafeteria | 2.11 | | | | | |
| External service for animal care | | 3.26 | | | | |
| Gardening | | | 0.06 | | | |
| Premises and equipment cleaning | 2.97 | | 2.84 | | | |
| Technical services | | | 0.97 | | | |
| Total | 40.28 | 5.41 | 17.61 | | | |

* Categories from Table 10.1, as follows: (a) responsible for the care and treatment of animals; (b) responsible for the preparation of practical and clinical teaching; (c) responsible for administration, general services, maintenance, etc. (d) engaged in research work; (e)support to teaching (pc rooms, video, etc), librarians.

| Ratios: From the above data | please delineate the following ratios |
|-----------------------------|---------------------------------------|
|-----------------------------|---------------------------------------|

| R# | Variables | Values | Denomin. | Range (from SOP 2009) |
|----|---|----------------|-------------|--------------------------|
| R1 | n° total FTE in veterinary training ^d n° undergraduate veterinary students ^a | 73.07 | 1 7.924 | 8.85 - 10.42 |
| R2 | n° of total FTE at Faculty ^e n° undergraduate students at Faculty ^b | 80.16 1 022 | 1 12.750 | 8.75 - 12.54 |
| R3 | n° total VS FTE in veterinary training ^f n° undergraduate veterinary students ^a | 57.15 579 | 1 10.131 | 10.62 - 12.62 |
| R4 | n° total VS FTE in veterinary training ^f n° students graduating annually ^c | 57.15 73.20 | 1 1.281 | 4.91 - 7.21 |
| R5 | n° total FTE academic staff in veterinary training ^d n° total FTE Support Staff in veterinary training ^g | 73.07 63.29 | 1 0.866 | 0.53 - 2.20 |

Table 10.3: Indicators: Ratios students/staff, and staff/staff.

Note.

In order to calculate the above ratios, the following data have been used:

| Figure | Typology of data | Value |
|--------|---|-------|
| а | n° undergraduate Veterinary students (repeating and off-course included) $(\mbox{from Table 9.1})$ | 579 |
| b | n° undergraduate students at Faculty (repeating and off-course included) $(\mbox{from Table 9.1b})$ | 1022 |
| С | n° students graduating annually (average of the last five years) (from Table 9.4) | 73.20 |
| d | n° total academic FTE in Veterinary training (from Table 10.1) | 73.07 |
| е | n° total academic FTE at Faculty (from Table 10.1a) | 80.16 |
| f | n° total Veterinary Surgeons FTE in Veterinary training (from Table 10.1) | 57.15 |
| g | n° total FTE Support Staff in Veterinary training (from Table 10.1) | 63.29 |

Outline how the allocation of staff to the Faculty is determined.

The distribution of posts from the University to the Faculty is different departaccording to Academic or Support Staff.

It is difficult to describe the assignment mechanisms of the academic budgeted posts, which underwent repeated variations in the last years. There are no official criteria for the assignment. The Faculty chooses the disciplinary sector to which the post should be assigned, taking into account the Departments' requests and opinions, based on different factors. These are: (a) didactic load of the different scientific disciplinary sectors in relation with the available teachers, and (b) type of disciplines (clinical or not clinical).

Support Staff allocation to the Faculty is requested by the University on the base of documented demands forwarded by Departments or other facilities (e.g. Library etc). The candidate will be selected upon specific public competition published by the University. The Faculty is free in the "Others" category recruitment, within the budget limit, allocated specifically for the University each year.

Outline how the allocation of staff to the departments (or other units) within the Faculty is determined.

As mentioned above, it is necessary to consider that requests for a new post (either for Teaching Staff or for Support Staff) is generally forwarded by the Departments or other Units (e.g. Library etc.). The request is then discussed and submitted to the Faculty Board for approval. Therefore allocation of new posts is already predetermined at a certain limit, before the launch of the competition procedures, which will recruit new personnel.

The newly hired teachers can ask to belong to any department within the University. The acceptance of their request is subordinate to approval by the Department Board. Moreover, in the course of their career, teachers can choose to change departments.

Indicate whether there are difficulties in recruiting or retaining staff

The only personnel recruitment difficulties for Teaching Staff and Support Staff are connected with the availability of the necessary economic resources. Moreover, recruitment procedures are usually time consuming, and can be delayed because of problems not related to the Faculty or to the University of Parma.

> Describe (if appropriate) any relevant trends or changes in staff levels or the ability to fill vacancies over the past decade.

In recent years, allocation of budgets for new staff distributed by the Education Ministry (MiUR) has substantially decreased, and the trend is going to continue. Therefore the Faculty has difficulty in recruiting new personnel, both teaching and supporting staff. More recently, the Teaching Staff has seen its number decrease, especially regarding Researchers (Tab. 10.4).

| Category | 2005/06 | 2006/07 | 2007/08 | 2008/09 | 2009/10 |
|---------------------|---------|---------|---------|---------|---------|
| Full professor | 24 | 24 | 22 | 22 | 21 |
| Associate professor | 21 | 25 | 24 | 24 | 24 |
| Researcher | 25 | 17 | 18 | 18 | 17 |
| Other | 0 | 2 | 0 | 0 | 55 |
| "Fuori ruolo"* | 2 | 2 | 3 | 1 | 1 |
| Total | 72 | 70 | 67 | 65 | 117 |

Table 10.4: Faculty Teaching Staff during the last 5 years.

* This term, which literally means "out of tenure" is used to describe full professors who have reached retirement age but who can continue their research activities for a further 2 years. They do not teach. In fact the promotion from one level to another (from researcher to Associate Professor, or from Associate Professor to Full Professor) has a lower cost compared to recruiting a new researcher. This mechanism explains the large number of Full professors and Associate professors which are substantially stable, while researchers passed from 25 in 2005/06 to 17 in the academic year 2009/10. This brought unavoidably to an increase of the average age of teaching personnel. Nonetheless the average age of the Teaching Staff at the FVMUP is lower than that of the University of Parma average for Associate professors and Researchers (Tab. 10.5).

| Category | Faculty of V.M. | University of Parma |
|---------------------|-----------------|---------------------|
| Full professor | 59.6 | 58.9 |
| Associate professor | 50.5 | 53.7 |
| Researcher | 41.0 | 45.0 |

Table 10.4a: Average age (years) of the budgeted Teaching Staff (A.A. 2009/10).

The Faculty tried to resolve the problem of the low number of researchers through the recruitment of a considerable number of Contract Professors, which passed from 0 in the academic year 2005/06 to 55 in the academic year 2009/10. It has to be highlighted that Contract Professors perform their activities exclusively in the practical teaching.

The reduction of the number of students enrolled in the first year should also be taken into consideration (see Chapter 9). This reduction represents a negative item under the "budget" voice. In fact the income of the University decreases due to the reduction of the number of the enrolled students, which brings the University consequently to cut the budget assigned to the Faculty. To keep a high level of teaching, especially to smaller sized groups for clinical training, the Faculty recruited a certain number of professionals (Contract Professors), who are paid a nominal wage or who even work without remuneration.

Indicate whether it is easy to employ additional staff from service income (e.g. from revenues of clinical or diagnostic work).

Teaching Staff can be hired for specific courses every year, with the agreement of the Faculty Board, but this cannot be done using service income. Currently in fact, neither the Teaching Hospital, nor Departments nor the Faculty have the possibility of employing additional staff directly using clinical, diagnostic or laboratory revenues. Such revenues, according to the University regulations, must be distributed proportionally between the same University, University personnel, Departments and Support Staff, who contributed to the service.

> Describe the regulations governing outside work, including consultation and private practice, by staff working at the establishment.

According to University Regulations (D.R. n. 310 of the 28 April 2010) industrial and commercial activities, business participation and private company employment are forbidden for both full and part time teachers. Academic staff may be allowed to make external consultation only sporadically and following a specific Dean/Rector approval.

Any and all forms of private external work are prohibited inside the University structures. Services rendered to third parties (clinical, diagnostic, pharmacological, etc) are permitted following the stipulation of the appropriate contract or convention with specific University departments. Part-time professors are allowed to have private clinical or diagnostic activity, but all part-time personnel have a reduction of their salary of approximately 33% and they do not have access to be Dean or Head of Department.

Currently the whole Teaching Staff is on full time regime apart from one teacher.

Describe the possibilities and financial provisions for the academic staff to: (a) attend scientific meetings; (b) go on a sabbatical leave.

Participation in scientific conventions and meetings must be entirely funded by participants. Generally funding comes from research projects. Full and associate professors have the right to apply for a one year period of leave (sabbatical year). Applicants must present a research project to the Faculty, which they intend to carry out during the sabbatical leave, and the Faculty reserves the right to authorise it or not. During the sabbatical leave, the individual receives the normal salary. At the end of that period, the teacher must present a report on the activity carried out and the results achieved to the Faculty.

At the Faculty of Veterinary Medicine of Parma in the last ten years only one teacher took the sabbatical leave.

10.2 Comments

Comment on the numbers of personnel in the various categories.

In the last years the number of budgeted academic staff and Support Staff positions has not changed significantly but a decrease of Teaching Staff will be recorded in the next academic year (5 positions). However, the Faculty has recently recruited many Contract Professors, who practice in the area and are directly involved in practical activity, in order to improve the quality of the practical teaching for students. In the Annex 10.1 informations about budgeted support staff (BSS) are reported.

Comment on the salary levels, especially those of academic staff in relation to the level of income in the private sector.

According to national law (n° 382/1980), salaries are the same either for Teaching Staff or for Support Staff in all the Italian Universities. The gross salary of an associate professor is 70% less of a full professor, and a salary for researchers is 70% of an Associate professor. Some allowances are added to the basic salary, for example from revenues of diagnostic activity.

The economic progression of a University teacher's salary can be complex and is based mainly on seniority. For the sake of information, it can estimated that at the half-way point of a teacher's career, net salaries for each of the three categories of teachers is around the following monthly values: Full professor $3\,900$, Associate professor $3\,000$ and Researcher $2\,400$. According to the University Regulation, all staff involved in clinical, diagnostic or laboratory services within the Faculty receive a part of the generated revenues. Therefore, salaries can vary. Finally, it must be considered that job security has certainly its values, since all academic and Support Staff positions are permanent.

Comment on the ease or difficulty of recruiting and retaining personnel.

Apart from the economic restrictions mentioned before, academic and Support Staff recruitment has not been difficult. However, researchers - particularly in the clinical

field - are likely more attracted by the higher salary levels in similar activity in private sector.

Comment on the percentage of veterinarians in the academic staff.

The percentage of veterinarians in the academic staff, expressed as FTE, is about 78% (56.81 FTE out of total 73.07 FTE). Teachers with other educational backgrounds are necessary and qualifying in several basic disciplines (math, chemistry, economic) and in disciplines which are closely associated with the veterinary profession (agronomy, animal husbandry and production).

10.3 Suggestions

The students/teachers ratio R1 (Table 10.3) is calculated taking into consideration not only the undergraduate students, but also the repeater and off- course students (v. Chap. 9, Par. 9.1.1 e Tab. 9.1).

This ratio would be more favourable using only the regular undergraduate students (R1=4.39), or the regular undergraduate students + repeaters (R1=6.09).

The Faculty is currently trying to decrease the number of repeater students, which would also lead to a reduction in the time needed to graduate. However the effectiveness of these measures is limited for reasons already mentioned (v. Chap. 9, par. 9.2.5). Specifically addressing tutor activity to the needs of and off-course repeater students could lead to an improvement.

The students/teachers ratio is undoubtedly conditioned by economic factors. Recruitment of a substantial number of new Associate and Full Professors, appears to be unlikely and is not included in the objectives of the University in the near future.

It would be desirable to have career promotion of the existing Teaching Staff, and above all the recruitment of new researchers. This would have a the positive result of lowering the average age of the teaching staff. However considering the current trend of the world economic status and the general politics of the government toward a decrease in economic resources for education, recruitment of new teacher personnel is unlikely. A self-financing possibility using Faculty resources (those coming from diagnostic activity or generally from on payment service) is even more improbable. The Faculty is currently exploring alternatives, such as Regional funding.

Despite all these difficulties, the Faculty is making a great effort to assure students quality practical teaching in small groups, especially for the clinical subjects. The number of new students was already reduced in the last years (see Chap. 9), and most likely the current number is going to decrease, in order to comply with a more efficient system.

Suggestions relating BSS are essentially correlated to three "areas":

1. It is useful to organise training courses regarding IT technologies, foreign languages (see tables in the Annex 10.1) and statistical analysis. Support by the Dean and the Head of Departments is very important and necessary. Probably, if it should be possible for Support Staff to attend free courses (internal or external to university), it should be an incentive to stimulate continuing education. Another possibility to organise courses without any cost (for the University), could be the permission to attend degree courses at the University with final examination legally assumed to move workers ahead in career. Education and training is important in a working environment as University. Moreover, the possibility to attend training courses would harmonize the capability of career within the University and the private sector, also in the view of a "privatization" of the Italian Universities.

2. To harmonize the position of the BSS at the University of Parma with the other European Faculties (especially for the Faculties of Veterinary Medicine which are submitted to EAEVE certification) it should be recommended that in the Faculty Board should include a representative of the Support Staff. BSS has already a representative in the Department Board, calculated in percentage ratio on the number of the members of the Board equal to 10%. Representatives are elected between technicians and administration staff.

3. To favour the optimal working of the two Departments which compose the Faculty, it should be recommended that Support staff, who is absent for maternity or illness leaves, should be substituted to permit the continuity of the work in laboratories or offices. Until now this opportunity is not applied. In the past, administrative figures were replaced in case of illness or pregnancy. In the case of laboratory technicians it is more difficult as the job is more specialized. Maybe, the organization of internal departmental courses could permit some tasks to be carried out by collegues.

Faculties of Veterinary Medicine can become a role-model for other Faculties belonging to different Italian Universities. Support staff is a very important "piece of the puzzle" in the delicate and important world of the Academy. Support staff help Teaching staff in educational activities for and and therefore the students to become trained practitioners.

Chapter 11

Continuing education









Chapter 11.

Continuing education

11.1 Factual information

Please describe the role of the Faculty in providing continuing education.

The Faculty of Veterinary Medicine of Parma is committed to supporting veterinary students, veterinary practitioners and the public in the maintenance and development of their knowledge and professional performance for all the major fields of the veterinary science.

Historically in Italy, the role of Veterinary Schools was focused on undergraduate teaching and postgraduate research programs (leading to doctorate degrees), while continuing veterinary education programs were considered the task of external, often private, veterinary "cultural" associations.

Continuing education was also facilitated by logistic facilities as the post- university Institute Santa Chiara (Casalmaggiore, CR) in agreement with the University of Parma. The Institute offers equipped classrooms with modern video facilities, moreover accommodation at low price and inner restaurant are available.

The reasons owing to the good results in continuing medical education obtained, are:

- 1. the Staff of the Faculty encourages and collaborates in the organization of and participation in educational projects such as courses, seminaries, meetings, etc
- 2. the staff of the Faculty encourages relationships and collaboration with major external private and public veterinary associations and organizations
- 3. the agreement with Santa Chiara Institute provides adequate facilities especially when the Faculty didactic structures are busy for under-graduate activity
- 4. the activity in Veterinary Continuing Medical Education (VCME) are realised in order to satisfy the instructions of Ministry of Health.

In 2000 the Italian Ministry of Health introduced an official annual VCME program organised through the collection of certified elective credits. The system is based on the accumulation of a certain number of hours of courses (theoretic and practical) with a final multiple choice questions (MCQ) examination derived from activities accredited by the Ministry of Health itself. The introduction of a VCME has increased substantially the demand and the number of postgraduate practical courses in all fields of veterinary medicine in Italy. The VCME of the Ministry of Health is directed towards all sanitary professions dealing with veterinary medicine including private practitioners and all professions dealing with public health and food hygiene. In 2007 the Ministry of Health established that for the 2008-2010 period the veterinarians should achieve a total of 150 credits with an average of 50 credits per year, with a minimum of 30 and a maximum of 70 per year (this should correspond to one working week time dedicated to continuing education). Each credit corresponds to 1 hour of congresses, courses, research activities, tutored activities, distance e-learning, stages, presentations to congresses etc.

Thus, the Faculty is involved in the direct organisation of VCME courses, in collaboration with many public and private organisations implementing VCME system.

The Faculty VCME activity is organised in masters, conferences, seminars, specialty courses, theoretical and practical courses arranged directly by the Faculty Teaching Staff (table 11.1a). The Faculty also organises all types' courses in cooperation with the major professional Italian private and public institutions and associations (Table 11.1b).

Additionally, the Faculty offers sponsorship to several external courses. Patronage is granted on the basis of the scientific content of the course, the curriculum of the external staff involved and the contribution of Faculty Teaching Staff (Table 11.1b).

11.1.1 Courses

Courses, seminars, symposium organised by or at the Faculty in recent years are reported in tables 11.1.

| Year | Type of activity | Title | Place | Number of participants | Total number hours/course |
|------|------------------------|--|-------|------------------------|------------------------------|
| 2010 | Workshop | Spleen echography in dog and cat | PARMA | 75 | 8 |
| 2010 | Symposium | Rabies and epidemiology in Italy | PARMA | 52 | 4 |
| 2010 | 1° Professional course | "TPLO E TTA" | PARMA | 30 | 16 |
| 2010 | 2° Professional course | "TPLO E TTA" | PARMA | 30 | 16 |
| 2009 | Symposium | Avian flu | PARMA | 143 | 4 |
| 2009 | Symposium | Regenerative therapy of DJD in the horse | PARMA | 67 | 16 |
| 2009 | Professional course | Animal welfare | PARMA | 36 | 104 |
| 2009 | Professional course | Food quality and certification | PARMA | 43 | 140 |
| 2009 | 5° Professional course | Dermatology in cat and dog | PARMA | 36 | 22 |
| 2009 | 6° Professional course | Dermatology in cat and dog | PARMA | 36 | 22 |
| 2008 | Seminary | Cutaneous dermatitis | PARMA | 18 | 8 |
| 2008 | Seminary | Theoretical foundation in Dermatology (part 1 and part 2 - 2 courses) | PARMA | 32 | 23 |
| 2008 | Professional course | Veterinary clinical neurophysiology | PARMA | 32 | 20 |
| 2008 | Seminar | Gastroenterology: allergies, food intolerances | PARMA | 22 | 8 |
| 2008 | Symposium | Precision farming and use of dynamic model for feeding of dairy cows | PARMA | 96 | 32 |
| 2008 | Professional course | Internal FIX-IN | PARMA | 26 | 8 |

Table 11.1a: Symposium, Seminars, Courses organised by the establishment itself in the previous years

11.1.2 Other activities

The Faculty offers patronage to several courses and scientific meetings. In 2008 and 2009 the number of sponsorships was 3 and 5, 1 in 2010 and 1 (in progress) in 2011 (See table 11.1b).

| Year | Type of activity | Title | Place | Number of participants | Total number hours/course |
|---------------|----------------------------------|--|---------|------------------------|------------------------------|
| April 2011 | Seminar AIVPAFE (in progress) | ABCemergency and intensive care in the cat | BOLOGNA | / | / |
| Nov 2010 | Seminar SIVE (in progress) | Orthopedics and Equine reproduction | PARMA | / | / |
| 2009 | Nat. Congress SIDILV | Italian Society of Veterinary Laboratory diagnostic | PARMA | 298 | 40 |
| 2009 | Congress | "Sicura" convention | MODENA | 362 | 50 |
| 2009 | Nat. Congress SICV | Italian Society of Veterinary surgery | PARMA | 153 | 14 |
| 2009 | Nat. Congress AIVPA | Clinical management of new subject: pupil of cat and dog | PARMA | 123 | 16 |
| 2009 | Professional course | AIVPAFE | PARMA | 33 | 16 |
| 2008 | Symposium AIVPA | Infective diseases and dermatology in small animals | MODENA | 125 | 14 |
| 2008 | Seminar SITOV and AIVPA | Osteoarthritis in cat | PARMA | 47 | 8 |
| 2008 | Seminar APVAC | Speaking about oncologic surgery and over | PARMA | 26 | 14 |
| 2008 | Workshop (two days) | Workshop NDS 3 - Advanced utili- sation of NDS 3 and of the CNCPS Model in the Italian contest | PARMA | 40 | 16 |
| 2008 | Seminar | Precision farming and use of dyna- mic systems for dairy cattle diet for- mulation | PARMA | 105 | 4 |

Table 11.1b

11.1.3 Involvement of Teaching in continuing education organised by outside organisations

The FMVUP Teaching Staff is constantly involved in continuing education activities organised by external organisations, including private cultural associations and public organisations such as the Professional board and the National Health Service.

The Faculty is involved both in planning activities and in selecting the major topics of interest and many Teaching Staff members are invited as expert lecturers. Due to the elevated number of these courses and the lack of a record a detailed account is not available.

11.2 Distance learning (Including via internet)

If the establishment is involved in providing distance learning, please outline the nature and the volume of this work.

At the moment, no internet learning is yet offered.

11.3 Comments

Continuing education activities reported in the previous tables describe the initiatives of both teachers and external experts, who acknowledge the graduates demands and satisfy their requests organising courses, masters and symposiums.

The Faculty of Veterinary Medicine of Parma must take further steps for setting up and organising a continuing education programme, but the organisation of the above events has been a priority so far.

A board for the institution of a programme on continuing education has been established by the Faculty, emphasising the necessities of keeping up to date expressed by the veterinary practitioners and/or the officer of the national health service.

11.4 Suggestions

No suggestions.

Chapter 12

Post-graduate education









Chapter 12.

Post-graduate education

This heading covers all further training leading to a diploma - special postgraduate studies, Ph.D. courses, research training programmes, and national or European College specialised qualifications. Please provide details of all post-graduate training opportunities in tabular form under "Factual Information".

12.1 Factual information

At the University of Parma, the Faculty of Veterinary Medicine proposes the following post graduate educational choices:

European Specialist Training:

• European College Porcine Health Management.

PhD courses:

- PhD: National and European Legislation on Food Safety and Control
- PhD: Experimental and Comparative Immunology and Immuno-Pathology
- PhD: Domestic Animal Orthopaedics
- PhD: Animal Production, Veterinary Biotechnology, Food Quality and Safety
- PhD: Animal Health, Breeding and Livestock Productions.

International PhD:

• Inspective and Sanitary concern in animal production in exchanges between the European Union and the People's Republic of China.

Postgraduate Specialisation Schools:

- Postgraduate Specialisation School in "Inspection of Food Of Animal Origin"
- Postgraduate Specialisation School in "Animal Health, Breeding and Livestock Production"
- Postgraduate Specialisation School in "Swine Pathology".

International Masters:

• Food technology.

Research Fellowships

12.1.1 European specialist training (interns and residents)

Indicate any programmes that are certified by the European Board of Veterinary Specialisations

Staff members of the FVMUP, who are diplomats at the EBVS (European Board of Veterinary Specialisation), are indicated in Table 12.1. In the next paragraph the European college which are activated at the FVMUP, is presented.

| FVMUP staff | College |
|--------------------|---|
| Borghetti Paolo | European College of Porcine Health Management |
| Cavirani Sandro | European College of Bovine Health Management |
| Corradi Attilio | European College of Porcine Health Management |
| Grandi Giulio | European Veterinary Parasitology College |
| Kramer Laura Helen | European Veterinary Parasitology College |
| Martelli Paolo | European College of Porcine Health Management |

Table 2: List of staff member of FVMUPR who are diplomats in one of the EBVS.

12.1.1.1 European College Porcine health management

Indicate whether students involved in this training receive a grant or a salary

The primary objective of the College shall be to advance health oriented porcine production management in the herd context in Europe and increase the competency of those who practice in this field by:

- 1. establishing guidelines and standards of training for postgraduate education and experience prerequisite to become a specialist in the speciality of porcine health management
- 2. examining and authenticating veterinarians as specialists in porcine herd health management to serve health and welfare of the animals, the economic outcome of the herd, and the production of safe quality products for consumers in a sustainable animal production by providing expert care for pigs

- 3. encouraging research and other contributions to the science and practice of porcine herd health management including husbandry, reproductive management at herd level, epidemiology, pathogenesis, diagnosis, therapy, prevention, and control of diseases directly or indirectly affecting pigs and the maintenance of healthy and productive pig herds. Porcine health management also includes the impact on quality and safety of pork products and gives special consideration to herd health and production, production systems and targets and the management of pig populations
- 4. promoting communication and dissemination of knowledge related to item c) above.

A residency period shall comprise a two-and-a-half years of training programme in porcine health management conducted under the supervision of one (or in some circumstances more than one) Diplomat of the College or an equivalent as defined by the Credentials Committee. The period can be taken consecutively or on a part-time basis as long as the total time approximates to three-years and the total period does not exceed 7 years. There shall be no restriction on training institutions/approved practices as long as they meet the requirements for approved residency agreed by the Educational Committee. A training institution can be a Faculty of Veterinary Medicine that fulfils the requirement stated by the Educational Committee evaluates the Residency programme either in term of facilities and quality of the training proposed.

The Residency Program in Parma has been accepted in December 2009. Currently (2010) two resident students are following the programme without receiving grant or salary. The number of the residents is not predictable. The attendance is free and the admission of the candidates is based on their curriculum vitae and an interview.

| Clinical discipline | n° Interns | n° Residents | Diploma or title anticipated |
|---|------------|--------------|---------------------------------|
| EUROPEAN COLLEGE PORCINE HEALTH MANAGEMENT | - | 2 | Dipl. ECPHM |

Table 12.2: Clinical specialist training offered by the Faculty of Veterinary Medicine at Parma University.

12.1.2 Research education programme: PhD courses

Please indicate when and where and whether the students require a grant or a salary

The PhD course is a post graduate career committed to research. At the University of Parma students graduated with an University degree can apply to enter in the PhD course.

To be admitted to the PhD course candidates must pass a public competition which contains both a written and an oral part, that usually takes place in November. Once passed the examination, PhD students are enrolled for a period of three years, starting from the following calendar year.

The PhD Teaching Committee is the body delegated for managing the PhD. It is composed from a congruent number of full and associate professors and researchers, in relation to the number of PhD students. Seventy percent of teachers must belong to the disciplines of the reference area of the PhD course. During his/her learning period, a tutor supervises the PhD student, and He/she supports the research activities and looks after the additional teaching activity, which can be attributed to the PhD student. Moreover the tutor guides the student in the draft of the PhD thesis.

In order to continue the following year, PhD students are evaluated by the Teaching Committee at the end of the first and second year, through the draft of an annual report. At the end of the third year the Teaching Board assesses the students' suitability for the final examination. Once the final examination is passed the student will be awarded with the title of PhD for that specific discipline. The final examination consists in discussion of the thesis in front of a Commission composed by three members, of which two members belong to other faculties.

PhD students receive a gross salary of \Box 13 638 per year, paid by the Ministry of Education, University and Research (MiUR). In addition, public institutions as Zoo-prophylactic Institute of Lombardy and Emilia Romagna Regions, as well as private industries and foundations, can provide scholarships supporting particular research projects following special ad hoc agreements.

A number of PhD students without grants are admitted to the PhD course. Their number may vary for each PhD course, notwithstanding it is usually attested around a minimum of 2 students without grant for each grant awarded.

PhD students have to attend learning activities, including courses, lectures, seminars and practical activities specifically set up for each PhD course. Major activities are committed to carrying out a specific research project under the guidance of a supervisor. The research project is the product of the research education and will end up in the draft of a PhD thesis, independently evaluated by a Commission. Moreover students can decide to spend until half the time of the PhD course at research institutions abroad, receiving 50% more salary, during their stay abroad.

The Faculty is structured into two departments where the PhD courses are organised. The departments cooperate with the private sector in applied research, including pharmaceutical, nutritional, and diagnostic companies. Many foreign companies are also involved. The departments are also involved in numerous research projects awarded by MiUR and private industries.

Here below a brief description of the PhD courses is reported. Note that tables report the students per year of the PhD course.

12.1.2.1 National and European legislation on food safety and control

Coordinator: Prof. Franco Brindani, Department of Animal Health

The PhD course intends to train a professional, who will achieve competence and scientific preparation in food safety legislation on the different problems of the inspection area for microbiological and chemical fields. The candidate will acquire technical capabilities in the main laboratory methods exploited for food analysis, as well as in the knowledge of national and European laws in the framework of the new hygiene legislation, risk assessment, food safety control and traceability.

As regard to food safety, food microbiology basic themes, such as microorganisms responsible for altered and food borne phenomena, will be broaden. Methodological approach is supported by the use of traditional and progressive techniques (Enzyme Immunoassay, bio-molecular techniques, etc.). Moreover the following topics are handled during the course:

- epidemiologic aspects of the main food borne diseases, particularly of the emerging food borne diseases (BSE, Campylobacteriosis) and of the more frequently found outbreaks at European and national level
- problems related to traceability of the food chain, in case of genetically modified organisms (GMO) and of aflatoxins
- european legislation on food and hygiene and product control and their legal and jurisprudence interpretation. Close examination of verdicts, hand down in the food area
- epidemiological evaluation of drugs residues for therapeutic or auxinic use for food producing animals (antibiotics, hormones) and heavy metals.

The educational course of the PhD student is carried out through attendance to laboratory activities, which focus on microbiological methods for the identification and characterization of the main food borne pathogens, as well as the survey of chemical substances, responsible for food poisoning. The PhD student is also expected to acquire legislative competence to better understand national, European legislation and jurisprudence verdicts in the food area.

PhD student has the opportunity to carry out teaching activity inside and outside the University, in public and private facilities, as well as to attend stages, which allow the acquisition of administrative and health procedures for surveillance and control in slaughter facilities and food of animal origin processing industries.

| Years | 2007 | 2008 | 2009 | 2010 | |
|-----------------------------------|------|------|------|------|--|
| Number of students full time/year | 3 | 2 | 2 | 3 | |
| Students with grant | 1 | 1 | 1 | 1 | |
| Students without grant | 2 | 2 | 2 | 2 | |
| Number of PhD awarded | 6 | 2 | 3 | 3 | |
| 3 vears duration | | | | | |

Table 12.1: Number of PhD students enrolled in the PhD in "National and European Legislation on food safety and control".

12.1.2.2 Immunology, experimental and comparative immuno-pathology

Coordinator: Prof. Attilio Corradi, Department of Animal Health

The PhD course aims to train PhD students along three curriculum paths:

- the Molecular and Cellular Immunology curriculum foresees the theoretical and practical study of the biomolecular and cellular biology problems of the animal and human immune system
- Immunopathology curriculum regards the analysis of the main pathogenetic mechanisms of the immune response in swine and bovine infectious pathology. The present curriculum also focuses on the immune response of the mucous membranes, especially the intestinal and respiratory ones, to infectious agents
- Immune Pharmacology curriculum plans the experimental study of vaccines for controlling diseases by viral and microbial infections and for the epidemio-logical assessment of animals and humans mycotoxicosis.

| Years | 2007 | 2008 | 2009 | 2010 | |
|-----------------------------------|------|------|------|------|--|
| Number of students full time/year | 2 | 3 | 3 | 1 | |
| Students with grant | 1 | 1 | 1 | - | |
| Students without grant | 1 | 2 | 2 | - | |
| Number of PhD awarded | - | - | 2 | 2 | |
| 3 years duration | | | | | |

Table 12.2: Number of PhD students enrolled in the PhD in "Immunology, Experimental and Comparative Immune-Pathology".

12.1.2.3 Domestic animal orthopaedics

Coordinator: Prof Paolo Botti, Department of Animal Health

The purpose of the research doctorate in "Orthopaedics of domestic animals" is an in-depth study of the innermost structure of the physiology and the physiopathology of the bone, cartilage, synovial capsule, muscles, tendons and ligaments of domestic animals. After having completed this training path the student will be able to face specialist topics such as osteosynthesis, arthroprosthesis, ligament and tendon reconstruction. The PhD student will be able to deal also with oncologic pathologies of the locomotor apparatus.

| Years | 2007 | 2008 | 2009 | 2010 |
|-----------------------------------|------|------|------|------|
| Number of students full time/year | 4 | - | 2 | 1 |
| Students with grant | 1 | - | 1 | 1 |
| Students without grant | 2 | - | 1 | 2 |
| Number of PhD awarded | 3 | 1 | - | 4 |
| | | | | |

3 years duration

Table 12.3: Number of PhD students enrolled in the PhD in "Domestic Animal Orthopaedics".

12.1.2.4 Animal production, veterinary biotechnology, food quality and safety

Coordinator: Prof. Primo Mariani, Department of Animal Production, Veterinary Biotechnology, Food Quality and Safety

PhD student training to scientific research is placed in a national and international context. The student's educational career, under the guidance of a tutor and/or of a teacher, is focused on the acquirement of theoretical knowledge and specific survey techniques in the theme assigned to the PhD student from the Teaching Committee, in order to develop an independent research project. The following subjects are dealt with during the PhD course:

- genetic and environmental factors involved in cheese making
- physicochemical composition of milk of various animal species
- studies on biodiversity in different animal species
- studies on adipose tissue in animals in livestock production
- effect of functional food and vitamins in animal nutrition
- behavioural disorder in pets and livestock
- problems related to growth and developing of the foal
- immune pathogenesis of parasitic diseases
- biophysical characterization of the "odorant binding protein" of vertebrates

- · valorisation and qualification of fishery products and aquaculture
- control of microbial contamination in the poultry sector
- studies on the biomechanics of the vertebral column in pets and livestock
- impact of EU agricultural policy on the strategies of livestock farms
- mechanisms of ovarian angiogenesis.

Following the Teaching Committee's approval, the PhD student has the opportunity to spend time in research activities at highly qualified national and international centres or to develop experiences in a working context in public national and foreign centres. The PhD student must attend scheduled educational courses, specifically related to themes of the PhD course or from other degree courses. Moreover the PhD student should participate in seminars, conferences and workshops.

| Years | 2007 | 2008 | 2009 | 2010 | |
|-----------------------------------|------|------|------|------|--|
| Number of students full time/year | 3 | 3 | 4 | 3 | |
| Students with grant | 1 | 1 | 2 | 1 | |
| Students without grant | 2 | 2 | 2 | 2 | |
| Number of PhD awarded | 3 | 3 | 3 | 3 | |
| 3 years duration | | | | | |

Table 12.4: Number of PhD students enrolled in the PhD in "Animal Production, Veterinary Biotechnology, Food Quality and Safety".

12.1.2.5 Animal health

Coordinator: Prof. Paolo Martelli, Department of Animal Health

The PhD course in Animal Health has the objective to train researchers in the animal health sector to acquire competence in managing the assessment of epidemiological data, clinical and therapeutic aspects, as well as activation of direct and indirect prophylaxis measures in the diseases involving microbial pathogens of the domestic animals. The operating field refers to both companion animals and food producing animals in intensive farming.

Research in animal health is the objective of the PhD course. Scientific activities develop in two possible paths: one more addressed to basic research, the other orientated to applied research both strictly connected with animal health. The cultural area is largely interdisciplinary.

The study and research areas are based on to the professional characterizing disciplines of the Veterinary Medicine Degree course, particularly relevant in the animal health area both in pet animals and food producing animals, such as Veterinary Physiology, Domestic Animal Infectious Disease, Veterinary Clinical Medicine, Obstetrics and Veterinary Gynaecology. The accepted name for this PhD course clearly points out the relevant goals for the veterinary profession.

PhD course is placed in multidisciplinary context which pivots on animal health. Disciplinary areas more directly involved are: VET/02 Veterinary Physiology, VET/05 Domestic Animal Infectious Disease, VET/08 Veterinary Clinical Medicine, VET/10 Obstetrics and Veterinary Gynaecology.

Here below several research topics within the framework of the PhD course in Animal health are reported:

- physiopathology of bovine, buffalo and swine reproduction
- canine and feline cardiology
- diagnosis and prophylaxis of the bovine and swine infectious diseases
- progressive reproduction techniques: in vitro insemination and embryonic cryo-conservation in bovine and equine species
- neurophysiology and neuropathology of domestic animals
- animal health on public health care
- preparation and efficacy assessment of progressive vaccines.

| Years | 2007 | 2008 | 2009 | 2010 |
|-----------------------------------|------|------|------|------|
| Number of students full time/year | 3 | 3 | 4 | 3 |
| Students with grant | 1 | 1 | 1 | 1 |
| Students without grant | 2 | 2 | 3 | 2 |
| Number of PhD awarded | 3 | 3 | 3 | 3 |
| | | | | |

3 years duration

Table 12.5: Number of PhD students enrolled in the PhD in Animal Health".

12.1.3 International PhD courses

12.1.3.1 Inspective and sanitary concern in animal production in exchanges between the European Union and the People's Republic of China.

Coordinators for the University of Parma: Proff. Adriana Ianieri and Fausto Quintavalla The PhD Programme in "Inspective and Sanitary Concerns in Animal Productions in Exchanges between the European Union and the People's Republic of China" was activated in 2007 with a special co-funding by the Italian Ministry of Education, Research and University and the University of Pisa. Furthermore funds for three grants for Chinese students were given by the Italian Ministry for Foreign Affairs. Other two grants were funded by the Universities of Parma and Turin.

Partners involved in the project are both from China and Italy:
Chinese partners are:

- Animal Husbandry and Veterinary Medicine College of Xining
- Chinese Academy of Agricultural Sciences (Beijing)
- Department of Veterinary Science and Animal Husbandry, Guangxi Agricultural University.

Italian partners are:

- Faculty of Veterinary Medicine, University of Pisa
- Faculty of Veterinary Medicine, University of Parma
- Faculty of Veterinary Medicine, University of Turin
- National Ministry of Health
- Region of Tuscany
- Zooprophylactic Institute of Lazio and Tuscany Regions.

The main goals of the PhD programme is the interdisciplinary training of students and the consequent development of professional figures able to operate within the field of animal production connected with the cultural and commercial relations between these two worlds. In particular, the development of a bilateral teaching system allows the students to improve their knowledge of the laws and of the organisation of food production systems and food control of the host Countries, which is fundamental for consumer protection within the new policy of the extraordinarily growing exchange rate between China and countries of the EU.

The PhD is structured on the basis of a 3-year education programme in which Italian and Chinese students spend most of their training periods (at least 18 months) in Chinese and Italian institutions, respectively. While doing their stages abroad, they attend courses and lectures and participate to established research programmes. Furthermore, students are included in a number of industrial sectors in order to improve their personal knowledge and competency in the food production and manufacturing reality. Finally students have to attend intensive courses to learn the language of the Country where they study, even if English is the official language of the course. The first students with grants will graduate in the year 2010.

| | Available posts | Posts with grant | Applicants | Student with grant | Students without grant | Total admitted |
|-----------|--------------------|------------------|------------|-----------------------|------------------------|-------------------|
| 2007 | 12 | 6 | 36 | 6 | 6 | 12 |
| Total | 12 | 6 | 36 | 6 | 6 | 12 |
| 3 years o | luration | | | | | |

Table 12.6: Number of PhD students enrolled in the PhD in "Inspective and SanitaryConcerns in Animal Productions in Exchanges between the European Union and the People's Republic of China".

12.1.4 Postgraduate Specialisation Schools

Three Specialisation Schools are activated at the Faculty of Veterinary Medicine of the University of Parma. A Ministerial Decree (MD 27/01/2006) establishes which specialisation courses can be made available at each Faculty of Veterinary Medicine Specialisation Schools confer the Diploma as National Specialist, necessary to enter in the National/Regional Health Services (AUSL). Enrolment in the Specialisation Schools is through a public entrance examination.

Postgraduate courses provide training in the specific subject through lectures, seminars and laboratory sessions. According to the older regulations (MD 08/03/1994) students should attend a 1 200 hour-course, 600 of which are for lectures and the remaining 600 for practical training. According to the new regulation (MD 27/01/2006), students must attend 180 ECTS (25 hours each), 70% of which should be practical hands-on training in academic or non-academic organizations.

At the Faculty of Veterinary Medicine of Parma University, the School of Specialisation on "Inspection of food of animal origin" began its first 3-year cycle in the academic year 2006-2007 with 35 students enrolled, according to the older regulation (MD 08/03/1994). The School began its second 3-year cycle in the academic year 2009-2010, enrolling 17 students, according to MD 27/01/2006. A third cycle is scheduled for the next academic year 2010-2011.

The School of Specialisation in "Animal Health, Breeding and Livestock production" began its first 3-year cycle in the academic year 2006-2007 with 31 students enrolled. According to the new regulations, the second 3-year cycle began in the academic year 2009-2010, with 10 students enrolled.

The Specialisation School on "Swine Pathology" was activated in the academic year 2007-2008 according to the older regulation (MD 08/03/1994), and in the academic year 2009-2010 will end the 3-year cycle. From the following year 2010-2011 will be activated similarly to the other Schools.

12.1.4.1 Inspection of food of animal origin

Director: Prof. Franco Brindani

The School is structured in a three-year course, and in 180 University Learning Credits (ECTS), of 25 hours each.

The Specialist must gain theoretical and scientific experience and professional knowledge in the food inspection area and in the control of all the phases of the food of animal origin production chain. In the educational programme, production hygiene, commercialization, and food administration, systematic preventive (HACCP) plans management, food borne disease epidemiology, risk assessment, management and communication, as well as animal welfare protection, are emphasised. The Specialist must successfully and practically achieve theoretical knowledge and professional competence regarding:

- clinical and pathological acknowledgment through the laboratory tests of the more widespread pathologies of animals farmed for food production
- organization and management of the systems and technologies of production and raw material processing
- principles of eco sustainable production techniques
- production evaluation according to quality systems (ISO) and safety (HACCP);
- management of animal welfare
- statistic applied to food-borne disease epidemiology
- principles of professional ethics of main interest for the public veterinary medicine.

At the end of each year, within the second section, the specialist has to carry out periodic profit examinations to be allowed to attend the following year.

12.1.4.2 Swine pathology

Director: Prof. Attilio Corradi

The School has the objective to train specialists in swine farming and pathology to offer a high technical and scientific level of assistance and consultancy in the various aspects of swine farm management in the national territory. The scope of the School is the Specialist's achievement of a strong theoretical, scientific and professional knowledge on porcine pathology and relative prophylactic and therapeutics operations, as well as development of practical and characterizing competence on production technologies, swine farming management and conduction.

Specialist must have attained a solid theoretical knowledge, scientific and professional on pig diseases and treatment options, on breeding techniques, nutrition and feeding. The specialist must possess skills of clinical and autopsy diagnosis of infectious diseases and their control, should have gained experience in the organization and farm management, hygiene in production and their marketing in the genetic aspects of improving production.

The course lasts three years, with 20 posts available at the first year.

There are 12 scholarships, with a gross salary of \Box 11 620,28. The scholarships are reserved for those specialists who choose the full time regimen with a daily commitment of 6 hours per day for 5 days a week for at least 11 months.

The Curriculum of the School covers the seven educational areas as provided by the Ministerial Decree, 8 March 1994, Art.29, published on G.U. suppl. n. 198, 25th August 1994, reported below. Educational activities should be at least of 1 000 hours. Educational areas:

- 1. anatomy and physiology
- 2. technology of swine farming
- 3. genetics and nutrition
- 4. computer science, statistics, epidemiology
- 5. pathology and clinics
- 6. diagnostic and prevention
- 7. health legislation and general hygiene.

12.1.4.3 Animal health, breeding and livestock production

Director: Prof. Cristina Ossiprandi

The Specialist in Animal Health, breeding and livestock production must acquire knowledge in the shelter facilities, nutrition, reproduction, domestic animal welfare and ethology. He/she must also have basic computer science notions for farming management both from an economic and sanitary point of view. The Specialist should strengthen knowledge of pathology, diagnosis and prophylaxis of infectious and parasitic diseases, paying particular attention to the health risk prevention of diseases transmissible to humans. Finally, it is necessary to acquire legal and economic notions. The Specialist must achieve theoretical knowledge and practical competence regarding:

- knowledge of the main infectious and parasitic diseases, especially those included in the Regulation of Veterinary Policy and in the OIE list
- notions related to the laboratory diagnosis of diseases transmitted by virus, bacteria and parasites of the animals
- knowledge of farming technology and food producing animals' nutrition
- notions on aetiology and pathogenesis of animal disease with practical competences on morph pathological, macro and microscopic description
- notions on veterinary drugs, poisoning substances used in animal production field, food residues, and food safety and environment prevention
- cooperation agreement between AMNVI (National Association of Italian Veterinarians) and the University of Parma, Faculty of Veterinary Medicine, School of Specialisation "Animal Health, breeding and livestock production", and the Peoples' Friendship University of Russia, Faculty of Agronomy.

In the context of the Specialisation School of "Animal Health, breeding and livestock production", a cooperation agreement has been recently signed to encourage the collaboration and the establishment of contacts among the members of the faculties, professional associations or scientific societies of AMNVI and research centres of the above mentioned parties, including the exchange of teachers and students for limited periods of time between the cited institution. The agreement envisages the following cooperation activities:

- development and research and/or professional projects to be published on scientific journals with IF
- development and promotion of innovative professional and educational activities.

12.1.5 Masters

- Food Technology- International master 2007/08 Coordinator: Prof. Giuseppe Bonazzi
- Food Technology- International master 2009/10 Coordinator: Prof. Giuseppe Bonazzi

The International second level master (http://www.masterparma.com.ar/) is organised by Parma University, Faculty of Veterinary Medicine, Department of Animal Health, and by the Faculty of Agronomy, in cooperation with the University of Buenos Aires, Faculty of Agronomy.

Graduates with a degree in agronomy, veterinary medicine, food science and technology, chemistry, biology, biotechnology, engineering or equal title achieved abroad, can apply.

Partners involved are University of Buenos Aires, National University de La Plata - Research centre on food Cryotechnology.

The master lasts two years. The maximum number admitted is 50 participants, however the number of attendants was 28 in 2007-2008 and 23 in 2009-2010. Tuition fees are 3 125 \square for the two years.

The international master intends to train professionals in scientific, technical and general management knowledge, and be able to apply technological innovations in the food sector. The course aims to train specialized technicians in the several food areas such as pasta, bakery products, cheese and processed meat product etc. Moreover the course proposes to facilitate experience, exchange and transfer to Argentina of the Italian industrial technologies. The trained personnel should possess the necessary competence to process the implementation of technical projects in the food sector, and projects of transferring technologies from Italy to Argentina. The professional will also develop capabilities to assess and understand process and control problems, as well as to elaborate and apply legal indications regarding the nutritional properties of foodstuff. Personnel should also acquire capabilities to develop feasibility projects of technically high and economically convenient processes.

The course is structured in annual credits, in all 61 ECTS per year, as shown below.

Each ECTS is organised in 8 hours of classroom lectures, 8 hours of alternate activities and 9 hours of individual studying.

| | ECTS |
|------------------|------|
| Teaching | 33 |
| Other activities | 4 |
| Stage | 20 |
| Final exam | 4 |
| Total | 61 |

Table 12.7: Master structure organised in ECTS.

The curriculum of the international master in Food Technology is based on 18 disciplines and 2 working laboratory units. The first part of the programme offers basic subjects in technology and management, the second part proposes the more specific subjects related to food technology. It is possible for foreign students to travel to Italy to attend stages at Italian Universities and industries (Erasmus, companies etc.). Each candidate is evaluated through an examination and at the end of the course a final thesis is presented and discussed (4 ECTS).

A videoconference service between the various universities is made available to support teaching and to promote a network between the institutions involved in the training project.

The project also plans cooperation with important food companies from Argentina.

12.1.6 Research fellowships

Research grants are normally given to individuals with a PhD, but can also be granted to recent graduates. The scientific research activities regard specific topics indicated by a proposing professor form either of the two departments.

The research fellowship is awarded after a public selection procedure regarding the specific topic.

According to article 51 of the Law 449/97, the grant duration is a minimum of 2 years with possible renewal. The research fellowship is \Box 16 138.00 per year.

Candidates must have at least a higher University degree. PhD graduates with a scientific curriculum attested by publications, holders of a Specialisation diploma, participants with certificates of attendance of postgraduate courses, achieved in Italy or abroad, can all apply. Research fellowships last 4 years maximum in the case of PhD holders. They can be renewed for a maximum limit of 8 years if the candidate did not obtain a PhD previously.

A Research fellow carries out specific activity planned in a specific research programme and may also be involved in teaching activities. The Fellow's research activities are supposed to be autonomous and flexible, even though it should be continuous in order to complete the research project.

At the end of the first year The Research Fellow presents a detailed report to the Department Board on the activity carried out throughout the year. This is then presented to the Faculty Board, if teaching activity was also carried out. Fellowships are renewed at the end of the second year for a further year if the candidates have received a positive review from the Department and the Faculty boards.

| | | Academic years | | | | | factor | |
|------------|-------------------------------------|----------------|---------------|---------------|---------------|---------------|--------|--|
| Department | Kesearch grant (Two year period) | 2006- 2007 | 2007- 2008 | 2008- 2009 | 2009- 2010 | 2010- 2011 | SDS | |
| DAH | 4 | - | 1 | 1 | 1 | 1 | VET/10 | |
| DAH | 5 | - | 2 | 1 | 1 | 1 | VET/08 | |
| DAH | 1 | - | - | - | - | 1 | VET/03 | |
| DAH | 5 | 1 | 1 | 1 | 1 | 1 | VET/05 | |
| DAH | 4 | - | 1 | 1 | 1 | 1 | VET/04 | |
| DAH | 4 | 1 | 1 | 1 | 1 | - | VET/09 | |
| DAPF | 5 | 1 | 1 | 1 | 1 | 1 | AGR/17 | |
| DAPF | 3 | - | - | 1 | 1 | 1 | VET/04 | |
| DAPF | 4 | - | - | 1 | 2 | 1 | AGR/19 | |
| DAPF | 4 | 1 | 1 | - | 1 | 1 | BIO/10 | |
| DAPF | 1 | - | _ | _ | _ | 1 | BIO/12 | |

Table 12.8: Research fellowships at the Faculty of Veterinary Medicine of Parma during the academic years 2006/07 until 2010/11. Animal Health (DAH), Animal Production, Veterinary Biotechnology, Food Safety and Quality (DAPF).

Topics of the research fellowships regard the following scientific disciplines (and respective codes),

DAH:

- *VET 03*: Swine immunity: feasibility study on immune and neuro-endocrine response.
- *VET 04:* Bio molecular characterization of pathogenicity genetic factors of microorganism in food of animal origin.

- VET 05:
 - a. Transcriptional dynamics of bovine endometrium infected by bovine *Herpesvirus-4*
 - b. Control strategies in bovine Herpesvirus infection.
- VET 08:
 - a. Diagnostic and therapies of the "chronic renal failure" diseases in domestic animals
 - b. Anomalous rhythm and cardiac conduction study in dogs with moderate and severe mitral valve failure through dynamic electrocardiography.
- VET 09:
 - a. Clinical radiography study on skeletal apparatus development in English bulldog breed
 - b. Pain in the domestic animals, ethical and physio-pathological problem: processing and comparative evaluation of different anaesthesiological protocols.
- VET 10:
 - a. Endo video laparoscopy surgery of the reproductive apparatus in domestic animals
 - b. Diagnosis, therapy and prognosis of neonatal and perinatal bovine diseases.

DAPF:

- AGR 17:
 - a. Identification and characterization of genetic resources native in the Emilia Romagna region for animal protection
 - b. Enhancement of Biodiversity in Livestock Production: analysis of productive systems, populations and productions
- AGR 19:
 - a. Genetic and food factors influences on dairy milk quality for Parmigiano-Reggiano
 - b. Subjective and objective comparison of the morph functional parameters assessment in the horse.
- BIO 10:
 - a. Structural and functional studies of native and mutant forms of Odorant Binding Protein in mammals, with regard to cellular mechanisms opposing to the oxidative stress
 - b. Structural and functional characterization of some elements of proteome of the p2 fagus of Lactococcus lactis.
- *VET 04*: Characterisation, hygienic health assessment and improvement of traditional processed meat products.
- *BIO 12*: Setting up of Patch-Clamp instrumentation for in-vitro electrophysiological measurements.

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.

The number of PhD students awarded annually is almost in line with the incoming number of PhD students.

According to the new Regulations (MD 27/01/2006) from the current academic year, attending a Specialisation School is complicated for a self-employed veterinarian, while recent graduates can more easily attend the School of Specialisation full time. Moreover unlike other faculties, veterinary practitioners are not supported by any scholarships to attend the years of the Specialisation School.

The number of residencies and internships programmes should be increased.

The number of European college residency and internship programmes has room for improvement.

12.3 Suggestions

It would be appropriate to strengthen cooperation with the National Health System (AUSL) from the whole Italian territory, regarding the specialists' participation to the training activities.

An increase in the number of PhD students spending part of their research activities in European and foreign institutions and Universities, is advisable in order to promote student exchange, international University networking and cooperation.

Post-doctoral students are an important resource for research and residents, and play an educative role in vocational clinical and non-clinical activities. In addition, Research Fellowships are an excellent opportunity for qualified graduates to support research activities on a specific subject. Continuity research paths for these professional figures should be expected in order not to lose precious scientific gained experience, on which many years of work were invested in.

A major involvement and networking of international and European institutions with the Faculty of Veterinary Medicine of Parma is foreseen, planning in the near future the possible establishment of a further residency programme for diplomate status in the European Veterinary Parasitology College. 

Research









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

13.1.1 Introduction

Commitment to scientific research is an important part of the teachers' academic role at the Faculty of Veterinary Medicine of the University of Parma (FVMUP). The FVMUP Teaching Staff is involved in various research projects in the different fields of veterinary science and in interdisciplinary fields.

The quality of the research carried out by each staff member is evaluated every three years by a scientific committee made up of members from both the Veterinary Faculty and the Faculty of Agriculture (Scientific Committee for Agricultural and Veterinary Sciences).

The most important scientific publications of the teaching staff of the Faculty are available here:

shortcut url: http://tinyurl.com/vetpr-15
real url:http://www.unipr.it/arpa/facvet/eaeve/teachingstaff.pdf

Research activity has a positive impact on teaching quality. It facilitates laboratory experience, enables acquisition of teaching material (of animal origin and not), equipment and facilities available for teaching both basic and clinical subjects. In this way, research activity has a positive effect on the students' training in veterinary sciences. This is especially true when the student is involved in the preparation of his/her final year thesis for graduation.

13.1.2 The undergraduate student's involvement in research

"Indicate the involvement of undergraduate students in research, including time spent, percentage of students involved and outcome required".

The main involvement of the student in research activity is during the preparation and draft of the final year thesis.

In Italy, in order to graduate with a degree in Veterinary medicine, it is compulsory for the student to prepare a written dissertation and to present it at his/her final exam in front of a Commission.

The student can choose from among the following types of thesis:

- a review of existing literature on a given subject (thereafter indicated as *"review thesis"*)
- review thesis together with analysis of clinical cases observed and collected directly by the student (thereafter indicated as *"review and clinical reports"*)
- autonomous analysis under the guide and the responsibility of a supervisor teacher, of data collected by the students themselves following an experimental protocol (thereafter indicated as *"experimental thesis"*).

During thesis preparation and draft, the undergraduate student must independently choose and elaborate a specific topic of research and learn to apply methodologies of scientific research.

The "expected outcome" is that the student be able to:

- perform a complete bibliographic search and critically interpret the results of scientific articles in published literature
- correctly and systematically report literature data in a comprehensive review of the available knowledge on a specific topic ("comprehensive review", "review thesis")
- retrospectively or directly analyse clinical case reports and cases of a given pathology ("review and clinical reports")
- carry out basic laboratory techniques, clinical analysis, apply and follow experimental protocols and assess obtained results ("experimental thesis")
- structure the written paper following the criteria for a scientific publication (review, clinical reports, experimental thesis)
- present and discuss the dissertation in front of a Commission, similar to a presentation at a scientific meeting.

The undergraduate student is guided by his/her Supervisor (Relatore) who is usually a teacher from the FVMUP staff.

Each teacher of the FVMUP must offer at least three topics from his/her scientific discipline as possible titles for the final year thesis each year. These are listed in the Student Secretariat and are available on the Faculty website. The student may choose his/her thesis topic from this list or he/she may ask any teacher from the FVMUP staff to develop a topic of particular interest in a preferred field of veterinary science.

The current list of titles for the final thesis is available here:

shortcut url: http://tinyurl.com/vetpr-16

real url: http://medvet.unipr.it/cgi-bin/campusnet/tesi.pl/Search?search=medvet

Under the OC-2001, every student had to choose the thesis topic by the end of the fourth year and most activity was carried out during the last year of study, except for experimental theses that usually require more time in laboratory. The thesis counted as 15 ECTS (minimum 15 weeks: 375 hours), assigned at graduation, for preparation and final discussion. With this system, students are usually involved in their thesis preparation during the fifth year of study. The time spent depends on the type of thesis and can be as long as 18 months for an experimental thesis.

Under NC-2009, the final thesis counts as 9 ECTS that are accredited at different times during the degree course: 2 ECTS are assigned in the 3rd year when students choose their topic and begin to learn how to carry out bibliographic research and data mining; another 3 ECTS are assigned in the 4th year and involve a more in-depth approach to the chosen topic and the acquirement of analytical and research skills necessary for writing the dissertation and/or for laboratory work. The 4 remaining ECTS are accredited once the final discussion is passed (graduation examination).

Once the topic is chosen, the supervisor informs the student of conditions and times for thesis preparation and on how to organise the research work. In the case of an experimental thesis, the student begins to attend the laboratory and to participate in research activities, as an "Attendee Student". Here, the student learns to follow and apply research techniques and protocols.

In general, and for review theses in particular, students learn the basics of literature search and data-mining. The Library and its staff support the students in this learning process and in the use of databases and bibliographic search management (OPAC, Databases).

The Supervisor and the student can also be assisted by an "Assistant Supervisor" (Corelatore) who assists the student in the thesis preparation. The Assistant Supervisor can be a teacher, a PhD student, a research fellow, a specialist, etc., belonging to any University and nationality, or a professional expert outside the academic field.

At the Degree examination, the Commission Members and an appointed "Reviewer"

(Controrelatore) evaluate the student's preparation on the thesis subject (see Chapter 4.1).

The Degree examinations are open to the public. The student has approximately 20 minutes to present the thesis, followed by a discussion of the dissertation of nearly 10 minutes.

The following tables and figures report the Degree theses carried out and presented in the years 2006, 2007, 2008, 2009 and 2010. These are grouped according to thesis typology (Table 13.1, Figure 13.1), EU-listed subjects (Table 13.2, Figure 13.2) and to professional areas (Table 13.3, Figure 13.3).

| Year | Review | Review and clinical reports | Experimental thesis | Total |
|-------|--------|-----------------------------|---------------------|-------|
| 2006 | 66 | 15 | 23 | 104 |
| 2007 | 54 | 19 | 15 | 88 |
| 2008 | 42 | 15 | 13 | 70 |
| 2009 | 30 | 11 | 15 | 56 |
| 2010 | 22 | 20 | 6 | 48 |
| Total | 214 | 80 | 72 | 366 |

Table 13.1: Final theses classified per typology and per years (from 2006 to 2010) (absolute values).

Final theses classified per typology [total percentage values]

Review and clinical reports Experimental original work

Figure 13.1: Final theses classified per typology: average percentage values of the period 2006-2010

| Year | Basic sciences | Animal production | Food Hygiene and Public Health | Clinical Sciences | Total |
|-------|-------------------|-------------------|-----------------------------------|----------------------|-------|
| 2006 | 13 | 9 | 4 | 78 | 104 |
| 2007 | 6 | 16 | 5 | 61 | 88 |
| 2008 | 4 | 6 | 6 | 54 | 70 |
| 2009 | 9 | 7 | 3 | 37 | 56 |
| 2010 | 3 | 4 | 2 | 39 | 48 |
| Total | 35 | 42 | 20 | 269 | 366 |

Table 13.2: Theses classified per EU-listed subjects (*) and per year (from 2006 to 2010) (absolute values).

* a) Basic sciences (anatomy, biology, ethology, physiology, biochemistry and molecular biology, pharmacology, microbiology, epidemiology, immunology; b) Animal Production; c) Food Hygiene and Public Health; d) Clinical Sciences (internal medicine, surgery, radiology, therapeutics, reproduction and reproductive disorders, infectious diseases and parasitology, anatomy pathology)



Figure 13.2: Final theses classified per EU-listed subjects (average percentage values of the period 2006-2010).

| Year | Pet clinics | Horse Medicine | Farm animals health management | Wild animals, diseases diagnosis and welfare | Food Hygiene | Nutrition | Other |
|-------|----------------|-------------------|-----------------------------------|--|-----------------|-----------|-------|
| 2006 | 37 | 17 | 27 | 8 | 4 | 6 | 5 |
| 2007 | 38 | 9 | 25 | 4 | 5 | 5 | 2 |
| 2008 | 39 | 6 | 8 | 5 | 6 | 4 | 2 |
| 2009 | 18 | 6 | 17 | 4 | 3 | 4 | 4 |
| 2010 | 23 | 5 | 13 | 4 | 2 | 1 | 0 |
| Total | 155 | 43 | 90 | 25 | 20 | 20 | 13 |

Table 13.3: Theses classified per professional areas and per years (from 2006 to 2010).



Figure 13.3: Final theses classified per professional areas (average percentage values of the period 2006-2010).

The facilities and research activity of the teachers of the Faculty of Veterinary Medicine of Parma offer numerous possibilities to our students to be actively involved in research during their thesis work. A broad choice of possibilities and topics are offered to the students for the thesis preparation, either as data collection in scientific review type, and in the experimental theses, as direct involvement and training in the different scientific and professional areas of Veterinary Medicine. The FVMUP, with its research facilities, Departments and the VTH, together with extra-mural activity, guarantee a wide range of experiences that can contribute to thesis preparation, particularly if based on experimental research work or on description and analysis of clinical cases.

The two Departments at FVMUP are the reference facilities for the organization (see Chapter 2), funding (see Chapter 3) of research activity and where equipment, instruments and facilities are located (see Chapter 6).

Departments are also centres of activity and collaboration with the private and public sectors. They are reference centres for several institutions, public and private bodies for professional consultancy and for basic and applied research projects. Moreover, private practitioners for both farm and small animals, farmers, pharmaceutical companies and feed industries, all refer to the Departments for various services, including clinical and infectious diagnostic services, histopathological, diagnostic, and microbiological analysis on food and quality control of products of animal origin. The VTH is not only the venue where undergraduate training takes place, but also where students can carry out clinical case reviews and experimental research in a strictly professional context.

There are several areas of research at the FVMUP, from basic subjects to clinical science, from molecular biology to surgery, from animal farming to food of animal origin safety and quality (see below).

Several teachers carry out applied research activity in epidemiology and infectious diseases. Other teachers have contacts with food companies within the food sector of the Parma Food Valley, where typical products (like Parmigiano-Reggiano and Parma ham) play an important role and where the development of dairy cattle and heavy breed pig farming is essential. This interaction with the professional fields allows interested students to carry out practical research in the diagnostic, clinical, food sciences and in the public health and management of food-producing animals.

During thesis preparation, students can rely not only on their Supervisor and Support Staff, but also on staff involved in post-graduate study, like PhD students and research fellows. They are often assigned as Assistant supervisor for those students who are carrying out an experimental or clinical research project during their thesis preparation. At the Faculty of Veterinary Medicine of Parma several PhD courses and several fellowships for graduates on a specific subject, are activated (see Chapter 12).

13.1.2.1 The organization of the research at the FVMUP

The aspects and the main research areas in veterinary science as well as the organi-

sation of the two Departments of the Faculty of Veterinary Medicine, DAH and DAPF, are briefly illustrated here below.

13.1.2.2 The research of the Department of Animal Health (DAH)

The research activity of DAH involves several areas of the veterinary sciences from basic subjects to clinic and food hygiene, following some main topics:

- pet clinics and clinical pathology: diagnosis and therapy of cardiac diseases, neuro-muscular diseases, metabolic disorders; antimicrobial therapy and antibiotics resistance, legislation and animal welfare
- pig health management: pathogenesis, immunity, therapy and vaccination protocols to control respiratory and enteric diseases; joint pathology, reproductive physiopathology and immunotoxicology (mycotoxins)
- bovine infectious diseases and epidemiology: pathogenetic studies, diagnosis and prevention of viral and bacterial diseases, biotechnological studies on viral genome, viral vectors for immune-therapy and vaccines
- neuro-anatomy: immunohistological analysis on sensitive and motor neurons of genital organs of male and female
- biomaterials, bone and joint pathology, reparative and regenerative medicine: osteointegration and biocompatibility in vitro and in vivo of biomaterials applied in surgery for tissue reparation
- clinical and experimental surgical pathology: studies on anaesthesia and paintherapy, on osteo-articular malformation, skeletal traumatic pathology; surgery of respiratory, enteric, neurological and ocular systems; oncology and stem cell and platelets-gel application
- animal reproduction: studies on reproductive management in field, semen evaluation, pet reproduction and endovideolaparoscopic surgical techniques
- animal Production and Food Quality and Safety: detection and characterization of micro-organisms responsible of food-borne diseases by microbiological and bio-molecular techniques in food of animal origin; detection of drug residues in food, growth promoters' additives; studies on economic farm management.

13.1.2.3 The Research of the Department of Animal Production, Veterinary Biotechnologies, Food Quality and Safety (DAPF)

The research activity at the DAPF involves several veterinary scientific topics:

- animal feeds, nutrients and optimal performance
- studies on the factors affecting animal production systems, as well as genetic analysis of native production and recreation breeds
- genetic and environmental factors affecting chemical, physio-chemical and technical properties of milk

- ovarian physiology in swine
- sanitary, technological and nutritional aspects of foods of animal origin
- development of methodologies for the authentication of foods of animal origin
- molecular and cellular characterization of biological systems of veterinary interests, including olfactory systems, mesenchymal stem cells, and fagi-lactic bacteria interactions.

13.1.2.4 Facilities and equipment for research

Several research laboratories are active at the Departments of the FVMUP. The DAH provides Laboratories of Virology and Bacteriology, Parasitology, Biotechnology, Clinical Pathology and Haematology, Cell Cultures and Immunopathology, Histochemistry and Immuno-histochemistry, Haematology and Toxicology, Pharmacology and Endocrinology. At the Unit of "Inspection of Food of Animal Origin", a Laboratory of Food Microbiology is active and accredited (since March 2010) according to UNI CEI EN ISO/IEC 17025:2005 "General requirements for the competence of testing and calibration laboratories" law, by the assessment and acknowledgment body (ORL) of the National Health Institution, Istituto Superiore di Sanità.

Several instruments are available for researchers, such as direct and inverted optical phase contrast and fluorescence-epifluorescence microscopes, qualitative and quantitative-PCR thermo cyclers, transilluminators, electrophoresis and Western blotting devices, hybridization oven, electroporator, centrifuges and ultracentrifuge, HPLC device, photometers and spectrophotometers, chemical cabinets and biological hazard laminar flow cabinets, thermostats and CO_2 incubators, mini-VIDAS apparatus for enzyme-linked fluorescence assays, freezer and freezing containers, inclusion stations and microtomes, technical and analytical scales, programs for image analysis, apparatuses for instrumental clinical diagnostics such as ultrasonography machines, automated analysers for clinical biochemistry, clotting and haemogas-analysis, electromyographs, and radiology equipments, ultrasound and CAT facilities.

At the DAPF several research laboratories are active: feed/feedstuff and forage testing laboratory, milk analysis laboratory, gas cromatography and elemental analysis laboratory, HCPL/MS laboratory and Molecular biology/cellular cultures laboratory.

Several instruments are available for researchers involved in the different research projects: different types of centrifuges, spectrophotometers and spectro fluorimeters, FPLC, Thermo cyclators and Real Time PCR, electrophoresis cell for DNA and proteins, beta and gamma radiations counter, multifunctional well plates counter (spectrophotometer, fluorimeter, luminometer), gas cromatographers equipped with μ ECD, FID and MS detectors, microwave digestion unit, atomic absorption spectrophotometer, ICP atomic emission spectrophotometer, Kjeldahl digestion and distillation units, Sox-

hlet extractor, Crude fiber and fibrous fraction extractor, fiber fermentator (Artificial Rumen), High Pressure Liquid Chromatographer equipped with UV-Vis, Fluorescence and MS detectors, Gas Massa.

13.2 Comments

Comment on the opportunities for students to participate in research activities

The final thesis preparation work is an essential moment of the Veterinary Medicine student educational path for the degree achievement, in which he/she acquires the first experiences on how to perform research activities and to produce a written report on a given scientific topic (see Chapter 4).

The student learns the knowledge through an individual and independent approach and following the scientific research methodology rules.

He/she acquires, reads and synthesizes scientific data reported from the international bibliography, getting those learning skills, which will allow him/her to deal with an independent study in the professional life and to organise his/her own permanent training through bibliographic research on databases and professional updating websites consultation.

The student studies how to objectively read scientific articles through a proper knowledge of the English language, which will enable him/her an appropriate updating of the professional knowledge.

During the experimental thesis work the undergraduate student can achieve capabilities on research laboratory practices application as well as research and clinical tests instruments use.

The preparation thesis period represents also an important moment of educational guidance toward the profession, as he/she faces for the first time problems of a particular professional area, clarifying and strengthening his/her tendency. The direct interaction with the tutor teacher can allow him/her to obtain relevant information on the future professional path.

As previously said, the FVMUP offers various opportunities to the students to attend research laboratories, clinical facilities and external facilities for the activities related to the thesis preparation. From data analysis on the types and topics of theses chosen by our students in Veterinary Medicine from 2006 to 2010, reported in the figures and tables, it can be observed that:

- the majority of theses are carried out in the clinical sciences, equally distributed between clinical surgery (32% of the theses in clinical sciences, and 23.5% of the total theses of the last five years) and internal medicine (36.4% and 26.7%, respectively)
- the number of theses carried out on infectious and parasitic diseases appears to be relevant (23.4% of the theses in the clinical area and 17.2% of the total)
- it is important to point out that the percentage of theses in basic subjects (9.6% of the total number) is comparable with the other disciplinary areas and, amongst them; theses on animal behavior, microbiology/epidemiology and pharmacology are well represented
- currently, review theses prevail (58.4%), especially in the clinical field, where the majority of the original works, consist of the clinical reports analysis. The prevalence of review theses is connected with the free choice of the student, who often does not feel that he/she can afford a long period of time for thesis preparation, as it is expected for an experimental work
- there is strong interest for topics in companion animal medicine (42.3%), but a great interest is also shown for equine practice, farm animal health management (41.8%), animal production and nutrition
- compared to other EU-listed subjects and professional areas, the number of theses in Food Hygiene and public Health appears to be limited (5.5%).

Within the Erasmus project, the FVMUP encourages students to carry out all or part of their thesis at research facilities and Faculties of Veterinary Medicine abroad, although currently the number of theses carried out abroad is limited (3 in the period 2008-2010).

13.3 Suggestions

"Will students be given more opportunity to participate in research activities"

An increase in the students' interest toward experimental theses is desirable. Students should be more involved in experimental research projects or in the study and critical evaluation of clinical cases, since these activities are excellent training and allow the student to learn how to carry out analytical surveys or clinical and diagnostic challenges.

However, scientific review theses allow the student to acquire skills to objectively handle data collection and analysis in literature. Moreover, in many cases, the thesis is prepared and written in the departments, together with staff members, so students are directly in contact with the reference teacher's research activities and with what is going on in the laboratory.

Students should be informed regularly on the experimental and clinical research activity developed in the Departments through symposia, workshops and scientific meetings open to them. They should also be more encouraged to carry out their thesis abroad.

A better educational guidance toward the research areas of the FVMUP, could allow students to be more interested in research themes and topics related to Food Hygiene and Public Healt, in relation to the growing importance of this sector in the Veterinary profession, especially in the district of the Faculty of Veterinary Medicine of Parma, which is located in an important area for livestock farms and where demand for such professionalism is high.

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