Faculty of Veterinary Medicine

# University of Padova

# **Self Evaluation Report 2010**



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### Edited by

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### FOREWORD

This Self Evaluation Report (SER) has been compiled using as a base the SER written on the occasion of the first EAEVE visit of the Veterinary Faculty of Padova in the year 2000. In 2000, the SER had been written by the following professors: Lucia Bailoni, Gianfranco Gabai, Carlo Guglielmini, Massimo Castagnaro. Credit must be given to the above authors as their effort facilitated the work of those who wrote the current edition of the SER.

The 2010 edition of the SER of the Faculty of Veterinary Medicine of the University of Padova is the result of the effort of the whole Faculty, as each single member of the teaching staff contributed to the editing of this volume by submitting data which were compiled by the contributors of each single chapter.

All chapters have been initially reviewed by Bruno Cozzi, Valerio Giaccone, Carlo Guglielmini, Catia Sorgato. Final evaluation and revision have been made by Dean Massimo Castagnaro and by President of the Degree Course Council Paolo Carnier.

The help of the Dean's office personnel in providing and updating information is gratefully acknowledged. Also, the Faculty would like to thank Dr. Elena Quagliato for playing a key role in translating a conspicuous set of documents and in editing the final document.

The SER has been prepared by the Faculty of Veterinary Medicine of the University of Padova on the occasion of the May 3-7 2010 visit by the Experts of the "European Association of Establishments For Veterinary Education" (EAEVE). The Visiting Team is composed by the following experts:

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The following is a list of the acronyms most commonly used throughout this volume:

| AST    | Animals Sciences and Technology                            |
|--------|--|
| AUSL   | Local Division of the National Health Service              |
| AWCC   | Agripolis Waste Collection Center                          |
| CAB    | University Library Center                                  |
| CAPERE | Catalog of Padova University Electronic Journals           |
| CAI    | Computerized Axial Tomography                              |
| CENSIS | Italian Center for Social Studies                          |
| DCC    | Degree Course Council                                      |
| EBVS   | European Board of Veterinary Specialisation                |
| ECAR   | European College of Animal Reproduction                    |
| ECBHM  | European College of Bovine Health Management               |
| ECVAA  | European College of Veterinary Anaesthesia and Analgesia   |
| ECVCP  | European College of Veterinary Clinical Pathology          |
| ECVP   | European College of Veterinary Pathology                   |
| ECVPT  | European College of Veterinary Pharmacology and Toxicology |
| ESU    | Regional Agency for the Right to Study                     |
| FVMP   | Faculty of Veterinary Medicine, University of Padova       |
| HB     | Health Biotechnologies                                     |
| IHC    | Immunohistochemistry                                       |
| JTC    | Joint Teaching Committee                                   |
| MD     | Ministerial Decree   |
| MMMTB  | Mediterranean Marine Mammals Tissue Bank                   |
| MRI    | Magnetic Resonance Imaging                                 |
| MUR    | Ministry of University and Research                        |
| OFF    | Ordinary Financing Fund                                    |
| PD     | Padova   |
| PP     | Processing Plant   |
| SBA    | University Library System                                  |
| SBN    | National Library System                                    |
| SH     | Slaughterhouse   |
| SHFP   | Safety and Hygiene of Food Products                        |
| SIC    | Services Interdepartmental Center                          |
| ULC    | University Learning Credit                                 |
| VA     | Veneto Agriculture   |
| VTH    | Veterinary Teaching Hospital                               |
| ZEI    | Zooprophylactic Experimental Institute                     |

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# Chapter 0 INTRODUCTION

### written by S. Romagnoli

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,

- the 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

### **Historical Background**

The University of Padova, founded in 1222, is therefore more than 780 years old and one of the oldest Universities in the world. Since 1992, it includes the Faculty of Veterinary Medicine, which bears the same organisation and teaching programs as many other European Faculties of Veterinary Medicine Schools. Yet, a School of Veterinary Medicine in Padova had already existed during the XVIII century, when Padova was part of the Republic of Venice. In those days, because the Republic was importing large quantities of livestock from Eastern countries, mainly from Dalmatia, Slovenia and Hungary, the significant economic exposure, the unbalance in the state finances and the high animal mortality caused by unhealthy local farming conditions and meat production, prompted the development of Institutions devoted to the study of animal husbandry and medicine. This led to establish a Chair of Agriculture at the University of Padova (1765), held by the botanist Pietro Arduino, whose duties also included an investigation over the reasons for the insufficient production of cattle.

Veterinary Sciences started to become increasingly important in the second half of the XVIII century, with the foundation of Schools of Animal Medicine all over Europe. The majority of these Schools were created following a specific overwhelming military necessity for the care of army horses. On September 9, 1773, the Republic of Venice, following the creation of the first Schools of Veterinary Medicine in France, officially founded the Collegium Zooiatricum Patavinum (Zooiatric College), under the direction of Giuseppe Orus, a graduate of Alfort. The School was located in Padova, in the old Convent of the Maddalene. Orus was responsible for the organisation of the School of Veterinary Medicine and for the foundation of a Museum of Comparative Anatomy. He also acted as an official meat and hygiene inspector for the Republic, travelling to wherever cattle epidemics occurred. Despite cavalry being a fundamental organization also for the Venetian Republic at the time, the teaching of Veterinary Medicine in Padova was established with a somewhat different aim, as the study of the epidemiology of infectious diseases of cattle was one of the highest priorities to help the commerce and economy of the region. On October 1, 1774, the Veterinary School formally opened with 12 students coming from different Italian States, and in 1779 it licensed the first small group of veterinarians. In the following years (1779-1787), the veterinary studies were reformed, whereby the veterinary curriculum became part of the Faculty of Medicine and Surgery, and the Chair of Comparative Anatomy of Giuseppe Orus was formally included among those of the University of Padova.

Orus died prematurely on 1792. His disciple, Antonio Rinaldini, "privately" taught Veterinary Medicine for years, waiting for an official nomination, while the University Chair remained vacant. The Republic of Venice collapsed in 1797, and the Democratic Government appointed Antonio Rinaldini Professor of Veterinary Medicine in 1798. French and Austrian occupations of the city of Padova ensued, and the veterinary curriculum continued for years with alternate fortunes. After the retirement of Rinaldini in 1805, and the one-year substitution by Gaetano Malacarne, the School was officially closed for the time period 1806-1815, during which the custody of the Museum of Comparative Anatomy was assigned to Malacarne.

In 1815 Girolamo Molin was appointed Professor of Veterinary Medicine at the Faculty of Medicine, and the veterinary curriculum was reduced to two years. In 1827, the School and all the related materials were moved to the former Convent of S. Francesco, which was renamed Veterinary Institute. In 1839, Vincenzo Tomada became Professor of Veterinary Medicine, soon to be followed (in 1840) by Giuseppe Brugnolo, who held the Chair of Epizootic and Veterinary Medicine at the Faculty of Medicine until 1857, when Bernardino Panizza was appointed. Panizza was the last professor of Veterinary Medicine in Padova, as the veterinary teaching in Padova was officially discontinued in 1873. Basically, this decision was taken because, after the constitution of the Kingdom of Italy (in 1860), the total number of Schools of Veterinary Medicine had to be limited in compliance with Kingdom regulations. Not to forget that the guidelines of the Veterinary Schools of the new Kingdom were radically different from those of the University of Padova, where the School had been reduced to a chair in the Faculty of Medicine.

Since then, on several occasions the Academic Senate of the University of Padova had considered to re-open a Faculty of Veterinary Medicine, both because animal farming (including fish farming) was routinely exploited in the Veneto Region, and also because local veterinarians had to be trained at the Milan or Bologna Schools. Unfortunately, however, the economic situation of the Region consequent to the long-lasting wars in North-Eastern Italy that took place until the middle of the XIX century precluded the prosperity, expansion and maturity of the Veterinary School in Padova. It was only in 1992 that the Academic Senate finally re-opened the Faculty of Veterinary Medicine. Yet, from this brief historical sketch, it should appear evident that the "new" Faculty of Veterinary Medicine of the University of Padova follows a tradition of animal sciences that is well-rooted in the past, and fully dedicated to animal husbandry and welfare.

### Main Organisational Changes

The most important organisational changes are:

- a) the new (national) veterinary curriculum, which was approved in 2004, through which the new course has been structured with tracking in a clinical path and a food hygiene path. This new syllabus was implemented in Padova starting from the Academic Year 2007/2008.
- b) a new organisation of practical training called TIROCINIO, through which the amount of handon practical activity has been made a fundamental prerequisite and has been increased to a total of 45 University Learning Credits (ULC =equivalent to 25 hours per credit) spanning from the 2<sup>nd</sup> to the 5<sup>th</sup> year. In addition, more practical works have been introduced in all courses with peaks of 50% in some clinical classes.
- c) the establishment of the Veterinary Teaching Hospital, which provides a 24-hr emergency service to small animals and horses.

### New buildings or major items of equipment

The Veterinary Faculty at the University of Padova was visited by EAEVE for the first time in the year 2000. While the visiting team found most of the premises in substantial compliance with EAEVE requirements, two major problems were encountered, which were due to the fact that the three main buildings of the Veterinary School, the Clinical Department Building, the Animal Ward Building and the

Necropsy Building had not been completed yet by the contractors at the time of the visitation. This led the visiting team to formulate in their report the following two Category 1 deficiencies:

- 1. the level of caseload, both living animals and those for necropsy work, has to be increased in all species
- 2. the structured training at the FVMP for all students actually should include an adequate level of hands on clinical work, covering the principle species and disciplines.

The above three buildings were subsequently completed during that same year and have been fully operational since 2001. Thanks to these new premises, the amount of clinical cases has risen from less than 1000/year in 2001 to more than 3000 in 2007, and the yearly number of autopsies has risen from a few (less than 50 and exclusively small animals) in 2001 to more than 600 in 2007 (small and large animals).

The latest development of our Veterinary Faculty is the implementation of the 24-hour service. The building which formerly hosted the Department of Veterinary Clinical Sciences until the year 2001 has undergone drastic changes and interior remodelling and has just become operative. A group of young veterinarians has been selected to be on duty during the night. Personnel on night duty includes one veterinarian and two veterinary students. Finally, a new building with additional teaching and research facilities has been approved and budgeted by the University and will be soon built.

*New Regulations Relating to Teaching* – A change which was introduced in 2002 was the adoption of teaching evaluation forms to be filled out by students towards the end of each course.

*Main Changes to the Study Programme* – With the aim of improving international exchange programmes it has been decided to incentivate those teachers who are willing to give their entire course in English language

*Main problems encountered by the Establishments (whether resolved or not)* – due to the decisions implemented by the Ministry of Economic and Public Finances the University of Padova (and therefore the Veterinary Faculty) will have to face a substantial shortage of budget and resources as of 2010. Another important problem to underline is that a mismatch is present between fees paid by students and the real cost of the Establishment compared to other Schools of the University of Padova.

### Chapter 1

### Objectives

written by S. Romagnoli

### 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 Primary and secondary objectives of the Faculty

The Faculty of Veterinary Medicine of the University of Padova (FVMP) is the only teaching establishment responsible for the education in Veterinary Medicine of the entire Veneto, the Region to which Padova belongs. Notably, however, the FVMP is also the only veterinarian educational centre of the wider geographical district of the North East of Italy known as "Tri-Veneto" that, in addition to the Veneto Region, comprises the Regions of Trentino Alto Adige and Friuli Venezia Giulia (Figure n° 1).

The mission of the FVMP is clearly stated in its Teaching Regulation (Annex n. 1). The overall objective of the FVMP is to provide high-quality education to students of veterinary medicine and to offer further professional and scientific post-graduate education 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 threefold:

1) To train undergraduate students of veterinary medicine, by providing all theoretical and practical skills that will enable graduates to: (i), work independently as practitioners with domestic animal species; (ii), promote animal and human health; (iii), safeguard the quality of food of animal origin. In particular, given that teaching efforts are devoted to cover the whole chain of food production, individual animal treatment, and environmental hygiene, complete knowledge of both disease treatments and preventive medicine is ensured.

2) To produce research, innovation, and development of critical thinking in the various disciplines of veterinary sciences, including basic veterinary sciences, animal sciences, veterinary clinical sciences, and veterinary public health.

3) To orient the professional, teaching, technical and administrative resources to fulfil the needs and expectations of our society, and to become the major scientific, professional and continuing education reference for veterinarians and the society at large in North-Eastern Italy as well as the Northern Adriatic region.



**Figure n° 1.1** – This geographic chart of Italy shows the 20 administrative Regions in which the country is divided, and the 14 Italian Veterinary Faculties that are members of the EAEVE. The Faculty of Veterinary Medicine at Padova is the only teaching establishment of the "Tri-Veneto" area (composed of the Regions of Veneto, Trentino Alto Adige and Friuli Venezia Giulia). In the Region of Friuli Venezia Giulia a Veterinary Faculty is part of the University of Udine (blue dot); however, this faculty was established merely for political reasons, and in fact the only degree offered is in Animal Science and Technologies . In the Region of Calabria, the University of Catanzaro (black dot) has recently established a new Veterinary Curriculum within the School of Medicine. This Faculty is not a member of EAEVE

The prime objective of the Faculty is the 5-year curriculum necessary to obtain the degree in Veterinary Medicine. Theoretical and practical teaching is provided for in the context of disciplines that are classified according to the Ministeral Decree (MD) n° 270, 24 October 2004 (see Chapter 4). The objectives to be accomplished during the degree course in Veterinary Medicine are the following:

- knowledge of those topics of basic sciences that are required for veterinary activities;
- knowledge of the structures and functions of healthy animals, including the aquatic species, their offspring, reproduction and general hygiene, as well as their nutrition and related technologies
- knowledge of animal behaviour and welfare;
- knowledge of the causes, nature, development, effects, diagnosis, and treatment of animal diseases, especially those that can be transmitted to humans;
- knowledge of preventive medicine;
- knowledge of the hygiene and technologies inherent to the production, processing, and commercialisation of food of animal origin destined to human consumption;
- knowledge of the legislation and regulations governing the above subjects;
- ability to understand and critically evaluate the impact of animal breeding on the environment;
- ability to design, implement and control veterinary public health plans;
- ability to control and manage food animal production chains;
- acquisition of clinical and practical experience (under adequate supervision)
- knowledge of at least one (written and oral) foreign language of the European Union.

Accomplishment of the above objectives is completed through an obligatory practical training called TIROCINIO<sup>1</sup>. The FVMP is constantly striving to offer its students relevant opportunities to apply in practice what is taught in class. This translates to an increasing quantity of practical activities. Within the frame of the new veterinary curriculum (MD 270, 22 October 2004), the FVMP has decided to consider these practical activities a formal prerequisite in terms of n° of University Learning Credits (ULC) to be gained already starting from the second year. Therefore, at the FVMP TIROCINIO starts already at the 2<sup>nd</sup> year and, by the end of the curriculum, totals the remarkable amount of 45 ULC, approximately half of which are acquired during the final year.

Collateral teaching objectives have been identified by the FVMP over the years to fulfil the professional and cultural needs of the society at large. The following degree courses see a direct on indirect involvement of the FVMP:

- 3-year Degree course in Safety and Hygiene of Food Products (SHFP) This course is organised and taught entirely by the FVMP. Students learn about a) technologies and management of animal and vegetable productions and their environmental impact; b) illness of food producing animals; c) food products technologies, hygiene and safety of foods and certification systems of process and product (e.g., ISO, UNI); d) food legislation and the methodologies of its application, risk assessment and HACCP procedures application on food production lines; e) risk prevention and good management practices. Occupational perspectives of graduates in SHFP are in the food production chain, in the food supply chains or in the catering business, as well as in public companies as technician for chemical or microbiological laboratories.
- 3-year Degree course in Animal Science and Technology (AST) This course is organised in collaboration with the Faculty of Agriculture, and provides students with competence in animal breeding for agricultural purposes as well as the management of agro-zootechnical enterprises. Students are trained in genetics, nutrition, reproduction, hygienic aspects and health, organization and management of animals of agricultural interest, sport or companion animals. The student learn

<sup>&</sup>lt;sup>1</sup> TIROCINIO, the Italian word for Practical Training, will be used throughout this SER to refer to structured, supervised practical activities carried out by students as a prerequisite for the completion of their studies (described in Chapters 4.1.1.3.a through 4.1.1.3.f).



to combine the most modern technical aspects with environmental friendly production and how to solve problems connected to sustainability and globalization. Graduates in AST pursue their careers in the areas of management and control of nutrition of animal for agricultural production, sports or companion animals.

3-year Degree course in Health Biotechnologies (HB) – This course is organised in collaboration
with the Faculties of Medicine and Surgery and Pharmacy and is meant to provide students with
a sound background on how to develop and investigate a) new drugs and other bioactive
substances; b) new biotechnological tools useful for the diagnosis, prevention, and therapy of
human diseases; c) new biotechnological tools to be used in Veterinary Medicine for improving
animal health, food hygiene and quality of foodstuffs. Graduates in HB pursue their careers as
investigators in biotechnological research in public and private companies working on
development of drugs and diagnostic systems.

Improving the quality of teaching is also considered an important aspect of teacher's professionalism at the FVMP. Therefore, the Faculty is deeply involved in establishing co-operations with European and extra-European countries aiming at the improvement of teaching methods and the development of research in veterinary science. To this end, the FVMP has already opened international agreements with the Universities of Iowa and Texas A&M (USA), Universidad de Conception (Chile), Universidad Nacional La Molina (Perù), Université d'Antananarivo (Madagascar), Universidad de Sao Paulo (Brasil), University of Addis Abeba (Ethiopia), Institute of Endemic Diseases, University of Khartoum (Sudan), as well as Socrates programs with the Veterinary School of Madrid, Barcelona, Lisbon, Ghent, Zurich. The Faculty Coordinator for the ERASMUS and SOCRATES program is Prof. Antonio Mollo, from the Department of Veterinary Clinical Sciences.

An important teaching objectives of the FVMP relates to the organisation of postgraduate continuing education courses. In the 2009-2010 academic year the FVMP offers a wide arrays of continuing education opportunities including EBVS College Residency Programs, Master courses, 3-year Specialisation Schools, as well as 1-year or 2-year Master courses (see also chapter 12). The following is a list of such opportunities:

A 1-year Master Course in Veterinary International Cooperation

Two 2-year Master type course (second level degree) on

- Biotechnology applied to food security and nutrition, focussed on both biotechnological methodologies and characterization of agri-food industry processes (in collaboration with the Faculties of Medicine and Surgery and Agriculture)
- Marine Biology, focussed on marine biodiversity and aquaculture (in collaboration with the Faculties of Agriculture and Natural Sciences)

Three 3-year Postgraduate Veterinary Specialisation School in

- Rearing, hygiene, and pathology of aquatic species and control of fish products.
- Inspection of foods of animal origin.
- Animal health, breeding and production.

Two EBVS Residency Program in

- Small Animal Reproduction (ECAR)
- Veterinary Pathology (ECVP)

With regard to research training, the FVMP is specifically organised so as to provide a constantly updated training in the broad field of Basic and Applied Comparative Veterinary Science. To fulfil this objective, the FVMP currently offers research opportunities consisting in PhD positions in the two PhD Schools in a) Veterinary sciences and b) Animal sciences.

### 1.1.2 Methods used to measure the accomplishment of the Faculty's objectives

**1.1.2.1 Faculty performance indicators -** All strategic decisions, including revision of the Faculty objectives, are taken by the Faculty Council under the supervision of the Dean. The revision of the overall objectives, which were broadly set when the FVMP was established in 1992, happens at regular intervals. Every 3 years the FVMP (as any other Faculty within the University of Padova) is bound to discuss a target programme to implement the University Strategic Plan and its policy programme. The University of Padova monitors the performance of its faculties using *unbiased performance indicators* (e.g., number of completed degrees, employment ratios for graduates, n° of PhD diplomas achieved, n° of publications, amount of research funding, etc.). Following this assessment, the target programme re-defines Faculty's 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 Council and the Degree Course Council (DCC). For a detailed explanation of how these two bodies function relative to quality assessment the reader is referred to Chapters 2.1.6.b and 2.1.6.d, respectively. Among the indicators that are considered important at the Faculty level, the FVMP includes the teaching quality assessment system, the examination rates of the students, the reports of the teaching staff, and the fallout of 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 up by all students. These questionnaires are not aimed at only evaluating teachers, but also Faculty's premises and organisation as well as services offered. The answers of 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 5.4.

1.1.2.2.b Examinations and their passing rates - Examinations can be oral, or written, or both, and are normally taken at the end of each course. However, outcome assessments can also take place throughout the course. The grading of the courses is expressed in thirtieths, 18/30 being the lowest passing score. All teachers who have taught in a given course are members of the Examining Board of their specific discipline. Once classes are over, examinations can be taken in three specific periods of the year (exam sessions): January-February, June-July, and September. Within each session students have the possibility to take the exams on two different times (at least 15 days apart). Students who fail an exam have the right to repeat it as many times as necessary<sup>2</sup>. Examination passing rates are kept under a close control by the Dean and the President of the DCC. This control is performed informally through contacts with the students, monitoring whether or not the exam pass rate drops below critical levels. A good passing rate (indicating that candidates have received a proper training) should be no less than 50%. If the passing rate of a specific course drops below this threshold, the teacher is informally approached and ways to improve the situation are investigated.

1.1.2.2.c Reports of the teaching staff - Every three years, all members of the Faculty are required to submit to the Faculty Council 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 have historically been not relevant enough for teaching staff members to lose their jobs or to see their salaries being curbed, two consideration should be made in this respect:

i. at the FVMP, 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

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<sup>&</sup>lt;sup>2</sup> This possibility is granted by the Italian Law, and there is nothing that can be done about it.

are striving to do their best in order to avoid having their shortcomings being addressed in front of the entire Faculty Council

ii. 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 loose 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).

1.1.2.2.d Contacts with public and private health sectors - The FVMP has a permanent Veterinary Committee composed by the Dean, representatives of the Faculty professors and trade unions of various professional veterinary activities, the Presidents of the Veneto Region Veterinary Chamber Associations and a representative of the Veneto Region Veterinary Chamber. This Committee meets normally twice a year and discusses issues related to the role of FVMP in private and public veterinary profession.

### 1.2 Comments

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

A good indicator of how the quality of teaching has improved over the last decade at the FVMP is the amount of hands-on activities. In fact, thanks to the availability of new structures, laboratory spaces, hospitalisation facilities, clinical and non-clinical equipment as well as to a new curriculum and a change in attitude from teachers, over the past 10 years the Faculty has undoubtedly undertaken a massive effort to increase the amount of hands-on teaching activity from the first to the fifth year of the veterinary curriculum. This has resulted in more than 40% of the study hours being devoted to practical hands-on activities. Student's satisfaction has increased remarkably over the last few years. Also, based on Censis<sup>3</sup> official annual statistics, the Veterinary Faculty of the University of Padova has constantly scored as 1st or 2nd in the country during the past 5 years.

### What, in your view, are the main strengths and weaknesses of the Faculty?

The Faculty's leading strengths are:

- Its inclusion in a university of great prestige with a long tradition;
- Its location outside the city limits (approx. 10 km from Padova) in an area shared with the Faculty of Agriculture and the Zooprophilactic Experimental Institute (ZEI);
- Its recent establishment and therefore the fact that the average age of its staff members is fairly low;
- A limited programmed number of students (<70);
- The fact that the students who apply to enter the FVMP are the best performing high school students of the whole country (based on nation-wide results of University Entry Tests see also Chapter 9)
- Its collaboration with the ZEI of the Veneto Region;
- Its collaboration with the Faculties of Medicine and Surgery, Mathematics, Physics and Natural Sciences through interdisciplinary projects (trans-genetic animals used for inter-species transplants, experimental surgery centre);

<sup>&</sup>lt;sup>3</sup> The CENSIS is a Center for Social Studies founded in 1964 and established as a Foundation by the Italian Government with Decree n° 721/1973. It provides statistical studies and reports as well as consultations to local, regional or state bodies and also to international organisations. Its publications are considered very prestigious and authoritative particularly for implementation of long-term development projects.



• The possibility for online access to a large amount of scientific journals through the University Library system (see also Chapter 8)

- The student and staff cafeteria located inside the Campus area;
- The possibility for student housing on Campus
- The excellent relationship between professors and students;

• Its inclusion in a geographic area (North-Eastern Italy) of leading importance in the country for animal production and general economic conditions;

• Its proximity to the emerging nations of Eastern Europe which gives it a key role to be played considering the future expansion of the EU in Central and Southern Europe;

• Broad and heterogenous international relationships.

The Faculty's most significant weaknesses are:

• Its recent establishment has so far hampered the development of clinical services due to the existence of a high number of private veterinary clinics and hospitals providing a good to high level of veterinary care in the area of Padova

- The shortage of technical/administrative staff;
- The difficulties in obtaining large animals for practical teaching activities in the clinics;
- 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 TIROCINIO activity are not officially
- recognized and therefore included in the personal teaching work load of academic staff.
- The impossibility to reward teaching excellence

### **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.

- a) The University should provide more technical/administrative staff positions;
- b) The University should recognize in the personal teaching work load of academic staff the hours spent in the TIROCINIO activity;
- c) The University/ MUR should give the FVMP the tools to reward the best evaluated teachers.
- d) Health National/Regional Authorities should recognize the Veterinary Teaching Hospital as part of the health system



## Chapter 2 ORGANISATION

### written by S. Romagnoli

#### 2.1 **Factual Information**

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

### 2.1.1- Details of the Faculty

| Name of the Faculty: | Faculty of Veterinary Medicine of the University of Padova (FVMP) |
|----------------------|---|
| Address:             | 16, Viale dell'Universita', Legnaro (PD), 35020 Italy             |
| Telephone:           | + 39 049 827 2536   |
| Fax:                 | + 39 049 827 2602   |
| Website:             | http://www.veterinaria.unipd.it/                                  |
| Dean                 | Prof. Massimo Castagnaro  |
| E-Mail:              | preside.medicina.veterinaria@unipd.it                             |

The Faculty of Veterinary Medicine of the University of Padova (FVMP) is one of University of Padova's thirteen faculties: Agricultural Sciences, Economics, Pharmacy, Law, Engineering, Literature and Philosophy, Medicine and Surgery, Veterinary Medicine, Psychology, Educational Sciences, Mathematics-Physics and Natural Sciences, Political Sciences, and Statistics.

The University of Padova is a national (state-funded) university composed as of October 1st, 2009 of 2411 teaching staff members and 2326 personnel. There are approximately 60,000 students enrolled. The composition of the teaching, technical and administrative staff of the University of Padova at the date of 1<sup>st</sup> October 2009 is showed in tables 2.1.1.a and 2.1.1.b.

|                                   | Number | %     |
|-----------------------------------|--------|-------|
| Full Professors                   | 717    | 29.7  |
| Associate Professors              | 742    | 30.7  |
| Assistant Professors <sup>4</sup> | 922    | 38.3  |
| Assistants <sup>5</sup>           | 30     | 1.3   |
| Total teaching staff              | 2411   | 100.0 |

Table 2.1.a. Teaching staff of the University of Padova

Assistant Professor has been used throughout the SER (see also Chapter 10.1.1) <sup>5</sup> Assistant" refers to the old terminology used to identify the entry level of academicians (what is currently called Assistant Professor) prior to 1980. Assistants are being gradually phased out. No "Assistant" is present at the Veterinary Faculty of the University of Padova.



<sup>&</sup>lt;sup>4</sup> In Italian Academia, the entry level is defined "Ricercatore" (= Researcher). However, for the sake of clarity, the term

#### Chapter 2 - Organisation

|  | Number | %     |
|--|--------|-------|
| Central Administration staff                   | 480    | 20.6  |
| Departmental staff                             | 1254   | 54.0  |
| Librarians                                     | 24     | 1.0   |
| Staff working for Centers                      | 381    | 16.4  |
| Dean's office staff and general administration | 187    | 8.0   |
| Total technical and administrative staff       | 2326   | 100.0 |

Table 2.1.b. Technical and administrative staff of the University of Padova

The total number of students registered at the University of Padova during the current academic year is shown in the table 2.1.c.

| Faculty                                 | N° of undergraduate students<br>registered in 2009-10 |
|---|---|
| Agriculture                             | 2487  |
| Economics                               | 1355  |
| Education                               | 3594  |
| Engineering                             | 10415   |
| Law                                     | 5205  |
| Mathematics, Physics & Natural Sciences | 4723  |
| Medicine and Surgery                    | 5107  |
| Literature and Phylosophy               | 6941  |
| Pharmacy                                | 2118  |
| Political Sciences                      | 6221  |
| Psychology                              | 7019  |
| Statistics                              | 1011  |
| Veterinary Medicine                     | 913   |
| Inter-Faculty Degree Courses            | 4318  |
| Inter-University Degree Courses         | 114   |
| TOTAL                                   | 61361   |

Table 2.1.c - Undergraduate students registered in all degree courses of the 13 Faculties of the University of Padova.

### Details of the competent authority overseeing the Faculty.

**2.1.2 Competent authority** - The Rector of the University of Padova is the competent authority overseeing the FVMP as outlined in diagram 2.1. The Rector is Prof. Giuseppe Zaccaria, (office: via 8 Febbraio n° 2, 3512 Padova; tel. +39 049 827 3001). Prof. Zaccaria is from the Faculty of Political Sciences, and was elected to his first 4-year term in the Fall of 2009. The Statute of the University of Padova is available (only in Italian) at the following address (http://www.unipd.it/stdoc/regolamenti/Statuto\_05022008.pdf).

2.1.3 Organs of the University of Padova - The central Organs of the University of Padova are:

- the Rector;
- the Academic Senate;
- the Council of Administration;
- the Stakeholder Council

2.1.3.a – The **Rector** represents the University of Padova and has the functions of initiating, promoting and implementing university policies. The Rector presides over and coordinates the activities of the Academic Senate and of the Board of Administration. She/he also supervises the running of the University's organizations and services, and may take disciplinary measures against students or staff, as well as stipulate agreements, contracts and conventions. The Rector is elected from among the full-



time full professors by an electorate composed of the professors and the representatives of the students and technical-administrative staff (their vote accounts for 7% of the professors' vote) on the above councils.

The Rector holds office for four years and may be re-elected only once. She/he appoints a vice-Rector, who stands in for the Rector in the event of the latter being absent or unable to perform her/his duties. All recent Rectors have appointed and coordinated a small number of pro-rectors (chosen among the full-time teaching staff and entrusted with specific duties such as Teaching, Buildings and Infrastructures, International Affairs etc.) and an extensive team of delegates, who cooperate with the Rector

**2.1.3.b** - The Academic Senate represents the political government of the University of Padova. It gives the guidelines for the action and the development of the University; it also coordinates and verifies all university activities. At present, the Academic Senate of the University of Padova is composed of the Rector, who acts as Chairperson; the Vice-Rector; the Deans of the University's 13 Faculties; the Administrative Director; 6 Heads of Departments nominated by the Heads of Department's Council and representing the three Macro-Areas of scientific disciplines (Macro-Area 1: Mathematics, Physical Sciences, Information and Communication Sciences, Engineering and Earth Sciences; Macro-Area 2: Life Sciences; Macro-Area 3: Human and Social Sciences); 3 Coordinators of Scientific Area nominated by the Scientific Committee of the University of Padova and on behalf of the three Scientific Macro-Areas previously described; 1 Coordinator of the Specialization Schools' Council; 2 representatives of technical and administrative staff; 5 student representatives.

**2.1.3.c** - The **Council or Board of Administration** manages all the administrative, economic, financial and patrimonial aspects of the University of Padova. It acts pursuant to the guidelines given by the Academic Senate. At present the Council of Administration is composed by the Rector; the Vice-Rector; the Administrative Director; 1 representative of the Deans (in the person of Prof. Massimo Castagnaro, the Dean of the FVMP); one representatives of the Heads of Departments; 1 Full Professor, 1 Associate Professor and 1 Assistant Professor from each scientific Macro-Areas; 2 representatives of technical and administrative staff; 5 student representatives.

**2.1.3.d** - The **Stakeholder Council** is composed of one representative from the following bodies: the Veneto Region; the Province of Padova; the Municipality of Padova; the Chamber of Commerce, Industry, Agriculture and Crafts; the Regional Schools Direction; Bodies that share special agreements with the University of Padova for the development of decentralized facilities; Entrepreneurial Associations in Veneto; Professional Orders of Veneto; Trade Unions of Veneto; Relevant and representative cultural bodies. The function of the Stakeholder Council is to help the University of Padova to establish strategies leading to a high degree of integration between the type of teaching provided and the needs of the territory at large.

**2.1.3.e** - The **Departments** – at the present in number of about 70 – are the structures of the University of Padova entrusted with the organization and coordination of the research activities in one or more scientific areas, culturally and substantially homogeneous for scientific objectives and methods. Departments have administrative and financial autonomy, along the guidelines and the finances approved by the Senate and the Council of Administration. They can have their own financial income, which is generally obtained for research activities done and/or services performed in favor of third parties.

Members of the teaching staff must choose the Department which they want to belong to (i.e. through which they opt to perform their research and service activity). The choice must be done on the basis of scientific homogeneity with the objectives and methods of the Department. Technical and administrative staff are assigned to the Department by the University Central Administration. Departments cooperate

with Faculties to implement teaching activities by providing space, equipment, expertise as well as teaching material. Departments are completely independent from Faculties, and – at least in theory –do not need to refer to any specific Faculty, which means that one or more members of the teaching staff of a faculty may belong to a department based in another faculty. However, very often each Department mainly refers to only one Faculty.

Departments are managed by a Director or Head and by the Departmental Council. The Director chooses a Vice-Director. All Department Heads meet regularly in the Council of Department Heads. This council elects 6 representatives who are voting members of the Academic Senate. In case of complex teaching-related service and for specific research activities implemented in the general interest of the University of Padova, Interdepartmental Centres can be established. These are managed by a Director and by a Council of the Interdepartmental Centre. On the Agripolis Campus, the most important interdepartmental center most relevant to the FVMP is the Service Interdepartmental Center (SIC). The SIC was established in the early 1990's (when the Agripolis Campus was opened) and is composed by members of the teaching staff of the Faculties of Agriculture and Veterinary Medicine, and by a relevant number of technicians who take care of all sorts of technical problems (electricity, computer software and hardware, internet connection, building maintenance, availability of teaching aids) occurring on the Agripolis Campus. The SIC manages external contractors hired by the University and is in charge of care and maintenance of common areas and services such as: gardening, management of parking lots, care and maintenance of teaching equipment (video projectors, microphones, computers), waste disposal (chemical and biological), management of the Library, books and Journals subscriptions (paid for by both the Faculty and the Departments).

The other significant interdepartmental center for the FVMP is the Veterinary Teaching Hospital (VTH) was established in 2008 as an interdepartmental center in order to allow all veterinary departments to provide integrated services through it. It is composed only by members of the teaching staff of all the 4 departments of the FVMP, and its main function is to provide health care related service to support teaching activities.

2.1.3.f - Other important bodies at the University of Padova are:

- the Heads of PhD Schools' Council
- the Heads of Medical Specialization Schools' Council
- the Observatory for postgraduate specialization courses
- the Scientific Committee of the University of Padova
- the Teaching Committees of the University of Padova
- the Students' Council
- the Sport Committees
- the Auditors' Board
- the Evaluation Centre
- the Defence Counsel Office

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

**2.1.4 Appointment of Faculty's elected officials -** The Dean represents the Faculty and supervises all its activities. The Dean must be a full time Full Professor, is elected by secret ballot from all the members of the Faculty Council (including student representatives) and is appointed by a Rector's Decree. The Heads of Department represent the Departments, chair the Council of the Department and supervise all activities carried on by each Department. They are elected by secret ballot among the full-time Full Professors or, in case of unavailability of Full Professors, among the full-time Associate Professors; all teaching staff members of the department vote for electing the department Head, who is



### Chapter 2 - Organisation

subsequently appointed by a Rector's decree. A similar system of election and appointment is generally adopted for choosing the Heads of Interdepartmental centers or the Head of any other Faculty Committee.

Provide a diagram of the internal administrative structure of the Faculty itself (councils, committees, departments etc.), as well as a diagram of the administrative structures showing the Faculty in relation to the university and ministerial structure of which it is part.

**2.1.5** Administrative structure of the Faculty and the University – Figure n° 2.1 represents a diagram illustrating the administrative structure of the FVMP. The University of Padova depends directly from the Ministry of the University. The current Minister of the Education, University and Research is Dr. Maria Stella Gelmini. A diagram showing how the Faculty relates to the University and the Ministry is portrayed in Figure n° 2.2.



Figure nº 2.1 - Administrative structure of the Faculty of Veterinary Medicine at the University of Padova

### Chapter 2 - Organisation



**Figure n° 2.2** – Relationships between the Faculty of Veterinary Medicine, the University of Padova and the Ministry of Education, University and Research. Apart from the two degree courses listed here (Veterinary Medicine and Safety and hygiene of food products) the Faculty organises and/or collaborates to the teaching of other degree courses (see also Chapter 1.1.1)

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

**2.1.6 Main administrative bodies -** The organisation, administration and function of the Faculty of Veterinary Medicine at the University of Padova are very similar to those of most veterinary teaching establishments in Europe. The bodies of the Faculty of Veterinary Medicine of the University of Padova are:

- the Dean;
- the Faculty Council;
- the Faculty Executive Committee;
- the Degree Course Councils;
- the Departments

**2.1.6.a - The Dean** represents the Faculty and supervises all its activities. The Dean must be a full time Full Professor appointed by the members of the Faculty Council. She/he is responsible for the promotion and implementation of all activities necessary to allow proper teaching as well as proper Faculty management. A Vice-Dean is nominated by the Dean among Full Professors. The Vice-Dean can substitute for the Dean in any of her/his functions, in case of absence. The Dean may appoint other Professors for specific duties.

**2.1.6.b** - The Faculty's most important functional body is **the Faculty Council** 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, representatives of technical and administrative staff (maximum three), and 5 students' representatives. The Faculty Council coordinates and decides all Faculty activities and verifies their efficiency. In particular, its main functions are:

- i. planning the use of teaching and technical staff assigned to the Faculty;
- ii. planning the use of the finances and human resources assigned to the Faculty
- iii. proposing the maximum number of places to be offered to students for enrolment in the first year, as well as the number of places for students coming from different Universities for enrolment to the 1<sup>st</sup> and subsequent academic years;

The Faculty Council is convened by the Dean whenever necessary, at least 4 times a year. The Council includes temporary and permanent Committees such as the Faculty Executive Committee, which has the role to carry out the resolutions of the Faculty policy; the Committee for the Erasmus program; the Committees for international relationships; the Pietro Arduino Library Committee; the Committee for the University Farm etc. (for a complete description see Chapter 5.1.1.2 and Table 5.1).

At the FVMP, a Joint Teaching Committee (JTC) is also established. The JTC has the role to evaluate the efficacy and the efficiency of the teaching organization and tutoring services, as well as the consistency between the ULC assigned to a course and the specific learning objectives. Furthermore, the JTC may propose initiatives aimed at improving the teaching program. For more information on composition and function of the JTC see also Chapter 5.1.1.2.

**2.1.6.c** - The Faculty Executive Committee (also called the Dean Council) is composed by the Dean, the Vice-Dean, the Presidents of each Degree Course Council and the Department Heads. The Administrative Secretary takes part at the Council when relevant administrative, economic, financial and patrimonial aspects are to be discussed. Usually the Executive Committee meets before each Faculty Council's session, in order to review the agenda of the Faculty Council and to decide upon items on which the Faculty Council has delegated.

2.1.6.d - Each Degree Course has a **Degree Course Council** (DCC) whose task is to organize and coordinate the teaching activities of the Degree Course. The DCC is appointed by the Faculty Council



(as soon as a new Degree Course is established) to deal with all issues related to teaching. In essence, the duty of the DCC is to review and debate all teaching issues and to present the results of the above discussions to the Faculty Council for approval. The DCC is composed by the Chairman (usually a full professor) and by as many members as are the teachers (full, associate, and assistant professors) involved in the curriculum. Also, 9 student representatives are, at present, members of the DCC. A meeting of the DCC is held whenever necessary or any time there is a request from at least one third of its members. Normally, it is held once every 1-2 months. The DCC has specific tasks and responsibilities:

Inherent to the Faculty's objectives, the tasks of the DCC are:

- 1. to assess the efficacy of the global teaching organisation;
- to propose to the Faculty Council solutions to problematic issues related to teaching, in particular those issues requiring co-ordination between: (i), the various courses and their professional orientation parts; (ii), Professors of inter-related courses, or Professors and Students; (iii), the Faculty and the secretarial, or the tutorial, services.

On the other hand, *responsibilities* include:

- 1. informing the Dean and the Faculty Council on the state of teaching activities;
- 2. expressing opinions on, and formulating proposals for, the institution of new undergraduate, or post-graduate, degree courses;
- providing guidelines and proposals regarding the maximum number of students to be enrolled in single study courses, or in the professional orientation - compatible with the availability of teaching staff and structures;
- 4. formulating clear-cut criteria for the recognition of the curriculum (e.g., courses, examinations, and teaching credits) of students who come from other Italian Faculties/courses and wish to enrol in one of the courses held by the FVMP. Criteria must also be formulated with regards to stages carried out by students in foreign Universities, in agreement and collaboration with the Erasmus Exchange Committee ;
- 5. providing the Faculty with suggestions and proposals for an equal distribution of the teaching loads;
- 6. evaluating the examination process of all types of courses (single courses, 5-year and 3-year graduate degrees etc.) in order to increase the test efficiency and balance the used methods;
- expressing opinions on the co-ordination of the programs and the teaching calendar of the study courses;
- 8. preparing the time-table and class schedule for the study course of each academic year;
- 9. preparing, distributing, acquiring and evaluating the questionnaires concerning the teaching quality;
- 10. assessing the functioning of the tutorial services, and formulating proposals to increase their efficacy;
- 11. promoting investigations and other activities to improve the quality of teaching;
- 12. promoting and assessing experimental and innovative forms of teaching;
- 13. implementing the proposals for individual student study programs.

**2.1.6.e** – There are 4 **Departments** at the FVMP. The departmental constitution, name of the Director and the subjects taught by the teaching staff belonging to each department are listed in Table n° 2.4

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

**2.1.7** - Although the veterinary profession is not directly involved 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 TIROCINIO where they train and supervise undergraduate students on professional subjects both at the faculty premises or on the field. (see table n. 4.1.12)



### Chapter 2 - Organisation

| Name of Department                   | Subjects taught by teaching staff members within the Department | Director of the Department |
|--------------------------------------|---|----------------------------|
| Veterinary Experimental Sciences     | Basic Sciences, Parasitology                                    | Prof. Mario Pietrobelli    |
| Public Health, Comparative Pathology | Hygiene, Public Health, Pathology, Infectious                   | Prof. Tomaso Patarnello    |
| and Veterinary Hygiene               | Diseases  |                            |
| Veterinary Clinical Sciences         | Clinical Sciences   | Prof. Roberto Busetto      |
| Animal Sciences                      | Animal Sciences   | Prof. Luigi Gallo          |

Table n° 2.4 – Name, subjects taught by teaching staff members belonging to, and name of the director for the 4 Departments present at the Faculty of Veterinary Medicine of the University of Padova. The Dept of Animals Sciences is composed of teachers from the Faculties of Veterinary Medicine and Faculty of Agriculture.

**2.1.7.a** - The **Zooprophylactic Experimental Institute** (ZEI) is an important diagnostic and research institution providing veterinarians and animal breeders with consultations and laboratory analysis. The ZEI is a technical-scientific instrument of the State that provides the three Regions of the Tri-Veneto area (Veneto, Trentino Alto Adige and Friuli Venezia Giulia) with public veterinary services as well as with the technical support necessary for health monitoring and disease prevention activities, among which:

- basic research on public veterinary health and hygiene, in compliance with programs and conventions established with universities, Italian and foreign research institutes, as well as State, Regions or any other public/private organisations;
- ii. technical and scientific support in veterinary and pharmacological control operations;
- iii. epidemiological surveillance, also through the actions of specific veterinary observatories;
- iv. vigilance into the hygiene of farm animal productions;
- v. studies, tests, and technologies for controlling the health of foods of animal origin and animal feeding;
- vi. update training for veterinarians and other technical operators;
- vii. study of alternatives to the use of animals in scientific experimentation.

Over the years, the FVMP and the ZEI have officially co-signed several agreements of collaboration, including those aimed at sharing knowledge and teaching resources, research and service supply sectors. The Director of the ZEI is currently a professor and former Dean of the FVMP. Because of their nature, ZEI and FVMP's activities may cross each other's paths. Historically, there has always been a frequent collaboration and exchange of opinions and information between the FVMP and the ZEI. Veterinarians from the ZEI and teaching staff of the FVMP actively collaborate in many fields of research and clinical practice.

**2.1.7.b** - The **7 Provinces** (Figure n° 2.3 ) of the Region of Veneto (Venezia, Padova, Vicenza, Verona, Belluno, Rovigo, Treviso) have each one its own local Veterinary Chamber, whose activity is supervised by the Regional Federation of Veterinary Chambers of Veneto. The Presidents of the Provincial or Regional Veterinary Chamber are frequently consulted by both the Dean as well as other professors of the FVMP, in order to modulate the teaching activity of the Veterinary School and also to provide counselling on appropriate conduct in case of legal dispute. No such dispute has ever occurred between a member of the teaching staff and any local veterinary practitioner. The local Veterinary Chamber comes into play for the State Board Exam, as one of the members of the Exam Committee has to be a private practitioner chosen from the Local Veterinary Chamber

### 2.2 – Comments

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

### 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.

A major issue regarding the integration of the FVMP activities within our territory is the lack of institutional recognition of FVMP (mainly research and services) as a public health body. FVMP staff may not apply for research funding to the Ministry of Health. Also the FVMP staff may not perform direct research activity for specific infectious diseases (transmissible spongiform encephalopathies). As it is pointed out in chapter 6.6.5, these facts affect also the services offered within the VTH.





# Chapter 3 FINANCES

### written by F. Gottardo

### 3.1 Factual information

The University of Padova is State-funded. Every year the Italian Ministry of Education, University and Research (MUR) provides it with an institutional fund (called Ordinary Financing Fund: OFF) used by all Universities to cover almost all the expenses for teaching and support staff. Resources used to pay for operating and teaching costs (derived from the OFF and tuition fees) are passed on by the University to the Faculty (Dean's Office and Departments). General expenses are covered jointly by the University, Dean's Office and Departments as shown in table 3.1. Further details of the expenses are shown in Annex 2 and all the costs referring to the Dean's office, the Departments and the Faculty of Veterinary Medicine are summarized in tables 3.1, 3.2, and figure 3.1.

Research funds allocated to the Departments derive from:

- Public Authorities such as Ministries (MUR; Ministry of Health; Ministry of Agricultural and Forestry Policies), National Research Council (NRC), the Veneto Region and the European Union.
- Several private enterprises
- Clinical and diagnostic services
- Food and feed analyses services

| Expenditure item              | University | Faculty | Departments |
|-------------------------------|------------|---------|-------------|
| Heating                       | х          |         |             |
| Gas                           | х          |         |             |
| Water                         | х          |         |             |
| Electricity                   | х          |         |             |
| Disposal of chemical waste*   | х          |         | Х           |
| Disposal of biological waste* | х          |         | х           |
| Cleaning                      | х          |         |             |
| Telephone                     | х          | Х       | х           |
| Gardening*                    | х          |         |             |
| Maintenance of facilities*    | x          |         | Х           |

**Table n° 3.1** Institutions in charge to cover general expenses of Faculties and Departments at the University of Padova. Expenses labelled as (\*) are paid for by the University and Departments and managed by the Service Interdepartmental Center (SIC), located in the Agripolis Campus. For further information on the SIC and its role in managing a budget for the FVMP, see Chapter 2.1.3.e

### 3.1.1 General Information

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

The financial data presented in this document keep into account the fact that the teaching budget is managed by the FVMP, while research funds and services are managed by the Departments. The FVMP offers various degree programs, therefore not all the resources available to the FVMP are used for supporting the costs of the Veterinary Medicine Degree Course as stated in figure 3.1. However, more than 60% of the budget assigned to the FVMP is used for the Veterinary Medicine Degree Course



Figure n°3.1 - Budget allocated to the Veterinary Medical curriculum for academic teaching staff during the period 2006-2008.

The cost for academic teaching staff is paid by the University. The allocation of those positions are decided by the academic senate based upon the number of professors who retired the year before. Due to the recent budget constraints set by the MUR, the University and, as a consequence, the Faculty will have limited possibilities for recruitment.

With regard to operating costs and general expenses for teaching activities, the University of Padova allocates to the Dean's Office and Departments on average 20% of tuition fees per year, without considering any changes implemented to improve teaching activity and practical hands-on training. This amount of budget is managed by the Faculty Council and should cover the costs for:

- Management of Faculty and Dean's office,
- Maintenance of teaching and laboratory equipment,
- Management of farm animals
- Improvement of teaching infrastructure.

The Faculty Council decides yearly how to allocate the funds assigned by the University. Its main goal is to assign adequate financial resources in order to improve quantity and quality of practical training. Another priority is to use this funds to increase the 'international activity' of the Faculty. The resources for scientific research coming from the University are limited and vary each year according to the number of projects approved by the University Research Committee. Although probably lower than what available in other EU countries, the amount of funds accessible for research at the University of Padova is the highest in the country.



In addition please specify:

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

Academic positions are assigned through public national search processes to cope with the Faculty's teaching needs. The number of people employed depends on the number and type of courses offered by the Faculty and on the number of students enrolled. Field and lab technicians and support staff involved in administration activity are recruited on the basis of the number of departments of the Faculty and the specialized facilities such as the SIC, the VTH or the University Farm. The ratio between teaching staff and support staff currently used by the University for allocating support staff positions is 3:1.

The resources for teaching are about 20% of the tuition fees paid by the students. Due to the low number of students enrolled into the Veterinary Medicine Degree Course the total budget available is not very high considering the cost foreseen for practical activities. Research funds available for departments are related to the number and type of projects approved. Despite the large number of calls for proposal available each year at the European level, few financial resources come from this channel at the FVMP. This may be due to the lack of an adequate support from the University offices. More efforts should be focused on the creation of collaborations between the Faculty with private enterprises and farmer associations working at the Regional level in order to enhance private income for research.

### Please describe:

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

At the University of Padova, tuition fees paid by Veterinary Medical students (Table 3.2) are 14% higher than those paid by the students enrolled in the Medical Faculty and 24% higher than those paid for by the students of the Faculty of Philosophy. These differences are due to a considerable amount of lab and field work during practical activities. Such a higher amount of lab and field work on one hand increases the necessary expenses for lab materials and equipment and the care and maintenance of the specific facilities (VTH, University Farm) and on the other hand limits the number of students attending the same lab session. The Academic Senate has introduced an internal rule allowing off-course<sup>6</sup> students to pay about 52% of the annual tuition fees

When the Faculty was established in 1992 the acquisition of most teaching equipments, including video and audio devices, computers, biology lab and the out-patient clinic, was made possible thanks to special funds assigned by the University. Replacement of obsolete instruments and equipment is paid for with funds that the University assigns to the Faculty each year for improving teaching infrastructure.

|                               | Veterinary Medicine | Medicine and Surgery | Philosophy |
|-------------------------------|---------------------|----------------------|------------|
| 2006-07                       | 1,402               | 1,218                | 1,087      |
| 2007-08                       | 1,471               | 1,269                | 1,118      |
| 2008-09                       | 1,485               | 1,271                | 1,119      |
| Average enrolment fees (euro) | 1,453               | 1,253                | 1,108      |

 Table n°3.2 Comparison of the average enrolment fees paid for by each student of different

 Faculties of the University of Padova

<sup>6</sup> For a definition of "Off-Course" Students the reader is referred to Chapter 9.3.1

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

Until 2008 part of the tuition fees income was used to promote innovative teaching projects, approved by a specific Committee composed of students and teachers representatives. Here are some examples of projects partially or fully funded over the years by this special program:

- Mobile unit for clinical activities on the farms
- Plastinated bovine bony pelvis for theoretical teaching of rectal palpation
- Laboratory for behavioural studies of companion animals
- Facilities for nutritional studies in dogs
- Portable ultrasonographic unit
- e-Instruction's Classroom Performance System (Clickers, see Chapter 5.1.1.3.c).

As of January 2009 a significant amount of the budget is used to support rising expenses for practical hands-on training on farm animals and equines both at the University Experimental Farm and (most importantly) at private farms and veterinary hospitals and clinics around Padova and in the Veneto Region. For this reason, the FVMP recently asked the University to raise the amount of money aimed at supporting animal rearing as well as financing activities related to TIROCINIO (see Chapter 4.1.3.f and table 4.1.10)

Equipment for research is usually purchased and managed by the Departments by compounding research grants and University funds. New initiatives such as a new biotechnology lab (created in collaboration with the Faculty of Agriculture) were funded by extraordinary grants assigned by the University.

- iv. The mechanism(s) for funding capital expenditure (e.g. building work, major items of equipment) and how decisions are taken in this matter.
- v. The mechanism(s) to provide the necessary support for building maintenance and how decisions are taken in this matter.

The SIC(Chapter 2.1.3.e) is in charge of ordinary maintenance of Agripolis' buildings and facilities. The expenses are covered by the University after approval of an annual budget prepared by the SIC. The cost for building maintenance in Agripolis is on average 3% of the cost for teaching and support staff. A detailed description of this items is reported in Annex 2 tables 1, 2 and 3. Construction of new buildings is regulated by the University building plan and depends on the needs of all faculties of the University of Padova. In the year 2008, in Agripolis, the number of classrooms was increased to meet the needs of the FVMP and the Faculty of Agriculture. The current shortage of office and laboratory space has been temporarily solved by renting part of a private building in the town of Legnaro (where, among other things, also the Companion Animal Behavioural Consultation Center (CABCC) has been established. However, a project for new Department buildings for about five million euro has been approved by the University and its construction is expected to start during the second half of 2010.

### 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):
- 30

The FVMP does not give any percentage of its income, because revenues from research grants, clinical and diagnostic activities are managed by the Departments. On the other hand, the Departments owe the University a percentage of the total revenues from research grants and contracts. The percentage depends on the type of fund received; it varies from 0%, (for financial resources used exclusively to pay salaries, scholarships, research grants, etc..) up to 12% (for third party services such as clinical diagnostic work).

Please indicate whether students:

- Pay tuition/registration fees,
- How much these are,
- How they are decided,
- How the funds are distributed.

Students of the FVMP pay their annual tuition fees twice yearly. The individual tuition fees and the total tuition fees paid for by the students enrolled in different degree courses of the Faculty of Veterinary Medicine are reported in table 3.3 and 3.4, respectively. The total amount of fees paid for by the students of the Veterinary Medical Degree Course is about 44% of the total fees paid by the students of the FVMP. Every year, the Board of Directors, based on advice from the Academic Senate, decides the amount that should be paid as tuition fees. The University assigns about 20% of tuition fees to each Faculty. Every year the Faculty Council decides the allocation of funds to each department on the basis of the number of teaching hours provided by each professor.

| Faculty                      | Degree Courses             | Type of degree course | 2006-07 | 2007-08 | 2008-09 |
|------------------------------|----------------------------|-----------------------|---------|---------|---------|
| Veterinary Medicine          | Veterinary Medicine        | 5 years curriculum    | 1,402   | 1,471   | 1,485   |
|                              | Safety and hygiene of Food |                       |         |         |         |
| Veterinary Medicine products |                            | 1st level degree      | 1,290   | 1,268   | 1,323   |
| Interfaculty                 | Health Biotechnologies     | 1st level degree      | 1,205   | 1,224   | 1,124   |
| Interfaculty                 | Animal sciences            | 1st level degree      | 1,197   | 1,269   | 1,313   |
| Interfaculty                 | Aquaculture                | 2nd level degree      | 1,309   | 1,197   | 1,012   |
| Interfaculty                 | Marine Biology             | 2nd level degree      | 1,086   | 1,072   | 1,116   |
| Interfaculty                 | Food biotechnologies       | 2nd level degree      | 1,087   | 1,174   | 1,225   |
|                              |                            | fees                  | 1,293   | 1,331   | 1,352   |

Table n°3.3 – Average enrolment fees paid for by each student of the Faculty of Veterinary Medicine of the University of Padova

| Faculty             | Degree Courses                      | Type of degree course | 2006-07   | 2007-08   | 2008-09   |
|---------------------|-------------------------------------|-----------------------|-----------|-----------|-----------|
| Veterinary Medicine | Veterinary Medicine                 | 5 years curriculum    | 715,187   | 768,024   | 800,612   |
| Veterinary Medicine | Safety and hygiene of Food products | 1st level degree      | 358,534   | 412,213   | 523,820   |
| Interfaculty        | Health Biotechnologies              | 1st level degree      |           | 181,170   | 160,672   |
| Interfaculty        | Animal Sciences & Technol           | 1st level degree      | 227,429   | 286,880   | 273,085   |
| Interfaculty        | Aquaculture                         | 2nd level degree      | 7,856     | 7,180     | 1,012     |
| Interfaculty        | Marine Biology                      | 2nd level degree      | 51,027    | 47,170    | 55,793    |
| Interfaculty        | Food biotechnologies                | 2nd level degree      | 69,593    | 82,148    | 66,135    |
|                     |                                     | Total enrolling fees  | 1,626,013 | 1,784,785 | 1,881,130 |

Table n°3.4 – Total amount of enrolment fees paid for by the students of the Faculty of Veterinary Medicine of the University of Padova

### 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 are reported in tables 4 and 5 of Annex 2. The same type of data referring to the FVMP are reported in table

3.5. The main income of the FVMP is represented by the OFF used to pay salaries and wages for teaching and support staff of the Faculty. 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 12% of the total amount of revenues. Such income is managed by the Departments and used to pay research 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 can be slowly modified by improving and enhancing collaborations with local enterprises (Slaughterhouses, Feed and Food Processing Plants, Farmer Associations). Income from third party services corresponds to 2.8% of the total amount of the budget and has increased by 30% during the 2006-2008 period. Such an income is likely to increase in the short to medium term thanks to new services and extended consultation hours (including the 24-hr emergency service) provided for by the VTH. It should be pointed out that the item "Other income" mainly includes external funds that arrive to the Dean's Office or to the Departments to provide specific education courses (Specialisation Schools, Master Courses).

|      | By the State<br>to the<br>University | By the<br>University to<br>Dean's<br>office and<br>Departments | Income<br>from any<br>other<br>source<br>to<br>Dean's<br>office | Income from<br>any other<br>source to<br>the<br>Departments | Public<br>income<br>for<br>research | Private<br>income for<br>research | Income from<br>services<br>provided | TOTAL     |
|------|--------------------------------------|--|---|---|-------------------------------------|-----------------------------------|-------------------------------------|-----------|
| Year |                                      |  |   |   |                                     |                                   |                                     |           |
| 2006 | 5,489,941                            | 644,177  | 0   | 2,660   | 724,661                             | 353,081                           | 188,377                             | 7,402,897 |
| 2007 | 6,009,278                            | 911,250  | 54,744  | 8,613   | 402,205                             | 268,049                           | 230,522                             | 7,884,661 |
| 2008 | 6,615,895                            | 1,009,559  | 51,646  | 116,278   | 758,039                             | 432,116                           | 263,245                             | 9,246,778 |





**Figure n°3.2** – Sources of income of the Faculty (Dean's Office and Departments) of Veterinary Medicine at the University of Padova (average in percentage on three years 2006 – 2008)

Unfortunately, because of the growing financial difficulties of the 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. The consequence of this decision will be a significant reduction of human resources, considering that personnel hired with short term contracts will be not confirmed.



A detailed description of the expenditure of the last 3 years of the Dean's Office and Departments is reported in tables 6 and 7 of Annex 2. The same type of data referred to the Faculty of Veterinary Medicine are reported in table 3.6. Expenditure for salaries and wages of teaching and support staff represent the greater expense (about 80%) of the budget of the FVMP. The costs for research represent around 8-10% of the total amount of the expenses, while expenses for teaching represent around 4-6% of the total budget

The expenses for building maintenance are very low, and absolutely not in any relation with the real value of the buildings and with their actual needs of maintenance. Because of the financial difficulties of the University, maintenance of the buildings is often provided only in emergency situation.

|      | Expenses for teaching<br>and support<br>staff+external staff for<br>teaching | Expenses for the<br>functioning of<br>the<br>establishment | Expenses<br>for teaching | Expenses<br>for<br>research | Expenses for<br>building<br>maintenance | Other<br>expenses | TOTAL     |
|------|--|--|--------------------------|-----------------------------|---|-------------------|-----------|
| Year |  |  |                          |                             |   |                   |           |
| 2006 | 5,779,451  | 378,806  | 234,107                  | 943,841                     | 26,997                                  | 93,139            | 7,456,340 |
| 2007 | 6,299,969  | 414,640  | 192,848                  | 706,935                     | 24,715                                  | 106,583           | 7,745,689 |
| 2008 | 6,928,194  | 489,576  | 353,229                  | 606,051                     | 36,912                                  | 130,069           | 8,544,032 |

**Table n°3.6** – Expenditure (euro) of the Faculty (Dean's Office and Departments) of Veterinary Medicine at the University of Padova



Figure n°3.3 – Item of expenses of the Faculty (Dean's Office and Departments) of Veterinary Medicine at the University of Padova (average in percentage on three years 2006 – 2008)

### 3.2 Comments

The number and impact of recent reforms of the Italian University system and the extent of the political debate over the (soon to be voted) University Law make it fairly difficult to plan ahead of time. The trend seems to go towards a fund distribution mechanism more strictly based on scientific productivity and economic efficiency. In this unstable context the FVMP is trying to sponsor/stimulate activities devoted to improve teaching such as:

• the internationalization process with courses provided in English language (see Table 5.2 and Chapter 5.1.1.3.e)

- the development of innovative research projects supporting young researchers.
- a balanced ratio between teaching hours and time dedicated to research activities
- an increase in the number of technical staff supporting students during lab work and training activities.
- collaborations with external bodies and institutions that represent a valuable resource for the practical training offered to students.

### 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. The possibility of a real change, due to limitations in public funding, is minimal. Therefore, in order to achieve the goals listed above the suggestions should be the following:

- an increase in the tuition fees paid by the students mainly addressed to support the cost of extramural practical training;
- an agreement with the University of Padova to increase support staff dedicated to practical training,
- an enhancement of the interest of private enterprises towards the Faculty through the promotion and development of new services and consultations.



### CURRICULUM

written by A. Zotti, M. Dacasto, G. Gabai, A. Piccirillo

### **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.

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).

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)

The Italian university education is regulated by the Ministerial Decree No 509 enacted on November 3<sup>rd</sup> 1999 (MD 509), which has been reviewed by the Ministerial Decree No 270 enacted on October 22<sup>nd</sup> 2004 (MD 270). Currently, the course in Veterinary Medicine at the University of Padova is in the middle of the transition from the curriculum as established by the MD 509 to that regulated by the MD 270. In particular, the 1<sup>st</sup>, 2<sup>nd</sup> and 3<sup>rd</sup> years of the curriculum follow the MD 270 dictates, while the 4<sup>th</sup> and 5<sup>th</sup> years are still under the MD 509 regulation. The aforementioned situation is described in the present chapter. Hence, when MD 509 and MD 270 give different indications the choice have been to illustrate what MD 270 states, as the degree in Veterinary Medicine will entirely conform to MD 270 over the following 2 years.

The MD 509 is the body of a vast reform of the Italian university education system following the so called "Bologna Declaration". This new law replaced the traditional undergraduate courses lasting 4 and 5 years with a two level system: the 1<sup>st</sup> level degrees lasting 3 years (and meant to be already professional degrees), and the 2<sup>nd</sup> level (specialist) degrees lasting a further 2 years. However, the courses related to Medicine and Surgery, Pharmacy, Veterinary Medicine, Architecture and Law represent an exception to this two level system, since they maintained a *curriculum* structure lasting 5 (Pharmacy, Architecture, Law and Veterinary Medicine) or 6 (Medicine and Surgery) years.

The MD 509 introduced the concept of University Learning Credits (ULC). The ULC represents the measure of the amount of 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 MD 509 established that the individual work can not be less than 13.5 hours except that in the case of activities such as experimental and practical learning. However, the 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.

At the University of Padova the amount of individual work for each ULC can be in the range between 7 and 18 hours. However for specific activities (such as practical training) the amount of individual work can be equal to 0. Current legislation (MD 270) establishes that in order to obtain the degree in Veterinary Medicine students must acquire 300 ULC distributed in a maximum of 30 examinations.

#### Chapter 4 - Curriculum

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

When considering National legislation requirements in terms of learning objectives and activities for obtaining a particular University degree, some differences between MD 509 and MD 270 can be envisaged. All curricula of different degrees obtained in Italian Universities must be defined within specific requirements called Degree Classes. In the Class of Veterinary Medicine Degree, the MD 270 grouped all learning activities in areas of disciplines (see Annex n 3). An area of disciplines is a set of subjects considered as culturally and professionally related. The MD 270 establishes the minimum number of ULC assigned to each area of disciplines divided in basic (minimum 58 ULC) and professionalizing subjects (minimum 130 ULC). Current legislation recognized also the possibility to enclose within the curriculum an adequate number of ULC for integrative (minimum 12 ULC), optional (8 ULC) and practical work (30 ULC). Moreover, the MD 270 establishes the minimum number of ULC for the preparation of the graduation thesis and the study of a foreign (EU) language.

In order to design the curriculum, the FVMP had to comply with the boundaries imposed by law, in particular by the MD 270. The veterinary curriculum was prepared in 2 steps. In the first step the class regulation was re-organized (See Annex 4) During this process the main goal was to increase the number of ULC dedicated to supervised practical training from 30 to 45 credits. Once this process was completed, the Faculty Council enacted the Course Regulation, which establishes the list of the courses and their organization in teaching modules (multi-disciplinary courses), the subject of each module and the number of ULC attributed to each course and to practical training. The Course Regulation is approved annually by the Academic Senate and becomes part of the Teaching Regulation of the University of Padova.

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

One important point in designing the curriculum is the allocation of ULC within each course. On this particular aspect, the Italian legislation has not been very precise, as the MD 270 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 Academic Senate of Padova aimed to regulate and rationalise the indications contained in the MD 270, and allowed the Faculties to introduce two types of courses: i) Mono-disciplinary courses, ii) Multi-disciplinary courses and iii) Integrated courses.

A mono-disciplinary course has only one module (part) and is assigned to one teacher who is responsible of its organization, gives most of the lectures and chairs the exam commission. However, other members of the teaching staff may give a limited number of lectures/practical activities. A Multidisciplinary course is composed by at least 2 distinct modules, of which at least one has to be of no less than 4 ULC and is taught by the responsible of the course while other module/s (which can be of less than 4 ULC) can be taught by other members of the teaching staff.

An Integrated Course is composed by 2 or more modules of no less than 4 ULC each; students are evaluated by a final single examination at the end of the teaching period or by multiple in-progress examinations. The Exam Commission is composed by at least two members and chaired by the older teacher or the one with the higher number of ULC. Modules of a Multi-disciplinary course may belong to different areas of disciplines.

The Academic Senate of the University of Padova has decided that the curriculum in Veterinary Medicine cannot encompass more than 6 Multi-disciplinary courses. In order to change or amend the curriculum, the Faculty should start a process of revision, which has to be in agreement with the regulations described above.
# 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.

According to the MD 270 the curriculum content is structured in "core subjects" (taken by every student), elective subjects (courses that allow for some degree of tracking within the curriculum), optional subjects (subjects that students may choose from the Degree Course in Veterinary Medicine or any other degree course of the entire University of Padova) and practical training (obligatory intramural and extramural work)

The current ULC system makes an estimate of the total time that every student dedicates for any activity in each subject, which is 1 ULC = 25 hours. The amount of hours dedicated to lectures/practical work for the 5 years of the Veterinary Curriculum are reported in tables n° 4.1 and 4.1.1 through 4.1.5.

The whole curriculum consists of a total of 300 ULC. However, the number of hours per ULC dedicated to theoretical training and supervised practical training is not the same for all subjects.

For core subjects, each ULC corresponds to 10 hours of in-class training (theoretical training and/or supervised practical training), as detailed in following tables in chapter 4. The rest of ULC (15 hours) is considered spent by the student for at home studying. The following modules represent exceptions (see the descriptions in table 4.1.1):

- Practical of Biomolecular Techniques: 7 hours/ULC
- Methodologies for risk analysis; Zoology; Biochemistry; Applied Biostatistics: 8 hours/ULC
- Medical physics; Molecular biology: 9 hours/ULC

In order to increase the amount of hands-on work for critical courses, additional supervised practical training (named Tirocinio), as core subjects, has been established. For these core subjects 1 ULC corresponds to 25 hours of hands-on supervised practical training that is detailed in tables as "Practical in" plus the name of the specific subject or indicated by an asterisk following the number of TIROCINIO hours for a specific subject.

With regard to the elective subjects (see Figure n° 4.1), one ULC corresponds to 8 hours of lectures, which may be of either theoretical training, supervised practical training or both. The rest of ULC (17 hours) is considered spent by the student for at home studying. In optional courses each ULC corresponds to 7 hours. The rest of ULC (18 hours) is considered spent by the student for at home studying.

# 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.

### Supervised practical training

**Laboratory and desk based work.** Includes teaching sessions where students themselves actively perform laboratory experiments, use 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.

# 4.1.2 Undergraduate curriculum followed by all students

# 4.1.2.1 Curriculum hours

This section makes a distinction between curriculum hours to be taken by every student and those offered as electives, optional and obligatory intramural and extramural work (see paragraphs 4.2., 4.3, and 4.4)

The total number of curriculum hours taken by all veterinary medical students at the FVMP is portrayed in Table n° 4.1

|        |                |          | ŀ        | Hours of in-class | Training            |          |       |       |
|--------|----------------|----------|----------|-------------------|---------------------|----------|-------|-------|
|        | Theoretical tr | aining   |          | Supervi           | sed practical train | ing      | Other | Total |
| YEAR   | Lectures       | Seminars | Self     | Laboratory        | Non-clinical        | Clinical |       |       |
|        |                |          | directed | and desk          | animal work         | work     |       |       |
|        |                |          | learning | based work        |                     |          |       |       |
| First  | 344            | 14       | 0        | 88                | 48                  | 0        | 0     | 494   |
| Second | 438            | 12       | 0        | 102               | 64                  | 0        | 0     | 616   |
| Third  | 328            | 20       | 0        | 95                | 102                 | 32       | 8     | 585   |
| Fourth | 458            | 36       | 0        | 94                | 130                 | 116      | 0     | 834   |
| Fifth  | 168            | 4        | 225      | 28                | 240                 | 362      | 0     | 1027  |
| Total  | 1736           | 86       | 225      | 407               | 584                 | 510      | 8     | 3556  |

Table n° 4.1 - Curriculum hours taken in Core Subjects by all students at the Faculty of Veterinary Medicine, University of Padova.

The total number of hours taken by veterinary medical students at the FVMP in years 1 through 5 is shown in tables 4.1.1 through 4.1.5.

|                                     | Hours of in-class Training |          |                           |                                   |                             |                  |       |       |     |  |
|-------------------------------------|----------------------------|----------|---------------------------|-----------------------------------|-----------------------------|------------------|-------|-------|-----|--|
|                                     | Theoretical trai           | ning     |                           | Su                                | pervised practical trair    | ing              |       | Total | ULC |  |
| SUBJECT                             | Lectures                   | Seminars | Self directed<br>learning | Laboratory and desk<br>based work | Non-clinical animal<br>work | Clinical<br>work | Other |       |     |  |
| Molecular Biology, Zoology,         | 96                         | 2        | 0                         | 10                                | 8                           |                  |       | 116   | 13  |  |
| Histology and Veterinary Embriology |                            |          |                           |                                   |                             |                  |       |       |     |  |
| Medical Physics and methodologies   | 40                         | 12       | 0                         |                                   |                             |                  |       | 52    | 6   |  |
| for risk analysis                   |                            |          |                           |                                   |                             |                  |       |       |     |  |
| Biochemistry                        | 80                         |          | 0                         | 21                                |                             |                  |       | 101   | 13  |  |
| Veterinary Anatomy I                | 50                         |          | 0                         | 20                                | 20                          |                  |       | 90    | 9   |  |
| Veterinary Anatomy II               | 50                         |          | 0                         |                                   | 20                          |                  |       | 70    | 7   |  |
| Veterinary Parasitology             | 28                         |          | 0                         | 12+25*                            |                             |                  |       | 65    | 5   |  |
| Total                               | 344                        | 14       | 0                         | 88                                | 48                          | 0                | 0     | 494   | 53  |  |

\*Hours of TIROCINIO (supervised practical training)

Table nº 4.1.1 - Yearly Curriculum Hours (non in EU-listed subjects) taken by All Students (Core Subjects) - First year

|   | Theoretical trai | ning     |                           | S                                 | upervised practical trair   | ning          |       | Total | ULC |
|---|------------------|----------|---------------------------|-----------------------------------|-----------------------------|---------------|-------|-------|-----|
| SUBJECT   | Lectures         | Seminars | Self directed<br>learning | Laboratory and desk<br>based work | Non-clinical animal<br>work | Clinical work | Other |       |     |
| Veterinary Microbiology and<br>Immunology       | 60               |          | 0                         | 20                                | 25*                         |               |       | 105   | 9   |
| Animal Breeding and Genetics                    | 68               |          | 0                         | 16                                |                             |               |       | 84    | 9   |
| Veterinary General and Special Physiology       | 60               |          | 0                         | 16                                | 4                           |               |       | 80    | 8   |
| Hygiene and technology of food of animal origin | 56               |          | 0                         | 14                                |                             |               |       | 70    | 7   |
| Veterinary Physiology and Ethology              | 96               |          | 0                         | 14                                | 10                          |               |       | 120   | 12  |
| Animal Feeding and Nutrition                    | 38               | 12       | 0                         | 22                                | 25*                         |               |       | 97    | 9   |
| Veterinary General Pathology                    | 60               |          | 0                         |                                   |                             |               |       | 60    | 6   |
| Total   | 438              | 12       | 0                         | 102                               | 64                          | 0             | 0     | 616   | 60  |

\*Hours of TIROCINIO (supervised practical training) **Table n° 4.1.2** - Yearly Curriculum Hours (non in EU-listed subjects) taken by All Students (Core Subjects) – Second year

|                                     | Theoretical tra | aining   |               | S                   | Supervised practical trai | ning     |       | Total | ULC |
|-------------------------------------|-----------------|----------|---------------|---------------------|---------------------------|----------|-------|-------|-----|
| SUBJECT                             | Lectures        | Seminars | Self directed | Laboratory and desk | Non-clinical animal       | Clinical | Other |       |     |
|                                     |                 |          | learning      | based work          | work                      | work     |       |       |     |
| Infectious diseases of livestock,   | 68              |          | 0             |                     | 16                        |          | 6     | 90    | 9   |
| poultry and companion animals       |                 |          |               |                     |                           |          |       |       |     |
| General pharmacology, toxicology    | 36              |          | 0             | 12                  |                           |          | 2     | 50    | 5   |
| and pharmacovigilance*              |                 |          |               |                     |                           |          |       |       |     |
| Veterinary medical semiology and    | 54              |          | 0             |                     |                           | 26       |       | 80    | 8   |
| clinical methodology                |                 |          |               |                     |                           |          |       |       |     |
| Special pharmacology and veterinary | 24              | 12       | 0             | 4                   |                           |          |       | 40    | 4   |
| chemotherapy                        |                 |          |               |                     |                           |          |       |       |     |
| General anatomical pathology and    | 10              |          | 0             | 20                  | 30                        |          |       | 60    | 6   |
| necropsy techniques                 |                 |          |               |                     |                           |          |       |       |     |
| Parasitic diseases                  | 26              |          | 0             | 14+25*              |                           |          |       | 65    | 5   |
|                                     |                 |          |               |                     |                           |          |       |       |     |
| Animal Husbandry                    | 66              | 4        | 0             | 20                  | 50*                       |          |       | 140   | 11  |
|                                     |                 |          |               |                     |                           |          |       |       |     |
| Veterinary Surgical Pathology and   | 44              | 4        | 0             |                     | 6                         | 6        |       | 60    | 6   |
| Semeiotics                          |                 |          |               |                     |                           |          |       |       |     |
| Total                               | 328             | 20       | 0             | 95                  | 102                       | 32       | 8     | 585   | 54  |

\*Hours of TIROCINIO (supervised practical training)

Table n°4.1.3 - Yearly Curriculum Hours (non in EU-listed subjects) taken by All Students (Core Subjects) – Third year

|   | Theoretical tra | ining    |                           | S                                 | upervised practical train   | ning             |       | Total | ULC |
|---|-----------------|----------|---------------------------|-----------------------------------|-----------------------------|------------------|-------|-------|-----|
| SUBJECT   | Lectures        | Seminars | Self directed<br>learning | Laboratory and desk<br>based work | Non-clinical animal<br>work | Clinical<br>work | Other |       |     |
| Obstetrics and pathology of reproduction                    | 58              |          | 0                         | 4                                 |                             | 61               |       | 123   | 8   |
| Animal Husbandry  | 70              | 14       | 0                         | 7                                 | 25                          |                  |       | 116   | 8   |
| Inspection and control of food products of animal origin    | 70              | 8        | 0                         | 6                                 | 70                          |                  |       | 154   | 10  |
| Veterinary special anatomical pathology                     | 84              |          | 0                         | 10                                | 10                          |                  |       | 104   | 8   |
| Clinical Pathology and veterinary legislation               | 62              |          | 0                         | 36                                |                             |                  |       | 98    | 7   |
| Quality of food products, Animal welfare and Animal farming | 44              | 10       | 0                         | 3                                 | 25                          |                  |       | 82    | 7   |
| Veterinary Epidemiology                                     |                 |          | 0                         | 20                                |                             |                  |       | 20    | 2   |
| Veterinary Surgery  | 70              | 4        | 0                         | 8                                 |                             | 55               |       | 137   | 9   |
| Total   | 458             | 36       | 0                         | 94                                | 130                         | 116              | 0     | 834   | 59  |

Table n°4.1.4 - Yearly Curriculum Hours (non in EU-listed subjects) taken by All Students (Core Subjects) – Fourth year

|                                    | Hours of in-class Training |          |               |                     |                           |          |       |       |     |
|------------------------------------|----------------------------|----------|---------------|---------------------|---------------------------|----------|-------|-------|-----|
|                                    | Theoretical tra            | ining    |               | S                   | upervised practical train | ning     |       | Total | ULC |
| SUBJECT                            | Lectures                   | Seminars | Self directed | Laboratory and desk | Non-clinical animal       | Clinical | Other |       |     |
|                                    |                            |          | learning      | based work          | work                      | work     |       |       |     |
| Medical clinic, Therapy and        | 54                         |          | 0             | 28                  |                           | 77       |       | 159   | 9   |
| Radiology                          |                            |          |               |                     |                           |          |       |       |     |
| Clinics in Reproduction            | 40                         |          | 0             |                     | 15                        | 40       |       | 95    | 6   |
| Veterinary surgical clinic         | 74                         | 4        | 0             |                     |                           | 45       |       | 123   | 8   |
| Practical in Anatomical Pathology, |                            |          |               |                     | 75*                       |          |       | 75    | 3   |
| Poultry and Rabbit pathology       |                            |          |               |                     |                           |          |       |       |     |
| Practical in Swine Clinics and     |                            |          |               |                     |                           | 25*      |       | 25    | 1   |
| Husbandry                          |                            |          |               |                     |                           |          |       |       |     |
| Practical in Cattle Clinics and    |                            |          |               |                     |                           | 25*      |       | 25    | 1   |
| Husbandry                          |                            |          |               |                     |                           |          |       |       |     |
| Practical in Equine Clinics        |                            |          |               |                     |                           | 50*      |       | 50    | 2   |
| Practical in Small Animal Clinics  |                            |          |               |                     |                           | 100*     |       | 100   | 4   |
| Practical in Food Hygiene          |                            |          |               |                     | 125*                      |          |       | 125   | 5   |
| Practical in Animal Science        |                            |          |               |                     | 25*                       |          |       | 25    | 1   |
| Final Thesis**                     |                            |          | 225           |                     |                           |          |       | 225   | 9   |
| Total                              | 168                        | 4        | 225           | 28                  | 240                       | 362      | 0     | 1027  | 49  |

\*Hours of TIROCINIO (supervised practical training)

\*\*Although most of the thesis are finalized during the fifth year, very frequently students begin thesis work at the third/forth year

Table n°4.1.5 - Yearly Curriculum Hours (non in EU-listed subjects) taken by All Students (Core Subjects) - Fifth year

|                            | Theoret  | ical training |                           | Su                                | pervised practical trainir  | Ig               |       | Total   |
|----------------------------|----------|---------------|---------------------------|-----------------------------------|-----------------------------|------------------|-------|---------|
| SUBJECT                    | Lectures | Seminars      | Self directed<br>learning | Laboratory and desk<br>based work | Non-clinical animal<br>work | Clinical<br>work | Other |         |
| Basic subjects             | 98       | 12            | 0                         | 6                                 | 0                           | 0                | 0     | 116     |
| Basic sciences             | 614      | 16            | 0                         | 133                               | 107                         | 0                | 6     | 876     |
| Clinical sciences          | 698      | 8             | 0                         | 156                               | 101                         | 527              | 0     | 1490    |
| Animal production          | 218      | 68            | 0                         | 58                                | 156                         | 0                | 0     | 500     |
| Food hygiene/Public health | 106      | 28            | 0                         | 20                                | 195                         | 0                | 0     | 349     |
| Professional knowledge     |          |               |                           |                                   |                             |                  |       |         |
| Total                      | 1734     | 132           | 0                         | 373                               | 559                         | 527              | 6     | 3331*** |

The total number of curriculum hours in EU-listed Core Subjects (subjects taken by all students) is shown in Table n° 4.1.5.a.

Table nº 4.1.5.a - Curriculum hours in EU-listed subjects offered and to be taken, as core subjects, by all students at the Faculty of Veterinary Medicine, University of Padova.

\*\*\* The total number of hours does not correspond to the total number of hours reported in table 4.1 because hours for final thesis (225) have not been included in any EU-listed core subject.

|         | Theoretical training |          |               | Si                  | upervised practical trair | ing           |       | Total | ULC |
|---------|----------------------|----------|---------------|---------------------|---------------------------|---------------|-------|-------|-----|
| SUBJECT | Lectures             | Seminars | Self directed | Laboratory and desk | Non-clinical animal       | Clinical work | Other |       |     |
|         |                      |          | learning      | based work          | work                      |               |       |       |     |

| Basic Subjects              |    |    |   |   |   |   |   |     |    |
|-----------------------------|----|----|---|---|---|---|---|-----|----|
| Physics <sup>A</sup>        | 28 | 8  | 0 |   |   |   |   | 36  | 4  |
| Animal Biology <sup>B</sup> | 40 |    | 0 |   |   |   |   | 40  | 5  |
| Biomathematics <sup>C</sup> | 30 | 4  | 0 | 6 |   |   |   | 40  | 5  |
| Total                       | 98 | 12 | 0 | 6 | 0 | 0 | 0 | 116 | 14 |

Table n°4.1.6 - Curriculum Hours in EU-Listed subjects taken by All Students (Core Subjects).

<sup>A</sup>: Module: "Medical Physics" (4 ULC – 1 ULC = 9 hours) of the Multi-disciplinary course: "Medical Physics and Methodologies for risk analysis", Ist year
 <sup>B</sup>: Module: "Zoology" (5 ULC – 1 ULC = 8 hours) of the Multi-disciplinary course: "Molecular Biology, Zoology, Histology and Veterinary Embryology", Ist year
 <sup>C</sup>: Module: "Methodologies for risk analysis" (2 ULC – 1 ULC = 8 hours) of the Multi-disciplinary course: "Molecular Biology, Zoology, Histology and Veterinary Embryology", Ist year
 <sup>C</sup>: Module: "Methodologies for risk analysis" (2 ULC – 1 ULC = 8 hours) of the Multi-disciplinary course: "Medical Physics and Methodologies for risk analysis", Ist year + Module: "Applied Biostatistics" (3 ULC – 1 ULC = 8 hours) of the Multi-disciplinary course: "Animal Breeding and Genetics", IInd year

|   | Theoretical tra | ining    |               | S                   | upervised practical train | ning     |       | Total | ULC |
|---|-----------------|----------|---------------|---------------------|---------------------------|----------|-------|-------|-----|
| SUBJECT   | Lectures        | Seminars | Self directed | Laboratory and desk | Non-clinical animal       | Clinical | Other |       |     |
|   |                 |          | learning      | based work          | work                      | work     |       |       |     |
| Basic Sciences  |                 |          |               |                     |                           |          |       |       |     |
| Anatomy (incl. histology and embryology) <sup>A</sup>   | 130             | 2        | 0             | 20                  | 48                        |          |       | 200   | 20  |
| Physiology <sup>B</sup>   | 126             |          | 0             | 26                  | 8                         |          |       | 160   | 16  |
| Biochemistry, cellular and molecular biology c  | 116             |          | 0             | 21                  |                           |          |       | 137   | 17  |
| Genetics (incl. molecular genetics) <sup>D</sup>  | 50              |          | 0             | 10                  |                           |          |       | 60    | 6   |
| Pharmacology & Pharmacy E + F*  | 60              | 12       | 0             | 16                  |                           |          | 2     | 90    | 9   |
| Toxicology (incl. environmental<br>pollution) given with Pharmacology &<br>Pharmacy course<br>E + F * See Footnotes |                 |          |               |                     |                           |          |       |       |     |
| Microbiology (incl. virology, bacteriology and mycology, and infectious diseases) <sup>G</sup>                      | 90              | 2        | 0             | 8                   | 26+25*                    |          | 4     | 155   | 14  |
| Immunology <sup>H</sup>   | 28              |          | 0             | 12                  |                           |          |       | 40    | 4   |
| Epidemiology (including scientific and  | 0               | 0        | 0             | 20                  |                           |          |       | 20    | 2   |
| technical information and   |                 |          |               |                     |                           |          |       |       |     |
| documentation methods) <sup>1</sup>   |                 |          |               |                     |                           |          |       |       |     |
| Professional Ethics L   | 14              |          | 0             |                     |                           |          | -     | 14    | 1   |
| Total   | 614             | 16       | 0             | 133                 | 107                       | 0        | 6     | 876   | 88  |

\*Hours of TIROCINIO

Table n°4.1.7

<sup>A</sup> Module: "Histology and Veterinary Embryology" (4 ULC – 1 ULC= 10 hours) of the Multi-disciplinary course: Molecular Biology, Zoology, Histology and Veterinary Embryology, Ist year; + Modules: "Splanchnology" (3 ULC – 1 ULC = 10 hours), "Veterinary Microscopic Anatomy" (2 ULC – 1 ULC = 10 hours), "Special Veterinary Anatomy" (4 ULC – 1 ULC = 10 hours) of the Multidisciplinary course: "Systematic and comparative veterinary anatomy I", Ist year; + Modules: "Comparative Neuroanatomy" (3 ULC – 1 ULC = 10 hours), "Anatomy of the Iocomotor apparatus" (4 ULC – 1 ULC = 10 hours) of the Multi-disciplinary course: "Systematic and comparative veterinary anatomy II", Ist year.

<sup>B</sup> Modules: "General Physiology and Body Fluid Physiology" (4 ULC – 1 ULC = 10 hours) and "Physiology of the Nervous System and of the Digestive System" (4 ULC – 1 ULC = 10 hours) of the Multi-disciplinary course: "Veterinary General and Special Physiology", IInd year + Modules: "Circulatory, Respiratory and Renal Physiology" (4 ULC – 1 ULC = 10 hours) and "Physiology of Reproduction, Growth andThermoregulation" (4 ULC – 1 ULC = 10 hours) of the Multi-disciplinary course: "Veterinary physiology", IInd year.

<sup>c</sup> Modules: "Laboratories of Biomolecular Techniques" (3 ULC – 1 ULC = 7 hours), "Chemistry of Biomolecules" (2 ULC – 1 ULC = 8 hours); "Principles of Biochemistry" (6 ULC – 1 ULC = 8 hours), "Metabolic Biochemistry" (2 ULC – 1 ULC = 8 hours) of the Multi-disciplinary course: Biochemistry, Ist year, + Module "Molecular Biology" (4 ULC – 1 ULC = 9 hours) of the Multi-disciplinary course: Molecular Biology, Zoology, Histology and Veterinary Embryology, Ist year

<sup>D</sup> Module: Applied Animal Genetics (6 ULC = 1 ULC = 10 hours) of the Multi-disciplinary course: "Animal Breeding and Genetics", IInd year

E+F: The two subjects can not be separated in our educational system\* Module: "General and Molecular Pharmacology and Toxicology" (4 ULC – 1 ULC = 10 hours) of the Multi-disciplinary course: General Pharmacology, toxicology and pharmacovigilance", III year + Module: "Pharmacokinetic models and pharmacovigilance" (1 ULC – 1 ULC = 10 hours) of the Multi-disciplinary course: General Pharmacology, toxicology and pharmacovigilance", III year; + Module: "Special pharmacology and veterinary chemotherapy" (4 ULC – 1 ULC = 10 hours) of the Multi-disciplinary course: "Special pharmacology and veterinary chemotherapy", III year + Module: "Special pharmacology and veterinary chemotherapy" (4 ULC – 1 ULC = 10 hours) of the Multi-disciplinary course: "Special pharmacology and veterinary chemotherapy", III year

<sup>G</sup> Module: "Veterinary Bacteriology and Virology" (4 ULC – 1 ULC = 10 hours) of the Multi-disciplinary course: Veterinary Microbiology and Immunology, IInd year, + Module: "Infectious disease of livestock and companion animals" (5 ULC – 1 ULC = 10 hours) of the Multi-disciplinary course: "Infectious disease of livestock, poultry and companion animals", III year; + Module: "Poultry Infectious Disease" (4 ULC – 1 ULC = 10 hours) of the Multi-disciplinary course: "Infectious disease of livestock, poultry and companion animals", III year; + Module: "Poultry Infectious Disease" (4 ULC – 1 ULC = 10 hours) of the Multi-disciplinary course: "Infectious disease of livestock, poultry and companion animals", III year; + Module: "Poultry Infectious Disease" (4 ULC – 1 ULC = 10 hours) of the Multi-disciplinary course: "Infectious disease of livestock, poultry and companion animals", III year; + Module: "Poultry Infectious Disease" (4 ULC – 1 ULC = 10 hours) of the Multi-disciplinary course: "Infectious disease of livestock, poultry and companion animals", III year; + Module: "Poultry Infectious Disease" (4 ULC – 1 ULC = 10 hours) of the Multi-disciplinary course: "Infectious disease of livestock, poultry and companion animals", III year; + Module: "Poultry Infectious Disease" (4 ULC – 1 ULC = 10 hours) of the Multi-disciplinary course: "Infectious disease of livestock, poultry and companion animals", III year; + Module: "Poultry Infectious Disease" (4 ULC – 1 ULC = 10 hours) of the Multi-disciplinary course: "Infectious disease of livestock, poultry and companion animals", III year; + Module: "Poultry Infectious Disease" (4 ULC – 1 ULC = 10 hours) of the Multi-disciplinary course: "Infectious disease of livestock, poultry and companion animals", III year; + Module: "Poultry Infectious Disease" (4 ULC – 1 ULC = 10 hours) of the Multi-disciplinary course: "Infectious disease of livestock, poultry and companion animals", III year; + Module: "Poultry Infectious Disease" (4 ULC – 1 ULC = 10 hours) of the Multi-disciplinary cour

<sup>H</sup> Module: "Ecology of pathogens, immunology and laboratory diagnostic" (4 ULC – 1 ULC = 10 hours) of the Multi-disciplinary course: Veterinary Microbiology and Immunology, IInd year <sup>E</sup> Module: "Veterinary Epidemiology" (2 ULC – 1 ULC = 10 hours), IVth year;

L: Module: "Veterinary Legislation e Deontology" (1 ULC – 1 ULC = 14 hours) of the Multi-disciplinary course "Clinical Pathology and Veterinary Legislation", IVth year

|                                   | Theoretical trai | ining    |               | S                   | Supervised practical training |               |       |     |    |
|-----------------------------------|------------------|----------|---------------|---------------------|-------------------------------|---------------|-------|-----|----|
| SUBJECT                           | Lectures         | Seminars | Self directed | Laboratory and desk | Non-clinical animal           | Clinical work | Other |     |    |
|                                   |                  |          | learning      | based work          | work                          |               |       |     |    |
| Clinical Sciences                 |                  |          |               |                     |                               |               |       |     |    |
| Obstetrics <sup>A</sup>           | 24               |          | 0             |                     |                               | 4             |       | 28  | 2  |
| Pathology (including pathological | 174              |          | 0             | 40                  | 30+50*                        |               |       | 294 | 24 |
| anatomy) <sup>B</sup>             |                  |          |               |                     |                               |               |       |     |    |

| Parasitology <sup>c</sup>             | 54  |   | 0 | 26+50* |     |             |   | 130  | 10  |
|---------------------------------------|-----|---|---|--------|-----|-------------|---|------|-----|
| Clinical medicine and a surgery       | 308 | 8 | 0 | 8      | 6   | 78          |   | 408  | 32  |
| (including anaesthetics) <sup>D</sup> |     |   |   |        |     |             |   |      |     |
| Field veterinary medicine             |     |   | 0 |        |     | 175 + 225*1 |   | 400  | 16  |
| (ambulatory clinics) Obligatory       |     |   |   |        |     |             |   |      |     |
| Intramural and Extramural Clinical    |     |   |   |        |     |             |   |      |     |
| Work                                  |     |   |   |        |     |             |   |      |     |
| Diagnostic Imaging (including         | 34  |   | 0 | 28     |     |             |   | 62   | 5   |
| Radiology) <sup>E</sup>               |     |   |   |        |     |             |   |      |     |
| Reproduction and reproductive         | 76  |   | 0 | 4      | 15  | 45          |   | 140  | 10  |
| disorders F                           |     |   |   |        |     |             |   |      |     |
| Veterinary state medicine and public  | 28  |   | 0 |        |     |             |   | 28   | 2   |
| health <sup>G</sup>                   |     |   |   |        |     |             |   |      |     |
| Total                                 | 698 | 8 | 0 | 156    | 101 | 527         | 0 | 1490 | 101 |

\*Hours of TIROCINIO

<sup>1</sup> These hours of TIROCINIO have been arbitrarily indicated under "Field veterinary medicine" even if some of them are actually attended by the students in other EU listed subjects such as clinical medicine and surgery, diagnostic imaging and reproduction and reproductive disorders.

Table nº4.1.8 A: Module: "Obstetrics and Gynaecology" (2 ULC - 1 ULC = 14 hours) of the Multi-disciplinary course: "Obstetrics and Pathology of Reproduction", IVth year

<sup>B</sup>: Including the modules: "Veterinary General Pathology" (5 ULC – 1 ULC = 10 hours) and "Veterinary Immunopathology" (1 ULC - 1 ULC = 10 hours) of the Multi-disciplinary course "Veterinary General Pathology", IInd year; including the modules: "Special Anatomical pathology1" (2 ULC - 1 ULC = 13 hours), "Special Anatomical pathology2" (2 ULC – 1 ULC = 13 hours), and "Special Anatomical pathology3" (2 ULC – 1 ULC = 13 hours) of the Multi-disciplinary course "Veterinary General Pathology3" (2 ULC – 1 ULC = 13 hours), and "Special Anatomical pathology3" (2 ULC – 1 ULC = 13 hours) of the Multi-disciplinary course "Veterinary Special anatomical pathology", IVth year; + Module: "Clinical Pathology" (2 ULC – 1 ULC = 10 hours) of the Multi-disciplinary course "Veterinary Medical Semiology and clinical methodology", III year; + Module: "Veterinary general anatomical pathology, histopathology and cytopathology" (4 ULC – 1 ULC = 10 hours) of the Multi-disciplinary course: "General anatomical pathology", III year; + Module: "Necropsy techniques" (2 ULC – 1 ULC = 10 hours) of the Multi-disciplinary course: "General anatomical pathology", III year; + Module: "Necropsy techniques" (2 ULC – 1 ULC = 10 hours) of the Multi-disciplinary course: "General anatomical pathology", III year; + Module:

<sup>c</sup> Including the course: "Veterinary Parasitology" (4 ULC – 1 ULC = 10 hours), Ist year; Module: "Parasitic diseases" (4 ULC - ULC = 10 hours) of the Multi-disciplinary course: "Parasitic diseases", III year;

<sup>D:</sup> Including the modules: "Internal Medicine" (2 ULC – 1 ULC = 14 hours) and "Medical Therapy" (1 ULC – 1 ULC = 14 hours) of the Multi-disciplinary course: "Medical Clinic, Therapy and Radiology", Vth year; Including the modules: "Veterinary surgical clinic" (4 ULC – 1 ULC = 14 hours) and "Veterinary Neurosurgery" (3 ULC – 1 ULC = 14 hours) of the Multi-disciplinary course: "Clinical Pathology and Veterinary Surgical clinic", Vth year; Including the modules: "Veterinary Anesthesiology" (4 ULC – 1 ULC = 14 hours) of the Multi-disciplinary course: "Clinical Pathology and Veterinary Legislation", IVth year; Including the modules: "Veterinary Anesthesiology" (3ULC – 1 ULC = 14 hours), and "Veterinary Traumatology" (2 ULC – 1 ULC = 14 hours) and Veterinary Surgery (3 ULC – 1 ULC = 14 HOURS) of the Multi-disciplinary course: "Veterinary Surgery", IVth year + Module: "Veterinary Medical Semiology" (4 ULC – 1 ULC = 10 hours) of the Multi-disciplinary course: "Veterinary Medical Semiology and clinical methodology", III year; + Mono-disciplinary Course: "Veterinary Surgical Pathology and semeiotics" (6 ULC – 1 ULC = 10 hours), III year
<sup>E:</sup> Modules: "Diagnostic Imaging" (1 ULC - ULC = 14 hours), and "Veterinary Radiology and Nuclear Medicine" (2 ULC – 1 ULC = 14 hours) of the Multi-disciplinary course: Medical Clinic, Therapy and Radiology, Vth year + Module: "Principles of diagnostic imaging and endoscopy" (2 ULC – 1 ULC = 10 hours) of the Multi-disciplinary course: "Veterinary Medical Semiology of the Multi-disciplinary course: Medical Clinic, Therapy and Radiology, Vth year + Module: "Principles of diagnostic imaging and endoscopy" (2 ULC – 1 ULC = 10 hours) of the Multi-disciplinary course: "Veterinary Medical Semiology of the Multi-disciplinary course: "Veterinary Medical Semiology of the Multi-disciplinary course: Medical Clinic, Therapy and Radiology, Vth year + Module: "Principles of diagnostic imaging and endoscopy" (2 ULC – 1 ULC = 10 hours) of the Multi-disciplinary course: "Veterinary Medical Semi

clinical methodology". III vear:

F: Modules: "Reproduction and reproductive diseases of farm animals" (3 ULC - 1 ULC = 14 hours) and "Veterinary Andrology and Clinics in Veterinary Andrology" (2 ULC - 1 ULC = 14 hours) of the Multi-disciplinary course "Obstetrics and Pathology of Reproduction", IVth year; Including the Modules: "Reproduction in Pets (dog, cat and exotic mammals" (3 ULC - 1 ULC = 14 hours) and "Equine Reproduction" (1ULC - 14 hours) and "Biotechnolgies in animal reproduction" (1ULC - 1 ULC = 14 hours) of the Multi-disciplinary course: "Clinics in Reproduction", Vth year G: Module: "Forensic medicine and animal protection" (2 ULC - 1 ULC = 14 hours) of the Multi-disciplinary course "Clinical Pathology and Veterinary Legislation", IVth year

| Theoretical training                        |          |          |                           | Supervised practical training     |                             |                  |       | Total | ULC |
|---|----------|----------|---------------------------|-----------------------------------|-----------------------------|------------------|-------|-------|-----|
| SUBJECT                                     | Lectures | Seminars | Self directed<br>learning | Laboratory and desk<br>based work | Non-clinical animal<br>work | Clinical<br>work | Other |       |     |
| Animal Production                           |          |          |                           |                                   |                             |                  |       |       |     |
| Animal Production A*                        | 36       | 24       | 0                         | 30                                | 50*                         |                  |       | 140   | 11  |
| Animal Nutrition <sup>B</sup>               | 26       | 8        | 0                         | 6                                 | 25*                         |                  |       | 65    | 5   |
| Agronomy <sup>c</sup> *                     | 12       | 12       | 0                         | 8                                 |                             |                  |       | 32    | 4   |
| Rural Economics <sup>c*</sup>               |          |          |                           |                                   |                             |                  |       | 0     |     |
| Animal husbandry A*                         | 114      | 24       | 0                         | 10                                | 50+25*                      |                  |       | 223   | 16  |
| Animal ethology and protection <sup>D</sup> | 30       |          | 0                         | 4                                 | 6                           |                  |       | 40    | 4   |
| Total                                       | 218      | 68       | 0                         | 58                                | 156                         | 0                | 0     | 500   | 40  |

\*Hours of TIROCINIO

#### Table n°4.1.9

A\*: The two subjects cannot be separated in our system. Including modules: "Animal husbandry" (5 ULC – 1 ULC = 10 hours) of the Multi-disciplinary course: "Animal husbandry", III year; + Module: "Animal welfare and food quality" (4 ULC – 1 ULC = 10 hours) of the Multi-disciplinary course: "Animal husbandry", III year;

<sup>B</sup>: Modules: "Animal Feeding and Nutrition" (4 ULC – 1 ULC = 10 hours),

C: The two subjects cannot be separated in our system. Module: "Crop Production" (4 ULC - 1 ULC = 8 hours) of the Multi-disciplinary course "Animal feeding and nutrition, IInd year

D: Module: "Veterinary Ethology and Animal Welfare" (4 ULC - 1 ULC = 10 hours) of the Multi-disciplinary course "Veterinary Physiology and Ethology", Ind year;

|  | Theoretical tra | ining    |                           | S                                 | upervised practical trair   | ning             |       | Total | ULC |
|--|-----------------|----------|---------------------------|-----------------------------------|-----------------------------|------------------|-------|-------|-----|
| SUBJECT  | Lectures        | Seminars | Self directed<br>learning | Laboratory and desk<br>based work | Non-clinical animal<br>work | Clinical<br>work | Other |       |     |
| Food Hygiene/Public health   |                 |          |                           |                                   |                             |                  |       |       |     |
| Inspection and control of animal foodstuffs or foodstuffs of animal origin and the respective feedstuff production unit <sup>A</sup> | 70              | 8        | 0                         | 6                                 | 70+25*                      |                  |       | 179   | 11  |
| Food Hygiene and technology <sup>B</sup>   | 36              | 20       | 0                         | 14                                |                             |                  |       | 70    | 7   |
| Food science including legislation <sup>A</sup>  |                 |          |                           |                                   |                             |                  |       | 0     |     |
| Practical work (including practical work in places where slaughtering and processing of foodstuffs takes                             |                 |          | 0                         |                                   | 100*                        |                  |       | 100   | 4   |

| place) |     |    |   |    |     |   |   |     |    |
|--------|-----|----|---|----|-----|---|---|-----|----|
| Total  | 106 | 28 | 0 | 20 | 195 | 0 | 0 | 349 | 22 |

\*Hours of TIROCINIO

Table n°4.1.10

A: Module: "Chemistry and Biochemistry of Human Food" (2ULC – 1 ULC = 13 hours) and "Veterinary Inspection of Food Products of Animal Origin" (6ULC – 1 ULC = 13 hours) of the Multidisciplinary course: "Inspection and Control of Food Products of Animal Origin", IVth year.

B: Module: "Food Hygiene and Technology" (4 ULC – 1 ULC = 10 hours) and "Industries and Food Quality Control" (3 ULC – 1 ULC = 10 hours) of the Multi-disciplinary course "Hygiene and Technology of Food of Animal Origin, IInd year

**4.1.3.a** Organization of Practical Training. As mentioned before, in order to increase the amount of hands-on work for students a specific practical training supervised activity called TIROCINIO has been established in the Degree Course of Veterinary Medicine. Students of the old curriculum (MD 509) – 4<sup>th</sup> and 5<sup>th</sup> year have to acquire 17 ULC of TIROCINIO corresponding to 425 hours of practical hands-on training performed under the supervision of a Faculty member with a low teacher:student ratio (1:1 to 1:4). Students of the new curriculum (MD 270) – 1<sup>st</sup>, 2<sup>nd</sup>, and 3<sup>rd</sup> year have to acquire 6 ULC of TIROCINIO corresponding overall to 150 hours of practical hands-on activity performed as described above.

As mentioned earlier in the chapter, the Degree Course is in the middle of the transition from MD 509 to MD 270. For both curricula, TIROCINIO has to be performed intramural and extramural, but always under the supervision of a Faculty member. The only exception is the TIROCINIO performed in regional slaughterhouses, milk and food processing plants, fish markets and public health offices where the supervision of the activity is guaranteed by state veterinarians (Tables 4.1.11).

Whereas TIROCINIO for Pathology and Parasitology is done entirely intramural, TIROCINIO for other disciplines is carried out intra- and extramurally. We want to emphasize that <u>extramural activity</u> (<u>external activity</u>) indicated as TIROCINIO is always carried out under the supervision of Faculty staff (<u>veterinarians</u>) hired specifically for this activity. Further to this, students have to perform 7 (MD 509) or 5 (MD 270) ULC of extramural unsupervised practical activity.

| Groups of<br>Disciplines | Groups of Where Training is<br>Disciplines performed |                                 | N° of ULC for students of<br>the new curriculum 1 <sup>st</sup> 2 <sup>nd</sup><br>and 3 <sup>rd</sup> year MD 270) |  |  |
|--------------------------|--|---------------------------------|---|--|--|
|                          |  | Practical training<br>ULC/hours | Practical training<br>ULC/hours   |  |  |
| Pathology                | Intramural   | 2/50                            | 0   |  |  |
| Food Inspection          | Intramural   | 1/25                            | 0   |  |  |
| and Food Hygiene         | Extramural   | 4/100                           | 0   |  |  |
| Poultry/Rabbit           | Intramural   | 0.4/10                          | 0   |  |  |
| Diseases                 | Extramural   | 0.6/15                          | 0   |  |  |
| Parasitalagy             | Intramural   | 0                               | 2/50  |  |  |
| Falasitology             | Extramural   | 0                               | 0   |  |  |
| Small Animal             | Intramural   | 4/100                           | 0   |  |  |
| Clinics                  | Extramural   | 0                               | 0   |  |  |
| Equipo Clinico           | Intramural   | 0                               | 0   |  |  |
|                          | Extramural   | 2/50                            | 0   |  |  |
| Cattle Clinics and       | Intramural   | 0                               | 0   |  |  |
| Husbandry                | Extramural   | 1/25                            | 0   |  |  |
| Swine Clinics and        | Intramural   | 0                               | 0   |  |  |
| Husbandry                | Extramural   | 1/25                            | 0   |  |  |
| Animal Science           | Intramural   | 1/25                            | 3/75  |  |  |
| Animal Science           | Extramural   | 0                               | 0   |  |  |
| Microbiology             | Intramural   | 0                               | 0   |  |  |
| wiciobiology             | Extramural   | 0                               | 1/25  |  |  |
| Total                    |  | 17                              | 6   |  |  |

**Table n° 4.1.11**– Disciplines in which obligatory Practical Training called TIROCINIO is performed for students at the Faculty of Veterinary Medicine of the University of Padova. Students who are registered in their 2<sup>nd</sup> through 5<sup>th</sup> year during the current (2009-2010) academic year (and therefore are following the old and new curriculum) must perform a total amount of 23 ULC of practical training. Each ULC is calculated as 25 hours of practical activity.

The teaching activity and the assistance given by the supervisors to the students during practical hands-on training are considered of strategic importance for the training of veterinary medical students at the FVMP. Extramural TIROCINIO is considered particularly important because: a) it exposes students to the professional reality, b) let the students practice clinical procedures which are relevant for acquiring day-1 skills and c) allow the students to perform professional activity in an integrated manner. Students are frequently informally interviewed on the outcome of their practical activities to check the performance of the supervisors.

**4.1.3** *b* Coordination of TIROCINIO – The TIROCINIO Committee composed by the President of the DCC and by the coordinators of each group of disciplines (Table n° 5.1) is responsible for coordination and general organization of TIROCINIO. The activities carried out by this Committee include:

- formulating proposals and approval of new external structures; assessing the requirements for accreditation and proposing removal of accreditation from structures that do not comply with standards of quality of teaching
- keeping students updated on the schedule of the TIROCINIO;
- checking consistency between activities performed by the student and corresponding learning objectives;
- evaluating whether the personal TIROCINIO Logbook of each student (Annex n° 5) has been filled in as required;
- promoting modifications to the present Regulation.

**4.1.3.***c.* Admission Requirements for TIROCINIO - At the beginning of the first year of the Veterinary Medicine Course the DCC provides a compulsory training course to educate students on how to comply with the national law n. 626/1994 on health and safety in the working place. Attendance is compulsory and passing the final exam is a prerequisite for the admission to the TIROCINIO. The Dean's Office provides a documentation attesting the final examination and the student has the duty to show the documentation if required by the supervisors of the practical activities. A second, similar course is organized for those students who for whichever acceptable reason could not attend the above course during the first year.

**4.1.3.d.** *Practical Training abroad* - Students are also allowed to perform their training activities at foreign Universities. Specific agreements on students' mobility have been signed by some foreign Universities and the FVMP. Students have to apply for admission to a practical training abroad two months ahead of time. The application form includes the program of the learning activities that the student is going to attend at the foreign facility. The program will be evaluated by the coordinator of the group of discipline and the professor in charge of the international exchange program. If the evaluation is positive the program is approved 30 days prior to departure.

**4.1.3.e** *TIROCINIO schedule* - TIROCINIO starts during the first semester of the second year and finishes at the end of the fifth year. A tight schedule (CALENDAR) is given to the students prior to the beginning of each semester. The Calendar is based on the rotation of groups of students composed by from 1 to 4 students depending on the specific group of disciplines. (See Annex 6 calendar 1<sup>st</sup> macrogroup and calendar 2<sup>nd</sup> macrogroup TIROCINIO year 2009/2010) Students are given the possibility to change the assigned group for acceptable reasons.

Following completion of TIROCINIO, students must submit to the Dean's Office all the documentation of their training signed by all supervisors involved in the specific activities. The Documentation is then transmitted to the President of DCC who will verify and give the final approval of the TIROCINIO activities.

A certification that the student has successfully completed her/his TIROCINIO requirements is then issued by the Dean's Office, and the student's record is upgraded with the relative number of ULC. (Annex n.7)

Students who do not complete TIROCINIO activities are not allowed to complete their degree curriculum.

#### **4.1.3.** *f* Structures involved in TIROCINIO

1) Practical in Small Animal Clinics: students attend 4 ULC in a period of 3 weeks at the Veterinary Teaching Hospital of the FVMP. During this period students must acquire adequate practical knowledge in the broad fields of small animal internal medicine, surgery, and reproduction and intensive care (see Annex n°5 TIROCINIO Logbook).

2) Practical in Cattle Clinics: students attend 1 ULC in a period of 1 week, in part at the teaching facilities of the FVMP (University Farm and Veterinary Teaching Hospital) and in part at private farms. During this period students must acquire adequate practical knowledge in ruminant clinics as listed in the TIROCINIO Logbook (see Annex n°5 TIROCINIO Logbook).

3) Practical in Equine Clinics: students attend 2 ULC in a period of 2 weeks, one at private farms ("Tieppo Srl" and "Intermizoo") and one at a private clinic ("Centro Medico Equino"). During this period students must acquire adequate knowledge in the field of equine clinics as listed in the TIROCINIOLogbook (see Annex n° 5 TIROCINIO Logbook).

4) Practical in Swine Clinics and Husbandry: students attend 1 ULC in a period of 1 week at private farms (i.e. "Azienda Agricola Milani"). During this period students must acquire adequate practical knowledge in the field of swine clinics and husbandry as listed in the TIROCINIOLogbook (see Annex n° 5 TIROCINIO Logbook).

5) Practical in Food Hygiene: students attend 5 ULC in a period of 5 weeks, one at the teaching facilities of the FVMP and four at one of the Regional Public Health Bodies with which the faculty has an official agreement. During this period students must acquire adequate practical knowledge in the field of the Food Hygiene as listed in the TIROCINIOLogbook (see Annex n° 5 TIROCINIO Logbook).

6) Practical in Animal Science: students attend a total of 4 ULC. 4 ULC equal to a period of four weeks are attended at the University Farm. During this period students must acquire adequate practical knowledge in the field of Animal Science (see Annex n°5 TIROCINIO Logbook).

7) Practical in Pathology: students attend 2 ULC in a period of 2 weeks done in the necropsy hall of the FMVP. Students must acquire adequate practical knowledge of diagnostic anatomical pathology as listed in the TIR Logbook. (see Annex n°5 TIROCINIO Logbook).

8) Practical in Poultry and Rabbit diseases: students attend a total of 1 ULC. Two days are spent at the facilities of the FMVP, one day at a private rabbit farm ("Azienda Agricola Mesenello Nazzareno") and two days at a private poultry farm ("Azienda Agricola Berica") students must acquire adequate practical knowledge in the field of poultry and rabbit diseases as listed in TIROCINIO Logbook. (see Annex n° 5 TIROCINIO Logbook).

9) Practical in Microbiology: students attend 1 ULC at the Experimental Zooprophilactic Institute (EZI). Students must acquire adequate practical knowledge in the field of diagnostic microbiology as listed in TIROCINIOLogbook. (see Annex n° 5 TIROCINIO Logbook).

10) Practical in Parasitology: students attend 2 ULC at the facilities of FVMP. Students must acquire adequate knowledge in the field of diagnostic parasitolgy as listed in the TIROCINIO Logbook. (see Annex n° 5 TIROCINIO Logbook).

Each student can add in his/her personal Logbook other optional activities besides the compulsory ones performed during TIROCINIO. Students are also required to answer a questionnaire at the end of TIROCINIO to evaluate difficulties encountered and to improve the quality of TIROCINIO. During the last two years a total number 107 contracted veterinarians (see table 4.1.12) has been hired by the FVMP in order to increase the number of TIROCINIO supervisors for a total expense of 108,500.00 euro per year.

| Field veterinarian                              | Species                    | Skill                            |
|---|----------------------------|----------------------------------|
| Arnaldo Azzolin, DVM                            | Bovine                     | Cattle practitioner              |
| Marcello Lora, DVM                              | Bovine                     | Cattle practitioner              |
| Angelo Sandri; DVM                              | Bovine                     | Cattle practitioner              |
| Claudio Toffan, DVM                             | Bovine                     | Cattle practitioner              |
| Daniele Dalle Palle, DVM                        | Bovine                     | Large animals practitioner       |
| Carlo Barnini, DVM                              | Horse                      | Equine Medicine and Surgery      |
| Giuseppina Rossetto, DVM                        | Swine                      | Swine practitioner               |
| Francesco Tonon, DVM                            | Swine                      | Swine practitioner               |
| Andrea Pizzabiocca, DVM                         | Poultry                    | Poultry practitioner             |
| Antonio Davide Rigolin, DVM                     | Rabbit                     | Rabbit practitioner              |
| Diego Caliari DVM PhD                           | All species                | Pathologist (VTH)                |
| Matteo Pilla DVM                                | Small Animals              | 24 Hours Emergency Service (VTH) |
| Massimo Bucci DVM                               | Small Animals              | 24 Hours Emergency Service (VTH) |
| Angela Polacchini, DVM PhD                      | Small Animals              | 24 Hours Emergency Service (VTH) |
| Giuseppe Michieletto, DVM AUSL 1 Belluno        | Food safety/ Public Health | Veterinary State Officer         |
| Giovanni Colle, DVM AUSL 1 Belluno              | Food safety/ Public Health | Veterinary State Officer         |
| Maurizio Stefani, DVM AUSL 1 Belluno            | Food safety/ Public Health | Veterinary State Officer         |
| Patrizia Bragagna, DVM AUSL 1 Belluno           | Food safety/ Public Health | Veterinary State Officer         |
| Ivonne Caliz, DVM AUSL 4 Udine                  | Food safety/ Public Health | Veterinary State Officer         |
| Ivan Poli,DVM AUSL 4 Udine                      | Food safety/ Public Health | Veterinary State Officer         |
| Fausto Rigonat, DVM AUSL 4 Udine                | Food safety/ Public Health | Veterinary State Officer         |
| Gianfranco Cevini, DVM AUSL 4 Alto Vicentino    | Food safety/ Public Health | Veterinary State Officer         |
| Lucio Maculan, DVM AUSL 4 Alto Vicentino        | Food safety/ Public Health | Veterinary State Officer         |
| Ivano Scorzato, DVM AUSL 4 Alto Vicentino       | Food safety/ Public Health | Veterinary State Officer         |
| Attilio Zarantonello, DVM AUSL 4 Alto Vicentino | Food safety/ Public Health | Veterinary State Officer         |
| Fabrizio De Stefani, DVM AUSL 4 Alto Vicentino  | Food safety/ Public Health | Veterinary State Officer         |
| Antonio Fagnani, DVM AUSL 4 Alto Vicentino      | Food safety/ Public Health | Veterinary State Officer         |
| Gabriele Crescioli, DVM AUSL 5 Ovest Vicentino  | Food safety/ Public Health | Veterinary State Officer         |
| Massimo Cataldi, DVM AUSL 5 Ovest Vicentino     | Food safety/ Public Health | Veterinary State Officer         |
| Giancarlo Acerbi, DVM AUSL 5 Ovest Vicentino    | Food safety/ Public Health | Veterinary State Officer         |
| Daniele Burella, DVM AUSL 6 Pordenone           | Food safety/ Public Health | Veterinary State Officer         |
| Luigi Zotti, DVM AUSL 6 Pordenone               | Food safety/ Public Health | Veterinary State Officer         |
| Ennio Mazzoli, DVM AUSL 6 Pordenone             | Food safety/ Public Health | Veterinary State Officer         |
| Franco Pinardi, DVM AUSL 6 Pordenone            | Food safety/ Public Health | Veterinary State Officer         |
| Mario Gentili, DVM AUSL 6 Pordenone             | Food safety/ Public Health | Veterinary State Officer         |
| Franca Cassan, DVM AUSL 6 Pordenone             | Food safety/ Public Health | Veterinary State Officer         |
| Damiano Berton, DVM AUSL 6 Pordenone            | Food safety/ Public Health | Veterinary State Officer         |
| Franco Carnevali, DVM AUSL 6 Pordenone          | Food safety/ Public Health | Veterinary State Officer         |
| Daniele Sisto, DVM AUSL 6 Pordenone             | Food safety/ Public Health | Veterinary State Officer         |
| Massimo Castellani, DVM AUSL 6 Vicenza          | Food safety/ Public Health | Veterinary State Officer         |
| Pier Luigi Crema, DVM AUSL 6 Vicenza            | Food safety/ Public Health | Veterinary State Officer         |
| Giuseppe D'Aura, DVM AUSL 6 Vicenza             | Food safety/ Public Health | Veterinary State Officer         |
| Stefano Ferrarini, DVM AUSL 6 Vicenza           | Food safety/ Public Health | Veterinary State Officer         |

| Gabriele Poli, DVM ALISI, 6 Vicenza           | Food safety/ Public Health  | Veterinary State Officer |
|---|-----------------------------|--------------------------|
|   | Tood salety/ Tublic Tlealth | Veterinary State Onicer  |
| Cristiana Penon, DVM AUSL 6 Vicenza           | Food safety/ Public Health  | Veterinary State Officer |
| Vincenzo Piccolo, DVM AUSL 6 Vicenza          | Food safety/ Public Health  | Veterinary State Officer |
| Claudio Passarin, DVM AUSL 6 Vicenza          | Food safety/ Public Health  | Veterinary State Officer |
| Paolo Terza, DVM AUSL 6 Vicenza               | Food safety/ Public Health  | Veterinary State Officer |
| Alessandro Tiziani, DVM AUSL 6 Vicenza        | Food safety/ Public Health  | Veterinary State Officer |
| Tiziano Zanetello, DVM AUSL 6 Vicenza         | Food safety/ Public Health  | Veterinary State Officer |
| Achille Boffo, DVM AUSL 8 Montebelluna        | Food safety/ Public Health  | Veterinary State Officer |
| Pierluigi Bortolazzo, DVM AUSL 8 Montebelluna | Food safety/ Public Health  | Veterinary State Officer |
| Loris Casagrande, DVM AUSL 8 Montebelluna     | Food safety/ Public Health  | Veterinary State Officer |
| Angelo Genovese, DVM AUSL 8 Montebelluna      | Food safety/ Public Health  | Veterinary State Officer |
| Adriano Tessariol, DVM AUSL 8 Montebelluna    | Food safety/ Public Health  | Veterinary State Officer |
| Adriano Bigolin, DVM AUSL 8 Montebelluna      | Food safety/ Public Health  | Veterinary State Officer |
| Daniele De Lucchi, DVM AUSL 8 Montebelluna    | Food safety/ Public Health  | Veterinary State Officer |
| Gianluca Diquattro, DVM AUSL 8 Montebelluna   | Food safety/ Public Health  | Veterinary State Officer |
| Mario Parisotto, DVM AUSL 8 Montebelluna      | Food safety/ Public Health  | Veterinary State Officer |
| Emanuele De Poi, DVM AUSL 9 Treviso           | Food safety/ Public Health  | Veterinary State Officer |
| Francesco Franceschini, DVM AUSL 9 Treviso    | Food safety/ Public Health  | Veterinary State Officer |
| Aldo Rizzuti, DVM AUSI, 9 Treviso             | Food safety/ Public Health  | Veterinary State Officer |
| Carlo Rossi DVM AUSL 9 Treviso                | Food safety/ Public Health  | Veterinary State Officer |
| Claudio Tasca, DVM ALISI, 9 Treviso           | Food safety/ Public Health  | Veterinary State Officer |
| Michele Tonetto, DVM AUSL 9 Treviso           | Food safety/ Public Health  | Veterinary State Officer |
| Maria Tripi DVM AUSL 9 Traviso                | Food safety/ Public Health  | Veterinary State Officer |
| Massime Zapatti DVM AUSL 9 Travica            | Food safety/ Public Health  | Veterinary State Officer |
| Reale Zanin, DVM AUSL 9 Trevise               | Food safety/ Public Health  | Veterinary State Officer |
| Ciargia Do Bassi DVM AUSL 12 Mirano           | Food safety/ Public Health  | Veterinary State Officer |
| Cionhuigi Derosti, DVM AUSL 13 Milano         | Food safety/ Public Health  | Veterinary State Officer |
| Gianiugi Borsatti, DVM AUSL 13 Mirano         | Food safety/ Public Health  | Veterinary State Officer |
| Pablo Conte, DVM AUSL 13 Milano               | Food safety/ Public Health  | Veterinary State Officer |
| Giovanni Basso, DVM AUSL 13 Mirano            | Food safety/ Public Health  | Veterinary State Officer |
| Paolo Trevisanello, DVM AUSL 13 Mirano        | Food safety/ Public Health  | Veterinary State Officer |
| Stefano Zeico, DVM AUSL 13 Mirano             | Food safety/ Public Health  | Veterinary State Officer |
| Luciano Boffo, DVM AUSL 14 Chioggia           | Food safety/ Public Health  | Veterinary State Officer |
| Patrizia Buratti, DVM AUSL 14 Chioggia        | Food safety/ Public Health  | Veterinary State Officer |
| Maria Chiara Bovo, DVM AUSL 16 Padova         | Food safety/ Public Health  | Veterinary State Officer |
| Franca Cavallin, DVM AUSL 16 Padova           | Food safety/ Public Health  | Veterinary State Officer |
| Maurizio Crema, DVM AUSL 16 Padova            | Food safety/ Public Health  | Veterinary State Officer |
| Amerigo De Luca, DVM AUSL 16 Padova           | Food safety/ Public Health  | Veterinary State Officer |
| Piraska Sabbion, DVM AUSL 16 Padova           | Food safety/ Public Health  | Veterinary State Officer |
| Alessandro Schiavon, DVM AUSL 16 Padova       | Food safety/ Public Health  | Veterinary State Officer |
| Giorgio Zago, DVM AUSL 16 Padova              | Food safety/ Public Health  | Veterinary State Officer |
| Michele Zaghi, DVM AUSL 16 Padova             | Food safety/ Public Health  | Veterinary State Officer |
| Virio Gemignani, DVM AUSL 17 Conselve         | Food safety/ Public Health  | Veterinary State Officer |
| Renato Cestari, DVM AUSL 17 Conselve          | Food safety/ Public Health  | Veterinary State Officer |
| Fulvio Cavallaro, DVM AUSL 17 Conselve        | Food safety/ Public Health  | Veterinary State Officer |
| Adalberto Gobbo, DVM AUSL 17 Conselve         | Food safety/ Public Health  | Veterinary State Officer |
| Francesca Pasetti, DVM AUSL 17 Conselve       | Food safety/ Public Health  | Veterinary State Officer |
| Ferdinando Salterini, DVM AUSL 17 Conselve    | Food safety/ Public Health  | Veterinary State Officer |
| Maria Gabriella Zanirato DVM AUSI 17          | Food safety/ Public Health  | Veterinary State Officer |
| Conselve                                      |                             |                          |
| Primo Dellamorte DVM AUSL 17 Conselve         | Food safety/ Public Health  | Veterinary State Officer |
| Gianmarco Veronese DV/M AUSI 17 Conselve      | Food safety/ Public Health  | Veterinary State Officer |
| Alessia Marinucci DVM AUSI 17 Conselve        | Food safety/ Public Health  | Veterinary State Officer |
| Lino Giora DVM ALISE 17 Consolve              | Food safety/ Public Health  | Veterinary State Officer |
| Mosà Chiarollo, DVM AUSI, 17 Consolva         | Food safety/ Public Fleatth | Veterinary State Officer |
| Vittorio Poggion DVM AUGL 17 Conselve         | Food cofety/ Public Health  | Veterinary State Officer |
| Villono Boggian, DVIVI AUSL 17 Conserve       | Food safety/ Public Health  | Veterinary State Officer |
| Ciaudio Biondani, DVIVI AUSL 18 ROVIGO        | Food safety/ Public Health  | veterinary State Officer |
| LIZIANO ROSSIN, DVM AUSL 18 Rovigo            | Food safety/ Public Health  | Veterinary State Officer |
| Vittorino Zanforlin, DVM AUSL 18 Rovigo       | Food safety/ Public Health  | Veterinary State Officer |

| Sergio Cavazza, DVM AUSL 20 Verona    | Food safety/ Public Health | Veterinary State Officer |
|---------------------------------------|----------------------------|--------------------------|
| Arrigo Dal Forno, DVM AUSL 20 Verona  | Food safety/ Public Health | Veterinary State Officer |
| Anselmo Micheloni, DVM AUSL 20 Verona | Food safety/ Public Health | Veterinary State Officer |
| Riccardo Murari, DVM AUSL 20 Verona   | Food safety/ Public Health | Veterinary State Officer |
| Aurelio Rinaldi, DVM AUSL 20 Verona   | Food safety/ Public Health | Veterinary State Officer |
| Franco Ronconi, DVM AUSL 20 Verona    | Food safety/ Public Health | Veterinary State Officer |
| Marina Speri, DVM AUSL 20 Verona      | Food safety/ Public Health | Veterinary State Officer |

Table n°4.1.12 – Veterinarians hired as contract professors by the Faculty of Veterinary Medicine, University of Padova for TIROCINIO.

#### 4.2. Elective subjects

As previously reported, the course in Veterinary Medicine at the University of Padova is currently in the middle of the transition from the old (MD 509) to the new (MD 270) curriculum; in particular, the 1<sup>st</sup>, 2<sup>nd</sup>, and 3<sup>rd</sup> years follow the MD 270 dictates, whereas the 4<sup>th</sup> and 5<sup>th</sup> years are still under the MD 509 regulation. This is currently influencing the offer of elective subjects.

As a general rule, students are required to take a certain number of hours of elective subjects. Since the introduction of the MD 270, the Faculty of Veterinary Medicine has adopted a so-called "Y" configuration of its curriculum (see Fig. 4.1). In this "Y", the common trunk consists of all core subjects that have to be taken by all the undergraduates. Starting from the 2<sup>nd</sup> year, each student has the possibility to choose between two educational pathways: the clinical medicine path (indicated as the left arm of the "Y") and the food safety path (indicated as the right arm of the "Y"). Consequently each student, depending on the choice, will follow during her/his career a number of specific courses. The total number of hours followed by each student within the two arms of the "Y" is the same, but the number of specific courses is different, as it depends on how courses are structured in each educational pathway. Students can freely choose among the left or right arm of the "Y" at the end of the 1<sup>st</sup> semester of the 2<sup>nd</sup> year and before the beginning of the 2<sup>nd</sup> semester. Currently, there is no set minimum number of applicants per arm of the "Y". However, the definition of specific rules cannot be excluded, at least hypothetically, in the near future.

With regard to the Food Safety path, it should be noted that the selection process performed by the admission test (see chapter 9) is actually indirectly inhibiting students from choosing this path. In fact, the admission test only selects students who have a good general culture, but no specific background or motivation to do anything else with their career except being a companion animal or a horse veterinarian. Therefore, the food safety path was mainly designed with the aim to give students an opportunity to become familiar with public health aspects of the veterinary profession.



**Figure n°4.1** The "Y" configuration. The "Y" trunk reports the Multi-disciplinary Courses followed by all the veterinary students, grouped per year and starting from the 1<sup>st</sup> and up to 5<sup>th</sup> year. The specific modules (which constitute a part of each fundamental Multi-disciplinary course) for the aforementioned educational pathways of clinical medicine and food safety are reported in the left and right arm of the "Y", respectively.

Such a strategy was also adopted following an in-depth evaluation of the professional demands for veterinarians in the country. In fact, in recent years food safety or food quality control have gained an increasing importance. Traditionally, these aspects have a strategic importance in the north-east of Italy and mostly in the Region of Veneto, where farm animals (i.e., swine, poultry, rabbit, and cattle) and food-related industries are economically relevant. Curriculum hours in EU-listed subjects offered and to be taken as electives by 2<sup>nd</sup> - 3<sup>th</sup> year students are reported in table 4.2.1. The choice between the two arms of the "Y" is presented to 1<sup>st</sup> year student during their first semester, and there is no set minimum number for each path to be reached. Students are free to choose whichever path they want. It is of interest to observe that in the 2008-09 academic year 2<sup>nd</sup> year student made the following choice: 52% for the clinical path and 48% for the food safety path. This was regarded by the FVMP as a very positive result both for our Faculty as well as for the veterinary profession.

<u>Free choice field work</u>: students have to attend 4 additional ULC of field work in a period of 4 weeks at a facility of their choice among those recognised by the FVMP. All the official collaboration agreements between the FVMP and the outside bodies are reported on the website (updated every 3 months). It is important to highlight that in many of these facilities for the free choice field work no formal supervision from the Faculty is carried out. Free choice Practical activity is no longer available for students of the new curriculum (MD 270).

|                                  | Theoretical training |          |          | Supervised practical training |   |                                |                  |       |     |
|----------------------------------|----------------------|----------|----------|-------------------------------|---|--------------------------------|------------------|-------|-----|
| SUBJECT                          | Year(s)<br>Offered   | Lectures | Seminars | Self<br>directed<br>learning  | Laboratory<br>and desk<br>based<br>work | Non-clinical<br>animal<br>work | Clinical<br>work | Other |     |
| Basic subjects                   |                      |          |          |                               |   |                                |                  |       |     |
| Basic sciences                   | 3                    | 20       | 4        |                               | 8                                       |                                |                  |       | 32  |
| Clinical sciences                | 3                    | 60       |          |                               | 20                                      |                                |                  |       | 80  |
| Animal<br>production             | 2/3                  | 60       | 16       |                               | 20                                      |                                |                  |       | 96  |
| Food<br>hygiene/Public<br>health | 2                    | 16       |          |                               |   |                                |                  |       | 16  |
| Professional<br>knowledge        |                      |          |          |                               |   |                                |                  |       |     |
| Total                            |                      | 156      | 20       |                               | 48                                      |                                |                  |       | 224 |

Table n° 4.2.1 - Curriculum hours in EU-listed subjects offered and to be taken as electives for 2<sup>nd</sup> and 3<sup>rd</sup> year students at the Faculty of Veterinary Medicine, University of Padova.

# 4.3. Optional subjects

To complete their curriculum, students are invited to choose some "optional" subjects from a panel of courses offered by teachers of the FVMP, for a total amount of 8 ULC. The aim of these courses is essentially to complete the student's knowledge in some areas of their specific interest. In theory, students can choose any subject offered by the University of Padova, other national, or foreign Universities, and could even obtain credits for participating in a variety of different activities such as

seminars, conferences, etc. However, this is rarely done since students have to motivate their choices of optional subjects and submit their application to the Joint Teaching Committee (JTC, see chapter 5, table n. 5.1). The JTC comments on how closely the topic chosen by the student is related to her/his course of studies, and the JTC's comment is assessed by the Course Degree Council.

In the 2008-09 academic year a list of eight optional subjects was proposed to 5<sup>th</sup> year students on topics of companion animal, farm animal or equine medicine and surgery, clinic of wild and unconventional animals, small animal advanced diagnostics, aquaculture, small animal health and welfare, veterinary public health (Table 4.3.1). Each undergraduate formulates a 3-subject ranking list, and a minimum number (7) of participants is required to actually activate the course. The final decision on which course each student can be admitted to is based on the student's career, and is taken by the Joint Teaching Committee and, subsequently approved by the Degree Course Council (CDC). The complete list of "optional subjects" actually proposed by the FVMP is reported in Table 4.3.1.

|   |                    | Theoretic | cal training |                           | Supervised practical training     |                             |               | Other | Total |
|---|--------------------|-----------|--------------|---------------------------|-----------------------------------|-----------------------------|---------------|-------|-------|
| SUBJECT   | Year(s)<br>Offered | Lectures  | Seminars     | Self directed<br>learning | Laboratory and<br>desk based work | Non-clinical animal<br>work | Clinical work |       |       |
| Basic sciences  |                    |           |              |                           |                                   |                             |               |       |       |
| Bioethics in veterinary medicine                                | 1                  | 28        |              |                           |                                   |                             |               |       | 28    |
| Clinical Sciences   |                    |           |              |                           |                                   |                             |               |       |       |
| Oriented approach to the acute patient                          | 5                  | 21        |              |                           | 7                                 |                             |               |       | 28    |
| Ecology and epidemiology of vector-transmissible diseases       | 5                  | 14        | 4            |                           | 6                                 |                             |               |       | 28    |
| Animal production   |                    |           |              |                           |                                   |                             |               |       |       |
| The pet foods as an health preventive tool                      | 5                  | 8         |              |                           |                                   | 20                          |               |       | 28    |
| Food hygiene/Public health                                      |                    |           |              |                           |                                   |                             |               |       |       |
| Human-animal relationship<br>problems in a urban<br>environment | 5                  | 20        | 5            |                           | 3                                 |                             |               |       | 28    |
| Food stuffs of animal origin and Human Health                   | 5                  | 28        |              |                           |                                   |                             |               |       | 28    |
| Medicine and surgery of sport horses                            | 5                  |           |              |                           |                                   |                             | 28            |       | 28    |
| Functional anatomy of marine mammals                            | 5                  | 21        |              |                           |                                   | 7                           |               |       | 28    |
| Pathology and hygiene in aquaculture                            | 5                  | 7         |              |                           | 7                                 | 14                          |               |       | 28    |
| Kennel medicine   | 5                  |           |              |                           |                                   |                             | 28            |       | 28    |

Table n° 4.3.1 - Curriculum hours in EU-listed subjects offered as optional for 5<sup>th</sup> year students at the Faculty of Veterinary Medicine, University of Padova. In order to be activated an optional course needs to be selected by a minimum number of 7 students.

#### 4.4 Further information on the curriculum

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

**4.4.1 Tracking** - Tracking is provided for with the new "Y" organisation of the curriculum (see paragraph 4.2)

#### 4.4.2 Study abroad at Texas A&M - See Chapter 5.1.1.3.e

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

**4.4.3** - Students are required to attend at least 50% of theoretical activities and 90% of practical activities within each subject in order to be eligible to sit for any exam. Participation to theoretical and practical classes is assessed by asking students to sign an "attendance list". During the TIROCINIO students keep their logbook indicating the type of activity and the signature of the supervisor of any particular activity. At the end of every teaching period, teachers have to make a cumulative check of all the attendance lists of each class and send an attendance report to the Dean's Office.

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:

- i. Are such rotations a structured part of the training given to all undergraduate students
- *ii.* What is the total number of days or weeks of such rotation, and the year(s) in which they occur?
- iii.What are the different areas covered and the time spent in each area?

**4.4.** - At the FVMP, the TIROCINIO rotations are obligatorily performed as indicated (Annex n° 6) by all veterinary medical students. As previously described TIROCINIO starts already at the 2<sup>nd</sup> year, and by the end of their study students must complete 23 ULC of practical training. The clinical part of TIROCINIO occurs in rotations, which in this transient phase, are organized during the 5<sup>th</sup> year divided in two macro-groups, one in the Fall semester (from November until January) for the first half of the students, and one in the Spring semester (from March until May) for the remaining half of the students. Within each macro-group, students are divided in 10 groups of 4 students/group. Each student has to do a total of 10 weeks of full time clinical training from Monday until Thursday (Annex n° 6)

These TIROCINIO rotations are not scheduled during the months of February and in the June-October period in order to a) leave students time to prepare for finals, and b) give an opportunity to those students who missed some parts of their training (for sickness, personal problems, etc) to catch up and/or re-do some parts that they liked. Activity of students within each macro-group includes also disciplines that are not strictly clinical such as animal production, pathology and food hygiene. This organization of TIROCINIO will likely change to a continuous rotation system already next year to adjust for the increased number of ULC dedicated to TIROCINIO. Furthermore the TIROCINIO dedicated to clinical disciplines has been planned to be held in the 4<sup>th</sup> and 5<sup>th</sup> year. For further information on the different areas covered and the time spent in each area please refer to Table n° 4.1.11

- iv. Whether attendance is full-time, for part of the day, and/or other (e.g. based on case needs).
- v. What are the group sizes in the clinical rotations.
- vi. The activities and case responsibilities that students are expected to undertake

**4.4.5** - Attendance in the VTH during week-days is from 9:00 am until 1:00 pm, although when there is difficult case students frequently spend longer hours in the VTH. Students on night duty start their shift at 6:00 pm and finish at 8:00 the following morning. The 24-hr service is active on every night and on week-ends. Attendance at the Equine Hospital (Centro Medico Equino) is from 9:00 am until 1:00 pm; when on field trips for bovine or swine practice, students generally leave very early in the morning (between 6:00 and 7:00 am) in order to reach the veterinarian in charge already at his first farm visit and return is from 4:00 to 6:00 pm. When the field trip leaves directly from the Veterinary School, departure is at 8:30 am.

Students in TIROCINIO work in groups of maximum 4, which allows for excellent student-teacher interaction and provides trainees with lots of opportunities to perform hands-on procedures. At the VTH students are expected to receive the client, perform the initial assessment of the patient as well as all the clinical procedures listed on theTIROCINIO Logbook (Annex n 5). Each case is assigned to a student who is responsible also for filling out the clinical records on the Easy-Vet program on intranet (see Chapter 7).

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

**4.4.6** – During the 2<sup>nd</sup> year students are trained on how to handle large animals (cattle and horses) in animal production part of TIROCINIO. Students in the 4<sup>th</sup> year are trained in identification of clinical signs of large and small animals (including exotics), monitoring of organic functions (temperature, pulse, respiration rate, heart rhythm), collection of blood and urine, rectal palpation and uterine catheterization in large animals, identification and function of the most common clinical (ultrasound, radiology, computerized tomography, clinical chemistry) and surgical instruments. This type of hands-on training is typically performed within each specific course and happens on Fridays, when clinical teachers are not busy with TIROCINIO.

#### Outline the student involvement in the emergency and hospitalization activities of the clinics

**4.4.7** - Students rotate through the Emergency 24-hr Service in such a way that each night 2 students are present with a veterinarian. This Service will start officially on April 1<sup>st</sup>, 2010. Therefore, the 5 ULC estimated to be done by each student are not present on any Table of this chapter. However, Emergency 24-hr activity is included as TIROCINIO in the 4 ULC spent by students at the VTH (see table of TIROCINIO 4.1.11). Within the Emergency Service, student will be responsible for and actively in monitoring patients present in the hospital, performing clinical exams and any other clinical procedure necessary on patients present in the hospital as well as on emergency cases, and also helping the veterinarian in performing anaesthesia and surgical procedures whenever necessary.

Specify student participation in the activities of the mobile clinic and indicate whether or not the hours spent in the mobile clinic are included in those in Table 4.1.11

**4.4.8** - Student participation in the Mobile Clinic is reported in Table 4.1.11 under Extramural section of all clinical activities. For bovine practice, groups of 4 students follow this routine:



Monday - field trip with a teacher in ruminant reproduction from FVMP

Tuesday – field trip with a cattle practitioner (Table 4.1.12)

Wednesday - field trip with a teacher in ruminant medicine

Thursday – field trip with a cattle practitioner (Table 4.1.12)

For further information on large animal clinical procedures that students have to learn prior to graduation see Annex n 5.

## 4.5 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.

See Chapters from 4.1.3a to 4.1.3.f.

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

Specific arrangement with slaughterhouses (SH) and food processing plants (PP) as well as their distances from the FVMP are referred to in paragraphs 6.7 and 6.8. For each SH or PP, the FVMP signs an official agreements with the veterinarians working for and also directly with Local Health Agencies (AUSL) from which the slaughterhouse or the food processing plant depends for sanitary inspection. For instance, the AUSL 4 is responsible for the Asiago cheese FPP; the AUSL 6 is responsible for the Busin SH and for the Milk PP of Vicenza; the AUSL 12 is responsible for the Fiorital fish PP; the AUSL 15 is responsible for the Tosetto SH; the AUSL 16 is responsible for the Brugnolo FPP; the AUSL 17 is responsible for the Pantano and Piccolo SL; the AUSL n° 22 is responsible for the Montorsi salami PP. Therefore, the FVMP has signed official agreements with each one of these AUSL, and within the framework of each of these agreements students can be assigned to do their practical training in a specific SH or PP depending also on the student's residence, travel time etc.

### 4.6 Ratios

These must be delineated from Table 4.1

For explanation about ratios, see the section 'Main Indicators' of **Annex I.** The indicator derived from the ratios established is the denominator when the numerator is set 1.

#### 4.6.1 General Indicators of Types of Training

As indicated in table n° 4.1, the figures for the numerators and denominators are defined as follows:

| Figure   | Total n° of teaching hours     |
|----------|--------------------------------|
| A = 1736 | Lectures                       |
| B = 86   | Seminars                       |
| C = 225  | Self directed learning         |
| D = 407  | Laboratory and desk based work |
| E = 584  | Non-clinical animal work       |
| F = 510  | Clinical work                  |
| G = 8    | Other                          |

# Please give the following values:

|      | Denominator   | Ratio                      |
|------|---|----------------------------|
| R 6: | $\frac{\text{Theoretical training (A + B + C)}}{\text{Supervised practical training (D + E + F)}} = \frac{2047}{1501} = 1.364$              | $\frac{1}{1.364} = 0.733$  |
| R 7: | $\frac{\text{Clinical work } (F)}{\text{Laboratory and desk based work}} = \frac{510}{991} = 0.515$<br>+ non - clinical animal work (D + E) | $\frac{1}{0.515}$ = 1.942  |
| R 8: | $\frac{\text{Self directed learning (C)}}{\text{Teaching load (A + B + C + D + E + F)}} = \frac{225}{3556} = 0.063$                         | $\frac{1}{0.063} = 15.804$ |
|      |   |                            |

# 4.6.2 Special Indicators of Training in Food Hygiene/Public Health

|       | Denominator   | Ratio                      |
|-------|---|----------------------------|
|       | Total no. curriculum - hours                        |                            |
|       | Food Hygiene / Public Health _ 349 _ 0.008          | 1                          |
| R 9:  | $\frac{1}{3556} = 0.098$                            | $\frac{1}{0.098} = 10.189$ |
|       | vet. Curriculum                                     | 0.078                      |
|       |   |                            |
|       | Total no. curriculum - hours                        |                            |
| D 40. | Food Hygiene / Public Health $-\frac{349}{-2.792}$  | 1 _ 0.258                  |
| R 10: | Hours obligatory extramural work $-\frac{125}{125}$ | $\frac{1}{2.792} = 0.338$  |
|       | in Veterinary inspection                            |                            |

The reader is referred to Annex 11 on page 211 for a comparison with the current EAEVE-accepted Ratios.

## 4.7 Comments

#### Please comment on:

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

The existing veterinary curriculum at the University of Padova distributes in 3.48% of the contents in basic subjects, 26.30% in basic veterinary subjects, 44.73% in clinical subjects (including professional training), 15.01% in animal production subjects and 10.48% in food hygiene and public health. This syllabus provides the students with basic general training, which is flexible and balanced, and produces graduates who are skilled in many areas. Graduates in Veterinary Medicine at the University of Padova can enter into the labour market and are able to adapt to the different professional profiles required in the Region (Veterinary medicine, Animal production and health, Food science and technology, Food hygiene and public health). 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-1 skills.

*ii.* the way the curriculum is structured and reviewed.

The designing of the new curriculum as regulated by the MD 270 took into consideration several factors: the points of weakness of the past curriculum, in particular on the distribution of the ULC; the professional demand from the local Veterinary Professional Boards, the Experimental Zooprophylactic Institute, and the AUSL; the standards required by the EAEVE.

It is noteworthy to emphasise the transition from the curriculum regulated by the MD 509 to that regulated by the MD 270, and the great increase in the number of hours dedicated to the TIROCINIO. In fact, although the minimum number of ULC for the practical training as indicated by the MD 270 is 30 ULC, the Faculty considered it necessary to increase that number to 45 ULC.

#### *iii. the major developments in the curriculum, now and in the near future.*

The following tables summarize the decisions of the last DCC with regard to new curricular hours (non Eu-listed subjects) taken by 4th and 5th year students

|                     | Hours of in-class Training |          |          |                               |          |          |       |     |   |
|---------------------|----------------------------|----------|----------|-------------------------------|----------|----------|-------|-----|---|
|                     | Theoretical training       |          |          | Supervised practical training |          |          | Total | ULC |   |
| SUBJECT             | Lectures                   | Seminars | Self     | Laboratory                    | Non-     | Clinical | Other |     |   |
|                     |                            |          | directed | and desk                      | clinical | work     |       |     |   |
|                     |                            |          | learning | based                         | animal   |          |       |     |   |
|                     |                            |          |          | work                          | work     |          |       |     |   |
| Obstetrics and      | 40                         |          |          |                               |          | 75       |       | 115 | 7 |
| pathology of        |                            |          |          |                               |          |          |       |     |   |
| reproduction        |                            |          |          |                               |          |          |       |     |   |
| Inspection and      | 40                         |          |          |                               | 40       |          |       | 80  | 8 |
| control of food     |                            |          |          |                               |          |          |       |     |   |
| products of animal  |                            |          |          |                               |          |          |       |     |   |
| origin              |                            |          |          |                               |          |          |       |     |   |
| Food Stuff Markets* | 32                         |          |          |                               |          |          |       | 32  | 4 |
| Veterinary special  | 30                         |          |          |                               | 20       |          |       | 50  | 5 |
| anatomical          |                            |          |          |                               |          |          |       |     |   |
| pathology           |                            |          |          |                               |          |          |       |     |   |
| Veterinary special  | 20                         |          |          |                               | 12       |          |       | 32  | 4 |
| anatomical          |                            |          |          |                               |          |          |       |     |   |

| pathology applied to food safety*  |     |    |     |     |     |    |
|--|-----|----|-----|-----|-----|----|
| Veterinary special<br>anatomical<br>pathology applied to<br>companion animals* | 20  |    | 12  |     | 32  | 4  |
| Clinical Pathology<br>and veterinary<br>legislation                            | 40  | 20 |     |     | 60  | 6  |
| Veterinary Surgery   | 60  |    |     | 50  | 110 | 11 |
| TIROCINIO <sup>1</sup>   |     | 50 | 200 | 50  | 300 | 12 |
| Total  | 282 | 70 | 284 | 175 | 811 | 61 |

Table n° 4.7.1 - New curriculum hours (non eu-listed subjects) taken in core and electives subjects by 4th year students at the Faculty of Veterinary Medicine of the University of Padova (\*elective)

TIROCINIO<sup>1</sup> includes hours of Animal Science (100), Food Hygiene/Public Health (75), Parasitic Diseases (25) and Infectious Diseases (100)

|                        | Hours of in-class Training |          |                    |            |          |             |       |       |     |
|------------------------|----------------------------|----------|--------------------|------------|----------|-------------|-------|-------|-----|
|                        | Theoretical training       |          | Supervised practic |            |          | al training |       | Total | ULC |
| SUBJECT                | Lectures                   | Seminars | Self               | Laboratory | Non-     | Clinical    | Other |       |     |
|                        |                            |          | directed           | and desk   | clinical | work        |       |       |     |
|                        |                            |          | learning           | based      | animal   |             |       |       |     |
|                        |                            |          |                    | work       | work     |             |       |       |     |
| Veterinary Medical     | 30                         |          |                    | 10         |          | 75          |       | 115   | 7   |
| clinic                 |                            |          |                    |            |          |             |       |       |     |
| Medical Clinic of      | 32                         |          |                    |            |          |             |       | 32    | 4   |
| Companion and          |                            |          |                    |            |          |             |       |       |     |
| Farm Animals*          |                            |          |                    |            |          |             |       |       |     |
| Food Legislation*      | 16                         |          |                    |            |          |             |       | 16    | 2   |
| Basics Clinics in      | 40                         |          |                    |            |          | 75          |       | 115   | 7   |
| Reproduction           |                            |          |                    |            |          |             |       |       |     |
| Clinics in             | 25                         |          |                    |            |          | 90          |       | 115   | 5   |
| reproduction of        |                            |          |                    |            |          |             |       |       |     |
| Farm animals,          |                            |          |                    |            |          |             |       |       |     |
| horses and             |                            |          |                    |            |          |             |       |       |     |
| unconventional         |                            |          |                    |            |          |             |       |       |     |
| species*               |                            |          |                    |            |          |             |       |       |     |
| Veterinary surgical    | 50                         |          |                    |            |          | 75          |       | 125   | 8   |
| clinic                 |                            |          |                    |            |          |             |       |       |     |
| Veterinary surgical    | 32                         |          |                    |            |          |             |       | 32    | 4   |
| clincic of farm and    |                            |          |                    |            |          |             |       |       |     |
| companion animals*     |                            |          |                    |            |          |             |       |       |     |
| TIROCINIO <sup>1</sup> |                            |          |                    |            | 100      | 575         |       | 675   | 27  |
| Final thesis           |                            |          | 225                |            |          |             |       | 225   | 9   |
| Total                  | 225                        |          | 225                | 10         | 100      | 890         |       | 1450  | 64  |

Table n° 4.7.2 - New curriculum hours (non eu-listed subjects) taken in core and electives subjects by fifth year students at the Faculty of Veterinary Medicine of the University of Padova (\*elective)

TIROCINIO<sup>1</sup> includes hours of Food Hygiene/Public Health (100), Anatomical pathology (125), Veterinary Surgical Clinic (150), Clinics in Reproduction (150) and Veterinary Medical Clinic (150).

iv. Local conditions or circumstances that might influence the ratios in 4.6.1

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

# 4.8 Suggestions

If the denominators in 4.6.1 for your Faculty are not meeting the range as indicated in Annex I, **Supplement A**, what can be done to improve the ratios?

Due to the increasing importance of the rabbit industry in the Veneto Region the DCC has decided to increase the practical training dedicated to poultry and rabbit diseases starting from the next academic, so as to give our students the opportunity to do hands-on practice in at least 4 different poultry and rabbit farms. Poultry and rabbit farmers willing to cooperate with the FVMP have been identified, and formal agreements are already being discussed.

In order to allow for a consistent implementation of the veterinary curriculum, a higher degree of stability in the decisions of our central government concerning the university system should be necessary.

# Chapter 5

# **TEACHING and LEARNING: QUALITY and EVALUATION**

written by A. Piccirillo

### 5.1 Factual information

As of the academic year 2008/2009, the Degree Course in Veterinary Medicine follows the Ministerial Decree (MD) n° 270/2004) (see Chapter 4). The main aims of this new degree course are a) to decrease the percentage of veterinary students dropping out during their studies by providing them with a consistent and well-balanced curriculum; b) to increase the amount of practical hands-on training; c) to improve the student-teacher interaction thus providing students with a better exposure to the occupational world. To achieve these goals, two strategic issues were highlighted by the Teaching Committee of the University of Padova, in the Rector's Decree (RD) n° 1496/08, Protocol n° 31886:

a) Final exams should be taken during the session just after the end of the courses. A delay between the end of a course and the actual date when students take that specific exam should be avoided, so that the learning process might improve;

b) The required propaedeutic courses should be well-defined and differentiated between basic and specific disciplines in order to improve and streamline the student's educational and cultural progress.

#### 5.1.1 The teaching program

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

**5.1.1.1 Rules of the teaching program -** The Veterinary Medicine Degree Course is controlled by specific regulations established by the University of Padova (RD n°1623/2008). All the rules concerning the organization and delivery of courses are included in the Teaching Regulation (Annex n° 1) approved by the Faculty Council on proposal of the most important committee that is concerned with quality of teaching in the veterinary medical curriculum, the Degree Course Council (DCC). The DCC's major role is coordination and organization of the teaching activity. The DCC has a President (normally one of the Full Professors who teaches in that degree course) and a Council. A Vice-President is also designated. The President of the DCC supervises on the normal execution and quality of the teaching activity and suggests the composition of the board of examiners (for each single courses as well as for the graduation thesis defence). Furthermore, she/he analyses and proposes changes in all the aspects related to the organization of the teaching program, the teaching methodology and the examinations methods for each single discipline. According to the current regulation the Council is composed of 18 Full Professors, 17 Associate Professors, 31 Assistant Professors, 107 Contract Professors, 1 lecturer from another University, 9 students' representatives and 1 representative of administrative and technical staff.



The DCC deliberates on the following subjects: a) Teaching organization with the contribution of the competent Departments; b) approval and publication of the study program; c) formulation of proposals and opinions on the amendments of the statute of the Degree Course; d) formulation of proposals for hiring new teaching staff members and accomplishing further Teaching activities. Other duties of the DCC consist in proposing, modifying and approving the schedule of theoretical and practical classes, the examination calendar, and the teaching program of all the subjects. For further information on tasks and responsibilities of the DCC the reader is referred to Chapter 2.1.6.d

The teaching program of the DVM degree course is published every academic year in a bulletin available in Italian on the web site of the FVMP (http://www.veterinaria.unipd.it/Didattica-bollettino informativo).

**5.1.1.2 Committees -** Both the Faculty and the DCC may establish committees with specific tasks in order to monitor, coordinate and improve the quality of teaching. At the FVMP, several committees of relevance to teaching quality have been established (table n° 5.1).

| Committees                              | N° of students | N° of teaching staff |
|---|----------------|----------------------|
| 1) Joint Teaching Committee             | 6              | 6                    |
| 2) Practical Training Committee         | 0              | 7                    |
| 3) Curricular Committee                 | 0              | 3                    |
| 4) Erasmus Exchange Committee           | 0              | 7                    |
| 5) Computer and IT Committee            | 2              | 5                    |
| 6) International Relationship Committee | 4              | 5                    |
| 7) Pietro Arduino Library Committee     | 1              | 1                    |
| 8) University Farm Teaching Committee   | 3              | 4                    |

Table n° 5.1 – Committees established at the Faculty of Veterinary Medicine, University of Padova, which are relevant to teaching quality and evaluation. All committees except (2) and (3) are Faculty Committees, although most of what they deal with concerns the DVM degree course, while the TIROCINIO and the Curricular Committees pertain exclusively to the DVM degree course.

The Joint Teaching Committee (JTC) is the most important of all the Committees dealing with quality assessment of the veterinary curriculum. This Committee is established according to the Statute of the University of Padova. It is composed by the Faculty's Dean or Vice-Dean, the President of the DCC in Veterinary Medicine and the Presidents of other DCCs of the Faculty of Veterinary Medicine, an equivalent number of students' representatives and a representative of the assistant professors. The JTC has the duty to evaluate the efficacy and the efficiency of the teaching organization and tutoring services, as well as the consistency between the University Learning Credits (ULC) assigned to a course and the specific learning objectives. Furthermore, the JTC may propose initiatives aimed at improving the teaching program. The JTC is a Faculty committee, i.e. it functions relative to all degree courses of the FVMP, not just the Veterinary Medical Degree Course.

# 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.

**5.1.1.3 Pedagogical approach** - The aim of our learning process is the education of a "day-one" veterinarian able to perform common basic diagnostic and therapeutic procedures with standardized, high quality methods. Furthermore, our day-one veterinarian should be able to have a critical approach to clinical and food safety problems. To achieve this goal, the DVM curriculum is based on the principles contained in the "Bologna Declaration" (i.e. stimulation of self-learning, problem solving, team working, etc.) as well as on the learning outcomes as indicated by the "European Qualification Descriptors" (i.e. applying knowledge and understanding; making judgments; communication skills; and learning skills).



5.1.1.3.a Bridging course - At the beginning of the 1<sup>st</sup> year of the DVM curriculum, students who have passed the admission test, but have not achieved the threshold score of > 50% of correct answers, must cover specific learning defects (defined as *learning debts*) by compulsorily attending a "bridging" course (60 hrs of theoretical lectures), held just before the beginning of curricular courses. Bridging courses are aimed at improving knowledge on biology, chemistry, physics and mathematics. Students who do not attend these special courses during their 1<sup>st</sup> year must pass an exam in the presence of a Committee purposely designated by the Faculty Council following proposal of the DCC. If such an exam is not passed, the student is not allowed to continue her/his studies.

5.1.1.3.b The Library - One of the main resources for the students' learning process is represented by the "Pietro Arduino" Library (see Chapter 8), which offers a large variety of educational resources including databases, books, periodicals, specialized documents, theses, etc., most of which are available also in electronic format. Furthermore, the Library provides 6 computers for bibliographic consultation and 8 video stations to view VHS videotapes, as wells as a free access computer room, where there are 30 PCs available for students' usage, including Internet access. In addition, two buildings of the Agripolis campus (Cà Gialla and Pentagono buildings) are provided with wireless connection. The Library also organizes courses to train students on the use of International and National library catalogues, Winspirs, etc. Finally, many electronic resources are available for students' self-learning, among which a collection of 150 specialized video-tutorials (VHS, CD-audio, CD-Rom and DVD). Students are normally provided with all the educational material necessary for self-learning during the course or through the Faculty website (http://www.veterinaria.unipd.it/). The educational material includes course notes, theoretical lectures in .ppt or .pdf formats, multimedia materials (CDs or DVDs) and web site links.

5.1.1.3.c The Clickers - Since 2008, a quality assessment system has been experimentally introduced in several courses of the 1<sup>st</sup> and 2<sup>nd</sup> year of the curriculum extended to the 3<sup>rd</sup> year in 2009. Through such a system (e-Instruction's Classroom Performance System<sup>TM</sup>) each student is given a clicker that can be used to register class attendance, administer quizzes and tests, review class material or assess the students' satisfaction of lectures. This kind of assessment is implemented as agreed with the course's teacher.

5.1.1.3.d Internationalization - Providing students with an international atmosphere requires them having a good grasp of at least the English language. A class of Scientific English is offered to veterinary students during the first two years, but the amount of exposure and the opportunity to practice English is not enough. Also, the fact that the FVMP only offers its courses in Italian discourages northern European veterinary students from coming to the FVMP for their Erasmus exchange. Therefore, the issue of providing courses of the DVM curriculum directly in English language has been debated several times within the Faculty Council during the last academic year, as this is one of the main objectives not just of the FVMP, but rather of the entire University of Padova. The Faculty Council has recently approved new rules regarding teaching courses in English language: during the first year up to 10% of the curriculum has to be taught in English; for the rest of the academic years, courses can be taught in English depending on teachers' fluency and willingness. Teachers who teach their courses in English are entitled to a small economic incentive (400 €/ULC, gross income). It is the intention of the FVMP to convince in the long run all of its teaching staff members to teach their courses in English. Table n 5.1 lists courses provided in English language during the academic year 2009-2010 (the first one in which this new rule came into force).

| Year | Integrated course/module  | ULC | Hours |
|------|---|-----|-------|
|      | Animal Breeding and Genetics (integrated course):                         |     |       |
| 2    | Applied Biostatistics   | 3   | 24    |
|      | Veterinary General Pathology (integrated course):                         |     |       |
|      | Veterinary General Pathology  | 5   | 50    |
| 3    | General anatomical pathology and necropsy techniques (integrated course): |     |       |
| 3    | Veterinary general anatomical pathology, histopathology and cytopathology | 4   | 40    |
| 4    | Animal Husbandry (integrated course):                                     |     |       |
|      | Techniques of Cattle, Pig, Sheep and Horse Breeding                       | 4   | 52    |
|      | Obstetrics and Pathology of Reproduction (integrated course):             |     |       |
|      | Veterinary Obstetrics and Gynaecology                                     | 2   | 28    |
|      | Veterinary Andrology and Clinics in Veterinary Andrology                  | 2   | 28    |
|      | Reproduction and reproductive diseases of food animals                    | 3   | 42    |
| 5    | Veterinary Neurosurgery   | 3   | 42    |
|      | Clinics in Reproduction (integrated course):                              |     |       |
|      | Reproduction in Pets (dog, cat and exotic mammals)                        | 3   | 42    |

Table n° 5.2 – Modules (in Italics) of the Veterinary curriculum at the Faculty of Veterinary Medicine of the University of Padova currently taught in English.

New applications for Erasmus exchange program have been put forward with the Norwegian Veterinary School and the School of Veterinary Medicine at Liverpool University, and there has been already an exchange of students with the Veterinary School at the University of Oslo.

5.1.1.3.e Collaboration with Texas A&M - In 2008 a teaching project "Study abroad at the College of Veterinary Medicine, University of Padova" started following the collaboration between the College of Veterinary Medicine & Biomedical Sciences of Texas A&M (TAMU) University and the FVMP. This project began with a summer course of Veterinary Physiology held by American and Italian teachers and attended by 7 American and 10 Italian students. The entire course (theoretical and practical lectures) was held in English language with each student having the opportunity to earn credits in those disciplines at her/his university. Such initiative was enthusiastically received both by American and Italian students, which led to the organisation of the two courses of Veterinary Physiology (9 American and 10 Italian students) and Veterinary Pharmacology (7 American and 10 Italian students) in 2009 in Padova. In 2010 these two courses will be repeated in Padova and 10 students from the FVMP will go to College Station (Texas, USA) to attend a common clinical oriented course with TAMU students. On March 2010 the Dean of both Schools met to extend the exchange program. Results of such meeting will be presented during the visit.

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

**5.1.1.4. Course Notes** - At the beginning of each course, teachers indicate the main textbooks which are recommended and/or refer the students to a set of official Class Notes. These notes are available in advance and can be printed by the students before they attend each lecture. For many courses notes are available on the web-site of the FVMP (http://www.veterinaria.unipd.it/) at the specific page of that course, usually as .ppt or .pdf files.

Similarly, topics of lectures are indicated lecture by lecture to allow the students to read specific book chapters prior to each lecture. Moreover, many professors recommend specific additional bibliography in term of articles from international journals that might provide a better comprehension of specific subjects. Teachers always stress the importance of studying on English language textbooks. However, students still tend to rely on their hand-written notes, on the official Course Notes when available, and on Italian 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.

For a complete description of contractual arrangements supporting undergraduate teaching the reader is referred to chapter 4.1.1.3.f and Table 4.1.12.

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

**5.1.1.5** Learning Objectives - As stated in the Teaching Regulation approved by the Faculty Council, learning objectives are oriented to give the scientific basis and the theoretical-practical education for practicing the veterinarian profession. To achieve this goal, during the DVM curriculum students must learn basic day-one veterinary skills, learn an approach method to solve a diagnostic problem, and learn basic research and laboratory techniques of analysis and sampling. Learning objectives of each course are clearly stated on the web site of the FVMP (http://www.unipd-veterinaria.it/contenuti/files/FFZ\_Bollettino\_MV\_2009-10\_ord.270.pdf).

Learning objectives are achieved through theoretical lectures, practical demonstrations and individual and/or small group wet laboratories, the latter ones being held for most, if not all, courses from the 1<sup>st</sup> year on using the chemical-biological laboratories, the computer laboratories, the dissection and necropsy room, the University Farm, and the VTH. Practical hands-on training is also provided through intra- and extra-mural fieldwork (see above).

Describe how the Faculty collects the data required to ensure students are equipped with these day-1 skills (evidence of learning).

**5.1.1.6 Evidence of Learning** Documentation that students have achieved their learning objectives is collected with examinations (oral and/or written) at the end of each course. Many courses have so called mid-term exams, i.e. exams held one third or half way through the course that will count as percentage of the final mark. Since 2008, some professors rely on an electronic device, the e-Instruction's<sup>™</sup> Classroom Performance System (CPS<sup>™</sup>) previously described, to collect data related to students' learning. ). The TIROCINIO Logbook (Annex n. 5) is an important reference for learning objectives of the clinical and paraclinical disciplines leading students to acquire day-1 skills.

#### 5.2 The teaching environment

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

No particular staff development initiative is currently available

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

No reward system for teaching excellence is currently available.

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

Lectures directed to younger teachers (and to all those who are interested) to discuss issues and difficulties in teaching and provide hints on how to improve teaching skills have been organized for the first time during the 2008-09 academic year. A series of lectures were given by Faculty members recognized by students and by the evaluation system of the university as talented in their Teaching skills. These were well received and the Faculty is currently debating whether to organize them on a regular basis.

#### 5.3 The examination system

#### Describe the examination system of the Faculty:

The DVM degree is achieved through the acquisition of at least 300 credits and the passing of a final exam, which consists in the dissertation of a thesis. Credits can only be earned by successfully taking the final exam for each course. The maximum number of exams necessary for obtaining the degree has to be no higher than 30. Graduation is conferred with a final degree score (minimum 66 - maximum 110). For the final score computation, the following learning activities contribute: basic, specific, supplementary, and elective courses. Besides contributing to the acquisition of credits, the exams produce number marks (minimum 18 - maximum 30), which contribute to determine the final degree score. The latter is constituted by the sum of the weighted average of exams' marks, the mark obtained at the dissertation of the thesis and possible merit awards. Furthermore, students are required to know the English language at a Preliminary English Test (PET) level and this is accomplished through passing an exam or providing a certificate.

# In particular, is there a central examination policy for the Faculty as a whole? If 'yes', by whom is it decided?

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

Evaluation of students' learning is accomplished through different methods: final or interim, oral or written examinations (multiple-choice questions, open questions, brief or extended reports), practical or computer-assisted examinations. Each method can be used separately or in combination. Since 2008 some professors use a specific continuous assessment, the e-Instruction's<sup>™</sup> Classroom Performance System (CPS<sup>™</sup>), previously described. As stated by the Teaching Regulation (Annex n° 1), the continuous assessment must not disturb teaching activity of other courses.

A final thesis dissertation is also taken by all students. Students have to prepare and discuss an original thesis written with the assistance of a supervisor. Such a thesis is generally the result of an experimental research performed by students under the supervision of the professor acting as her/his advisor. Most students make up their mind on the topic on which they want to do their thesis during their 4<sup>th</sup> year, as this often requires several months or even more than 1 year of work (which is done during their spare time). Those students who are either not interested in performing research or do not have time to dedicate to it will opt for writing an in-depth review paper (see chapter 13). Either paper will constitute the final dissertation which will be formally presented and defended at the end of the Degree Course in the presence of a Committee designated by the Dean and composed by at least 5 teachers, one of whom chairs the session. The student's supervisor acts on behalf of (or
"defending") the student, while another faculty member (occasionally an external examiner) provides a critical review of the student's performance.

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

For each course every student must take an exam at the end of the course. Before the beginning of the year, the exam session calendar is published by the University of Padova, while the exam dates are published by the Veterinary Medicine Faculty. For the 1<sup>st</sup> year organized in quarters, every professor has to plan 8 dates of exam distributed in 4 sessions during winter (2), spring (2), summer (2) and fall (2). For the years organized in semester, every professor has to plan 6 dates of exams distributed in 3 sessions during Winter (2), Summer (2) and Fall (2). Dates within the same session must have a gap of at least 10 days for quarters and 14 days for semester. There are two more "extraordinary" exam sessions: one in December and one in April (Christmas and Easter exam sessions). These extraordinary sessions have been purposely established for giving an extra chance to off-course students. During the exam sessions no teaching activity is allowed.

As of February 2010, a fixed or "perpetual" examination calendar has been adopted. This will allow a better distribution of the exams within the sessions with no overlapping of dates of exams from the same curricular year. This calendar will distribute the exams for all courses in fixed days of the exam sessions (day 1, day 2, day 3, etc.), so that the specific date will be known as soon as the academic calendar of the year is published by the University (this includes dates of national and academic holydays). For the final dissertation, the Faculty Council fixes at least three sessions equally distributed during the academic year within the periods indicated by the Academic Senate.

#### Is use made of external examiners?

For each learning activity, examinations take place in the presence of a Committee, in which no external examiners are present. The Committee is designated by the Faculty Dean and includes at least two teachers: one has the duty of President and is the lecturer of the course, the other is a teacher belonging to the same scientific-disciplinary sector or similar. The final dissertation committee can be composed by external examiners upon request of the student's supervisor.

#### How many retakes of an examination are allowed?

At the University of Padova, as well as at national level, no limits in the number of retakes are fixed.

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

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

At the end of the 1<sup>st</sup> year of the new DVM curriculum, the students must have earned 40 credits to be allowed to enrol to the 2<sup>nd</sup> year. Anyone not complying with this request is re-enrolled as repeating the year for a maximum of 4 times, after this time he/she is expelled from the Faculty. Furthermore, in order to sit for some specific exams students are required to have successfully passed other propaedeutic exams. There is no formal rule on which exams are required (propaedeutic) for other exams, but each teacher may set specific requirements which have to be approved by the DCC. Below, there is a list of all the exams for which students are required to have successfully passed other exams, divided by year.

1st year (MD n° 270/2004)



• Veterinary Anatomy I requires Molecular Biology, Zoology, Histology and Veterinary Embryology.

• Veterinary Anatomy II requires Molecular Biology, Zoology, Histology and Veterinary Embryology.

• Veterinary Parasitology requires Molecular Biology, Zoology, Histology and Veterinary Embryology.

## 2<sup>nd</sup> year (MD n° 270/2004)

• Veterinary General and Special Physiology requires Medical physics and Methodologies for risk analysis; Biochemistry; Veterinary Anatomy I; Veterinary Anatomy II.

• Veterinary Physiology and Ethology requires Veterinary General and Special Physiology.

• Veterinary General Pathology requires Veterinary Anatomy I; Veterinary Anatomy II; Biochemistry; Veterinary General and Special Physiology; Molecular Biology, Zoology, Histology and Veterinary Embryology; Veterinary Microbiology and Immunology; Veterinary Parasitology.

## 3<sup>rd</sup> year (MD n° 270/2004)

• Infectious diseases of livestock, poultry and companion animals requires Veterinary microbiology and immunology, Veterinary general pathology.

• General pharmacology, Toxicology and Pharmacovigilance requires Veterinary Anatomy I and II, Biochemistry, Veterinary General and Special Physiology, Veterinary Physiology and Ethology, Molecular Biology, Zoology, Histology and Veterinary Embryology, Veterinary General Pathology.

• Veterinary medical Semiology and clinical methodology requires Veterinary physiology and Ethology, Veterinary general pathology, Veterinary anatomy I, Veterinary anatomy II.

• Special pharmacology and Veterinary chemotherapy requires Medical physics and methodologies for risk analysis, Biochemistry, Veterinary anatomy I, Veterinary anatomy II, Veterinary General and Special Physiology, Veterinary Physiology and Ethology, General Pharmacology and Toxicology and Pharmacovigilance.

• General anatomical pathology and necropsy techniques requires Veterinary general pathology, Veterinary general and special physiology.

• Parasitic diseases requires Molecular biology, zoology, histology and veterinary embryology; Veterinary parasitology.

• Animal Husbandry requires Animal feeding and nutrition, Veterinary physiology and ethology.

• Veterinary Surgery Pathology and Semeiotics requires Veterinary general pathology.

•

## 4th year (MD n° 509/1999)

Techniques of Animal Breeding in Zootechnical Production requires Feeding and Nutrition.

• Inspection and Control of Food products of animal origin requires Hygiene and Technology of food of animal origin; Veterinary Special Pathological Anatomy.

• Veterinary Special Anatomical pathologyrequires Veterinary Pharmacology; General Pathological Anatomy; Veterinary Toxicology.

• Medical Pathology and Veterinary Legislation requires Semeiotics and Clinical Methodology.

• Quality of Food Productions, Animal Welfare and Rearing Systems requires Veterinary Ethology and Psychobiology; Techniques of Animal Breeding in Zootechnical Production.

• Obstetrics and Pathology of Reproduction requires Infectious Diseases, Prophylaxis and Veterinary Police; Veterinary Pharmacology; Veterinary Special Pathological Anatomy; Veterinary Toxicology.

• Veterinary Epidemiology requires Infectious Diseases, Prophylaxis and Veterinary Police.

• Veterinary Surgery requires Veterinary Topographical and Applied Anatomy; Veterinary Surgery Pathology and Semeiotics.

### 5<sup>th</sup> year (MD n° 509/1999)

• Medical Clinic, Therapy and Radiology require Infectious Diseases, Prophylaxis and Veterinary Police; Medical Pathology and Veterinary Legislation.

• Veterinary Surgery Clinic requires Infectious Diseases, Prophylaxis and Veterinary Police; Veterinary Special Pathological Anatomy; Veterinary Surgery.

Clinics in Reproduction requires Obstetrics and Pathology of Reproduction.

### 5.4 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.

The evaluation of teaching and learning is accomplished following general rules established by the University of Padova. In 2006 the University started a three-year plan for the development of evaluation models and tools in order to improve teaching and learning at University level. This plan comprised three projects: 1) web-based teaching evaluation; b) self-evaluation; and c) Agorà - Follow up 2007/2008 post-graduate.

In the first project (Web-based teaching evaluation), students were involved in evaluating a new detection instrument and comparing it to the old paper questionnaire. The project was also aimed at collecting students' satisfaction of lectures attended, final examinations and the entire degree course. In the second project (Self-evaluation), teachers were involved in self-assessing their teaching skills through critically considering and evaluating the courses they had given to the same students involved in the 1<sup>st</sup> project. The last project (Agorà – Follow-up 2007/2008 post-graduate) was aimed at a) evaluating the efficacy of academic learning as regards the professional employment and fulfilment, b) detecting the acquired skills of post-graduates during the working activity, and c) developing a system of "evaluation indicators" in the three years after graduation. An indirect method to assess the quality of teaching and learning at the FVMP is also the Censis, an important Foundation providing statistical studies and reports as well as consultations to local, regional or state bodies (see footnote of Chapter 1.2). In fact, based on Censis' official annual statistics, the Veterinary Faculty of the University of Padova has constantly scored as 1st or 2nd in the country during the past 5 years.

#### Describe the role of students in the evaluation of teaching and teachers.

Assessment is done at University level and the survey is realized with paper questionnaires, held at about two third of the course time duration. The questionnaire is anonymous and consists of two parts: the first one with open questions and the second one with questions with predefined answers, which are graded on a scale from 1 to 10. The open questions ask students to explain positive and negative aspects of the teaching and to give suggestions to improve teaching quality. The latter part is immediately given to the teacher so that he/she can take note and have a perception of his teaching. The aim of the second part of the test is to bring out attending students' different opinions about specific aspects of the course, such as teaching organization, teaching and studying activities, teaching contents, level of interest, and brief judgment of satisfaction.

In order to make across-teachers comparisons, each teacher receives results of his/her evaluation as well as average results of all teachers of the University, of teachers of FVMP, and of teachers who teach students of the same year of the degree course.

Evaluators are part-time students, as they need to be informed about the teaching system of the University. They are trained through 2 sessions of 4 hours each on the following themes: objectives of the survey; questionnaire; analysis of the methods and data-entry program.

#### Indicate the use of external evaluators.

No external evaluator is currently being used.

#### Describe the follow-up given to the evaluation.

Moral suasion is the only weapon Deans can use at the moment. Teachers who are doing poorly on their job as assessed by the students are normally called by the Dean for meeting in which the results of the evaluation of their course/s is discussed, and ways to improve their performance are sought.

#### 5.5 Student welfare

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

To guarantee the access to the facilities and the development of practical hands-on activities according the MD 626/94 the Veterinary Medicine Degree Course provides a safety education course compulsory for all students. Students have to pass a written exam at the end of this course in order to attend practical hands-on training. Furthermore, students working in a clinical environment such as the VTH or the University Farm or any other agricultural enterprise are briefed on basic techniques of animal handling and restraint, are required to wear latex disposable gloves, and are taught all the basic principles of safety in a veterinary clinic (such as to never put back the needle cover on to the syringe needle after doing a blood collection or a parenteral treatment, how to dispose of biological waste, etc.). When going to a farm, students are required to wear safety boots (with metal protection at the tip of the foot), to wear rectal palpation gloves when performing rectal examination, to wear latex disposable gloves to handle and restraint large animals, etc.

Every time students enter the necropsy room, teachers and authorized personnel must explain to students what are the basic rules to be followed in the necropsy room. These are also written in a leaflet on the entrance door of the room. The access to necropsy room is allowed only if the following rules are observed: students must be authorized to enter in the necropsy room by a teacher or authorized personnel; students must wear suitable, disposable overalls, gloves and footwear (gloves and footwear are available for a basic charge from token-operated vending-type machines located in the Public Health building); the use of cotton overalls is allowed only in the hemicycled-double levelled-tribune observation area overlooking the necropsy area; students must not wear clothes that create obstacles (i.e., scarf, long-fringed clothes, etc.); students must not leave bags or anything else outside the suitable lockers; long hair must be put up; necklaces, bracelets or something else must not come out the overall and gloves; hands must be washed every time a job is finished and before leaving the room; at the end of the job, tables must be cleaned, equipment washed and dried and put back; personnel must be informed of any accident. In the necropsy room it is also not allowed to smoke, drink, and eat.

There are also rules that should always be followed when working in the laboratory. A Code of practice is distributed by the University of Padova to the students. Good laboratory practice is essential if laboratories are to be safe places in which to work. The following is an example of a list of good laboratory practice posted on each lab:



#### **General Laboratory Guidelines**

- Only authorized personnel are permitted in laboratory areas
- Smoking, eating, and drinking is prohibited in lab
- Always wear individual safety equipment and protection (e.g. disposable gloves, eye
  protection, proper shoes low-heeled shoes with non-slip soles are preferred to
  avoid accidents)
- Secure long hair, loose clothing (especially loose long sleeves, neck ties, or scarves) and remove jewellery (dangling jewellery)
- Mouth pipetting is forbidden
- Always clean up after yourself and work in a clean and tidy manner. Clean up spills immediately

#### Before leaving the laboratory

- Clean your glassware
- Clear-up your bench space
- Replace any special equipment into the appropriate storage areas
- Turn off any electrical equipment

Before the beginning of practical hands-on training students have to perform a medical test, a blood test and a urinalysis (at the Department of Preventive Medicine, Padova Hospital Trust) with particular attention to antibody titers for tetanus and hepatitis. In absence of detectable antibodies, they have to repeat the vaccination. The University of Padova offers medical and psychological support to every student.

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

The University of Padova recognizes and encourages all the social activities that might contribute to make learning more fruitful and to improve the quality of university life, supporting students' initiatives regarding culture, sport and hobby. Sports facilities are offered both at University and at Faculty level. At University level the University Sports Centre represents one of the most interesting and complete set of sport opportunities available in Padova. Its facilities are available to the entire University Community and include a polyvalent fitness gym (volleyball, hockey, basketball, handball), a fencing hall, four hard tennis courts, a judo gym, Astroturf pitches for five-a-side football. More information can be found at the website of the University Sport Centre: http://www.cuspadova.net/impianti.php.

On the Agripolis campus a soccer field and a volleyball field are provided for students. Furthermore, the FVMP organizes a party at the end of the year with a soccer competition between students and a student-professor final soccer match. Moreover, the FVMP has an agreement with some facilities located in Legnaro close to the Faculty: a soccer field, a swimming-pool, and an athletic field. The Faculty has a cafeteria with 700 places and a bar with an open space. Several vending machines for coffees, drinks and snacks are available in each building of the campus. There are several study and reading rooms at FVMP: 7 in the Cà Gialla building, 2 in the Pentagono building and 1 in Public Health building. Computer rooms are in the Ca' Gialla building and in the Pentagono building.

A students' office (Front Office) is present at the FMVP with representatives of the student community being available to discuss problems of the degree course. The representatives of the students not only take active part as voting members of the Faculty and DCC, but also at the JTC set up by the Council, where their opinion may be decisive for important issues, such as the funding  $\frac{77}{7}$ 

management bound to some educational projects for the students. Students themselves have to present their initiatives aimed at improving University life (i.e. some of the funded projects are: IT room, WiFi service, mobile educational unit). In the students' office tokens for vending machines selling disposable gloves, footwear etc. can be purchased.

Special prices are offered for students of the University of Padova: a 40% discount at cinemas and theatres is available, as well as a  $2 \in$  discount at selected hairdresser and a 10% discount at selected pizzerias in Legnaro.

# 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.

The University of Padova cooperates with the Regional Agency for the Right to Study called ESU, through which it offers a variety of services in order to guarantee equal right to study to all students. This consists in assigning extraordinary benefits to some students with financial difficulties, offering housing and food at 14 University Student Dorms (all of which are accessible to disabled students and provided with all kind of facilities), and 8 student cafeterias. Financial support through grants or any other form is also available to students with economic difficulties.

Concerning University fees, students are required to fill in at the beginning of each academic year an Income Assessment Form in order to apply for possible reductions of the university fees. Reductions of fees and contributions can be applied in favour of: disabled students, working students, and candidates who are suitable for a study grant. Partial and total exception is available for part-time students (<u>http://www.unipd.it/en/area/area-4011.htm</u>). Furthermore, the University can handle regional funds to finance both registered Italian and foreign students. Grants are also available for students who attend Specialization Schools (excluding medical Specialization Schools, for which grants are specifically available) and to Ph.D students who do not have a research grant. Grants are awarded both in money and services, and are given to disadvantaged, low-income students with a good academic record, after a selection test.

Part-time jobs in the University's main educational facilities are available for all the students who already completed the first year course and meet specific merit and income requirements. Students may work a maximum of 150 hours per year. Applications are accepted from all second-year students who meet the requirements. The application form can be filled on line by connecting at the <u>www.unipd.it/sis/</u>; applicants must also attest their own economical conditions.

Periodically, the ESU announces competitions for the award of extraordinary subsidies for students enrolled at the University of Padova. The extraordinary subsidy is a variable sum claimable in situations of particular and exceptional economic hardship; it can be awarded to an individual once only during his/her student career and is incompatible with other economic benefits given by any other public or private body.

Each Faculty of the University of Padova ensures a tutor service for students with learning problems. During the academic year 2008-09, within the tutoring service funded by the University of Padova three PhD students have offered their assistance within the FVMP from September 2008 to July 2009. Tutoring service was aimed at assisting and guiding students during the degree course, acquainting students with the learning process, and removing obstacles encountered in taking some exams. In particular, tutors were committed in supporting learning either by providing assistance to lecturers, organizing study groups and/or in-depth review of certain theoretical topics, or practical hands-on training.

No architectural barriers are present, all buildings and rooms (including services) are accessible to students with physical problems.

Future career development and job selection

No advice on career development and job selection is formally given to students

## 5.6 Comments

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

The teaching program of the FVMP is regarded as a very good one. Over the last few years there has been a remarkable increase on the amount of practical activity, which is well perceived by current students. Certainly there is always room for improvement, and certainly there are teachers who do not believe in the importance of the assessment of quality at all levels, including teaching. The fact that a poor evaluation by the students may be disregarded by the teacher without any major consequence is a drawback

## 5.7 Suggestions

In our opinion it is very important that teaching excellence is adequately rewarded.

# Chapter 6 FACILITIES and EQUIPMENT

## written by Stefano Romagnoli

### 6.1 Factual Information

The FVMP lies in the Municipality of Legnaro approximately 10 km from the centre of the city of Padova and is located within the Agripolis Campus, which also includes the Faculty of Agriculture and a Regional Agency for the Agricultural, Forestry and Agri-food sectors. The University farm, with both production and teaching animals, is located on the North-West side of the campus (within walking distance from the Veterinary School). Two important research institutions operate in close proximity of the Agripolis Campus, namely the EZI and the Padova Center of the National Nuclear Physics Agency. The EZI is particularly relevant to the Veterinary Faculty, as it is a state funded Research and Service Institution for animal breeders and veterinarians. Many of the researchers working there have a veterinary or agricultural background (the Executive Director, Prof. Igino Andrighetto, is a former Dean and still a faculty member of the Veterinary School). There is a constant e exchange of ideas, expertise and partnership in basic science and clinical investigation between the two Institutions. Especially relevant to our goal here is the fact that part of the extramural practical training in infectious diseases of the 5<sup>th</sup> year students is performed inside the EZI.

## 6.2 Premises in general

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

Completed in the early 1990's, the Agripolis Campus is a fully fenced complex composed of nine independent buildings that are placed around large areas covered with grass and sided by trees. The fenced area has 3 entrances, the main one at the end of Viale dell'Università, a second one in the lateral Via Orsaretto and a third one, which is the entrance of the VTH. All entrances are open to pedestrians from 7:00 am until 8:00 pm, while staff members can open the bar to access the campus area with their vehicle (or open the bar and the gate outside of normal opening hours) using their badge. Parking for students and visitors is available outside of the main entrance but not outside of the entrance. Adjacent to the Agripolis complex is the Legnaro Municipal Sports and Gymnasium built with contributions from the University of Padova whose premises are open to Faculty, students and staff members. Large parking lots are available for staff members within the Agripolis complex and for students right outside of the fenced area.

**6.2.1 The "Pentagon" and "Ca' Gialla" Buildings** - The areas dedicated to teaching activities (classrooms, study halls, etc.) are located in the two buildings known as "*Pentagon*" and "*Ca' Gialla*" [literally: "Yellow House"]. These two buildings are equally shared by the Faculty of Veterinary Medicine and the Faculty of Agriculture as they both feature classrooms, laboratories and offices; the

Pentagon also includes the campus Library, whereas the Ca' Gialla building hosts both Dean's offices, a Cafeteria and a Bar (Figure n° 6.1).

**6.2.2** The "Veneto Agriculture" Building - The semi-oval building known as "Veneto Agriculture" (VA), is the Regional Company for the Agricultural, Forestry and Agri-Food sectors, which has been established by the Regional Law n° 35 of September 5, 1997, and strategically placed in the Agripolis Campus. This is an important operative instrument that the Veneto Region has created in order to foster improvement and advancement of its rural world. VA is composed of 3 sections (Research and Experimentation, Services for Rural Innovation and Development, Administration), is managed by a President who is nominated by the Veneto Regional Council, and operates through projects financed by the Regional Administration, the Italian government, and the European Union. The mission of VA is to promote product innovation by spreading agricultural information and development of rural areas, to organise food product quality certifications, to upgrade environmental resources through research and vocational training, and to protect biodiversities including the management of Regional Plant Nurseries, forests and Nature Reserves. The collaboration between VA and the FVMP is relevant on topics of food hygiene, particularly within the SHFP degree course (chapter 1.1.1).

**6.2.3 The "3rd Branch" Building and other out-of-campus buildings** – The Faculty of Agriculture is located in two large buildings on the south-east side of the Agripolis Campus. The Building closer to the Pentagon, known as the "3rd Branch" building, hosts the Department of Animal Science, which includes personnel of both the FVMP and the Faculty of Agriculture and the provisional location of the Department of Experimental Veterinary Science; some laboratories are shared by staff members of the two Faculties. In fact the spaces occupied by staff members of the FVMP in the disciplines of anatomy and physiology are temporarily assigned, while waiting for a new dedicated building to be shared with the Department of Public Health. Construction of the building should start within 2010, based on the executive plan approved by the Central Administration of the University of Padova (see paragraph 6.10)

*Veterinary Anatomy* has 4 offices: 4 (total surface area of 61.10 sq m), and has access to the 3 laboratories of Histology, Histochemistry and Molecular Biology (total surface area of laboratories: 78.75 sq m), one dark room (8.75 sq m) and 2 rooms dedicated to the confocal microscope (27.84 sq m).

*Veterinary Physiology* has 3 offices (Total surface area of offices: 49.35 sq m) and has access to the 79.50 sq m Radioisotope Laboratory, which is equipped for radioactivity protection and manipulation of radioactive sources; this laboratory is composed of two distinct units: a "hot" room and a "cold" room. The disciplines of Anatomy and Physiology also share the two other laboratories: a common preparation laboratory, 26.25 sq m, and a Cell Culture Laboratory of 26.25 sq m.

Despite hospitality from the Department of Animal Science (Faculty of Agriculture) the Department of Veterinary Experimental Sciences has had to rent additional office space in the town of Legnaro for some of its staff members in Veterinary Physiology and Pathology. This space also hosts the Laboratory of Applied Ethology and an additional room suitable for meetings and teaching purposes. This situation will hopefully be solved when the new building will be constructed behind the Public Health building (see paragraph 6.10).

Animal Production has 8 offices (Total surface area 130 sq m) and has access to the 5 laboratories of physical-chemical analysis of food, meat quality, spectrometry and chromatography, molecular biology and animal reproduction biotechnology (total surface area of laboratories: 243 sq m).

A large University building (Vallisneri, located in downtown Padova) hosts on two different floors the Department of Biological Chemistry and the Interdepartmental Center for Innovative Biological Research (ICIBR). The offices (total surface area 22 sq m) and the two laboratories of Biochemistry and Prions (total surface are 50 sq m) of two staff members of the FVMP are in the former location. Another staff member of the FVMP uses an 11 sq m office and the 18 sq m Molecular Biology laboratory in the latter Institution. Within the Vallisneri building there is also a large biochemistry and molecular biology teaching laboratory (which can host up to 100 students) which is currently used for students of the FVMP (albeit not veterinary medical students but rather students of the degree course in HB – see chapter 1.1.1)

**6.2.4 The Veterinary Complex** – The majority of offices, clinics, and laboratories of the Veterinary Faculty are housed in a complex of 4 buildings known as the Veterinary Complex (Figure n° 6.2). Offices and laboratories used by faculty members in Anatomy, Physiology (belonging to the Department of Experimental Veterinary Science), and Animal Production (belonging to the Department of Animal Science, in common with the Faculty of Agriculture) are located within the building known as the *Third Branch* (Figure n° 6.1). Therefore, this building hosts teachers and support staff members from both Faculties of Veterinary Medicine and Agriculture. The construction of a new building (already approved and financed) is about to begin right next to the Public Health Building, which should have office and laboratory space for both the Dept. of Public Health, Comparative Pathology and Veterinary Hygiene as well as Veterinary Experimental Science.

A map of the buildings of the Veterinary Complex is included in Annexes 8 and 9.

Chapter 6 – Facilities and Equipment



**Figure n° 6.1** – Aerial view of the Agripolis Campus, including the Faculties of Veterinary Medicine and Agriculture, the Classroom and Library Building know as "The Pentagon", the Classroom, Dean's Office and Cafeteria Building known as "Ca' Gialla". The "3rd Branch" Building hosts some of the faculty members in Basic Sciences and Animal Science. "Veneto Agriculture" is the Regional Company for Agricultural, Forestry and Agri-Food sectors. Outside of the Agripolis Campus is the Experimental Zooprophylactic Institute, a State Funded Research and Service Institution for animal breeders and veterinarians. In the center of the town of Legnaro (in the background) office and lab space is rented by the Department of Veterinary Experimental Sciences. A map of the buildings of the Veterinary Complex is included in Annexes 8 and 9.

Three of the 4 buildings of the Veterinary Complex were completed towards the end of 2000 and became operational in 2001. These are the Clinical Department Building, the Necropsy Building and the Animal Ward Building (Figure n° 6.2). A map of these buildings is enclosed as Annex n° 8 and 9. Two recent additions include an aviary for raptors and hens located on the necropsy side of the Necropsy Building, and the new Horse Barn located adjacent to the long side of the 24-hr Service building (Figure n° 6.2).

**6.2.4.1 The Public Health Building** – This building has a large classroom of the floor level (Vet Classroom, see Table 6.3) and the Veterinary Museum. On the first floor there are mostly offices while the second floor hosts research laboratories, the latter ones being used also for teaching 5<sup>th</sup> year students (Practical Training and Thesis). Offices and laboratories are shared by the following disciplines: Pharmacology and Toxicology has 3 offices (total surface area of 38 sq m), and 2 laboratories (HPLC and "In vitro" methods for a total surface area of 32 sq m). Food Hygiene and Inspection has 3 offices (total surface area of offices: 40 sq m), and 2 laboratories (Food microbiology and Chemical analysis of food, for a total surface area of 160 sq m). A Chemical Preparation Laboratory (23.98 sq m) is shared by teachers and researchers in Pharmaco-Toxicology and Food Technology. Infectious Diseases has 3 offices (total surface area of about 50 sq m). Parasitology (whose personnel belongs to the Department of Experimental Veterinary Science) has 2 offices (Total surface area: 31.3 sq m) and 1 laboratory (Parasitology and Parasitic diseases of about 28 sq m. Pathology has 3 offices (total area: 47,21 sq m) and 2 laboratory (Veterinary cytopathology and histopathology, Veterinary molecular pathology, total surface area: 49,62 sq m).

**6.2.4.2 – The Necropsy Building** – Immediately adjacent to the Public Health Building, the Necropsy Building is composed by the necropsy area and a large classroom (Clinical Classroom, see Table 6.3) opposite to the necropsy area across the alley. The necropsy area is composed of:

- a) a 32 sq m entrance used as a changing room for students (Annex n° 8 and 9)
- b) a 41 sq m abattoir room; this room is connected to the Large animal Ward and to the Large Animal Surgery room through a track on the ceiling, by which carcasses can be taken directly from surgery or from the barn and delivered into the necropsy area. The abbattoir room is occasionally used for teaching to groups of 5-10 students.
- c) a 10 sq m refrigerated (+ 5°C) room
- d) an 18 sq m freezing (-20°C) room
- e) a 133 sq m necropsy room with 7 stainless steel, rectangular tables of which six tables of 2 x 1 m and one table of 2.6 x 1.65 m
- f) An amphitheatre-type stage overlooking the bigger necropsy table, for students to look at procedures being carried out there or into the collateral screens when a camera is used to film a necropsy or dissection.

### 6.3 Premises used for clinics and hospitalisation

The information to be entered in Table 6.1 is the number of animals that can be accommodated, not the number of animals used. Certain premises may be used to accommodate different species of animal. If so, the same premises should be entered only once.

The majority of clinical activities take place in the Clinical Department Building, where clinical examinations, day-hospital and surgical procedures are normally performed during week-days. Large animals are hospitalized in the Animal Ward Building, while small animals are hospitalized in the 24-hr Service Building.



**6.3.1 Animal Ward Building** – This one-storey building includes a hospitalization section with large and small animal wards facilities, and also a laboratory animal section. The hospitalization section features:

a) Seven 15 sq m wards for large animals.

b) A small animal unit with 7 rooms (of which five of 7.2 sq m, and two of 10.3 sq m), for a total occupancy of 16 small animals. Two small and one large units are isolation units.

c) one 19.7 sq m small animal treatment room.

d) one 104 sq m cattle barn with room for 6 cows; this room is currently being restructured to be turned into 2 new large animal isolation wards.

e) two 13.7 sq m barns for isolation



**Figure n° 6.2** – Aerial view of the Faculty of Veterinary Medicine of the University of Padova. The *Clinical Department Building, Animal Ward Building* and *Necropsy Building* were not present in 2000 at the time of the first EAEVE visit. These 3 buildings were completed in early 2001, and have been in full operation since then. The 24-hr Building was used by the Department of Veterinary Clinical Sciences for clinical activity until the year 2000, and is now being used as 24-hr service and intensive care service for the Veterinary Teaching Hospital. (\*) indicates the area where the aviary is located; (\*\*) indicates the area where the new Horse Barn is located.

The laboratory animal section is a research facility located in a separate unit that communicates with the rest of the building through a common washing room that leads into the service corridor for the laboratory animal stables. Access to this section is through a second corridor of the large animal ward area. The section is composed of the following structures:

- No. 4 rooms used as stables total surface area: 23.04 SQ M
- one laboratory total surface area : 12.26 SQ M
- one operating room adjacent to the laboratory total surface area : 8.50 SQ M
- Storage room Total surface area : 7.68 SQ M
- Dressing rooms, bathrooms, shower total surface area : 4.9 SQ M

No teaching is performed in this area of the building.



**6.3.2 Clinical Department Building** – This building hosts the facilities of the VTH on the floor level, and offices/laboratory space on the 1<sup>st</sup> floor. The floor level is composed of:

a) a large reception area where clients are met by lay personnel and steered to each specific service b) a clinical area with

- six 17 sq m exam rooms (room 1-6); room n° 3 is larger than the other ones and is used for induction of anesthesia, preparation of surgical patients, , recovery and intensive care after surgery; room n° 5 is organized to be used as alternative recovery room for patients requiring a particularly quiet environment; room n° 6 is an "Experimental Radiology Laboratory" which consists of 1) a Dual-Energy X-Ray Bone Densitometry device which is used for scientific investigations on bone metabolism and bone adaptation to different environments in animals, and 2) a work station for post-processing of both x-ray and Computerized Axial Tomography (CAT) images.; all the other 4 rooms are used as routine exam rooms.

- three diagnostic imaging rooms: one of 34.7 sq m (equipped with X-ray and a CAT scan equipment), one of 14.9 sq m (equipped with 2 ultrasound units) and one of 7.9 sq m (for film development)

c) a small room for drug storage

d) a 35 sq m room used by graduate students

e) a surgical area (accessible only through the changing and scrubbing-in area) featuring:

- one 34 sq m small animal surgery room (with two surgical theaters)

- one 17 sq m small animal orthopaedic surgery room

- a 8.4 sq m room for washing, autoclaving and sterilizing surgical equipment

- a 51.7 sq m room for equine or bovine surgery

- a 15.4 sq m room padded with mattresses for induction of anesthesia and awakening of large animals

- a 116 sq m room for general examination and minor surgery of large animals. This room is equipped with two moving walls padded with lead, which are used when large animal X-ray procedures have to be carried out

- a 43.2 sq m room with a scintigraphy equipment for small and large animals. The latter is not yet fully functioning,

- a 1.7 sq m room (hot room) for processing of the radioactive compound.

- a 41 sq m room used as a laboratory, provided with equipment for routine clinical chemistry and endocrine assay (see Chapter 6.6.4 and Table n° 6.6.7)

|                         | Species                 | Number of places  |
|-------------------------|-------------------------|---|
| Regular Hospitalisation | cattle                  | Total = 5 large boxes located in the Animal Ward building |
|                         | horses                  | Total = 10 boxes located in the Horse Barn                |
|                         | small ruminants         | Total = 2 large boxes located in the Animal Ward building |
|                         |                         | accommodating up to 5-8 animals each                      |
|                         | pigs                    | Total = 3 boxes for 10 adult pigs or 20 minipigs, located |
|                         |                         | next to the 24-hr Service building                        |
|                         | dogs                    | Total = 10 cages located in the 24-hr Service building    |
|                         | cats                    | Total = 12 cages located in the 24-hr Service building    |
|                         | other <sup>1</sup>      | Total = 24 (16 small+8 large) birds can be accommodated   |
|                         |                         | in the aviary next to the Necropsy building               |
| Isolation Facilities    | farm animals and horses | Total = 2 located in the Animal Ward building             |
|                         | small animals           | Total = 16 located in the Animal Ward building            |

 Table n° 6.1: Places available for hospitalisation and animals to be accommodated within the premises of the Veterinary

 Teaching Hospital of the Faculty of Veterinary Medicine of the University of Padova.

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Eliminato: ( Eliminato: ) On the first floor there are 14 offices (area of 13-20 sq m each), a meeting room of approximately 39 sq m, a reproductive technology laboratory (17.8 sq m) and an archive room for clinical records (approx 24 sq m), plus 3 small technical rooms (Annex 9).

**6.3.3** New Horse Barn – A new Horse Barn was built during 2009 between the 24-hr Service Building and the Clinical Department building. This brand new facility can accommodate 10 horses in boxes of 3.5x3.5 sq m each, and is used for hospitalisation of clinical cases. One of these boxes has a mobile wall which – when shifted – turns the two boxes into a single one. A map of this building is portrayed in Figure n° 6.3.

**6.3.4 Old Horse Barn** – A complex composed by four boxes for horses of 3.5 x 3.5 sq m each is located immediately adjacent to the 24-hr Service building. These boxes are currently used for small ruminants or pigs/minipigs.



Figure n° 6.3 – Map of the New Horse Barn, a new facility which can be used to accommodate 10 horses. One of the 10 boxes is slightly larger than the other ones and can be used for a mare with a foal. Sizes are in meters.

**6.3.5 24-hr Service Building** – This is an old complex which has been remodeled and turned into an Emergency 24-hr Service Unit. It is composed of a room with cat cages (n°1), one with dog cages (n° 2), an exam room (n° 3), a surgery room (n° 4), and X-ray development room (n° 5), a pharmacy-laboratory (n° 6), a bedroom for the veterinarian on duty (n° 7), a treatment room (n° 8), an office (n° 9) and a bedroom for students on duty (n° 10). A map of this building is portrayed in figure n° 6.4.



Figure n° 6.4 – Map of the building which hosts the 24-hr Service of the Veterinary Teaching Hospital. Refer to text (Chapter 6.3.5) for interpretation of numbers. Sizes are in meters.

#### 6.4 Premises for animals

Give a description of the facilities for rearing and maintaining normal animals for teaching purposes.

Animal used for teaching can be maintained both at the Faculty premises as well as at the University Farm. The Faculty premises include the Animal Ward building where large animals and small ruminants of South American camelids may be occasionally housed for prolonged periods of time,

the old Horse Barn adjacent to the 24-hr Service building and the aviary located next to the Necropsy building.

**6.4.1 The University Farm** - The University Farm (Figure n° 6.5) lies on the west side of the Agripolis Campus, and features quite an extensive amount of land (approximately 70 hectares) most of which is devoted to agronomic testing, and also a number of animal facilities (barns, stables etc.) which are used for research activity by two Departments of the University of Padova (Dept of Environmental Agronomy and Crop Production and Dept of Animal Science) and teaching activities in the context of the courses offered by the Faculties of Agriculture and Veterinary Medicine. The Farm is managed by the Agricultural Farm Teaching Committee (Table n° 5.1).

**6.4.2** Animals, The FVMP currently keeps the following animals at the premises of the University Farm: 10 dairy cows, 8 horses, and 35 sheep. These animals were purchased by the FVMP and are maintained exclusively for teaching purposes (see Chapter 7, table 7.2.2) thanks to University funding. The University Farm also hosts a) some production animals which can be used for teaching in animal production, and b) some research animals which can be used for teaching when they are not part of a research trial. Production animals include 52 Holstein Friesian cows, 30 calves, 40 heifers reared as replacement females, 50 beef cattle, while research animals include 500 rabbits, 400 poultry and 80 pigs.



Figure n° 6.5 – Aerial view of the Agripolis Campus showing the proximity between the Veterinary Complex and the University Farm

**6.4.3 Facilities** All facilities of the University Farm belong to the Department of Animal Science. These include:

6.4.3.a Offices and laboratories: this is a block of structures that houses offices, a basic chemistry laboratory, a milk storage room, a freezer room, storage rooms, a mini-manufacturing dairy, dressing rooms, bathrooms and showers for operators and students. All offices are equipped with a fax and a PC connected via modem to the Department of Animal Science for exchange of farm data concerning animal nutrition (daily intake), production (milk yield and weight gain data) and reproduction control (fertility data). The laboratory is also used for the preparation of samples and certain basic chemical-physical analyses on feed, foods and other materials. The particle distribution of the total mixed ration (TMR) is also routinely evaluated using the Penn State method.

6.4.3.b Multi-functional stable: a specific stable is dedicated to young animals (calves and heifers). Calves are reared on litter straw (5 pens containing 3 calves each) and fed maternal milk or artificial milk replacers. Heifers are kept in multiple pens (12 in number, containing 5 heifers each) and fed a specific mixed ration. Feeds for these animals are prepared and distributed by the students during practical activities.

6.4.3.c Stall for digestibility and metabolic trials: a specific stall is used exclusively for *in vivo* digestibility trials and equipped with metabolic cages to allow total feces and urine collection (from calves, sheep and/or rabbit).

6.4.3.d Stable for sheep and goats: this stable offers a central closed room, where the diets are prepared, and two roofed side wings, each of which divided into 11 open pens holding 6 heads (sheep) per pen. The sheep housed in the Farm come from local breeds and are involved in programs for the conservation of genetic variability.

6.4.3.e Beef fattening stalls: they are open on one side, with grating for floors, divided into 14 pens capable of holding 4-5 animals each. Animals arrive with a body weight of 180-220 kg and are kept until slaughtering. Each fattening cycle lasts 8-12 months.

6.4.3.f Dairy cow stable: free-stall type, with a cubicle laying area, equipped with 8 pens, each of which capable of holding 6 cows. Cows of different breeds (Holstein Friesian, Simmental, Brown Swiss, Rendena, Jersey, Pinzgau, Burlina, etc) are present in this stable in order to teach students in animal production morphological and physiological differences among various dairy breeds. The milking room with its 6 + 6 herringbone-shaped configuration (only 6 units are operative at the moment) stands next to the stable. The cows are fed total mixed ration (TMR) and high producing animals receive an additional amount of feeds by automatic feeders. Diet is personalized for each cow considering the nutritional requirements. The stable also offers a milk refrigeration room and an office equipped with a PC for the computerized management of the cows (data on daily milk yield, reproductive activity, feed intake using automatic feeders are daily recorded).

6.4.3.g Open paddock: This area, consisting of 4 pens, is used for teaching cows belonging to the FVMP as well as for cows before and after parturition (to allow for a better management of each animal in a quiet environment).

6.4.3.h Stall for horses: these are 8 closed pens, open on one side and with a paddock on the other side. Seven/8 pens are used for horses while the last one is used for storage of horse feeds (concentrates and commercial mixed feeds) and all devices to move the animals. Practical activities are possible in this stall using a specific restraint stock.

6.4.3.*i* New structures for the breeding of poultry, rabbits and pigs: three modern structures were recently (2009) constructed for the breeding of the following species:

- a) poultry (40 pens of 3.9 m<sup>2</sup> area each, considering an average breeding density of 10 heads/sq for a full load of 1684 hens);
- b) rabbits (432 single cages for fattening rabbits, 128 places for does and 40 metabolic cages for digestibility studies);
- c) growing and fattening pigs (8 breeding pens with dimensions of 5.6 x 4.3 m capable of holding 10 heads each, with floor grating and underlying storage trenches.

These 3 new structures are used exclusively for research on animal nutrition and metabolism.

6.4.3.1 Feed factory, hay-lofts and silos, waste tanks - All facilities and devices required to guarantee correct management and good husbandry practices on the farm are available. Two large silos for the silage storage and a structure for the storage of hays and straw are located in the farm. A modern machine to prepare and distribute the total mixed ration is also present.

**6.4.4 Staff** - The staff working at the University Farm includes 9 people, 3 of whom are paid by the FVMP (2 full time technicians and one non-budgeted veterinarian) while 6 are paid by the Faculty of Agriculture. The non-budgeted veterinarian paid by the FVMP has been hired to help with teaching student during TIROCINIO at the University Farm. Staff paid by the Faculty of Agriculture include a) one agronomist who supervises and organizes the different activities in the farm and is also responsible for safety of both operators and students; b) one veterinarian involved in helping with research and teaching activities; four technicians who are responsible for all farm activities (feeding, milking, monitoring reproduction events, taking care of disease prevention, administering treatments etc.). All these 9 people are from time to time involved directly (the two veterinarians) or indirectly (the 7 technicians) in teaching veterinary students, both during practical activities connected to each course as well as during TIROCINIO.

#### 6.5 Premises used for theoretical, practical and supervised teaching

| small animals           | no. consulting rooms<br>no. surgical suites  | 5<br>3 |
|-------------------------|--|--------|
| equine and food animals | no. examination areas<br>no. surgical suites | 1<br>2 |
| other1)                 | Field observation and dog<br>training Area   | 1      |

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.

#### Table 6.2: Premises for clinical work and student training

The Faculties of Agriculture and Veterinary Medicine share the use of a large number of classrooms of different area and capacity on both the Ca' Gialla and Pentagon buildings, while classrooms in the Public Health and Necropsy buildings are normally used only for Veterinary Medical courses. Classrooms for lectures are generally assigned at the beginning of the semester, while classrooms for practicals can be reserved by teachers through a booking service provided for by the Dean's Office. All the lecture halls can be used for supervised group work in the afternoon. When

necessary, laboratories and reading rooms within Departments can also be used for this purpose. All classrooms are equipped with a video-projector installed on the ceiling (in a few cases available on the desk) and connected to the podium, so that the teacher's laptop can be easily connected to it (Table n° 6.3). Two halls have microphone and loudspeakers, while the Main Hall (*"Aula Magna"*) has recording equipment. All classrooms have a wireless or cabled internet connection.

Teaching in groups is performed also in the Veterinary Museum as well as in the abbatoir area of the Necropsy building. The official number of students that can be accommodated in each of the rooms listed in Tables 6.3 and 6.4 is smaller than the actualy capacity of each room. This is due to the fact that safety regulations for public places in Italy are fairly strict.

| Building        | Ca' Gialla |     |     |     |     | Pentage | ono | Veterinary B          | uildings      |
|-----------------|------------|-----|-----|-----|-----|---------|-----|-----------------------|---------------|
| Room n.         | 2          | 7   | 17  | 18  | 2   | 15      | 17  | Clinical Lecture Hall | Vet Classroom |
| N° of seats     | 18         | 18  | 18  | 18  | 88  | 88      | 117 | 100                   | 98            |
| Video-projector | Yes        | yes | yes | yes | yes | yes     | yes | yes                   | yes           |
| Internet        | Yes        | yes | yes | yes | yes | yes     | yes | yes*                  | yes*          |

**Table 6.3** – Premises for lecturing at the Veterinary School of the University of Padova, Agripolis Campus: Room n°, building in which the classroom is located, n° of seats and presence of a video-projector installed on the ceiling and connection to internet. (\*) internet connection via a cable. Clinical Lecture Hall is in the Necropsy building, whereas Vet Classroom is in the Public Health building.

| Room n°    | 1        | 2            | 3       | 4         | 5           | 6          | 7          | 8      |
|------------|----------|--------------|---------|-----------|-------------|------------|------------|--------|
| Laboratory | Necropsy | Microscopy 1 | Biology | Chemistry | Haematology | Computer-1 | Computer-2 | Museum |
|            | N        | Р            | PH      | P         | P           | P          | P          | PH     |
| Places     | 40       | 35           | 30      | 40        | 20          | 20         | 22         | 50     |

**Table 6.4** – Premises for practical work at the Veterinary School of the University of Padova, Agripolis Campus: number of places for students' practical work on the various buildings of the Agripolis Campus. N = Necropsy building; P = Pentagon building; PH = Public Health building. Room n° 1 is shared by teachers in anatomy, pathology, food hygiene and reproduction. For the two computer rooms, the number of places refers to the number of computers available (plus the Master one)

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.

**6.5.1 Safety Measures** - The European Directive 89/391/CEE known as the Mark Directive sets out measures to promote improved security and safety for workers, while the Italian Law n° 626 of 1994 on Safety on Working Places outlines key preventive measures to be taken in public and private companies to guarantee safety of workers and reduce the risk of working accidents. In order to be allowed to access premises for practical work as well as laboratories, students have to take a course on Instructions for Personal Safety. The course is taught by a Faculty member of the FVMP (who deals with safety in the laboratory) and an agronomist working at the University Farm (who deals with safety when working with animals). Such a course is mandatory for every student, and is normally offered twice at the beginning of the first semester of the first year. Once the student has successfully taken the final written test, the Dean's office produces a certificate which the student has to show prior to initiating any kind of practical activity. There is no formal training on safety working with dogs, cats and exotic and wild animals; however, students are taught how to approach these animals during practical in animal husbandry, internal medicine, surgery and reproduction at the 3<sup>rd</sup> and 4<sup>th</sup> year. With regard to safety in radiology, 5<sup>th</sup> year students are trained during the course of Radiology on how to effectively and safely handle animals while taking an X-ray, including

wearing protective lead clothing. Undergraduate students are only involved in positioning and keeping the patient under the X-ray machine, but they have to exit the X-ray room when an X-ray is taken. PhD students are provided with personal X-ray badges and personal X-ray rings and can help in radiology.

#### 6.6 Diagnostic laboratories and clinical support services

#### Briefly describe the diagnostic laboratory facilities available for clinical diagnostic work.

As a support to animal owners and veterinarians for clinical and research investigations, the FVMP 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 Padova and its Municipality. The Pathology Service was the first one to be established in 1998, the Clinical Chemistry Laboratory started in 1999 together all Clinical services, while both the services of Parasitology and Infectious Diseases started in 2003.

**6.6.1 Parasitology Diagnostic Service** - The Parasitology and Parasitic Diseases Diagnostic Service offered through the Department of "Experimental Veterinary Sciences" provides diagnoses of parasitic diseases relevant to animal production and public health on a wide range of animal species. This service is situated in a 28 sq m room on the second floor of the Public Health building. A professor in Veterinary Parasitology holds responsibility for the service. One budgeted technician works full time in the Laboratory. This service started in 2003 with routinary diagnostic activities, chiefly concerning copromicroscopic examinations and heartworm disease detections. Since 2006 the Service started to use serological and molecular tools, which are not commonly applied in veterinary clinics for parasite analyses. As a consequence, the activity of the Service has increased over the years (Table n° 6.5.a)

| YEAR | N. of samples tested |
|------|----------------------|
| 2003 | 190                  |
| 2004 | 165                  |
| 2005 | 174                  |
| 2006 | 204                  |
| 2007 | 219                  |
| 2008 | 334                  |
| 2009 | 436                  |

Table n° 6.5.a – Number of samples tested for routine diagnostic activity from the Parasitology and Parasitic Diseases Diagnostic Service at the Faculty of Veterinary Medicine, University of Padova

Apart from the external Diagnostic Service on clinical samples coming from the VTH and from external clients, mainly practitioners (Table 6.5.a), the Laboratory of Parasitology and Parasitic Diseases performs analyses for research activity and to support research activity carried out by the Department of Veterinary Clinical Sciences. Thanks to this activity, the Laboratory provides also a good teaching environment for the practical training and for the graduation thesis work of veterinary medical students. As an example, for the 2009, the different type and number of analysis performed either as diagnostic service or for research activity are reported in Table 6.5.b.

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| ANALYSIS YEAR 2009   | diagnostic | research | TOTAL |
|--|------------|----------|-------|
|  | services   |          |       |
| Qualitative coprological examinations                      | 330        | 877      | 1207  |
| Quantitative coprological examinations                     | 23         | 1748     | 1771  |
| Serological tests and circulating microfilariae detections | 33         | 5        | 38    |
| Serological tests for Babesia canis                        | 28         | 6        | 34    |
| Serological tests for Babesia equi e B. caballi            | 4          | 5        | 9     |
| Parasite identifications                                   | 2          | 0        | 2     |
| Smears for hemoparasites                                   | 3          | 0        | 3     |
| Polymerase Chain Reaction analysis                         | 13         | 150      | 163   |
| TOTAL  | 436        | 2791     | 3227  |

**Table n° 6.5.b** – Type and number of analyses performed by the Parasitology and Parasitic Diseases Diagnostic Service of the Department of Experimental Veterinary Sciences, Faculty of Veterinary Medicine, University of Padova, in the Year 2009.

**6.6.2. Microbiology and Infectious Diseases Diagnostic Service** – The Service of Microbiology and Infectious Diseases began its activity in 2003 within the Department of Public Health, Comparative Pathology and Veterinary Hygiene. The service is performed in three laboratories of about 14 sq m each located on the second floor of the Public Health building. Bacteriology and serology are performed using common in vitro methods. Biomolecular techniques (PCRs and sequencing) are also applied. One budgeted technician works full time for this service. The head of the Service is a professor of veterinary microbiology and infectious diseases. Table n° 6.6.a lists the diagnostic tests routinely available.

| Diagnostic Tests                                |  |  |  |  |  |  |
|---|--|--|--|--|--|--|
| Microscopic and cultural bacteriology           |  |  |  |  |  |  |
| Antimicrobial sensitivity test                  |  |  |  |  |  |  |
| Serological tests for FIV                       |  |  |  |  |  |  |
| Serological tests for FeLV                      |  |  |  |  |  |  |
| Serological tests for Anaplasma phagocitophilum |  |  |  |  |  |  |
| Serological tests for Ehrlichia canis           |  |  |  |  |  |  |
| PCR for Anaplasma spp.                          |  |  |  |  |  |  |
| PCR for <i>Ehrlichia</i> spp.                   |  |  |  |  |  |  |
| PCR for Bartonella spp.                         |  |  |  |  |  |  |
| PCR for Borrelia spp.                           |  |  |  |  |  |  |
| PCR for Rickettsia spp.                         |  |  |  |  |  |  |
| PCR for PRRSV infection                         |  |  |  |  |  |  |
| PCR for Porcine Circovirus infection            |  |  |  |  |  |  |
| Sequencing                                      |  |  |  |  |  |  |

**Table n° 6.6.a** - Diagnostic tests available through the Microbiology and Infectious Diseases Diagnostic Service at the Faculty of Veterinary Medicine, University of Padova.

The diagnostic activity is performed on research samples as well as on clinical samples coming from the VTH and from external clients, mainly practitioners. Thanks to this activity, the Service provides also a good teaching environment for students of the Veterinary School (both during practical work of the courses in Infectious Diseases at the 3<sup>rd</sup> year as well as during TIROCINIO) and also for students of other degree courses (Biotechnologies, Food Biotechnologies and Food Security etc.), both for their training and for their graduation thesis work. Furthermore, this Service offers postmortem diagnostics on poultry and rabbits infectious diseases. The overall activity of this Service from 2003 to date is reported in table n° 6.6.b.

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| YEAR | N. of samples tested |
|------|----------------------|
| 2003 | 508                  |
| 2004 | 824                  |
| 2005 | 969                  |
| 2006 | 2205                 |
| 2007 | 2327                 |
| 2008 | 2298                 |
| 2009 | 2302                 |

Table n° 6.6.b Number of samples tested for both research and routine diagnostic activity by the Infectious Diseases Diagnostic Service at the Faculty of Veterinary Medicine, University of Padova.

**6.6.3 Pathology Diagnostic Service** - The Pathology Diagnostic Service is centered around a main laboratory which runs all diagnostic and research activities, in addition to the necropsy hall and to some areas dedicated to specific activities located in other interdisciplinary labs. The main laboratory (approx. 35 sq m) is located on the second floor of the Public Health building and is used for histopathology and cytopathology. Tissue samples received from outside practitioners and from the Clinical Department/VTH are trimmed, included, cut and stained in the laboratory, by means of an automed vacuum tissue processor (Leica ASP 300), an inclusion device (BioOptica), two microtomes for cutting (Shandon and Leica) and an autostainer (Leica autostainer XL). Trimming of necropsy samples is performed within the necropsy hall and then samples are processed in the histology laboratory. Standard haematoxylin and eosin and other histochemical stainings are routinely performed.

Two technicians work full-time in the histology laboratory. A third technician is involved with data registration, comunication with veterinarians, logistic of diagnostic activities, immunohistochemistry, as well as technical work. Upon receipt, sample data are registered in an *on line* database (www.simbavet.org) if not already registered by practitioners (see below). A digital camera (Nikon Coolpix 4500) is always available in the laboratory to take pictures of fixed/fresh samples during trimming. Cytological specimens are received in the same histology lab and stained with May Grumwald Giemsa in the autostainer or with different special staining if required. A cytospin cytocentrifuge (Shandon Cytospin) is frequently used by the technicians to prepare samples.

Specimen (biopsies and cytology) reading is performed by the staff of veterinary pathologists and by PhD students in the main office of the pathology section where a multiple (7 positions) light microscope (Olympus BX40) is available with a dedicated computer. A double light microscope (Olympus BX 40) with a second dedicated computer is also available in the same office and 3 single light microscopes (2 Nikon Eclipse E200 and 1 Nikon YS100) are generally used for diagnostic and research. A photographic light microscope is also available (Olympus Provis AX 70 with two non digital cameras and the Olympus U-MCB apparatus) in another office. A *Leica DMD108* digital microimaging network instrument is available in yet another office for histological specimen analyses and imaging capture and analyses.

Since the year 2000, all diagnostic cases (biopsies, cytology and necropsies) are recorded in an Access database. A report for each case is written by the staff on duty. Data recorded include owner details, signalment and brief history, sample features, characteristics of the lesion (according to the AFIP – Washington DC, USA - Descriptive Pathology standards), diagnosis and comment. A paper copy of the report is archived with a copy of the sample submission form. An official report signed by the head of the service and by the staff on duty is then sent by mail to the practitioners responsible for the case. In 2005, a new web-based system was developed (www.simbavet.org) where all data are collected and archived. External users have a password-based access, they can register, submit cytology, histology and necropsy exams request before sending the samples; through this system,

samples can be tracked on a real-time basis, and diagnosis and description can be available as soon as the pathologist records them. A signed paper copy of the report is mailed as an official document. Gross and histopath pictures can be loaded on the database in association with requests/reports by users and by staff. All glass slides are archived in a MetalGlass drawers system (Kaltek s.r.l) and submitted formalin-fixed samples are kept for three months before being disposed of.

Diagnostic routine immunohistochemistry (IHC) is run mainly for neoplasia phenotyping, generally once/twice a week. Research IHC protocols are investigated and applied by PhD students and staff once or twice a week also. An automed immunostainer (BenchMark IHC-ISH Ventana Medical System) is used with standardised protocols on large numbers of samples. A specific area of an interdisciplinary laboratory (1<sup>st</sup> floor, Public Health building) is available for IHC where the instrument is located with a dedicated computer. Protein analysis and electrophoresis (Western Blot; mono- and bidimensional electrophoresis preparation) are run for research in the same interdisciplinary laboratory as above. These latter techniques are applied specifically to test new antibodies for cross-reaction in IHC.

Molecular biology studies (institutional projects, PhD projects and graduation theses) are performed using the following facilities: two laboratories (20 and 25 sq m, respectively) provided with vertical laminar flow cabinets, Miniprep 60 (Tecan) Hybaid ribolyser, thermal cyclers (Primus 96 plus, MWG AGBiotech), 1 miniCycler MJ Research (Genenco), Real-Time PCR apparatuses (ABI Prism, Applied Biosystem and IQ5 BIORAD) for quantitative analysis with dedicated computers, Image Master VDS Pharmacia Biotech for gel images analysis and DNA-microarray devices (Agilent Technologies, Oligo Microarray Kit, Affymetrix).

Instruments for Electron Microscopy analysis are not available at the moment in the pathology unit. However, cooperative agreements with human hospitals and research centers in the Municipality of Padova allow ultrastructural analysis whenever the diagnostic procedures require it. Most common instances in which electron microscopy is require include research and case studies of neoplasia (i.e. undifferentiated/atypical neoplasia). The Pathology Service processes thousands of samples each year. Samples are received from the entire Northern and Central Italy including Rome. In 2009, more than 5000 samples were processed.

**6.6.4. Clinical Chemistry Diagnostic Service -** A fully equipped Clinical Chemistry Laboratory is located on the floor level of the Clinical Department building providing support for the handling of clinical cases of the VTH. The following equipment is available in the Laboratory:

| Company         | Name   | Year of acquisition | Used for                               |
|-----------------|--|---------------------|--|
| Roche           | Hitachi 912 Automatic Analyzer                   | 2001                | Serum biochemistry                     |
| Siemens         | ADVIA 120  | 2000                | Haematology                            |
| Siemens         | Immulite   | 2001                | Endocrine assays (Chemiluminescence)   |
| Nikon           | Eclipse E600 Microscope                          | 2000                | Routine microscopy                     |
| IL              | Premier 3000 GEM                                 | 2010                | Haemogas analysis                      |
| Beckman Coulter | P/ACE MDQ  | 2001                | Capillary electrophoresis              |
| Heraeus         | Labofuge 400                                     | 2000                | Routine centrifugation                 |
| Heraeus         | Labofuge 400                                     | 2000                | Routine centrifugation                 |
| Hermle          | Z233 M-2   | 2000                | Ultracentrifugatio (14000 rpm)         |
| Thermo Quest    | Trace GC Trace MA                                | 2001                | Gas chromatography – mass spectrometry |
| Packard         | Cobra 2  | 2000                | Gamma counter                          |
| Packhard        | Tri-Carb   | 2000                | Liquid Scintillation analysis          |
| Tecan           | Sunrise  | 2000                | Automated ELISA reader                 |
| Waters          | 26955 (+ detector 2487 UV/vis, coulochem II ESA) | 2001                | High Pressure Liquid Chromatography    |

 Table n° 6.7 – Name of company, name of instrument, year of acquisition and type of analysis for which each piece of equipment is being used in the Clinical Chemistry Diagnostic Laboratory of the Veterinary Teaching Hospital.

The Clinical Chemistry Laboratory is manned by 2 full time budgeted technicians (one of which is a biologist) and a part time non-budgeted technician. The Laboratory is open Monday through Friday from 8:30 until 17:30, and receives samples mostly from clinicians of the VTH. At night and during week-ends a Reflotron and a haemogas-analysis machine are available to the clinician on night duty in case of an emergency. The growth in number of analyses performed on an annual basis has somewhat paralleled the growth in the number of clinical patients during the last several years (see Table n. 6.8 and Figure 7.1). The sharp increase occurring only during the last year is due to the fact that in 2009 the organisation of the laboratory was improved. As a consequence the recording process became more sophisticated and complete and each and every analysis is now properly archived.

|           | N° of analyses performed during |      |      |            |              |               |            |       |  |  |
|-----------|---------------------------------|------|------|------------|--------------|---------------|------------|-------|--|--|
|           | 2006                            | 2007 | 2008 |            | 2009         |               |            |       |  |  |
|           | r                               |      |      | Hematology | Biochemistry | Endocrinology | Urinalysis | Total |  |  |
| Routine + | 450                             |      |      |            |              |               |            | 450   |  |  |
| Research  | ្រ                              | 361  |      |            |              |               |            | 361   |  |  |
|           | ι                               |      | 677  |            |              |               |            | 677   |  |  |
| Routine   |                                 |      |      | 114        | 380          | 110           | 95         | 699   |  |  |
| Research  |                                 |      |      | 33         | 45           | 208           | 6          | 292   |  |  |

**Table 6.8** – Number and type of analysis performed by the Clinical Chemistry Service of the Faculty of Veterinary Medicine of the University of Padova. Analyses performed until the end of 2008 were not recorded separately, therefore this piece of information is only available for 2009. The increase in the number of analyses during 2009 is also due to the archiving process being improved in 2009.

Indicate the nature of central clinical support services and how they are organised (e.g. diagnostic imaging, anaesthesia, etc.)

**6.6.5 Clinical Services: the Veterinary Teaching Hospital** – At the FVMP, the VTH has been organized as an Interdepartmental Center providing services related to teaching. The Director of the VTH is Prof. Maurizio Isola. Members of the VTH include staff members of FVMP. The VTH has a Statute and Policies and Procedures (see Annex 10) which have been formally accepted by the Rector of the University of Padova. The VTH is an autonomous financial center and has its own administrative secretary. The VTH offers a relevant number of clinical services mostly (but not exclusively) for companion animals including internal medicine, cardiology, dermatology, surgery, behavioural medicine, reproduction, radiology and computerized axial tomography, neurology, anesthesia and intensive care, ophthalmology, parasitology, microbiology and pathological anatomy. A large animal mobile clinic service called Herd Medicine Service is available for large animals. A wide range of sophisticated equipments complement clinical activities, including computerized axial tomography and scintigraphy (Table 6.10). A second-hand Gamma Camera (Table 6.10) has been recently acquired and validated for use in small animal for skeletal and endocrine diseases; the instrument is also available for clinical cases, but is not regularly employed in any of the clinical services yet as its costs curtail its routine use in everyday practice.

A 24-hr Emergency Service is available for small animals and horses. All services are supervised by the VTH Management Board and are aimed at providing clients and referring veterinarians with highquality veterinary care as well as specialist treatments (based on the competence of European College Diplomates and Residents present among staff). Referrals as well as first opinion cases come mostly from the Municipality of Padova, but also to a lesser degree from the rest of the Region



of Veneto as well as from neighbouring Regions (Emilia Romagna, Friuli Venezia Giulia, Marche). All services are meant to be purposely organized for teaching; therefore 1-4 students are always present attending patients and performing medical and surgical procedures during their clinical rotations.

**6.6.5.a** - The Internal Medicine Service provides high quality care in the fields of small animal internal medicine, cardiology, neurology (with one Diplomate of the ECVN), nephrology and urology, dermatology as well as in male and female abdominal ultrasonography. A total number of 40 ultrasound exams were officially performed in 2009 for general abdominal ultrasonography.

**6.6.5.***b* - The Surgery Service provides high quality care in the fields of small animal orthopedic and soft tissue surgery (with one candidate for the exam of the ECVS). This service is operated by 5 staff surgeons (Table 6.9).

**6.6.5.c** - The Cardiology Service provides high quality care in the fields of small animal cardiology. This service is operated by 2 staff internists with a special competence in cardiology (Table 6.9). A total of 24 cardiac ultrasonographies and 60 cardiological exams were performed during 2009.

**6.6.5.***d* - The Dermatology Service provides high quality care in the fields of small animal dermatology. This service is operated by 1 staff internist with a special competence in dermatology (Table 6.9).

**6.6.5.e** - The Reproduction Service provides high quality care in the fields of small animal reproduction and artificial insemination and semen freezing (with one diplomate and one resident of ECAR), reproduction of wild and exotic animals and reproductive ultrasonography. This service is operated by 4 staff theriogenologists (Table 6.9). Of these, one is a Diplomate and one is a resident of the ECAR. A total of 44 reproductive ultrasonographies were officially performed in 2009

**6.6.5.f** - The Radio-CAT Service provides high quality care in the fields of radiology and computerized axial tomography (CAT). This service is operated by one staff radiologist, two staff surgeons (Table 6.9). Also, one radiology technician is working full time for this service. Approximately 1600, 1900 and 1900 X-rays were taken during 2007, 2008 and 2009, respectively. A second-hand 1994 CAT equipment was acquired in the year 2007. With this equipment, 88, 40 and 35 CAT exams were performed in 2007, 2008 and 2009, respectively.

**6.6.5.***g* - The Anatomical pathologyService provides a diagnostic service in histopathology, cytopathology, necropsy and transmission electronmicroscopy. This service is operated by 5 staff pathologists of the Dept of Public Health, Comparative Pathology and Veterinary Hygiene (Table 6.9). Of these, 2 are diplomate of the ECVP. Approximately 5,000 histopathological diagnosis were performed in 2009.

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I

| Staff  | Internal<br>Medicine | Surgery | Cardio | Derm | Repro | Radio-<br>CAT | Patho | Anesth &<br>ICU | Neuro | 24-hr | Herd<br>Med | Ophthalm | Behavior | Microbiol | Parasit |
|--------|----------------------|---------|--------|------|-------|---------------|-------|-----------------|-------|-------|-------------|----------|----------|-----------|---------|
| member |                      |         |        |      |       |               |       |                 |       |       |             |          |          |           |         |
| FPdb   | Х                    |         |        |      |       |               |       |                 |       | Х     |             |          |          |           |         |
| FPrb   |                      | Х       |        |      |       |               |       |                 |       | Х     |             |          |          |           |         |
| FPcg   | Х                    |         | Х      |      |       |               |       |                 |       | Х     |             |          |          |           |         |
| FPsr   |                      |         |        |      | Х     |               |       |                 |       | Х     |             |          |          |           |         |
| FPmm   |                      |         |        |      |       |               |       |                 |       |       | Х           |          |          |           |         |
| FP mc  |                      |         |        |      |       |               | Х     |                 |       |       |             |          |          |           |         |
| FPmp   |                      |         |        |      |       |               |       |                 |       |       |             |          |          |           | Х       |
| APmi   |                      | Х       |        |      |       | Х             |       |                 |       | Х     |             |          |          |           |         |
| APii   |                      | Х       |        |      |       | Х             |       |                 |       | Х     |             | Х        |          |           |         |
| APvz   |                      |         |        |      |       |               | Х     |                 |       |       |             |          |          |           |         |
| APmm   |                      |         |        |      |       |               |       |                 |       |       |             |          |          | Х         |         |
| APmb   |                      |         |        |      |       |               |       |                 | Х     |       |             |          |          |           |         |
| AsPpf  |                      |         |        |      |       |               |       | Х               |       | Х     |             |          |          |           |         |
| AsPgd  |                      |         |        |      |       |               |       | Х               |       | Х     |             |          |          |           |         |
| AsPbc  |                      | Х       |        |      |       |               |       |                 | Х     | Х     |             |          |          |           |         |
| AsP am |                      |         |        |      | Х     |               |       |                 |       | Х     | Х           |          |          |           |         |
| AsPcm  |                      |         |        |      | Х     |               |       |                 |       | Х     |             |          |          |           |         |
| AsPdg  |                      |         |        |      | Х     |               |       |                 |       | Х     |             |          |          |           |         |
| AsPmef |                      |         |        |      |       |               |       |                 |       | Х     | Х           |          |          |           |         |
| AsPcs  |                      |         |        |      |       |               |       |                 |       | Х     | Х           |          |          |           |         |
| AsPaz  | Х                    |         |        |      |       | Х             |       |                 |       | Х     |             |          |          |           |         |
| AsPhp  | Х                    |         | Х      | Х    |       |               |       |                 |       | Х     |             |          |          |           |         |
| AsPst  | Х                    |         |        |      |       |               |       |                 |       | Х     | Х           |          |          |           |         |
| AsPmg  |                      |         |        |      |       |               |       |                 |       |       | Х           |          |          |           |         |
| AsPlc  | Х                    |         |        |      |       |               |       |                 |       | Х     | Х           |          |          |           |         |
| AsPgg  | Х                    |         |        |      |       |               |       |                 |       | Х     |             |          |          |           |         |
| AsPlc  |                      |         |        |      |       |               | Х     |                 |       |       |             |          |          |           |         |
| AsP sm |                      |         |        |      |       |               | Х     |                 |       |       |             |          |          |           |         |
| AsPsf  |                      |         |        |      |       |               | Х     |                 |       |       |             |          |          |           |         |
| AsPla  |                      |         |        |      |       |               | Х     |                 |       |       |             |          |          |           |         |
| AsPmd  |                      |         |        |      |       |               |       |                 |       |       |             |          |          | Х         |         |
| AsPsn  |                      |         |        |      |       |               |       |                 |       |       |             |          | Х        |           |         |
| AsPrc  |                      |         | 1      | 1    |       | 1             | 1     |                 | 1     |       |             |          |          |           | Х       |
| AsPaf  |                      |         |        |      |       |               |       |                 |       |       |             |          |          |           | Х       |
| AsPfm  |                      |         |        |      |       |               |       |                 |       |       |             |          |          |           | Х       |

## Chapter 6 – Facilities and Equipment

**Table n° 6.9** – List of teaching staff members from the Dept of Veterinary Clinical Sciences, the Dept of Public Health, Comparative Pathology and Veterinary Hygiene, the Dept of Veterinary Experimental Sciences, and their expertise/role within the different services offered by the Veterinary Teaching Hospital (FP = Full professor; AP = Associate Professor; AsP = Assistant Professor; Cardio = cardiology; Derm = dermatology; Repro = reproduction; Neuro = neurology; Patho = Pathological Anatomy; Anesth & ICU = Anesthesia and Intensive Care; Ophthalm = Ophthalmology; Microbiol = Microbiology and Infectious Diseases; Parasitol = Parasitology and Parasitic Diseases). The letters following each acronym are the initials of each person: db = Daniele Bernardini; rb = Roberto Busetto; cg = Carlo Guglielmini; sr = Stefano Romagnoli; mi = Maurizio Isola; ii = Ilaria Iacopetti; mb = Marco Bernardini; pf = Paolo Franci; gd = Giulia Debenedictis; bc = Barbara Carobbi; am = Antonio Mollo; cm = Chiara Milani; dg = Donatella Gelli; mef = Maria Elena Falomo; cs = Calogero Stelletta; az = Alessandro Zotti; hp = Helen Poser; st = Stefania Testoni; mg = Matteo Gianesella; Ic = Luigi Coppola; gg = Gabriele Gerardi; mc = Massimo Castagnaro; vz = Valentina Zappulli; Ic = Laura Cavicchioli; sf = Silvia Ferro; Ia = Luca Aresu; sm = Sandro Mazzariol; mm = Marco Martini; md = Michele Drigo; mp = Mario Pietrobelli; af = Antonio Frangipane di Regalbono; rc = Rudi Cassini; fc = Federica Marcer; sn = Simona Normando

6.6.5.h - The Anaesthesiology and Intensive Care 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 anaesthjesia. . Two staff anesthesiologists (one resident and one candidate for the exam of the ECVAA) operate this service in Exam Room n° 3 for short staying patients and 24h Service Bulding for long staying patients. (Table 6.9).

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| Company           | Name                            | Year of acquisition | Used for   |
|-------------------|---------------------------------|---------------------|--|
| General Electrics | Logig P5                        | 2007                | Abdominal and Cardiac US scans                   |
| Zonare            | Z.one Ultra 3.5                 | 2008                | Abdominal and Cardiac US scans                   |
| Pie Medical       | 100 Falco                       | 2002                | Abdominal US scan (students' equipment)          |
| Hewlett Packard   | Page Writer XLi                 | 1998                | Real time ECG                                    |
| Cardioline        | Telemetry CHT TX 2000           | 2004                | Telemetry 1 channel ECG monitoring               |
| Cardioline        | Prima ECG – Prima Stress        | 2004                | Real Time and Stress Test ECG                    |
| Cardioline        | Prima Holter                    | 2004                | 24h ECG recording                                |
| Olympus           | CHK2-F-GS (Optical microscope)  | 1996                | Quick smears evaluation during consultation      |
| Heine             | Mini 2000 Dermatoscope          | 2008                | Dermatoscopy                                     |
| Picker (PHILIPS)  | Gamma Camera PRISM 3000<br>XP   | 2007                | Skeletal and thyroid scintigraphy                |
| General Electrics | AS/5 Anesthesia Monitor         | 2009                | Anesthesia monitoring                            |
| Philips           | Viridia Anesthesia Monitor      | 1999                | Anesthesia monitoring                            |
| Datex-Ohmeda      | Capnomac                        | 1998                | Respiratory gas monitoring                       |
| Datex-Ohmeda      | Cardiocap II                    | 1998                | Cardiovascular monitoring                        |
| Hewlett Pakard    | Merlino x2                      | 1996                | Anaesthesia monitoring                           |
| IVAC              | 598 x2                          | 2001                | Fluids Infusion                                  |
| Terumo            | TE171NW2                        | 2003                | Fluids Infusion                                  |
| Fresenius         | Pilot C x3                      | 2002                | Drugs infusion                                   |
| BBraun            |                                 | 1997                | Drugs infusion                                   |
| Graseby           | 3500                            | 2008                | Drugs infusion                                   |
| BBraun            | Stimuplex HNS12                 | 2008                | Peripheral nerve block                           |
| Ministim          | MS1 B                           | 2008                | Neuromuscolar function monitoring                |
| Bair Hugger       | Warmer 505                      | 2008                | Patient warming                                  |
| EBI-Taema         | Archimede x2                    | 2003                | Anesthetic delivering and mechanical ventilation |
| Puritan Bennett   | 7200                            | 2006                | Mechanical ventilation                           |
| Various brands    | Anesthesia apparatus x4         | 1997-2002           | Volatile anesthetic delivering                   |
| SAMED             |                                 | 1999                | Anesthetic delivering and mechanical ventil      |
| SAMED             |                                 | 1996                | Volatile anesthetic delivering (Large animals)   |
| STORZ             | 450BV                           | 2008                | Endoscopy  |
| MULTIMAGE         | RADIUS S9                       | 2001                | IB   |
| TECNO-GAZ         | LINEA                           | 2001                | Sealing  |
| PBI               | ORION AUTOCLAVE                 | 1997                | Autoclave  |
| F.LLI GALLI       | 1800-T                          | 2003                | Water Bath                                       |
| MELAG             | MELACLEAN                       | 2003                | Sterilizer                                       |
| ALSA EXCELL       | 350 MCDS                        | 2003                | Electrosurgical                                  |
| SAMED             | TERMOBED SOLE                   | 2003                | Warm water blanket                               |
| CA-MI             | NEW HOSPIVAC 400                | 2009                | Suction machine                                  |
| AESCULAP          | GF 092                          | 1996                | Suction machine                                  |
| LIARRE            | TWIN                            | 2000                | Scaling machine                                  |
| MULLER            | X/995                           | 2000                | Dental micromotor                                |
| ESAOTEBIOMEDICA   | PATIENT IMPUT BOX 2<br>CHANNELS | 2001                | Electromyography                                 |

Formattato: Allineato a sinistra

Formattato: Francese (Francia)

Table nº 6.10 - Company name, instrument model, year of acquisition and type of exam/analysis performed by each piece of clinical equipment being used in the Veterinary Teaching Hospital.

**6.6.5.***i* - The Neurology Service provides high quality care for small animal patients with neurologic conditions. This service is provided by two staff member in surgery (one diplomate of the ECVN and one candidate for the exam of the ECVS).

**6.6.5.1** - The 24-hr Emergency Service is a new service started this year which provides a continuous monitoring of surgical as well as medical patients requiring constant care throughout the night and week-ends. The service will be operative daily from 18:00 until 8:00 of the following day, and from 18:00 on Friday evening until 8:00 of the following Monday. During this time small animal and equine patients admitted to the VTH are constantly monitored, and clients coming in with an equine or small animal emergency are accepted. The service is provided by a team of 3 non-budgeted staff members and 2 senior (5<sup>th</sup> year) veterinary student. The night team on duty is composed by one of the 3 non-budgeted veterinarians and 2 students. Out of the 19 budgeted staff members who participate in this service, 1 staff member in surgery, 1 in medicine and 1 in reproduction are available every night or week-end for emergencies or immediate consultation (Table 6.9).

**6.6.5**.*m* - The Ophthalmology Service provides high quality care for small animal patients with ophthalmologic conditions. This service is provided by one staff member in surgery with a special competence in small animal ophthalmology (Table 6.9).

**6.6.5.***n* - The Behavioural Service provides high quality care for small animal patients with behavioural conditions. This service is provided by one staff member from the Dept of Veterinary Experimental Sciences (a diplomate of the ECVBM).

**6.6.5.0** - The Microbiology and Infectious Diseases Service provides a diagnostic service for infectious conditions relevant to animals due to viruses and bacteria. This service is provided by 2 staff members in infectious diseases from the Dept of of Public Health, Comparative Pathology and Veterinary Hygiene (Table 6.9). Routine bacteriology and antimicrobial sensitivity tests are offered, as well as a selected set of serology and biomolecular (PCR) tests for viruses and microorganisms (see table n° 6.6.a).

**6.6.5.***p* - The Parasitology and Parasitic Diseases Service provides a diagnostic service for parasitic conditions on a wide range of animal species. This service is provided by 4 staff members in parasitology from the Dept of of Veterinary Experimental Sciences (Table 6.9). Routine copromicroscopic examinations, heartworm disease diagnosis, as well as serological and biomolecular tools are offered (see table n° 6.5.b).

**6.6.6** – PhD students and Interns of each one of the Departments offering services to the VTH are actively engaged in the VTH activities, and sometimes are official involved in some of the services.

*Note* - The total number of 108 ultrasonographic exams officially performed during 2009 may appear low. However, ultrasonographies are not always charged to clients (i.e. when clients accept to have student perform ultrasonund exams on their pets, or when a student brings in an healthy animal owned by a friend to be used for teaching purposes) the above figure underestimate the actual number of ultrasound exams performed; it is estimated that numbers relative to cardiological, and general abdominal and reproductive ultrasonographies should be multiplied by 1.2, 3 and 4, respectively.

#### 6.7 Slaughterhouse facilities

## Describe briefly the slaughterhouse facility to which the Faculty has access, including distances from the Faculty and level of activity.

There is no SH facility on the Agripolis Campus. Students are sent out to various public slaughterhouses (with which the FVMP has formal agreements) for their practical training. The Faculty has signed formal agreements with all the Public Health Agencies (AUSL) of the Veneto Region and also with those of the Regions of Friuli Venezia Giulia and Trentino Alto Adige. Based on these agreements, each student on TIROCINIO of Food Hygiene and Inspection (5th year) can take part to all inspective procedures, including ante and post mortem inspection of slaughtered animals in all SHs of the above mentioned Italian Regions (which means, about 600 SHs for Veneto, 100 for Friuli Venezia Giulia and 30 for Trentino Alto Adige. A part of these SHs includes meat processing plants, so that students can take part also in veterinary inspective procedures of meat products, meat preparations and/or of meat seasoned products. Some of the above mentioned SHs are very large plants which can process more than 100-200 cattle and/or equine per day, or more than 50,000-100,000 poultry per day. About 50% of the SHs are medium sized processing plants and the remaining 40% are small or very small processing plants. All SHs are authorized by the local AUSL according to the EU legal rules on food hygiene and Inspection. . All slaughterhouses strictly follow European and Italian rules on animal welfare to avoid pain and suffering before and during the slaughtering process.

The Faculty has established formal agreements with 5 SH where practical training sessions are regularly planned and performed during the Food Inspection courses. Students, divided in small groups (maximum 12 students per group), attend part of the teaching directly at the SH following the actions of official veterinarians under the guidance of university teachers: all the plants have the continuous presence of both official and internal (private) control system.

Bovine slaughterhouse: "Macello Tosetto", EU code CE IT 234 M., via Provinciale n. 12, in the town of Campo Sanmartino (PD), 20 km from Padova (a 30-minute trip from the Faculty) AUSL 15 Alta Padova. This is a bovine SH where students can gain experience on bovine slaughtering. This SH on average processes more than 200 cattle and/or 100 calf every day). The web site is: http://www.tosettocarni.it/.

Bovine/equine slaughterhouse: "Macello Pantano carni", Scarso Romualdo & Sons S.A.S. EU code CE IT 0 307 M, via Solchiello 20 in the town of Arre Padovana (PD), 20 km from Padova (a 20-minute trip from the Faculty) AUSL 17, Este-Conselve-Monselice-Montagnana. This is an associated bovine and equine SH where students can gain experience on bovine/equine slaughtering procedures. This SH slaughters 50-70 cattle and/or 20-30 horses per day). There is no available web site, at the moment.

Bovine/equine slaughterhouse: "Macello Piccolo", EU code CE IT 1601 M,, in the town of Lozzo Atestino (PD), Via Cà Basedonna, 25 - 35034 tel: 0429 94577, 50 km from Padova (a 60-minute trip from the Faculty), AUSL 17, Este-Conselve-Monselice-Montagnana. This is an associated bovine and equine SH where students can gain experience on bovine/equine slaughtering. This SH has the animal processing volume of a small/medium plant (i.e. on average 70-100 cattle and 20-30 horses per day). There is no available web site, at the moment.

Poultry Slaughterhouse: "Macello Scarso", in the town of Ponte San Nicolò (PD), 3 km from Padova (a 15-minute trip from the Faculty) AUSL 16 Padova. This is a poultry slaughterhouse with



the animal processing volume of a medium plant of 5,000-10,000 average animals per day (chickens, turkeys, quails, guinea fowls). There is no available web site, at the moment.

Swine Slaughterhouse: "Macello Busin", Salumificio Busin Ignazio & C. s.n.c.. 36010 Zanè (VI), in the town of Zané (Vicenza), 45 km from Padova (a one hour trip from the Faculty) AUSL 6 Vicenza. This is a swine SH with the processing volume of a medum plant. The web site is: <a href="http://www.salumificiobusin.it">http://www.salumificiobusin.it</a>.

### 6.8 Foodstuff processing units

Describe briefly any access that the Faculty has to foodstuff processing units.

There is no foodstuff processing unit on the Agripolis Campus. Students are sent to various public foodstuff processing units (with which the FVMP has formal agreements) for their practical training. As above outlined in Chapter 6.1.6., according the the agreements with all the Public Health Agencies of Veneto, Friuli Venezia Giulia and Trentino Alto Adige, each student during his/her own practical training on Food Hygiene and Inspection (5<sup>th</sup> year) can take part in all inspective procedures in various food PPs, with particular regard to those which process food of animal origin (meat products, dairy products, fish products). Because in each AUSL there are many food PPs which produce all kinds of food products, each student on TIROCINIO of Food Hygiene and Inspection can take part in inspective procedures for many different kinds of food, varying from meat products and dairy products to fish products including mollusks and other invertebrates.

#### 6.8.1 Food Hygiene

Practical training in food hygiene is also performed in food processing plants through formal agreements with the FVMP. Students, divided in small groups (maximum 12 students per group), attend practical demonstrations performed by the veterinarians of the processing plants under the guidance of university teachers. All the plants adopt both official and internal (private) control systems.

#### 6.8.1.1. Meat and meat products

- a. Salumificio M. Brugnolo S.r.I. 35010 Perarolo di Vigonza (PD) Via Venezia. 15. Tel. +39 049 8934222 Fax +39 049 725320 EU code CE IT 938 L, info@salumificiobrugnolo.it. www.salumificiobrugnolo.it/azienda.asp. AUSL 16 Padovana. This is a meat PP located 10 km from Padova (a 25-minute trip from the Faculty) where students experience the hot cutting of swine carcasses, the different kind of cuts and the of raw fresh and seasoned salamis (including sausages and "soppressata") and other fresh and seasoned meat products (including wurstel, bacon and so on). The Company has a modern management approach to the commercial and hygienic quality of the products and a very effective and updated HACCP-plan to control hygienic standards during the process.
- b. Salumificio Negroni Montorsi, Via Catania, 34. 37069 Villafranca. (Verona). Tel. 045 7901788; EU code CE IT 363 L, in the town of Villafranca di Verona, 70 km from Padova (a 1 hour trip from the Faculty) AUSL 22 Villafranca-Bussolengo. ThIS is one of the major food PP of the whole country for the production of cooked hams and cooked sausages. In this plant students can watch the processing of cooked meat products and take part to the veterinary inspective activities and to the self-controlled HACCP procedures which are implemented in the plant. For their modern approach to the HACCP-system application the Salumificio Montorsi is one of the best meat PPs of Italy.

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6.8.1.2. Milk and cheese

- a. Central milk factory of the Province of Vicenza: Via delle Casone 36100 Vicenza (Veneto), 0444 239811; <u>www.centralelattevicenza.com</u>. In Vicenza, 40 km from Padova (a 45 -minute trip from the Faculty) AUSL 6 Vicenza. A modern Company at the forefront in the production and marketing of fresh pasteurized milk and its derivatives such as UHT milk and yoghurt. Students actively follow the processing, the managing of the commercial and hygienic quality of any single product and the lab tasks.
- b. Mini-manufacturing dairy and milk storage room of the University Farm (see paragraph 6.4.3.a). Within the University Farm there is a milk collection unit and a simple laboratory for the processing of dairy products where students learn and apply the hygienic standards necessary for milking and the management of the milk before it is processed.
- c. Consorzio fra i Caseifici Dell'Altopiano di Asiago (Qxy.Coop) EU Code CE IT 05 234 Via Torrerossa,69 - 36043 Camisano Vicentino Tel.: (+39) 0444410272, Tel. 0424 460537/64844 Fax 0424 462639. This consortium delivers the milk to a large dairy plant located in via Francesco Baracca, 14 - 36012 Asiago (Vicenza, 70 km from Padova, a 90-minute trip from the Faculty) (AUSL 3 Bassano del Grappa) which processes more than 8,000 tons of milk per year. Here students can see the production of soft, semisoft and hard cheeses such as Grana Padano and Asiago, two of the most important Italian DOP (Protected Trade Name) cheeses.

#### 6.8.1.3. Fish

- a. Public wholesale fish market of Venice, near Venice (località Tronchetto), 25 km from Padova (a 30-minute trip from the Faculty) (AUSL 12 Veneziana). The wholesale public fish market of Venice is the second in Italy in terms of quantity of of fresh fish and fish products sold (about 35,000 tons fish per month). Here the students can see fresh fishes and fish products, always with the assistance of a teacher and of a veterinarian of the Public Health Agency of Venice.
- b. Fiorital Srl Località Marittima Fabbricato 114 30135 Venezia. Tel.+39 0412409200, Fax +39 0412409050, +39 0415229954, <u>info@fiorital.com</u>. Sito internet: <u>www.fiorital.com</u>. (AUSL 12 Veneziana). This is an Italian Company leader in the production, processing and marketing of fresh and frozen fish. The factory is also a leader in the production of fish preparations such as fish hamburgers and other similar varieties of fish-based food. Here students experience how to work in a plant which takes care of every step in the process chain.
- To this effect this Company:
  - manages third party fishing fleets who work exclusively for the Company;
  - processes the products in its own production units.

#### 6.9 Waste management

# Briefly describe the systems and equipment used for disposing of waste material; cadavers, carcasses, biological waste of different types, excreta, etc.

The waste management policy of the University of Padova 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 by-products produced during teaching, research, and diagnostic services in the necropsy hall, in the VTH or in the research laboratories of the FVMP, are discharged once or twice a week through an incineration process performed outside of the Agripolis Campus by an authorized private company. This process is paid by the University of Padova. Table 6.11 shows the total amount of animal waste disposed of by the FVMP in the period 2007-2009.

#### Chapter 6 – Facilities and Equipment

|         | Quantity |
|---------|----------|
|         | (tons)   |
| 2007    | 54.45    |
| 2007    | 52.35    |
| 2009    | 67.45    |
| Average | 58.08    |

Table n°6.11 – Animal waste disposed of by the Faculty of Veterinary Medicine of the University of Padova in the period 2007-2009

In the Necropsy Hall, carcasses and viscera are normally stocked in a refrigerating (2.5m x 3.5m) or a freezing (2.5m x 3.0m) room, depending on timing of use and type of processing; however, after use and prior to disposal, the material is stocked exclusively in the refrigerating room. The whole carcasses of small/young animals are closed within large dedicated storage bins (300Kg); larger carcasses (adult bovines, equines etc...) are hung on a overhead system of mechanical and electrical rails that connects the refrigerating rooms to the necropsy room. The following official documents always accompany all material to be discharged:

- A detailed description of the material, including weight, species, type of organs and identification marks if present (*i.e.* auricular mark, tattoo, microchip).
- Official stamp of place of origin (necropsy hall), signature of technician in charge
- Official stamp and signature of the veterinary officer of the local sanitary office that examined the material before approving the disposal process
- Official stamp and signature of the discharge company and the officer in charge of transport outside the Faculty.

Each document has a specific and unique registration number and must be produced in 5 copies. One copy is to be kept by the place of origin of the material (necropsy hall), one by the veterinary officer, one by the transporter and two copies will be presented to the discharging company. One of the latter two copies will be sent to the original place where the animal material came from (farm, owner, shelter etc...) after completing the process. All material is transported in large containers specifically approved by local sanitary authorities. Once the disposal process is over, all instruments, containers, storage bins, rooms that have been used for storage and movements are disinfected with sodium hypochlorite and ammonium salts before subsequent use.

The collection of chemical waste and laboratory material is handled on a regular basis by the Agripolis Waste Collection Center (AWCC), which receives weekly from the laboratories of each department as well as from the VTH the following type of waste:

- Solid biological waste (small remnants of organ removed at surgery, syringes with traces of blood, needls, bandages, faeces etc); this is collected in purposely labelled yellow plastic bags and put into cardboard boxes. These boxes are delivered weekly to the AWCC.
- Liquid biological waste (remnants of animal's blood, serum, urine etc) from research or diagnostic laboratories is put into purposely labelled plastic containers and taken weekly to the AWCC.

One technician from each Department is designated as responsible for handling hazardous waste and delivering it to the AWCC.

## 6.11 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.

A new, 3-storey (floor level, 1<sup>st</sup> and 2<sup>nd</sup> floor) building is going to be built attached at the south end of the Public Health Building. This new development of the FVMP has already been budgeted for, the architectural plan already approved by the University Senate and Administrative Council, and it should be started by the end of 2010 and completed by the end of 2013. This new building is supposed to host all the offices and laboratories of the Departments of Experimental Veterinary Science, and Public Health, Comparative Pathology and Veterinary Hygiene, respectively. Some of the personnel belonging to the former Department are now temporarily using facilities belonging to the Department of Animal Science (see above).

### 6.11 Comments

#### Comment on the adequacy of the buildings in general for undergraduate teaching.

The VTH buildings where clinical undergraduate teaching is performed are not adequate. There are not enough exam rooms, there is a lack of a room large enough to establish aproperly functioning ICU unit. Also, there is a general shortage of office space on the second floor of the Clinical Department Building. After being completed in 2001,his building has quickly reached its maximum capacity with most offices now hosting 2 and sometimes 3 staff members. PhD students and interns are crowded in one room. The room used as Pharmacy is basically a small storage room where only shelf space is available for drugs, plus a safe for anaesthetic drugs.

Furthermore, parking space at the VTH has also become insufficient. Clients often do not find a place to park their vehicles, and parking near the New Horse Stall Building puts vehicles at risk of being hit by a horse (or horses of injuring themselves while being moved to and from the VTH). Students have to park along the narrow road leading to the VTH bar-entrance; this further restricts the width of the road creating difficult situations when vehicles travel in opposite directions.

#### Comment on the adequacy of the equipment in general for undergraduate teaching.

The equipment available for undergraduate teaching is more than adequate. The only piece of equipment which is not ye available is a magnetic resonance equipment (MRI) and digital radiography. The Department of Veterinary Clinical Sciences has received 70,000 Euro for the acquisition of a second-hand magnetic resonance equipment (MRI) The expected cost of transferring and reassembling the MRI is approximately 120,000 Euro. The missing 50,000 should become available through a private sponsor before the end of the year.

#### Comment on the maintenance of buildings and equipment.

All buildings on campus undergo periodic renovation and maintenance, and are currently in fairly good conditions. However, little if any funding is available for routine maintenance, which tends to be done only when a serious problems arises.

Wireless internet connection is freely available in the Pentagon and Ca' Gialla buildings, while it is not available in the Clinical Department building.

The equipment of the Clinical Chemistry laboratory is fairly expensive to be maintained. Maintenance contracts are a heavy burden for the Departmental budget, therefore renewal of these contracts is not done on a yearly basis but rather when funds are available. Occasionally a piece of equipment may brake down and be unavailable for a few days or weeks. This creates problems and may harm the reliability of the VTH.

#### 6.3 Suggestions

# If you are unhappy with any situation, please list any improvements you would make in order of preference.

Due to the above reasons a formal request for building an extra floor on this building has been put forward to the central administration of the University. Having an extra floor would solve the problems connected to the lack of office space, and perhaps would create the possibility to establish a Pharmacy in one of the rooms on the ground floor.

Another need is to move the 24-hr service within the Clinical Department building or closer to it, as currently patients need to be moved back and forth from the 24-hr building to the Clinical Department building using a stretcher, which becomes problematic when it rains.

Because of the expected growth of the VTH, it would be advisable to enlarge the width of this road and turn part of the land in front of the main entrance of the VTH building into a parking lot.

Wireless internet connection should be activated also in the Clinical Department building.

## Chapter 7

## ANIMALS and TEACHING MATERIAL of ANIMAL ORIGIN

## written by V. Zappulli and S. Romagnoli

### 7.1 Factual Information

The article n. 8 of the national law n. 116/1992 about 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 University of Padova has decided not to authorise these kinds of experiments, opting for the use of alternative methods in teaching. Therefore, experiments with animals for teaching purposes are not performed in any of its courses. Healthy animals are only showed to students and when handled, are never in a suffering/stressed condition. Any kind of veterinary treatment is performed only on sick animals, and it is finalised only to cure and improve their health. These cases are also used for teaching purposes.

### 7.2 Anatomy

## Indicate the materials that are used in practical anatomical training, and how these are obtained and stored.

Practical anatomical training is performed using both fresh and stocked animal samples.

#### Fresh samples

Carcasses and viscera of domestic animals are normally used for dissection during anatomy wet labs. Numbers of animals and animal material used are summarized in Table 7.1. Cadavers of dogs and cats – who were sacrificed for humane reasons or died from natural causes - are obtained mainly from shelters located around Padova. Since the cost of incinerating animal bodies is quite high, the owner is not charged these expenses in exchange for the use of the body of the dead animal, following written agreements. Therefore the animal bodies are specifically collected for students practicals thanks to the good professional relationship the FVMP maintains with many shelters, including the responsibility for clinical and pathological aspects. Occasionally, dogs and cats are submitted for necropsies from owners and practitioners and the carcass remains are then used for dissection of specific anatomical systems (*i.e.*, muscular and skeletal systems, peripheral and central nervous systems etc.), for display of macroscopical features or gross anatomy. Histological samples collected by the pathologists are sometimes displayed for teaching purposes.

Carcasses of large animals (mainly food producing animals: calves/cows, sheep, goats, pigs) derive from farms located throughout the entire Veneto Region and occasionally from surrounding Regions. These animals died from non-infective conditions and are usually submitted to perform diagnostic necropsies to the FVMP. When animals are submitted for an official necropsy, some parts of the cadaver (devoid of lesions) could be used also for anatomy dissection wet labs (i.e. limbs can be used to study the skeletal system provided that the animal did not die because of infectious diseases). Horses are more difficult to obtain, since they are usually valuable animals that died for infective conditions or are submitted for legal necropsies. When traumatic/non-infective causes are
reported, the horse can be used for anatomy practice. Similarly, rodents and lagomorphs are obtained from local farms and used for teaching purposes both in anatomy and pathology practice.

The FVMP has many scientific cooperation with zoos, natural parks and both local and central authorities<sup>7</sup>. Through such cooperation, several other species of non-domestic animals are submitted for necropsies, either for research studies or as a donation to the Veterinary Teaching Museum. The list of species includes reptiles (*i.e.* snakes, turtles, iguanas), exotic birds, wild mammals (*i.e.* tigers, lions, wild ruminants) and marine species. In 2002 a Mediterranean Marine Mammal Tissue Bank (MMMTB) was established at the Department of Experimental Veterinary Sciences, with the specific purpose to harvest organ specimens from stranded whales and dolphins and distribute the tissues to researchers all over the world for free. Marine species are transported to the FVMP particularly when stranded in the Northern Adriatic or Northern Tyrrenic Sea. Although the legislation is quite strict on the use and handling of live or dead cetaceans, the FVMP is fully authorized (CITES permit # IT 020, issued to the MMMTB) to this purpose. Therefore a consistent number of dolphins and even whales is used for anatomical and pathological practice. The MMMTB – and therefore the FVMP - houses a consistent collection of cetacean tissues (> 2500 specimens), brains (> 40) or skeletons (45) (table 7.2.1).

Anatomy wet labs take place in two teaching laboratories (a dissecting room; a microscope laboratory) and in the Veterinary Teaching Museum where the students are divided in two groups of 30-35 students each. Each room has several tables, and students, working in small groups under the supervision of a teacher have to complete the assignment of each laboratory in subsequent sessions. One session in the dissecting room usually consists of the dissection of a group of muscles or a specific muscle (such as the *biceps brachii*) including the relative relevant vessels and nerves; students, working in the microscope laboratory share one instrument every two persons and analyze slides of the different organs of the body systems, with the aid of a display screen connected to the master microscope manipulated by the teacher; students in the Museum work with bones identifying clinical/surgical landmarks using freely available bones and skeletons (the Museum is open all day long also outside the teaching schedule and students are encouraged to practice also alone using textbooks and notes. Avian species are also included in practical training for embryology (fetal adnexa) and are part of the anatomical practice.

Non-pathological visceral organs from SHs are also used for wet labs of anatomy, either fresh or refrigerated (for a complete list of SHs where viscera are collected see table 7.2.5). Organs are mainly from traditional food producing animals (cattle, pigs, sheep, goats), while equine organs can be obtained less frequently as horses are not slaughtered as intensively as other food animal species in the Veneto Region. Organs mainly include lung, liver, heart, spleen, and kidney in equal percentage. Other organs (*i.e.* the gastrointestinal tract and central nervous system) are more difficult to obtain due to transmissible spongiform encephalopathy legislation. Nevertheless during the anatomy course a scheduled timetable of practical activity is run in accordance with theoretical lectures and specific organs are collected (*i.e.* genital tract with foetal membranes, digestive system etc) depending on specific agreements with SHs. Plastination of visceral organs has been performed thorough external cooperation, and some plastinated visceral organs are located within the Faculty Museum. A whole equine fetus with fetal membranes, three bovine hearts, an equine intestine, an ovine rumen, and fully sectioned brains of two tigers are available to study anatomical details. These viscera are available to students when fresh organs are insufficient.

<sup>&</sup>lt;sup>7</sup> In Italy local authorities such as Port Authorities, Forestry Police and City Police are responsible for marine animals, wild animals and wildlife animals, respectively

Dissections performed by the teacher on cadavers and organs are videotaped and concomitantly projected on two large monitors located within the necropsy hall. Students can watch the dissection directly standing around either the dissecting table or on the surrounding hemicycled-double levelled-tribune for observers. During practicals students also personally dissects available cadavers under teacher supervision.

#### Stored samples

Complete skeletons (>50) of several species, including exotic and wild animals, and lab animals (non human primates) are also prepared and many are already stocked and available to students in the Veterinary Teaching Museum close to the necropsy/dissecting room. In addition, four bovine pelvic bones have been completely reconstructed for obstetric clinical practice during which fresh bovine uteri can be lodged for practicing rectal palpation and artificial insemination. As noted above, a consistent collection of more than 45 skeleton or skeletal remains of marine mammals is available for student thesis and advanced studies. An artificial human skeleton is present for comparative medicine. Within the Veterinary Teaching Museum a collection of multiple feline, canine, bovine and equine bones is also stocked into two unlocked, freely available cupboards for student self study.

A collection of formalin-fixed complete brains (>40) from marine mammals, carnivores (several specimens of different large felines, including two plastinated tiger brains cut along the coronal and horizontal planes) one elephant and one hippopotamus, is kept in the Dept. of Experimental Veterinary Sciences for scientific studies. In addition, animal tissues are processed to prepare histology slides for practical training of microscopic anatomy. In the microscopy room multiple sets (60 boxes) of normal tissues (70 specimens per boxes) of all different organs from domestic animal species (dog, cat, horse, cow, pig, sheep, goat) and lab animals are available for students. Thirty-five optical microscopes (Leika and Nikon) are located in Room n.2 (see chapter 6.5) in addition to a 5-headed microscope and a digital microimaging instrument (DMD108, Leika Mycrosystem) that can both project the image either through a screen projector or on two digital screens. Furthermore, the following interactive CDs collections are shown during lectures and are available to students: Molecular Biology of the Cell (Alberts ed.), Developmental Biology (Gilbert ed.), Visceral Anatomy of the Horse (EdAgricole ed.), Histology and Microscopic Anatomy (Delmann Eurell, English ed.).

Embalming of whole cadavers or single organs is feasible since a specific perfusion pump has been recently acquired, but the whole procedure is seldom applied since fresh cadavers are easily available. Furthermore the disposal of the embalming fluids and the embalmed cadaver is quite costly because of the potentially toxic and dangerous nature of some of the embalming fluids.

#### 7.3 Physiology

Practical training in physiology is largely based on laboratory work during which students can acquire expertise related to the physiology of various organs and systems. Emphasis is placed on laboratory procedures which are relevant to clinical practice, such as urinalysis, haematology, serum biochemistry, analysis of organic fluid compartments (*i.e.* osmolarity) and electrocardiography. Nervous system and muscles physiology are practiced both with laboratory experiments as well as with virtual models applied on computer and DVD (*i.e.* isolated nerves and muscles). Practical training is carried out two hours/week/student, with students divided into two groups of 40 each. Students are then further divided in groups of 4 and each group has an assignment (*i.e.* how to assess osmolarity, how to acquire data in a particular physiological procedure such as with isolated nerves, isolated muscles etc) and have to write a report. Groups are randomly chosen every week so that students learn the importance of flexibility and team working.

|          |                         |                    | 2007    | 2008          | 2009          | Average   |
|----------|-------------------------|--------------------|---------|---------------|---------------|-----------|
|          | food                    | cattle             | limbs   | limbs         | 1 (and limbs) |           |
|          | producing               | small<br>ruminants |         | 1             |               |           |
|          | ammais                  | pigs               | 15      | 25            | 15            |           |
|          | equine                  | horses             | limbs   | 2 (and limbs) | 1 (and limbs) |           |
| CADAVERS | companion               | dogs               | 30      | 40            | 50            |           |
|          | animals                 | cats               | 2       | 5             | 10            |           |
|          | rodents /<br>lagomorphs |                    | 80      | 80            | 80            |           |
|          | avian                   |                    | -       | -             | 30            |           |
|          | TOTAL                   |                    | 127     | 151           | 187           | 155       |
| ORGANS   |                         |                    | 2268 Kg | 1870 Kg       | 2260 Kg       | 2132.6 kg |

Table n°7.1. Material used in practical works in veterinary anatomy. Organs include lungs, livers, hearts, spleen, and kidneys in equal percentages. Other organs (nervous, digestive, and reproductive systems) are collected whenever necessary in accordance with lectures timetable.

In addition to lab work some practical are also performed on live animals. The chosen subjects are mainly large animals from the University Farm. Here students can observe and study the main organic functions through physical examination. Bovines are used to observe digestive and nervous functions. As during these visits animals are under stressed condition due to human presence, the autonomous sympathetic activity is specifically monitored. Sensorial, cardiovascular and digestive physiology is also studied on these and other animals (small ruminants, equines). Students are divided in groups of 3 student/animal, and are under constant supervision while doing their assignments. By doing a series of repeats with 5 groups of 3 students working at the same time, the entire class has the opportunity to practice physiology in close contact with a live animal during one afternoon.

Additionally, students are required to observe animal behavior. This is performed both on large animals in the University Farm where behavior is examined and discussed with the teacher. DVDs containing videos with specific behavioral traits of small animals are shown in class and discussion with the students is then stimulated (it is not easy to obtain small animals to be examined directly in class). Furthermore a visit is always carried out during the ethology course to meet a dog trainer who can explain and discuss with students major problems and needs related to this profession and veterinary responsibility in this field. The dog trainer also shows students how to properly train dogs in practice with the application of learning principles.

#### 7.4 Pathology

Indicate the nature and extent of any additional sources of material for the teaching of necropsies and pathological anatomy, including slaughterhouse material.

Table 7.2 shows the number of necropsies performed over the past three years by teachers and pathologists of the Department of Public Health, Comparative Pathology and Veterinary Hygiene. The Department offers a Diagnostic Service of anatomical pathology in cooperation with microbiology and avian pathology. Necropsies are usually performed at the Faculty, with the exception of a few field necropsies performed within the farms and some cetaceans necropsies that are carried out outside of the necropsy room (but still at the Faculty premises) or on beaches where animals are stranded. Multidisciplinary approach to necropsies can include involvement of parasitologists and anatomists from the other Departments of the FVMP.

Domestic animals come from private practices located in urban and suburban area of Padova as well as occasionally from the Veneto region and from the Department of Veterinary Clinical Science of the FVMP. Large animals are collected from farms mainly within Veneto Region and occasionally from the urban and suburban areas of Bologna and Ferrara (Region of Emilia Romagna) and from the Regions of Friuli Venezia Giulia and Trentino. Wild and exotic animals come either from private practices (i.e. small reptiles) or from zoos and natural parks in North-Eastern Italy that have collaborative agreements with the Faculty. Cetaceans and other marine mammals from Mediterranean sea are either transported to the FVMP (see also the description of the MMMTB above) or require on-site necropsies in coastal areas or in aquatic parks.

Students from the 5<sup>th</sup> year going through the TIROCINIO in pathoogy follow practical rotations that include necropsies and avian pathology. Four students a week follow necropsies being performed by the diagnostic service of anatomical pathology. They have to collect historical and clinical data and take notes of major lesions in order to prepare a final report to submit to the teacher on duty. They personally perform the necropsy opening major cavities, examining organs, and then discussing macroscopic lesions with the pathologist on duty. Gross pictures are collected and archived by students with teacher support. Students also collect samples for additional exams (bacteriology, virology, toxicology) and for histology purposes. During the rotation students also participate to the trimming process to prepare histological specimens either from necropsies performed earlier in the week or necropsies of the previous week, following discussion of lesions on gross images. Similarly, during rotation in avian pathology 5<sup>th</sup> year students perform necropsies coming from the Veterinary Clinic of the FVMP, clinicians and students on clinical rotation are invited to present the case and, if possible, students from the clinical rotation follow the initial steps of the necropsy with discussion of major gross lesions together with pathologist/s and the students from the pathology rotation.

In addition to the diagnostic necropsies other carcasses and visceral organs are specifically obtained for teaching (table 7.2.1). Large animals consist mainly of pigs, as the FVMP has a number of official agreements with Veneto swine farms through which animals that died for non-infectious conditions (and which do not need an official diagnostic report) are sent to the FVMP for teaching purposes. Occasionally old horses with chronic non-infective diseases are donated to be used for non invasive teaching. Small animals come from shelters provided that they died from non-zoonotic disease or were euthanized for humane reasons. Avian species are either donated or purchased from local farms for teaching. These are used during avian pathology course (3<sup>rd</sup> year). Students learn how to perform a necropsy on avian species and to interpret gross pathological lesions.

Visceral organs are collected from SHs around the Padova area (a complete list of SHs where viscera are collected is included in table 7.2.5. These organs are similarly collected for practical activity for the course of Food Inspection. Organs are split between the two disciplines after collection to approach gross exams from different point of view and therefore organs quantities in table 7.2.1 and 7.2.4 are equal. Visceral organs are from bovine, small ruminants, swine and equine and include equal percentages of: heart (with pericardium and major heart base vessels); lung with trachea, esophagus and mediastinal lymph nodes; liver; spleen; kidney. Less frequently reproductive tract and stomach/intestines are obtained.

|                                |                     | 2007 | 2008 | 2009 | Average |
|--------------------------------|---------------------|------|------|------|---------|
|                                | cattle              | 78   | 61   | 91   | 76.6    |
| food producing                 | small ruminants     | 9    | 4    | 19   | 10.6    |
| animaio                        | pigs                | 9    | 2    | 11   | 7.3     |
| equine                         | horses              | 17   | 11   | 27   | 18.3    |
| companion animals              | dogs                | 40   | 32   | 62   | 44.6    |
| ··· ··· · · · · ·              | cats                | 12   | 12   | 30   | 18.0    |
| rodents /                      | rodents             | -    | -    | -    |         |
| lagomorph                      | lagomorph           | 2    | 8    | 13   | 7.6     |
|                                | reptiles            | 17   | 18   | 25   | 20.0    |
| wild / exotic                  | camelids            | 3    | -    | 4    | 2.3     |
|                                | others <sup>1</sup> | 9    | 2    | 7    | 6.0     |
| marine<br>mammals <sup>2</sup> |                     | 9    | 11   | 13   | 11.0    |
| Non human                      |                     |      |      |      |         |
| primates                       |                     | 6    | 2    | 14   | 7.3     |
| avian                          |                     | 10   | 17   | 6    | 11.0    |
| TOTAL                          |                     | 221  | 180  | 322  | 241     |

#### Chapter 7 – Animal and teaching material of animal origin

Table n°7.2 - Number of diagnostic necropsies over the past three years. <sup>1</sup> other exotic/wild animals include: 2 antelopes, 2 chinchillas, 4 deers, 2 leopards, 1 lion, 1 lynx, 2 mongooses, 1 mustelid, 2 suricats, 1 tigers; <sup>2</sup> marine mammals includes: cetaceans, sea lions and seals

Both carcasses and organs are mainly used during the General Anatomical Pathology course (3<sup>rd</sup> year students, II semester) which is mainly based on practical activity. The course includes a module of Necropsy Techniques where students learn how to perform a complete post mortem. A second module is General Anatomical Pathology which includes discussion of descriptive pathology criteria and morphological diagnoses on pathological viscera and organs. General pathology processes are explained on the basis of gross lesions. A descriptive approach is applied and students are required to be able to understand lesions and reach a morphological diagnosis.

|                       |                           |                                       | 2007    | 2008    | 2009    | Average |
|-----------------------|---------------------------|---------------------------------------|---------|---------|---------|---------|
|                       |                           |                                       | -       | -       | 6       | 2.0     |
|                       | food producing<br>animals | small ruminants                       | 2       | 7       |         | 3.0     |
|                       |                           | pigs                                  | 69      | 120     | 65      | 84.6    |
|                       | equine                    | horses                                | -       | 2       | 2       | 1.3     |
| CADAVERS              | companion animals         | dogs                                  | 88      | 88      | 109     | 95      |
|                       | companion animais         | cats                                  | 5       | 17      | 65      | 29      |
|                       | radanta / lagamaraha      | rodents                               | -       | -       | -       |         |
|                       | Todents / lagomorphis     | lagomorphs                            | 11      | 16      | 15      | 14      |
|                       | avian                     |                                       | 150     | 200     | 310     | 220     |
|                       | TOTAL                     |                                       | 325     | 450     | 572     | 449     |
| Slaughterhouse ORGANS | large animals             | Cattle, pigs, small ruminants, horses | 4536 kg | 3740 kg | 4700 kg | 4325 kg |

Table 7.2.1 Organs and cadavers specifically obtained for students practical training

During diagnostic necropsies and practical training the most significant and representative lesions are also preserved by use of reduced concentrations of formalin fixative (Klotz solution). At present, the collection of these specimen is not very abundant, but it is progressively increasing. Using this

procedure, students can safely handle and study specimens not routinely encountered during their training period.

Practical sessions of cytology and histopathology are given on cytological specimens and formalinfixed paraffin-embedded tissues coming from necropsies and from the histopathology diagnostic service. Biopsies come from Italian veterinary practitioners mainly from Northern Italy and from the VTH. Cytology practical activity is included in the 5<sup>th</sup> year pathology rotation of the TIROCINIO (see Table 5.3) when 4 students sit at the multi-headed microscope with the pathologist on-duty. Cases are presented and discussed with students in association with clinical history. Occasionally cytological procedure is performed during necropsies, mainly from small animals, allowing students to practice with sampling techniques and to associate cytopathology with gross aspects.

Practical training in histopathology occurs mainly at the 3<sup>rd</sup> year during the General Anatomical Pathology course including a third module of cyto- and histopathology. Slides are projected with a digital microimaging device in the microscopy room, and are also are available to students for self assessment. Slides, prepared from most common species (dog, cat, bovine, equine) show major general pathological processes (degeneration, necrosis, inflammation and neoplasia) in order to give students a complete picture of pathological processes (general pathology, histopathology and gross pathology).

The case load both for necropsies has increased remarkably over the last three years. Formal agreements have been established between the Faculty and farms as well as practitioners to increase numbers of cadavers available to students; all cadavers are collected at the expenses of the FVMP. Furthermore, all material entering the necropsy hall is discharged according to European laws (i.e. EC Regulation 1774/02). Therefore, students during the 5<sup>th</sup> year rotations learn also about management of biological waste and safety procedures associated with necropsies.

#### 7.5 Parasitology and Parasitic Diseases

Macro and microscopic identification of endo/ecto-parasites is carried out during practical works in the microscopy and biological rooms during the 1<sup>st</sup> and 3<sup>rd</sup> year. Parasites belong to collections prepared either from cadavers/organs entering the Faculty through the Diagnostic Service or for teaching and from samples sent to the Parasitology Unit for diagnostic. The entire collection covers major parasitic groups for a total of approximately 250 specimens for macroscopic identification and 100 samples for microscopic examination. Samples come from food-producing animals, pets as well as wild animals.

During practical sessions of the 1<sup>st</sup> year (Parasitology), students are divided into groups of 20-25 students/group and work in the microscopy room with 2 teachers for a total of 12 hours of practical activity/student to allow practicing morphological identification. During practical sessions of the 3<sup>rd</sup> year (Parasitic Diseases), lab work is performed on isolation and identification techniques from different biological samples (faeces, urine, blood, skin scrapings, hair plucks, environmental specimen) in order to allow students to practice diagnostic technique in parasitic diseases. Students are organized in groups of 15-20 students/each group with 2 teachers for a total of 14 hours of practical activity/student. Preserved parasites are also available to students for autonomous studying sessions.

Besides the practical teaching provided during the 2 courses of Parasitology and Parasitic Diseases, students go through practical training for their TIROCINIO at the Laboratory of Parasitology for a total of 50 hours (2 ULC). Students in TIROCINIO are organized in groups of 3-4 persons and

practice parasite identification and diagnostic techniques learned during the courses, under the supervision of the teaching staff in Parasitology.

#### 7.6 Microbiology and Infectious diseases

Practical activity for infectious diseases consists of lab work and field work. The lab work is performed during the 2<sup>nd</sup> year when student are divided into groups (<20 students each, with two teachers) and practice within the lab all standard techniques related to microbiology diagnostics including serology, immunology and bacteriology. Students perform tests from biological samples (swabs and blood samples) obtained from the Infectious Diseases Unit of the VTH. In addition visits to animal farms are planned during the 3<sup>rd</sup> year and at least one farm for each food producing species (bovine, equine, swine, small ruminants) and one shelter are visited as a whole-class trip. Students learn farming techniques with regard to infectious diseases associated with environmental features. Poultry and rabbits farms are also visited as part of practical activity of the avian pathology course (3<sup>rd</sup> year), although availability of farms where the whole class can be admitted is limited and tends to vary from year to year. Epidemiology is also part of the veterinary curriculum which includes a fair amount of practical activity mainly performed with a problem solving system using case studies and computer facilities.

#### 7.7 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 perform practical training in food-producing animals (farm animals) with regards to breeding and genetics, morphological evaluation, nutrition, rearing techniques and animal welfare, on live animals both within the University Farm and private farms which accept to receive students after specific agreement with the FVMP. In addition, shelters are also included in cooperative agreements to allow students to carry out practical activity on nutrition and management of dogs and cats as well. The University Farm is close to the FVMP (see Figure 6.4) and can be easily reached by small groups of students to perform practical activity. For this reason, all the students spend at least 2 weeks of their TIROCINIO there to practice handling different species of farm animal and to understand the management of a farm. The agreement of the FVMP with external farms and facilities offers the students opportunities to enhance practical activity and to apply the knowledge acquired during the training performed at the University Farm. Teaching animals available at the University Experimental Farm are summarized in table 7.2.2. while table 7.2.3 indicates the number of agreements signed by the FVMP with external farms.

| Animal category | 2007 | 2008 | 2009 | Average |
|-----------------|------|------|------|---------|
|                 |      |      |      |         |
| Dairy cattle    | 55   | 58   | 62   | 58.3    |
| Calves          | 45   | 46   | 40   | 40.7    |
| Heifers         | 43   | 42   | 30   | 38.3    |
| Beef cattle     | 50   | 50   | 50   | 50      |
| Sheep           | 20   | 22   | 35   | 25.6    |
| Horse           | 8    | 8    | 8    | 8       |
| Fattening pigs  |      |      | 80   | 80      |
| Rabbit          |      |      | 500  | 500     |
| Poultry         |      |      | 400  | 400     |
| Total           | 221  | 226  | 1292 | 1200.9  |

Table n°7.2.2 Number of animals available at the University Experimental Farm of the University of Padova for practical training to students in Veterinary Medicine.

| Category                      | N° of teaching agreements |
|-------------------------------|---------------------------|
| Dairy and beef cattle farms   | 10                        |
| Pig farms                     | 7                         |
| Poultry farms                 | 1                         |
| Sheep farms                   | 2                         |
| South American camelid farm   | 1                         |
| Rabbit farm                   | 1                         |
| Farmers associations          | 6                         |
| Riding school and horse farms | 2                         |
| Shelters                      | 2                         |

Table n°7.2.3 Number of formal agreements signed by the Faculty of Veterinary Medicine of the University of Padova with private farms and breeding centers in 2009.

#### 7.8 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.

During the 2<sup>nd</sup> year, when attending the course of Food Hygiene and Technology, students are taken out on whole-class trips to visit 2 food PPs. During the 7<sup>th</sup> semester students attend each week 2 hours of practical demonstration in the necropsy hall where the whole class examines with the teacher visceral organs, poultry carcasses, molluscs and fishes. Furthermore, the teacher organizes each Wednesday afternoon 2-hour sessions during which students come to the necropsy hall in groups of 10 (20 students with 2 teachers) and perform direct, hands-on evaluation of visceral organs, poultry carcasses, molluscs, fishes etc. Viscera affected by the most frequent lesions found at meat inspection come from many SHs of the Veneto Region, as already mentioned in chapter 7.2. For these organs judgments related to food inspection legislation are given after gross pathology exams and discussion with the teacher. Possible commercial frauds concerning these latter species are discussed with the students. Material available for practical works in food hygiene and public health is summarized in table 7.2.4.

In addition to on-site training of commercial products and organs, visits to meat and dairy factories and to SHs are also performed to allow students to verify the HACCP system in the control of food hygiene. A list of the structures that are involved in specific agreements with the FVMP to accept students and major SHs that are visited and used to collect organs is given below (Table 7.2.5).

|   | 2007    | 2008    | 2009    | Average |
|---|---------|---------|---------|---------|
| Visceral organs from food producing animals | 4536 kg | 3740 kg | 4700 kg | 4325 kg |
| Poultry (N. of animals)                     | 306     | 300     | 810     | 472     |
| Mollusc and fishes                          | 272 kg  | 128 kg  | 164 kg  | 188 kg  |

Table n°7.2.4 Material used for food hygiene and public health practical activity

During TIROCINIO in food inspection (see also chapter 4), 5th year students work in groups of 4 in the laboratory of Food Microbiology, following and being actively involved in the normal routine of microbiological examination of food; at the same time, the students are stimulated to draw an inspective judgment on the basis of the analytic results found during the food analysis. Subsequently, students are sent to one of the SHs or food PPs of a Regional Public Health Agency where they practice food inspection under the supervision of State Veterinarians who are contract professors at the FVMP (see Table 4.1.12). Students work directly at the food chain, inspect fish markets, check milk and food processing plants, food stores etc. Each 5th year student has to do a total of 7 ULC of TIROCINIO in food inspection and Public Health.

| Animal        | Company name               | Address   |
|---------------|----------------------------|---|
| species       |                            |   |
| Bovine        | Macello Tosetto s.a.s.     | Via Provinciale 12 CAP 35010 Campo San Martino (PD) |
| Bovine/equine | Macello Pantano Carni      | Via Solchiello, 20 CAP 35020 Arre (PD)              |
| Bovine/equine | Macello Piccolo            | Via Ca' Basedonna, 25 Lozzo Atestino (PD)           |
| Poultry       | Macello Scarso R. and sons | Via Garibaldi, 43 CAP 35020 Ponte S. Niccolo' (PD)  |
|               | s.a.s.,                    |   |
| Swine         | Macello Busin              | Via Trieste, 158 CAP 36010 Zanè (Vicenza)           |

Table n°7.2.5 - Slaughterhouses with associated meat plant and deboned meat plant (dissecting laboratories). These structures have formal collaborative agreements with the Faculty of Veterinary Medicine. University of Padova, to provide organs and viscera as well as accept students for practical training in food hygiene and inspection

#### 7.9 Consultations and patient flow service

#### 7.9.1

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.

The Veterinary Teaching Hospital (VTH) is currently open for 50 weeks throughout the year for five days a week. Consultations are from Monday to Friday, from 8.00 a.m. to 6.00 p.m. The consultation service is based on appointments. An emergency care is active both during consultation hours as well as during nights and week-ends (see chapter 6.6.5). During the year the consultation service is closed one week in August and one week in December. For a complete description of services operated on a daily basis within the VTH the reader is referred to chapter 6.6.5. All the service are available both for small and for large animals.

#### 7.9.2

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 7.4.3). The term "consultation" refers to those patients which come in and go out during daily consultation hours. "Hospitalisation" refers to those patients which are retained in the clinic as "in patients" following presentation.

The number of animals visited at the VTH is summarized in Table 7.3. A significant growth in the total number of animals seen at the VTH occurred over the last nine years (Figure n° 7.1). Animal species include dogs and cats as well as large animals, mainly horses and bovines. Ovine and caprine, small



lagomorphs and some exotic animals such as camelids and small reptiles (turtles, iguanas) are sometimes presented to the VTH for clinical examination. With regard to total number of cases, it is well known that each animal can serve as more than one case, both because more than one condition may be present, but also because a patient may constitute a case for the internalmedicine rotation as well as for the surgery rotation (if the condition becomes untreatable) or for the anesthesia and ICU rotation, the diagnostic imaging rotation etc. We have looked at how frequently this has occurred in our patients of the VTH during 2009, assessing how often the same patient appears in the budget (as a cost for the owner) through different rotation-related services. Based on a conservative estimate of the VTH records, during the months of March, June an October 2009 ten animals have produced approximately 15 clinical cases. Therefore, the figures relative to the total number of cases of 4288, 4311 and 5076 for 2007, 2008 and 2009, respectively.

A small number of large animals including 3 horses, 1 donkey, 2 calves, 15 ovines, 15 minipigs 4 llamas and 7 alpacas (5 males and 2 females) are presently housed at the Faculty premises for research or teaching purposes. These animals are generally cared for and followed by students (5<sup>th</sup> year rotations and students on night and week-end duties). They are typically used during lectures (clinics and animal production) to demonstrate various non-invasive procedures of clinical examination, physiological functions related to nutrition and feeding, and animal behavior. The mini-pigs are used for experimental cardiac surgery within a research project in collaboration with the Medical School of the University of Padova. Students are actively involved in the handling of animals, in performing sedation, intubation anesthesia, in helping the chief surgeon as well as in the recovery phase.

| Yea             | ar   | 2007                    | 2    | 008                     | 2    | 2009                   | Average |
|-----------------|------|-------------------------|------|-------------------------|------|------------------------|---------|
| Species         |      |                         |      |                         |      |                        |         |
|                 |      | 1 <sup>st</sup> opinion |      | 1 <sup>st</sup> opinion |      | 1 <sup>st</sup> opinio | on      |
| Dogs            | 2403 | 408                     | 2256 | 639                     | 2668 | 525                    | 2442.3  |
| Cats            | 333  | 141                     | 489  | 170                     | 582  | 226                    | 468.0   |
| Equine          | 23   | 22                      | 56   | 50                      | 38   | 29                     | 39.0    |
| Bovine          | 28   | 21                      | 16   | 16                      | 30   | 29                     | 24.7    |
| Small ruminants | 22   |                         | 15   |                         | 22   |                        | 19.7    |
| Other species   | 50   |                         | 52   |                         | 44   |                        | 48.7    |
| TOTAL           | 2859 |                         | 2874 |                         | 3384 |                        | 3039    |

**Table n°7.3** Number of animal visited at the Veterinary Teaching Hospital of the Faculty of Veterinary Medicine of the University of Padova, divided by species. Small ruminants include ovine, caprine and camelids (alpaca and Ilama). Other species are small lagomorphs and some exotic animals such as and small reptiles (turtles, iguanas).

The FVMP has also signed an agreement with a private equine hospital (Centro Medico Equino, owned by Dr. Carlo Barnini) where student spend a week of their TIROCINIO of equine practice following clinical cases, attending surgeries and learning the most common procedures of equine medicine and particularly equine emergency surgery. During 2009, the Centro Medico Equino has seen 477 horses (Table n° 7.3.1)



Figure n° 7.1 - Number of animals visited at the Veterinary Teaching Hospital of the Faculty of Veterinary Medicine, University of Padova, during the period 2001-2009.

|                           | Medicine | Surgery | Reproduction | Orthopedics | Rehabilitation | Pre-purchase<br>visits | Sub-total |
|---------------------------|----------|---------|--------------|-------------|----------------|------------------------|-----------|
| Day Hospital              | 24       | 87      | 5            | 64          |                | 8                      | 188       |
| Prolonged hospitalization | 73       | 116     | 60           | 18          | 22             |                        | 289       |
| TOTAL                     |          |         |              |             |                |                        | 477       |

**Table n° 7.3.1** – Total number of horses visited during 2009 at the "Centro Medico Equino", a private equine hospital with which the Faculty of Veterinary Medicine of the University of Padova has a formal agreement. Since the 2008-2009 academic year, all 5<sup>th</sup> year student spends a week in this hospital during their TIROCINIO rotation in equine practice, in groups of 4 students/group.

#### 7.9.3 Vehicles for animals transport

#### State the number and nature of the Faculty vehicles that can be used to bring sick animals to the clinics.

A small truck is available to carry sick animals to the FVMP. This vehicle is mainly used to transport bovines and equines. It can carry up to two adult horses and it is normally used for outside calls. On the vehicle all instruments for a field-based clinical visit can be transported and animals can be visited outside the Faculty or transported to the VTH. Two other small vans are available. These cannot be used to transport live animals but are mainly used for outside visits with students, particularly during the 5<sup>th</sup> year for the clinical rotations of TIROCINIO or for dissertation projects. When visiting farms students are always accompanied by a teacher. Also PhD students can use these vehicles to follow their own projects and reach research or field facilities. Private owners will often transport their own animals to the Faculty; this happens particularly with horses (but also with South American camelids or small ruminants) coming from within or outside the Veneto Region. Practitioners working with equine species and owners will occasionally brings their animals to the Faculty for referral visits.

#### 7.10 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 consultations. A 24-hr emergency service has been activated as of March 22, 2010. This service is operated by 1 veterinarian and 2 students who are on duty from 6:00 pm until 8:00 am 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 outpatients (see also chapter 6.6.5.1)

#### 7.11 On farm teaching and outside patient care

#### 7.11.1 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.

At the FVMP, a mobile clinic is available for food animals and horses. Such a service has been organized gradually over the years thanks to the FVMP a) signing a number of agreements with dairy and beef as well as small ruminant farms, and b) hiring as full time staff an Assistant Professor who has managed to maintain a few key equine clients with whom also the FVMP has signed formal agreements. For food animals, faculty staff regularly visit the farm to support health managements and reproduction. For equines, during the breeding season the staff member provides a regular service to clients, including emergency service on nights and week-ends for foaling or neonatology problems. Students always go out regularly both to the food animal farms as well as to the equine farms and stud centers. These outside visits are performed with either faculty or private vehicles, carrying material for standard specific procedures and sampling. When surgery or diagnostic imaging aids are necessary, animals are transported to the Faculty.

Table n° 7.4.1 portrays the total number of informal and formal, commercial-type agreements which the FVMP has currently signed with veterinarians, farmer's associations and also directly with cattle breeders. Through these agreements faculty members from the Herd Medicine Service regulary bring groups of 3-4 students out on field trip on Mondays and Wednesdays of each week. At least 2 farms are visited on any given field trip, and students learn how to approach an animal, how to do a physical examination, how to collect blood and biological material, how to introduce an oro-oesophageal cannula, how to administer fluids and how to counsel farmers on interpretation of productive and reproductive indices. The aim is to expose students to food animal practice while at the same time acquiring informations about metabolic and nutritional disorders of animals in livestock production in order to perform research related to the assessment of animal welfare and fertility.

| Chapter 7 – | Animal | and | teachine | a mat | terial | 0 | animal | oriain |
|-------------|--------|-----|----------|-------|--------|---|--------|--------|
|             |        |     |          | J -   |        |   |        | - 0    |

| Farm name                                      | Location                        | Animals reared                | Number<br>of<br>animals | Number<br>of visits<br>each<br>year | Number<br>of<br>examined<br>animals |
|--|---------------------------------|-------------------------------|-------------------------|-------------------------------------|-------------------------------------|
| Az. Agricola Abruzzo Romeo*                    | Collelongo (AQ)                 | Dairy cows and beef<br>cattle | 100                     | 2                                   | 10                                  |
| Az. Agricola Bernardi Amedeo*                  | Longa Schiavon (VI)             | Dairy cows                    | 450                     | 4                                   | 48                                  |
| Az. Agricola Bernardi Giovanni<br>e Angelo*    | Rossano Veneto (VI)             | Dairy cows                    | 239                     | 3                                   | 36                                  |
| Az. Agricola Cà Filza di Filippi*              | Bolzano Vicentino (VI)          | Dairy cows                    | 525                     | 3                                   | 36                                  |
| Az. Agricola Caoduro Severino                  | Monterale Valcellina<br>(PN)    | Dairy cows                    | 800                     | 1                                   | 20                                  |
| Az. Agricola Chiappin Pier<br>Sergio           | Santorso (VI)                   | Dairy cows                    | 119                     | 1                                   | 12                                  |
| Az. Agricola Cofini Giovani*                   | Magliano dei Marsi<br>(AQ)      | Dairy cows and beef<br>cattle | 100                     | 2                                   | 10                                  |
| Az. Agricola Colombare                         | Fara Vicentino (VI)             | Dairy cows                    | 180                     | 1                                   | 14                                  |
| Az. Agricola Crosato                           | San donà di piave (VE)          | Dairy cows                    | 75                      | 1                                   | 13                                  |
| Az. Agricola Dalle Palle Silvano               | Camisano Vicentino<br>(VI)      | Dairy cows                    | 210                     | 2                                   | 23                                  |
| Az. Agricola Finato Martinati<br>Guido         | Concamarise (VR)                | Dairy cows                    | 398                     | 1                                   | 14                                  |
| Az. Agricola La Meridiana*                     | Vicenza (VI)                    | Dairy cows                    | 219                     | 4                                   | 48                                  |
| Az. Agricola La Voliera*                       | Tezze sul Brenta (VI)           | Dairy cows                    | 328                     | 3                                   | 36                                  |
| Az. Agricola Mazzetto Andrea                   | Villadose (RO)                  | Dairy cows and beef<br>cattle | 238                     | 18                                  | 348                                 |
| Az. Agricola Miotti Apollonio*                 | Breganze (VI)                   | Dairy cows                    | 153                     | 4                                   | 48                                  |
| Az. Agricola Rigoni Diego                      | Asiago (VI)                     | Dairy cows                    | 89                      | 1                                   | 14                                  |
| Az. Agricola Stocchero Alberto                 | Montorso Vicentino              | Dairy cows                    | 124                     | 1                                   | 8                                   |
| Az. Agricola Tomassetti<br>Filiberto e Flavio* | San Benedetto dei<br>Marsi (AQ) | Dairy cows and beef cattle    | 200                     | 2                                   | 8                                   |
| Az. Agricola Tonin Giuseppe                    | San Martino di Lupari<br>(PD)   | Dairy cows                    | 150                     | 3                                   | 39                                  |
| Az. Agricola Toninelli Luciano                 | Orzinuovi (BS)                  | Dairy cows                    | 146                     | 1                                   | 12                                  |
| Az. Agricola Valdastico-Benetti                | Thiene (VI)                     | Dairy cows                    | 134                     | 1                                   | 12                                  |
| Az. Agricola Zecchin F.lli*                    | Mira (VE)                       | Weawening calves              | 750                     | 4                                   | 96                                  |
| Az. Agricola Zilio Gastone                     | Villafranca Padovana<br>(PD)    | Dairy cows                    | 134                     | 1                                   | 14                                  |
| Stalla Sociale La Villa*                       | Collelongo (AQ)                 | Dairy cows and beef<br>cattle | 250                     | 2                                   | 10                                  |
| Stalla sociale Molinella*                      | Mira (VE)                       | Beef cattle                   | 1050                    | 24                                  | 245                                 |
| Stalla sociale Monastier*                      | Monastier (TV)                  | Beef cattle                   | 2180                    | 24                                  | 269                                 |
| TOTAL  |                                 |                               | 9341                    | 114                                 | 1443                                |

**Table n° 7.4.1** - Total number of visits to cattle farms performed under the supervision of faculty staff, commercial-type agreements which the Faculty of Veterinary Medicine of the University of Padova (FVMP) has currently undersigned (for the year 2009) with veterinarians, farmer's assocations or farmers. The table also illustrates for each agreement the type of animals bred, how many visits/month are done by the Herd Medicine Service staff of the FVMP, and the average number of animals checked by teaching staff and students on each visit (\* Farms with which there is a formal written agreement which includes a payment to the FVMP or the Dept of Veterinary Clinical Sciences.)

| Contract Professor   | Animals reared        | Number of visits each year |
|----------------------|-----------------------|----------------------------|
| Arnaldo Azzolin, DVM | Dairy and beef cattle | 96                         |
| Marcello Lora, DVM   | Dairy and beef cattle | 96                         |
| Angelo Sandri, DVM   | Dairy and beef cattle | 96                         |
| Claudio Toffan, DVM  | Dairy and beef cattle | 96                         |
| TOTAL                |                       | 384                        |

Table n° 7.4.1.1 - Total number of visits to cattle farms performed under the supervision of contract professors within the TIROCINIO activity.

- 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). Also, state the average number of visits in a year made by the ambulatory clinic to farms and other institutions. Animals studied in practical teaching outside the Faculty should be entered in the section entitled "Ambulatory Clinic" (Table 7.4.3)

**7.11.1.a** - BOVINES – In 2009, a total of 1443 animals (both adult cows and calves) have been visited and/or controlled directly on farms. Many of the calves had common neonatal diseases (respiratory problems, meteoric conditions, diarrhea), nutritional diseases (urolithiasis) or hereditary and/or genetic diseases (harmonic dwarfism, mulefoot, congenital cardiac disease). Most operations on cows were related to general farm animal medicine such as metabolic-nutritional diseases (ruminal acidosis, ketosis), productive and reproductive conditions. All students are normally involved in handling animals, performing physical and collateral examinations as well as doing the follow up of each case.

The Department of Veterinary Clinical Science has a contract with several bovine farms for the surgical treatment of perineal hernia in calves: this surgery is performed on the farm directly by the students: the student holds the scalpel and does the sutures, while a staff surgeon provides supervision. In 2009, field trips have been performed to 38 dairy farms and 5 beef bulls farms. During this activity 2016 samples of biological material (blood, urine, faeces, ruminal fluid, food, milk, etc.) were collected and submitted for laboratory analysis. This activity has led to the drafting of 8 thesis for graduation in Veterinary Medicine (and also Animal Science and Technology) and a few publications on scientific, peer reviewed journals on topics relating to metabolic and nutritional disorders of animals in livestock production.

**7.11.1.b** – SMALL RUMINANTS and CAMELIDS - Similarly to cows, formal agreements have been established by the FVMP also with small ruminant and South American camelids. During 2009, 12 visits were performed to the following 2 farms: a) *Fattoria Lungargine* (Padova), a Suffolk sheep farm with 35 ewes and 20 rams; b) *Azienda Bevilacqua*, Cartura (Padova) – a farm with 10 llamas. On each visit, on average 20 and 5 animals are visited in the Lungargine and Bevilacqua farms, respectively. Four visits during the course of 2009 were performed to *Azienda Poggio Piero*, (Grosseto, Central Italy), with 60 alpacas; on each visit, approximately 20 alpacas were visited

**7.11.1.c** - SWINE – A total of 9 swine farms are currently being visited by students on TIROCINIO for swine practice (Table 7.4.2). Swine field trips are performed on Wednesdays, Thursdays and Fridays. The first day (Wednesday) is entirely spent at the Milani Farm where students perform castration and vaccination of piglets, and artificial insemination, estrus detection, blood sampling etc working with Dr. Rossetto (Table n° 4.1.12); the average number of cases seen on any Wednesday is 55. The following 2 days are spent travelling to the other 8 farms with Dr. Tonon (Table n° 4.1.12), where student perform ultrasonographic pregnancy diagnosis, infertility investigations, field necropsy, and learn how to handle and use drugs as well as counsel pig farmers on productivity problems. The average number of cases seen in the two days spent with Dr. Tonon is 110. Surgical procedure are performed either by the students or by Faculty staff ony when expressly requested by the farm owners.

#### Chapter 7 – Animal and teaching material of animal origin

| Farm                      | Location                               | Animals                         | No. of<br>visits/year |
|---------------------------|--|---------------------------------|-----------------------|
| Agrifarm                  | Casali Campeis – Fagagna (UD)          | 100 sows                        | 16                    |
| Suinicola Sandanielese a) | Via Aonedie – Ragogna (UD)             | 500 sows                        | 16                    |
| Suinicola Sandanielese b) | Via Divisione Julia – Majano (UD)      | 200 sows                        | 16                    |
| Armellini Sonia           | Via Richinvelda – S. Martino al T. PN  | 250 sows, farrow to finish      | 16                    |
| Zoccolo E.S.A.            | Via Casenove – Ronchis (UD)            | 150 sows, farrow to weaning     | 16                    |
| Gigante F.Ili             | Via Erars – Ronchis (UD)               | 150 sows, farrow to finish      | 16                    |
| Nordest di Brotto         | Via Maserat – Cordignano (TV)          | 180 sows, farrow to finish      | 16                    |
| Ponte Alto                | Via S. Pietro – la Salute di Liv. (VE) | 20,000 animals, wean. to finish | 16                    |
| Milani                    | Via Pordenone, S. Vito al Tagliamento  | 4000 sows, farrow to weaning    | 16                    |
| Total                     |  |                                 | 144                   |

Table n° 7.4.1.2 - Swine farms that signed agreements with the FVMP for the TIROCINIO and under the supervision of contract professors (Giuseppina Rossetto, DVM and Francesco Tonon, DVM).

**7.11.1.d** - EQUINES – The FVMP has a formal agreement with two equine breeding stud centers, Intermizoo S.p.a located in Barbariga di Vigonza (who holds 5 stallions and serves about 30 mares/year) and Tieppo Equine Breeding s.r.l, located in S. Martino di Lupari (Padova) (who holds 5 stallions and serves 100 mares/year). One of the teachers of the Department of Veterinary Clinical Sciences, Dr. Falomo, provides a 24-hr mobile clinic service during the breeding season through which approximately 40 mares and/or foals are followed up every breeding season. Groups of 4 students are regularly taken out by Dr. Falomo during the equine Practical Training which takes place during the breeding season (all students have to rotate through the equine practice TIROCINIO during the breeding season). Table 7.4.2 shows a list of procedures performed during the last 5 years at the above 2 equine breeding stud centers. Students typically spend 3 days/week working at breeding studs and are actively involved in performing each and everyone of the above-mentioned procedures. The total number of patients seen by the Mobile clinics services of the FVMP is shown in table n° 7.4.3.

#### 7.12 Other Information

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 facilities, hours of service, equipment, expertise, responsiveness, etc.

**7.12.a** - Staff members in reproduction have established informal agreements with municipal shelters of the Veneto Region. In one of these shelters (Selvazzano, Padova), the teacher brings the students for practical works within the course of Clinics in Reproduction. Students in groups of 8-12 spend the entire morning or afternoon visiting dogs, practicing animal restraint, performing vaginal or preputial smears, transabdominal palpation of the uterus, transrectal palpation of the prostate, and also blood collection whenever there is such a need.

Such practical works are organized at the end of the course of Clinics in Reproduction, between December and January each year. In two other shelters (Monselice and Rovigo) one other teacher in reproduction brings the students in groups of 4-5 to give them an opportunity to practice spay/neuter of dogs and cats; students are actively involved in performing anesthesia and doing the surgical procedures hands-on. On any given day, the above 3 shelters have an average of 60 dogs, 50 dogs and 60 dogs + 40 cats, respectively.

| PROCEDURE                                     | Year 2005 | 2006 | 2007 | 2008 | 2009 |
|---|-----------|------|------|------|------|
| Artificial Insemiantion (AI) with fresh semen | 86        | 92   | 81   | 73   | 68   |
| AI with frozen semen                          | 32        | 28   | 18   | 16   | 0    |
| Deep intrauterine Al                          | 4         | 15   | 26   | 44   | 53   |
| Pregnancy diagnosis                           | 123       | 142  | 119  | 193  | 164  |
| Embryo Transfer                               | 18        | 28   | 21   | 16   | 14   |
| Semen collection and evaluation               | 600       | 600  | 600  | 600  | 600  |
| Semen freezing                                | 120       | 135  | 123  | 73   | 64   |
| Cervical swab for bacteriology                | 54        | 73   | 66   | 82   | 78   |
| Cervical swab for citology                    | 54        | 73   | 66   | 82   | 78   |
| Uterine Biopsy                                | 28        | 33   | 31   | 27   | 19   |
| Uterine flushing                              | 105       | 147  | 166  | 184  | 172  |
| Caslick surgery                               | 48        | 51   | 36   | 49   | 63   |
| Endometritis                                  | 36        | 37   | 44   | 26   | 51   |
| Testicular ultrasound                         | 2         | 5    | 9    | 6    | 13   |
| Testicular biopsy                             | 5         | 2    | 3    | 1    | 1    |
| Fetal monitoring                              | 64        | 72   | 63   | 37   | 46   |
| Assisted parturition                          | 34        | 27   | 21   | 33   | 38   |
| Abortion                                      | 5         | 7    | 6    | 11   | 4    |
| Placentitis                                   | 3         | 1    | 4    | 6    | 9    |
| Dystocia                                      | 3         | 8    | 11   | 5    | 7    |
| C-section                                     | 0         | 1    | 0    | 0    | 1    |
| Placental ritention                           | 11        | 13   | 10   | 16   | 12   |
| Pregnancy diagnosis Donkey                    | 38        | 52   | 49   | 23   | 47   |
| NEONATOLOGY                                   |           |      |      |      |      |
| Failure of passive transfer of immunity       | 6         | 4    | 8    | 3    | 7    |
| Peripartum asfixia syndrome                   | 12        | 16   | 11   | 2    | 5    |
| Neonatal Isoeritrolisis and septicemia        | 3         | 5    | 3    | 2    | 2    |
| Septic artritis                               | 4         | 4    | 6    | 1    | 2    |
| Omphalitis                                    | 5         | 9    | 6    | 21   | 19   |
| Respiratory disease                           | 13        | 23   | 28   | 31   | 48   |
| Angular limb deformity                        | 10        | 15   | 9    | 4    | 11   |
| TOTAL   | 560       | 540  | 570  | 555  | 580  |

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**Table n° 7.4.2** – Total number of equine reproduction and general medicine cases seen through the Equine Ambulatory Service offered by the Faculty of Veterinary Medicine, University of Padova to the 2 Equine Breeding Studs Intermizoo s.r.l. and Tieppo s.r.l. during the period 2005-2009. The total number of cases does not corresponds exactly to the sum of all the cases seen in each year because the same horse may bave been treated more than once for various conditions.

|                                  | Chasica            | ١          | Average    |            |         |  |
|----------------------------------|--------------------|------------|------------|------------|---------|--|
|                                  | Species            | 2007       | 2008       | 2009       | Average |  |
| Food-producing animals           | cattle             | 502        | 625        | 1443       | 1262.3  |  |
|                                  | small ruminants    | 82         | 240        | 240        |         |  |
|                                  | pigs               |            |            | 165        |         |  |
|                                  | other farm animals | 30 alpacas | 50 alpacas | 80 alpacas | J       |  |
| Poultry (n° of flocks)           |                    |            |            | 3          | _ 5     |  |
| Rabbits (n° of production units) |                    |            |            | 2          | ſ       |  |
| Equine                           |                    | 570        | 555        | 580        | 568.3   |  |

Table n°7.4.3: Number of cases seen by the Ambulatory (mobile clinics) in the past three years

The level of clinical practice offered by the Faculty is unanimously considered of a good to high standard when compared to outside practices. When considering facilities and equipment for small animal, the FVMP scores in the upper 10%, with only a small number of private clinics and hospitals being of a higher level due to the presence of magnetic resonance or of a brand new type of CAT machine. Particularly, one private clinical chemistry and hormonal assay. This clinic provides a full fledged array of assays on virtually anything that can be necessary in veterinary practice, and has an excellent commercial organization thanks to an agreement with an express courier, through which it processes thousands of samples each month. Although the Clinical Chemistry Laboratory of the FVMP is nowhere near competing with this structure, it is nevertheless equipped with a remarkable number of sophisticated pieces of equipment and has increased its volume of activities over the last few years (see Chapter 6.6.4 and Tables 6.7 and 6.8). A small but increasing number of samples are coming from outside veterinary clinics.

When considering the level of expertise, few if any private clinics in the Veneto Region have the same number of veterinarians who are specialists or are regarded as being experts in their area. The hours of service are higher than most small animal clinics. Responsiveness to clients' needs is also very good as many of the clinicians are young and well trained in client satisfaction (an issue which has been regarded as increasingly important by the Italian veterinary medical curricula over the last 20 years).

# 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.

**7.12.b** - A breakdown by species of animals seen at the VTH is featured on Table 7.3. The same table also reports how many cases were new cases in each of the last 3 years (new cases here refers to clients who are new to the recording system). With regard to the ratio between of primary vs referrals, for small animals such proportion varies depending on the discipline considered, ranging from 50% (i.e. internal medicine, general surgery, reproduction) to 70% (i.e. dermatology, cardiology, orthopedic surgery, infertility). The term "referral" in this case includes both referrals as well as second opinions.

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.).

**7.12.c** - The level of expertise of the different staff members within the VTH is succinctly described in Table n° 6.9. True specialization as acknowledged by holding a Diploma of the European Board of Veterinary Specialisation (EBVS) is present for the disciplines of neurology (1 Diplomate of ECVN), reproduction (1 Diplomate of ECAR), and Bovine Health Management (1 Diplomate of ECBHM). Three staff members are doing or have completed their residencies in anesthesiology (2) and surgery (1). Several of the staff members not holding an EBVS Diploma have acquired a local or national reputation as expert in their fields and, as such, attract a relevant amount of referral/second opinion cases both in internal medicine (dermatology, cardiology, ultrasonography), surgery (soft tissue and orthopedic surgery) reproduction (equine, South American Camelid and small animal reproduction) and wild/exotic animal medicine.

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.

**7.12.d** - Despite a sense of fear of competition which was quite diffused particularly among small animal veterinarians in the area of Padova and its Province at the time when the FVMP was reestablished in 1992, the Faculty has managed to foster excellent relationships with outside practitioners throughout the years. This is confirmed by the high percentage of referral cases submitted every year as well as by the fact that there has never been a single complaint of unfair competition put forward by any veterinary practitioner against any member of the FVMP. Clinicians at the VTH are well instructed on the fact that whenever there is a referral the colleague who has sent the case to the VTH should be contacted once the case has been seen and informed on the results, and the client sent back to her/his veterinarian.

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).

See Chapter 4.

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.

**7.12.e** - The case recording system is centralised on an intranet which uses a commercial password-operated software specifically designed for veterinary use, called EasyVet. Upon admission, each patient receives a case record number, and name and address of the owner are recorded by a receptionist. The Easivet software is available on the computer of the reception, the exam rooms n° 1, 2 and 4, the ultrasonography room, and in all the computers of each single staff member of the VTH. Once client's and animal's data have been entered, the patient is visited in an exam room where students normally record all their observations directly on EasyVet. Students do not have their own password, but the clinician on duty normally provides them with her/his own password each time they need to access the system. Laboratory data are entered from the Clinical Chemistry Laboratory directly on EasyVet, and clinicians and students can check lab results on the intranet. EasyVet allows data retrieval using keywords but does not allow to modify old records. If a new observation or a new lab results must be added, it can only be added with the current date.

#### 7.13 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.

The indicator derived from the ratios established is the denominator when the numerator is set 1.

The number of animals available for clinical practical activity and teaching is indicated in Table 7.5. The relative ratios from R11 to R17 are reported below.

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| Figure | Typology of data  | Value  |
|--------|---|--------|
| A      | No. of students graduating annually                             | 54.4   |
| В      | No. of food producing animals seen at the FVMP                  | 164.4* |
| С      | No. of individual food-animal consultations outside the Faculty | 1262.3 |
| C1     | No. of individual equine consultations outside the Faculty      | 568.3  |
| D      | No. of herd health visits                                       | 658    |
| E      | No. of equine cases   | 198**  |
| F      | No. of poultry/rabbit cases                                     | 150    |
| G      | No. of companion animals seen at Faculty                        | 3384   |
| Н      | No. of poultry (flocks) / rabbits (production units) seen       | 5      |

Table n°7.5 – Synthesis of the data necessary to calculate the ratios from R11 to R17. Data are calculated as average of the last three years. (\*)This number has been calculated by adding the number of food producing animals referred to the VTH (44.4) to the number of clinical cases seen at the University Farm (\*\*)This number includes the equine cases seen by the students at the private equine hospital "Centro Medico Equino" for 2009 only (see table 7.3.1)

|       | Denominator  | Ratio                      |
|-------|--|----------------------------|
| R 11: | $\frac{\text{No. of students graduating annually (A)}}{\text{No. of food producing animals}} = \frac{54.4}{164.4} = 0.330$<br>seen at the Faculty (B)                  | $\frac{1}{0.333} = 3.030$  |
| R 12: | $\frac{\text{No. of students graduating annually (A)}}{\text{No. of individual food - animal}} = \frac{54.4}{1262.3} = 0.043$<br>consultations outside the Faculty (C) | $\frac{1}{0.043} = 23.257$ |
| R 13: | $\frac{\text{No. of students graduating annually (A)}}{\text{No. of herd health visits (D)}} = \frac{54.4}{658} = 0.083$   | $\frac{1}{0.083} = 12.804$ |
| R 14: | $\frac{\text{No. of students graduating annually (A)}}{\text{No. of equine cases (E)}} = \frac{54.4}{198} = 0.275$   | $\frac{1}{0.275} = 3.636$  |
| R 15: | $\frac{\text{No. of students graduating annually (A)}}{\text{No. of poultry/rabbit cases (F)}} = \frac{54.4}{150} = 0.363$   | $\frac{1}{0.363} = 2.75$   |

| R 16: | $\frac{\text{No. of students graduating annually (A)}}{\text{No. of companion animals seen at Faculty (G)}} = \frac{54.4}{3384} = 0.016$                 | $\frac{1}{0.016} = 62.500$ |
|-------|--|----------------------------|
| R 17: | $\frac{\text{No. of students graduating annually (A)}}{\text{No. of poultry (flocks) and rabbits (production units) seen (H)}} = \frac{54.4}{5} = 10.88$ | $\frac{1}{10.88} = 0.092$  |

The reader is referred to Annex 11 on page 211 for a comparison with the current EAEVE-accepted Ratios.

#### 7.14 General Indicators about necropsies available for clinical education

The number of necropsies available for clinical education is indicated in table 7.2 and cadavers examined by students in table 7.2.1. In the latter and in table 7.2.4 quantities of organs are also included. Data necessary to calculate ratios are reported in Table 7.6 as sums of necropsies (table 7.2) and cadavers (table 7.2.1) for each group of species, considering the averages of last three years. Cadavers and organs included in anatomical practical training are not included, since only those for pathology and food hygiene have been considered. The relative ratios R18, R19 and R20 are reported below. The additional ratios RX1, RX2 and RX3 have been calculated to take into account also necropsies other species (mainly wild and exotic animals) as well as the number of viscera, mollusks and fishes analyzed by the students.

| Figure | Typology of data  | Value   |
|--------|---|---------|
| Α      | No. of students graduating annually (in the last five years)        | 54.4    |
| I      | No. of necropsies of food producing animals + equines               | 203.7   |
| J      | No. of necropsies of poultry/rabbits                                | 724.6   |
| K      | No. of necropsies of companion animals                              | 186.6   |
| L      | kg of mollusk and fish analysed by students                         | 188     |
| M      | No. of necropsies of other species (mainly wild and exotic animals) | 46.6    |
| Ν      | Kg of viscera analysed by the students                              | 10782.6 |

Table n°7.6 - Synthesis of the data necessary to calculate the ratios from R18 to R20

|       | Denominator  | Ratio                     |
|-------|--|---------------------------|
| R 18: | $\frac{\text{No. of students graduating annually (A)}}{\text{No. of necropsies of food producing animals +}} = \frac{54.4}{203.7} = 0.267$ equines (I) | $\frac{1}{0.267} = 3.75$  |
| R 19: | $\frac{\text{No. of students graduating annually (A)}}{\text{No. of necropsies of poultry - rabbits (J)}} = \frac{54.4}{724.6} = 0.075$                | $\frac{1}{0.075} = 13.33$ |

| R 20: | $\frac{\text{No. of students graduating annually (A)}}{\text{No. of necropsies of companion animals (K)}} = \frac{54.4}{186.2} = 0.292$    | $\frac{1}{0.292} = 3.42$ |
|-------|--|--------------------------|
| R X1: | $\frac{\text{No. of students graduating annually (A)}}{\text{kg. of mollusk and fish (L)}} = \frac{54.4}{188} = 0.290$                     | $\frac{1}{0.290} = 3.45$ |
| R X2: | $\frac{\text{No. of students graduating annually (A)}}{\text{No. of necropsies of other species (M)}} = \frac{54.4}{46.6} = 1.170$         | $\frac{1}{1.170} = 0.85$ |
| R X3: | $\frac{\text{No. of students graduating annually (A)}}{\text{kg. of viscera analyzed by the students (N)}} = \frac{54.4}{10782.6} = 0.005$ | $\frac{1}{0.005} = 200$  |

The reader is referred to Annex 11 on page 211 for a comparison with the current EAEVE-accepted Ratios.

#### 7.15 Other Species

#### Indicate how the Faculty deals with fish and other food producing species

Several other species of wild and exotic animals are received by the FVMP for diagnostic or clinical purposes. In particular, the FVMP has a caseload of reptiles, wild and exotic birds and marine mammals. Although the overall number is still not relevant, the trend is on the increase and respond to the growing demand of the outside public and to the tendency to consider new species as household pets or display animals. Members of the teaching staff of the VTH have developed an expertise in working with wild birds and exotic animals. Therefore many zoos and natural parks, including forestry authorities, refer to the FVMP for clinical counseling. Agreements have been signed with natural parks and zoos to encourage these structures to work in cooperation with the Faculty, to increase professional skills of faculty staff and to train students on these less common species. Students can perform practical work and final thesis projects in these facilities.

The presence of exotic species either maintained in the owner's home or held in display in zoos has prompted a steady increase in the number of necropsies performed on these subjects, when animals are sent to the Anatomical pathology service of the VTH. As with other animal species, necropsies of exotic animals are carried out in the Faculty with students of the 5th year.

Furthermore, (as already mentioned before) marine mammals are often studied at FVMP. Pathologists work in cooperation with anatomists and parasitologists and staff members from infectious diseases. Animals are brought to the Faculty when small enough otherwise beach/field necropsies are performed. Tissues are kept at the MMMTB (see Chapter 7.2). Specific legislation for these species is followed both for transport and tissue distribution. Necropsies and scientific reports are often carried out with students to allow a better understanding of major causes of stranding and

death. As reported in table 7.2, approximately 10 necropsies on large marine mammals are performed by teaching staff of the FVMP every year.

Students of the 5th year are given also the opportunity to acquire theoretical and practical basis on anatomy, physiology and patology of aquaculture species, in particular fishes. The course called "Fish and shellfish pathology and hygiene in aquaculture", consists of 28 hrs (4 ULC), 9 hrs of lectures (power point presentations) and 19 hrs of laboratory, desk based work and visits to local commercial fish farms. Fish health is an important and diverse area of opportunity for the veterinary profession and to learn the basis of necropsy techniques, diagnostic and prophylaxis is an important tool for the students. Moreover, as some research groups of the Faculty focus their activities on aquaculture species (welfare, genomics, fish pathology), students may participate to the experimental work and prepare an original thesis on these topics.

#### 7.16 Comments

#### Comment on major developments in the clinical services, now and in the near future.

The 24-hours Emergency Service within the Veterinary Teaching Hospital (VTH) started its activity as of March 22, 2010. Many small animal practitioners in the area of Padova are looking forward to the establishment of this service as only a few of them 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 who do provide these services, as they fear losing the client each time. This is not going to be the case with the VTH at the University of Padova, as it has been made very clear during meetings with the local Veterinary Chambers that referred cases will be sent back to the referring veterinarian as soon as possible.

A similar opportunity exists with equine neonatology, a field in which the majority of veterinarians and clients are really looking forward to the establishment of a 24-hr service for problem foaling mares and problem 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.

#### Comment on local conditions or circumstances that might influence the ratios in tables 7.5 and 7.6.

Despite a relative abundance of poultry and rabbit farms, these enterprises very rarely accept anybody into their premises for sanitary reasons. The FVMP has acquired a young member of its staff whose main task is related to poultry and rabbit diseases. Her activity has led to the establishment of some formal agreements with local poultry and rabbit breeders which have become part of TIROCINIO activity (see Chapter 4) for our students. With regard to the Ratio R15, it should be noted that clinical cases of production rabbit and poultry are virtually non-existent in most realities as diseases in these animals are basically diagnosed at necropsy and in the infectious diseases laboratory. Cases of rabbit and poultry pathology and infectious diseases at the FVMP are normally encountered in the necropsy case load as well as in the activity of the Infectious Disease Laboratory.

#### 7.17 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?

# Chapter 8 LIBRARY and LEARNING RESOURCES

#### written by G. Gabai

#### 8.1 Factual information

The "Pietro Arduino" Central Library (hereafter "Library") was established in 1996 through the unification of the Central Library of the Faculty of Agricultural Science and the departmental libraries. The Central Library is a part SIC of the Agriplis Campus since 1997 and it has its own body of regulations. The main body of bibliographic resources is located in the Centralised Library on the second floor of the building "Pentagono", although some Departments still maintain small decentralised areas of activity. However, the whole body of the bibliographic resources is indexed in the Central Library and is easily available to users.

#### 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 Library is under the control of the University of Padova Library System (SBA = Sistema Bibliotecario di Ateneo), which is linked to the National Library System (SBN = Sistema Bibliotecario Nazionale). The University of Padova Library System serves to develop and organise the purchasing, conservation and use of the library and its resources in a co-ordinated manner, along with the treatment and diffusion of bibliographic information using the most advanced methods. The co-ordination of the SBA is entrusted to the University Library Centre (CAB = Centro di Ateneo per le Biblioteche).

#### Indicate how the library/libraries are managed (e.g. library committee).

The Library has a Director and a Library Board. The Director of the Library is the Director of the SIC. The Director of the SIC appoints a managing director who chairs the Library Committee, supervises Library activities, and drafts the budgets and balance sheet. The Library Board is responsible for the coordination and the final check of the cultural and scientific choices on purchasing and services of the Library.

The Library Board is made up of 10 members: the Director, the coordinator of the Committee of the Scientific Area (Agricultural & Veterinary Sciences), the technical supervisor of the Library, a representative of the library area, a technician of the administration staff, a representative of the students of the Faculty of Agricultural Sciences, a representative of the students of the Faculty of Veterinary Medicine, two representatives and experts in the branch of Agricultural Sciences and one representative and expert in the branch of Veterinary Medicine.

#### 8.1.2 Library staff

The Library is manned by 7 people belonging to (or officially hired through) the SIC, the CAB and the Department of Territory and Agro-Forestry Systems (TESAF). These people work at the Library either full time or as a shift of their normal weekly working hours (table n° 8.1).

| Name Function       |                        | Institution to   | N° of hours/week |
|---------------------|------------------------|------------------|------------------|
|                     |                        | which the person | working at the   |
|                     |                        | belongs to       | Library          |
| Domenico ZINI       | Chief Librarian        | SIC              | 36               |
| Micaela De COL      | Library collaborator   | SIC              | 36               |
| Annarita BALDINI    | General services agent | SIC              | 36               |
| M. Rosa PITTARELLO  | General services agent | SIC              | 36               |
| Caterina HARTSARICH | Assistant librarian    | CAB              | 18               |
| M. Gabriella LEON   | Assistant librarian    | Dept TESAF       | 6                |
| Fabio OPTALE        | Assistant librarian    | Dept TESAF       | 17               |

**Table 8.1** – Name, function, institution to which the person belongs to and number of weekly hours of work for personnel of the "Pietro Arduino Library" of the Agripolis Campus.

The University Library Centre also hires a certain number of students as part-time workers in order to guarantee coverage during the Library's opening hours. Moreover, the Library service is supported by civil service volunteers.

#### 8.1.3 Library resources

The Library receives basic financial support from the CAB. In addition, Faculties and Departments contribute towards acquiring books and paying for journal subscriptions using funding from their own budgets. As a matter of fact, the acquirement of new books proposed by students and personnel belonging to Faculties and Department within the campus of Agripolis is centralized at the Library.



**Figure n°8.1** – Annual financial support assigned to the "Pietro Arduino" Library from the University Library Centre (CAB) of the Agripolis Campus.

The resources of the Library amount to approximately 50,000 books and 1800 periodicals, of which 600 subscriptions are current (33 in Veterinary Medicine). Ever since the unification of the books (both those stored in the central structure and in the Departments), the international Dewey decimal system has been used for their classification with SBN catalogues. All the resources are generally available "on-line".

Users of the Library have free access to the serials purchased by the Library and also to the ejournals purchased together with the CAB, which has signed a contract with the largest scientific publishers (Elsevier, Sprinter, Kluwer, Lipincott, American Chemical Society, Wiley).

#### 8.1.4 Access, reading places, on-line literature search

The Library also serves approximately 4000 students and 220 professors and Researchers from the Faculty of Veterinary Medicine and the Faculty of Agricultural Science. In addition, given the interdisciplinary nature of a large part of the Library's resources, a remarkable increase in use by other Faculties has been observed: in 2008, in fact, over 15,000 users and approximately 8,400 book loans were recorded.

The Library is located in the Pentagon building, and is composed of:

- A semi-basement floor with three storage rooms for periodicals (3 rooms, total surface 700 sq m)
- Second floor: one room for technical-administrative management (sq m 32)
  - i an area equipped with computers for on-line research (sqm 187)
  - ii one book and magazine consultation room (sq m 690)

The Library offers 80 reading seats, 6 bibliographic consultation stations, and 8 video stations for viewing VHS-type videotapes. The students of Veterinary Medicine have free access to a veterinary student-only information-science room. The room is provided with 30 personal computers with which it is possible to search the catalogues for bibliographic information and access on-line documents and journals.

The on-line literature search service allow students and staff members to use the resources listed below:

#### 8.1.4.a E-Journals

Library users have access to the electronic journals that have been subscribed to or are available through a University of Padova Catalog of Electronic Journals called CAPERE which comprehends 764 titles on agricultural sciences and veterinary medicine. Actually CAPERE is not a simple catalog, because it directs to full text of available publications and integrates different databases of the electronic resources that one can use. Also, CAPERE is able to perform statistical checks on the use of licences and collecting economic and administrative data. Access to CAPERE is possible through all workstations connected directly to the University network or through auth-proxy. The auth-proxy connection is reserved to students, teachers, and the technical and administrative staff of University of Padua and to all who have a contract for research or teaching with the University and also to visiting professors and occasional users admitted to the Library services. It is possible to see a list of the journals pertinent to Veterinary Sciences at the following link:

http://capere.cab.unipd.it/ricerca?lista=1&titolo=&area8=1&f\_editore=&lista\_alfabetica=&issn=

#### 8.1.4.b Integrated Access to Electronic Resources (AIRE PORTAL)

The AIRE Portal offers a single, simple search interface: a fast access to selected electronic resources (databases, magazines, catalogs, digital collections, Web sites). The portal, which became operational on October 9, 2006, is based on the integrated software *Metalib SFX* linking technology. The Portal is accessible by all users who connect to the University network at the following url: http://www.cab.unipd.it/node/36 However, only teachers, students and staff of the

University of Padua can use the advanced features of the Portal (accessible via authentication) and see the portal from home via identifiable Auth-Proxy.

Available resources are organized in quick sets and categories by area. The resources about veterinary science are 25, among them Amphibian Species of the World, MERCK Manuals - Online Medical Library, Zoological records, PubMed and many others. Resources of closely related field areas like Biology, Medicine, Chemistry, Pharmaceutical Science are also available.

#### 8.1.4.c 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 (NRC) 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 euros through which they can get any document for free.

#### 8.1.4.d ACNP (National Catalog of Periodicals)

The National Catalog of Periodicals ACNP is a project developed by the University of Bologna in collaboration with the NRC. Its aim is to form a database of national scientific periodical - available both as paper copy or electronic format – which may dialogue with all software for Document Delivery using standards ISO-OSI and WC3. This means a solid and constant engagement of collaboration with NILDE that produced very good results: all the libraries that participate in both projects have important optimizations in processes of document request. The integration of the two systems is visible both on the ACNP Catalog and on NILDE. The Library participates to the ACNP project since 2009.

#### 8.1.4.e Subito

At the international level the Library uses <u>Subito</u>, the brand name of the document delivery service of research libraries in Germany, Austria and Switzerland. Subito provides a quick and easy-to-use service which makes copies of articles from periodicals or books, sends them to the user and supports the lending of books. This is all possible thanks to the stocks in the archives of the participating libraries. Subito charges a small fee for each document being requested.

#### 8.1.5 Opening hours

The Library is open every month of the year Monday through Friday from 8.20 to 18.00. The Library is closed on weekends, for the 2 central weeks in August, for the Christmas week and during other national and religious holidays.

#### 8.1.6 Services

The Library provides the following services:

orderly access to the patrimony of textbooks, scientific books, and specialised journals;

- loans of books;
- on-line research and distribution of bibliographic information;
- the purchase of books and periodicals using Library funds or funds expressly transferred from the Departments and/or Institutes, with respective classification and cataloguing;
- self-service photocopying of the materials available (whenever permitted by law);
- document delivery;
- access to CD ROM and on-line data bases and to all the electronic resources available from the University of Padova. For veterinary Medicine, there is a specific quick-set of electronic resources selected within the AIRE gateway (which is dedicated to the integrated access to all electronic resources).
- For institutional users, access to the University electronic resources is free, as is, also, from computers located outside the University net, through auth-proxy authentication. However, some of the services are not free: a list of them is available from the Central Library web site.
- inter-library book loans.

The Library regularly organizes <u>courses</u> for students of all grade (students, researchers, teachers, technicians) about the use the Catalog of Padua Library System, electronic resources and all bibliographic databases available in the net of our University.

#### 8.1.7 Self-learning resources

Some multimedial resources are available for users to use for self-learning. Those resources can be borrowed through an automatic distributor located outside the main entrance of the library. The distributor allows users to borrow and bring back documents by themselves. Among other documents is a collection of 150 videotutorials (VHS) of great scientific interest, published by the DVM Foundation. A list of available documents is available on-line at the following web address: http://www.unipd.it/esterni/wwwpolis/multimedia.htm

#### 8.1.8 Subsidiary libraries of the Faculty

### Please describe the subsidiary (e.g. Departmental) libraries of the Faculty, and arrangements for student access

Three Departmental libraries exist in Agripolis campus, which function mainly as study rooms for the students and deposit areas for various books and journals related to research activities carried out in each department.

The Library of the Department of Animal Science contains books and periodicals of animal science. The Library of the Department of TESAF contains books and periodicals related to economical sciences. The Library of Entomology contains books and periodicals related to entomology.

#### Indicate whether the main library holds a list of individual books of the subsidiary libraries.

The Library holds the list of books, periodicals and other documents resident in the subsidiary libraries and manages book and periodical loans. Students can freely access to these subsidiary libraries when the housing Departments are open to public.

Describe any other information services and how are they are supported and how student access is regulated

#### 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.

The Library ranks within the first five places among the fifty-five libraries in Padova, according to the evaluation of library services published by Alma Laurea<sup>8</sup>. Also, the Library offers all authorized users a complete and good service to use the databases and e-journals available. Internet access is easy and adequate, thanks to the Wi-fi service of Agripolis.

With regard to opening hours, it is noteworthy that student are never on Campus on week-ends, as they find more convenient working areas in one of the libraries in downtown Padova. Also, the system Auth-Proxy allows to access the AIRE Portal from home, thereby removing the need to be directly at the Library.

The document delivery service is quite efficient, and requests for copies of scientific papers are usually accomplished in 2-4 working days.

Please comment on the Faculty's provision of IT -facilities and the approach to self-learning, and on the further developments in this area.

#### 8.3 Suggestions

In general, students ask for an extension of the week-day opening hours and to increase the purchase of book copies (more copies of the same book) for consultation when preparing their examinations. In addiditon, students ask for an increase of internet access points, although the Wi-fi service of Agripolis allow the use of portable PC. Also, students in Veterinary Medicine demand to increase the subscriptions to veterinary medicine periodicals.

<sup>&</sup>lt;sup>8</sup> Alma Laurea is a consortium of Italian universities with the purpose to compare data of teaching activities with the level of occupancy

### **Chapter 9**

### STUDENT ADMISSION and ENROLMENT

written by F. Mascarello

#### 9.1 Undergraduate Courses

Table 9.1 asks for numbers of undergraduate students in the veterinary training institution. This means students enrolled for undergraduate training and paying the corresponding tuition fees (if applicable), except for those students who do not participate in the teaching offered. Some veterinary curricula require students to successfully complete all courses presented in an academic year before they can start the subjects in the following year. In other establishments students have to complete all the subjects in the curriculum before graduating, but can do so in a more flexible way. In the latter instance, it may be difficult – perhaps impossible – to place some of the students in a specific year of the programme. If this is so, table 9.1 may

- i) be omitted
- ii) ii) be an approximate figure, or
- iii) iii) be calculated by reference to the course of year that corresponds to the largest number of subjects taken.

The composition of Veterinary Medical students at the Faculty of Veterinary Medicine of the University of Padova is shown in Table n° 9.1.

| Total number of undergraduate students |     |
|--|-----|
| Total number of male students          | 157 |
| Total number of female students        | 353 |
| Foreign students                       |     |
| - from EU countries                    |     |
| - from non-EU countries                | 14  |

 Table n°9.1 - Total number and sex ratio of undergraduate students enrolled in the Faculty of

 Veterinar Medicine of the University of Padova for the academic year 2009-10

#### Indicate the minimum number of years (MNY) allowed to successfully pass the curriculum

**9.1.1 Minimum number of curricular years -** The minimum number of years to successfully pass the curriculum is five. While there is a lower limit, there is no upper limit, as students are allowed even to take leaves for whatever reason and come back after a few years to complete their studies. However, the Italian Law poses a limitation to the number of year a student can wait after the last exam successfully passed: after 8 years have elapsed from the last exam, all exams taken virtually expire, and the student has to start all over again from scratch.

#### 9.2 Undergraduate Student Numbers

The composition of undergraduate student of the Faculty of Veterinary Medicine at the University of Padova is shown on table 9.2

|  | 1st year | 2 <sup>nd</sup> year | 3 <sup>rd</sup> year | 4 <sup>th</sup> year | 5 <sup>th</sup> year | > 5 <sup>th</sup> year | Total |
|--|----------|----------------------|----------------------|----------------------|----------------------|------------------------|-------|
| Female students                        | 49       | 42                   | 66                   | 105                  | 64                   | 27                     | 353   |
| Male students                          | 24       | 17                   | 36                   | 43                   | 19                   | 18                     | 157   |
| Foreign students from non EU countries | 7        | 1                    | 2                    | 3                    | 1                    |                        | 14    |
| Total                                  | 80       | 60                   | 104                  | 151                  | 84                   | 45                     | 524   |

Table n° 9.2 - Composition of undergraduate students enrolled in the Faculty of Veterinar Medicine of the University of Padova for the academic year 2009-10 (sub-divided by course year)

#### 9.2.1 Student Admission

State the minimum admission requirements;

**9.2.2 Requirements to enter the Veterinary School -** A 5-year high school diploma is required for admission in the case of Italian students. Foreign students must possess similar qualifications, which should be evaluated by the competent Consular and Academic Authorities according to the multilateral and bilateral European and international conventions.

Indicate whether there is a limit to the number of students admitted each year; describe how the number of government-funded student places is determined.

**9.2.3 Limitations to enrollment into the veterinary curriculum** - As of the academic year 1989-90, the enrolment of new students to italian Faculties of Veterinary Medicine is being regulated by a numerous clausus system. Each Faculty Council proposes the number of places to be offered to "EU and Non-EU students residing in Italy" and "Non-EU students residing abroad" for enrolment in the first year in Veterinary Medicine to the Academic Senate. The number of students admitted to the course depends on the teaching potential available in the faculty and the prevailing prospects for professional employment. This number for "EU and Non-EU students residing in Italy" is then communicated by the Academic Senate to the Ministry of University and Research (MUR), which decides whether or not to accept the proposal. Through a decree, the MUR then determines the total number of students that can be enrolled onto the graduate courses in Veterinary Medicine for the "EU and Non-EU students residing in Italy", and assigns a specific number to each University. The total number of new students accepted into Veterinary Medicine degree courses in Italy has been progressively reduced over the last few years, with some Veterinary Schools remaining at levels similar to the past and others seeing their numbers being considerably curbed (Table n° 9.3)

| University | 2001-02 | 2002-03 | 2003-04 | 2004-05 | 2005-06 | 2006-07 | 2007-08 | 2008-09 | 2009-10 |
|------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| Bari       | 135     | 140     | 135     | 135     | 135     | 135     | 135     | 98      | 102     |
| Bologna    | 150     | 150     | 150     | 150     | 150     | 150     | 150     | 125     | 125     |
| Camerino   | 80      | 80      | 80      | 80      | 80      | 80      | 76      | 49      | 35      |
| Catanzaro  |         |         |         | 25      | 25      | 25      | 22      | 18      | 11      |
| Messina    | 100     | 100     | 100     | 100     | 100     | 95      | 90      | 77      | 67      |
| Milano     | 190     | 190     | 190     | 190     | 190     | 190     | 180     | 180     | 162     |
| Napoli     | 130     | 130     | 130     | 130     | 130     | 130     | 114     | 114     | 80      |
| Padova     | 68      | 68      | 68      | 68      | 74      | 74      | 70      | 70      | 65      |
| Parma      | 115     | 115     | 110     | 98      | 81      | 81      | 77      | 77      | 68      |
| Perugia    | 117     | 117     | 117     | 95      | 95      | 95      | 90      | 84      | 90      |
| Pisa       | 85      | 97      | 100     | 100     | 100     | 95      | 90      | 90      | 79      |
| Sassari    | 80      | 80      | 80      | 45      | 45      | 45      | 43      | 43      | 38      |
| Teramo     | 90      | 90      | 90      | 90      | 90      | 90      | 85      | 67      | 70      |
| Torino     | 120     | 120     | 120     | 120     | 120     | 120     | 120     | 109     | 120     |
| TOTAL      | 1,460   | 1,477   | 1,470   | 1,426   | 1,415   | 1,405   | 1,342   | 1,201   | 1,110   |

Table n° 9.3 – "Numerus clausus" for "EU and Non-EU students resident in Italy" of the Veterinary Medicine Course, assigned by the Ministry of University and Research (MUR) to each Veterinary Faculty in Italy over the last decade.

#### Outline any selection process (or criteria) used in addition to the minimum admission requirements.

**9.2.4** The selection process - An admission test must be taken in order to enrol in Veterinary Medicine. The national admission test is administered by the MUR with the support of a commission whose members are appointed by Ministerial decree (Law n.189/ 2002, art.26). The test is composed of 80 multiple-choice questions with 5 possible answers to choose from, on the following subjects (Table n° 9.4). The admission test takes place in all Italian universities on the same day.

| Subjects                               | Academic year 2008-09 | Academic year 2009-10 |
|--|-----------------------|-----------------------|
| General knowledge and logical thinking | 33                    | 40                    |
| Biology                                | 21                    | 18                    |
| Chemistry                              | 13                    | 11                    |
| Physics and Mathematics                | 13                    | 11                    |
| TOTAL                                  | 80                    | 80                    |

Table n°9.4 - Type and number of questions in the Veterinary Medicine admission tests for the academic years 2008-09 and 2009-10.

Despite a rising concern about the number of unemployed or under-employed veterinarians (although most of them are in the companion animal clinical field), the interest for the Veterinary Medical profession in Italy remains very high, as can be extrapolated from Table 9.5.

| University | 2005 | -2006 | 2006 | -2007 | 2007 | -2008 | 2008 | -2009 | 2009 | -2010 | NA average | NP average | Avera<br>seleci<br>pressu |
|------------|------|-------|------|-------|------|-------|------|-------|------|-------|------------|------------|---------------------------|
| •          | NP*  | NA**  | NP   | NA    | NP   | NA    | NP   | NA    | NP   | NA    |            |            | p                         |
| Bari       | 135  | 236   | 135  | 275   | 135  | 274   | 98   | 330   | 100  | 400   | 303.0      | 120.6      | 2.5                       |
| Bologna    | 150  | 440   | 150  | 433   | 150  | 447   | 125  | 447   | 125  | 570   | 467.4      | 140.0      | 3.3                       |
| Camerino   | 80   | 173   | 80   | 187   | 76   | 191   | 49   | 148   | 35   | 150   | 169.8      | 64.0       | 2.6                       |
| Catanzaro  | 25   | 98    | 25   | 130   | 22   | 102   | 18   | 142   | 11   | 138   | 122.0      | 20.2       | 6.0                       |
| Messina    | 100  | 373   | 95   | 351   | 90   | 311   | 77   | 361   | 67   | 429   | 365.0      | 85.8       | 4.2                       |
| Milano     | 190  | 557   | 190  | 533   | 180  | 582   | 180  | 613   | 162  | 759   | 608.8      | 180.4      | 3.3                       |
| Napoli     | 130  | 513   | 130  | 545   | 114  | 538   | 114  | 588   | 80   | 626   | 562.0      | 113.6      | 4.9                       |
| Padova     | 74   | 378   | 74   | 387   | 70   | 472   | 70   | 485   | 65   | 580   | 460.4      | 70.6       | 6.5                       |
| Parma      | 81   | 285   | 81   | 268   | 77   | 353   | 77   | 312   | 68   | 378   | 319.2      | 76.8       | 4.1                       |
| Perugia    | 95   | 304   | 95   | 318   | 90   | 351   | 84   | 338   | 90   | 440   | 350.2      | 90.8       | 3.8                       |
| Pisa       | 100  | 314   | 95   | 383   | 90   | 421   | 90   | 377   | 79   | 404   | 379.8      | 90.8       | 4.1                       |
| Sassari    | 45   | 164   | 45   | 154   | 43   | 148   | 43   | 167   | 38   | 168   | 160.2      | 42.8       | 3.7                       |
| Teramo     | 90   | 256   | 90   | 244   | 85   | 248   | 67   | 290   | 70   | 327   | 273.0      | 80.4       | 3.4                       |
| Torino     | 120  | 406   | 120  | 418   | 120  | 446   | 109  | 428   | 120  | 467   | 433.0      | 117.8      | 3.6                       |
| Total      | 1415 | 4497  | 1405 | 4626  | 1342 | 4884  | 1201 | 5026  | 1110 | 5836  | 355.3      | 92.5       | 4.(                       |

Table n° 9.5 - Intake of veterinary students at the Faculty of Veterinary Medicine of the University of Padova over the last five years. (\*) NP is the number of places available for EU students; (\*\*) NA is the number of EU students applying for admission; (\*\*\*) average selection pressure is calculated as ratio of NA average to NP average.

Amongst Italian Universities, the University of Padova is one of the most selective (see below). Only 13% of students sitting for the Veterinary Medicine Admission test were able to enrol onto the undergraduate course in Veterinary Medicine for the academic year 2009-10.

Even if the selection is made on a very high number of students, the national admission test does not necessarily select the best students for veterinary skills. As it happens for many other European veterinary schools, the national test select top-IQ students coming from urban environment with a general inclination toward small animals. As a consequence, large animals and food safety fields are not focussed by the students as career opportunities and subjects related to these fields are always looked at with reluctance.

Another problem originated by the national test is that most students register for other admission tests set by different Degree Courses (Medicine and Surgery, Pharmacy, Dentistry) and once they have been selected and entered a ranking list, they opt to change to their preferred Degree Course. Therefore, some students may try different admission tests, pass only the admission test for Veterinary Medicine, and enrol onto the Degree Course in Veterinary Medicine only with the intention of changing onto another Degree Course in the following year (10 students did so during the last academic year).

### Describe any circumstances under which extra students may be admitted to the undergraduate veterinary course.

**9.2.5 Exceptions to the Selection process** - When considering the total number of students admitted to the first year, a minor degree of freedom is allowed to Veterinary Faculties through the option of adding a few "Non-EU students residing abroad" to the number of students allowed by the MUR. For instance, in 2008-09 the MUR assigned a total number of 1,201 students for Veterinary Medicine, to be divided between all of the Universities. Of these, **70** were assigned to the Faculty of Veterinary Medicine of the University of Padova (FVMP). The Faculty Council of the FVMP subsequently established that **10** foreign students could be admitted upon demonstrating their fluency in the Italian language. A ranking list for Non-EU students was then prepared on the basis of the scores obtained in the admission test (which is the same as for EU students). Therefore, the total number of students admitted to Veterinary Medicine in the year 2008-2009 was **80** (Table 9.6). However, during the first year of the course some students moved to other courses or dropped out altogether. At the same time, only 5 students non-EU resident entered the Veterinary School. Therefore, the number of student for that year was reduced, and as a consequence 5 vacant positions were assigned to "EU and Non-EU students residing in Italy".

For the academic year 2009-10 the MUR has assigned a total of 1,110 places in Veterinary Medicine for "EU and Non-EU student residing in Italy", to be divided between all of the Universities. Of these, **65** were assigned to the University of Padova. With regard to Non-EU students residing abroad, the Faculty Council subsequently confirmed that a further **10** foreign students could be admitted. Therefore, the total number of students admitted to the Veterinary Medicine in the year 2009-2010 was **75** (Table n° 9.6).

|                  | 2001-<br>02 | 2002-<br>03 | 2003-<br>04 | 2004-<br>05 | 2005-<br>06 | 2006-<br>07 | 2007-<br>08 | 2008-09   | 2009-10  |
|------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-----------|----------|
| EU- students *   | 68          | 68          | 68          | 68          | 74          | 74          | 70          | 70 (+ 5)  | 65       |
| Non EU- students | 2           | 2           | 2           | 2           | 2           | 2           | 2           | 10 ( - 5) | 10 (- 5) |
|                  |             |             |             |             | Total nu    | umber       |             | 80        | 70       |

 Table n°9.6 - The number of 1st year students enrolled into the Veterinary Faculty of the University of Padova over

 the last 6 years (including non-EU students).

For the academic year 2009-10 and henceforth, a resolution passed by the Academic Senate has decided that even if the number of "Non-EU students residing abroad" falls below the proposed

number, the vacant positions will not be assigned to "EU and Non-EU students residing in Italy" to make up total student numbers. Therefore the number of students in the present year is 65 EU + 5 Non-EU = 70 students. The 5 vacant positions for Non-EU students have not been filled up.

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.

**9.2.6 Knowledge base of 1**<sup>st</sup> **year students -** The students enrolled at the University come from different educational backgrounds (classical, scientific or technical education). As a result, basic courses must be offered by the Faculty to adjust for these differences. These basic courses are provided by the Faculty prior to the beginning of the official teaching courses in October before the start of first year classes (see "Bridging course", Chapter 5.1.1.3.a).

### Outline any changes foreseen in the number of students admitted annually. If applicable, describe how the Faculty plans to adjust to these changes.

**9.2.7 Changes foreseen -** As shown in table 9.6, during the last 6 years the FVMP has maintained a number of 1<sup>st</sup> year students ranging from 68 to 74 for "EU and Non-EU students residing in Italy" and has increased the number of places for "Non-EU students residing abroad" from 2 to 5. Based on available resources as well as number of teachers as staff members, the Faculty Council estimates that 80 students would be an adequate number for the FVMP (70 EU students and 10 non EU students) on a yearly basis.

Contrary to this, starting from the Academic Year 2006-2007 the MUR has progressively reduced the number of places of students for Veterinary Medicine, going from a national total of 1,405 in 2002-03 to 1,110 in the 2009- 2010. Such a reduction has been requested by the Federation of the National Veterinary Chapters (FNOVI) as well as by several veterinary practitioners associations, on the ground that there is an increasing risk of unemployment of veterinarians in Italy. However, such claims a) have never been substantiated by objective assessments of veterinary employment rate, b) have not taken in due consideration the potential job offer for veterinarians in the food industry and pharmacological industry sectors, and c) have never taken into account the rate of employment for veterinarians is very different across Italian regions and, therefore, every curb should involve italian vet schools on a regional basis. However, despite many proposals put forward by the Italian Conference of Deans of Veterinary Faculties, the MUR has kept on curbing the number of students, on a, more or less, national basis. Whatever the policy of the MUR, it is hoped that future decisions will be based on sound and objective assessments of the current situation of the veterinary profession region by region.

To give an example of such a problem, we provide here the situation of Triveneto area and the Emilia Romagna Region. Based on the retirement rate (3%, see table 9.6.1) of veterinarians of Triveneto the number of new veterinarians needed to replace retired ones should be around 80 per year. The number of available places in the vet curriculum at FVMP is 65. When considering a nearby region (i.e. Emilia Romagna) one may notice that there is a disproportion between the number of veterinarians who are going to retire each year (193 in 2009-10) and the student intake of the 2 Veterinary Faculties of Emilia Romagna, Parma dn Bologna (see table 9.6.2 and figure 1.1).

#### Chapter 9 - Student admission and enrolment

|   | No.    | of vets  |
|---|--------|----------|
|   | Region | Province |
| Trentino Alto Adige                           | 358    |          |
| Bolzano                                       |        | 185      |
| Trento  |        | 173      |
| Veneto  | 1871   |          |
| Belluno                                       |        | 83       |
| Padova  |        | 451      |
| Rovigo  |        | 102      |
| Treviso                                       |        | 299      |
| Venezia                                       |        | 221      |
| Verona  |        | 429      |
| Vicenza                                       |        | 286      |
| Friuli Venezia Giulia                         | 468    |          |
| Gorizia                                       |        | 47       |
| Pordenone                                     |        | 109      |
| Trieste                                       |        | 70       |
| Udine   |        | 242      |
| Total   | 2697   | 2697     |
| Retirement rate/year                          |        | 80.91    |
| No. students enrolled at the FVMP (2009/2010) |        | 65       |

 Table n°9.6.1
 Number of veterinarians present in the Triveneto area and the calculated 3% retirement rate.

|                      | No. of | vets     |
|----------------------|--------|----------|
|                      | Region | Province |
| Emilia Romagna       | 3017   |          |
| Bologna              |        | 752      |
| Ferrara              |        | 161      |
| Forlì-Cesana         |        | 250      |
| Modena               |        | 420      |
| Parma                |        | 519      |
| Piacenza             |        | 182      |
| Ravenna              |        | 219      |
| Reggio Emilia        |        | 388      |
| Rimini               |        | 126      |
| Total                | 3017   | 3017     |
| Retirement rate/year |        | 90.51    |
| (2009/2010)          |        | 193      |

Table n°9.6.2 Number of veterinarians present in the Emilia Romagna Region and the calculated 3% retirement rate.

#### 9.3 Student flow and the total number of undergraduate veterinary students

**9.3.1 "In course" and "Off course" students** – In Italy, university students have historically been classified as "in-course" (those who are proceeding in their studies at a regular pace and should probably graduate in 5 years) and "off-course" (those who lose time and eventually have to repeat one or more years). The Academic Senate has recently abolished the definition of 'off-course student', replacing it with the status of 'student repeating the same year'. Such a definition is supposed to be used for those students who register for the same year for a second, third or up to a fourth time. When student succeed in passing on to the following year, they will appear again as "in course". Such a definition precludes any assessment of the student's career, as no statistical data is currently available which sub-divides clearly the number of 'in-course' and 'off-course' students. From >5<sup>th</sup> year onward students are considered "off course". Data presented in table n° 9.7 is the official breakdown for the students enrolled at the FVMP in the current (2009-10) academic year.

| Enrolled students          | 1 <sup>st</sup> year | 2 <sup>nd</sup> year | 3 <sup>rd</sup> year | 4 <sup>th</sup> year | 5 <sup>th</sup> year | > 5 <sup>th</sup> year |
|----------------------------|----------------------|----------------------|----------------------|----------------------|----------------------|------------------------|
| students attending classes | 70                   | 60                   | 104                  | 64                   | 84                   |                        |
| students re-registered     | 10                   |                      |                      | 87                   |                      | 40+5                   |
| Total n° of students = 524 | 80                   | 60                   | 104                  | 151                  | 84                   | 45                     |

**Table n°9.7** The undergraduate student composition for the year 2009-10 (sub-divided by course year). The number of students attending in the  $2^{nd}$ ,  $3^{rd}$ ,  $4^{th}$  and  $5^{th}$  year include both in-course students and off-course students, the latter ones registered as re-enrolled onto the same year.

**9.3.1.1 – 1<sup>st</sup> and 2<sup>nd</sup> year students -** The total number of students enrolled in the 1<sup>st</sup> year is 70 (65 EU students + and 5 Non-EU students; 5 Non-EU places are vacant). The number of 2<sup>nd</sup> year students is reduced to 60 (down from 80 enrolled in Academic year 2008-09) (Table n° 9.6).

**9.3.1.1.a Transfers and Dropouts** - Out of 80 students enrolled in academic year 2008-09 (see table 9.6), 10 students did not attend any of the courses and transfered to other degree courses within the University of Padova or dropped out. While in the past this fact did not have any consequence on student flow to the FVMP (as students leaving the degree course in Veterinary medicine were being replaced by those who had scored after the last one accepted), in the academic year 2009-10 the 10 students enrolling temporarily into the Faculty of Veterinary Medicine and then transferring the following year onto the Medicine and Surgery Degree Course could not be replaced. Therefore, 10 students who would have become eligible to register at the Veterinary Faculty were, in essence, denied such right. Given the current law, this problem is difficult to solve.

**9.3.1.1.b Curriculum assessment -** 10 students did not acquire the necessary 40 University Learning Credits (ULC) and, based on current regulation, had to re-register onto the 1<sup>st</sup> year (they were then classified as newly-registered students) and, as such, have to complete the remaining exams of 1<sup>st</sup> year; their class attendance is not compulsory but is warmly recommended. The Degree Course Council (DCC) considers 60 out of 70 students to be a positive result compared with the results obtained with the old university system. Teachers of the second year observed a higher and more motivated attendance from students who did not have to re-take exams from previous years.

**9.3.1.2. Students enrolled in the 3**<sup>rd</sup> **year** - It is evident that the number of enrolled students is higher than the 76 students enrolled in the 1<sup>st</sup> year of the 2005-06, 2006-07 and 2007-08 academic years. The number of students in the 3rd year has increased in an anomalous way because of changing from old plane to the new study plane. The old study plan included an assessment at the end of the 2<sup>nd</sup> year: those 20 students who had one or more "learning debts" –persistent problems in
passing exams - had to re-register as 2<sup>nd</sup> year students. With the new study plan this assessment is done at the first year.

Therefore, the 20 students re-enrolled for the second time in 2<sup>nd</sup> year in the Academic Year 2008-2009 (under the old University system, MD 509), opted in Academic Year 2009-2010 for New University system (MD 207); these students were added to the "in course" students of previous year. For the abolished definition of "off-course", they are considered "in course" students because they were enrolled for the first time in the 3<sup>rd</sup> year.

**9.3.1.3 Students enrolled in the 4**<sup>th</sup> **year** - The data on table 9.7 shows an elevated number of registered students (87). These students have serious learning debts (they do not reach the threshold of 209 ULC), and therefore they had to re-enroll in the 4th year. They have to re-take exams and course attendance is free.

**9.3.1.4 Students enrolled in the 5th year -** The data on table 9.7 includes "in course" (5 years of curriculum) as well as "off course" students (beyond 5 years of curriculum) although both are considered in course because en-rolled for the first time at the 5<sup>th</sup> year.

For this reason the following table has been compiled, analyzing each single student's curriculum. The 5th year has been chosen for such analysis, because students have passed the threshold of 209 ULC and can graduate within the year and therefore this is the most significant year. The same analysis for previous years was too complex to be obtained since we do not posses statistic analysis and is necessary to analyze more than 500 curricula.

| AA 2009-10                              | In course   | 6°          | 7°          | 8°          | 9°          | >9° |
|---|-------------|-------------|-------------|-------------|-------------|-----|
| 5° year                                 | enrolled in |     |
| -                                       | 2005-06     | 2004-05     | 2003-04     | 2002-03     | 2001-02     |     |
| 84                                      | 27          | 22          | 15          | 9           | 11          | 5   |
| Number of enrolled at<br>the first year | 74+2        | 70+2        | 70+2        | 70+2        | 68+2        |     |
| Percentage                              | 35%         | 31%         | 21%         | 12.5%       | 15.7%       |     |

Table n°9.8 Student flow and total number of undergraduate veterinary medical students at the University of Padova

The data of table 9.8 has been normalized removing from the calculation any year that was attended by students in other courses before the enrollment in FVMP. "In course" students comprise only one third, another third is represented by "off course" students (of one year). 87% of students are within their 7<sup>th</sup> year of University. This observation is confirmed by the average number of years of study required to graduate (see below). The most serious problem is represented by the students who are in their 9<sup>th</sup> year "off course". It is not possible to forbid the enrollment even if they have learning debts and some students are working students.

**9.3.1.4 Students enrolled > 5th year -** 45 students completed their class attendance but they still have to carry out their research thesis or still take some exams. 40 students are enrolled for the first time at the 6<sup>th</sup> year, while the remaining 5 are enrolled beyond the 6<sup>th</sup> year. Table 9.9 shows the number of students graduating over the last 5 academic year (from October to September). Table 9.10 shows the average duration of studies based on distribution of students in the different years

### Chapter 9 - Student admission and enrolment

| Year from October to September<br>considering fees payment | Number graduating |
|--|-------------------|
| 2004/2005  | 54                |
| 2005/2006  | 66                |
| 2006/2007  | 47                |
| 2007/2008  | 53                |
| 2008/2009  | 52                |
| average  | 54.4              |

Table n°9.9 - The number of students graduating annually over the past four years from October to September

| year  | 5 years | 6 years | 7 years | 8 years | 9 years | 10 years | 11 years | 12 years | 13 years | 14 years | 15 years | Total | average     |
|-------|---------|---------|---------|---------|---------|----------|----------|----------|----------|----------|----------|-------|-------------|
| 2006  | 12      | 16      | 13      | 15      | 5       | 5        | 3        | 2        | 1        | 1        | 0        | 73    | 7,479452055 |
| 2007  | 10      | 11      | 12      | 4       | 3       | 1        | 1        | 1        | 0        | 0        | 2        | 45    | 7,155555556 |
| 2008  | 15      | 17      | 9       | 9       | 4       | 0        | 0        | 0        | 2        | 0        | 0        | 56    | 6,678571429 |
| 2009  | 8       | 20      | 10      | 8       | 4       | 2        | 1        | 0        | 1        | 1        | 0        | 55    | 7,054545455 |
| Total | 45      | 64      | 44      | 36      | 16      | 8        | 5        | 3        | 4        | 2        | 2        | 229   | 7,11790393  |

Table n°9.10 - Average duration of studies (based on distribution of students in the different years) for students of the Faculty of Veterinary Medicine of the University of Padova



**Figure n° 9.1** – Graphic representation of average duration of studies (based on distribution of students in the different years) for students of the Faculty of Veterinary Medicine of the University of Padova. The median of students (50%) graduate within 6.5 years of study

The mean value of table 9.10, showing the average number of years of study required for students to graduate, is distorted by a small number of students who can take up to 15 years to graduate. The "median" is more significant: about 50% of students graduate within 6.5 years of study. In 2007 and 2008 there was an improvement although in 2009 the trend was again increasing. Due to the low cost of annual fees and the difficulty of finding employment after University, many students prefer to dedicate more time to prepare well for their exams as well as to prepare their (experimental research) thesis.

# Describe the requirements (in terms of completing subjects and examinations) for progression to a subsequent year of the course.

The FVMP has recently adopted a new rule for students of the Veterinary Medicine Degree Course who are now required to complete 40 ULC by the end of the first year. If students do not achieve this academic result they have to reregister. The assessment provided at the end of the first year forces students to commit themselves to study from the very first day of course and gives them more responsibility. Students who are not particularly gifted can change their degree course without damaging their position. In passing from the old study plan to the new one, it has not been possible to retain the assessment at the 4th year, and this has consequently been removed. Currently no review is made of the carrier of students after the 1st year.

## Describe the academic circumstances under which the Faculty would oblige students to leave the course.

Exam results is valid for ten years, after which a student must take the same exam again. Pursuant to article 11, paragraph 9 of the Teaching Regulation of the University, a student who has not passed any exams or assessments within three Academic years from the date of first registration or enrolment onto the University of Padova, will cease to be regarded as a student.

Furthermore, the same will be the case for any student who does not acquire 60 ULC, according to the teaching regulations of the degree course, within five years from the date of first enrolment into the University.

In future, if legally possible, the University will be required to dismiss compulsorily any student enrolled in the first year who does not attend the courses provided. This is to dissuade poorly motivated students from enrolling temporarily. Due to the numerus clausus system, these places are lost and it becomes difficult to make them up with the re-integration at the 2nd year of students enrolled on the same Degree Course at another University or with students enrolled in other course who, passed the test , have acquired at least 40 ULC useful for the curriculum of FMVP.



## 9.4 Comments

|            | AA 2008-09   |               |              | AA 2009-10    |
|------------|--------------|---------------|--------------|---------------|
| University | N° of places | Minimum score | N° of places | Minimum score |
| Bari       | 98           | 31,50         | 102          | 35,50         |
| Bologna    | 125          | 41,25         | 125          | 41,00         |
| Camerino   | 49           | 31,50         | 35           | 35,50         |
| Catanzaro  | 18           | 34,00         | 11           | 39,00         |
| Messina    | 77           | 42,00         | 67           | 40,50         |
| Milano     | 180          | 40,75         | 162          | 40,25         |
| Napoli     | 114          | 38,00         | 80           | 39,75         |
| Padova     | 70           | 48,75         | 65           | 49,25         |
| Parma      | 77           | 41,50         | 68           | 42,00         |
| Perugia    | 84           | 40,00         | 90           | 39,75         |
| Pisa       | 90           | 40,25         | 79           | 42,75         |
| Sassari    | 43           | 32,50         | 38           | 33,00         |
| Teramo     | 67           | 34,00         | 70           | 34,25         |
| Torino     | 109          | 40,50         | 120          | 39,00         |
|            | 1201         |               | 1110         |               |

### Comment on standard of the students starting the course.

Table n° 9.11 – The number of places in the 1st year at the 14 Italian Veterinary Medical Faculties and the minimumpassing score (in italics) at each University for the Veterinary Admission Test.The passing score at Padova is thehighest.

For the Academic Year 2008-09, the lowest score for admission to the University of Padova (70th) was 48.75. By comparison, at the University of Messina the same statistic was 42, at the University of Parma 41.51 and at the Universities of Bari and Camerino it was only 31.5. Also, for the Academic Year 2009–10 Padova was the most selective, its lowest score (65th) for admission being 49.25, in comparison with 42.75 at the University of Pisa (ranked second for difficulty) and 33.0 at the University of Sassari (ranked last). If the score levels were common in a national ranking list, many of the students who did not gain access to the Veterinary Medical course at the University of Padova would have been able to enrol at another University. The national test, held in every university on the same day, has the effect of penalizing the best students, especially at highly competitive universities like the University of Padova. The original purpose of the national admission test was to obtain a national ranking of candidates.

The current selection mechanism is inefficient. In fact, it fails:

- a) to select the best students for veterinary skills, and
- b) to select a sample of students with a homogeneous scientific background

Based on the data obtained from the scores attained in the admission test, questions on general knowledge and logical thinking (40/80) are decisive in determining a student's final score. Some scientific questions (in particular those on maths and physics) are often unclear, badly formulated or very difficult and these therefore become less important in the selection process for admission because students tend to leave them unanswered. Furthermore, with the mechanism of "changeover", places vacated by the best of the students who opt for another degree course (see above) are filled by students who show a lower level of preparation. Due to this mechanism of "changeover", the lowest place in the ranking useful for admission was 131 th (and not 65 th) and the

score obtained was 47.75 out of 80. In comparison the 1<sup>st</sup> student obtained a score of 66 out 80 and the 65<sup>th</sup> was 49.25.

Because the students enrolled at the University come from different educational backgrounds (classical, scientific or technical high school education), basic courses must be offered by the Faculty to adjust for such differences. These "bridging" courses are scheduled before the beginning of the official courses in October (see Chapter 5.1.1.3.a). It is the opinion of the Faculty that the selection process should be based more on scientific knowledge, so that additional courses would not become necessary later in order to rectify a lack of scientific background knowledge. Contrary to this, MUR, in the academic year 2009-10, has moved in the opposite direction by increasing the emphasis on general knowledge and logical thinking questions (from 33 to 40), as compared to scientific ones. Ideally, individual faculties should be responsible for the selection process, as is already happening in the case of other courses in other faculties (i.e. Engineering or Biology).

# Comment on the ability of the Faculty to satisfactorily decide the number of students it can accept, as well as on the factors that determine the number of students admitted.

The MUR keeps reducing the number of "EU and Non-EU students residing in Italy" enrolled at the Faculties of Veterinary Medicine (Table 9.3). At the University of Padova, the reduction for the current academic year is 7.6 %. For other Faculties the reduction varies between 7% to 30% on the bases of various evaluation parameters, in addition to the EAEVE position of the specific Faculty.

The Faculty considers 80 as an adequate number of student. This number takes into consideration suggestions made by the professional body (The Register of Professional Veterinarians) regarding self-employment and also the requirements of, and opportunities offered by, the National Social and Health Service, the Experimental Zooprophylactic Institute, the food-processing industries and the pharmacological industries.

# Comment on the adequacy of the facilities and teaching programme to train the existing number of students.

The premises available at the Agripolis Campus are proportioned to the needs of 80 students each year. There are 5 rooms with 100 places available for lecturers and special rooms for practical activities: microscopy, autopsy, biology laboratories, the teaching hospital and the teaching museum, the University Experimental Farm and the library, which is shared with the Faculty of Agricultural Sciences. Students also can take advantantage of a number of study rooms. Connections with the city are quite good, with bus routes connecting the railways with Agripolis (one bus every 20 minutes) and there is also a restaurant and a bar on campus. For further information and comments on facilities on the Agripolis Campus, the reader is referred to Chapter n° 5.

Comment on the progress made by students in their studies, and the Faculty's ability to ensure that satisfactory progress is maintained.

Attendance is mandatory for 50% of lecturers and for 90% of practical activities, both practical works (practical activities connected to a particular course) or practical training (intra- and extramural activity accomplished as stand alone activity from the 2<sup>nd</sup> to the 5<sup>th</sup> year (see Table 5.3). At the end of the year, each professor prepares a list of students who were present at his/her

lessons. Students can sit for their exams if they have attended at least 50% of the lectures of that specific course as well as if they have already successfully sat for exams of courses which are propaedeutic.

At the end of the course, students are requested to fill in a form to evaluate the course and to express any suggestions or improvements they may have. The outcome is communicated to the teacher and to the Dean who is asked to look into any problems that might emerge during the process. This initiative has been activated for a few years and the University of Padova has been one of the first to adopt this method of evaluation. In the new bill it is stated that the judgment given by students will be used for teaching evaluation by MUR. The Ministry, on the basis of different parameters of teaching evaluation of each University, will assign additional resources to the Universities.

The Regulation for the new study plan specifies an assessment at the end of the 1st year, organized on the basis of a threshold of 40 ULC. According to this limit, students have to pass every exam during the first year with the possible exception of two. If the student does not acquire 40 ULC, he/she is compulsorily re-enrolled for the second time in the first year, without compulsory attendance to the courses.

Results from the first year have been discussed by the DCC and for the academic year 2008 – 2009 these have been positively evaluated. With the new Regulation (MD 207), the assessment (minimum number of ULC to be achieved) at the 4<sup>th</sup> year has been abandoned. This assessment was based on a threshold of 209 ULC.

The Faculty Council will be called upon to deliberate on other possibilities in order to fully assess the achievement of learning objectives, and possibly an assessment will be organized during the 3<sup>rd</sup> year. The objective is to allow attendance to practical, hands-on training only to those students who have reached a curriculum level in clinical subjects which is considered appropriate. The changes implemented by the new study plan, however, do not permit the identification of the parameters which would be most useful in introducing this assessment.

#### 9.3 Suggestions

Please state in order of importance any suggestions that you may have concerning this Chapter if you feel unhappy about:

- The number of students admitted;
- The drop-out percentage and reasons, if known
- The average duration of studies;
- Other aspects.

**9.3.1** N° of students admitted - The number of EU students is decided by the MUR, on the basis of the number proposed by the University and having considered the opinions of the Faculty. The objective is to achieve the enrolment of about 80 (70 EU + 10 Non-EU) students and the Faculty considers it fundamental to obtain the parameters of the positive evaluation of EAEVE. For other consideration see chepter 9.2.7.

**9.3.2 The drop-out percentage and reasons, if known -** From the 1st to the 2nd year during the academic year 2009-2010 the data show a significant decrease in the number of enrolled students. 10 students transferred to other degree courses and under current regulations these students will not

be replaced. It is difficult to monitor the situation of 'off course' students because technically, they do not exist anymore.

9.3.3 The average duration of studies - The median number of years required by students to graduate is about 6.5, which is similar or even better than the number required by students on other 5-year degree courses at the University of Padova as well at other Universities. To improve this figure it is necessary to work on the degree courses and on student recruitment. The new study plan has been structured so as to increase practical activity, whilst decreasing the number and the hours of lecturers. The average duration of studies has fluctuated over the last few years, but it is difficult to assess the effect of the new curriculum (MD 270) as no student has yet graduated with it. However, the amount of lectures during the 5th year has been drastically reduced, and the second guarter of the 5th year has been completely dedicated to practical activities and thesis, leaving students some time to make up exams which they have previously failed. We are confident that these changes will result in a lowering of the time needed by student to complete their curricular requirements and graduate. Comments received regarding the first year under the new system (MD 270) are positive and a similar system could also be used for other years. Assessment of the student curriculum will be based on the number of ULC acquired. This will allow for monitoring of the efficiency of the Degree Course and for a "replacement" of the student if the curriculum fails.

**9.3.4 Other aspects -** As far as possible, pressure will be applied at ministerial level regarding the admission test, in order to increase the number of scientific questions in relation to general knowledge ones.

# Chapter 10 ACADEMIC and SUPPORT STAFF

written by R. Cassini

## **10.1 Factual information**

## Definitions:

Budgeted and non-budgeted posts: A distinction is drawn between:

- posts that are allocated to the Faculty and financed by the university or ministry responsible for the Faculty. These posts can be regarded as more or less permanent. They are termed "budgeted posts".
- posts that depend upon finance in addition to the allocation of budgeted posts from public money. These posts can fluctuate in number. They are termed "non-budgeted posts".

*Full-time equivalents (FTE):* Posts can be occupied full-time or part-time. The number given should correspond to a total of full-time equivalents (FTE). For instance 10 full-time posts plus two part-time posts at 50% plus 1 part-time posts at 80% should be given as a total of 11.8 FTE.

**VS versus NVS academic personnel:** A distinction has to be made between teaching staff holding the degree of veterinary surgeon (VS) and non veterinary surgeon (NVS) teaching staff.

Teaching staff: It is understood fact that "teaching" staff will also do research.

**Research staff:** This category includes academic personnel whose main task is to do research work, even though they may from time to time participate in undergraduate teaching.

**Support staff:** This includes all posts, regardless of the work undertaken; secretaries, administrators, technicians, animal caretakers, cleaners, etc.

*Interns, residents, doctoral (Ph.D.) students* are not included in the staff numbers unless they perform regular, paid, teaching activities for at least 20% of their workload.

If you find that the distinctions made between different groups of staff do not fit your situation, make the best distribution you can of your personnel between the headings we use. Add an explanatory note if you wish.

### 10.1.1 Staff composition

In Italian Universities, academic staff is composed of the upper two teaching levels of Full and Associate Professors and by an entry level which in theory should not have any teaching obligation, and for this reason it has been historically defined as Ricercatore ("Researcher") However, Italian "Researchers" have always been required to provide a substantial amount of teaching, which often increases exponentially once tenure is obtained (form the 4<sup>th</sup> year on after being hired). Teaching duties for "Researchers" tend to increase with seniority both because of the need of provide teaching in an system which tends to offer more and more academic courses (due to a generalized trend towards increasing profits by all Universities) as well as because there is a separate retribution for

teaching which, although minimal, is an incentive for all academicians to commit themselves to providing lectures.

The term "Researcher" may be a source of confusion because its meaning is associated with research while in Italy "Researchers" are full members of the teaching staff. Therefore, for the sake of clarity, the term Assistant Professors will be used instead of "Researchers" throughout this Self Evaluation report.

All staff members are generally required to use their time for both teaching and research. Full and Associate professors have a specific course permanently assigned, while Assistant Professors are assigned their teaching duties on a year by year basis and not all of them may necessarily assigned a courses on every given academic year. Academic staff in Clinical subjects is also required to participate in clinic and diagnostic activities. Non budgeted posts called "Contract professors" are hired mainly for TIROCINIO (chapter 4.1.1.3a-c). Instead, support staff can also be in non-budgeted posts and financed by projects, Departments or Faculty funds, clinical or diagnostic services revenues. These posts are usually temporary.

The number of teaching staff is calculated according to the professors officially belonging to the Faculty, which are at present 85 (18 Full Professors, 19 Associate Professors and 48 Assistant Professors). Personnel on leave (at present 1) is not calculated, and part-time professors are calculated as 0,5 FTE. All teaching staff is mainly involved in teaching activity (including support practical work, supervision of student final thesis, TIROCINIO) inside the Course of Veterinary Medicine, but 5 Assistant Professor who are mainly involved in teaching activity in another Course of the FVMP (Safety and hygiene of Food products) are calculated as 0,3 FTE. Furthermore, 2 Full Professors and 1 Associate Professor not officially belonging to the Faculty are part-time working for the Faculty itself and their contribution is therefore calculated as 0,5 FTE.

Full and Associate Professors from other Faculties (mainly from Faculty of Agriculture) usually cover part of the teaching activity of the Course of Veterinary Medicine concerned with common subjects (e.g. agronomy, animal production). Similarly few Professors of the FVMP may not have any teaching activity in the Veterinary Medical curriculum, being assigned with course in other additional courses of the Faculty. During the last academic year (2008-2009), 64 professors (62,5 FTE) were assigned one or more courses within the veterinary curriculum.

During the last two years, in order to increase the number of TIROCINIO supervisors, 107 veterinarians (see table 4.1.12) have been hired by the FVMP as Contract Professors. These posts are non-budgeted posts, since the budget is assigned year by year with a decision of the Faculty Council. The time spent in teaching activity differs according to the duty assigned to each of these veterinarians and is calculated as follows:

- 1 FTE each for the Large animals practitioner assigned to the TIROCINIO in Animal Science and to the Pathologist assigned to the VTH.
- 0.5 FTE each for the 3 Small animals practitioners assigned to 24 Hours Emergency Service in the VTH.
- 0.2 FTE each for the 9 Large animals, Poultry and Rabbit practitioners assigned to the TIROCINIO in clinical subjects.

- 0.1 FTE each for the 93 public health veterinarians assigned to the TIROCINIO in Food Hygiene. Therefore, at present, these Contract professors account for 14.6 FTE. The above mentioned staff is included in Table 10.1 in the non-budgeted academic staff and in Table 10.2 under the Dean office.

|       |   | Budgete<br>(FT | d posts<br>E) | Non-bu<br>posts | dgeted<br>(FTE) | Total | (FTE)  |  |
|-------|---|----------------|---------------|-----------------|-----------------|-------|--------|--|
| 1. A  | cademic staff   | VS             | NVS           | VS              | NVS             | VS    | NVS    |  |
|       | Teaching staff (total FTE)  | 52.7           | 28.3          |                 |                 | 52.7  | 28.3   |  |
|       | Research staff (total FTE)  |                |               |                 |                 | 0.0   | 0.0    |  |
|       | Others (contract professors) (FTE)  |                |               | 14.6            |                 | 14.6  | 0.0    |  |
|       | Total FTE   | 52.7           | 28.3          | 14.6            | 0.0             | 67.3  | 28.3   |  |
|       | Total FTE (VS + NVS)  | 81             | .0            | 14.6            |                 | 95    | 5.6    |  |
|       | FTE providing last (5°) year teaching<br>FTE providing teaching in the last<br>academic year at veterinary medicine<br>course |                | 3.5           | 14.6            |                 | 33.1  |        |  |
|       |   |                | 62.5          |                 | 14.6            |       | 77.1   |  |
| 2. Sı | upport staff  |                |               |                 |                 |       |        |  |
| a)    | responsible for the care and treatment of animals   | 2.             | 50            | 0.              | 00              | 2.50  |        |  |
| b)    | responsible for the preparation of practical and clinical teaching.   | 14             | .75           | 0.              | 60              | 15.35 |        |  |
| c)    | responsible for administration, general services, maintenance, etc.   | 20             | .60           | 0.              | 00              | 20.60 |        |  |
| d)    | engaged in research work  | 14             | .95           | 2.              | 30              | 17.25 |        |  |
| e)    | others (informatic technicians)   | 2.             | 00            | 0.              | 00              | 2.    | 00     |  |
|       | Total support staff   | 54             | .80           | 2.              | 90              | 57    | .70    |  |
| 3. To | otal staff  | 135            | 5.80          | 17              | .50             | 153   | 153.30 |  |

Table n°10.1: Personnel in the establishment provided for veterinary training (<sup>1</sup>Full Time Equivalents; <sup>2</sup>Veterinary Surgeon - DVM; <sup>3</sup>Non Veterinary Surgeon)

|   |                  | А                 | cade       | mic te        | achin       | q staf       | f         |              | Support staff  |                  |        |  |
|---|------------------|-------------------|------------|---------------|-------------|--------------|-----------|--------------|----------------|------------------|--------|--|
|   |                  |                   |            |               |             | 0            |           |              | (see           | table 10         | .1)    |  |
| Department name   | Full prof.       |                   | Asso<br>pr | ociate<br>of. | Assi:<br>pr | stant<br>of. | Con<br>pr | tract<br>of. | Technical      | animal<br>carers | Admin. |  |
|   | VS <sup>2)</sup> | Nvs <sup>3)</sup> | vs         | Nvs           | VS          | Nvs          | VS        | Nvs          | (b + d +<br>e) | (a)              | (c)    |  |
| Experimental Veterinary<br>Sciences                               | 4.0              | 1.0               |            | 2.0           | 4.0         | 6.3          |           |              | 8.5            | 0.0              | 1.0    |  |
| Public Health, Comparative<br>Pathology and Veterinary<br>Hygiene | 2.0              | 2.0               | 7.0        | 2.0           | 12.9        | 3.0          |           |              | 10.0           | 0.0              | 4.0    |  |
| Veterinary Clinical Sciences                                      | 5.0              |                   | 2.5        |               | 14.0        |              |           |              | 8.2            | 1.2              | 4.6    |  |
| Animal Sciences   |                  | 2.0               |            | 1.5           | 1.3         | 1.0          |           |              | 5.3            | 1.3              | 0.7    |  |
| Biological Chemistry  |                  | 1.0               |            |               |             | 1.0          |           |              |                |                  |        |  |
| Philosophy  |                  |                   |            |               |             | 1.0          |           |              |                |                  |        |  |
| Pure and applied Mathmatics                                       |                  |                   |            | 0.5           |             |              |           |              |                |                  |        |  |
| Physics   |                  |                   |            | 1.0           |             |              |           |              |                |                  |        |  |
| Environmental Medicine and<br>Public Health                       |                  |                   |            | 2.0           |             |              |           |              |                |                  |        |  |
| Histology, Microbiology and medical biotechnology                 |                  | 1.0               |            |               |             |              |           |              |                |                  |        |  |
| Dean office   |                  |                   |            |               |             |              | 14.6      |              | 2.0            | 0.0              | 5.5    |  |
| Agripolis Campus Services<br>(CIS)                                |                  |                   |            |               |             |              |           |              | 0.6            | 0.0              | 4.8    |  |

Table n°10.2: Allocation of academic teaching and support staff to the various Departments (1Full Time Equivalents; 2Veterinary Surgeon - DVM; 3Non Veterinary Surgeon)

The FVMP is organised in 4 main Departments. Most of teaching and support staff of 3 of these Departments (Experimental Veterinary Medicine Department, Public Health, Comparative Pathology and Veterinary Hygiene Department and Veterinary Clinical Sciences Department) is working full time for the FVMP, whereas personnel of the Animal Sciences Department is nearly equally shared

between the Faculty of Agriculture and the FVMP. Some members of the FVMP teaching staff belong to other Departments of the University of Padova (Table n° 10.2). For the sake of simplicity, support staff of these Department is not considered in the present Report. Besides the academic and support staff of the 4 main Departments involved in the FVM activity, the support staff of the Dean's office and of the SIC is reported in Tab. 10.2.

The Ratios reported in Table 10.3 refer to the academic year 2008-2009. The reader is referred to Annex 11 on page 211 for a comparison with the current EAEVE-accepted Ratios.

|      |  |       |     | Denominator | Ratio |
|------|--|-------|-----|-------------|-------|
| R 1: | no. total academic FTE in veterinary training      | 95.6  | _ = | 0.200       | 5.00  |
|      | no. undergraduate veterinary students              | 476   |     |             |       |
| ם ז. | no. of total FTE at Faculty                        | 153.3 | _   | 0.185       | 5.40  |
| R 2: | no. undergraduate students at Faculty              | 829   |     |             | J.40  |
|      | no. total VS FTE in veterinary training            | 67.3  | _   | 0.141       | 7.00  |
| К Э. | no. undergraduate veterinary students              | 476   |     |             | 7.09  |
| D /- | no. total VS FTE in veterinary training            | 67.3  | -   | 1.237       | 0.80  |
| К4.  | no. students graduating annually                   | 54.4  |     |             | 0.00  |
|      | no. total academic FTE in veterinary               | 95.6  |     | 1.65        |       |
| R 5: | no. total FTE support staff in veterinary training | 57.7  | - = |             | 0.60  |

Table n° 10.3: Ratios students/staff [<sup>1</sup>Full Time Equivalents; <sup>2</sup>Only academic staff providing Courses, practical training and TIROCINIO within the veterinary curriculum during 2008-09 academic year is considered; <sup>3</sup>The students calculated here are only those who are enrolled at the Faculty of Veterinary Medicine (i.e. students in Veterinary Medicine and students in Safety and hygiene of Food products) while other students of degree courses in which the FVMP has only a partial role (Marine Biology, Biotechnologies in Nutrition, Biotechnologies in Health Sciences, Animal Science and Technologies) are not calculated. ]

### 10.1.2 Allocation of staff to the Faculty

#### Outline how the allocation of staff to the Faculty is determined.

Academic positions are assigned only through public national search processes for Full, Associate and Assistant Professors. Within the context of single academic categories, promotion occurs through the evaluation by the National Public Committees of the teaching and scientific activity performed by the candidate. Salary increases are provided exclusively on the basis of seniority<sup>9</sup>.

<sup>&</sup>lt;sup>9</sup> However, the introduction of a "scientific production" parameter to calculate salary increases has been seriously considered at the political level for the past several years, and is likely to become a law sooner or later.

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### 10.1.3 Allocation of staff to the Departments

# Outline how the allocation of staff to the departments (or other units) within the Faculty is determined.

The main task of departments is to perform research and provide service to clients. The opening of a position is decided by the Faculty, in order to cope mainly with teaching needs. However, research and clinical activities are also considered when making such a choice. All new professors of the Faculty should decide to which Department they want to belong upon signing their contract. However, this decision can be changed at any time.

#### Indicate whether there are difficulties in recruiting or retaining staff.

Recruitment procedure is usually time spending and, depending on public national search processes, can be delayed because of problems not related to the FVMP or the University of Padova.

## 10.1.4 Trends in staff levels

Describe (if appropriate) any relevant trends or changes in staff levels or the ability to fill vacancies over the past decade.

| Academic staff         | 2000 | 2006 | 2007 | 2008 | 2009 | 2010 |
|------------------------|------|------|------|------|------|------|
| Full prof.             | 8    | 16   | 16   | 17   | 17   | 18   |
| Associate prof.        | 13   | 20   | 20   | 20   | 19   | 19   |
| Assistant prof.        | 24   | 42   | 47   | 49   | 49   | 48   |
| Total permanent staff  | 45   | 78   | 83   | 86   | 85   | 85   |
| Other (contract prof.) | 3    | 19   | 13   | 9    | 10   | 107  |

Table n° 10.4: Trend of permanent and contracted teaching staff during the last 5 years (2006-2010) and compared to the previous EAEVE visit [only professors officially belonging to the Faculty are calculated].

Table 10.4 shows that permanent academic staff nearly doubled since 2000 and also that in the 2006-2008 period there was an increase in the number of Assistant Professors. The increment of the Contract professors in the 2010 is mainly due to the involvement of public health veterinarians in the supervision of TIROCINIO. Similarly support staff had a good increment in the last 4 years (Tab. n° 10.5)

#### Chapter 10 - Academic and support staff

| Support staff   | 2006 | 2007 | 2008 | 2009 |
|---|------|------|------|------|
| responsible for the care and treatment of animals                   | 1.2  | 1.1  | 1.2  | 2.6  |
| responsible for the preparation of practical and clinical teaching. | 12.8 | 11.9 | 12.6 | 15.3 |
| responsible for administration, general services, maintenance, etc. | 14.9 | 16.0 | 18.8 | 20.4 |
| engaged in research work  | 12.0 | 13.4 | 13.6 | 17.4 |
| others (informatic technician)                                      | 1.6  | 1.6  | 1.6  | 2.0  |
| Total   | 41.5 | 44.0 | 47.8 | 57.7 |

Table n° 10.5: Trend of support staff during the last 4 years (2006-2009) [staff is calculated according to the FTE; 1in the structures shared between the FVMP and Faculty of Agriculture personnel is calculated only in the percentage supposed to be dedicated to the FVMP].

# 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 contracted for specific courses every year, with the agreement of the Faculty Council, but it is not possible to employ additional academic staff from service income. Only temporary and permanent additional support staff can be covered by service income, but at present no technicians in the Faculty is covered completely by revenues of clinical and diagnostic services. However, the University of Padova has an internal set of rules for the creation of spin-off and the FVMP at present is involved in 2 spin-off enterprises (BioUniVet Srl – www.biounivet.com; GRAINIT – www.grainit.it ), with professional personnel employed privately.

#### 10.1.5 Regulations governing outside work, including consultation and private practice

Describe the regulations governing outside work, including consultation and private practice, by staff working at the establishment.

- a. Consultation Academic staff may be allowed to make external consultation only sporadically and following a specific Dean/Rector approval.
- b. Private external work 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.

#### 10.1.6 Financial provisions foreseen in case of:

- Describe the possibilities and financial provisions for the academic staff to:
   a) attend scientific meetings;
  - a. participation in scientific meetings in the event of participation in scientific meetings, Teaching staff and PhD students are entitled to reimbursement for their travel and 158

accommodation expenses according to a table differentiated by position. The funds used for the purpose of these missions are usually those allocated to research.

b) go on a sabbatical leave.

b. leave of absence for study or sabbatical leave - leaves of absence for study of limited duration and longer term leaves (sabbaticals) are permitted without any variation in salary, but should be accepted by the Faculty Council, provided that the teaching activity is temporarily fulfilled by other staff members.

## **10.2 Comments**

#### 10.2.1 Number of personnel employed

As reported in the section 10.1.4 the teaching staff increased remarkably over the last 10 years and particularly many new assistant professors were recruited in the last 3 years. At present the Faculty has reached a reasonable academic staff/students ratio. The academic staff average age is particularly low compared to other Italian Faculties.

#### 10.2.2 Remuneration levels

Teaching and non-teaching personnel salaries are fixed by law and do not change in all the Italian public Universities. Despite differences in the cost of living between Italy and many other Western- or Northern-European countries and cities, wages for Italian academicians are to be considered as being exceptionally low (particularly for the support staff and Ph.D. students, and especially in Northern-Italian cities where living costs approach those of any large European city). Job security has certainly its values (all academic and technical positions are permanent).

#### 10.2.3 Difficulties in recruiting and retaining staff

Academic work at the FVMP is an interesting and challenging activity. Job security and absence of working time control are surely considered positively, but researchers can be attracted by higher salary levels in similar activity in the private sector. Also veterinarians working for other institutions in the public sector, but under the Ministry of Health, have better salary conditions.

#### 10.2.4 Percentage of veterinarians in the academic staff

Veterinarians represent the 70.4% of the all academic staff (67.3 FTE/95.6 FTE). All teaching staff of the clinical Department are veterinarians.

### **10.3 Suggestions**

Staff/students ratios of the FVMP are in the established range or under it, meaning that more staff is available for each student. This reasonable staff/students ratio was reached recently, mainly because of a rapid increment of assistant professors. It is now expected that clinical and diagnostic services will also increase, as soon as all staff get confidence with his position. As a consequence it will be possible to employ additional support staff from services revenues.

## Chapter 11

## **CONTINUING EDUCATION**

written by V. Giaccone

## **11.1 Factual Information**

Please describe the role of the Faculty in providing continuing education.

## 11.1.1 Continuing Education Courses held at the Establishment

In Italy veterinarians can find employment:

(1) in the private sector, as self- employed, contractors or consultants.

(2) in the public sector, employed by the National Health Care System.

In the latter case, the veterinarians are public employees, employed by state-run Public Health Agencies called AUSL. The veterinarian's role within the AUSL is to monitor the health of animals (both pets as well as food animals) and to monitor the hygiene of food production. Since 2000, every year state veterinarians have to attend continuing professional development courses called Continuous Education in Medicine (CEM) courses, in which they are expected to acquire at least 30-50 learning credits per year. Similar update courses for veterinarians are organized and provided for by the FVMP, either in its own teaching facilities. Alternatively, the FVMP sometimes provides teachers who then participate in the CEM courses organized by qualified outside bodies.

Teachers from the FVMP also schedule and organize update courses, these being for selfemployed veterinarians (the category previously described at point 1), for graduates from different scientific subject areas and for technicians, according to their own levels of competence.

|                                       | Title of course  | Number<br>of<br>partecip<br>ants | Total<br>number of<br>hours of<br>the course |
|---------------------------------------|--|----------------------------------|--|
| Legnaro (PD)<br>24 and 25<br>October  | Propedeutic course in X-ray research on<br>skeletal congenital or hereditary canine<br>diseases (HD-ED-SP-WS). | 40                               | 12   |
| Legnaro (PD)<br>29 March              | Complications in anestesia: prevention is<br>better than cure  | 68                               | 6  |
| Legnaro (PD)<br>12, 13 and 14<br>June | Cytology of hematopoietic organs and linfoid tissue  | 18                               | 24   |
| Legnaro (PD)<br>2, 3 and 4<br>October | Basics in Anestiosology  | ??                               | 24   |

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| Legnaro (PD)<br>from 13<br>November to<br>17 December | Basics in veterinary field for support staff   | ?? | 40       |
|---|--|----|----------|
| Legnaro (PD)<br>25 and 26<br>June                     | Sampling methods in diagnostic medicine  | 24 | 16 hours |
| Legnaro (PD) I<br>1- 30 Apri                          | Vocational Training on wild fauna for<br>veterinarians employed by the National<br>Health Care System: "Wild Fauna in Italy<br>and basics in bio-ecology "                         | 35 | 32 hours |
| Legnaro (PD)<br>12-16 October                         | Summer School: Health and Reproductrive<br>management of South American camelids<br>bred and raised in Italy and Peru'   | 12 | 30 hours |
| Legnaro (PD)<br>1- 30 October                         | Vocational Training on wild fauna for<br>veterinarians employed by the National<br>Health Care System: "Wild fauna in Italy:<br>knowledge of pathologies and helath<br>management" | 35 | 48 hours |

Table nº 11.1. Courses organised by the establishment itself in the most recent year (2009)

| Year 2008          | Title of course   | Participants | Hours |
|--------------------|---|--------------|-------|
| 18-19 October      | Propedeutic course in X-ray research on skeletal<br>congenital or hereditary canine diseases. | 40           | 20    |
| 18-19-20 January   | Anestesiology VI – Loco-regional anesthesia   | 33           | 15    |
| 23-24-25 May       | Anestesiology VII – Complications in anestesia, intensive care and reanimation                | 37           | 15    |
| 4 May              | Surgery Seminar - Surgical treatment of perineal<br>pathologies                               | 37           | 5     |
| 26-27-28 September | Anestesiology VIII – Anesthesia for a variety or practical<br>situations                      | 37           | 15    |
| 28-29-30 November  | Cytopathlogy I<br>Basics in Cytopathology   | 15           | 24    |
| 20 September       | New approaches to an old problem: leptospirosis   | 50           | 5     |
| 19 March           | Health Education for food inspectors (course I)   | 32           | 3     |
| 26 May             | Health Education for food inspectors (course II)  | 32           | 3     |
| 3 July             | Health Education for food inspectors (course III)   | 32           | 3     |
| 27 October         | Health Education for food inspectors (course VI)  | 32           | 3     |

 Table n° 11.2 Courses organised by the establishment itself in the the year 2008

| Year 2007             | Title of course   | Participants | Hours |
|-----------------------|---|--------------|-------|
| 20-21 October         | Propedeutic course in X-ray research on<br>skeletal congenital or hereditary canine<br>diseases | 40           | 20    |
| 15-16-17 June         | Cytopathlogy VI<br>Cytopathlogy – Clinical cases  | 15           | 15    |
| 28-29-30<br>September | Anestesiology V<br>Assisted ventilation   | 30           | 15    |
| 5 February            | Health Education for food inspectors<br>(course IV)   | 32           | 3     |

### Chapter 11 – Continuing education

| 13 March     | Health Education for food inspectors (course IV)    | 32 | 3 |
|--------------|---|----|---|
| 18 April     | Health Education for food inspectors (course IV)    | 32 | 3 |
| 20 June      | Health Education for food inspectors<br>(course IV) | 32 | 3 |
| 12 September | Health Education for food inspectors (course IV)    | 32 | 3 |

Table 11.3 Courses organised by the establishment itself in the year 2007

Indicate the involvement of teaching staff at the establishment involved in continuing education organised by outside organisations

The staff teachers of the establishment are always involved to a significant extent in programmes offered by outside organisations.

#### 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**

Comment on the quality of the continuing education programmes in which the establishment is involved.

In our opinion, the quality of the programmes is generally very good. The teachers are qualified experts and specialists. The infrastructures used in the conduct of these courses are generally good and can sometimes be deemed excellent.

Comment on the degree of participation of veterinarians in the continuing education programmes in which the establishment is involved.

The participation of the Italian veterinarians is very good. The FVMP has no problem in attracting a large number of participants and the return rate is quite high. The continuing education events are an excellent platform upon which to establish good working relationships with the practitioners and the veterinarians who work in Public Health structures. From this point of view the FVMP is considered today the most important reference for the development and the implementation of continuing education courses in the Tri-Veneto. Usually, teachersof the FVMP are able to cover most if not all of the scientific fields involved in the different continuing education programmes.

#### 11.4 Suggestions

Two distance update courses, conducted via internet, will be offered in 2010 for veterinarians who are employed by AUSL. This move is in accordance with an agreement between the FVMP and the AUSL of the Tri-Veneto who are asking for the setting up of Postgraduate Specialization Courses in public health for veterinarians.

## Chapter 12

## **Postgraduate Education**

## written by V. Giaccone, G. Gabai and R. Cassini

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 postgraduate training opportunities in tabular form under "Factual Information".

## **12.1 Factual information**

At the University of Padova, the Faculty of Veterinary Medicine offers the following postgraduate educational programmes:

- ECAR Resident Training in Small Animal Reproduction
- ECVP Resident Training in Animal Pathology[...]
- PhD School in Veterinary science
- PhD School in Animal science
- 1-year Master Course in Veterinary International Cooperation
- Postgraduate Specialization School in "Inspection of food of animal origin"
- Postgraduate Specialization School in "Rearing, hygiene and pathology of aquatic species and control of fish products" "
- · Postgraduate Specialization School in 'Animal health, rearing and zootechnic production'

## 12.1.1 European Specialist Training (Intern & Resident)

## Indicate any programmes that are certified by the European Board of Veterinary Specializations.

At the FVMP there are two Residency programs authorised by the European College and Veterinary Pathology (ECVP – Supervisor Prof. Massimo Castagnaro) and the European College of Animal Reproduction (ECAR – Supervisor Prof. Stefano Romagnoli), respectively (Table 12.1). However, more diplomatesd are present at FVMP (Table 12.1.1).

The ECAR Training Institution offers training to residents in small animal reproduction and reproductive biotechnologies. The residency program in reproduction lasts 3 years of full time work and is a combined program which includes a PhD project and the accomplishment of clinical skills in canine and feline reproduction or reproductive biotechnogies. Residents have to develop and/or be involved in a research project and be trained in clinical reproduction of small animals (including gynaecology, artificial insemination, obstetrics, pediatrics, male and female infertility, control of reproduction, andrology, semen freezing. A period abroad in a research institution in Europe or the USA of at least 12 months during the 3 years is commonly adopted (and there is a salary increase during such a stage) both to perform part of a research project or to be trained in an animal species different from the one in which the resident is being trained. Currently, there are two ECAR residents:



Dr. Chiara Milani (who recently joined the FVMP as Assistant Professor in Animal Reproduction); she has completed her third year of residency at the end of 2009 and will probably sit for the certifying exam in 2011; and Dr. Hasan Sontas, Assistant Professor in Animal Reproduction at the Faculty of Veterinary Medicine of the University of Istanbul, Turkey, who has completed his 1<sup>st</sup> year of residency during 2009 (on leave from his university), is in Turkey at the moment and is due to be back in Padova during the Spring of 2010.

The ECVP Training Institution offers training to residents in Veterinary Pathology. Currently, two residents are enrolled in the ECVP residency program: Dr Diego Caliari and Dr. Gabrita De Zan

| Location of Training<br>Institution                                       | Type of Residency<br>Program – College – year<br>approved    | Programme Director        | Other Diplomates<br>on staff | N° of<br>Interns/Residents |
|---|--|---------------------------|------------------------------|----------------------------|
| Dept of Public Health,<br>Comparative Pathology<br>and Veterinary Hygiene | Standard Residency<br>Program – authorized by<br>ECVP – 2006 | Prof. Massimo Castagnaro, | Prof. Valentina<br>Zappulli  | 0/2                        |
| Dept of Veterinary<br>Clinical Sciences                                   | Standard Residency<br>Program – authorized by<br>ECAR - 2006 | Prof. Stefano Romagnoli,  |                              | 1/2                        |

**Table n° 12.1** – Location of residency program, type of residency program, College from which it has been officially authorized andd year of first authorisation, program director, other diplomates on staff and n° of interns and/or residents currently present in each specific program at the Faculty of Veterinary Medicine of the University of Padova.

| FVMP staff         | College  |
|--------------------|--|
| Bernardini Marco   | European College of Veterinary Neurology (ECVN)                    |
| Castagnaro Massimo | European College of Veterinary Pathology (ECVP)                    |
| Da Casto Mauro     | European College of Veterinary Pharmacology and Toxicology (ECVPT) |
| Morgante Massimo   | European College of Bovine Health Management (ECBHM)               |
| Normando Simona    | European College of Veterinary Behavioural Medicine-Companion      |
|                    | Animals (ECVBM-CA)   |
| Petterino Claudio  | European College of Veterinary Clinical Pathology (ECVCP)          |
| Romagnoli Stefano  | European College of Animal Reproduction (ECAR)                     |
| Zappulli Valentina | European College of Veterinary Pathology (ECVP)                    |

Table n° 12.1.1 – List of staff member of FVMP who are diplomats in one of EBVS recognized veterinary colleges.

The residency program in pathology, approved by the ECVP Application Committee in 2006, last 3 years of full time work and is a combined program which includes a PhD project and the accomplishment of diagnostic skills in histology and necropsies. Resident have to develop and/or be involved in a biomedical research project and be trained in diagnostic pathology (including necropsy, descriptive pathology, histopathology, molecular pathology, electron microscopy, clinical pathology, light microscopy, report writing.). During the last five years 3 DVM have been trained (Valentina Zappulli, Diego Caliari and Gabrita De Zan). One of them passed the exam in february 2009 (Valentina Zappulli). The remaining two passed 2/5 and 3/5 parts on February 2010 of the exam and will sit the exam next year.

During the residency, a period of time ranging from 3 to 12 months may be spent abroad for training in pathology with diplomats of both ECVP or ACVP (American College of Veterinary Pathologists). Residents are asked to publish a case report per year from their diagnostic duties and/or staff duties. One full research paper has to be published by the last year of the program concerning the specific PhD project. Residents are stimulate to attend the ESVP/ECVP summer schools. All courses offered from other European as well as American (AFIP, CL DAVIS Fundation). Residents have to

become proficient on the following topics - 1<sup>st</sup> year: general pathology, cellular adaptation and cell death, tissue renewal and repair, hemodynamic disorders, genetic diseases, immunity, neoplasia, infectious diseases, environmental and nutrional pathology; 2<sup>nd</sup> year: bones and joints, pancreas and peritoneum, muscles, urinary, respiratory, respiratory, cardiovascular, endocrine, hemopoietic, liver, alimentary; 3<sup>rd</sup> year: male genital, female genital, nervous system, eye, integumentary, lab animal pathology, avian pathology, primates, wild and exotic animal diseases.

At the end of the third year candidates have to submit their PhD thesis by December. From August up to February they revise all the subject to be ready to sit the exam in February of the subsequent year.

#### Indicate whether students involved in this training receive a grant or a salary.

Grants or salaries for interns or residents may be available depending on funding availability. Currently one intern and one resident in Animal Reproduction are not being paid on a regular basis. The two residents in Pathology are payed on grants generated from the histopathology service.

#### 12.1.2 Research Education Programmes: PhD Schools

#### Please indicate when and where and whether the students require a grant or salary

The third segment of the university education is represented by the PhD Schools. A PhD school is devoted to research education and the PhD students are enrolled for periods of 3 years. At the University of Padova, students graduated in Veterinary Medicine interested in improving their education in scientific research can apply to enter the PhD schools in Veterinary Science or in Animal Science, both established since year 2004.

The structure of the PhD School is organised as follows: a) Directive Committee, elected among the teaching staff of the Departments that support the School; b) Director of the School, elected among Directive Committee members; c) Teaching Committee (one for each curriculum), composed by the teaching staff of the Departments; d) Scientific Committee, composed by 3 external experts proposed by University Evaluation Board. To be admitted to the PhD School, candidates must pass a public competition that takes usually place between October and November of each year. Once passed the competition, PhD students are enrolled for a period of three years starting on January 1<sup>st</sup> of the year following the examination.

However, in order to be admitted to each subsequent year of the PhD course students are evaluated for their research activity at the end of first and second year by the Teaching Committee. At the end of the third year, the Teaching Committee must approve both performance and scientific results of each PhD student for the admission to the final examination to be awarded by the title of PhD. The final examination is a thesis defence given in front of a Judging Commission independent from the Teaching Committee. Such Commission generally features professor from other Italian universities or also from foreign universities.

When a PhD student spends at least three months in a foreign research institution within the EU, he/she has the opportunity to apply to be appointed as *Doctor Europaeus*. In this particular case, the PhD thesis must be revised by two reviewers (scientists belonging to EU Countries), and at least one member of the Judging Commission must be an academic member from a foreign EU Country. In addition, the candidates must defend the thesis in front of the Commission in one of the EU languages different from Italian. The PhD title obtained in Italy is recognized within the EU.

PhD students receive a gross salary of  $\in$  13.638.47 per year. Most grants are paid by the University of Padova, and the Ministry of Education, University and Research (MIUR) can confer special grants

based on the Youth Supporting Fund (Law n. 170 enacted 13<sup>th</sup> July 2003) to PhD Schools to support national strategic programmes. In addition, public institutions (such as the Zooprophylactic Experimental Institute and the Veneto Region<sup>10</sup>) as well as industries and bank foundations can pay for PhD grants in support to particular research projects following special agreement with each PhD School.

A number of PhD students without grant can also be admitted to PhD Schools. Their number must not exceed 50% of the total number of students enrolled each year. Usually, they are working students whose working activities must be compatible with the School teaching activities and do not limit/compromise the achievement of the PhD title.

PhD students must attend all learning activities including short courses, lectures, seminars and practical activities for an average of 100-120 hours per year. Most of the time, however, is dedicated to the achievement of a research project under the guidance of a supervisor. The research project represent the product of the research education and results in the drafting of the PhD thesis, which will be evaluated by a third party Commission. In addition, PhD students can spend as long as 18 months (half of their PhD course) in research institutions abroad as a part of their research education, and receive a 50% grant increase during their stay abroad.

#### 12.1.2.1 PhD School in Veterinary Sciences

Director: Prof. Massimo Morgante, Dept of Veterinary Clinical Sciences

*Vice-Director*: Prof. Gianfranco Gabai, Dept of Veterinary Experimental Sciences

The PhD school in "Veterinary Science" is composed of 3 curricula:

- I. Veterinary and comparative biomedical sciences (coordinator: Prof. Gianfranco Gabai)
- II. Public health and comparative pathology (coordinator: Prof. Mauro Da Casto)
- III. Clinical sciences (coordinator: Prof. Maurizio Isola)

The PhD School in Veterinary Sciences originated from the union and rearrangement of two former PhD courses, focussed on domestic animal biology and medicine, and animal pathology and public health. The school relies on three curricula, one mainly focussed on veterinary basic science, the other on pathology and public health, and the last one on animal clinical science. Specific courses devoted to PhD students are yearly arranged and held by the teaching staff of the three Departments involved in the school. Courses are focussed on i) statistics and programming of experiments; ii) scientific English; iii) scientific writing and communication. In addition, PhD students attend to cycles of seminars held by internal and invited speakers. The PhD school in Veterinary Science enrols 6-18 students per year.

The School of Veterinary Science provides a vibrant and stimulating environment for research, and offers the opportunity to undertake innovative research in basic and clinical science as well as in comparative pathology and public health encompassing many key aspects of companion animals and livestock health and production. The research interests of academic members of staff are wide-ranging and span from molecular biology to animal behavior and welfare. Scientific interests involve a diverse range of scientific disciplines including molecular biology, biochemistry, anatomy, physiology, pathology, immunology, microbiology and bioinformatics. The School is internationally recognized for research in the medical, agricultural, biological, and food sciences, and students

<sup>&</sup>lt;sup>10</sup> Italy is composed of twenty Regions, which are administrative entities. Each Region is divided in variable number of Provinces that are further divided in Municipalities (Commons).

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registered for a research degree within the School will work alongside internationally renowned scientists while developing new knowledge in specialist areas.

|   | Veterir<br>compa<br>scienc | ary and<br>rative bio<br>es | medical         | Public health and comparative pathology |                 | Clinical sciences |                 |                 |                 |
|---|----------------------------|-----------------------------|-----------------|---|-----------------|-------------------|-----------------|-----------------|-----------------|
|   | 1 <sup>st</sup>            | 2 <sup>nd</sup>             | 3 <sup>rd</sup> | 1st voor                                | 2 <sup>nd</sup> | 3 <sup>rd</sup>   | 1 <sup>st</sup> | 2 <sup>nd</sup> | 3 <sup>rd</sup> |
|   | year                       | year                        | year            | I veai                                  | year            | year              | year            | year            | year            |
| Total number of Students                          | 5                          | 5                           | 4               | 4                                       | 8               | 4                 | 4               | 3               | 6               |
| Students graduated in<br>Veterinary Medicine      | 2                          | 2                           | 1               | 3                                       | 5               | 1                 | 4               | 3               | 6               |
| Students with grants from<br>University of Padova | 1                          | 2                           | 1               | 2                                       | 2               | 2                 | 2               | 1               | 2               |
| Students with grant from other sources            | 3                          | 1                           | 1               | 1                                       | 4               | 1                 | 0               | 1               | 1               |
| Students without grant                            | 1                          | 2                           | 2               | 1                                       | 2               | 1                 | 2               | 1               | 3               |
| N. of PhD awarded                                 |                            | 7                           |                 |   | 3               |                   |                 | 6               |                 |

Table nº 12.2 - Number of research students enrolled in the PhD school of "Veterinary Science" (year 2009)

#### 12.1.2.2 – PhD School in Animal Sciences

Director: Prof. Martino Cassandro, Dept of Animal Science

Vice-Director: Prof. Lucia Bailoni, Dept of Animal Science

The PhD school in "Animal Sciences" is composed of 2 curricula:

- I. Animal husbandry, nutrition, environment, welfare and product quality (coordinator: prof. Lucia Bailoni)
- II. Genetics, biodiversity, biostatistics and biotechnologies (coordinator: Prof. Martino Cassandro)

The PhD School in Animal Science (AS) originated from the union and rearrangement of two former departmental PhD courses, focussed on animal production and animal breeding and genetics. The school relies on two curricula, one mainly focussed on animal production and quality of animal products; the other on animal genetics, biotechnology and conservation of genetic resources. Six courses devoted to 1st year students are yearly arranged and held by teaching staff of the Department; courses are focussed on applied computer science and experimental databases management; biostatistics and programming of experiments; good procedures and security in laboratory and animal research structures; scientific writing and communication. The PhD in AS hires 7-8 students per year including both graduated students of the University of Padova and of other Italian or foreign universities. Every year 6 grants are available: 3 grants per year are from the University of Padova and the remaining ones stem from specific contracts or agreements with public and private institutions or from competitions for financial support attributed to top quality Ph.D projects.

The School of Animal Science undertakes innovative research on many key aspects of livestock and companion animals production and health. This involves a diverse range of scientific disciplines which support research lines such as husbandry, feeding, conservation and genetic improvement of farm, pet and hunting species-populations; biotechnology applied to selection, conservation, feeding and husbandry of animals and to traceability of animal products; Biostatistics and computer science applied to animal science; Welfare of farm and pet animals; environmental impact of herds and strategies for decreasing pollutants of farm origin; improvement of animal products through new systems of quality assessment and assurance; procedures and systems of genetic evaluation, selection and crossbreeding schemes.

The School is internationally recognized for research in the agricultural, and food sciences, and students registered for a research degree within the School have the opportunity to work alongside internationally renowned scientists.

|  | Animal husbandry, nutrition,<br>environment, welfare and product<br>quality |                      |                      | Genetics, bi<br>biotechnolog | odiversity, bios<br>gies | tatistics and        |
|--|---|----------------------|----------------------|------------------------------|--------------------------|----------------------|
|  | 1 <sup>st</sup> year  | 2 <sup>nd</sup> year | 3 <sup>rd</sup> year | 1 <sup>st</sup> year         | 2 <sup>nd</sup> year     | 3 <sup>rd</sup> year |
| Total n. of Students                             | 3   | 3                    | 5                    | 7                            | 5                        | 3                    |
| Students graduated in Veterinary<br>Medicine     | 0   | 1                    | 2                    | 0                            | 0                        | 1                    |
| Students with grant from University of<br>Padova | 2   | 2                    | 2                    | 1                            | 1                        | 1                    |
| Students with grant from other sources           | 0   | 1                    | 2                    | 4                            | 3                        | 1                    |
| Students without grant                           | 1   | 0                    | 1                    | 2                            | 1                        | 1                    |
| N. of PhD awarded                                |   | 2                    |                      |                              | 2                        |                      |

Table nº 12.3 - Number of research students enrolled in the PhD school of "Animal Science" (year 2009)

#### 12.1.2.3 PhD Summer School in "Dairy Science"

From 23<sup>rd</sup> June to 3<sup>rd</sup> July 2009 the PhD Schools in Animal Science and Veterinary Science organized a joint Summer School in "Dairy Science" in collaboration with the University of Sydney, Australia. Twenty Italian and three Australian PhD students participated to the activities planned to cover the following topics:

- Dairy production systems in Italy and Australia
- Stem cells in animal science and veterinary medicine
- Milk quality
- Alternative use of milk and milk by-products
- Fertility & Sources of reproductive wastage in dairy cows

- Health management of the dairy herd
- New approach to the evaluation of feed and diets of dairy cows
- Ecology of farming systems.

The organizers aimed to fulfil the following General Learning Objectives:

- Describe the differences in dairy production systems in Italy, Australia and around the world;
- Identify how the various husbandry and management techniques can impact on dairy cows' welfare and production and recommend procedures to minimize these impacts;
- Identify factors affecting milk characteristics and explore alternative industrial possibilities to exploit milk by-products;
- Communicate and interact competently with fellow PhD students, scientists and producers;
- Develop a scholarly and integrative approach to research in animal and veterinary science;
- Widen the perspective of the PhD students about biology applied to animal and veterinary sciences.

The learning activities were lead by supervisors belonging to the Teaching Committee of the two PhD Schools and the University of Sydney, and the main lectures were given by international speakers:

- Giuseppe Bertoni (Faculty of Agricultural Science, Università Cattolica Piacenza, Italy)
- Pietro Celi (Faculty of Veterinary Medicine, University of Sydney, Australia)
- Anthony Capuco (USDA, Bovine Functional Genomics Lab, Beltsville, MD, USA)
- Didier Dupont (INRA, UR Technologie et Analyses Laitiéres, Rennes, France)
- Michael Doherty (School of Agriculture, Food Science & Veterinary Medicine, Dublin, Ireland)
- Karl Fent (University of Applied Sciences, Muttenz, Swiss Federal Institute of Technology, Zürich, Switzerland)

Considering the positive comments addressed by the invited speakers and students, the organizers planned to repeat the experience of the summer school, compatibly with the financial support by the University of Padova. In addition, organizers are considering the hypothesis to involve in the initiative other foreigner Universities.

#### 12.1.3 Postgraduate Specialization Courses

In Italy veterinarians can find employment:

- 1. in the private sector, as self- employed, contractors or consultants.
- 2. in the public sector, employed by the National Health Care System.

In the latter case, the veterinarians are public employees, employed by state-run bodies called Public Health Agencies (AUSL). The veterinarian's role within the AUSL is to monitor the health of animals (both pets as well as production animals) and to monitor the hygiene of the food production chain. A National Specialist Diploma is required to be eligible to work as a Veterinarian for an AUSL. This Diploma is obtained by enrolling onto specific courses offered by the so-called 'Specialization Schools''. A Ministerial Decree (MD 27/01/2006) establishes which specialist courses can be made available at each Faculty of Veterinary Medicine (a list is enclosed, attachment I)

The following courses are being or will be offered at the FVMP:

- (1) Inspection of food of animal origin 3 year course; the 1<sup>st</sup> one started in 2000 (2000-2003) with 52 students enrolled. The 2<sup>nd</sup> course started in 2004 (2004-2006) with 52 students enrolled. A 3<sup>rd</sup> course, structured according to the new regulations, will be offered from the academic year 2009/2010 2011/2012.
- (2) Rearing, hygiene and pathology of aquatic species and the monitoring of by-products -3 year course; the 1<sup>st</sup> one started in 2003 (2003-2005) with 35 students enrolled. The 2<sup>nd</sup> course started in 2006 (2006-2008) with 49 students enrolled. A 3rd course, structured according to the new regulations, will be offered from the academic year 2009/2010 – 2011/2012.
- (3) Animal Health, Rearing and Zootechnic Production This course will be regularly offered as of the 2010-2011 academic year by the FVMP, alongside a third cycle of the other two courses.

#### 12.1.3.1 Purposes of postgraduate specialization courses for veterinarians

Postgraduate courses provide training in the course subject through lectures, seminars and lab sessions. According to the older regulations the students should attend a 1.200 hour-course, 600 of which are for lectures and the remaining 600 for practical hands-on training. As for the new regulations, students must attend 180 ULC (25 hours each) 70% of which should be practical hands-on training in academic or non-academic organizations which are able to provide an adequate practical training.

#### 12.1.3.2 Brief description of the topics/subjects of the specialization courses 2000 - 2010

### Inspection of food of animal origin

The specialist must have acquired adequate practical, theoretical and scientific knowledge in the field of food inspection and the monitoring of the production and processing of food of animal origin. Particular emphasis in the training must be given to: the hygiene of food production, marketing and food administration, managing of self-control plans, epidemiology of food-borne diseases, risk evaluation, management and communication as well as animal welfare.

#### Rearing, hygiene and pathology of aquatic species and control of fish products

The specialist must have acquired adequate practical, theoretical and scientific knowledge in the field of: hydrobiology and ecology in aquatic environments, taxonomy of the main marketed aquatic species, fishing production as food sources for humankind, fish breeding and fishing technologies, pathologies of aquatic species, general hygiene rules for the protection of breeding and the environment, production chains to obtain better quality of product, food supplies, markets, product industries, fishing by-products, social hygienic controls of fishing products and aquaculture products as food sources for humankind, legislation.

#### Animal health, breeding, zootechnic productions

The specialist must have acquired adequate knowledge of shelter facilities, food, reproduction, welfare and pet ethology. Furthermore they must possess IT knowledge in order to manage breeding from an economic as well as a social point of view. They should become competent in pathology, diagnosis and prophylaxis of infectious diseases with particular attention to notions concerning the prevention and social risk resulting from diseases transmissible to man. Finally, economic and legal knowledge is required.

#### 12.1.4 Master Course in Veterinary International Cooperation

In 2007 and in 2009 two editions of the one-year Master Course in Veterinary International Cooperation were held. This Master Course is designed to train experts in Veterinary International Cooperation. It comprises three main areas: one addressing the geographic, historical, economic and political issues, one adapting the specific veterinary knowledge and skills to the context of cooperation projects and one focusing on project cycle management. Public administrations, international agencies and Non Governmental Organizations (NGOs) involved in the veterinary international cooperation could benefit of practitioners with this kind of background. The course is based on various teaching approaches such as theoretical lectures, seminars with experts, critical analysis of field experiences, stages at laboratories, stages at existing cooperation projects in foreign countries and field activities. The final examination consists in the discussion of a dissertation representing the outcome of a project work. In all, 60 ULC (135 hrs theory, 20 hrs practice, 170 hrs seminars, 350 hrs stage, 200 project work) are provided by academics and experts covering the different aspects of the veterinary cooperation (diagnostic laboratory, animal production, disease prevention and management, project planning, policy, budgetary and socio-economic issues). Students and are supported by a supervisor. The course is sponsored by the Italian branch of an Association called Veterinarians Without Frontiers, by the regional branches of the Zooprophylactic Experimental Institute of Veneto and Abruzzo-Molise Regions, which provide experts, opportunities to attend their laboratories, field activities and projects. The latter two institutions also support five scholarships, each of 15000 €, awarded to the students passing the entrance selection with the best score. A minimum of 15 and a maximum of 25 students are admitted to the course. Tuition fee are 2200 € (500 € for student from developing countries and 400 € for disabled students).

## 12.2 Comments

#### - Comment on the number of post-graduate titles awarded annually

Lack of residencies and internships is perceived as a problem. Training residents in the two disciplines of Neurology and Bovine Health Management for which Diplomates are present would be advantageous for the Faculty. Ways should be looked for finding sponsors for residents and interns. Even more importantly, the number of diplomats should be increased. The FVMP has recently decided to allocate funding for an assistant professor position in Veterinary Internal Medicine provided that the person to be hired is a Diplomate of the ECVIM.

- Comment on the percentage of veterinarians participating in postgraduate research training programmes

### 12.3 Suggestions

The PhD schools can offer a great opportunity to be in contact with world-wide high quality research. The University of Padova should strengthen and financially support initiatives developed with other foreign institutions.

# Chapter 13 RESEARCH

## written by F. Gottardo and M. Dacasto

The details requested under this heading relate only to research experience offered to students during their undergraduate training, for example through project work.

## **13.1 Factual Information**

Indicate the involvement of undergraduate students in research, including the time spent, percentage of students involved and outcome required.

All undergraduate students are involved in research during the compilation of their final dissertation. This latter was considered, within the old curriculum (MD 509), among those curricular activities (for a total of 15 ULC,) scheduled for the final dissertation (12 ULC) and the knowledge of a foreign language (English, 3 ULC,). When the new curriculum (MD 270/2004) will be fully active, the final dissertation (9 ULC) will be located within the so-called "other curricular activities", which include the optional subjects (8 ULC), English knowledge (3 ULC) and the obligatory extramural work (45 ULC). As students commonly start working at their theses during the final 2 years, those who are currently involved in it are doing it according to MD 509 curricular guidelines ("each student dedicate at least 300 hours in order to prepare the DVM graduation thesis"). This time will be spent either carrying out an experiment or writing an in-depth review paper. The preparation of the final dissertation represent for the student the first opportunity to acquire appropriate knowledge on how to create a database, how to evaluate data using a statistical package and how to do a bibliographic review finalized to the discussion of the results. The majority of the students prefer to take part in an experimental work so they have the opportunity to understand what research means in particularly on topics considered fundamental for their future employment.

Experimental theses can be carried out in several facilities: in Agripolis and in outside structures (table 13.1) Many students prefer to perform this research activity in facilities located outside the Faculty such as private clinics (22% of the students), commercial farms, slaughterhouses, shelters, zoos, natural parks (41% of the undergraduates), labs (20% of the students). This experience offer the student the possibility to get in contact with the real work field. Few students have opted for doing their theses working at the university experimental farm during the past 4 years. This is likely due to the difficulty to plan experimental work in this type of farm mainly which is mainly addressed to the teaching activity. The current situation could be improved by the implementation at the beginning of the 2009 of the new barns for growing pigs, rabbit and poultry.

#### Chapter 13 – Reasearch

|                      | Teaching<br>hospital | Private clinics | Labs of<br>the<br>Faculty | Other Labs | University's<br>experiment<br>al farm | Other (commercial farms, slaughter-<br>houses, shelters, | Research<br>centres<br>abroad |
|----------------------|----------------------|-----------------|---------------------------|------------|---------------------------------------|--|-------------------------------|
| Year                 |                      |                 |                           |            |                                       | zoos, ect.)  |                               |
| 2006                 | 22.2                 | 13.33           | 60.0                      | 17.8       | 4.4                                   | 44.4   | 2.2                           |
| 2007                 | 37.8                 | 32.43           | 54.1                      | 27.0       |                                       | 35.1   | 2.7                           |
| 2008                 | 32.6                 | 27.91           | 53.5                      | 30.2       |                                       | 48.8   | 2.3                           |
| 2009                 | 21.8                 | 18.18           | 47.3                      | 9.1        |                                       | 38.2   | 5.5                           |
| Total (4 years base) | 27.8                 | 22.22           | 53.3                      | 20.0       | 1.1                                   | 41.7   | 3.3                           |

 Table n°13.1 - Graduation theses for the Degree Course in Veterinary Medicine, University of Padova during the period 2006-2009: facilities in which students carried out their research activities during their thesis (%).

Students are free to choose the topic of the research within a range of proposals set by the supervisor. Data reported in table 13.2 show a clear preference for the clinical subjects (40.6% of the students choose a clinical subject) about 10% of the students dedicate their research activity to Animal Science, Veterinary Hygiene and Parassitology, respectively.

|                             | 2006  | 2007  | 2008  | 2009  |
|-----------------------------|-------|-------|-------|-------|
|                             |       |       |       |       |
|                             |       |       |       |       |
|                             |       | 9     | 6     |       |
| Subject                     |       |       |       |       |
| Anatomy                     | 4.4   | 2.7   | 4.7   | 1.8   |
| Physiology                  | 17.8  | 8.1   | 2.3   | 3.6   |
| Parasitology                | 13.3  | 10.8  | 9.3   | 9.1   |
| Veterinary hygiene          | 8.9   | 10.8  | 25.6  | 3.6   |
| Food hygiene                | 6.7   | 5.4   | 2.3   | 12.7  |
| Pathology                   | 4.4   | 5.4   | 2.3   | 5.5   |
| Pharmacology                | 2.2   | 5.4   | 4.7   | 1.8   |
| Animal Science              | 4.4   | 13.5  | 9.3   | 16.4  |
| Clinical Science-medicine   | 15.6  | 8.1   | 14.0  | 10.9  |
| Clinical Science-obstetrics | 17.8  | 10.8  | 7.0   | 20.0  |
| Clinical Science-surgery    | 4.4   | 18.9  | 18.6  | 14.5  |
| TOTAL                       | 100.0 | 100.0 | 100.0 | 100.0 |

Table n°13.2 - Graduation theses for the Degree Course in Veterinary Medicine, University of Padova during the period 2006-2009: percentage allocation of the subject of the thesis in different areas of research

#### Chapter 13 – Reasearch



Figure n°13.1: Graduation theses for the Degree Course in Veterinary Medicine, University of Padova during the period 2006-2009: percentage allocation of the subject of the thesis in different areas of research (average of the period 2006-2009)

As far as the veterinary species subject of the thesis, most of theses ones are made in companion animal (55.1%, if we include the horse), whereas farm animals represent the 22.8 %. Students demonstrate a preference among farm species for cattle while among pet animals for cat and dog. Within the category of pet the interest towards horse is also relevant. Data regarding other species such as reptile, small rodents, companion rabbit, marine mammals or wild animals, underline the increasing interest of students for new topics.

|               | 2006 | 2007 | 2008 | 2009 |
|---------------|------|------|------|------|
|               |      |      |      |      |
|               |      |      |      |      |
|               |      | %    |      |      |
| Species       |      |      |      |      |
| cattle        | 17.8 | 18.9 | 18.6 | 10.9 |
| swine         | 4.4  | 2.7  | 4.7  | 1.8  |
| poultry       | 0.0  | 2.7  | 7.0  | 3.6  |
| fich          |      | 0.0  | 0.0  | 0.1  |
| tisn          | 4.4  | 0.0  | 0.0  | 9.1  |
| dog/cat       | 33.3 | 32.4 | 37.2 | 21.8 |
| horse         | 15.6 | 13.5 | 11.6 | 21.8 |
| other pet     | 2.2  | 2.7  | 4.7  | 0.0  |
| other species | 22.2 | 27.0 | 16.3 | 30.9 |
| TOTAL         | 100  | 100  | 100  | 100  |

 Table n°13.3 - Graduation theses for the Degree Course in Veterinary Medicine, University of Padova during the period 2006-2009: percentage of thesis divided for different species

#### Chapter 13 - Reasearch



Figure n°3.2 - Graduation theses for the Degree Course in Veterinary Medicine, University of Padova during the period 2006-2009: percentage of thesis divided for different species (average of the period 2006-2009)

In addition to increase the research interest of undergraduate students, the FVMP actively encourages them to apply for fellowships for research activity carried out abroad. The FVMP every year covers the expenses for travel and accommodation for at least 2 students aiming to prepare their thesis in foreign research centres or foreign veterinary schools. Also, the Foreign Academic Affairs Office and the SOCRATES program actively try to recruit students for exchange visits at other foreign universities, in order to give these students the possibility to – at least in part – work on a research project.

## 13.2 Comments

#### Comment on the opportunities for students to participate in active research work.

Since a large part of the faculty staff is involved in ongoing research projects, several opportunities of research activities are offered to undergraduate students. In this respect every year an Open Day is organised at the Veterinary School, in which PhD students put up posters based on their research activity and they are available for discussion with undergraduate students; also, seminars and special lecture series with invited speakers and expert are organised. Such initiative is organized with the aim to show the types of research carried out in different departments and disseminate its results, hoping to recruit undergraduate students interested in research and academic career.

### **13.3 Suggestions**

Will students be given more opportunity to participate in research activities? If so, how will this be done?

a) Information events on research projects at the FVMP can attract the interest of the students. The number of afore mentioned events should be increased aiming to inform the student about the importance of research activity carried out in each areas of the faculty. Data presented in table 13.1 and 13.2 underline the great motivation and interest of veterinary

#### Chapter 13 – Reasearch

medical students at the FVMP to perform research in clinical sciences (about 40%) and particularly in companion animals such as dog and cat (37.6%). On the other hand, such a great interest is probably a reflection of the bias our students have towards companion animals. Most of them join the FVMP because they just want to become urban veterinarians treating dogs and cats. It is the responsibility of the Faculty to show them how diversified the veterinary profession can be starting from the 1<sup>st</sup> year of their studies. Strategies for getting students to become interested in topics such as public health or food inspection should be devised and applied from the beginning of the curriculum.

b) It is not surprising that the young age of the FVMP brings with it both positive and negative aspects, especially regarding the development of the Faculty. The positive aspects are primarily centred in the young age of most members of the Faculty and in their natural enthusiasm. This, however, has not had yet that fallout one would have wished, given that the heavy teaching load and every-day routine have precluded so far the possibility of long leave of absence to spend in foreign Universities. This is unfortunate, not only for the scientific maturation of the young staff, but also because the confrontation with other veterinary Institutions and new, or advanced, research fields, would bring enormous benefits to the Faculty in terms of teaching and research. In light of this, it will be of strategic importance that the Faculty strives to increase the number and duration of the stages abroad by the Faculty members, especially if in their early academic career. Along this line, it is also important that the Faculty considers this type of experience as top criterion for the carrier progression.

#### Annex

## Annex n 1

#### University of Padova

#### The Faculty of Veterinary Medicine Degree Course of Veterinary Medicine

#### **Teaching Regulation**

## TITLE I OBJECTIVES AND TEACHING ORGANIZATION

#### Art. 1 – Introduction and objectives

- The Degree Course in Veterinary Medicine has a curriculum that lasts five years and is defined within the Degree Class LM-42 (Annex 3) pursuant to MD of 16<sup>th</sup> March 2007 Official Journal n. 157 9<sup>th</sup> July 2007 Ordinary Supplement to the Official Journal n. 155.
- 2. The Degree Course in Veterinary Medicine is performed at the Faculty of Veterinary Medicine. The competent teaching body is the Degree Course Coursel in Veterinary Medicine (DCC).
- 3. The Teaching organization of the Degree Course with its learning activities and distribution of credits are reported in Annex 4.
- The current Regulation according to the University Teaching Regulation and the Faculty Regulation governs the organization of the teaching on the Degree Course.

#### Art. 2 – Admission

1. In order to enrol onto the Degree Course in Veterinary Medicine, in the case of Italian students, a 5-year high school diploma is required. Foreign students must possess similar qualifications, according to their national law and system.

2. To enrol onto the Degree Course, students need to have adequate knowledge in the following disciplines: Biology, Chemistry, Physics and Mathematics. Furthermore they need to have adequate levels of general cultural knowledge and command of logic. The test of admission shall evaluate their competence.

3. The Degree Course in Veterinary Medicine is regulated by a numerous clausus system.

The number of students admitted to the Degree Course in Veterinary Medicine is decided annually by the Ministry of Education, University and Research on the basis of the Teaching potential available in the Faculty of Veterinary Medicine, pursuant to the article 3 Law 2 August 1999, n 264, and it is published in the **Manifesto degli Studi** of the University of Padova.

4. An admission test must be taken in order to enrol in Veterinary Medicine. Candidates will be selected and will enter a ranking list on the basis of their score obtained according to criteria set by the Council of the Faculty of Veterinary Medicine and by the MUR.

5. Students in the ranking list who do not reach the threshold set for admission, will need to attend a compulsory course (60 lectures), which is conducted prior to the beginning of the official courses.

The calendar of activities of the course in Veterinary Medicine will be supplied to students during pre-matriculation. Students who enter the ranking list in lower positions can fill vacant positions and students who reach the achievement threshold can attend the basic course offered by the Faculty prior to the beginning of the official courses.

Subjects covered on the basic course are: Biology, Chemistry, Physics and Maths. In order to pass the course, at least 70% attendance by each student is required. Attendance is monitored by supervisors. Students must sign a register when they are present in class. Any student who does not meet these requirements during the first year of enrolment will need to pass a test. The test will be prepared by a Committee nominated by the Degree Course Council.

Students must attend the course and must pass the evaluation in order to continue on the Veterinary Medicine course. Any student who does not meet these requirements during his/her first year will cease to be regarded as a student of the Degree Course in Veterinary Medicine.

#### Art. 3 – Teaching Organization

1. The Degree Course in Veterinary Medicine has one curriculum but this has been organized into different disciplinary paths, as proposed by the Degree Course Council and approved by the Faculty Council.

#### Annex

The number of students admitted to activate each individual path is decided annually by the Degree Course Council in order to guarantee adequate qualitative teaching standards and effective use of personnel, support staff and Teaching premises (laboratories, classrooms etc.)

In order to graduate, a student will need to acquire 300 University Learning Credits:

#### ULC Typology

Core Subjects 217 + TIROCINIO 45 = 262 Foreign Language (English) 3 Elective subjects 27 Optional subjects 8

#### Total 300

2. The learning activities proposed by the Degree Course in Veterinary Medicine, the list of subjects and their organization in teaching modules (integrated courses), the learning objectives and propeduatical activities, the list of Professors of the Course and the teaching activities equivalent to at least 150 ULC held by Professors or Assistant Professors of the different scientific disciplinary sectors, are reported in a separated Annex, which is evaluated annually by the Faculty Council.

The learning activities activated by the Faculty, and any updating regarding these, are reported annually in the database of the Ministry and in the **Manifesto degli Studi** of the Faculty of Veterinary Medicine. Programmes of teaching activities and other learning activities (typology d) and e) of article 10, paragraph 5, MD 24<sup>Th</sup> October 2004 n.270) and the calendar of exams sessions are reported in the database of the Ministry and in the **Manifesto degli Studi** of the Faculty of Veterinary Medicine prior to the beginning of the Academic Year.

3.1 ULC corresponds to 25 hours of overall learning commitment (lectures/practical work + at home study by students.

4. Learning activities are organized on a six term basis for the courses in the 2<sup>nd</sup>, 3<sup>rd</sup>, 4<sup>th</sup> and 5<sup>th</sup> year and on a quarterly basis for the 1<sup>st</sup> year of the Degree Course.

5. Learning activities include: lectures, seminars, individual activities, activities in groups, practical training in the necropsy room or in the Veterinary Teaching Hospital, or on the University Experimental Farm or in other authorized premises. Further practical activities are performed by students in public and/or private accredited facilities.

6. The Degree Course Council may authorize the partial use of distance learning for specific activities and may decide to provide some of the activities in one European Union language (English) in order to foster the international nature of the Course.

7. The list of support research activities, which characterize the Degree Course in Veterinary Medicine, is available on the websites of the Department of Public Health, Comparative Pathology and Veterinary Hygiene, the Department of Veterinary Clinical Sciences, the Department of Experimental Veterinary Sciences and the Department of Animal Sciences of the University of Padova.

#### Art. 4 – Exams

1. For each learning activity reported in Annex 4students will be required to sit an exam at the end of the course. For integrated courses, students will be evaluated by a single examination. Students can acquire the credits accorded to activities by passing the corresponding evaluation.

2. The maximum number of exams or final evaluations is 30. Learning activities have been classified in:

1) Basic subjects

2) Professional subjects

3) Integrative subjects

4) Optional subjects

3. Final evaluation can be written or oral: and can be in the form of written reports, multiple choice questions, and/or practical tests.

Modalities for each evaluation are decided by the Professor in charge of the course prior to the beginning of the Academic Year. The programme of the learning activity is approved by the DCC. Modalities for evaluation shall be the same for each student and shall be in accordance with what has been decided at the beginning of the Academic Year.

5. Interim evaluations cannot replace evaluations as stated in paragraph 1. Students are required to have command of the English language at Preliminary English Test (PET) level. This is accomplished by passing an exam in front of a Committee nominated by the DCC or by providing a certificate, which has been approved by the DCC, regarding the achievement of 3 ULC specifically related to English language fluency.

6. TIROCINIO (45 ULC) is a supervised practical training activity that all students must perform and involves different scientific sectors:

Annex

| Groups of Disciplines                  | Scientific Disciplinary Sector | ULC |
|--|--------------------------------|-----|
| Pathology and Poultry/Rabbit Pathology | SDS Vet/03                     | 5   |
| Food Inspection                        | SDS Vet/04                     | 7   |
| Infectious Diseases                    | SDS Vet/ SDS Vet/05            | 5   |
| Parasitology                           | SDS Vet/06                     | 3   |
| Internal Medicine                      | SDS Vet/08                     | 6   |
| Veterinary Surgery                     | SDS Vet/09                     | 6   |
| Reproduction                           | SDS Vet/10                     | 6   |
| Animal Science                         | SDS Agr/17 ÷ Agr/19            | 7   |
| Total                                  |                                | 45  |

Practical 'hands-on' training can be performed at the teaching facilities of the FVMP, at other Italian Veterinary Medicine Faculties, or at qualified public or private bodies approved by the DCC. (In the case of public bodies, this would include Regional Public Health Bodies, a Governmental Institute that offers services in the Veterinary Public Health Sector, etc.) A list of practical activities and facilities through which University of Padova veterinary students can perform their training

is available, and is updated at the beginning of each Academic Year. A supervisor is nominated by the DCC for each scientific disciplinary sector. Rules concerning admission, attendance and organization of practical activities are declared in a specific regulation approved by the DCC. In order to acquire the 45 University Learning Credits of TIROCINIO students must submit a Logbook filled in as specified and signed by the supervisors of each different activity.

7. Results of a training activity performed by a student abroad will be recognized if it is deemed to be consistent with the learning objectives of the degree course.

8. As far as the activities in Annex 4 are concerned, the final assessment (as stated in paragraph 1) is expressed by a mark (minimum 18 - maximum 30) that determines the final graduation mark.

9. An exam pass is valid for ten years, after which the DCC shall evaluate the effects of obsolescence on the learning content and are therefore unable to confirm in advance the number of ULC acquired. Furthermore the DCC shall decide on the minimum number of credits that must be acquired by any student within a fixed term.

In any event, pursuant to article 11, paragraph 9 of the Teaching Regulation of the University, any student who has not passed his/her exams or assessments within three Academic years from the date of first matriculation or enrolment into the University of Padova, will cease to be regarded as a student of that institution. Furthermore, the same will be the case for any student who does not acquire at least 60 ULC within five years of the date of first matriculation or enrolment into the University.

#### Art. 5 – Final Evaluation

1. The final exam consists of a requirement for the student to prepare and discuss an original thesis, with the assistance of a supervisor.

2. This paper constitutes the final dissertation. The final dissertation will be presented formally and defended at the end of the Degree Course in the presence of a Committee designated by the Dean, the composition of which is dictated by the Teaching Regulation of the University.

3. The Exam Committee shall proceed for the presentation of the thesis.

4. If previously agreed with the supervisor and the President of the DCC, the final dissertation can be discussed in the English language. In such cases, a summary of the paper must first be produced in the Italian language.

#### Art. 6 – Achievement of the Degree

1. In order to obtain the degree in Veterinary Medicine students must acquire 300 ULC as stated in Annex 4, distributed between a maximum number of examinations and final evaluations, pursuant to article 4, paragraph 2. Furthermore, students must pass the final exam (see Article 5).

2. The final mark (minimum 66 - maximum 110) is the sum of:

a) The weighted average (WA) of the assessments ( $V_0$  obtained, pursuant to article 4, paragraphs 8 and 10, weighted with the related credits ( $C_0$ ) and expressed by the following formula:

WA= ( Σivici / Σici ) 110/30

b) The mark obtained in the final.

c) Possible marks related to features of the University career of the specific student.

An Honours Degree can be awarded to students who obtain the maximum mark.

3. The curriculum of the Degree in Veterinary Medicine lasts five years. It is not possible to obtain the degree in less than 5 years.

TITLE II FUNCTIONING

#### Art. 7 – Attendance

1. Attendance at learning activities, reported in Annex 4, is compulsory and will be verified by the DCC. In order to be admitted to the final exam and to achieve credits, students must attend at least 50% of lecturers and at least 90% of practical activities. Students who do not reach these thresholds will be required to repeat the entire course.

2. The professor shall decide not to admit to practical activities any student who has failed to pass the evaluations specified in Annex 4, propaedeutic for practical or learning activities.

3. It is not possible to take the Degree Course in Veterinary Medicine on a part-time basis.

#### Art. 8 – Admission to years of study following the first year.

1. In order to enrol onto the 2<sup>nd</sup> year of the course, except as stipulated in Article 15 of temporary laws (Title III), students must acquire at least 40 ULC. Students who do not pass this threshold will be required to re-enrol and to repeat the first year course. This can be permitted a maximum of 4 times, after which the student will cease to be regarded as a student on the Degree Course in Veterinary Medicine.

#### Art. 9 - Transfer and credit evaluation/recognition

1. Except as declared in article 2, paragraph 4 of this Regulation, transfer from other degree courses and other Universities is allowed, subject to an assessment of the knowledge acquired by the student, and to the availability of places within the Faculty. The possible acceptability of ULC will be subject to the approval of the DCC according the following criteria:

a) If the student was previously enrolled onto a degree course defined as being within the same Degree Class as the Veterinary Medicine Course, the number of ULC recognized as being relevant to the same scientific sector, (annex 3), cannot be less than 50%. In cases where the student has attended a distance learning course, this must be accredited pursuant to the law n 286 24<sup>th</sup> November 2006.

b) If the student was previously enrolled onto a course defined as being within a different Degree Class, the number of ULC recognized as being relevant to the same scientific sector, (annex 3), cannot be less than 10%.

c) If the student was enrolled onto a degree course at another University, officially assigned as being a different Degree Class, or has been on a distance learning course that has not been accredited, pursuant to the law n 286 24<sup>th</sup> November 2006, the number of ULC recognized as being relevant to the same scientific sector, will be subject to the decision of a Committee nominated by the DCC.

2. In case of recognition, the mark is assigned according the following rule: mark obtained in the first degree course

#### Art. 10 - Study plans.

1. Students are required to submit their study plan before a deadline, which will be decided by the Faculty.

The choice of optional learning activities shall be done among the courses provided by the University, as long as they are consistent with the learning project pursuant to article 10, paragraph 5, letter a) of MD 270/2004 and have been approved by the DCC. Choices (except for those which are stated in the following paragraph 3) shall be made by the students by the end of lessons in the first semester of the 2<sup>nd</sup> year of the Degree Course. These activities will be registered with the relevant mark and number of ULC. The mark determines the final evaluation, as stated in article 6, paragraph 2.

 Students choosing a different learning path, may do so as long as it is fully in accordance with the stipulations of the Teaching Regulation, and must submit their study plans before the deadline which is stipulated annually by the Faculty. Such study plans will need to be approved by the DCC prior to evaluation by a Committee nominated by the DCC itself.
 Study plans, paragraph 1 and 2, cannot include an overlapping of content from different learning activities, and must also relate to the typology stated in article 10, paragraph 5, letter a) of MD 270/2004.

#### Art. 11 - Tutor service.

1. The DCC may decide to organize tutor services according to the Regulation of the University and also according to decisions implemented by the Faculty Council.

#### Art. 12 - Quality of Teaching Assessment.

1. The DCC accomplishes an assessment of teaching quality following general rules established by the University of Padova. (article 18 of the Teaching Regulation of the University.)

2. The DCC provides the assessment following initiatives of Faculties and Universities.
## Art. 13 – Teaching load assessment.

1. The DCC implements initiatives whose aim is to assess the consistency between learning activity ULCs and the specific learning objectives planned. The Joint Teaching Committee, officially assigned within the Degree Course Council, has the task of assessing and monitoring the Teaching load required by the students, in order to achieve a balance between ULC dedicated to the different learning activities and the effective work load required.

## TITLE III FINAL LAWS AND TEMPORARY LAWS

### Art. 14 – Modification to the Regulation.

1. Modifications to the present Regulation shall be proposed by the President of the Degree Course Council, and by at least 1/3 of the members of the Council. Resolutions shall be adopted if they meet with the approval of an absolute majority of those present. Modifications shall be submitted to the Faculty Council.

2. When possible modifications to the Teaching Regulation of the University or the Teaching Regulation of the Faculty come into force, current Regulation shall be integrated and verified.

3. The present Regulation is valid for students enrolled in the academic year 2008-2009 and those enrolled in 2007-2008 who have asked to change their study plan with a view to the new university system. For all other students that, which is declared in the previous Regulation remains valid.

## Art. 15 – Temporary Laws

1. For students who were enrolled in the academic year 2007-2008, enrolment into the 2<sup>nd</sup> year of the course does not depend on the achievement of any ULC.

## Annex n 2

## **Annex TO CHAPTER 3**

## Table 1 – Expenditure of the Dean's office (euro)

|      |   |  | /                        |   |   |         |
|------|---|--|--------------------------|---|---|---------|
|      | Expenses for the<br>functioning of the<br>establishment | Expenses for<br>external staff for<br>teaching | Expenses<br>for teaching | Expenses<br>for building<br>maintenance | Other<br>expenses<br>(utilities +<br>general<br>operations) | TOTAL   |
| Year |   |  |                          |   |   |         |
| 2006 | 50,500  | 289,510  | 52,097                   | 6,282                                   | 21,673  | 398,389 |
| 2007 | 51,000  | 290,691  | 66,515                   | 5,045                                   | 21,755  | 413,251 |
| 2008 | 53,000  | 312,299  | 84,924                   | 8,256                                   | 29,092  | 458,479 |

### Table 2 - Expenditure of the Vet-Departments (euro)

|       | Expenses for the<br>functioning of the | Expenses<br>for | Expenses<br>for | Expenses for<br>services | Expenses for<br>building | Other<br>expenses      | TOTAL     |
|-------|--|-----------------|-----------------|--------------------------|--------------------------|------------------------|-----------|
|       | establishinent                         | research        | leaching        | provided                 | maintenance              | general<br>operations) |           |
| Year  |  |                 |                 |                          |                          |                        |           |
| DEVS  |  |                 |                 |                          |                          |                        |           |
| 2006  | 26,642                                 | 204,516         | 73,080          | 6,404                    | 5,343                    | 18,435                 | 315,985   |
| 2007  | 16,707                                 | 261,946         | 38,432          | 2,039                    | 4,857                    | 20,947                 | 323,981   |
| 2008  | 25,718                                 | 233,680         | 37,105          | 3,301                    | 6,375                    | 22,465                 | 306,179   |
| DAS   |  |                 |                 |                          |                          |                        |           |
| 2006  | 13,470                                 | 270,434         | 19,191          | 6,303                    | 4,138                    | 14,276                 | 313,536   |
| 2007  | 16,031                                 | 261,039         | 20,106          | 3,533                    | 3,518                    | 15,172                 | 304,228   |
| 2008  | 22,700                                 | 204,165         | 19,039          | 13,112                   | 4,819                    | 16,980                 | 263,834   |
| DCS   |  |                 |                 |                          |                          |                        |           |
| 2006  | 18,490                                 | 182,220         | 42,379          | 105,670                  | 6,339                    | 21,869                 | 355,098   |
| 2007  | 21,772                                 | 106,837         | 17,899          | 144,950                  | 6,556                    | 28,275                 | 298,014   |
| 2008  | 24,257                                 | 71,043          | 165,731         | 148,832                  | 8,605                    | 30,323                 | 418,468   |
| DAP   |  |                 |                 |                          |                          |                        |           |
| 2006  | 33,700                                 | 286,671         | 47,360          | 70,000                   | 4,894                    | 16,885                 | 442,625   |
| 2007  | 42,033                                 | 77,113          | 49,896          | 80,000                   | 4,738                    | 20,434                 | 253,780   |
| 2008  | 67,230                                 | 97,163          | 46,430          | 98,000                   | 8,857                    | 31,209                 | 317,680   |
| Total |  |                 |                 |                          |                          |                        |           |
| 2006  | 92,302                                 | 943,841         | 182,010         | 188,377                  | 20,715                   | 71,466                 | 1,427,244 |
| 2007  | 96,543                                 | 706,935         | 126,333         | 230,522                  | 19,670                   | 84,828                 | 1,180,003 |
| 2008  | 139,905                                | 606,051         | 268,305         | 263,245                  | 28,656                   | 100,977                | 1,306,162 |

DEVS Piterobelli DAS Animal SCi DCS Clinico DAP Patho

## Table 3 – Expenditure of the Faculty (euro)

|      | Expenses for teaching | Expenses for    | Expenses     | Expenses for | Expenses     | Other        | TOTAL     |
|------|-----------------------|-----------------|--------------|--------------|--------------|--------------|-----------|
|      | and support staff +   | the functioning | for teaching | research     | for building | expenses     |           |
|      | external staff for    | of the          |              |              | maintenance  | (utilities + |           |
|      | teaching              | establishment   |              |              |              | general      |           |
|      |                       |                 |              |              |              | operations)  |           |
| Year |                       |                 |              |              |              |              |           |
| 2006 | 5,779,451             | 378,806         | 234,107      | 943,841      | 26,997       | 93,139       | 7,456,340 |
| 2007 | 6,299,969             | 414,640         | 192,848      | 706,935      | 24,715       | 106,583      | 7,745,689 |
| 2008 | 6,928,194             | 489,576         | 353,229      | 606,051      | 36,912       | 130,069      | 8,544,032 |

## Table 4. - Income of the Dean's Office (euro)

|      | By the State to the l<br>salaries | University for the<br>of the | By the University to the<br>Faculty | Income from any<br>other source | TOTAL     |
|------|-----------------------------------|------------------------------|-------------------------------------|---------------------------------|-----------|
|      | teaching staff                    | support staff                |                                     |                                 |           |
| Year |                                   |                              |                                     |                                 |           |
| 2006 | 4,140,101                         | 1,349,840                    | 193,623                             |                                 | 5,683,564 |
| 2007 | 4,464,602                         | 1,544,676                    | 344,500                             | 54,744                          | 6,408,522 |
| 2008 | 4,858,207                         | 1,757,688                    | 241,602                             | 51,646                          | 6,909,143 |

## Table 5 - Income of the Vet-Departments (euro)

|       | By the University |               |                |                   |         |           |
|-------|-------------------|---------------|----------------|-------------------|---------|-----------|
|       | to the            | Public income | Private income | Income from       | Other   |           |
|       | Departments       | for research  | for research   | services provided | incomes | TOTAL     |
| Year  |                   |               |                |                   |         |           |
| DEVS  |                   |               |                |                   |         |           |
| 2006  | 194,912           | 139,900       | 3,500          | 6,404             |         | 344,716   |
| 2007  | 153,562           | 0             | 75,070         | 2,039             |         | 230,671   |
| 2008  | 170,650           | 129,200       | 8,333          | 3,301             |         | 311,484   |
| DAS   |                   |               |                |                   |         |           |
| 2006  | 54,731            | 167,243       | 99,600         | 6,303             |         | 327,877   |
| 2007  | 15,836            | 84,875        | 75,060         | 3,533             |         | 179,304   |
| 2008  | 40,153            | 185,879       | 54,600         | 13,112            |         | 293,744   |
| DCS   |                   |               |                |                   |         | 0         |
| 2006  | 96,522            | 64,211        | 25,800         | 105,670           | 2,660   | 294,863   |
| 2007  | 129,686           | 0             | 7,000          | 144,950           | 8,613   | 290,249   |
| 2008  | 331,470           | 49,900        | 49,000         | 148,832           | 116,278 | 695,480   |
| DAP   |                   |               |                |                   |         |           |
| 2006  | 104,389           | 353,307       | 224,181        | 70,000            |         | 751,877   |
| 2007  | 267,666           | 315,291       | 110,919        | 80,000            |         | 773,876   |
| 2008  | 225,684           | 393,060       | 320,183        | 98,000            |         | 1,036,927 |
| Total |                   |               |                |                   |         |           |
| 2006  | 450,554           | 724,661       | 353,081        | 188,377           | 2,660   | 1,719,333 |
| 2007  | 566,750           | 402,205       | 268,049        | 230,522           | 8,613   | 1,476,139 |
| 2008  | 767,957           | 758,039       | 432,116        | 263,245           | 116,278 | 2,337,635 |

# Annex n 3

Annex

# The Ministry of Education, University and Research DEGREE CLASS LM-42 Degree in Veterinary Medicine

## Basic subjects

| Disciplinary field  | Sector   | ULC |
|---|--|-----|
| Veterinary Medicine disciplines                                     | CHIM/01 Analytical Chemistry<br>CHIM/03 Inorganic and General Chemistry<br>CHIM/06 Organic Chemistry<br>FIS/01 Experimental Physics<br>FIS/02 Theoretical physics , mathematical methods and models<br>FIS/03 Physics of matter<br>FIS/04 Nuclear and sub-nuclear Physics<br>FIS/05 Astronomy and Astrophysics<br>FIS/06 Physics of the Earth system<br>FIS/06 Physics of the Earth system<br>FIS/07 Applied Physics ( to cultural assets, environmental issues,<br>biology and medicine)<br>FIS/08 Teaching and physics history<br>MAT/01 Mathematical Logic<br>MAT/02 Algebra<br>MAT/03 Geometry<br>MAT/04 Complementary Mathematics<br>MAT/05 Mathematical Analysis<br>MAT/06 Probability and Mathematical Statistics<br>MAT/07 Mathematical Physics<br>MAT/08 Numerical Analysis<br>MAT/09 Operations Research | 6   |
| Biology and animal genetics   | AGR/07 Genetics Agricultural studies<br>AGR/17 Animal breeding and genetics<br>BIO/01 General Botany<br>BIO/03 Environmental Botany and applied Botany<br>BIO/05 Zoology   | 6   |
| Structure, function and metabolism of biological interest molecules | BIO/10 Biochemistry<br>BIO/11 Molecular Biology<br>BIO/12 Clinical Biochemistry and Clinical Molecular Biology   | 12  |
| Structure and function of animal<br>organisms                       | VET/01 Domestic animals anatomy<br>VET/02 Veterinary Physiology  | 30  |
| Total   | 1  | 58  |

## Professionalizing subjects

| Disciplinary field                 | Sector   | ULC |
|------------------------------------|--|-----|
| Animal science                     | AGR/17 Animal breeding and genetics                              |     |
|                                    | AGR/18 Animal nutrition and feeding                              |     |
|                                    | AGR/19 Animal husbandry  | 20  |
|                                    | AGR/20 Poultry and rabbit science                                |     |
|                                    |  |     |
| Infectious diseases                | VET/05 Infectious diseases of domestic animals                   | 20  |
|                                    | VET/06 Parassitology and parasitic diseases of animals           |     |
| Anatomical pathologyand Inspection | VET/03 Veterinary general pathology and pathological anatomy     | 30  |
|                                    | VET/04 Inspection of food of animal origin                       |     |
| Veterinary Clinics                 | VET/07 Veterinary Pharmacology and Toxicology                    |     |
|                                    | VET/08 Veterinary Medical Clinic                                 | 55  |
|                                    | VET/09 Veterinary Surgery Clinic                                 |     |
|                                    | VET/10 Obstetrics Clinics in Reproduction                        |     |
| Statistics and IT methodologies    | INF/01 Information Technology                                    |     |
|                                    | INGL-INF/05 Information Systems                                  | 5   |
|                                    | SECS-S/02 Statistics for experimental and technological research |     |
| Total                              |  | 130 |

## Total amount of ULC required 188

## Annex n 4

## LEARNING ACTIVITIES AND DISTRIBUTION OF CREDITS OF THE VETERINARY CURRICULUM Faculty of Veterinary Medicine University of Padova

## Basic subjects

| Disciplinary field                    | Sector  | ULC |
|---------------------------------------|---|-----|
| Veterinary Medicine                   | CHIM/03 Inorganic and General Chemistry<br>CHIM/06 Organic Chemistry<br>FIS/01 Experimental Physics<br>FIS/02 Theoretical physics , mathematical methods and models<br>FIS/03 Physics of matter<br>FIS/04 Nuclear and sub-nuclear Physics<br>FIS/05 Astronomy and Astrophysics<br>FIS/06 Physics of the Earth system<br>FIS/07 Applied Physics ( to cultural assets, environmental issues,<br>biology and medicine)<br>FIS/08 Teaching and physics history<br>MAT/01 Mathematical Logic<br>MAT/02 Algebra<br>MAT/03 Geometry<br>MAT/05 Mathematical Analysis<br>MAT/06 Probability and Mathematical Statistics<br>MAT/07 Mathematical Physics<br>MAT/07 No Numerical Analysis<br>MAT/09 Operations Research | 6   |
| Biology and animal genetics           | AGR/17 Animal breeding and genetics<br>BIO/05 Zoology   | 7   |
| Structure, function and metabolism of | BIO/10 Biochemestry   |     |
| biological interest molecules         | BIO/11 Molecular Biology  | 13  |
| Structure and function of animal      | VE I/01 Domestic animals anatomy  | 20  |
| organisms                             | VE 1/02 Veterinary Physiology   | 32  |
| Total credits                         |   | 58  |

## Professionalizing subjects

| Disciplinary field                 | Sector   | ULC |
|------------------------------------|--|-----|
| Animal science                     | AGR/17 Animal breeding and genetics<br>AGR/18 Animal nutrition and feeding<br>AGR/19 Animal husbandry<br>AGR/20 Poultry and rabbit science | 23  |
| Infectious diseases                | VET/05 Infectious diseases of domestic animals<br>VET/06 Parassitology and parasitic diseases of animals                                   | 31  |
| Anatomical pathologyand Inspection | VET/03 Veterinary general pathology and pathological anatomy<br>VET/04 Inspection of food of animal origin                                 | 36  |
| Veterinary Clinics                 | VET/07 Veterinary Pharmacology and Toxicology<br>VET/08 Veterinary Medical Clinic  | 69  |

|                                 | VET/09 Veterinary Surgery Clinic<br>VET/10 Obstetrics Clinics in Reproduction |   |     |
|---------------------------------|---|---|-----|
| Statistics and IT methodologies | SECS-S/02 Statistics for experimental and technological research              | 5 |     |
| Total credits                   |   |   | 164 |

Total credits Integrative subjects

| Sector   | ULC |
|--|-----|
| AGR/01 Economics   |     |
| AGR/02 Agronomy and herbaceous cultivations                  |     |
| AGR/10 Rural buildings and Agroforestry                      |     |
| AGR/15 Food technologies and sciences                        |     |
| AGR/19 Animal Husbandry                                      |     |
| AGR/20 Poultry and rabbit science                            |     |
| BIO/10 Biochemistry  | 13  |
| M-FIL/03 Moral Philosophy                                    |     |
| VET/01 Domestic animals anatomy                              |     |
| VET/02 Veterinary Physiology                                 |     |
| VET/03 Veterinary general pathology and pathological anatomy |     |
| VET/04 Inspection of food of animal origin                   |     |
| VET/05 Infectious diseases of domestic animals               |     |
| VET/06 Parassitology and parasitic diseases of animals       |     |
| VET/07 Veterinary Pharmacology and Toxicology                |     |

## Other curricular activities (MD 270, art 10 paragraph 5)

| Disciplinary field  |                                 | ULC |
|---|---------------------------------|-----|
| Optional subjects (art 10, paragraph 5, letter a)           |                                 | 8   |
| Final exam and foreign language (art 10, paragraph 5,       | Final exam                      | 9   |
| letter c)   |                                 |     |
|   | Knowledge of a foreign language | 3   |
| Other curricular activities (art 10, paragraph 5, letter d) | Further languages knowledge     | 0   |
|   | It knowledge                    | 0   |
|   | Practical activities            | 45  |
|   | Other activities                | 0   |
| Internships and training performed in enterprises, local    |                                 | 0   |
| public and private bodies (art 10, paragraph 5, letter e)   |                                 |     |
| Total credits   |                                 | 65  |

Total amount of ULC required to obtain the degree in Veterinary Medicine 300

Annex n 5



FACULTY OF VETERINAY MEDICINE, UNIVERSITY OF PADOVA



Student name \_\_\_\_\_

ID number



Name, last name and Acquired skill N° Date Location where the skill was acquired Student's signature Signature of academic tute segnature of supervisor Extra/Intramural training on companion animals (internal medicine, surgery and reproduction) (4 ULC) Signalment and history 1 Safe and appropriate handling and restraint of domestic 2 animals. Complete physical exam 3 Performing and interpreting cytological exams and/or biopsies (needle aspirate, tissue biopsy, joint fluid smear, 4 skin smear, vaginal smear) on clinical patients Preparation and interpretation of basic laboratory exams on blood samples (hematocrit; performing, staining and 5 microscopic evaluation of a blood smear; leukocyt and erythrocyte formula) collected from clinical patients Preparation and interpretation of basic laboratory exams on urine samples (chemical characteristics, sedimento..) 6 collected from clinical patients Routin X-ray technique (handling and positioning of animal on the X-ray table, choice of the X-ray tray and 7 film, knowledge of safety regulations) Ultrasonographic exam (shaving, positioning of the 8 animal, choice of the transducer) 9 How to write certifications, official and legal documents How to properly fill out clinical records 10 Administration of drug through IM and IV routes, fluid 11 therapy

| 12 | Sedation, anesthesia   |      |  |                  |  |
|----|--|------|--|------------------|--|
| 13 | Monitoring the anesthetized patient  |      |  |                  |  |
| 14 | How to write a drug prescritpion   |      |  |                  |  |
| 15 | Practical aspectes of basic cleaning and sterilization of surgical instruments |      |  |                  |  |
| 16 | Basic principles of aseptic surgery  |      |  |                  |  |
| 17 | Monitoring patients during awakening   |      |  |                  |  |
|    |  |      |  |                  |  |
|    |  |      |  |                  |  |
|    |  |      |  |                  |  |
|    |  |      |  |                  |  |
|    |  |      |  |                  |  |
|    |  |      |  |                  |  |
|    |  |      |  |                  |  |
|    |  |      |  |                  |  |
|    |  | Prac | ctical training on bovine medicine and repro | oduction (1 ULC) |  |
| 1  | Evaluation of health management  |      |  |                  |  |

| 2  | Collecting individual and herd history   |   |           |  |
|----|--|---|-----------|--|
| 3  | Clinical exam of the cardio-circulatory, respiratory, digestive, locomotor, reproductive and mammary systems |   |           |  |
| 4  | Heat detection in ruminants  |   |           |  |
| 5  | Artificial insemiation in cattle   |   |           |  |
| 6  | Transrectal manual and ultrasonographic pregnancy diagnosis  |   |           |  |
| 7  | How to implement a vaccination plan  |   |           |  |
| 8  | How to collect blood, urine and faeces   |   |           |  |
| 9  | How to administer drug parenterally  |   |           |  |
| 10 | Practical management of parturition on the farm  |   |           |  |
| 11 | Management and clinical exam of neonates   |   |           |  |
| 12 | Assessing and interpreting productive and reproductive indices   |   |           |  |
|    |  |   |           |  |
|    |  |   |           |  |
|    |  |   |           |  |
|    |  | Practical training in equine reproduction | n (1 ULC) |  |
| 1  | Monitoring the mare's estrous cycle  |   |           |  |

| 2  | Artificial insemination with fresh and frozen semen  |  |        |  |
|----|--|--|--------|--|
| 3  | How to collect and process equine semen  |  |        |  |
| 4  | Clinical exam of the neonate   |  |        |  |
|    |  |  |        |  |
|    |  |  |        |  |
|    |  | Practical training in equine surgery ( | 1 ULC) |  |
| 1  | Handling a horse inside or outside the box, handling a mare alone or with a foal                                     |  |        |  |
| 2  | How to put a blanket on a horse  |  |        |  |
| 3  | Collecting a blood sample from the jugular vein  |  |        |  |
| 4  | How top out a nose-gastric tube  |  |        |  |
| 5  | Video-endoscopy of the equine respiratory tract in the<br>standing horse and also on the treadmill                   |  |        |  |
| 6  | Bandaging a wound  |  |        |  |
| 7  | Surgical preparation of an equine patient  |  |        |  |
| 8  | Physical exam: assessing rectal temperature, cardio-<br>pulmonary functions through auscultations, mucosal<br>status |  |        |  |
| 9  | Anesthesia of the palmar digital nerve   |  |        |  |
| 10 | Local anesthesia   |  |        |  |
| 11 | IM or IV drug administration   |  |        |  |

| 12               | Scrubbing to perform intra-joint injections  |                                   |     |  |
|------------------|--|-----------------------------------|-----|--|
| 13               | Clinical approach to the horse with a colic: physical exam, pre- and post-surgical treatment   |                                   |     |  |
| 14               | Follow up of surgical treatments   |                                   |     |  |
| 15               | Assessment of lameness   |                                   |     |  |
|                  |  |                                   |     |  |
|                  |  |                                   |     |  |
|                  |  |                                   |     |  |
|                  |  |                                   |     |  |
|                  |  | Practical training in swines (1 U | LC) |  |
| 1                | Health assessment and legal responsibilities on a swine<br>farm: how to keep and use drugs on a farm according to<br>current law requirements  |                                   |     |  |
| 2                | Collecting a blood sample from a hog   |                                   |     |  |
|                  |  |                                   |     |  |
| 3                | Measurement of body temperature  |                                   |     |  |
| 3                | Measurement of body temperature<br>Pregnancy diagnosis   |                                   |     |  |
| 3<br>4<br>5      | Measurement of body temperature<br>Pregnancy diagnosis<br>Planning, synchronization and induction of parturition   |                                   |     |  |
| 3<br>4<br>5<br>6 | Measurement of body temperature         Pregnancy diagnosis         Planning, synchronization and induction of parturition         Assistance to periparturient sows; piglet fostering |                                   |     |  |

| 8  | Estrus detection in the sow        |  |  |
|----|------------------------------------|--|--|
| 9  | Artificial insemination            |  |  |
| 10 | Castration of male piglets         |  |  |
| 11 | Parenteral administration of drugs |  |  |
|    |                                    |  |  |
|    |                                    |  |  |
|    |                                    |  |  |
|    |                                    |  |  |

|    | Food Inspection (5 ULC)  |  |  |  |  |  |  |
|----|--|--|--|--|--|--|--|
| 1  | Monitoring animal welfare upon arrival at the slaughter house  |  |  |  |  |  |  |
| 2  | Checking official ID documents of animals to be<br>slaughtered, pre-slaughtering health check                                    |  |  |  |  |  |  |
| 3  | Post-mortem inspection according to UE regulation n°<br>854/2004   |  |  |  |  |  |  |
| 4  | Environmental and meat sampling for bacteriology   |  |  |  |  |  |  |
| 5  | Sampling of meat for chemical/residue/inhibitor testing as<br>ancillary tests for the National Residue testing or BSE<br>testing |  |  |  |  |  |  |
| 6  | Interpretation of laboratori exams (microbiology, chemistry, etc.)   |  |  |  |  |  |  |
| 7  | Checking for accuracy of labelling, of integrità of sanitary<br>seals on meat sample during cutting and packaging                |  |  |  |  |  |  |
| 8  | Checking on traceability of food products  |  |  |  |  |  |  |
| 9  | Field sampling for official testing  |  |  |  |  |  |  |
| 10 | Planning and implentation of an auditing test for a slaughter house of food processing plant                                     |  |  |  |  |  |  |
| 11 | Identification of fish species   |  |  |  |  |  |  |
| 12 | Checking on accuracy of labelling of fish species  |  |  |  |  |  |  |
| 13 | Checking on accuracy of labelling of food products at a foodstore  |  |  |  |  |  |  |
| 14 | Visiting and checking fish processing plants on site   |  |  |  |  |  |  |
| 15 | Visiting and checking meat processing plants on site   |  |  |  |  |  |  |

| 16 | Visiting and checking milk processing plants on site   |  |  |
|----|--|--|--|
| 17 | Visiting and checking egg/honey/pastry processing plants<br>on site                                  |  |  |
| 18 | Preparation and analysis procedure for<br>microbiological/chemical/molecular testing at a laboratory |  |  |

Practical training in Animal Husbandry (4 ULC) Correct handling and restraint of food animals 1 Identification of the anatomical regions used for morphological assessment of food and companion 2 animals Official sampling of animal feed for testing 3 Reading and assessment of an ID tag 4 Quality assessment of diets for food and companion 5 animals Formulation, preparation and distribution of diets for food 6 and companion animals Reading and assessment of farm spreadsheets 7 Assessment of body condition score on food and 8 companion (dog and cat) animals) Pre- and post-milking routine for dairy cows 9 Heat detection in dairy cow through computerized 10 systems How to choose males for natural breeding or artificial 11 insemination based on genetic profiles Preparation of a check list for environmental and facility 12 testing for animal welfare 13

|   | Anatomical pathologyand Poultry and Rabbit Pathology (3 ULC)                               |  |  |  |  |  |  |
|---|--|--|--|--|--|--|--|
| 1 | Conservation procedure of biological material for<br>cytological and/or histological exams |  |  |  |  |  |  |
| 2 | Performing cytological exams   |  |  |  |  |  |  |
| 3 | Interpreting legal documents of cytological and<br>histophatological exams                 |  |  |  |  |  |  |
| 4 | Collection of individual and group history for colleteral testing on a post-mortem exam    |  |  |  |  |  |  |
| 5 | How to perform a necropsy  |  |  |  |  |  |  |
| 6 | Sample techniques of colleteral testing during necropsy<br>and interpreting the results    |  |  |  |  |  |  |
| 7 | How to properly write a report of a necropsy and of post-<br>mortem exams                  |  |  |  |  |  |  |
| 8 | Biological waste and carcasses management after post-<br>mortem report                     |  |  |  |  |  |  |

| Elective practical training (4 ULC) |  |  |  |  |  |  |
|-------------------------------------|--|--|--|--|--|--|
|                                     |  |  |  |  |  |  |
|                                     |  |  |  |  |  |  |
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|                                     |  |  |  |  |  |  |
|                                     |  |  |  |  |  |  |

# Annex n 6

Calendar 1 and 2 macro-group year 2009 - 2010 (File .pdf, appended separately)

## Annex n 7

## **Faculty of Veterinary Medicine**

CERTIFICATION OF TIROCINIO (students MD 509)

The student NAME/ID Number has successfully completed her/his practical training requirements as stated by the Teaching Regulation of the Degree Course in Veterinary Medicine and she/he has acquired 17 University Learning Credits **cod. 058542** by performing practice in the following disciplines:

- ✓ Small Animal practice DSS VET/ 08 VET/09 VET/10 (4 ULC);
- ✓ Practical training on bovine medicine and reproduction DSS VET/ 08 VET/10 (1 ULC);
- ✓ Practical training in equine reproduction DSS VET/10 (1 ULC);
- ✓ Practical training in equine surgery DSS VET/9 (1 ULC);
- ✓ Swine practice DSS VET/8 VET/10 (1 ULC);
- ✓ Food Inspection practice DSS VET/04 (5 ULC);
- ✓ Practical training in Animal Husbandry DSS AGR 17÷20 (1 ULC);
- ✓ Practical in Poultry and Rabbit diseases VET/05 (1 ULC);
- ✓ Practical in Pathology VET/03 (2 ULC).

Date Prot. Tit. V cl. 4.1

the President of the Degree Course Council



Map of the ground floor of the Veterinary Complex. 1) Clinical Dept building; 2) Animal Ward building; 3) Hay Storage; 4) Necropsy building; 5) Clinical classroom; 6) Public Health building



Map of the second and third floor of the Veterinary Complex. 1) Clinical Dept building; 2) Animal Ward building; 3) Hay Storage; 4) Necropsy building; 5) Clinical classroom; 6) Public Health building

## Annex n 10

Annex

## Policies and Procedures of the Veterinary Teaching Hospital

# Article 1: Objectives of the Research and Services Inter-departmental Centre, "Veterinary Teaching Hospital" of the University of Padova.

The Research and Services Inter-departmental Centre, "Veterinary Teaching Hospital" of the University of Padova shall pursue the following aims:

- 1. Coordinating and developing practical activities for students.
- 2. Encouraging research activities in the field of veterinary medicine with particular attention to the clinical applicative sectors.
- 3. Organizing learning activities for students, post-graduate students, PhD students, scholarship students, and students within the framework of exchange programmes involving the Faculty, carried out under the guidance of a supervisor and finalized to acquire adequate practical knowledge in the field of veterinary medicine.
- 4. Providing consultation and hospitalization services for patients.
- Encouraging scientific and professional updating (post-degree continuous training) with theoretical and practical internships for graduate students and continuing professional development courses for veterinarians.
- 6. Providing and coordinating services in the field of veterinary medicine.

#### Article 2: Organs of the Veterinary Teaching Hospital.

#### The organs of the hospital shall be the following:

- The Assembly.
- The Management Council.
- The Director.

### Article 3: The Assembly.

The Assembly holds office for three years and is composed of:

- The Director.
- The Vice-Director.
- The Heads of Departments who are assigned to the Veterinary Teaching Hospital. If the Head of Department
  of the Veterinary Teaching Hospital is not a Professor of the Faculty of Veterinary Medicine, he/she will be
  represented by a Professor who has been formally assigned to the Department and who is a member of the
  Faculty of Veterinary Medicine.
- The Administrative Secretary.
- The Professors working in the Complex Units and Services activated by the Veterinary Teaching Hospital.
- Two representatives of the technical and administrative staff, designated by the Management Council and another representative of technical and administrative staff working in the Complex Units.
- Representatives of PhD students (30%), elected by the Management Council from among PhD students who collaborate with the activities of the Teaching Veterinary Hospital.
- One student from the Degree Course in Veterinary Medicine, elected by the Faculty Management Council of Veterinary Medicine

The Assembly also has one representative from the external collaborators who provide services to the Veterinary Teaching Hospital. He/she is designated by the Management Council and has no right to vote.

The tasks of the Assembly shall be to:

- Plan activities.
- Define guidelines and priorities in the use of the resources allocated to the Veterinary Teaching Hospital.
- Apply for further funding to the competent bodies.
- Approve the annual plan of the Hospital's revenue and expenditure and the statement of account referring to the aforementioned revenue and expenditure.
- Approve the annual report on the activities of the Centre.
- Propose (by the 30th of June every year) all external collaborations, and evaluate whether collaborations, which have already been implemented, should continue on the bases of technical and teaching needs.

- Propose modifications to the management and organization of the Complex Units and the services provided by the Teaching Hospital.
- Nominate a Secretary for the Assembly.

The Assembly is convened by the Director twice a year, or whenever it is deemed to be necessary by at least one third of its members. Proposals shall be adopted by the majority vote of members present. In cases of equally balanced numbers of votes, the casting vote of the Director shall prevail.

Even if not specified as being so in the current article, all that is declared in relation to the Management Council of Department (in art 111 and 112, paragraph II, Title II of the General Regulation of the University of Padova) is held to be valid.

#### Article 4 : the Management Council.

All of the functions carried out by the Scientific Technical Committee (STC), as declared in the Statute of the Teaching Hospital, will be assigned to the Management Council.

The Management Council holds office for three years and is composed of:

- The Director.
- The Vice-Director.
- The Dean of the Faculty of Veterinary Medicine.
- The Heads of Departments belonging to the Veterinary Teaching Hospital. If the Head of Department of the Veterinary Teaching Hospital is not a Professor of the Faculty of Veterinary Medicine, he/she will be represented by a Professor who has been formally assigned to the Department and who is a member of the Faculty of Veterinary Medicine.
- The Administrative Secretary.
- Three representatives of the Professors (a Full Professor, an Associate Professor and an Assistant Professor), nominated by the Assembly.
- A representative of the technical administrative staff working in the Teaching Hospital and elected by the Assembly.
- A representative of the technical administrative staff, nominated from among the staff working in the Complex Units.

The Management Council shall:

- Implement the scientific and teaching planning of the Veterinary Teaching Hospital.
- Approve contracts, covenants and the list of charges for services provided.
- Decide upon and work to enhance the activities of the Teaching Hospital.
- Coordinate and determine the Complex Units and the services to be provided.
- Evaluate and approve external collaborations on the bases of scientific teaching and research needs, as proposed by the Assembly.
- Coordinate all initiatives involving the Teaching Hospital.
- Draw up an annual report.
- Nominate the Secretary of the Management Council.

The Management Council shall be convened by the Director, or can be convened upon the request of a majority of the members, at least twice a year. Such meetings shall be deemed valid and quorate upon the attendance of two thirds of the total number of members. The resolutions reached shall become valid when they are accepted by the majority of those present. In cases of equally balanced numbers of votes, the casting vote of the Director shall prevail.

#### Article 5: The Director.

The office of Director is held by a Professor of the Faculty of Veterinary Medicine, enrolled into the Register of Professional Veterinarians, elected by the Management Council from three Professors proposed by the Dean and officially designated by Rector's Decree.

The Director holds office for three years and may be re-elected once.

After two consecutive nominees she/he shall be barred from holding the office again, for a time period of the same length of one office.



The Director nominates (from among the Full Professors) a Vice-Director who is empowered to act as a substitute for the Director in any of her/his functions, in cases of her/his absence.

- The Director shall:
  - a) Promote and coordinate the institutional activities of the Veterinary Teaching Hospital.
  - b) Direct, control and coordinate the Hospital's activities, the Complex Units and the Services provided by the Hospital.
  - c) Be in charge of the personnel assigned to the Veterinary Teaching Hospital.
  - d) Be responsible for managing the Veterinary Teaching Hospital properties and assets.
  - e) Convene and chair the Assembly and the Management Council.
  - f) Nominate a person responsible for each Complex Unit and each service of the Veterinary Teaching Hospital.
  - g) Even if not stated as being so by the current article, the Director shall exercise all of the functions assigned to a Head of Department.
  - h) The Director holds the Office of Health Care Director and shall not be responsible for more than one Complex Unit.

#### At the end of his/her term of office the Director must call for new elections.

The Director is nominated from among the members of the Management Council (selected from three Professors who have been proposed by the Dean) and is officially enrolled into the Register of Professional Veterinarians.

The election shall be deemed valid upon the attendance of the majority of those who are eligible to vote.

The Director is nominated in the first two elections by an absolute majority of those eligible to vote. In cases where there has been a failure to secure a clear election outcome, a ballot will take place between the two candidates who had the highest number of votes in the previous election. In cases of an equally balanced number of votes, the candidate who is a senior professor shall be elected. If both candidates are senior professors, the younger of the two shall be elected.

#### Article 6: Minutes.

A minute shall be drawn up during meetings of the Assembly and the Management Council to record the text of the resolutions adopted. Resolutions adopted shall be implemented immediately, unless they contravene the clauses or current laws.

Minutes and documents shall be consulted pursuant to the law 241/90, paragraph V and its modifications.

# Article 7: Access to the funding of the Research and Services Inter-departmental Centre, "Veterinary Teaching Hospital".

Modality of access to the funding of the Research and Services Inter-departmental Centre "Veterinary Teaching Hospital" is defined by the Management Council. The Council decides the amount that is to be dedicated to the maintenance and administration of the facility and guarantees the use of funding derived from the services provided and/or the single Complex Units.

The Council shall decide upon the allocation of funding to other activities relevant to the management of the facility. The Management Council defines the guidelines to be followed in the use of revenues.

#### Article 8: Report on the activities carried out by the Research and Services Inter-departmental Centre.

The Assembly approves the annual plan concerning the budget estimate of the Hospital's revenue and expenditure by the 30<sup>th</sup> of June.

Following this approval, the report is sent to the Rector, the Departments involved and the Departments and Centres Committee.

Possible modifications to be implemented at the Veterinary Teaching Hospital are proposed by the Assembly in the annual report.

#### Article 9: Admission of new Departments into the Research and Services Inter-departmental Centre.

Applications for the admission of new Departments to the Research and Services Inter-departmental Centre shall be submitted to the Management Council.

The Council shall evaluate each application and send it to the Assembly for approval. Approval shall be deemed valid when given assent by two thirds of those who are eligible to vote.

The admission of new Departments shall be submitted for the approval of the competent bodies.

#### Article 10: Complex Units and Services.

# Complex Units and Services are structured according to the different scientific sectors of veterinary medicine and the typology of service being provided for.

The Complex Units and Services Heads, are recruited from among the Full Professors, the Associate Professors and the Assistants of the Departments officially assigned to the Centre.

Personnel of the Services are veterinarians enrolled on the Register of Professional Veterinarians, and they are recruited on the basis of a selection from among those with whom the Hospital has a formal agreement.

The Director of the Research and Services Inter-departmental Centre, "Veterinary Teaching Hospital" is responsible for a maximum of one Complex Unit.

Any proposal for the activation or deletion of one Complex Unit shall be submitted to the Management Council. For the activation of one Complex Unit, the following details shall be outlined:

- 1. Scientific curriculum of the responsible candidate and the participants to the service.
- 2. Modality, time and location of the service.
- 3. Equipment.
- 4. Financial development plan and costs.
- 5. Practical activity.
- 6. Availability of outside facilities, in the case of activities that are to be performed outside the Veterinary Teaching Hospital.
- 7. Further documentation for the application.

The deletion of Services and Complex Units is decided by the Management Council on the bases of technical-scientific and/or economic factors.

#### Article 11: Duties of the Complex Units and Services Heads.

The Complex Units and Services Heads shall:

- 1. Send a detailed annual report to the Management Council, covering the activities carried out by his/her Unit.
- 2. Be responsible for the services provided.
- 3. Be responsible for the organization of practical and teaching activities.
- 4. Attest practical activity performed by students.
- 5. Corroborate that none of the activities and services provided contravenes any law regarding security.
- 6. Sign medical reports.
- Propose the amount of finances to be divided among the participants of the Complex Units and/or Services, according to the guidelines reported in Article 7.
- 8. Perform any functions required by the Management Council.

#### Article 12: Access to the Hospital.

The following people can have access to the Hospital:

- 1. Personnel and staff.
- 2. Complex Units and Services Heads and people who are identified by the Management Council.
- 3. Students performing practical training according to their rotation turn.
- 4. Students of the Faculty of Veterinary Medicine who are carrying out research activities related to the Hospital, prior to the presentation of an application form to the Director, signed by a supervisor.
- 5. PhD students carrying out research activities, prior to authorisation by the Board of Professors.
- 6. Post-graduate Researchers, prior to the acceptance of their research programme.
- 7. Personnel who have a formal agreement authorised by the Management Council.
- 8. Clients, though access for them is restricted to the waiting rooms and emergency rooms only.
- 9. Visitors who have been authorized by the Director.

Opening hours shall be decided by the Director after consultation with the Complex Units and Services Heads.

### Article 13: Modifications to the Regulation.

Modifications to the current Regulation proposed by the Assembly, or by the Management Council (with the majority agreement of those eligible to vote), shall be approved by resolution of the Assembly, (similarly requiring the

#### Annex

majority agreement of those eligible to vote). Such modifications will subsequently be submitted for the approval of the competent academic bodies.

### Article 14: Temporary Laws.

During the interim period of the setting up of the Assembly, the Management Council, and the election of the Director, the Dean shall fulfil the functions of the Director and shall convene the Assembly and the Management Council within 60 days of the approval and application of the Regulation.

Upon the appointment of the new Management Council and the election of the Director, the said new Director will commence his/her duties and functions.

# **Current Upper-Lower Thresholds and Ranges for EAEVE Ratios**

# Special Form Ratios: upper (UL) and lower (LL) values for 80%-quantile and range (RA) upper-lower quantile

| No                         | Direction<br>(Threshold) | Туре   | Fraction | Denominator | Mean Denominator<br>as calculated by ECOVE<br>_23 09 09<br>day month year |
|----------------------------|--------------------------|--|----------|-------------|---|
| indicat                    | tors on teacher/st       | tudent ratios  |          |             |   |
| R 1:                       | UL                       | no. total academic FTE in<br><u>veterinary training<sup>3)</sup></u><br>no. undergraduate<br>veterinary students <sup>2)</sup> | = =      |             | 8.713   |
| <b>R</b> 2 <sup>a)</sup> : | UL                       | no. of total FTE at Faculty<br>no. undergraduate students<br>at Faculty  | = =      |             |   |
| R 3:                       | UL                       | no. total VS FTE in<br>veterinary training <sup>3)</sup><br>no. undergraduate veterinary<br>students <sup>2)</sup>             | = =      |             | 10.400  |

Mean Denominator Direction as calculated by ECOVE No Туре Fraction Denominator (Threshold) 09 \_23 09 dav month year no. total VS FTE in 1 veterinary training<sup>3)</sup> = = R 4: UL 2.579 no. students graduating annually<sup>4)</sup> indicator academic vs. technical staff no. total FTE academic staff in 1 veterinary training<sup>3)</sup> = = R 5: 0.631 - 2.268 Ra no. total support staff in veterinary training<sup>3)</sup> indicators type of training Theoretical training 1 (A+B+C)= =R 6: LL 0.551 Supervised practical training (D+E+F)Clinical Work 1 (F) = = R 7: UL 2.200 Laboratory and desk based work + non-clinical animal work (D+E) Self directed learning 1 (C) \_ = R 8: Ra 0.559 - 6.092Teaching load (A+B+C+D+E+F+G)

| No      | Direction<br>(Threshold) | Туре   | Fraction                         | Denominator    | Mean Denominator<br>as calculated by ECOVE<br>_23 09 09<br>day month year |
|---------|--------------------------|--|----------------------------------|----------------|---|
| special | indicators train         | ing in food hygiene /public health   |                                  |                |   |
| R 9:    | Ra                       | Total no. curriculum-hours<br><u>Food Hygiene / Public Health<sup>2)</sup></u><br>Total no. hours<br>vet. Curriculum <sup>1)</sup>                           | = =                              | -              |   |
| R 10:   | Ra                       | Total no. curriculum hours<br><u>Food Hygiene / Public Health<sup>2)</sup></u><br>Hours obligatory extramural work<br>in Veterinary inspection <sup>3)</sup> | = =                              | -              |   |
| Anima   | ls available for c       | linical training (in the premises of the f   | faculty or seen through an Ambul | latory service |   |
| R 11:   | LL                       | no. of students<br>graduating annually <sup>a)</sup><br>no. of food-producing animals<br>seen at the Faculty <sup>1)</sup>                                   | = =                              | -              | 3.084   |
| R 12:   | LL                       | no. of students<br><u>graduating annually<sup>a)</sup></u><br>no. of individual food-animal<br>consultations outside the Faculty <sup>2) 3)</sup>            | = =                              | -              | 13.416  |

Mean Denominator Direction as calculated by ECOVE No Туре Fraction Denominator (Threshold) \_23 09 09 day month year no. of students 1 graduating annually<sup>a)</sup> = = R 13: LL 0.344 number of herd health visits <sup>4)</sup> no. of students 1 graduating annually<sup>a)</sup> = \_ R 14: LL 2.529 no. of equine cases<sup>1</sup> no. of students 1 graduating annually<sup>a)</sup> = = R 15: LL 0.640 no. of poultry/rabbit cases<sup>1)</sup> no. of students 1 graduating annually<sup>a)</sup> = =R 16: LL 56.619 no. of companion animals<sup>1)</sup> seen at Faculty no. of students 1 graduating annually<sup>a)</sup> = = R 17: LL 0.110 Poultry (flocks)/rabbits (production units); seen<sup>2) 3)</sup>

Animals available for necropsies

| No    | Direction<br>(Threshold) | Туре   | Fraction | Denominator | Mean Denominator<br>as calculated by ECOVE<br>_23 09 09<br>day month year |
|-------|--------------------------|--|----------|-------------|---|
| R 18: | LL                       | no. of students<br><u>graduating annually <math>^{a)}</math></u><br>no. necropsies food producing<br>animals + equines $^{5)}$ | = =      | L           | 0.823   |
| R 19: | LL                       | no. of students<br>graduating annually <sup>a)</sup><br>no. necropsies poultry/rabbits <sup>5)</sup>                           | = =      | L           | 0.370   |
| R 20: | LL                       | no. of students<br>graduating annually <sup>a)</sup><br>no. necropsies companion animals <sup>5)</sup>                         | = =      | L           | 1.588   |

a) applies only to those faculties which offer also non-veterinary education

Direction:

UL = upper limit LL = lower limit

Ra = range