



# **Self Evaluation Report Veterinary Faculty University of Perugia**

**November 20-25, 2006**



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## INTRODUCTION

This Self Evaluation Report (SER) has been prepared, eight years after the first, for re-evaluation by the EAEVE for conformity to EU requirements of the training provided by the Faculty of Veterinary Medicine of Perugia.

This second SER was actually prepared by a panel of six Faculty members (Mandara M.T., Porciello F., Verini-Supplizi A., Bufalari A., Cenci-Goga B. T., Vindigni C., and Bartolini M.) co-ordinated by Boiti C. under the supervision of the Faculty Dean, Gaiti Alberto. All the details included in the present SER were supplied by the staff members of the Departments and the Faculty as well as by several Administrative Officers of the University of Perugia. The SER accomplishes the requirements as outlined by the Standard Operating Procedure adopted in 2002. The panel has checked, ordered, and presented the information requested in the clearest and most concise manner possible.

Since the last visit, in November 1998, several changes and improvements have been adopted, in line with the valuable suggestions given by the former EAEVE commission which greatly modified key teaching activities of the establishment and, consequently, in our opinion, improved the overall quality of the veterinary training.

The main changes are briefly summarised below:

1. Starting in 2000, a new departmental organisation completely rearranged the previous Institute-based model. At present, there are only two Departments in the Faculty.
2. The Veterinary Teaching Hospital (VTH) has been built on the premises of the Faculty and it will be operative by next September 2006;
3. Major renovations were carried out on the "old" clinics, which are now fully integrated with the VTH premises;
4. The didactic and experimental agro zoo-technical farm (AZDS), focused on both didactic and research activities, has been re-organized according to the approved project and the initial grants provided by the University of Perugia.
5. Equipment has been upgraded and/or bought thus improving the efficiency of both teaching and research-based activities.
6. A new curriculum was introduced in 2000/2001 academic year which rearranged the teaching activities according to major EAEVE suggestions on practical and clinical training. This new curriculum also aims to fulfil the set of minimal requirements requested by the Ministero dell'Istruzione,

Università e Ricerca (MIUR).

7. The number of enrolled students has been significantly reduced since 2004 in order to optimise, as far as possible, the ratios among teaching staff, facilities, laboratories and animal material to meet the EAEVE requirements in respect of the limits provided by the MIUR minimal requirements;
8. The number of teaching staff has been reinforced by enrolling young researchers and by appointing external teachers and professionals that are experts in specific fields;
9. Tutorial activities have been introduced on a regular basis for the incoming students and those in the following years with didactic debts.
10. Erasmus/Socrates exchange has been enhanced and extended to 10 Countries .

All the information hereby provided reflects the thoughts of professors, researchers, students, and staff who have been directly involved in the auto evaluation process of the teaching quality.

**Acknowledgements.** We wish to sincerely thank the SER panel and all the professors, technical-administrative staff and students of the Faculty, together with the University Administration, for their co-operation and assistance in providing all the information necessary to prepare this report. Finally, we would particularly like to thank the Rector and the Administrative Board who contributed financially to the production of this report.

Professor Alberto Gaiti

Professor Franco Moriconi

(former Dean)

(Dean)

Perugia July 13, 2006

## Chapter 1 OBJECTIVES

### 1. FACTUAL INFORMATION

#### 1.1. Major and secondary aims of the Faculty

The major aim of the Faculty is to provide the Degree in Veterinary Medicine which absorbs much of the available human and financial resources. Another important objective of the Faculty, which can be considered collateral to the previous one, is to provide post-graduate education through specialisation courses, Masters, and Continuing Education Programs in Medicine for Veterinarians (ECM).

Recently, the Faculty of Veterinary Medicine has been called to fulfil different secondary objectives, mostly consisting in three-year-long degree courses, as better specified in the appropriate section of this chapter and outlined in chapter 2 dealing with Organisation. These secondary objectives, which are accomplished in conjunction with other Faculties of the University of Perugia, respond to the urgent requirement of diversifying the spectrum of teaching in response to new professional requests, and of rescuing drop outs from the main course in Veterinary Medicine.

The main feature of the degree in Veterinary Medicine is to enable students to acquire:

- understanding of basic biological principles in relation to normal body functions and diseases;
- ability to distinguish pathological from normal conditions;
- knowledge to prevent diseases and to manage the processes of animal production to ensure animal and human health as well as animal welfare;
- expertise in diagnosing and treating diseases as well as in alleviating suffering;
- professional skills enabling them to work and communicate effectively with their peers and the public.

The Ministry of Education, Research and University studies (MIUR), in the year 2000 activated new regulations for the course in Veterinary Medicine. Concurrently, previous **scientific areas of disciplines** were rearranged into basal, professional and affine disciplines (see chapter 4 for details) which are briefly summarized below. They must provide basic knowledge on:

- fundamentals of veterinary activities;
- structure, functions, reproduction and veterinary hygiene;
- animal behaviour and welfare;
- causes, nature, pathogenesis and development, effects, diagnosis and treatment of animal diseases, in particular those that can be transmitted to man;
- preventive medicine;
- hygiene and technologies concerning production, transformation and marketing of food of animal origin for human consumption;
- clinical and therapeutical practical experience;
- laws and regulations concerning the above-indicated subjects.

A clear set of teaching and learning objectives are given for each area and course year as reported on the web site of the Faculty (see Chapter 4).

This degree enables the holder to be admitted to a State exam for qualification. Those graduates passing this State examination can be registered on the Provincial Board of Veterinary Surgeons and practise as Doctors in Veterinary Medicine (DVM) in Italy. Holders of this degree, provided they are EU citizens, are also, under the EU Directives, entitled to register and practise in all other EU countries.

The Faculty is strongly committed to licensing Veterinary Medicine graduates through a five year degree course in accordance to the master plan and regulations enforced by Ministerial Rules. The staff of the Faculty is strongly involved in the State Exam of Qualification for professional practice.

In addition, the Faculty contributes to the following degrees which represent secondary aims. In fact, these courses use only limited resources and are mostly run in tight cooperation with other Faculties of the University of Perugia.

Degree in:

1. Hygiene and Quality of Animal Production (duration: three years)
2. Biotechnology (duration: three years)

### **Degree in Hygiene and Quality of Animal Production**



A three year course in "Hygiene and quality of animal production" has been available since the 2002/2003 academic year at the Faculty of Veterinary Medicine in Perugia. This course has two common years, but provides two curricula at the third year: "Production and Quality of Food of Animal Origin" and "Production and Quality of Feeds for Domestic Animals". Currently, the latter curriculum is not active.

Admission is open to Students with a General Certificate of Education at secondary level.

Both basic and speciality subjects are taught at the Faculty concerning basic knowledge on:

- chemistry, biochemistry, mathematics, statistics, informatics;
- structure, functions, reproduction and hygiene of healthy animals;
- animal behaviour and welfare;
- hygiene and technologies concerning production, transformation and marketing of food of animal origin destined for human consumption;
- animal management and breeding, feed production and animal nutrition;
- law and regulation concerning the above-indicated subjects.

The degree will allow holders to be qualified for job offers from: Feed Industry, Farms and companies requiring technical and laboratory assistants to the veterinarian when hygiene of animal origin food, veterinary public health and control of breeding hygiene are involved.

### **Degree course in Biotechnology**

The Faculty of Veterinary Medicine will also be involved in this interfaculty course beginning from 2007/2008 academic year. The first two years are common, while different curricula are available for the third year concerning biotechnology applied to Agriculture, Medicine, Pharmacy, Chemical Industry and Veterinary Medicine.

The Veterinary Medicine curriculum (third year) is reserved to 10 students and includes courses on:

- basic knowledge of structure, functions, reproduction and hygiene of healthy animals
- biotechnology applied to animal breeding, rearing and animal production.

### **Postgraduate Specialisation Schools and Masters**

The Postgraduate Specialisation Schools (three year courses), according to the Faculty statute, are as follows:

- Animal Nutrition
- Veterinary Biotechnologies
- Food Hygiene
- Horse Medicine and Surgery
- Animal Health, Breeding and Zootechnical Production
- Bird, Rabbit and Game Technology and Pathology

Currently, only two of them are activated by the Faculty: "Food Hygiene" and "Animal Health, Breeding and Zootechnical Production".

Moreover, a Master (two years) in Clinical Biochemistry is activated in cooperation with the University of Pisa. Another master on Animal Assisted Activities and Therapies (Pet-Therapy) will be run in collaboration with the Faculty of Medicine of the University of Perugia starting from the 2006/2007 academic year. In addition, a first level Master degree between the University of Perugia and those of Tirana (Albania) and Pristina (Kosovo) has been approved and funded by MIUR and Ministero Affari Esteri (MAE) and shall begin this year.

### **Research**

A further objective of the Faculty is research. Its major task is to develop both basic and applied knowledge in the field of Veterinary Sciences and, at the same time, provide teachers, PhD, research fellows and students with an appropriate environment to expand their research capability.

Moreover, the Faculty has many research and collaboration agreements with Public and Private Institutions; it also supplies third-party services, as a source of teaching material.

### **Others**

The Faculty takes part in international programmes promoted by the EU in order to train professional European veterinarians in the fields of surgery, anaesthesiology, pathology, food hygiene and public health, obstetrics and gynaecology by exchanging teaching experience and developing new teaching methods.

The Faculty is involved in the SOCRATES/ERASMUS programmes. At the moment, the following Universities are involved in Socrates programme with our Faculty:

- University of Bristol
- Université de Liège
- University of Extremadura
- Universidad Autonoma de Barcelona
- Universidad de Zaragoza
- Universidad de Valencia
- University of Helsinki
- University of Veterinary Medicine of Kosice
- The Agricultural University of Wroclaw

Moreover, a bi-lateral agreement between the University of Perugia and the University of Pretoria (South Africa) have been signed for teaching exchange in Veterinary fields.

The Faculty offers specialised clinical and diagnostic services to practitioners on request (see Chapter 6)

## 1.2. Methods assessing the achievements of the Faculty aims

Since the 1992/1993 academic year, two Committees have been instituted in the Faculty: the **Committee for the Development Plan of the Faculty** and the **Lecturer-Student Joint Committee**. Their roles and objectives will be detailed in Chapters 2 and 5, respectively. Tight procedures for quality system evaluation have been enforced by law in 2001 and promptly implemented at the University of Perugia. In addition, the teaching quality of each lecturer is now routinely assessed, since 1999, by students themselves by means of anonymous questionnaire (see chapter 5 for more details). The combined results of teaching assessments are then analysed by the Evaluation Board of the University of Perugia together with more information related with University achievement of general teaching objectives.

The continuous relationship between veterinarians and their professional association results in several professional veterinarians being part of the examining Board for the *post lauream* examination. Currently there are

contacts and interaction between Faculty and professional veterinarians to increase and regulate professional and didactics activities (see continuing education, Chapter 11).

The achievement of **scientific aims** is assessed on the basis of **scientific reports** that lecturers and researchers must produce to the Faculty every three years for approval. Reports must be produced for University and Ministerial Committees, too. On these occasions, scientific reports are evaluated with particular attention to papers published in international journals and to collaborations with other scientific structures.

Moreover, a Research Register of the University has been organised to monitor, evaluate and evidence papers published by our University (see <http://www-b.unipg.it/~riplic/anagrafe.htm>).

## 2. COMMENTS

### 2.1 Extent to which objectives are being met

The main objectives of the Faculty are normally achieved, except those concerning practical activities, due to the limitations imposed by actual regulations of the curriculum fixed by law. Two other points continue to prevent full achievement of EAEVE expectations for increasing practical activity: a) the still relatively high number of students which requires practical classes to be repeated (on average four times, with 25 students each time), b) financial constraints of Italian universities in general, which limit the employment of lecturers and technicians, and the building of additional facilities.

Moreover, it should be pointed out that several Faculty structures, some of which are of great importance for teaching, are still to be completed. The building of the **VTH** of the Faculty will allow the indications of the new curriculum, which calls for extensive practical training in conformity with EAEVE directives and advice, to be partly satisfied. Some **multifunctional laboratories** are under construction; they will considerably facilitate the teaching of practical classes.

The University of Perugia is also provided with a **didactic and experimental agro-zoo-technical farm (AZDS)** for the specific requirements of the Faculties of Veterinary Medicine and Agricultural Sciences. It will be equipped

with shelters for large animals (cattle, horses), medium (sheep, pigs) and small animals (rabbits and poultry) for the purpose of practical teaching and research. The AZDS activity is controlled by the **Centre for didactics and research services in Agricultural and Veterinary fields (CeSAV)**. This Centre represents a support structure for practical activities, research and diffusion of new technologies of the Faculties of Agricultural Sciences and Veterinary Medicine.

As mentioned earlier, the AZDS will operate at the already existing agro-zoo-technical farm, near S. Angelo di Celle. It is organised in several independent blocks which will be implemented separately within the next 5-10 years (See Annex I).

The quality of the current research and the availability of scientific equipments can be considered satisfactory despite the above mentioned financial difficulties.

## **2.2. Measures taken to meet objectives fully**

The "old" curriculum failed to achieve adequate teaching standards, as confirmed by the average time needed to obtain a degree and the high number of students failing to do so in the prescribed time. The adoption of the new curriculum and the availability of new buildings, some already operative and others in an advanced state of construction, together with a 18% reduction of first-year enrolling students and the increase in the number of teaching staff should guarantee better teaching quality, including theoretical and practical training.

In order to improve students' technical and professional skills, the Faculty has established conventions and collaborations with the National Health Service, Zoo-prophylactic Institutes, and both public bodies and private companies. Among them, are food processing plants, feed processing plants, and farms.

The six –month training period is now carried out prior to graduation within the five year course.

A permanent evaluation system has been established to assess quality and achievement of the teaching objectives (see Chapter 5 for details).

### 2.3. Major strengths and weaknesses of the Faculty

#### Major strengths

- its history and consolidated prestige together with its established cultural tradition, including the organisation of several national and international meetings;
- highly motivated teaching staff with numerous national and international contacts as well as an increasing number of lecturers who graduated or are in training at other Certified European College Boards;
- the didactical organization focussed on the Veterinary degree co-ordinated by a President of the degree course;
- the new VTH with centralised services: distinct X-Ray equipment for small and large animals provided with digital acquisition and recording system plus a CT; six large and small animal operating theatres for specialist surgery; six visiting rooms dedicated to internal medicine specialist investigations and a high speed tread-mill room for horses; a computer network connected by a LAN to Internet provided with a computerized system for the processing and consultation of clinical records providing modern management of clinical activities also consenting full student participation.
- the location of all academic departments and Zoo-prophylactic Institute of Umbria and Marche (IZS) on the same site;
- the urban location of the Faculty which favours consultation of pets;
- the didactic and experimental agro-zoo-technical farm of the University (AZDS);
- the "Centro studio del Cavallo sportivo" (Sport Horse Research Centre);
- public equine breeding station linked with laboratory for breeding technology certified by local public health services;
- the entire Faculty has full access to internet by a LAN, also consenting e-teaching and e-learnig in video conference;
- a centralised library with two study rooms and one room for audiovisuals suitable for English lessons;
- audio-video camera and recorder systems in the autopsy, surgery, and microscopy rooms;
- one food hygiene laboratory, officially approved by Regional Government and ISO17025 certification; a pilot meat product plant and free access to panel test unit;
- access to agricultural highly qualified laboratory for advanced research and teaching in biotechnology

- officially approved Faculty structure by European Boards Veterinary Specialties (EBVS) for small animal reproduction;
- the agreement with IZS for research and didactics, giving full access to laboratories, experimental dairy plant and library.

**Among strengths, we can also include:**

- Some lecturers of our Faculty hold prestigious positions in:
  - a. European teaching colleges and scientific societies as well as EU Committees;
  - b. Ministry of Health and Ministry of Agriculture Committees;
  - c. National and international scientific societies;
- Agreement with feed manufacturers, farms and food industries for student training;
- Agreements with: National Health Service, Umbria Regional Health Service, the Zoo-prophylactic Institute of Umbria, Municipal slaughterhouse, the Italian Army Veterinary Corps for student training and teaching activities;
- Didactic office and secretariat;
- Availability of university sport facilities close to the Faculty, now Centro Bambagioni;
- Canteen and cafeteria for students and staff.

**2.4. Major weaknesses are:**

- the average time to graduate is quite still long even if, since 2000, it is gradually decreasing;
- adjustment problems due to frequent changes on the curricula enforced by the MIUR;
- we consider the fixed number of students per year to be relatively high (100 per year). Although student enrolment numbers were previously considered adequate, however there has been a further reduction of approximately 18-20%;
- limited parking area immediately outside the Faculty and viability;
- present location of the Faculty and the dated building A limit its potential future structural expansion even if, recently, the Faculty has acquired two new buildings, one already restructured and another is under way;
- an inadequate public transport system connecting the Faculty to the AZDS partially overcome by Faculty vehicles;
- the relative shortage of teachers, researchers and technicians.

**3. SUGGESTIONS**

Speed up the development of the AZDS structures already approved and increase the activities for students to facilitate practical and clinical work on livestock.

**ANNOTATIONS**



## Chapter 2 ORGANIZATION

### 1. FACTUAL INFORMATION

#### 2. 1 Details of the establishment

Name:	Faculty of Veterinary Medicine
Address:	Via S. Costanzo 4, 06126 Perugia, Italy
Telephone:	+39 075 585 7607
Fax:	+39 075 585 7609
Website:	<a href="http://www.unipg.it/facvet/">www.unipg.it/facvet/</a>
Email:	<a href="mailto:facvet@unipg.it">facvet@unipg.it</a>
Head:	Prof. Franco Moriconi, Dean of the Faculty (presvet@unipg.it)

The Faculty of Veterinary Medicine is part of the University of Perugia (University of Perugia, Piazza dell'Università 1, 06100 Perugia).

The Rector of the University of Perugia is the competent authority overseeing the Faculty of Veterinary Medicine as outlined in the diagram 1. His full address is:

Rector: Prof. Francesco Bistoni, Piazza dell'Università 1, 06100 Perugia. Tel. +39 075 585 2014

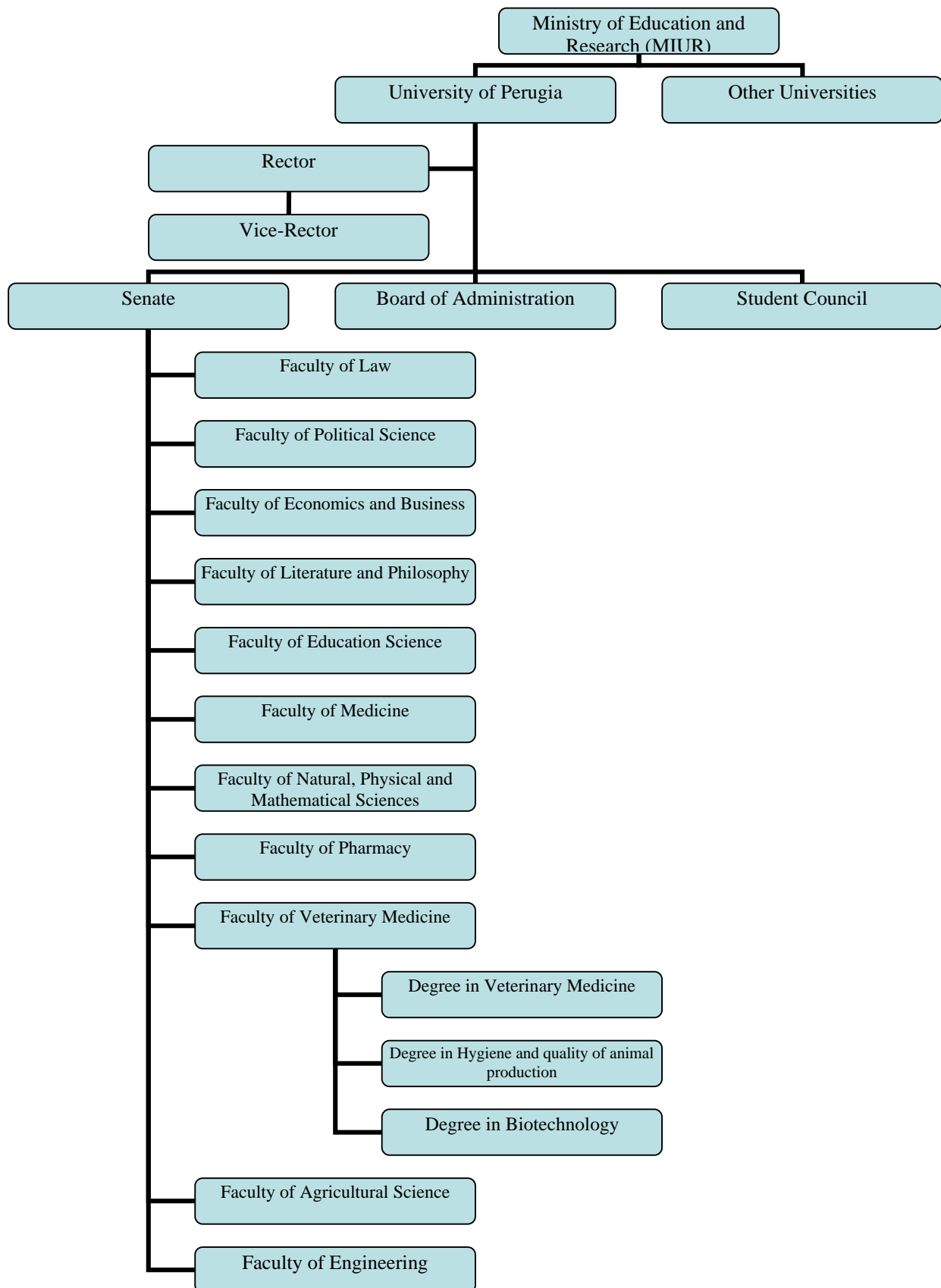
Overall, the University of Perugia employs 368 full professors, 398 associate professors, 448 researchers, 563 technicians, 512 administrative staff, 89 librarians, and 159 in the technical general service.

In the last three years, the average number of students per year was 34,900 with a decreasing trend of 6,5% in the last year.

#### 2.2 Situation of the Faculty in the University organisation

The Faculty of Veterinary Medicine is part of the University of Perugia; its administrative relations with ministerial structures is outlined in the diagram below.

Diagram 1. Relations of the Veterinary Faculty with the University of Perugia and Ministerial structure of which it is part



### 2.2.1 Responsibilities, constitution and function of the main administrative structures of the University

- The **Senate of the University** is composed of: the Rector, as chairman, the 11 Faculty Deans, 15 lecturers, on behalf of five scientific areas of study, 2 representatives of non-teaching staff, 4 student representatives, and the administrative director. The Senate programs and controls all University activities.
- The **Board of Administration** is composed of: the Rector, as chairman, the administrative director, 3 full-time lecturers, 3 associate lecturers, 3 researcher representatives, 3 representatives of the non-teaching staff, 3 student representatives, 1 representative of Umbria, 1 representative of the municipality of Perugia. The Board of Administration manages financial matters and accounting.
- The **University consulting Committee** is composed of the Rector, pro Rector and a limited number of full-time lecturers appointed by the Rector for specific academic tasks.
- The **Students' Council** is composed of 30 students (2 from each Faculty plus 2 from each of the four faculties with the majority of enrolments). It is the organ representing students and has proposing, advisory and checking tasks.

### 2.3. Organisation of the Faculty

The bodies of the Faculty, as shown in diagram 2, are as follows:

- the **Faculty Council**, which is composed of the Dean, acting as chairman, all full and associate professors belonging to the Faculty itself, plus elected representatives of both researchers and students corresponding to 1/3 and 15%, respectively, of the number of professors. The main functions of the Faculty council are:
  - planning of human resources;
  - planning of courses and teaching activities;
  - resolution on the proposals of the other commissions of the Faculty and degree courses where Faculty lecturers are involved.

- the **Course Council** for: *Veterinary Medicine* degree;
- the **Course Council** for: *Hygiene and quality of animal production* degree;
- the **Course Council** for: *Biotechnology* degree; this course is managed jointly with the Faculties of Agriculture, Medicine, Pharmacy, and Sciences.

Each Degree Course Council is composed of the President of the Course, acting as the chairman, and all the official lecturers having teaching responsibilities in the course plus elected representatives of students corresponding to 18% of the number of professors.

- **Council of postgraduate specialisation schools.** It is composed of the Director of the school, as chairman, all the official lecturers with teaching responsibilities in the school plus elected student representatives.
- **PhD Councils.** The four PhD councils are composed of lecturers directly involved in the teaching programs

The principal functions of the Course councils and Council of postgraduate specialisation schools are to propose and co-ordinate all the didactic activities.

The functioning of the establishment is guaranteed by the:

- **Dean**, elected by the Faculty remaining in office for four years.
- **Vice-Dean**, appointed by the Dean
- **Faculty consulting committee**, which includes the Dean, acting as the chairman, the Vice-Dean, the Presidents of each degree course belonging to the Faculty, the Directors of each postgraduate specialisation schools, plus two elected members as representatives of full professors, associated professors and researchers, respectively, and one student appointed among those elected in the Faculty Course council. The consulting committee develops preliminary documents for the points to be discussed by the Faculty and co-operates with the Dean in carrying out the resolutions of the Faculty policy.
- **Committee for the utilization of student taxes** consisting of the Dean, as co-ordinator, and five lecturers (two full professor, two associate professors, and two researchers) plus one member of the Dean's

administrative staff and one student, gives suggestions for the allocations of funds raised with the taxes paid by students.

- **Joint Committee for Didactics** which includes the Dean, acting as the chairman, the President of the Degree Course Council plus 13 members: six lecturers and seven students. The committee assesses the efficiency and the effectiveness of teaching services as well as the whole teaching organisation.
- **Committee for Tutoring and Orientation** (the Co-ordinator, six lecturers and 2 students) advises students during the course and organizes the tutorial activity of the staff.
- **Committee for International exchange** is composed of 8 representatives of lecturers; it co-ordinates and promotes cultural exchanges of students and lecturers by means of Socrates and Erasmus and other initiatives
- **Committee for Research development**, includes 6 representatives; it studies and suggests research proposals to be submitted to national and international funding organisations;
- **Committee for Faculty development** is composed of 10. It organizes workshops, meetings and continuing education programs. In addition it promotes the public image of the Faculty including its didactical activities and external services.
- **Committee of guarantors for the VTH** (the Dean, or his delegates, the President of the Veterinary medicine Course Council, the Directors of the Faculty Departments, VTH head plus one representative of students) verifies the attainments of the didactical objectives of the Faculty;
- **E-Learning Committee** composed of 6 lecturers implements new technologies for distance teaching;
- **ECTS Council** is composed of 4 lecturers: It evaluate the credits of the students acquired during Socrates/Erasmus programs;
- **Library Council** (the President, as chairman, plus four lecturers of the Faculty, a student, and a member of the library staff together with the Director) co-ordinates library activities.

All the members of the committees and Councils are appointed or elected by the respective components and ratified by the Faculty council and remain in office for four years.

In addition, the **Standing committee for research**, for the scientific areas related to Agricultural Sciences and Veterinary Medicine, is composed of nine members, three representatives for full professors, associated professors and researchers, respectively, which are jointly elected by the respective components of the Faculties of Agricultural Science and Veterinary Medicine. The standing committee for research, which remains in charge for two years, allocates both human (PhD, fellowships) and financial resources provided by the University of Perugia between the different scientific areas.

Diagram 2. Internal administrative structure of the Faculty

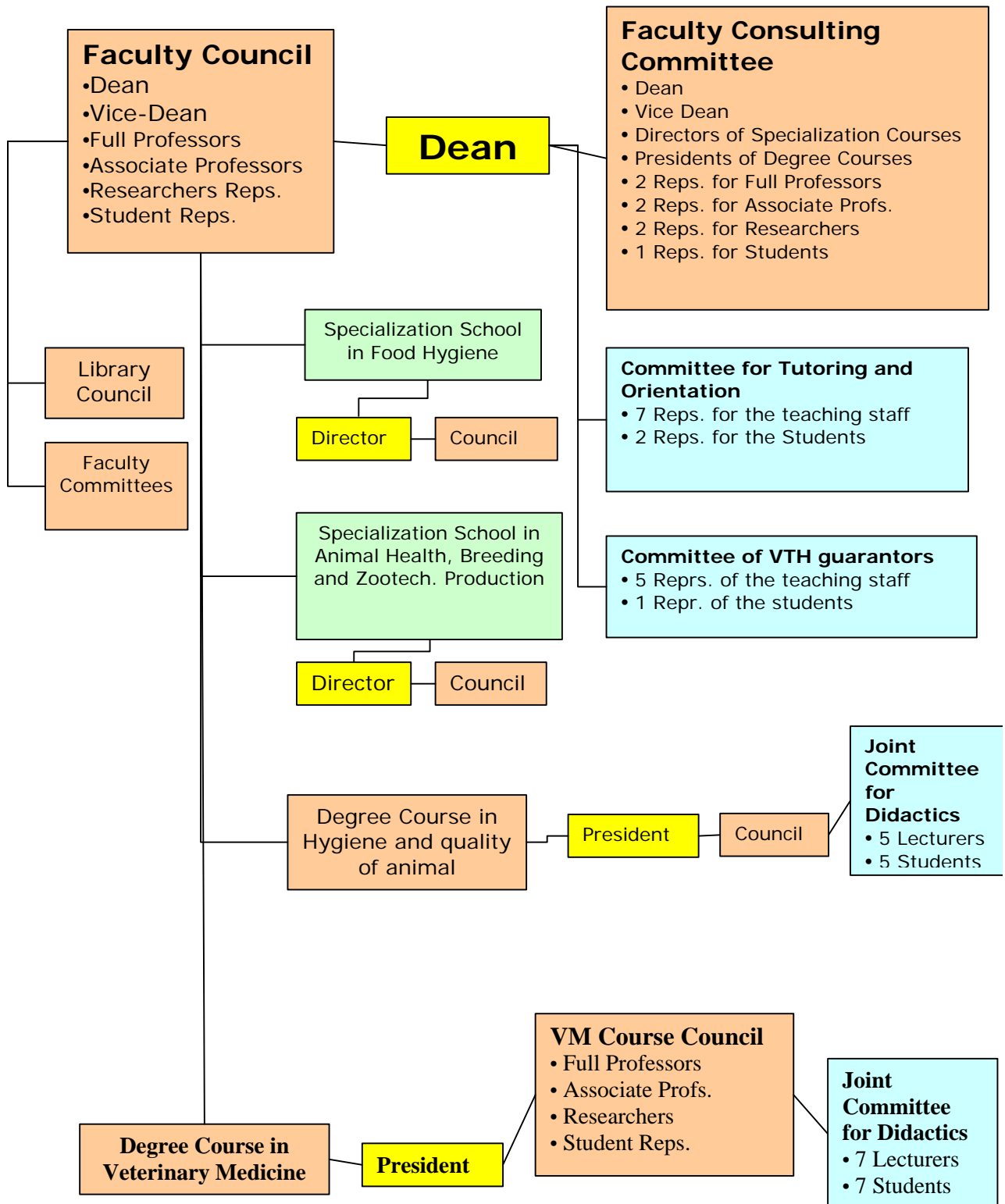
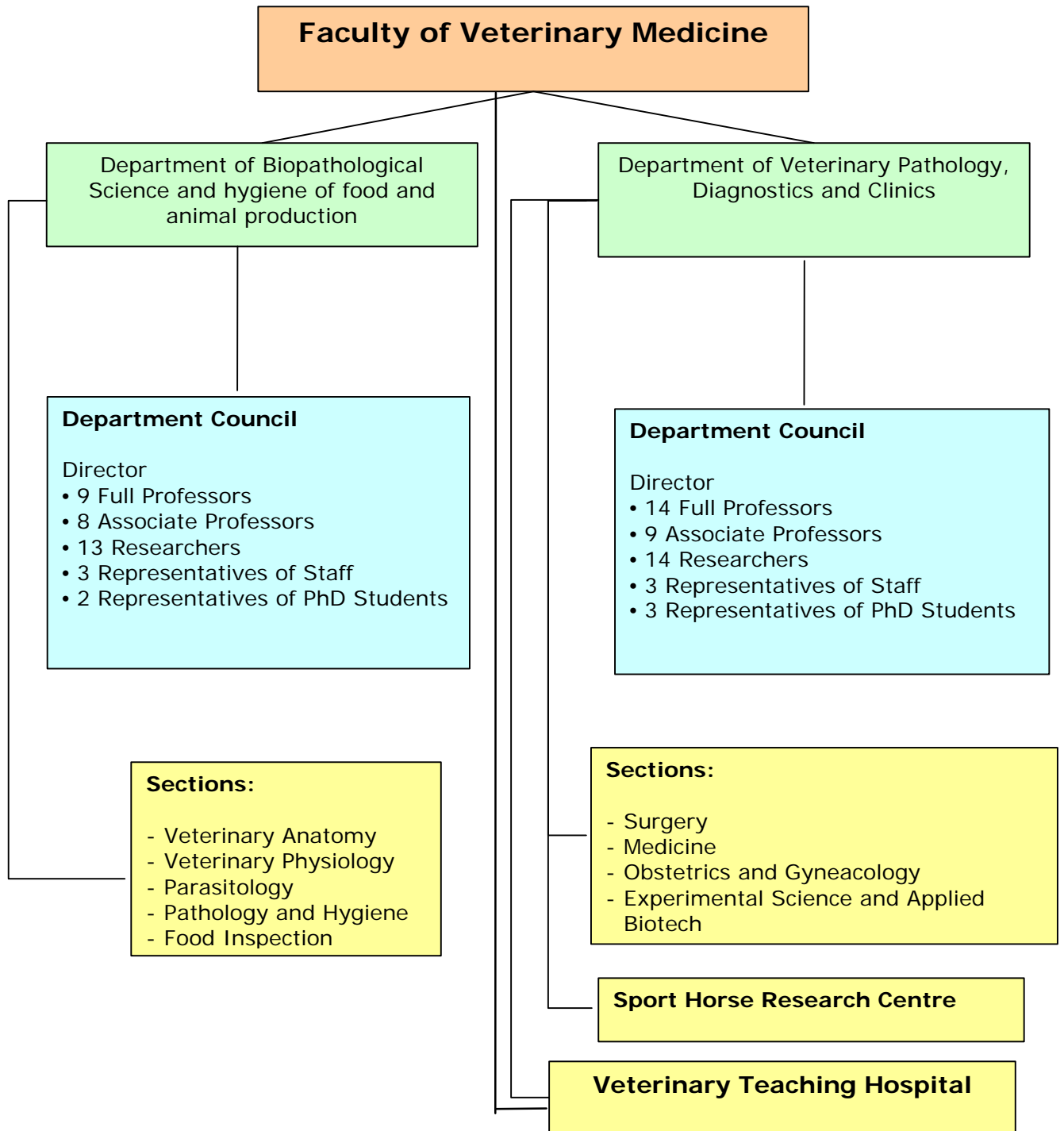


Diagram 3. Departmental organisation of the Faculty with composition of their respective Councils and Sections.





## **2. COMMENTS**

The suggestions provided by the EAEVE in the 1996 visit have been adopted in accordance with the rules of the University of Perugia.

The new departmental organisation, undoubtedly greatly improved the overall efficiency of the establishment. The departments now have full administrative competence and can pay suppliers directly, and sign conventions and contracts. In addition, research activities benefit from this type of organisation and several common laboratories have been set up and others are planned with great savings in equipment and better utilisation of human resources.

The organizational autonomy of VTH should improve clinical activities, including teaching. The increased number of committees set up in 2006 will hopefully accelerate the efficiency and modernization of the Faculty.

Didactic activities are organised and supervised by the Veterinary Medicine Course Council, and different Committees. Moreover, semester co-ordinators and officers for the practical/clinical training have begun operation to better organise teaching activities.

## **3. SUGGESTIONS**

**ANNOTATIONS**

## Chapter 3 FINANCES

### 1. FACTUAL INFORMATION

#### 3.1: Expenditure

Table 3.1.1: Annual expenditure of the establishment

Calendar year 2005	Euros
a. Personnel	
a.1 teaching staff	4,570,924
a.2 support staff	1,214,252
a.3 research staff	499,813
Total for a	6,284,989
b. Operating costs	
b.1 utilities	113,011
b.2 expenditure relating specifically to teaching	54,503
b.3 expenditure relating specifically to research	424,315
b.4 general operations (excluding the above)	694,931
Total for b	1,286,759
c. Equipment	
c.1 teaching	43,434
c.2 research	157,424
c.3 general (or common) equipment	20,086
Total for c	220,945
d. Maintenance of buildings	20,221
e. Total expenditure	7,792,692

Table 3.1.2: Cost of veterinary training

Direct cost	Euros
1. Annual direct cost of training a student	58,831
2. Direct cost of training for a degree	426,526

### 3.2: Revenues

Table. 3.2.1 Annual revenues of the establishment.

Calendar year 2005	Euros
a. revenue from the State or public authorities	600,207
b. revenue from private bodies	58,139
c. revenue from research	58,462
d. revenue earned and retained by the establishment	
d.1. registration fees from students	40,967
d.2. revenue from continuing education	10,000
d.3. revenue from clinical activities	540,917
d.4. revenue from diagnostic activities	24,000
e. revenue from other sources (please specify)	106,845
f. Total revenue from all sources	1,439,538

Table 3.2.2: Changes in public funding (euros)

Year	Euros
2005	1,439,537
2004	825,189
2003	1,032,928
2002	994,210
2001	1,134,406

The percentages of revenue deriving from Clinical work and diagnostic activities that is given to other bodies are the following:

- 8%: University;
- 46%: Clinical personnel and bio-pathological department personnel.

Therefore, the percentage deriving from commercial revenues that is retained within the Departments is 46%.

The Senate of the University sets up the general criteria for the allocation of funding according to the number of students and the scientific area (medical school and veterinary school being the most expensive). The allocation of funding within the establishment is decided by Faculty council on the basis of suggestions provided by competent committees according to specific requests.

The mechanism(s) for funding capital expenditure (e.g. building work, major items of equipment) is generally decided by the Department Councils. However, for extraordinary expenditure (such as the recent veterinary hospital) the approval is made by the Faculty council, pending approval by the Senate of the University and Board of administration. In this case the best offer is selected after a public contest.

Students pay registration fees (approx. 416 to 1120 euros per year, according to family income). The amount of these fees is decided every year by the Senate. Funds from registration fees are allocated to the single Faculties according to several parameters, including number of students, number of subjects, number of teachers, and according to specific parameters based upon the use of laboratories, hospital, clinics.

## 2. COMMENTS

1. Veterinary education is more expensive than training in other science-based disciplines. Since it includes clinical training and services (e.g. animal care), it requires a higher level of funding than Medicine and Dentistry which are subsidised by National Health Service operations. As our Faculty only gets limited funding from the University of Perugia it would be useful to have additional funding allocated to the Faculty.
2. Sufficient funds are not available to fully support the recommended teaching staff/student and teaching staff/support staff ratios (see chapter 10)
3. Following the increasing demand for specialist training, adequate funds are made available for clinical and research postgraduate students in the areas in which the Faculty has expertise.
4. Public funds are not sufficient to support research infrastructure and to provide seed money for projects, reflecting the negative national trend.
5. Associate and full professors salaries are sufficient to retain highly qualified staff, i.e. staff with veterinary degrees and/or PhDs, while the salary for researchers are lower than those of peers working in non-academic sectors.
6. Public funds for teaching purposes are not sufficient, given that sometimes lecturers have to use their own research grants for teaching activities.
7. Adequate provisions exist to fund necessary teaching structures, laboratory and clinical equipment, including computers, and to replace

- and update such equipment at regular intervals.
8. The routine cleaning and maintenance of buildings are ensured by University.
  9. University funds for the construction of new buildings (i.e. VTH, AZDS, - Administration offices, etc.) can be available, but should be considered extraordinary.
  10. Additional funds are provided to subsidise the clinical work in VTH and AZDS.
  11. A significant part of the income derived from the clinic activities is retained in the same clinical sectors to support the efforts in this area and to provide incentives for clinical staff to maximise earning potential. The remaining part is used to cover the expenses and to improve facilities and instruments whereas the remaining 8% is given to other bodies (University).

Compared to previous visit, the budget allocation per student and funding for teaching position per student have both been increased. In particular, the cost for training a student has increased yet decreasing the cost of training for a diploma (see table 3.1.2).

The Report of the EAEVE Commission following the 1998 visit stated that the funding of the Faculty should not be linked directly to the number of students enrolled. Unfortunately, the Faculty has only a limited control on this aspect within the Senate of the University. In fact, national, regional and University laws and regulations clearly indicate how funding is shared between different Faculties. According to these laws and regulations, precise calculations are made to determine the amount of the funding allocated. Future teaching parameters (new laws in due course), however, will be based on a ration of 50 students per teacher, thus improving the ratio given in table 3.1.2.

For the future, the number one priority of the Faculty is to increase and/or improve didactic structures including the laboratories, VTH, and AZDS.

The establishment is autonomous in financial matters regarding contracts and agreements with outside bodies, in fixing the prices of its own services as well as in budget allocation.

It must be emphasised that up to 50% of income from outside services is

allowed to be retained by the Faculty for its own use. At present, it is plausible that loss of income deriving from clinical and diagnostic activities may act as a disincentive for the services provided by the establishment.

### **3. SUGGESTIONS**

To comply with EAEVE suggestions, the Faculty has created a new mobile clinic service which, presently, has 3 vehicles used for out patient care. Funding for the mobile clinic should be maintained and, possibly, increased.

Given that the University funding is not sufficient to completely cover the cost of teaching activities, we suggest that in the future the University distributes student contribution and ordinary funds in such a way as to take into account the differing needs of the various Faculties. This request can be justified by the higher operating cost of teaching in Veterinary Faculty when compared to non scientific courses.

**ANNOTATIONS**



## Chapter 4 CURRICULUM

### 1. FACTUAL INFORMATION

There is a well defined national curriculum, established by the Ministry, which can be only partly customized by the Veterinary Medicine Course Council.

A new University Education System was introduced in Italy in the academic year 2001-2002. Consequently, the concept of academic or **formative credit** (*crediti formativi universitari: CFU*), which presently coincides with the well known ECTS (European Credit Transfer and Accumulation System) credit, promoted and supported by EU, was adopted. The CFU is a student-centred system based on student workload required to achieve the objectives of a programme, preferably specified in terms of the learning outcomes and competences to be acquired (See chapter 5).

The Veterinary Medicine Course Council has a certain degree of freedom to change the curriculum, within the indications given by the Ministry (See Table 4.1.3).

According to Italian legislation, the value of each credit is given by 25 working hours, on average consisting of 12.5 hours (50%) of teaching activity (TA) in the classroom as well as practical work and 12.5 hours (50%) of individual study (IS). However, the percentage of teaching activity and individual study of the CFU depends on the area of study and can vary from 0% TA + 100% IS (e.g. preparation of thesis and practical training) to 64% TA + 36% IS (e.g. Clinical subjects). TA can be theoretical and practical: practical training goes from 15% to 30% depending on the area of study.

The teaching system is organised around the so-called «*settori scientifico disciplinari*» (SSD), areas which include closely related disciplines with specific curricula enforced by the ministerial decrees. There are 10 specific Veterinary Medicine areas (Anatomy, Physiology, Pathology, Food Hygiene, Infectious diseases, Parasitology, Pharmacology, Internal Medicine, Surgery, Obstetrics and Gynaecology). Other areas are included, by law, among those needed to provide a complete education to veterinarians. The Veterinary Medicine Course Council has the authority to change the curriculum and each course content, while maintaining the major indications given by law. Suggestions on curriculum matters are proposed by teaching staff, discussed by the Joint

Committee for Didactics and then submitted for final approval to the Veterinary Medicine Course and Faculty Councils. Decisions about course contents are made by members of the scientific areas involved in the subjects or they are discussed by a specific committee to be better integrated or adapted to the teaching aims of Degree Course.

Moreover, each member of the teaching staff can change the contents of his/her course upon approval by the Veterinary Medicine Course Council. It is therefore obvious that the Veterinary Medicine Course Council has full control over the curriculum matters and the course contents, in respect of law.

In addition, the Veterinary Medicine Course Council has full control over the allocation of hours and over the balance between theoretical and practical teaching, within the limits currently dictated by law.

The degree in Veterinary Medicine is a five year course. The whole didactic load consists of 300 CFU and is organized, for every year level, in two coordinated periods, named "semesters". For each semester, 30 CFU are offered (60 CFU/year level), corresponding to 1500 hours of work per year according to the ECTS system. Each course is characterized by a minimum of 2 to a maximum of 14 CFU. At the end of each course there is an examination to evaluate the quality of the student's work. This evaluation is expressed in a mark out of thirty. CFUs are awarded on passing the exam independently of the mark obtained. The minimum duration and the length of the semesters are established by the Veterinary Medicine Course Council. In the first four years compulsory subjects common to all students are taught. During the fifth year the student can choose among professional Areas of study for a maximum of 20 CFU: the classes are activated if required. Before graduating, students must pass the English language exam (3 CFU) and prepare and present his/her thesis (12 CFU) which will be discussed at the end of the fifth year. Also, the practical training (30 CFU), which is necessary for admission to the State exam for qualification in the professional practice, must be acquired during the fifth year.

It is important to emphasize that in the previous curriculum practical training and thesis preparation periods were not included. Therefore, this new curriculum allows students to obtain qualification for professional practice at least six months earlier than before.

This curriculum is organised in areas of study (Table 4.1.2) where educational and formative aims are well defined (See Annex II). Courses and CIPs are an essential part. At the beginning of each academic year, and whenever necessary, the Veterinary Medicine Course Council consults with the Joint Committee for Didactics and the relative involved teaching staff to establish the organisation of the courses. Within each course, the Veterinary Medicine Course Council may distribute the hours among different modules, in accordance to the educational aims of the course. Within each course, at least 25% of teaching hours must be provided as practical or clinical work. Practical and clinical activities may be carried out also in qualified organizations other than the Faculty, such as Government Health Services (slaughterhouses, dog pounds, and sterilization units), the State Veterinary Service and Research Institutes (Istituto Zooprofilattico Sperimentale dell'Umbria e delle Marche) and other Institutions and private farms and companies operating in the field of Veterinary Medicine.

Each area of study is organised in courses, as listed in Table 4.1.3. Every course is composed of different "modules". The Veterinary Medicine Course Council activates the modules necessary to accomplish each teaching aim. These modules may be selected from the list available from Ministerial decree.

The number of exams is established by the Veterinary Medicine Course Council and corresponds to the number of courses. The exams can be carried out at the end of each course.

In order to obtain the Degree in Veterinary Medicine, students have to attend all the courses and to pass all the relative exams. Student must also have passed with positive marks the English language for medical-scientific purposes test. The Degree thesis consists of a written dissertation to be prepared by the student under the guidance of a qualified supervisor.

Annually, the Faculty Council has to transmit to the Ministry a special schedule concerning the resources at its disposal. This schedule must also show the conformity of the teaching structures with the EC standards.

#### **4.1: Curriculum followed by all students**

Table 4.1.1: General table of curriculum hours taken by all students

Year	Hours of training					
	Lectures	Practical work	Supervised work	Clinical work	Other	Total
	d	e2	e1	e3		
First	557	101	22	0		680
Second	620	159	88	0		867
Third	636	111	55	94		896
Fourth	567	60	6	158		791
Fifth	0	385	0	577		962
Total	2380	816	171	829		4196

Table 4.1.2: Curriculum hours in EU-listed subjects taken by every student

EU listed subjects	Lectures	Practical work	Supervised work	Clinical work	Total
<b>A. Basic subjects</b>					
Anatomy (incl. histology and embryology)	227	59	0	0	286
Biochemistry and molecular biology	103	14	5	0	122
Biology (incl. Cell biology)	46	0	8	0	54
Biophysics	23	4	0	0	27
Biostatistics and Scientific, technical and documentation methods	16	2	0	0	18
Chemistry	42	5	3	0	50
English	30	0	0	0	30
Epidemiology	21	9	0	0	30
Genetics	57	16	5	0	78
Microbiology and immunology	52	15	8	0	75
Parasitology (le malattie mettiamole sulla clinica?)	47.5	12	8	0	67.5
Pathological Anatomy (macroscopic and microscopic)	167	37	36	0	240
Pharmacology	51	15	10	0	76
Pharmacy	4	0	0	0	4
Physiology	171	29	16	0	216
Physiopathology	42	10	8	0	60
Toxicology (incl. environmental pollution)	45	12	7	0	64
<b>B. Animal production</b>					0
Agronomy	42	12	0	0	54
Animal behaviour (incl. behavioural disorders)	14	2	2	0	18
Animal husbandry (incl. livestock production systems)	82	182.5	10	0	274.5
Animal nutrition and feeding	93	23	19	0	135
Animal protection and welfare	14	2	2	0	18
Reproduction (incl. Artificial breeding methods)	45	0	0	19	64
Rural economics	25	11	0	0	36

<b>C. Clinical subjects</b>					0
Anaesthetics	22	0	0	10	32
Clinical examination and diagnostic and laboratory diagnostic methods	124	0	0	52	176
Clinical medicine	34	0	0	92	126
Diagnostic imaging	68	0	0	28	96
Obstetrics	34	0	0	66.5	100.5
Reproductive disorders	23	0	0	9	32
State veterinary medicine, zoonoses, public health and forensic medicine (including parasitic and infectious diseases)	173.5	57	14	55,5	304,5
Surgery	136	0	0	134	270
Therapeutics	34	0	0	14	48
<b>D. Food hygiene</b>					
Certification of food production units	31	10	4	0	45
Food certification	31	14	0	0	45
Food hygiene and food quality (incl. Legislation)	32	10	3	0	45
Food inspection, particularly food of animal origin	64	180,5	3	0	247,5
Food science and technology	15	3	0	0	18
<b>E. Professional knowledge</b>					0
Practice management	31	0	0	5	36
Professional ethics	34	0	0	14	48

Tables 4.1.3: Annual curriculum studies

Year 1	Courses	Subjects	Lectures	Practical work	Supervised work	Clinical work	
I Sem	Biochemistry	Propaedeutic biochemistry	42	5	3	0	
		Chemical and biochemical methods	15	0	3	0	
		General biochemistry	26	2	2	0	
	Physics, statistics and information technology for veterinary medicine	Physics applied to biology and medicine	23	4	0	0	
		Statistics and information technology for veterinary medicine	16	2	0	0	
	Plant and animal biology	Mendelian genetics	15	3	0	0	
		Botany	23	4	0	0	
		Zoology and biology	46	0	8	0	
	Histology, embryology and anatomy of domestic animals	Veterinary histology and embryology	55	10	0	0	
		Anatomy of the species of veterinary interest I	55	10	0	0	
		total	I semester	316	40	16	0
	II sem.	Biochemistry and molecular biology	Systematic and comparative veterinary biochemistry	15	3	0	0
			Nutritional biochemistry	15	3	0	0
			Molecular biology	17	3	0	0
Clinical biochemistry		Clinical biochemistry	15	3	0	0	
Anatomy of domestic animals		Anatomy of the species of veterinary interest II	18	7	0	0	
		Anatomy of the species of veterinary interest III	55	24	0	0	
		Veterinary topographic anatomy	44	8	0	0	
Veterinary physiology I		Veterinary Physiology I	62	10	6	0	
		Total	II semester	241	61	6	0
		Total	First year	557	101	22	0

Year 2	Courses	Subjects	Lectures	Practical work	Supervised work	Clinical work
I sem.	Veterinary physiology II	Veterinary physiology II	62	14	2	
		Endocrinology	40	4	8	
	Microbiology immunology and virology	Veterinary microbiology and immunology	52	15	8	
	Veterinary Parasitology and parasitic diseases	Parasitology	47,5	12	8	
	Conformation and performance evaluation in domestic animals. Species and breeds	Conformation and performance evaluation in domestic animals. Species and breeds	42	12	6	
	Livestock farm economy	Economy of the livestock farm	25	11		
		Livestock buildings	19	4	4	
	<b>Total</b>	<b>I semester</b>	<b>287,5</b>	<b>72</b>	<b>36</b>	
II sem.	Veterinary Physiology III	Veterinary Ethology and Animal Welfare	21	3	2	
		Psychobiology and Physiological Psychology	14	2	2	
	General Veterinary Pathology	Domestic Animal Physiopathology	42	10	8	
		General Veterinary Pathology	42	3	15	
	Animal breeding, Genetics and Biotechnology	Veterinary genetics	21	6	3	
		Genetic evaluation of animals	21	7	2	
		Biotechnology applied to animal production	21	9		
	Livestock farm economy	Forage crop management	19	8		
	Veterinary Parasitology and parasitic diseases	Parasitic diseases	47,5	16	4	
	Animal nutrition	Animal nutrition	21	6	3	
		Physical, chemical and nutritional characteristics of feeds	30	8	7	
	Veterinary Pharmacology and Toxicology	Pharmacokinetics Veterinary chemotherapy	33	9	6	
	<b>Total</b>	<b>II semester</b>	<b>332,5</b>	<b>87</b>	<b>52</b>	
	<b>Total</b>	<b>Second year</b>	<b>620</b>	<b>159</b>	<b>88</b>	<b>0</b>

Year 3	Courses	Subjects	Lectures	Practical work	Supervised work	Clinical work
I sem.	Pathological anatomy I	Necropsy	21	4	5	
		Pathological anatomy I	52	13	10	
	Veterinary Pharmacology and Toxicology	Pharmacology	22	6	4	
		Toxicology	45	12	7	
	Animal nutrition and feeding	Animal nutrition and feeding	21	3	6	
	Feed technology	Feed technology	21	6	3	
	Infectious diseases	Infectious diseases	21	5	4	
		Tropical pathology	21	5	4	-
	Surgical semiology and surgery	Surgery	34			14
		Surgical semiology	34			14
		Radiology	34			14
	English	English	-	30	-	-
	<b>total</b>	<b>I semester</b>	<b>326</b>	<b>84</b>	<b>43</b>	<b>42</b>
II sem.	Pathological anatomy II	Pathological anatomy II	52	17	6	
	Infectious diseases	Infectious diseases	42	16	2	
	Internal medicine, pathology and clinics I	Medical semiology	34			14
		Internal medicine pathology	45			19
		Diagnostic methods	45			19
	Food hygiene	Food hygiene	31	14		
	Food technology	Food technology	31	10	4	
	<b>Total</b>	<b>II semester</b>	<b>280</b>	<b>57</b>	<b>12</b>	<b>52</b>
	<b>Total</b>	<b>Third year</b>	<b>606</b>	<b>141</b>	<b>55</b>	<b>94</b>



Year 4	Course	Subject	Lectures	Practical work	Supervised work	Clinical work	
I sem.	Avian pathology and veterinary public health	Avian pathology and veterinary public health	42	15		3	
		Epidemiology	21	9			
	Food inspection, food certification I	Food inspection, food certification I	32	13			
		Food inspection, food certification II	32	10	3		
	Food quality	Food technology	32	10	3		
		Chemical analysis of food	15	3			
	Surgery I	Anaesthesiology	22			10	
		Surgery	34			14	
	Obstetrics I	Obstetrics	34			14	
		Andrology	23			9	
		<b>Total</b>	<b>I semester</b>	<b>287</b>	<b>60</b>	<b>6</b>	<b>50</b>
	II sem.	Internal medicine, pathology and clinics II	Internal medicine	34			14
			Therapeutics	34			14
Legal medicine			34			14	
Management of veterinary sanitary structures		Management of veterinary sanitary structures	31			5	
		Surgery I	Diagnostic imaging	34			14
Operative surgery			34			14	
Obstetrics I		Reproduction and AI methods	45			19	
Obstetrics II		Vet clinical obstetrics and gynaecology	34			14	
		<b>Total</b>	<b>II semester</b>	<b>280</b>			<b>108</b>
		<b>Total</b>	<b>Fourth year</b>	<b>567</b>	<b>60</b>	<b>6</b>	<b>158</b>
	<b>Total</b>	<b>First 4 years</b>	<b>2380</b>	<b>431</b>	<b>171</b>	<b>252</b>	

Year 5	Course	Subject	Lectures	Practical work	Supervised work	Clinical work
Internal training	Internal medicine and clinics					32
	Surgery					32
	Obstetrics and gynaecology					16
	Avian pathology and veterinary public health					16
	Animal breeding and husbandry			48		
	Food inspection			48		
		total clinical and practical training within the Faculty		96		96
External training	Internal medicine and clinics					75
	Surgery					75
	Obstetrics and gynaecology					37,5
	Avian pathology and veterinary public health					37,5
	Animal breeding and husbandry			112,5		
	Food inspection			112,5		
		total clinical and practical training out or within the Faculty		225		225
		total clinical and practical training		321		321
CIP	Clinical and practical activity - 5th year			64		256
Final thesis	1 CFU			0		0
		total V year	0	385		577
Total			2380	816	171	829

Table 4.1.4: Curriculum hours in other subjects taken by every student

Subjects	Hours in course					
	Lectures	Practical work	Supervised work	Clinical work	Other	Total
Animal handling			25			
Clinic subjects				25		

Animal handling will be done in the AZDS during the first year, whereas clinical rotation within the VTH.

#### 4.2: Elective subjects

Each student has to attend at least 320 hours among the following CIPs. There is no limitation in number, nor in the kind of subjects. Students can choose any subject regardless of the CIP: i.e. they can choose subjects from the same CIP or from different CIPs.

Elective track and courses	Practical work	Clinical work
Surgery		
<i>Small animal surgery</i>		32
<i>Large animal surgery</i>		32
<i>Diagnostic imaging</i>		32
Diagnostic control of hemoprotozoal diseases		16
Endoscopy in internal medicine		16
Ultrasonography in internal medicine		16
Cardiovascular emergency		16
Emergency in internal Medicine and Intensive care		
<i>Poisoning therapy</i>		32
<i>Intensive therapy of endocrine diseases</i>		32
<i>Intensive therapy of lympho-myelo-proliferative diseases</i>		32
Canine reproduction I		48
Canine reproduction II		32
Veterinary Oncology		
<i>Tumours of alimentary and respiratory systems</i>	32	
<i>Tumours of nervous system, muscles and bones</i>	32	
<i>Tumours of skin and uro-genital system</i>	32	
Microbiology of meat and meat products		
<i>Food borne diseases</i>	32	
<i>Isolation and identification of micro-organisms</i>	32	
<i>Molecular identification of micro-organisms</i>	32	
Chemical Contamination of food		
<i>Chemical residues</i>	32	
<i>Toxicology of residues</i>	48	
Food quality system		
<i>Auditing for food quality</i>	32	
<i>Analytical method for food quality</i>	48	

### 4.3: Optional subjects

Eighteen CFU are left to student's choice and may be selected also from other Faculties of the University of Perugia or others authorized Institutions.

### 4.4: Obligatory extramural work

At present, no obligatory extramural work is included in the curriculum. However, student can chose to spend part of practical training for the State examination in private or public Institutions that have an agreement with the Faculty (see chapter 1)

### 4.5: Ratio

Theoretical training/Practical and clinical training = 0.76

Satisfactory:  $x = 1$

Unsatisfactory:  $0.6 < x < 1$

Unacceptable:  $x < 0.6$

Clinical training/Theoretical and practical training = 4.06

Satisfactory:  $x = 4$ ; Unsatisfactory:  $4 < x < 9$ ; Unacceptable:  $x > 9$

### 4.6: Further information on the curriculum

#### A. Basic subjects

In the first two years students have to acquire the fundamentals of classical physics, in order to apply them to biological systems. They also have to understand the basis of information technology, so that they can profitably use a personal computer and personal productivity software. Students have to manage with basics of probability calculus, descriptive statistics and statistical inference. Nonetheless students have also to acquire the most up-to-date theories on the atom structure, the chemical bonds and a good knowledge of organic chemistry and the reaction mechanisms, paying special attention to the structures and properties of the macromolecules of biological interest.

Regarding biology they have to master taxonomy and zoology, the mechanisms of cell functions, the organisation and transmission of genetic information.

Gross and topographic anatomy, even from a comparative point of view, are taught in detail and students have to acquire a sound knowledge of the microscopic organization of each different apparatus of the body.

The dynamic integration and regulation among the different functions and the main physiological parameters of the animals, through the most up-to-date technologies, are taught in the physiology courses along with the fundamentals of animal behaviour and the factors conditioning their welfare also have to be studied.

The main etiological factors (physical, chemical, biological, metabolic, and environmental), and mechanisms involved in the pathologic processes and their relationships are taught along with anatomo-histopathology of the organic systems. Students should also master the necropsy techniques and the basic diagnostic methods, in order to differentiate post-mortem changes from ante-mortem lesions.

The knowledge of the action mechanisms, pharmacokinetics and metabolism of the medicines used in animals of veterinary interest, paying special attention to the species differences, are topics taught at the pharmacology courses.

Before getting into the clinical and professional courses students have to grasp epidemiology of parasites.

Preliminary knowledge such as classification, metabolism, and replication of the most important micro-organisms and viruses responsible for diseases in veterinary pathology are taught during the infectious diseases courses.

## **B. Animal production**

*Animal Husbandry.* Ethology, zootechnic environment and its influence on animals, paying particular attention to hygiene are the basic topics taught during the animal husbandry classes. Students have to get a good knowledge of genetics and biotechnologies applied to the improvement of the different species, especially those of zootechnical interest. Students also have to master the chemical and biological analysis of feed. The study also includes the laws that regulate the preparation and placing on the market of all the substances used in feeding domestic animals. Students also have to master the chemical and biological analysis of feed linked to digestibility and nutritional value. Knowledge of the organisation and management of fodder plants and being able to correctly formulate diets is also required.

## **C. Clinical subjects**

Students have to obtain a good knowledge of the clinic methods used in both direct and collateral semiotic investigations. They also have to carry out general investigations on animals and particularly of their organs and apparatus, as well as

to know the laboratory tests and their diagnostic meaning. An essential part of the training is dedicated to knowledge of the different pathologies, the symptoms and the clinic methods that allow students to make a diagnosis. Special attention has to be paid to the collateral tests (e.g. radiology, endoscopy, ultrasound, electrocardiography and laboratory tests). Students also have to get a good knowledge of the general and local anaesthesia techniques and the main surgical techniques aiming at treating the different diseases of domestic animals.

A good knowledge of the fundamentals of reproduction pathologies, both in male and in female domestic animals, is given during the obstetrics and gynaecology courses. They also have to study parasites and microorganisms in their pathogenic, clinical, diagnostic, prophylactic, and therapeutic aspects.

#### **D. Food hygiene**

Students have to get a good knowledge of the methods and aims concerning the *pre-* and *post-mortem* sanitary inspection of the animals for slaughter. They must understand the fundamentals of hygiene and food technologies applied to production and placing on the market of food of animal origin. Furthermore, they grasp the criteria, methods and techniques concerning tests aimed at assessing the sanitary conditions of the above mentioned products and the scientific basis of the relationship between food and human health. Students also have to get a good knowledge of the sanitary and quality certifications in compliance with the laws in force and the public health requirements.

#### **4.7: Specific information on the practical clinical training**

Intensive 'hands-on' clinical training, provided in small groups of four-five students, has been structured into the teaching curriculum that is taken by all veterinary students starting from the academic year 2005/06.

In particular, during the lecture-free final year, the Veterinary Medicine Course Council has provided structured practical training in clinical and other applied subjects (for details see Table 4.1.3 referring to the 5<sup>th</sup> year study plan as well as the general study plan).

This kind of compulsory 'hands-on' practical training is attended by each student through a comprehensive system of clinical rotations (internal medicine, surgery, and obstetric and gynaecology), and rotations through other applied subjects,

including avian pathology, animal production and food hygiene, lasting 180 hours per student.

The compulsory 'hands on' practical training is carried out on the Faculty premises (visiting rooms, diagnostic laboratories, treating rooms, surgery rooms, intensive care unit and other premises inside the VTH) as well as at the AZDS.

The practical and clinical skills which students need to acquire during the compulsory 'hands-on' practical training, are defined in details (see Annex II showing the timetable and plan of practical activities set up for each module of the 6 clinical and practical subjects involved).

Several teachers supported by other professionals involved in each subject (either Faculty staff or practitioners engaged by the VTH) are in charge of the following-up and assessing of the practical skills obtained by the students.

#### **4.8: Specific information on the practical training of food hygiene**

Students attend a large part of the teaching directly at the slaughterhouse and premises for production, processing and distribution of food.

In particular, all practical classes on meat hygiene are carried out at the local slaughterhouse which is a teaching unit according to the agreement between the Faculty and the municipality of Perugia running the abattoir (see paragraph 6.6 for further details).

Students can reach the slaughterhouse either by car or by bus in approximately 10 to 20 minutes. They are usually divided into small groups of 8-10 students to learn the basic principles of meat hygiene and the slaughtering techniques. Each session lasts 1 hour and is repeated every other day by one lecturer with the assistance of one veterinarian of the Public health service, until the compulsory number of hours is reached.

Teaching at premises other than the slaughterhouse is carried out at local plants (e.g. fishery, meat, and milk plants) and covers all theoretical aspects (see paragraph 6.7 for further details). Practical classes are organized every week, either at these premises or in the pilot plant of the section of Food Inspection.

Visits and lectures are open to all the students of the course, while, for practical work, students are divided into groups of 8-10. The practical work is repeated every hour.

## **2. COMMENTS**

The veterinary curriculum prepares the graduate for the various aspects of the veterinary profession. Special attention is given to companion animals and horses for the internal medicine, surgery and obstetrics courses, to the horse and dairy cow for the reproduction and animal husbandry courses. Other specific parts of the veterinary profession that receive more emphasis during the 5-year course reflect the conditions prevailing in our county where sheep and goats represent an important part of the livestock economy, especially for sheep and ewe dairy products. According to the EAEVE suggestions for other species, such as pigs and dairy cows, the Faculty has appointed several professionals and practitioners as teaching staff. Moreover, for the same reason, Rural Economics and Agronomy have been included in the curriculum.

The whole curriculum consists of 8 semesters during the first 4 years (see table 4.1.3) for teaching of basic subjects, animal husbandry, clinical subjects and food hygiene, including lectures, clinical work, practical work, and supervised work. During the last two semesters (5th year) students perform more hands-on activities and practical training in the so-called professional subjects (internal medicine, surgery, obstetrics-gynaecology, animal production and food hygiene). The curriculum is reviewed every year, according to the national laws, by the didactic committee and by the Course Council. Future trends include the removal of some non veterinary-specific courses so that some credits will be shifted to the professional subjects.

The ratios given in chapter 4.5 are now extremely close to the satisfactory range.

## **3. SUGGESTIONS**

All the suggestions given in the previous EAEVE Report have been thoroughly adopted. In particular, all hands-on activities are now taught to small groups of students. The theoretical training has been reduced. The suggested reduction of compulsory teaching has also been adopted, however it must be noted that the percentage of compulsory teaching is stated by national laws and the establishment has only limited control on these matters. Fortunately, new national laws are



underway and will introduce a reduction of compulsory lectures, hopefully maintaining the same standard of education.

It is advisable to increase the proportion of clinic and practical work within courses. This condition can be reached after the forthcoming completion of the new structures, including VTH, AZDS and teaching laboratories.

**ANNOTATIONS**

## Chapter 5 TEACHING: QUALITY AND EVALUATION

### 1. FACTUAL INFORMATION

#### 5.1: The teaching programme

Co-ordination in the teaching is assured by the Veterinary Medicine Course Council. Within each semester, a co-ordinator guarantees the correct teaching organization providing schedules for practical work.

Moreover, a 12-member **Lecturer-Student joint Committee** is currently set up for the courses of the Faculty according to the Statute of the University of Perugia, with the name of **Committee for Didactics**. It consists of the Dean plus twelve members. Five of them are lecturers and seven are students, appointed by the respective components and then ratified by the Faculty Council.

The Committee for Didactics makes proposals to the Degree Course Council and the Faculty Council, concerning teaching.

In particular this Committee has the following purposes:

- a) to present the Dean with an annual report about teaching, including both statistical and cognitive data and proposals to solve difficulties. The report will be discussed in the Degree Course Council before the beginning of the next academic year;
- b) to make proposals to the Degree Course Council as regards the maximum number of enrolments for each study course based on the lecturers and facilities available;
- c) to make justified proposals about course activation and changes;
- d) to formulate standards in order to validate courses, exams and formative credits for students coming from other courses or faculties and to evaluate periods spent at foreign universities, with particular attention to European exchange programmes;
- e) to make suggestions and proposals to the Faculty in order to distribute teaching duties fairly;
- f) to assess, together with the Degree Course Council, general performance of the students, degree and diploma exams, also in order to improve them and standardise evaluation criteria;
- g) to give an opinion on programme co-ordination and on the teaching calendar;
- h) to suggest a lesson time table;

- i) to oversee teaching evaluation made by students;
- j) to assess and improve tutorship activities;
- k) to acquire statistics on the study course to meet demands deriving from the labour market;
- l) to promote surveys and initiatives in order to improve the quality of teaching;
- m) to make proposals about the management of financial resources devoted to teaching;
- n) to promote and assess teaching experimentation;
- o) to protect students' rights;
- p) to coordinate teaching of new branches or "CIPs" (integrated professional courses) for the degree course or the diploma.

It should be pointed out that, by law, student representatives take part in the Veterinary Medicine course Council and in the Faculty Council.

The lecturers utilise modern e-learning technologies, such as Moodle course management system. At present, there are 18 courses in Moodle, 13 of which dedicated to the Degree in Veterinary Medicine. There are 450 registered members in the system, both students and lecturers: in the past year, 300 members were active and 56 files have been downloaded daily. In addition, other didactic material is available from the server of the Faculty and several sites are directly managed by teachers.

Computer-assisted learning has been implemented in the last few years and presentation of some courses as well as multiple choice tests are available on line from the Faculty site (<http://www.unipg.it/facvet/>).

In the first two years of the degree course, there is integration of preclinical sciences, to ensure proper understanding of normal body systems in the context of the whole animal in health and disease.

The third and fourth years cover integrated pathological, medical and surgical aspects of disease processes, in association with pharmacological therapy both in individual animals and in the flock or herd. The final year consists of clinical rotations, fully integrating the student into the health care team for maximum practical experience, including a significant component of small group teaching and interactive problem solving activities. During these rotations, the students will be under the careful supervision of experts in their respective field.

Moreover, course notes supplement standard veterinary textbooks; for some courses they can substitute the textbook, reducing students' expenses.

The Practical Training (30 CFU; see curriculum), which is necessary for admission to the State Exam for Qualification in professional practice, can be carried out at the Faculty laboratories, clinics and farms. However, all the students have the opportunity to spend this period in external structures thanks to the agreements between the establishment and external bodies, e.g. farms, breeding centres, practitioners, state veterinary services, factories/processing plants, slaughterhouse, external laboratories, experimental zooprophyllactic institutes, Army veterinary centres (Grosseto, Montelibretti - Roma), "Carabinieri a cavallo" Centre in Tor di Quinto - Roma.

Students with an interest in veterinary research can participate in clinical or laboratory-based research.

## **5.2: The teaching environment**

At present, there are no programs or funds for rewarding teaching excellence. At the same time, there is no accelerated promotion based on teaching aptitude.

## **5.3: The examination system**

There is no central examination policy for the establishment as a whole. Students must pass a compulsory exam at the end of each course. Intermediate examinations may also be scheduled. Generally, the exam consists of an oral examination. A practical test and a written examination may be scheduled (see Syllabi in the Annex III). At least two lecturers of the courses take part in the examining board. Marks are in thirtieths. Students need eighteen points out of thirty to pass.

There are three basic sessions: winter, summer, and autumn during lesson breaks. Moreover, three additional sessions are scheduled around Christmas, February and Easter, always after completion of the corresponding degree course lectures. To help students who have attended all the courses and are late with their exams additional exams sessions have been scheduled. All the additional sessions are, however, scheduled in periods without teaching.

Students can, by law, sit an exam several times without restrictions, but, at each session, students can take the same exam only one time. Prerequisite has been

instated to regulate curricular progression. Students can not enrol to the 2<sup>nd</sup>, 4<sup>th</sup> and 5<sup>th</sup> year of the course if more than 50% +1 CFU of that year have not been acquired before the beginning of the next year level. Students can start the training for the State Examination (scheduled in the 5<sup>th</sup> year of the degree course) only if they have acquired all the CFUs of the previous four years.

At the end of their curriculum each student has to defend his/her thesis against eleven lecturers appointed by Magnifico Rettore, according to the national laws.

Once graduated, in order to practise as a veterinarian, it is necessary to pass a State examination. The State examining board, appointed by MIUR on behalf of the Ministry of Health, consists of lecturers of the Faculty and external members of the professional association of veterinarians.

#### **5.4: Evaluation of teaching**

There are three levels for the evaluation of teaching. The quality of teaching is evaluated for all the teachers according to the National law n. 370 dated October 19<sup>th</sup>, 1999 by the "Comitato nazionale per la valutazione del sistema universitario" (National Committee for the evaluation of the University system, Ministerial Committee, 9 members) and by the "Nucleo di valutazione dell'Ateneo" (University Evaluation Board), 9 members and by the Committee for Didactics of Veterinary Medicine.

The students have a key role in the evaluation of teaching and teachers. They are asked to fill in a form anonymously at the end of each course. The form (see Annex IV) includes 8 parts:

1. Student's curricular information
2. Student's commitment
3. Evaluation of teacher's commitment and teaching facilities.
4. Difficulty of course
5. Evaluation of theoretical classes (score 1-5 = bad to excellent)
6. Evaluation of practical activity (score 1-5 = bad to excellent)
7. Additional information.
8. Comments and suggestions.

The forms are checked and evaluated by the "University Evaluation Board". Results are transmitted to the "National committee for the evaluation of the university system" as a report including self-evaluation of various activities of the University (budget, administrative organization, research, and teaching quality). Ministerial

fund availability for each University is partly related to the evaluation of this report. Results of students' evaluation are also communicated to the Faculty Dean and then to individual lecturers. Moreover, lecturers have to present a report on their didactics and research activities every three years to be evaluated and approved by the Faculty Council.

Since 2005, the Committee for Didactics of Veterinary Medicine introduced an additional form including 21 specific questions to better understand student's problems and opinions in order to improve teaching quality (see Annex IV). This form is filled in after passing the exams.

### **5.5: Student welfare**

The Faculty does not own structures to board students and, according to the laws in force, is not planning to build them.

Traditional catered accommodation (formerly referred to as "full board") is managed by the Umbrian Region through ADISU (*Agenzia per il Diritto allo Studio Universitario* - Agency for the right to study at University) which provides 6 halls of residence, accommodating a total of around 960 students in single or double study bedrooms. Four student restaurants offer 1200 seats. Catered accommodation comprises breakfast, lunch and evening meal. Accommodation and restaurant are free of charge for students with low family income and good marks. A recent addition to the food service is The Coffee Point, a place where students can gather, have a coffee, study, and organize cultural activities. ADISU also initiates cultural activities for all students, such as, theatrical productions, concerts and musical performances, workshops, assemblies, and art exhibitions.

Orphans and children of veterinarians, physicians, and pharmacists have a special residence hall at their disposal managed by the respective professional organisations (ONAOSI).

Students, of course, may also find accommodation at private houses, in Perugia or in the vicinity.

Two meeting and three reading rooms for students and a cafeteria are present on Faculty premises, as well as a canteen nearby.

Other facilities are provided for students: CUS is the organisation of student sport at University of Perugia. There are 15 sport activities including soccer, tennis, rugby, swimming. Facilities used by CUS include the "Bambagioni" Sports Centre, the sports village in via Tuderte recently purchased by the University of Perugia, and the campus of the former School of Physical Education (ISEF), which are both close the Faculty. Students are automatically members of CUS and able to become members of all the clubs provided, which include services free of charge or at low prices in the structures of the University or in other sport Centres with special arrangements with the University of Perugia. Finally, the physicians and staff of the University Centre for Sports Medicine are available to students for routine check-ups and monitoring.

The University of Perugia has established a University Orientation Service to assist students in making their way through the various stages of their cultural development and professional training beginning with choosing their degree program, throughout the course of their studies, and after graduation.

Following their degree, graduates can use the service for support in searching for opportunities in the working world. Individual assessment interviews, data bases, free courses on career planning, contacts with companies involved in recruiting and staff selection, and opportunities to meet business representatives through the "Spazio Azienda" are just some of the tools made available to graduates by the orientation service. The service also acts as a reference point for companies and public agencies, from Umbria and outside the region, to obtain CVs and information about new graduates. The Orientation Service has also set up a psychological support program for students in difficulties and an organizational and academic tutoring program for students with disabilities.

Students with social problems receive support from the University ranging from free accommodation and fellowship to medical and psychological assistance, up to tutorial activity for job opportunities.

The University of Perugia provides care for the mental and physical health of all enrolled students and international Erasmus scholarship students. The Psychological Counseling Centre was established in 1999. Students are welcome to meet with expert counselors on an individual or group basis in order to better understand and come to terms with psychological problems. Medical care is also available to non-resident students (medical examinations, prescriptions, clinical testing, referrals for



medical examinations in specialized fields). This service is available in accordance with the ADISU.

For study problems a Committee for student guidance and tutorials has been established and a guide for students is published every year. Moreover, all the teaching staff has tutorial activities, officially scheduled, to support students with academic problems.

Free courses after lesson hours are organised by the Faculty for students with formative debts; lessons are held by 4<sup>th</sup> and 5<sup>th</sup> year under-graduated students and PhDs with a work contract.

## 2 COMMENTS

The general structure of the course and the quality of teaching programme has increased over the past five years after the previous visit of EU Committee. In particular, practical and supervised work as well as clinical work, facilities and services for students have been greatly improved.

The presence of external examiners for the State examination is important for a final evaluation of the teaching quality of the Faculty.

As described above, students have a pivotal role in the design of courses and monitoring of lecturers as well as in the Faculty activities considering their presence in all the Committees and Councils of the Faculty.

## 3. SUGGESTIONS

The examination system could be improved by introducing *in itinere* tests to evaluate student knowledge on discussed topics. Students receiving a positive evaluation will take the final examination only on those topics not evaluated during the course.

To improve the quality of teaching the Faculty is contemplating:

- Reducing the number of students;
- Increasing problem-based learning;
- Studying systems for rewarding teaching excellence based on student evaluation and preparation;
- Obtaining a bus connecting the Faculty to the farms with an agreement with the Faculty;

- Increasing the number of teaching and support staff.

It would be helpful to reward lecturers on the basis of their teaching performance.

## **ANNOTATIONS**

## Chapter 6. FACILITIES AND EQUIPMENT

### 1. FACTUAL INFORMATION

#### 6.1. Premises in General

The Faculty of Veterinary Medicine is located in via San Costanzo, no. 4, on a 5-hectare hillside site close to the historical city of Perugia. The Faculty of Agricultural Sciences, the IZS (the Zoo-prophylactic Institute of Umbria and Marche), the Food Sciences, Technologies and Nutrition building, the Botanical Garden, as well as the student's residence and canteen are also located in the same area. The detailed map is included in the Annex V.

Most offices, laboratories and clinical services are housed in the main structure (building A). The *Polo Didattico* (building C) hosts the central library, aula Barboni, which is a large lecture room, and several lecture rooms as well as an autopsy room, other library and media facilities, and the Dean's office. The Students Office and the International Relations Office are located 300 meters from the Veterinary Faculty (Via Tuderte, 23).

The main improvement from the 1998 visit is the construction of the new **Veterinary Teaching Hospital** (VTH) facility that will be completed spring 2006. The new complex is situated at the extremities of the two wings and is connected to building A surrounding the internal garden (see Annex V). A new building (Administration Offices) was built by renovating an old existing country house near the *Polo Didattico*. It houses the administrative staff of the two Departments (see Annex V). A new small ring for examination of horse lameness has been built (see Annex V). Since the last visit, the previous Institute of Inspection of Food of Animal Origin, now part of the Department of "*Scienze Biopatologiche e Igiene delle produzioni animali e alimentari*" was extended and upgraded (see Annex V). In front of the main entrance of building A and near the VTH a small parking area for clients of the hospital is available. A large student parking lot has been recently opened close to the Student office which is located approximately 300 metres from the Faculty.

In addition, the Faculty of Veterinary Medicine has access to a didactic and experimental agro-zootechnical farm, called AZDS, where several animal species, including horses, cattle, sheep, pigs, rabbits, and poultry are bred. The AZDS was recently converted to a full teaching and experimental resource area for veterinary

and agricultural students. The University of Perugia also owns another two farms (Annex I)

## 6.2. Premises Used for Clinics and Hospitalization

In Table 6.2.1 the overall number of places available for hospitalization are listed. The places for small and exotic animals refer to the potential number of cages and not to the cages presently part of the equipment for the VTH.

Table 6.2.1: Total places available for clinics and hospitalization

Species	Number
<b>Farm Animals</b>	
Horses	20
Cattle	3
Small Ruminants	3
Pigs	2
Others	-
<b>Pets</b>	
Dogs	60
Cats	26
Others**	10

\*\* Reptiles, birds, rabbits, and rodents

Table 6.2.2: Places available for isolation facilities

Species	Number
<b>Farm Animals</b>	
Horses	2
Cattle	2
Small Ruminants	2
Pigs	2
Others	75
<b>Pets</b>	
Dogs	2
Cats	3
Others**	25

\* poultry

\*\* bird

An animal reproduction laboratory as well as facilities for the visit of large animals are available at the AZDS.

## 6.3 Premises for Animals

The facilities for animal rearing are described in the Annex I.

## 6.4: Premises used for Lecturing, Group Work, and Practical Work

Table 6.4.1

Rooms	Seats	Building	Lecturing	Group Work	Practical Work
Room I	50	C	Yes	-	-
Room II	108	C	Yes	-	-
Room III	108	C	Yes	-	-
Room V	126	C	Yes	-	-
Room VI	63	C	Yes	-	-
Room XI	56	C	Yes	-	-
Barboni Room	176	C	Yes	-	-
"Aula Magna"	156	A	Yes	-	-
Animal Production Classroom	25	A	Yes	Yes	-
Food Inspection "Aula Magna"	300	D	Yes	-	-
Food Inspection Classroom	40	D	Yes	Yes	-
Food Inspection Room	20	D	Yes	-	-
Microscopy room (Room VIII)	45	C	Yes	Yes	-
Computer room (Room IV)	28	C	Yes	Yes	-
Parasitology Classroom	60	C	Yes	Yes	-
Anatomo-pathology Classroom	50	A	Yes	Yes	-
Animal Prod. Biotechnology Lab	3	A	-	Yes	Yes
Animal Prod. Chemical Analysis Lab	10	A	-	Yes	Yes
Food Inspection Teaching Lab	16	D	Yes	-	Yes
Food Inspection Meat Lab	8	D	Yes	-	Yes
Food Inspection Microbiology Lab	8	D	Yes	-	Yes
Food Inspection Chemistry Lab	12	D	Yes	-	Yes
Food Inspection Reading Room	8	D	Yes	Yes	-
Necropsy room	60	C	-	-	Yes
Necropsy room	30	A	-	-	Yes
Anatomy Lab	30	A	Yes	Yes	-
Myology Lab	25	A	Yes	Yes	Yes
Virology and Microbiology Lab	30	A	Yes	Yes	-
Internal Medicine Lab (haematology)	10	A	-	Yes	Yes
Internal Medicine Lab 1 (clinical chemistry)	10	A	-	Yes	Yes
Internal Medicine Lab 2 (clinical chemistry)	10	A	-	Yes	Yes
Large animal surgery room (gynaecology and obstetrics)	30	A	-	Yes	Yes
Small animal surgery room	10	A	-	Yes	Yes
Small animal surgery room	15	A	-	Yes	Yes
Small animal surgery room	5	A	-	Yes	Yes
Small animal surgery room (gynaecology and obstetrics)	4	A	-	Yes	Yes
<b>Total number</b>	<b>1745</b>	-	-	-	-

All the first-year students enrolled in the course of Veterinary Medicine receive 16 hr compulsory training specifically devoted to health and safety measures as enforced by current Italian law (D.L. 626/1994). These classes are held by specialized non-Faculty staff. Each Department has appointed persons in charge of

health and safety measures who have received special training. The University of Perugia has established a specific office in charge of enforcing the law and periodically verifying its applications. Moreover, all the rooms for lecturing conform to the current laws (626/1994 and 242/1996) regarding emergency exits, doors, fire extinguishers. All the stairs are now provided with anti slip strips. The premises for group and practical work utilised by students are provided, according to their typology, with the necessary safety equipment (e.g. fire and smoking alarms, first aid cabinets, eyewashes, warning notices and safety instructions).

## **6.5: Diagnostic laboratories and clinical support services**

### *6.5.1 Diagnostic laboratories*

Diagnostic laboratories are located mainly in Building A, close to the VTH. They are the clinical pathology, microbiology, parasitology and immunology laboratories. The services provided include diagnostic veterinary bacteriology, mycology, virology and parasitology, and staff are also involved in providing hormone analyses for clinical pathology. The histo- and neuro-pathology, immuno-histochemistry, and ultra-structural pathology laboratories perform additional diagnostic investigations. Laboratories of internal medicine perform physics-chemical, haematological and cytological examinations on liquid and/or animal biological samples (see Annex VI for more details). Laboratories of Food Inspection perform HACCP and complete food analysis, while Animal Production laboratories carry out complete feed analysis. (See Annex VI).

### *6.5.2 Central clinical support services (VTH)*

At the establishment several services are offered (See Annex VI for more details). Most of these services are provided to referral cases sent by practitioners for consultations. At least one specialist Faculty member and one or more PhD veterinarian in each of the above mentioned services are available 5 days a week during the opening hours of the VTH.

## **6.6: Slaughterhouse facilities**

The Faculty does not have its own abattoir for teaching purposes. However, it has signed an agreement with the public slaughterhouse of Perugia which allows all the students both under- and post-graduates, to perform theoretical and practical activities under the supervision of teachers of the Faculty with a degree in Veterinary Medicine and the collaboration of the Veterinary staff who work in the plant. Within the plant there is a classroom for 30 students.

Herein, briefly the main characteristics of the slaughterhouse located in Perugia:

- The slaughterhouse is situated in Ponte San Giovanni, 10 minutes away by car (20 minutes by bus).
- It is an industrial plant provided with EU authorization and is managed by a cooperative of slaughterers.
- Here bovine animals, solipeds, swine, sheep and goats are slaughtered. The plant has three slaughtering lines: one for bovine/solipeds, another for swine and the last one for sheep and goats.
- The production capacity is of about 30 bovine/solipeds/hour (40 calves/hour), 90 swine/hour, 80 sheep/goats/hour.
- There is a locker and changing room where students put on helmets, overalls and boots.

The slaughtering of the animals is executed mainly in the morning, according to the following schedule:

- Monday: swine;
- Tuesday: bovine, solipeds, and sheep
- Wednesday: swine and sheep
- Thursday: bovine and swine
- Friday: bovine and solipeds

### **6.7: Foodstuff processing Unit**

The Faculty has agreements with foodstuff processing plants (Salumificio Cassetta, Arrone, TR, Salumificio Bettona, Bettona PG; Cooperativa Latte Grifo, Ponte San Giovanni, PG; Circeo Pesca, Corciano PG) where undergraduate students can observe the production lines of processed meat, dairy, and fishery products. In the same plants, students also do practical work during their practical training.

In the Food Hygiene Section (Building D), the Faculty has a fully equipped foodstuff processing unit where carcass examination and meat inspection are also carried out in a specific area. This unit has a cold-room and also an acclimatised ageing room for fermented products (cheeses and salami) where students can do hands-on work.

### **6.8: Waste management**

To treat the waste materials produced by the different activities of the Faculty for didactic, clinical, diagnostic, and research purposes, the Faculty Council has appointed a general manager, Dr. C. Floridi, who is in charge of supervising their

correct disposal with the support of two nominees, one for each department. These are helped by nine collaborators, one for each section.

According to the type of waste (liquid or solid) and category (toxic-chemical waste, potentially infectious biological waste, cadavers, carcasses, organs and by-products of animal origin, and excreta) specific procedures are followed, each one requiring an appropriate stocking system normally localised close to or within the production site (laboratory, unit, section), a temporary depot site within the Faculty premises, and final disposal which is currently assured by a specialised firm, according to a contract with the University of Perugia.

### **6.9: Future changes**

1. Two hundred square meters in the same building as the student Office have been assigned to the Faculty by the Rector of the University for didactical purposes.
2. At the moment, the VTH has a narrow access for client cars and transport vehicles (horses and farm animals) and the layout of the street does not provide an alternative exit onto the main street. In the next months the access to the VHT will be improved with a new exit and a one way street around the VTH.
3. The old parking lot present around building A will be renovated.
4. A new reserved parking lot for the clients of the VTH will be arranged around the building C.
5. The University of Perugia has recently bought a country house on the Faculty premises, that will be renovated and used as Dean's Offices, Guest rooms and a small canteen.
6. Implementation of new or restructured laboratories for activities related to EBVS.

## **2. COMMENTS**

Adequacy of the buildings for undergraduate teaching: The overall idea is that the Faculty has the necessary lecture halls, but could benefit from an additional number of large laboratories. The external area is necessarily limited thus making parking, access and internal viability for clients at times difficult.

Regarding the adequacy of the equipment for undergraduate teaching, since the last visit, the Faculty has made a strong effort in purchasing much equipment which has greatly improved the teaching quality. However, some equipment (e.g. the CT) outdates rapidly which makes upgrading all of it very difficult, due to lack of funds.



Regarding the adequacy of the maintenance of buildings, the buildings are not in an optimal state of maintenance especially the main building A. The costs for maintenance of the buildings are under the responsibility of the University of Perugia.

Other services such as neurology, urology, centralised drug dispensary, and toxicological analysis laboratory should be implemented in the near future.

### **3. SUGGESTIONS**

The main complaint with the present situation refers to the limited availability of space that negatively affects day to day operations and greatly hampers future expansion projects.

- A better access to the VTH would be highly recommended to facilitate vehicle access especially for emergency services.
- An additional parking area for the Faculty staff, students, and clients of the VTH would also be useful.
- Building A requires some renovation work on clinics to upgrade them to the same standard as the VTH.
- More funds are necessary to upgrade the existing equipment located in the clinics and laboratories of the Faculty and to buy new equipment for teaching, including MRI and Helical CT.
- Facilities, equipment, and services for teaching at the farm (AZDS) should be increased, implemented or acquired to accommodate more farm animals.

**ANNOTATIONS**

## Chapter 7 ANIMALS AND TEACHING MATERIAL OF ANIMAL ORIGIN

### 1. FACTUAL INFORMATION

#### 7.1: Basic subjects

**Anatomy.** For practical anatomy training, viscera coming from the slaughterhouse and pet cadavers coming from the clinics are collected once a week. The most common viscera examined belong to cattle and pigs. Occasionally, normal viscera from equine and canine animals submitted to necropsy examination are used. A number of birds are also examined during practical anatomy training. The teaching material is usually stored for five days a week in a cold room localized in the anatomical and dissection classroom (Polo Didattico or Building C). This material can be examined by the students themselves or under teacher supervision. Animal material is specifically collected depending on the teaching subjects during the course. For practical anatomy training, skeletons and bones of main domestic species, horses and cattle limbs and a number of anatomical models are available. Animal material is also used to prepare histological slides for practical training. They are stored into a histotheca with about 2000 slides.

**Pathology.** For the learning of necropsy technique and pathological anatomy, students utilise large and small animal dead bodies collected from the clinics of the Faculty and private veterinarians. Necropsies on livestock are also done in the Section of Diagnostic of the nearby Istituto Zooprofilattico. Whenever possible, field necropsies are arranged for students by the teaching staff. Moreover, dead swine bodies come from a private Company in charge of disposal of dead swine. About 7000 Kg of pathological viscera deriving from the slaughterhouse are submitted to gross pathology examination every year during practical training in Pathology subjects. After gross examination, pathological animal material is used to prepare histological slides for practical training, stored in a histotheca open to the students, which collects at present about 80.000 slides. These slides are available for consultation by the students through a paper retrieval system up until 2004 and via electronic system from 2005.

Table 7.1: Number of necropsies over the past 3 years

Species	2005	2004	2003
Farm/large animals;			
Cattle	54	51	3
Equines	48	52	39
Small ruminants	130	118	122
Pigs	113	109	100
Other farm animals (poultry and rabbits)	2020	2023	2061
Small/pets			
Dogs	195	170	185
Cats	76	66	50
Other pets	200	6	5

For practical training, other materials of animal origin are used as detailed below.

- Chemistry, Biochemistry and Molecular biology: blood samples from in-patient animals at the Faculty are used to perform clinical chemistry assays. Moreover, blood samples are also used for preparative methods (filtration, centrifugation, solvent extraction and so on). Occasionally, blood and rumen juice samples are collected from sheep and cattle respectively for practical training in clinical biochemistry, systematic biochemistry and biochemistry of nutrition;
- Genetics and Biotechnology: blood samples and oocytes from regularly butchered animals;
- Parasitology: viscera from slaughterhouses, faeces and blood samples for coprological and serological diagnosis of parasitological infections;
- Pharmacology and Toxicology: Serum, urine, and tissue samples (muscles and annexed skin, specially from finfish) to evaluate drugs and poisons;
- Physiology: Healthy, small animals from private owners, sheep from University farms and prestomach juice and blood samples are used in the practical Physiology training. Private pets, animals in public kennels and large animals are used for the study of animal behaviour;
- Physiopathology Histopathology slides from biopsies and necropsies;
- Epidemiology, Immunology and Microbiology: tissue and biological samples obtained from necropsies at the Faculty or animals hospitalised in VTH for diagnoses.

## 7.2 Animal production

Practical training in animal production regarding the morphological evaluation is carried out by the students on in-patient animals at the Faculty and on livestock housed on the university farms (AZDS, Casalina, and St. Apollinare) and Vocabolo

Pilo for a total number of about 210 cattle, 140 sheep, 4 pigs and 12 horses. Moreover, about 100 horses and about one hundred other animals, including buffalo, deer, fallow deer, mouflons and wild boars are also available for teaching animal production in farms linked by an agreement to the Faculty. Animal Production staff associated to the "Centro di Studio del Cavallo Sportivo" are in charge of evaluation of 80 Maremmano horses per year, for the selection of the best stallions and mares to be included in the breeding program.

A number of farms with poultry (3), wild fowls (2) and exotic birds (1) are also regularly visited by the students during the course.

### 7.3 Food Hygiene

Practical training in Food Hygiene is carried out on animals (for *ante-mortem* inspection) at the local slaughterhouse of Ponte S. Giovanni and on viscera (for *post-mortem* inspection) deriving from local slaughterhouses, including the Ponte S. Giovanni establishment. Students also use "pilot processing and raw meat/necropsy units" which are located in the Section of Food Hygiene of the Faculty. Every week, meat, dairy, and fishery products are submitted to the Faculty from local businesses and processing plants. Several agreements with local processing plants have been established to assure the availability of raw and processed materials.

### 7.4 Consultations

The VTH deals predominantly with referred cases. The VTH is open all year round, 5 days a week (Monday-Friday). On working days, the VTH is open from 8.30 a.m. to 1 p.m. for both consultations and referred cases. Out-patient visits are scheduled by appointment, but emergency consultations are always possible. Most large-animal patients are referred.

When required, out-patients may be visited by means of the clinic mobile service (See 7.8).

Table 7.4: Number of animals received for consultations in the past three calendar years

Species	2005	2004	2003
Farm/large animals;			
Cattle	17	13	12
Equines	447	354	443
Small ruminants	11	7	8
Pigs	3	2	3
Other farm animals*	202	204	210
Small/pets			
Dogs	3483	3310	3246
Cats	404	454	445
Other pets**	603	341	322

(\*) mainly rabbits (\*\*) turtles, parrots, reptiles, dwarf rabbits and rodents, guinea pigs etc.

### 7.5: Hospitalisation

Table 7.5: Number of patients hospitalised in the clinics in the past three calendar years

Species	2005	2004	2003
Farm/large animals;			
Cattle	7	4	4
Equines	252	200	275
Small ruminants	6	2	3
Pigs	0	0	0
Other farm animals*	0	1	3
Small/pets			
Dogs	503	509	610
Cats	79	83	69
Other pets**	0	1	1

(\*)mainly rabbits

(\*\*) exotic animals as previously defined

### 7.6 Vehicles for animal transport

The Faculty bought a horse trailer in 2001, while a small van was already present at the last EAEVE visit. The vehicles provide transport of sick animals from farms to the Faculty when necessary. Usually, the clients are charged for the transport when the animals are not transferred for teaching purposes.

### 7.7 Emergency service

The emergency service is structured as follows:

1. An emergency service for equine patients and food producing animals. Patients may be admitted 24 hours a day subject to call out to a dedicated mobile telephone number or the mobile telephone of the clinician team of the VTH who receives emergency call and provides reference point for the organization of the services at the structure.

2. An emergency service for small animals. Patients may be admitted 24 hours a day subject to call out to a dedicated mobile telephone number, or the mobile telephone of the clinician team of the VTH, that indicate the arrival of cases referred by practitioners.

In addition, an emergency 24-hour care service is available for all hospitalised patients. This emergency service is provided by rotation groups of near graduates students, who are supervised by post-graduated students and academic staff. After the first-aid emergency service the patient is sent to the ICU (Intensive Care Unit) or to the specific therapy units. The new ICU was set up to ensure assistance for critical cases (for further details see Annex VI).

### **7.8: Mobile Clinic**

The mobile clinic service is available on request for veterinary assistance and emergency during the opening time of VTH.

Presently, three vehicles can be used in the mobile clinic service, a Hyundai with 6 seats, a 9 seats Ford Transit and Renault Trafic. When necessary, these vehicles are equipped with basic medical supplies and with any other mobile medical instruments of the establishment, such as ultrasound, electrocardiograph, endoscope. For the mobile clinic service, private vehicles owned by Staff of the Faculty are also used. The vehicles are kept in a protected parking area. The number of visits per year made by the mobile clinic service is about 250. The majority of visits refers to horses, cattle, and small ruminants as well as to poultry farms.

### **7.9: Other information**

Animals awaiting slaughter in the nearby Ponte San Giovanni slaughterhouse are available for ante-mortem visit by students supervised by food hygienists or clinicians. In addition, animals in the AZDS (see point 7.2) and the other two farms of the University are also used for practical training. For clinical training purposes, students may participate in other clinical activities performed by staff of the establishment such as:

- evaluation of fertility on 60 bulls of the Associazione Nazionale Allevatori Bovini Italiani da Carne (National Breeder Association of Italian Beef Cattle; S. Fortunato della Collina, PG);
- evaluation of health of Maremmano horses during the performance tests in the Military National Centre of Grosseto;

- Local ENPA kennel of Collestrada (Perugia);
- Diagnostic laboratory test from both out- and in-patients at the establishment.

The clinical premises of the VTH are modern, well designed and functional. All the facilities of the VTH are in excellent condition. Regarding instrumentation, the clinics and their laboratories are very well equipped with the latest technologies. Overall, the expertise of the clinical staff is of a high standard and extensive even if, at present, some specialists are lacking in different clinical fields. However, clinicians with special interest in specific disciplines provide referral services. There is no other outside practice whose organisation is comparable to that of the VTH in the area in terms of facilities, equipment and expertise. It is likely, however, that some local practitioners offer longer opening hours.

About 80% of all the cases are referrals ranging from 65% to 95%, for small animals and horses, respectively. A balance between referrals and primary cases is sought by the establishment in order to guarantee basic training on routine cases in the clinical field and to provide specialistic activities to students and practitioners.

At the establishment, several clinical specialisations are covered during the opening hours of the VTH by the staff of the Faculty as listed in the Annex VI. Seven external specialists in livestock (bovine, pig, horse) have an agreement with the Faculty and are consulted whenever required.

The fees for clinical services are based on those stated by the local Board of Veterinary Surgeons. Generally, they are higher than those charged by practitioners.

VTH co-operates with several practitioners from the region of Central Italy for referral cases. Different diagnostic services (e.g. anatomohistopathology, cytology, parasitology, microbiology, veterinary toxicology, haematology and clinical pathology, Holter ECG, imaging diagnostic investigations) are also available to external practitioners. A number of practitioners participate in teaching activities under the supervision of the Faculty teaching staff. Several agreements with public veterinary service and private farms assure opportunities for extramural practical work with satisfying feedback regarding the level of Clinical training. Moreover, agreements with external organisations are routinely activated to provide student training in other clinical subjects (see paragraph 4.1 and 5.1).



Since 2000, the administrative system for clinical investigations is centralised using a database in which each patient is recorded and identified by species. Clinical history, diagnostic investigations, diagnosis and therapies are kept in different computer-based systems for each specific operative unit. The Faculty has recently bought a computer network connected by a LAN to Internet with a computerized system for the processing and consultation of clinical records, providing modern management of clinical activities.

## 7.10: Ratios

### 7.10.1: Animals available for clinical work:

Ratios:

#### a. Students/production animals

$$\text{No. students graduated 2005/No. production animals} = 96/1359 = \mathbf{14,2}$$

$$(20=x= 5)$$

#### b. Students/companion animals

$$\text{No. students graduated 2005/No. companion animals} = 96/4490 = \mathbf{46,8}$$

$$(50=x= 20)$$

### 7.10.2: Animals available for necropsy:

Ratios:

#### a. students/post-mortem examinations (including poultry)

$$\text{No. students graduated 2005/No. cadavers necropsied} = 96/2836 = \mathbf{29,5}$$

$$(x>4)$$

#### b. students/post-mortem examinations (not including poultry)

$$\text{No. students graduated 2005/No. cadavers necropsied} = 96/816 = \mathbf{8,5}$$

$$(x>4)$$

## 2. COMMENTS

- Compared to the previous visit, the provision of materials for teaching anatomy is now more satisfactory and the flow of animals for dissection is more regular throughout the course. The number of animals and range of species for dissection has been increased and a stock of such material is available in the cold room adjacent to the dissection rooms. Moreover, anatomy teaching staff has more teaching materials than in the past years, including anatomical models. The range of fixed teaching materials in anatomy has been increased,

stored in a ever growing histoteca and regularly open to students.

- Using an electronic database system, histopathology slides from pathological material are stored and made available to the students during their practical training or thesis working, from 9 a.m. to 5 p.m. five days a week in the Section of Pathology and Veterinary Hygiene. Moreover, an extensive atlas of histopathology can also be consulted at the Faculty server, at the teaching web site.
- Referring to the specific suggestion during the last EAEVE visit, clinical activity has been strongly increased with the active involvement of the students. A mobile clinic service has been created and implemented in the past years.
- Moreover, a 24-hour service for treating emergencies of hospitalised cases is now offered with active participation of students as part of their clinical training.
- The implementation of the AZDS and the availability of new transport vehicles have increased the caseload in livestock, including pigs, allowing more routine practical and clinical work, including routine veterinary treatments.
- Given the low number of cattle, small ruminants and pigs coming from the farms, students can also participate in necropsies on livestock carried out in the Diagnostic Section of the nearby IZS in force of an agreement between the Faculty and the cited Institute.
- Since 1998, the major developments in the clinical services include mobile clinical service, diagnostic imaging service (CT and eco-Doppler machine, video-endoscopy), ICU, additional specialisations, and the VTH.
- The general management of the VTH follows the guidelines of Good Veterinary Practice which is also taught to the 4<sup>th</sup> year students (see chapter 4 – Curriculum).
- Over the past few academic years, a number of practitioners have been employed for teaching with the purpose of increasing the caseload of large animals, pigs and exotic animals as well.
- The increase of day-hospital activity justifies the decrease of long-term hospitalisation rate.
- Compared to the previous visit, the total number of necropsies performed in the Faculty has decreased. This negative trend, referring to livestock, may be due to the decline of the number of farms and to the current BSE regulations, limiting the movement of dead cattle. Therefore, in order to increase the number of necropsies of large animals an agreement with the IZS of Umbria and Marche has been undersigned. The decreased number of pet necropsies points out the general inclination of eluding post-mortem examination, also reported by the European Pathologist members of the European Society of Veterinary Pathology.

Moreover, the general economic situation is negatively affecting pet the market. In spite of this, the number of necropsies for students is still satisfactory also due to the reduction of the number of students.

### **3. SUGGESTIONS**

Considering the very high number of practitioners in Perugia and its neighbourhood it is unlikely that the number of animal available for clinical work will reach a fully satisfactory ratio. The easiest way to further increase this ratio could be the additional reduction of student numbers, but at the moment this is unacceptable, given the current policy of the University.

An increase in the availability of livestock, as well as more agreements with practitioners might improve the situation.

On the other hand, the number of necropsies will certainly increase when post-mortem diagnostic investigation becomes compulsory for all animals hospitalised or those visited for consultation and dying at the VTH.

**ANNOTATIONS**

## Chapter 8 LIBRARY AND LEARNING RESOURCES

### 1. FACTUAL INFORMATION

#### 8.1: Library

The library of the Veterinary Faculty is a section of Centro Servizi Bibliotecari (CSB) of the University of Perugia situated in building C (*Polo Didattico*). The library is 433 m<sup>2</sup> wide and has of two levels: ground floor with books and journals storage rooms (book stacks) and an audio/video room; first floor with reading and consultation rooms, offices, and work areas (computer area) distributed in two adjacent buildings. The main change from the previous visit is that now the two buildings are connected by an internal stairway. One reading room has book stacks with recent journal for free consultation. The library also has a document delivery system (free of charge from other Italian libraries and with charge from foreign libraries) for journals not available at the library.

The library participates on the cataloguing of its own journals within the National Periodical Catalogue (*Archivio Collettivo Nazionale dei Periodici*). Books and journal collections are devoted primarily to Veterinary Medical Sciences, and are available to all the students, academic staff, veterinary practitioners and public health veterinarians. If veterinary practitioners or those of public health wish to loan books or journals they should present a specific request or a letter of authorization by a Faculty lecturer.

The library is managed by the Director and the Library Council (see Chapter 2). The council meets when necessary to discuss budget, major collection developments, and other issues.

**Main library.** The library is specific to the veterinary training establishment and it serves primarily the Faculty. The annual operating budgets (€) over the past three years were:

- 2003: 95,030
- 2004: 97,934
- 2005: 65,000

Library opening hours:           8:30 –18:45 from Monday to Friday  
  8:30 – 13:30 (August from Monday to Friday)

	Number
Full-time employees	3
Full-time equivalents or part-time employees	3 FTE*
Journals received each year	165 (in 2005)
Student reading places	70 + 2 places (for language learning laboratory)
Loans to students per academic year	1475 (in 2005)
Consultation	1065 (in 2005)

\*1 part-time plus 20 working students who work in the library for a total of 150 hours and are paid by the University Administration

\*\*August: 8:30 – 13:30 from Monday to Friday

The library has 12 computers for students with free access to online databases (PubMed, CAB, Ovid, and other resources). The CSB also provides a virtual library, available from computer connected to the university server, where many full-text electronic journals are available (<http://www.unipg.it/censerbi/homePE.html>).

Books, journals and web net access are available to students also at the library of the *Istituto Zooprofilattico sperimentale dell'Umbria e delle Marche* (the Zooprophyllactic Institute of Umbria and Marche, IZS).

A subsidiary, departmental library for consultation of specialized books by students, computers connected with University network, CDs, and videos are available at the Section of Food Hygiene which is open during the working hours of the Section. A general list of the Athenaeum and IZS (called Aleph) journals, books, and audiovisual material (CD, DVD, and VHS) is available in every Department of the University and is accessible on-line.

## 8.2: information technology services (ITS)

**a) Audio-visual service** The Audio-visual service is specific to the veterinary training establishment and it serves the Faculty only.

	Number
Full-time employees	3*
Full-time equivalents of part time employees	3*
Total videocassettes (VHS) available	100 (86 bought after 1998)

\* the same as those in the main library

In the library there is a viewing room with 7 places. The viewing room is open during library opening hours.

**b) Computer service** The computer service/department is specific to the veterinary training establishment and it serves the Faculty only. From 1998, 13 additional computers have been bought.

	Number
Full-time employees	3 <sup>a</sup>
Full-time equivalents of part time employees	3.2 <sup>b</sup>
Computers available in the service	6 <sup>c</sup>

<sup>a</sup> the same as the main library

<sup>b</sup> the same as the main library plus 2 temporary contracts for web site organisation and computer assistance).

<sup>c</sup> some computers in the departments dedicated to student work, thesis and bibliographic research.

Students have free access to these computers for their own use in accordance with the University regulations and national and international laws. For use of Library computers they have to sign with name, surname, time of entry and exit.

In addition, there is a computer room with 12 positions which is normally utilised for classes, but can also be used by students themselves during free classes time. The computer room is open in the same hours as the main library.

The library service doesn't provide teaching in the use of computer.

No teaching interactive CD-ROM is present at the moment in the library, but some lecturers offer their teaching materials on-line in the internet site of the Faculty and Moodle administrator (see chapter 5.1).

## 2. COMMENTS

Students seem to make good use of the facilities in conducting the necessary research for thesis and academic presentations and in borrowing books.

There is a good range of journals, and books which are scientifically adequate. However, a number of journal titles have been cancelled in recent years since the library budget has not kept pace with the increasing cost of journals. In any case, the reduction has been compensated by the increasing number of full-text electronic on-line journals (more than 2,000 in the fields of our interest), because CSB participates in purchasing agreements with other Italian University libraries. Therefore, the reduction in the budget provided in the last year (see point 8.1) is justified by the fact that a part of journal subscription fees are paid directly by CBS.

The document delivery system and the free access to other connected libraries (IZS) allow the students to consult a large number of books, journals and titles.

In practice, journals held in both print and electronic format appear to satisfy the needs of the undergraduate students. The staff are committed and responsive to students. The students seem to appreciate ITS support tools, but it is still underused.

The work spaces are considered generally adequate in terms of availability, but their numbers has proved to be insufficient in some instances, and provision for additional space is required especially for loan service and reading rooms.

The Library opening hours seems to be sufficient. Students are in favour of longer opening hours, but financial constraints are setting back the Faculty efforts to change things.

In order to further develop the self-learning system the Faculty has established an e-Learning Committee.

Students complain of the low number of text-books for loan and/or consultation. However, the library is not allowed to buy more than one item of each text-book, in accordance with current regulations.

### **3. SUGGESTIONS**

Reorganization of the space and better distribution of offices and services would be beneficial. Compatibly with the limited area, it would be essential to find additional work spaces for library users. It is also necessary to increase the number of interactive CD-ROM. The installation of a conditioning system also in the consulting and reading rooms would improve the comfort during the summer.

### **ANNOTATIONS**



## Chapter 9 ADMISSION AND ENROLMENT

### 1. FACTUAL INFORMATION

#### 9.1: Student numbers

The composition of undergraduate students enrolled in the academic year 2004/2005 is listed below in table 9.1.1

Table 9.1.1 Undergraduate student composition

Number of students		
a.	Total number of undergraduate students	790
b.	Male students	270
c.	Female students	520
d.	Nationals /Italian citizens	761
e.	Foreign students	29
	- from EU countries	17
	- from non-EU countries	12
f.	1st year students	108
g.	2nd year students	97
h.	3rd year students	174
i.	4th year students	32
j.	5th year students	154
k.	6th or subsequent year students	225

Table 9.1.2 specifies the numbers of postgraduate students including those enrolled at the two specialization schools, post doctoral degrees and masters at the Faculty of Veterinary Medicine of Perugia

Postgraduate student composition: 2003 -2004		
n.	Total number of postgraduate students	122
o.	Male students	51
p.	Female students	71
q.	Nationals/Italian citizens	119
r.	Foreign students	3
	- from EU countries	1
	- from non-EU countries	2
s.	1st year students	50
t.	2nd year students	32
u.	3rd year students	40
	Total number of students in the establishment (a + n)	912

## 9.2 Student admission

The minimum enrolment requirement for Italian students is a General Certificate of Education, obtained after five years of secondary school.

As regards students coming from countries outside the EU, the minimum enrolment requirement is an education qualification equivalent to the Italian one; the evaluation of this qualification is carried out by consular and academic authorities in conformity with bilateral and multilateral agreements in force.

Two different student selections (one for EU- and the other for non-EU citizens) are carried out according to current National regulations.

**EU students** According to the MIUR regulations, enrolment in the Faculty of Veterinary Medicine is determined by a written examination with multiple choice questionnaire. The same questionnaire is provided by MIUR and is taken on the same day all over Italy usually within the first two weeks of September. The questionnaire consists of 80 questions; 1 point is given for each correct answer, while 0 is given for each blank answer and -0.25 for wrong ones. Questions concern biology (n=18), chemistry (n=18), mathematics and physics (n=18), according to the curriculum studied in secondary school; some questions (n=26) aiming at checking the student's ability to use logic and to understand texts are also administered. On the basis of the final marks, a graded list of students is drawn up.

**Non-EU students** After passing the test aimed at checking knowledge of the Italian language, non-EU students must take the same enrolment examination as Italian students.

The students have a very variable knowledge base in scientific disciplines depending on their studies at secondary school.

Since the 1989/90 academic year, the Faculty of Veterinary Medicine programmed limited enrolment (*numerus clausus*), in conformity with MIUR directives.

Each year, the Senate of the University of Perugia, according to the Faculty Council's proposal, communicates to MIUR the maximum number of students (EU and non-EU student) that can be enrolled in the first year of the Course. The total number of students may vary depending on the so-called "Minimum Requirement of

MIUR". The academic authorities refer the situation concerning their Faculty to MIUR for comparison with the national trend.

For the 2004/2005 Academic Year a total of 100 students can be enrolled: 95 Italian and EU citizens plus 5 non-EU citizens. These include one student from Argentina and another one from China plus 3 non EU citizens with a scholarship from either the Italian Government or their Government.

There is not a limited number on student places funded by University. It depends on family income and student merit which is established each year.

Extra students (i.e. by transfer from other Faculties of Veterinary Medicine) may be admitted to the undergraduate veterinary course only in the case of available places due to student renunciation.

The number of students admitted annually has been decreased since 2004-2005 Academic Year (see table 9.2) according to the EAEVE suggestions for optimization of teaching system.

Table 9.2: **Intake of veterinary students**

Numbers of undergraduate students admitted to the establishment over the past ten years.

Table 9.2: Intake of veterinary students

Year	Number		
	Applying for admission	admitted*	other entry mode
N – 0 (2004-2005)	285	95 (+5)	
N - 1 (2003-2004)	383	117 (+12)	
N - 2 (2002-2003)	320	117 (+12)	
N – 3 (2001-2002)	333	117 (+12)	
N – 4 (2000-2001)	312	110 (+12)	
N – 5a (1999-2000)	303	110 (+12)	
N – 6 (1998-1999)	334	110 (+12)	
N – 7 (1997-1998)	409	110 (+12)	
N – 8 (1996-1997)	376	110	
N – 9 (1995-1996)	309	110	

\* in parenthesis: non-EU citizens

### 9.3: Student flow

The flow of students enrolled five years ago (1999) is outlined in table 9.3.1.

Table 9.3.1: Student flow Of the students whose admission year was N-5 (2000-2001)

Students present (five years later) in		
b.	b. 1st year	2
c.	c. 2nd year	0
d.	d. 3rd year	18
e.	e. 4th year	9
f.	f. 5th year	43
g.	g. how many have graduated	25
h.	h. how many have dropped out or been asked to leave.	16
l	i. how many are not in any identifiable year	7

Table 9.3.2: Number of students graduating annually (from undergraduate training) over the past five years :

Year	Number graduating
N (2003-2004)	91
N – 1 (2002-2003)	103
N – 2 (2001-2002)	133
N – 3 (2000-2001)	82
N – 4 (1999-2000)	106

Table 9.3.3: Average duration of studies of students graduating in year 2003-2004

	Duration of attendance	Number
l.	5 years	20
m.	6 years	19
n.	7 years	15
o.	8 years	11
p.	9 years	7
q.	= 10	19

The average duration of studies of the students who graduated in year 2003-2004 was **7.25**.

There are several blocks for progressing to subsequent curriculum years as described in chapter 5.3.

There are no academic reasons for which students are obliged by University to leave the course.

## 2. COMMENTS

The establishment tries to ensure that satisfactory progress in studies is maintained.

Given the non homogeneity of the students enrolling to the first years, since 2000/2001 the Faculty organizes courses before the written examination with multiple choice questions to standardize the level of knowledge in scientific disciplines of admitted students.

According to the current National laws, the Faculty is forced to enrol the 100 best ranked students. There is not a threshold for the admission. However, enrolled students with insufficient scores in specific subject of the admission test must attend courses organised by the Committee for Tutoring and Orientation to gain additional CFUs. In this way the above students may better their knowledge in specific subjects.

The number of the applicants is always much higher than the students enrolled. Females represent about 2/3 of applicants and ¾ of the admitted candidates.

The student distribution per year is irregular (table 9.3.1). This is likely due to the introduction of stops for curricular debts.

The length of study (table 9.3.3) was further negatively influenced by the introduction of a new national law which allows the drop-out student to re-enrol even if they left study many years ago (also more than 10 years). The Faculty must accept their previous curriculum without any further check.

Furthermore, to help students resolve study problems, the Committee for Tutoring and Orientation has been established and a guide for students is published every year. Moreover, all the teaching staff has a tutorial activity, officially scheduled, to support students with academic problems.

Free courses after school hours are organised by the Faculty for students with formative debts; lessons are given by students and PhDs with a labour contract.

The Faculty has made many efforts in increasing the budget and non-budget staff number in accordance to the suggestions made by the EAEVE in 1998. Thus, several ratios are now more satisfactory compared to previous visit. The Faculty would be favourable to further reduce the number of enrolling students, but unfortunately this proposal conflicts with the current policy of the University, due to economical reasons.

However, since 2004/2005, the Faculty has reduced the *numerus clausus* to 100 (about 18% less than those enrolled in 1997-1998) including non-EU students, thus accepting the suggestions provided in the first visit.

Moreover, there is a proposal from the National Committee for the evaluation of the University to fix the *minimum requirements* for the veterinary Faculty. *Minimum requirements* differ among the different degree courses and indicate the minimum requirements of structures, facilities and professors/number of students. This last ratio is calculated with respect to different sectors (basic subjects, professional subjects, etc.). By request of the Italian Conference of Deans of Veterinary Medicine, the *minimum requirements* are based substantially on the EAEVE rules.

In 1999 the Ministry of University (MIUR) established a new University evaluation system. The System is quite complex and it is now being progressively applied. The evaluation is performed by an independent Committee that takes into consideration different aspects of teaching, research, availability of structures, etc. Every year the Committee assigns 3 coefficients to the universities. One concerns didactic performance (number of students enrolled/ number of degrees obtained per year; number of credits obtained per year, etc). It is also worth mentioning that one of the factors taken into consideration is the results of the students' evaluation of the courses. The second concerns scientific production and the third refers to the observance of the so called *minimum requirements*. One of the most significant consequences of the Committee's evaluation is that, at the moment, a part of the annual budget that the Ministry gives to the different universities (about 10%) is multiplied by the above 3 different factors, whose values range from 0 to 1. The university that obtains a reduced budget may decide to place punitive sanctions on their faculties that received a negative score.

At the moment, the Faculty of Veterinary Medicine of Perugia is in line with the Ministry's minimum requirements

Since the previous visit in 1998, new didactical laboratories and the Veterinary teaching hospital (VTH) have been created, a new organization of the AZDS has taken place as well as the updating of the teaching program, giving more emphasis to practical aspects. We therefore believe the quality of the teaching provided by our establishment for the enrolled students is of very good quality.

Independently of the aforementioned factors which would increase the graduating ability in the next years, compared to the previous visit, the efficiency of the Faculty in graduating the students has already improved (7.25 vs. 7.96).

### **3. SUGGESTIONS**

- A more selective system for admission by introducing a threshold for the test and an interview should be implemented, to enrol only high motivated and prepared students.
- Hopefully, this would reduce the drop-out percentage and the average duration of studies.
- Since the number of graduate females is increasing as in the rest of Europe, generally, it would be desirable to introduce a corrective to balance male/female ratio.

**ANNOTATIONS**



## Chapter 10 ACADEMIC AND SUPPORT STAFF

### 1. FACTUAL INFORMATION

Academic staff of the Faculty includes:

- No 25 full professors,
- No 16 associate professors,
- No 32 researchers,

They cover nearly all the subject areas of the curriculum. For the remaining subject areas (Rural Economy, Rural Construction, Botany, and Physics) 4 external teachers are members of the staff plus one mother tongue English lecturer.

Support staff includes 13 administrators, 3 secretaries, 34 technicians, 28 animal care takers, 4 door keepers and maintenance men, 4 cleaners, and 6 librarians.

Adjunctive support to both academic and support staff is lent by a number of postgraduates, including 15 fellows, 30 PhD students, and a variable number of interns who are integrated in all the activities of the Faculty, along with 14 practitioners. All the above reported people contribute to the staff stability, continuity and competence offering security and benefits. Teaching staff, along with research and support staff, tends to research and other non-teaching-related academic activities.

Table 10.1 Personnel in the establishment (FTE)

Staff	Budgeted Posts (FTE)	Non-Budgeted Posts (FTE)	Total (FTE)
<b>1. Academic staff</b>			
a) Teaching staff	68.5		68.5
b) Research staff	15.0		15.0
c) Others*	6.5		6.5
d) Total academic staff	<b>90.0</b>		<b>90.0</b>
<b>2. Support staff</b>			
e. responsible for the care and treatment of animals	14.6		14.6
f. responsible for the preparation of practical and clinical teaching	24.6		24.6
g. responsible for administration, general services, maintenance, etc.	32.5		32.5
h. engaged in research work	17.8		17.8
i. others (please specify)	---		---
j. Total support staff	<b>89.5</b>		<b>89.5</b>
<b>3. Total staff (d + j)</b>	<b>179.5</b>		<b>179.5</b>

\* Other FTE: 16 x 0.25 (practitioners); 1 x 0.5 (mother tongue English lecturer); 4 x 0.5 (external teachers)

Table 10.2 Allocation of personnel (FTE) to the various departments

Department	Academic staff				PhDs	Support staff		
	Full Prof	Assoc Prof	Researchers	Fellows		Technical/animal carers		Admin/gener
						Teaching	Research	
Scienze Biopatolog.	10	5.5	16.5	7 (3)	13	17.85	12.5	13.5
Scienze Cliniche	14	10.0	13.0	8 (11)	17	15.15	11.5	19.0

(Number of practitioners in parenthesis). Librarians and cleaners are allocated at 50% between the two Departments.

Table 10.3 Personnel responsible for undergraduate teaching

	Personnel	Number
<b>A.</b>	Budgeted and non-budgeted teaching staff involved in undergraduate teaching	68.5
<b>B.</b>	Research staff involved in undergraduate teaching	15.0
<b>C.</b>	Personnel responsible for undergraduate teaching (A + B)	83.5

Ratios:

a. teaching staff/ undergraduate students

$$\text{No. of teaching staff/No. of undergraduate students} = 68,5/565 = \mathbf{1/8.2}$$

$$7.5 < x = 15 \text{ (unsatisfactory)}$$

b. teaching staff/support staff

$$\text{No. of teaching staff/No. of support staff} = 68,5/89.5 = \mathbf{1/1.3}$$

$$x = 1 \text{ satisfactory}$$

The Academic Senate determines the allocation methods of staff to the establishment according to the University triennial plan. Therefore, the Academic Senate:

- takes into consideration the annual report of the Quality Evaluation Committee of the University of Perugia;
- selects the allocation methods of staff in order to assure the harmonic development of the University;
- takes into consideration the Faculty development triennial plan and the new posts requested by the Faculty itself;
- submits the final demands to MIUR for final approval of the corresponding financial budget and to the administration offices of the Umbria region;
- assigns the posts and verifies the progression of public concourses.
- The allocation of teaching staff to the departments within the establishment is determined by taking in consideration the triennial plan of development of the

Faculty, that is firstly proposed by **Faculty Consulting Committee**, and then discussed and approved by the Faculty Council according to foreseen research and didactical duties in each scientific areas. By converse, the support staff is assigned by the Academic Senate on the basis of the requests arising from the Departments of the University. In addition, Departments may recruit non-permanent staff by using their own funds deriving from service income.

In general, since the current recruitment policy of the Universities is tightly bound to the available budget, it aims to guarantee the turn-over by privileging the teaching-over the support-staff. In fact, our University uses part of the budget from retiring staff to hire additional staff members and promote career advancement.

Temporary study and other educational leaves are allowed without any reduction in salary. Even in case of a long leave (sabbatical year) teachers are given their regular salary and can advance in their career. Attending to scientific meetings by academic and support staff is supported by a financial budget, coming from research funds or service income, which covers travel and subsistence.

There is no difficulty in the ability to fill vacancies as soon as the budget is made available to the Faculty. The Faculty policy has been and it will continue to be firm in privileging the recruitment of young researchers with the best academic qualification (PhD, master and training in specialised research laboratories or clinics) together with selective advancement of career.

Within the University structure, private practice is encouraged, when not conflicting with institutional activity, by the organisation of spins-off. However, private practice is allowed for part-time engagement. The University can establish the procedure to authorise contracts with public and private institutions to carry out scientific and technical researchers.

## **2. COMMENTS**

The number of teaching staff budgeted including professors, associate professors and researchers, had increased by almost 10% compared to that of the previous visit in 1998. The relative number of administrative staff is higher than in 1998; this is justified by the adoption of the departmental organization and the VTH. The number of staff members taking care of animals is considered not adequate to the routine activities of the clinics. Moreover, part of the animal caretakers job is carried out by students also during full immersion weeks on both clinical, practical

rotation and of the AZDS. In addition, the Faculty offers paid part-time work to undergraduate students (150 h/students) as support staff to be employed in the Library, Departments and other services.

Teachers salaries, paid by MIUR, range from € 1100 to € 5250 at the height of the career, referred to a young researcher at the start of his/her employment and a full professor, respectively. The salaries of the teaching staff of the Italian Universities are determined by law. This salary can be integrated by other activities (i.e. external teaching) authorised by the Faculty.

The percentage of veterinarians in the academic staff of the Faculty is 76%. The majority of non-veterinarians is engaged in the training of basic subjects.

### **3. SUGGESTIONS**

Even if the ratio teaching staff/students for our establishment do not fall into the "satisfactory" category, according to EAEVE standard, additional posts for research positions have already been assigned to the Faculty for 2007. In addition, the reduced number of enrolling students, adopted since academic year 2004/05, will result in better ratios over the next few years.

### **ANNOTATIONS**

## Chapter 11 CONTINUING EDUCATION

### 1. FACTUAL INFORMATION

It is considered of primary importance to the public that veterinarians continue their veterinary education throughout the period of their active practice of Veterinary Medicine. The Ministry of Public Health has established compulsory Continuing Education in Medicine (CEM) for health professionals involving all active veterinarians. The ministerial CEM Board establishes the minimum requirements for continuing veterinary education necessary for maintaining a license, for those working in the practice of Veterinary Medicine or in the Public Health System.

The Faculty co-operates with several professional organizations and competent Authorities in the design, implementation, and quality control of continuing education programmes.

Every practitioner and public health veterinarian must earn a minimum of 150 credit points of approved CEM activity in every three year period following the date of his/her admission to the Board of Veterinary surgeons.

#### 11.1 Continuing education courses held at the establishment

Table 11.1.1: Courses organised by the establishment in years 2005-2006

Date	Title of courses	Number of participants	Total number of hours of the course
1-2/4/05	Basic Course in Abdominal Echography and Echocardiography in dogs	24	18
24-25/6/05	Idem	24	18
21-22/10/05	Idem	24	18
2-3/12/05	Idem	24	18
16-17/12/05	GI and Respiratory Endoscopy in horses	18	18
3/6/05	New EC regulations in meat hygiene	70	8
11/11/05	EC regulations in primary production	70	8
2-3/5/05	New reproductive technology in dairy Cows: an update	18	16
14-15/01/06	Risk evaluation of hypofertility in dairy cows	30	16
3-4/3/06	Basic Course in Abdominal Echography and Echocardiography in dogs	24	18

31/3-2/4/06	Advanced Course in Abdominal Echography and Echocardiography dogs	30	27
15-16/09/06*	Equine reproduction and respiratory diseases in the athletic horse	40	18
22-23/9/06	Basic Course in Abdominal Echography and Echocardiography in dogs	24	18

All the courses were (or will be) held at Perugia, except that marked by an asterisk which will be held in Latina.

Table 11.1.2: Courses organised by the establishment itself in year 2004

Date	Title of course	Number of participants	Total number of hours of the course
14-15/5/04	Basic Course in Abdominal Echography and Echocardiography in dogs – Perugia Italy	24	18
3-4/12/04	Basic Course in Abdominal Echography and Echocardiography in dogs – Perugia Italy	24	18
21-23/10/04	Advanced Course in Abdominal Echography and Echocardiography in dogs – Perugia Italy	30	27
14-15/5/04	Reproduction and management of stallions	15	20
2-3/5/04	Reproduction and welfare in dairy cows	30	20

Table 11.1.3: Courses organised at the establishment by outside bodies in the most recent year 2004-2006

Date	Title of course	Number of participants	Total number of hours of the course
18/02/04	Italian standard-bred horse genetic evaluation	60	5
25/02/04	Italian Saddle Horse genetic evaluation	60	5
07/01/2004	Continuing education for equine practitioners	200	20
13-15/10/06	Gastroenterology in dogs and cats. Part I: oesophagus	30	21
21-22/10/06	Haematology and cytology in dogs and cats	30	15

As for the other Courses listed in table 11.1.3 several Faculty Members are involved, and they represented approximately 50% of the total Speakers for those courses.

Teaching staff of the Faculty also give lectures in postgraduate specialisation schools and special purpose courses organised by other Faculties or Universities.

Table 11.2: Distance learning (including via internet)

Date	Title of course	Number of participants	Total number of hours of the course
2005-2006	Master on Clinical Biochemistry and Veterinary Clinical Pathology	14	175
2005	Web-CT Public Health Course (Perugia and Utrecht Universities within the Socrates/Erasmus scheme)	20	25
2005-2006	Improvement of food hygiene and animal production (Perugia-Albania)	22	600

## 2. COMMENTS

With regards to the courses of basic and advanced levels in Abdominal Echography and Echocardiography in dogs, the Faculty has a joint venture with a Company that provides echo machines for practical sessions. Moreover, courses are usually held in Congress Centres to avoid interference with under graduate classes, whereas practical activity is mainly held at the Faculty.

The quality level of the Faculty CEM courses is assessed on the basis of the evaluation forms that every participant fills in at the end of each course. The average score obtained over the past ten years was always high ranging between good and very good out of four different levels (insufficient, sufficient, good and very good).

Each course has been accredited by the CEM Board of the Ministry of Public Health with the assignment of a number of CEM credits ranging from 15 to 24, which are rather high, considering that the CEM credits required for every veterinarian amounts to 150 in 3 years.

Given the previous points, the degree of participation of veterinarians is always high and the places available for each edition are always promptly booked. In our opinion, this is clear evidence of how the high quality of the courses is appreciated.

The teaching staff is also involved in continuing education courses, seminars, scientific meetings etc. organised by external organisations that invite lecturers of the Faculty as speakers in those events.

1. the teaching staff of the Food hygiene field has been involved in several courses organised by external organisation. Such as the Istituto Zooprofilattico Sperimentale (IZZS) and the local Board of Veterinary Surgeons;
2. the teaching staff of the Department of Pathology, Diagnostic and Veterinary Clinics has also been involved in several courses organised by the Italian Society of Veterinary Sciences (SISVet), Italian Society of Veterinarians for Equines (SIVE), the Italian Cultural Society of Veterinarians for Companion Animals (SCIVAC), the Italian Society of Hippology (SIDI), the Italian Society of Animal Production (ASPA), the Research Centre of the Italian Army, the Roman Veterinary Cultural Association (ACVet) and several local Colleges of Veterinary Medicine
3. the teaching staff of the Avian Pathology field has been involved in several courses organised by the local Board of Veterinary Surgeons.

Recently, two new different Commissions of the Faculty have been established to improve and coordinate the e-learning and continuing education programs.

### **3 . SUGGESTIONS**

The Faculty would benefit from further collaboration with other European Veterinary Schools in order to provide courses with a broader overview.

### **ANNOTATIONS**



## Chapter 12 POSTGRADUATE INFORMATION

### 1. FACTUAL INFORMATION

At the moment, programmes leading to qualifications in the clinical and para-clinical fields such as internships and resident-ships are not yet activated for the reasons specified in the comments.

#### 12.1 Postgraduate clinical training (interns and residents)

Programmes that are certified by a European Speciality College will be activated as soon as the VTH is fully functional.

However, post-graduates may be enrolled, without receiving salary, in the clinical fields outlined in following table.

Table 12.1.1: Postgraduate clinical training course

Clinical discipline	Duration of training (year)	Number enrolled		Diploma or title Anticipated
		Full time	Part time	
Vet internal medicine	1	3		Certificate
Vet surgery	1	5		Certificate
Vet obs. & gyn.	1	2		Certificate

#### 12.2: Postgraduate courses taught

Table 12.2.1: Taught postgraduate courses

Specializations & Masters	Duration of training (year)	Participants enrolled per year	
		Full time	Part time
(a) Specialization school*			
1. Food Hygiene	3		20
2. Animal Health, Breeding and Zoo-technical Production	3		13
(b) Masters			
1. Clinical Biochemistry and Veterinary Clinical Pathology	2		20
2. Animal Assisted Activities and Therapy	1		25

\*The only two specialization schools which enable the access to the public health service in Italy.

Students involved in the above listed training do not receive any grant or salary. At the moment, there is no relationship with either specialization schools or masters

with postgraduate clinical training as specified by the SOP for the reasons specified in the comments.

About 25 % of graduates follow such training.

### 12.3: Postgraduate research programmes

Table 12.3: Postgraduate research training programmes

Postgraduate programmes	Duration of Training (year)	Number enrolled	
		Full time	Part time
(a) Master Level	Not applicable		
(b) PhD level			
1. Equine Science	3	5	3
2. Veterinary Public Health and Food Hygiene	3		
3. Small Animal Physio-pathology and medicine	3	4	
4. Livestock production and Pathology	3	6	
5. Obs & Gynaecol	3	1	3
(c) Other doctoral level	Not applicable		

Only graduates may enter the PhD level programme. Students enrolled full time in all these research training programmes receive a salary.

## 2. COMMENTS

The Faculty retains that the number of postgraduate diplomas/titles referring to specializations awarded annually is quite satisfactory according to the Public Health Service needs. The Faculty is aiming to activate programmes where a certified board diplomate is already part of the establishment in order to provide for postgraduate clinical training. It should be noted, however, that current Italian legislation, does not support these programmes.

Nevertheless, in the meantime, the new VTH offers several kinds of "focused on" training courses that are attended by graduates working as interns.

At present, there are three board certified members of the Faculty belonging to European Specialties Colleges (European College of Veterinary Public Health, European College of Animal Reproduction, and European College of Veterinary Pathology, respectively). Moreover, 4 lecturers of clinical subjects are involved in the tutorial board of an international master promoted by the veterinary faculty of Bologna.

The percentage of veterinarians participating in postgraduate research training programmes is quite high.

### **3. SUGGESTION**

The Faculty should further encourage programs involving its own teaching staff to obtain ECS diplomas. One way to overcome this problem could be to engage diplomates from EU and/or USA. International PhDs and masters should also be promoted.

**ANNOTATIONS**

## Chapter 13. RESEARCH

### 1. FACTUAL INFORMATION

The involvement of undergraduate students in research is quite limited during the first four years of the course. Only those students, who ask to attend any of the laboratories of the departments, under the supervision of a staff member, may participate. However, in the last year of the course, students may choose to prepare a dissertation based on experimental data also under the Socrates/Erasmus scheme. In this case, they are actively involved in research by co-operating with personnel in charge of research activities under the control of the supervisor. Indeed, in the fifth year of the course, 12 CFU are reserved for the preparation of the thesis. The thesis title is agreed upon by student and supervisor and communicated to the Dean's Office by computerised system.

### 2. COMMENTS

As already mentioned, the opportunity for undergraduate students to participate in research projects is limited for a series of reasons. The main one refers to the curriculum load of didactic duties attended by the student each year plus the exams he has to prepare and pass. Usually, students are much more interested in practical activities connected to the professional areas of interest.

In general, however, the few students showing an interest in research are highly encouraged by supervisors to participate in the work done in the labs.

Involvement of students in research is hampered because of minimum allocation of public funds (over the past five years there has been a decrease of about 50%).

### 3. SUGGESTIONS

Students should become more involved in research activities, since they are very formative and help to develop problem-solving strategies. For this reason, perhaps, the experimental thesis should be rewarded with higher marks.

**ANNOTATIONS**