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INTRODUCTION

INTRODUCTION.

The Veterinary Faculty of Murcia was founded in 1982 (R.D. 1470/82, BOE 6-7-82), and it is located in the Campus of Espinardo, just a few kilometres away from the city of Murcia. It is member of the EAEVE (European Association of Establishment for Veterinary Education), since the course 1988-89. It was visited and evaluated by this Association in 1996. Prof. T. Fernández and Mr. D. M. Allman revisited the Faculty in August 1999 to verify that the improvements suggested by the evaluation Committee have been dealt accordingly. Upon providing further evidence, the Faculty was included on the EAEVE list of visited and approved establishments in November 2002.

The publication of the new Law of Universities (LOU) in December 2001, substituting the Law of University Reform (LRU) has given rise to several changes in the Higher Education in Spain such as: modification of the University structure, new kinds of teaching staff, the creation of the National Agency for Quality Assessment and Accreditation (ANECA) and new mechanisms to pursue excellence based on the SORBONNE/BOLOGNE statement to create overall convergence at European level.

The University of Murcia (UMU) adapted, then, its regulations to the new Law in September 2004. This new framework has led up to some changes at the Veterinary Faculty as the creation of commissions of work (such as the commissions of Teaching Arrangement and Syllabuses or Teaching Quality and Analysis of Exam Results) and a minor number of members at the Faculty Board.

The application of the ECTS (European Credit Transfer System) has meant another breakthrough undertaken during the academic year 2005-06: 10 core and 15 optional subjects were part of a pilot experience funded by the University of Murcia and Central Government, in which new teaching systems, focused on the student, were applied. The new approach concentrates on the improvement of the teaching quality focusing on the respect for animals, the preservation of their welfare and the environmental protection in a Region with a shortage of hydric resources.

The main characteristics of our Veterinary school that have led into important quantitative and qualitative advances are:

1. Despite the birth-rate reduction in Spain, the Faculty of Veterinary has kept the enrolment demand ratio. In addition, the decreasing number of students who can have access to Veterinary studies due to a further reduction of the "numerus clausus" (120 were accepted into our Faculty in 1996, whereas 95 students will be able to enrol this year) has allowed students to achieve higher standards of education.

2. A new Curriculum was approved and established in 2001 that has allowed, improving the ratio theory/practice, adapting the structure of the courses to semesters-terms, running of the core subject "pre-professional practices" and creating rotational modules in practices to avoid timetable overlapping between theory and practice. In addition, practical training is conducted in small groups of 10 students; even smaller groups are designed for clinical training.

3. Increase of the number of teaching staff on the Farm, the Teaching Veterinary Hospital and the Slaughterhouse which has improved the teacher/students ratio.

4. Opening of the Teaching Hospital performing teaching duties and providing medical care 24 hours a day throughout the year. There has been an increase in the number of cases attended both, in small and large animals and a residence programme has been set up.

5. Opening of the Veterinary Farm (the only one in the Spanish Veterinary Faculties). It has a large number of farm animals, and, a zoological unit to conduct clinical, animal breeding and animal health practices, applying the traceability principle.

6. Extension of the facilities such as the reading hall at the Library (with new computing access and bibliographic search systems), necropsy and dissection rooms, and the opening of the Anatomic Museum housing a large number of items.

7. A Pilot Plant of Food Technology to conduct practices related to this area.

8. A new plan to collect and eliminate residues by Murcia University (UMU).

9. Audio-visual and multimedia equipment has been installed for teaching purposes in the lecturer theaters. Three new computer rooms have been opened.

10. The Faculty Web page has been improved and the Intranet virtual tool (SUMA) implemented for students to have access to self-learning material, videos, texts, atlas, exam dates, etc.

11. The new university teaching staff is trained through UMU programmes for teaching innovation and quality. There is an increasing demand in these kind of courses that deal with the teaching of theory, practice, virtual teaching, tutorials, innovation courses and improvement of teaching quality.

12. Extracurricular practices are conducted during the summer break. Students can carry out practices on the different disciplines: at the clinics, within the administration, at the factories of fodder or at the slaughterhouses.

13. The Veterinary Faculty has signed collaboration agreements with the Official College of Veterinarians of the Region of Murcia, Agriculture and Health Council, Animal Protection Society, as well as with riding clubs. The Faculty keeps regular meetings with the Murcian Association of Companion Animals Veterinarians (AMURVAC).

14. Creation of a more reasonable structure of the Departments. Thus, the division of the Department of Animal Pathology has favoured the creation of the Departments of Medicine and Animal Surgery and the Department of Animal Health. The division of the Department of Anatomy and Compared Pathological Anatomy and Food Technology has allowed the creation of the Department of

Compared Anatomy and Pathological Anatomy and the Department of Food Technology, Nutrition and Bromatology. Besides, all the subjects taught in Veterinary Science are located at the Faculty.

15. During the past few years, groups of researchers of recognised prestige at a national and international level, have been consolidated with more funds linked to researching projects.

16. The Faculty gets actively involved in a programme for risk prevention through the Unit for Prevention at Murcia University, since it is increasingly higher our concern for the welfare of the students, teaching staff, and the administration and service personnel welfare.

17. Doctorate programmes and University Masters with a mention of quality adapted to the European Area of Higher Education as well as Meetings and Continuing Education Courses are taught every year. We also take part in the courses taught at the Summer University (Universidad del Mar).

18. Annual welcome meetings and personalised tutorials are held to help students integrate in the University life.

19. The Faculty has been collaborated actively in the edition of the so-called "White Book of the Degree in Veterinary Science" co-ordinated by the Spanish Conference of Veterinary Deans.

20. During the last few years, there has been an increase in the number of students participating in mobility programmes, such as SENECA-SICUE, SOCRATES-ERASMUS, ILA, and ISEP.

In addition, other projects to improve the facilities are underway:

1. The Veterinary Teaching Hospital: enhancement of the stables for long term stays, neonatology ward for equines, renovation and acquisition of outstanding diagnosis equipment.

2. The Veterinary Teaching Farm: creation of new livestock units. Involvement of the farm in therapeutic programmes (hypotherapy, zootherapy). Fitting out of the appropriate spaces for the recovery and rehabilitation of equines, the building of an experimental operating room and a field necropsy unit.

3. Extension of the following Departments: Food Technology, Nutrition and Bromatology as well as Animal Health.

At the time of the redaction of this document, one of the most ambitious projects of our Veterinary School is the creation of a Foundation for the management of the Veterinary Teaching Hospital that will allow more flexibility to take decisions, and to obtain more funds for new equipment and qualified personnel.

Chapter 1: OBJETIVES

CHAPTER 1. OBJECTIVES.

1. FACTUAL INFORMATION.

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

1.1.GENERAL OBJECTIVES OF THE UNIVERSITY OF MURCIA.

The general objectives of the University of Murcia are described in the article 1 of the University Regulations:

The University of Murcia is a public institution that by means of teaching and researching, carry out the public service of the Higher Education. The main responsibilities of the University of Murcia are:

1. *Creation, development, transmission and review of science, technique and culture.*

2. *Preparation for the professional activities that involve the application of scientific knowledge and methodology.*

3. *Dissemination, assessment and transference of knowledge for the purpose of promoting culture, quality of life and economic development.*

4. *Dissemination of culture and knowledge through the continuing professional development and education.*

1.2. GENERAL OBJECTIVES OF THE FACULTY OF VETERINARY.

The main objective of the Veterinary Faculty is the training of students to produce veterinarians of recognized quality and prestige. In accordance with the European Union Directive 78/1027, the Syllabus of the Faculty of Veterinary of Murcia guarantees the acquisition of a thorough knowledge in the following disciplines:

- ✓ Sciences on which the veterinary professional activity is based.
- ✓ Structure, functions, breeding, reproduction and general hygiene of healthy animals, as well as animal feeding and the technology applied to produce and preserve stock food.
- ✓ Behaviour and welfare of animals.
- ✓ Preventive medicine.

- ✓ Hygiene and technology of animal foodstuff or foodstuff of animal origin intended for human consumption.
- ✓ Legal and administrative dispositions related to the above-mentioned topics.
- ✓ Appropriate clinical and practical training under the adequate supervision.

Thus, the instruction received in the Faculty of Veterinary will enable the graduated students to practice the Veterinary profession in one or several of the following areas:

a) Production, maintenance and exploitation of domestic and rent animals.
b) Veterinary Medicine and its implications to Human Health.
c) Obtain, process and control of animal derived products with its sanitary, technological and economic implications.
d) Biological and biomedical teaching and research.
e) Public health control. Maintenance of natural ecosystems.

The Bachelor degree in Veterinary Science issued by the Murcia University enables to practice the profession in any country of the European Union. In Spain, the professional activity can be performed in the private or public sector:

1. Veterinarians can work in the public sector for the National or Autonomous Regional Governments and for City Councils. The veterinarians can also become SOIVRE technicians and military veterinarians. Other working possibilities arise in Human Hospitals as well as in Research Establishments such as the National Institute for Agrarian Research (INIA) and National Center for Research (CSIC). Finally, veterinarians can also be employed as High School teachers or as University lecturers.

2. In the private sector:

    a) As a private practitioner
    b) As an employee or as an adviser for a public entity, company, industry or any other business related to the Veterinary Profession, by means of a contract approved by the Official College of Veterinarians (Colegio Oficial de Veterinarios).

    In both cases, it is possible to work in the following areas:

    - Animal Breeding and Animal Health: livestock, including marine and continental aquaculture, industries of stock food, local, regional or national sanitary control, agrarian and livestock production consultant.
    - Veterinary medicine: practicing in a veterinary clinic (small and/or large animals). Veterinarians will deal with the prevention and treatment (medical or surgical) of diseases. The adequate sanitary handling and veterinary care of wild and exotic animals, invertebrates, fish and molluscs are also included in this field.
    - Hygiene and Food Technology: working in meat, milk, canning industries, etc., controlling their sanitary, technological and/or economic implications.
    - Surveillance, control and maintenance of ecosystems.

1.3. SPECIFIC OBJECTIVES OF THE VETERINARY FACULTY.

The specific objectives of the Veterinary Faculty of Murcia, are those established in the "White Book of the Degree in Veterinary Science" elaborated by the Spanish Conference of Veterinary Faculties Deans. These objectives intend that students reach the following competences:

A. - Knowledge:

1. General knowledge of the animals, their behaviours and the bases for their identification.
2. Structure and function of the healthy animal.
3. Breeding, improvement, handling and welfare of animals.
4. Physical, chemical and molecular bases of the main processes which take place in the animal organism.
5. Basic and applied principles of the immune response.
6. Basic fundaments of the different biological agents of interest for the veterinarian.
7. Structural and functional alterations in the animal organism.
8. Knowledge and diagnosis of the animal diseases, either individual or collective, as well as their preventive measures, paying special attention to zoonosis and noticeable diseases.
9. General bases for medical and surgical treatments.
10. Knowledge of the running and optimisation bases of the systems of animal breeding, and their repercussions on the environment.
11. Science and Food Technology Principles. Control over by-products and Food Safety and Hygiene.
12. Economic and management aspects of the veterinary profession.
13. Laws and Regulations within the veterinary field, the animals and the animal market.
14. Rights and duties of a veterinarian, focusing on ethic principles.

B. - Professional expertise:

1. Take the clinical history and conduct the clinical examination on animals.
2. Collect and refer samples properly.
3. Conduct basic analytical techniques and interpret their results.
4. Perform the diagnosis of common diseases by using various techniques, including the necropsy.
5. Identify, control and uproot animal diseases, particularly noticeable ones and zoonosis.
6. Provide emergency care and first aid attendance in veterinary medicine.
7. Conduct the most usual medical and surgical treatments on animals.
8. Application of the basic principles for the correct functioning of the reproductive cycle and treatment of obstetric conditions.
9. Advise and conduct epidemiological surveys, therapeutical and preventive programmes in accordance with animal health, welfare and public health regulations.
10. Assess and evaluate the productive and sanitary parameters of livestock, taking into account the main economic and welfare factors.

11. Handling of specific protocols and technologies intended for the modification and optimisation of the various systems of animal breeding.
12. Ante mortem and post mortem inspections of the animals in slaughterhouses, and the inspections on food intended for human consumption.
13. Conduct sanitary control in food establishments and restaurants. Implementation and supervision of quality management systems.
14. Risk analysis (including environmental and biosecurity riks), assessment and management.
15. Application of food technology to the elaboration of foodstuff intended for human consumption.
16. Advising and management, from a technical and economic point of view, of companies of the veterinary field within a sustainability context.

C. - Academic expertise:

1. Analyse, synthesise, problem-solving and decision making within the range of the veterinary profession.
2. Teamwork abilities, single or multidisciplinary, showing respect and sensibility for the work carried out for the others.
3. Ethical values when exercising the veterinary duties in regard to the profession and the society.
4. Fluent communication skills (speaking and writing).
5. Draw up and submit professional reports, keeping the required confidentiality.
6. Search and manage the information related to the veterinary activity.
7. Know how to apply the scientific method in the professional practice, including the evidence-based medicine.
8. Be able to get advice and professional help when necessary.
9. Manage of basic computer tools.
10. Basic knowledge on a second language, especially in the technical aspects related to the Veterinary Sciences.
11. Be aware of how important it is to keep veterinarians' knowledge, skills and attitudes updated by means of a lifelong learning.

2. COMMENTS.

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

The different commissions of the Faculty Board ensure the achievement of the general objectives of the Faculty. These commissions evaluate and analyse, throughout the academic year, the problems related to the syllabus, teaching (theory and practice) timetables, teaching quality and examination results.

In addition, the delegate commissions of the Government Council take the necessary measures to fulfil the University objectives.

The Deanery Team holds meetings with the Rector Team on an annual basis as a plan-fulfilment follow-up.

MAIN STRENTHS.

Resources. The Veterinary Faculty is in charge of the most valuable resources within the University of Murcia. The degree of Veterinary Sciences is highly demanded and a large number of students apply to be enrolled. Therefore, this Faculty is able to admit students with an in-depth training; moreover, for most of them (95%) the veterinary studies are their first-option, which means that they are vocational students.

Personnel. The Faculty is staffed with highly qualified teachers, a high percentage of Doctors and full time personnel trained in national and international establishments. They have a great experience in research and they are strongly committed to teaching at the Faculty. Support personnel is also highly qualified and trained by the University: they conduct courses every year, which are compulsory and paid by the University.

The academic activity. It is organised and planned accordingly to the Guide of Studies that provides a wide portfolio of all the activities scheduled by the Establishment, regarding class timing, examination dates and course programmes. The Guide of Studies is available to the students at least 4 months before the beginning of the next course, so students are able to schedule their academic activities quite in advance.

Faculty and University structure. The Faculty Board has implemented several Commissions for a better organization. The Faculty has the appropriate premises and equipment to provide students with quality instruction: Veterinary Teaching Hospital, Teaching Farm, Pilot Plant, Anatomic Museum, Dissection and Necropsy Rooms. The University provides other general services such as Support Service of Experimental Sciences with the following units: Culture of Tissues, Electronic Microscopy, Service of Chemical Analysis, Laboratory of Cellular and Molecular Biology and Animal House. The Campus also provides the student with a General Library, sport premises, lodging for the university community and restaurants and coffee-shops. The Faculty has taken part in the Second National Plan of Quality Evaluation.

There is a virtual campus on Intranet. Students have access to SUMA from the different computer rooms or using lap-tops provided with wireless connection. The lecturers produce teaching material available for students in SUMA.

Research. Most part of the teaching staff is working on research projects at a national or international level. Currently, the Faculty is teaching different Doctorate Programmes, which will become Official Masters in the academic year 2006/07. A third of the Official Masters offered by Murcia University are taught in our Faculty. The National Agency of Examination and Accreditation of Quality (ANECA) have awarded these programmes with the mention of quality "Excellent". The Faculty of Murcia also collaborates with other national and international Masters and Doctorate Programmes. The Faculty of Murcia has ECVS Diplomates within the teaching staff and it is provided with some laboratories considered of national and international reference.

Location. The Faculty is located in an important livestock region, just a few kilometres away from the capital of Murcia. The nearest public Veterinary Faculty is at 400 Km.

International relations and exchange of students. There has been a spectacular growth of students exchanged under the framework of national and international programmes,

such as Seneca, Socrates, ILA o ISEP. In the years of the first evaluation by the EAEVE 3 or 4 students were sent overseas and no students were received and currently over 25 students are exchanged in both directions each year.

WEAKNESSES.

The economic resources of out Faculty are scarce since the distribution of the budget by the University depends on the number of students, and because of the "numerus clausus" the number of veterinary students is lower than in other degrees. Therefore, there are needed additional funds, mainly to replace equipments used for teaching and diagnosis purposes which are getting out of date. It is also necessary to provide the Faculty with outstanding diagnostic equipment.

The Faculty of Veterinary has little freedom in the decision making processes to implement improvement plans, since it is provided with a short budget. Therefore, it is highly dependent on the decisions of the Rectorate and other University Government Bodies. Although, the Faculty maintains good relations with different companies, the administration, and associations; the economic support that the Faculty gets from these relationships is very limited.

In the Study Plan some courses are erroneously placed in a year or a cycle due to the strict framework imposed by the Spanish General Guidelines for the Veterinary Studies.

The students make an inadequate use of the available information; maybe, due to deficiencies in the advice given to first-year students as well as the scarce use of the tutorial activities organised by the Faculty. The long time needed by students to finish their undergraduate studies is probably due to the high workload of the Study Plan.

The teaching staff pays little attention to the Faculty management tasks. Moreover, the clinical duties carried out by the teaching staff in the Teaching Veterinary Hospital, particularly the emergencies and out of hour services are not well paid. Therefore, the running of some areas of the Hospital depends upon the personnel's goodwill.

The severe shortage of supporting personnel (PAS) for the teaching and administrative duties in the Departments and in the Faculty.

3. SUGGESTIONS.

If you are not satisfied with the situation, please list your suggestions for change in order of importance.

Proposals for improvement:

1. The Veterinary Faculty should be endowed with a greater budget to be able to reach the needed management autonomy to fulfil the aimed objectives under the supervision of the university authorities.

2. Correction and updating of the Study Plan to adapt it to the European Space for Higher Education and the future Spanish General Guidelines for Veterinary studies in order to create convergence at an European level. These changes may give raise

to better results in the graduation, delay and drop off ratios of the future students.

3. Increase the number of supporting personnel (PAS) to have a better ratio in relation to the teaching and researching staff.

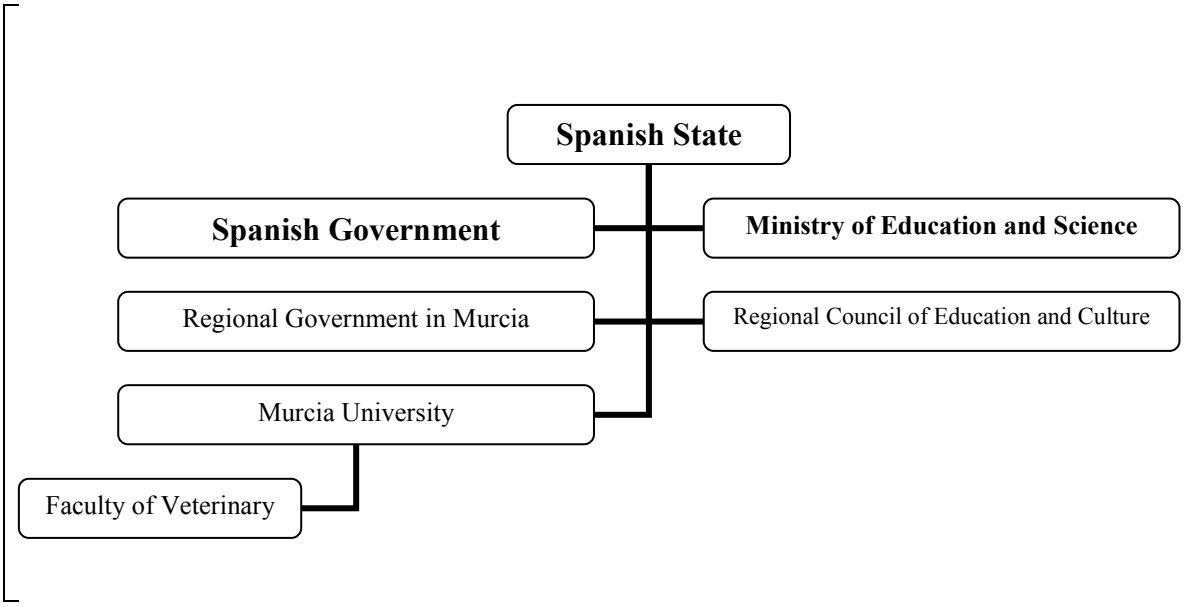
Chapter 2: ORGANISATION

CHAPTER 2. ORGANIZATION.

1. FACTUAL INFORMATION.

Details of the Establishment
Name of the Establishment: FACULTY OF VETERINARY
Address: Campus de Espinardo, 30071-Murcia
Telephone: +34968364799
Fax: +34968364147 **Website**: http://www.um.es/veterina
Title and name of the Head of the Establishment:
Dean, Professor Dr. D. Antonio Bernabé Salazar.

UNIVERSITY OF MURCIA



The University of Murcia is a public institution under the authority of the Spanish Ministry of Education and Science and the Regional Council of Education and Culture in Murcia. The Ministry states the general guidelines for certified degrees in the National Catalogue and determines the general policy for Higher Education in Spain. The Regional Council is responsible for the financing and management of Universities in Murcia. The Region of Murcia has three Universities (two public and one private).

FACULTIES AND COLLEGES IN MURCIA UNIVERSITY

University of Murcia has 3 Campus with the following faculties and colleges:

CAMPUS OF ESPINARDO
Colleges
College of nursing
Social work college
Faculties
Faculty of Fine Arts

Faculty of Biology
Faculty of Sciences of Work
Faculty of Communication and Documentation
Faculty of Economy and Business
Faculty of Education
Faculty of Philosophy
Faculty of Computer Studies
Faculty of Mathematics
Faculty of Medicine
Faculty of Psychology
Faculty of Chemistry
Faculty of Veterinary

CAMPUS LA MERCED
Faculties
Faculty of Law Studies
Faculty of Arts

CAMPUS OF BIOMEDICAL SCIENCES
College
College of nursing
Faculty
Faculty of Medicine

UNIVERSITY ESTABLISHMENTS SITUATED OUTSIDE THE CAMPUS ABOVE MENTIONED
Colleges:
College of Tourism in Murcia and Leisure in Murcia.
College of Nursing in Cartagena.
University Establishment "Perez de Lema" in Cartagena.

MURCIA UNIVERSITY IN FIGURES (dates of Academic Year 2004/2005)
Studies:
15 Faculties
2 Colleges
3 Ascribed Establishments
64 Certified Degrees
78 Postgraduates Courses
292 Continuing Education Courses
52 Courses at "Universidad Internacional del Mar"
51 Doctorate Programmes

University Community:

27.763 students from 1st and 2nd cycle, distributed as the following table indicates:

Intake of students according to qualification:

CERTIFIED DEGREES	STUDENTS
Faculty of Biology	**1.637**
Faculty of Economy and Business	**4.105**
Faculty of Education	**4.203**
Faculty of Philosophy	**256**
Faculty of Computer Studies	**1.771**
Faculty of Arts	**2.430**
Faculty of Mathematics	**238**
Faculty of Medicine	**1.443**
Faculty of Psychology	**1.151**
Faculty of Chemistry	**1.152**
Veterinary Students Food Science and Technology Students Students from mobility programmes	681 100 31
Faculty of Veterinary Science	**812**
Faculty of Law	**2.963**
Faculty of Communication and Documentation	**962**
College of Nursing	**894**
College of Nursing In Cartagena	**195**
College Of Social Work	**466**
Faculty of Sciences of Work	**1.518**
Perez De Lema Establishment	**125**
Faculty of Fine Arts	**299**
College of Tourism and Leisure	**743**
Total number of students in Murcia University	**27.763**

1.266 students enrolled in Doctorate Programmes.
1.919 professors.
905 members of administrative and service staff.
2.199 students in the Summer University.

Mobility Erasmus Programme
891 Erasmus mobility actions.
300 students from Murcia University transferred to partner universities.

Information and Database
107.000 queries of general information have been attended by internet.
7.500.000 visits to the web page.

Cultural and Sport Activities
360 cultural activities.
25.336 sport activity bookings.

Library
Library with capacity for 4.312 people.
638.208 books in the library.
262.074 book borrowings that have been made.

Computer-room
41 Rooms with 1.000 computers for the students.

Extramural Practices
4.911 Students that have been involved in practical activities, either in companies or public/private institutions.

Provide a diagram of the internal administrative structure of the establishment itself (councils, committees, departments,etc.). Describe briefly the responsibilities, constitution and responsibilities of the main administrative bodies (councils, committees, etc.). Indicate the involvement of the veterinary profession and public in the running of the establishments. Indicate the rules concerning the appointment of the elected officials of the establishment, which you feel useful for completing the description

THE FACULTY OF VETERINARY SCIENCE

The Faculty of Veterinary is the Establishment in charge of the education, academic processes, administrative and management arrangement in relation to the academic degree of Bachelor in Veterinary Science. It is formed by academic and research personnel, students, administration and service personnel ascribed to it. Its duties are:

a) Elaborate the Study Plan conducive to a degree of Bachelor in Veterinary Science.
b) Organise and co-ordinate teaching activities as well as manage support and research personnel.
c) Promote continuing education.
d) Propose the list of appropriate personnel to carry out the teaching plan (including administration and service personnel).
e) Manage and supervise the appropriate budget application.

COLLEGIATE BODIES

A. FACULTY BOARD

Faculty Board, chaired by the Dean, is the Faculty governing body. Its main responsibilities are:

- Elect and cease the Dean.
- Elect the Vice-Dean.
- Propose the Government Council to approve the Study Plan.
- Establish the teaching timetable and examination dates.
- Approve the Study Plan and any other proposal made by the departments.
- Fix the requirements of the awards for: "the best results at undergraduate level" and "the best PhD Thesis work".
- Propose the creation, modification and elimination of teaching positions.
- Inform the Financial Management Office (Gerencia) about the needs of the Faculty on administration and service personnel affairs.
- Inform about the creation, elimination or merge of any Department at the Faculty.
- Approving the fund allocation assigned to the Establishment.
- Propose and inform about any agreement that might be of interest for the Establishment.
- Keep the quality of teaching.
- Create work commissions, according to what the Internal Regimen Regulation indicates.

Faculty Board members:

a) 55% permanent teaching staff. The Head of Departments administering studies in the Establishment will be included in this group, or when, this professional cannot act as such, a Department representative will do. A total number of 83 members.
b) 10% representatives of the rest of the teaching and research staff. A total number of 15 members.
c) 30% representatives of the Faculty students. 45 members.
d) 5% representatives of the administration and service personnel. 7 members.

B. COMMISSIONS

B.1. Teaching Arrangement Commission. Its main responsibilities are:

a) Propose to the Board the examination calendar for partial and final exams.
b) Co-ordinate different academic departments .
c) Propose to the Faculty Board the "Award for the best results at undergraduate level".

It will be formed by:

a) The Dean, who will preside.
b) The Secretary or Vice Dean, who will act as the Secretary of the Commission.

c) Six teachers with permanent positions. As far as possible, the departments with greater teaching duties will be represented in the commission.
d) Two members of the teaching and research personnel.
e) Four students of the Faculty.
f) A member from administration and service personnel.

B.2. Study Plan, Teaching Quality and Analysis of Examination Results Commission. This commission is in charge of:

a) Analysing the results of the final examinations.
b) Analysing and informing about the proposals for the curriculum changes.
c) Proposals for the improvement of the teaching quality.
d) Studying any incidence derived from the accomplishment of teaching duties.

This commission will be formed by:

a) A member of the Dean's team, who will be the president.
b) Three teachers with permanent positions.
c) A member of the rest of the teaching and research personnel.
d) Two students of the Faculty.
e) A member belonging to administration and service personnel.

B.3. Building and Economic Matters Commission. The main responsibilities are:

a) Propose to the Board the internal distribution of different budget entries.
b) Carry out a follow up of the Establishment expenditure.
c) Prepare, at the end of the financial year, the budget report where the different units of the establishment will provide a detail account of the expenditure carried out during that year.
d) Study and inform about the proposals and needs, such as repairs, infrastructures, and building in the different premises concerning our Faculty.

This commission will be formed by:

a) The Dean, who will preside.
b) The Vice Dean or Secretary of the Faculty, who will act as the Secretary of the Commission.
c) Three teachers.
d) A member of the teaching and research personnel.
e) Two students of the Faculty.
f) A member of the service and administration personnel.

B.4. Library and Research Commission. The main duties are:

a) Propose the allocations of assigned funds for the acquisition of books and journals.
b) Execute the Establishment regulations on Graduate Dissertations (Tesina).

c) Propose the Faculty Board the awarding of Doctorate Extraordinary Awards.
d) Any other duty on investigation issues assigned by the Faculty Board.

The Commission will be formed by:

a) The Dean, who will preside.
b) A Vice Dean, who will act as a Secretary in the Commission.
c) Three teachers, permanent positions.
d) A member from the rest of the teaching and research personnel.
e) Two students of the Faculty.
f) A member of the service and administration personnel working in the General Library of the University in charge of the Veterinary area.

B.5. University-Wide Commission. It promotes the holding of seminars, conferences and any other cultural actions.

The commission will be formed by:

a) The Secretary or a Vice Dean from the Establishment that will preside the meeting.
b) Three teachers with permanent positions.
c) A member from the rest of the teaching and research body.
d) Two students attending studies conducive to an official degree.
e) A member from service and administration personnel.

In addition, the Board might approve of the setting up of temporary working commissions, at the request of the Dean or the tenth part of the Board members.

B.6. Professional Issues Commission. It is in charge of:

a) Keeping the fulfilment of the agreements signed between the Faculty and the Official College of Veterinarians and any other professional associations.
b) Proposing and revising any agreement reached with public or private association, beneficial for the Faculty from the teaching and research points of view.
c) Reward all those people or associations that have conducted some kind of remarkable work for the Faculty.
d) Any other responsibility that the Faculty Board might consider necessary.

This commission will be formed by:

a) The Dean, who will chair the meetings.
b) The Vice Dean on Academic arrangement, who will act as a Secretary.
c) The Director of the Veterinary Teaching Hospital.
d) Three teachers with permanent positions.
e) A member of the rest of the teaching and research personnel.
f) Two students (one conducting third cycle studies).
g) A member of the administration and service personnel.

B.7. International Relations Commission. It has an executive role. It is in charge of:

a) Validating and grading the studies of those students enrolled in Mobility programmes, e.g. Erasmus.
b) Proposing new Institutional agreements under the framework of the different mobility programmes. The adoption of this proposal will take place in the Faculty Board.

This Commission will be formed by:

a) Students' Vice-Dean. He will chair the meetings.
b) Academic Arrangement Vice Dean.
c) Teachers acting as tutors of students.
d) A member of the rest of the teaching and research personnel.
e) A student.
f) A member of the administration and service personnel.

B.8. Validation Commission. It sorts out any adaptation or validation of studies conducted in others Faculties following the current academic legislation.

The Commission will draw up some regulations stating the number of credits and minimum contents required to validate the subjects. The Faculty Board will adopt those regulations.

It will be formed by:

a) The Academic Arrangement or Food Science and Technology Vicedean depending the degree which the subject belongs.
b) A professor representative of each Faculty Department.

C. DEPARTMENTS

The Departments are the bodies in charge of the teaching co-ordination of one or several areas of knowledge (in one or several Establishments) in accordance with University teaching syllabus. It will also back up teacher's instruction or research activity, exercising any other responsibility stated by the present Charts and the regulations that develop those Charts. Other responsibilities are, namely:

- Participate in the design of the Study Plan in which the Department is involved.
- Organise PhD studies as well as co-ordinate the elaboration of doctoral thesis.
- Manage the Department budget and supervise its correct application.
- Conduct courses of specialisation.

The attached Tables shows the Departments, which administer studies in Veterinary Science, the disciplines as well as the core subjects that are being administered by each Department. We distinguish between "Facultative Departments" and "Interfacultative ones".

The main features of the **"Faculty departments"** are:

- They are located in the Faculty.
- Most part, or the whole instruction, is administered in Veterinary degree.
- Members of the Department belong to the Faculty of Veterinary Board.

"Interfacultative departments" are those which do not comply with the former features, but they administer teaching in Veterinary Science. They are part of the Faculty Board.

Faculty Departments

DEPARTMENT	AREA	CORE SUBJECTS
COMPARED ANATOMY AND PATHOLOGICAL ANATOMY	Veterinary Anatomy	Anatomy I and Embryology (1º) Anatomy II (2º)
	Veterinary Pathological Anatomy	Cytology and Histology (2º) General Pathological Anatomy (3º) Special Pathological Anatomy (4º)
ANIMAL PRODUCTION	Animal Production	Etology and Animal Protection and Etnology (1º) Agronomy (1º) Rural Economics (1º) Genetics (2º) Animal Nutrition (3º) Animal Production and Veterinary Hygiene (4º) Animal Husbandry and Welfare (5º)
ANIMAL HEALTH	Animal Health	Microbiology (2º) Immunology (2º) Parasitology (2º) Epidemiology (2º) Infectious Diseases (4º) Parasitic Diseases (4º)

		Preventive Medicine and Sanitary Police (5°)
FOOD TECHNOLOGY, NUTRITION AND FOOD SCIENCE	Food Technology	Food Technology (3°)
	Nutrition and Food Hygiene	Hygiene, Inspection and Food Control (5°)
ANIMAL MEDICINE AND SURGERY	Animal Medicine and Surgery	General Pathology (3°) Radiology (3°) Veterinary Anaesthesia (3°) Clinical Examination and Diagnosis and Laboratory Diagnostic Methods (3°) Medicine and Surgery (4°) Obstetrics and Reproduction (4°) Medical and Nutrition Pathology (5°)

Interfacultative Departments

DEPARTMENT	AREA	CORE SUBJECTS
BIOCHEMISTRY AND MOLECULAR BIOLOGY "A"	Biochemistry and Molecular Biology	Chemistry (1°) Biochemistry (1°)
ZOOLOGY AND PHYSICAL ANTHROPOLOGY	Animal Biology	Animal and Vegetable Biology (1°)
STATISTICS AND OPERATIVE INVESTIGATION	Statistics and Operative Investigation	Mathematics (1°)
PHYSICS	Applied Physics	Physics (1°)
PHYSIOLOGY	Veterinary Physiology	Animal Physiology (2°)
BIOCHEMISTRYAND MOLECULAR BIOLOGY "B" AND IMMUNOLOGY	Immunology	Immunology (2°)
PHARMACOLOGY	Veterinary Pharmacology	Pharmacy and Pharmacology (3°)

		Therapeutics (5º)
SOCIO-SANITARY SCIENCES	**Toxicology**	**Toxicology (5º)** **Deontology, Legal Medicine and Veterinary Legislation (5º)**

The Department are governed by the **Department Council**, presided by the Head of Department. The main responsibilities of the Department Council are:

- Elect and cease the Head of Department.
- Adopt the teaching arrangement plan.
- Schedule and organise the doctorate studies.
- Regulate and co-ordinate the curricula of the different subjects.
- Propose the creation, modification and elimination of teaching or research positions, and inform, when it proceeds, about the hiring of teaching and research personnel.
- Approval of the allocation and distribution of funds belonging to the Department, and their settlement.
- Inform and report about PhD thesis, Graduate disertations and any other investigation carried out in the Department.
- Any other responsibility stated by Murcia University Charts, or by the regulations, that develop those charts.

The Department Council is constituted by:

Group A: constituted by full time PhD professors. It counts for the 65% of the total number of members.

Group B: constituted by representatives of the rest of the research and teaching staff. It counts for the 5% of total number of members.

Group C: constituted by undergraduate and postgraduate students. It represents 30% of the Department Council.

Group D: members who belong to the service and administration staff. It is one member per every twenty members of the Council or fraction of twenty.

SINGLE BODIES

The Dean, will represent, direct and manage the Faculty. The Dean will be appointed by the Rector at the request of the Board of the Faculty. Other duties of the Dean are:

- Execute any agreement reached by the Establishment Board.
- Propose to the Rector the appointment and cease of Vice Dean and Secretary of the Establishment.
- Co-ordinate Vice-Deans and Secretary's activities.

- Take care of the adequate fulfilment of the duties of the Faculty members and the application, in the appropriate case, of the disciplinary law.
- Any other responsibility conferred by Murcia University Charts and the rules that develop those Charts.

The Dean is elected by the Faculty Board, by secret vote, among professors belonging to the University teaching body ascribed to the Establishment. The Dean will be in office for four years, being able to be re-elected only one more time.

The Vice-Dean is appointed by the Rector, at the request of the Dean, from among lectures ascribed to the Establishment. Vice-Deans will co-ordinate and manage the activities related to their assigned areas, as well as those responsibilities that the Dean decides to delegate to them.

The Secretary will be appointed by the Rector, at the request of the Dean, from among lectures ascribed to the Establishment. The Secretary main duties are:

- Be the Dean's assistant in the organisation of the Establishment.
- Elaborate and keep under custody the minutes of the Faculty Board sessions, as well as issue any certificate of the agreements reached in those meeting.
- Issue academic certificates according to the minute contents that he keeps under custody.
- Inform at the request of any members in the Establishment, about any official issue related to the secretariat.
- Any other competence delegated by the Dean.

The Head of Department exercises the duties of ordinary representation, direction and management of the Department. It is elected by the Rector at the request of the Department Council. Other duties of the Head of Department are:

- Preside the Department Council meeting and execute any agreement reached by the Council.
- Propose to the Rector the Secretary of Department's appointment and cease.
- Aprove the expenditure charged to the Department budget.
- Supervise the adequate fulfilment of the Department members´ laboural and academic duties, and the application, when necessary, of the disciplinary measures.
- He will be elected by the Department Council, and stated by its Internal Regimen Regulations, among Professor belonging to the University teaching body.

The Department Secretary will be appointed by the Rector, at the request of the Head of the Department, among the teachers ascribed to the Department. The main responsibilities of this post are:

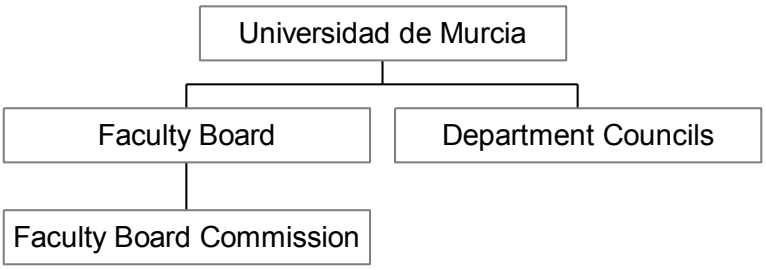
- Produce and keep under custody the minutes of the sessions of the Department Council, and when appropriate, of the Permanent Commission.
- Make available all the Department information and documentation to the Department members.
- Co-ordinate the economic management of the Department.

The following table relates the people in charge of single body posts in the Veterinary Faculty.

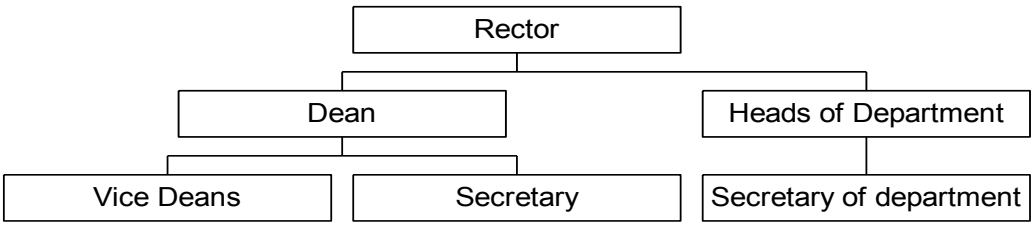
POST	HELD BY
DEAN.	Prof. Antonio Bernabé Salazar.
VICEDEAN.	Prof. Antonio Rouco Yáñez.
VICEDEAN.	Prof. Mª Jesús Periago Castón.
VICEDEAN.	Prof. José Joaquín Cerón Madrigal.
FACULTY SECRETARY.	Prof. Mª José Cubero Pablo.
DEPARTMENT HEAD OF COMPARED ANATOMY AND PATHOLOGICAL ANATOMY.	Prof. Miguel Ángel Gómez Sánchez.
DEPARTMENT SECRETARY OF COMPARED ANATOMY AND PATHOLOGICAL ANATOMY.	Prof. Rafael Latorre Reviriego.
DEPARTMENT HEAD OF BIOCHEMISTRY AND MOLECULAR BIOLOGY.	Prof. José Antonio Teruel Puche.
DEPARTMENT SECRETARY OF BIOCHEMISTRY AND MOLECULAR BIOLOGY.	Prof. Francisco Javier Campoy Menéndez.
DEPARMENT HEAD OF ANIMAL PRODUCTION.	Prof. Mª Luisa Hevia Méndez.
DEPARTMENT SECRETARY OF ANIMAL PRODUCTION.	Prof. Juan Orengo Femenía.
DEPARTMENT HEAD OF ZOOLOGY AND PHYSICAL ANTHROPOLOGY.	Prof. Juan José Presa Asensio.
DEPARTMENT SECRETARY OF ZOOLOGY AND PHYSICAL ANTHROPOLOGY.	Prof. Mª Isabel Arnaldos Sanabria.
DEPARTMENT HEAD OF STATISTICS AND OPERATIVE INVESTIGATION.	Prof. Juan Antonio Cano Sánchez.
DEPARTMENT SECRETARY OF STATISTICS AND OPERATIVE INVESTIGATION.	Profr. Josefa Marín Fernández.
DEPARTMENT HEAD OF PHYSICS.	Prof. Miguel Ortuño Ortín.
DEPARTMENT SECRETARY OF PHYSICS.	Prof. Juan Manuel Bueno García.
DEPARTMENT HEAD OF PHYSIOLOGY.	Prof. Francisco Javier Salazar Aparicio.
DEPARTMENT SECRETARY OF PHYSIOLOGY.	Profra. Mª Teresa Llinas Mas.
DEPARTMENT HEAD OF ANIMAL HEALTH.	Prof. Antonio Contreras de Vera.
DEPARTMENT SECRETARY OF ANIMAL HEALTH.	Prof. Jesús Salinas Lorente.
DEPARTMENT HEAD OF BIOCHEMISTRY AND MOLECULAR BIOLOGY B AND IMMUNOLOGY.	Prof. Arturo Manjón Rubio.
DEPARTMENT SECRETARY OF BIOCHEMISTRY AND MOLECULAR BIOLOGY B AND IMMUNOLOGY.	Prof. Concepción Martínez-Esparza Alvargonzález.
DEPARTMENT HEAD OF FOOD TECHNOLOGY, NUTRITION AND BROMATOLOGY.	Prof. Encarnación Gómez Plaza.
DEPARTMENT SECRETARY OF FOOD TECHNOLOGY, NUTRITION AND BROMATOLOGY.	Prof. Carmen Martínez Graciá.
DEPARTMET HEAD OF MEDICINE AND ANIMAL SURGERY.	Prof. Ana Montes Cepeda.
DEPARTMENT SECRETARY OF MEDICINE AND ANIMAL SURGERY.	Prof. José Murciano Pérez.
DEPARTMENT HEAD OF PHARMACOLOGY.	Prof. Elisa Escudero Pastor.
DEPARTMENT SECRETARY OF PHARMACOLOGY.	Prof. Emilio Fernández Varón.
DEPARTMENT HEAD OF SOCIO-SANITARY SCIENCES.	Prof. Domingo Pérez Flores.

DEPARMENT SECRETARY OF SOCIO-SANITARY SCIENCES.	Prof. Juan José Gascón Cánovas.

FLOWCHART OF COLLEGIATE GOVERNING BODIES IN THE FACULTY



FLOWCHART OF SINGLE GOVERNING BODIES IN THE FACULTY



MURCIA UNIVERSITY SERVICES RELATED OR DEPENDENT ON THE FACULTY OF VETERINARY

1. Secretary and Reception: (8 permanent positions) they are in charge of the administrative management of the Degrees, Faculty funds, economic management, supply, logistics and Establishment maintenance. It directly depends on the Faculty Secretary.

2. Deans' Administrative: (1 permanent position) this post is in charge of the Dean and Dean's Team administrative support.

3. Student's delegation: It is a collegiate body that groups all students represented in the governing bodies of the University and the Faculty. It is autonomous from the management point of view, and counts with the financing support of the Dean's office. It is integrated by the Delegate and Subdelegate of the Faculty, course delegates and subdelegates, students´ representatives in the Faculty Board and student's representatives in the University Cloister.

4. Students associations: these associations group students to carry out activities related to Veterinary with no profit end. There are three located in the Faculty:

a) IVSA: International Association of Veterinary students.
b) VEDEMA: Veterinarians for the Defense and Study of the Environment.
c) VETERMON: Veterinarians for the development of Third World.

5. Campus Library and Study Hall in the Faculty: they will be, specifically described in Chapter 8.

6. Computer rooms: there are three in the Establishment.

7. SIU and COIE: the main goal of the SIU (University Information Service) is the management and dissemination of information to students about any aspect related with the University. The COIE (Centre for Employment Orientation and Information) is a service that also helps new graduates getting a job. Both services depend upon Student and Work Vice Rectorate.

8. Veterinary Teaching Hospital: this is an autonomous service of the University of Murcia, ascribed to its Financial Management Office. It is attached to the Faculty and was opened in October, 1999, carrying out the tasks that were performed, until then, by the clinical services of Faculty.

It includes modern and appropriate infrastructure, giving rise, then, to a powerful teaching medium, in an adequate environment so that students are able to perform their clinical instruction. The hospital is open to the public and it will attend cases sent directly by the public, or by other veterinary practitioners. It offers a 24hour service, 7 days a week, 365 days/year. The teaching hospital is subdivided into three sections:

- Large animals
- Small and exotic animals
- Common services and laboratory (including Clinical Pathology, Diagnostic Imaging, Anaesthesiology, Pathological Anatomy and Infectious Contagious)

The Board Member Flowchart is the following:

Director: Prof. Cándido Gutiérrez Panizo.
Manager: Prof. María Josefa Fernández del Palacio.
Secretary: Prof. Francisco José Pallarés Martínez.

Ascribed personnel:

- Teaching staff of the clinical subjects of the Faculty of Veterinary.
- Clinical Associates Teachers.
- Residents.
- Scholarship holder.
- Intern students.
- Students carrying out practices.
- Administration and service personnel.

9. Veterinary Teaching Farm: it is an autonomous service ascribed to the Financial Management Office of Murcia University. It was opened in May, 2001. It is financed by FEDER funds, and also by its own economic resources. It has 16-hectare and a very specific infrastructure for Animal Production instruction.

The farm is located on the outskirts of Espinardo University Campus (2 Km. away from the Faculty of Veterinary), in a rural estate called "La Molineta", in Guadalupe, and holds the following units:

- A swine unit: a plant designed for 240-250 sows, producing on a weekly basis, it can also have the possibility of producing new breeding animals (hogs), to the extent of having students instructed about how to inseminate swine artificially.
- An egg laying unit: a plant designed for holding 500 egg laying obliquely arranged.
- An avian unit: a plant that aims to get different poultry species fat, in addition to an incubator able to have 2000 eggs incubated.
- A rabbit unit: a close-cycle system that can hold 150 doe rabbit and their production.
- Ovine unit: a plant designed for the breeding and exploitation of 100-125 reproductive sheep.
- Bovine unit: calves are being produced: 100 calves each time.
- Other units:
  - Goats: 150 goats of "Murciano-granadino" breed
  - Equine: 7 animals belonging to different species and breed
  - Apiculture unit: reproduction station
  - Simians: 28 baboon monkeys produced for testing purposes.

Likewise, the Farm counts with a Food Factory, a unit of Depuration of the liquid manure (Purines) and a 1,6 hectare fodder land. In addition, there is an academic building with:

- Offices.
- Library.
- Main lecture theatre.
- 2 classrooms that hold 35 students, each.
- Computer classroom for cattle-raising management with 20 different seats to work.
- Restaurant-coffee shop.
- Students, teachers' hall of residence.
- Action-exhibition hall.
- Shower and industrial laundry service.

It is a double-fenced isolated establishment, preventing any vehicle or person from entering the facilities. The biosecurity programme is so strict, that you can only have access to the premises through the showers. The boundaries between the so called "clean" and "dirty" are perfectly clear-cut.

The flowchart for Executive Board on the Veterinary Teaching Farm is the following:

Director: Prof. Alberto Quiles Sotillo.
Secretary: Prof. Francisco Fuentes García.

Ascribed Personnel:

- Lectures of the different disciplines in the Faculty of Veterinary.
- Associated lectures.
- Intern students.
- Students carrying out practices.
- Laboral hired personnel.

10. Other services ascribed to the Departments.

a) Food technology Pilot Plant.
b) Dissection Room and Anatomic Museum.
c) Toxicology service.

2. COMMENTS.

Add any comment to complete the description on the organisation and the running of the Establishment that you feel necessary.

The Veterinary Faculty Board might seem too large, and therefore, little operative; nevertheless, almost every issue is previously worked on in Delegate Commissions and the Board simply ratifies any proposal that arise from the Commissions. The Board does work specifically on those issues that are of general academic interest and that require a debate in depth. In that sense, we believe that it is convenient to have a highly represented Board, where many different opinions can be heard.

One of the main concerns of the Executive Board of the Faculty is to keep a fluent relationship with the representatives of the veterinary profession. As a consequence, in 2001 the Establishment signed an Agreement with the Official College of Veterinarians of Murcia and it was set up a Mixed Commission College-Faculty formed by: 2 members of the Dean Team, the Director of the Teaching Hospital, the representative of the Faculty Board at this College and two members of the Executive Team of the College. This commission deals with the co-operation procedures and issues of common interest.

In addition, the Faculty has signed agreements with over 200 companies related to the different veterinary fields that allow students to carry out practice during the non-contact lecture period.

3. SUGGESTIONS.

If you are not satisfied with the situation, please make a list of the changes that you feel should be appropriate in order of importance.

The LOU states a shared responsibility in the University instruction. On the one hand, the Departments are responsible for the teaching contents, and on the other, the Deaneries are responsible for the organisation of teaching. This co-responsibility produces difficulties in the co-ordination and solution of specific questions, and although this is something common to all the Spanish Universities, it would be interesting to solve this situation by giving clear and non-overlapping responsibilities.

Chapter 3: FINANCES

CHAPTER 3. FINANCES.

1. INTRODUCTION.

The University of Murcia on financing terms, is managed in a centralised and global way. Therefore, it is difficult to breakdown the expenditure and revenue items of the Veterinary School, as it is required on the SER.

Nevertheless, it can be stated, by inferring the data, that the total expenditure of the Veterinary Faculty is around 7,8 million €, 86,81% corresponds to personnel's salaries, 9,61% to operating costs, 2,92% to equipment, and, 0,66% to building maintenance. Revenue amounts to 8,7 million €. A detailed revenue analysis reveals that a 66,56% out of the income comes from State or Public Bodies, a 0,37% is obtained from Private Bodies, a 15% is obtained from research activities and finally a 3,33% comes from clinical activities and diagnostic services. In the Table 3.1 and 3.2 revenues and expenditures are explained in detail.

3.1. EXPENDITURE.

Table 3.1.1. Establishment annual expenditure*.
Year 2004

		Euro	%
A) Personnel			
A.1.) Academic		**4.400.081,14**	
A.2.) Support staff		**2.043.614,76**	
A.3.) Research		**350.527,30**	
	Total	**6.794.223,20**	**86,61**
B) Operating costs			
B.1.) Utilities		**272.597,03**	
B.2.) Expenditure specifically related to teaching		**240.284,29**	
B.3.) Expenditure specifically related to research		**227.050,24**	
B.3.) General Operations (excluiding the above mentioned)		**11.937,17**	
	Total	**751.869,17**	**9,61**
C) Equipment			
C.1.) Teaching		**100.943,77**	
C.2.) Research		**121.211,03**	
C.3.) General (or common) equipment		**6.308,22**	
	Total	**228.463,02**	**2,92**
D) Building maintenance		**51.727,39**	**0,66**
E) Total expenditure		**7.826.282,78**	**100,00**

* The last financial year that can be accounted is 2004.

It is not included in the teaching personnel heading (A1):

- Teaching bonus (quinquennium) obtained by lecturers in periods of five years, if the teaching job is positively evaluated by peers.
- Research bonus (period of six years) obtained in periods of six years, if the researching production of the lecturers has been evaluated positively.
- "Autonomic" bonus: obtained after an evaluation process at a Regional level.

This bonus is not included in the support personnel heading (A2). Those bonuses obtained by working overtime or carrying out dangerous tasks.

Some bonus of research personnel (A3) includes research grant holders in addition to Ramón y Cajal hired people.

Table 3.1.2. Cost of Veterinary Training.

	Euro
1. Annual direct cost of training a student	**9.657,60***
2. Direct cost of training for a diploma	**67.410,05****

The economic data refer to the year 2004 and the student's data refer to the academic year 2004-2005.

* It must be taken into account that Veterinary Sciences and Food Technology are different degrees taught in the Establishment. In 2004-2005, there were 681 students enrolled in Veterinary Sciences and 100 students enrolled in Food Technology.

** The average time to get a degree is 6,98 years.

3.2. REVENUES.

Table 3.2.1. Annual revenues of the Establishment.
Year 2004.

	Euro	%
a. Revenue from the State or Public authorities	**5.821.682,01**	**66,56**
b. Revenue from private bodies	**32.454,65**	**0,37**
c. Revenue from research	**1.311.743,28**	**15,00**
d. Revenue earned and retained by the Establishment	**1.574.251,98**	**18,00**
d.1 registration fees from students	**634.779,00**	
d.2 revenue from continuing education	**648.370,66**	
d.3 revenue from clinical activities	**253.228,17**	
d.4 revenue from diagnostic activities	**37.874,15**	
e. Revenue from other sources	**5.835,60**	**0,07**
e.1 charge on coffee shop	**2.909,06**	
e.2 reprography	**1.736,46**	
e.3 Veterinary Teaching Hospital coffee machine	**1.190,08**	
f. Total revenue from all sources	**8.745.967,52**	**100,00**

Table 3.2.2. Changes in Public Funding.

Give an outline of revenue from the State or public authorities (item a. from Table III.2.1) for the previous 5 years (in Euro).

Year	**2004**	**2003**	**2002**	**2001**	**2000**
Revenue	5.821.682,01	5.428.038,67	4.958.289,50	4.297.500,28	3.903.337,43

What percentage of income, from the following sources, does the veterinary teaching establishment have to give to other bodies (University, etc.)?

Clinical work Analysis for commercial clients Analysis for veterinary practitioners Research grants Other (please, explain):

Indicate the proportion of additional income that is retained within the institution in each case

Part of the revenues obtained by the Establishment services return to Murcia University.

-**Clinical work and analysis for commercial and veterinary practitioners**: These activities are managed within the framework of the Veterinary Teaching Hospital (HCV). The HCV is a Murcia University service, which has its own Expenditure Unit. Thus, 100% of the income returns to the University Central Account (Caja Central de la Universidad), after that, the University Central Office returns to the HCV the entire amount of money that will be spent in: perishable goods, equipment, grants awarded to scholarship holders and veterinary practitioners.

The only diagnostic service, which is not being framed within the HCV (Clinical Veterinary Hospital) structure, is the Toxicology and Forensic Veterinary Service. It charges for its services through OTRI, that is, Investigation Result Transfer Office (Oficina de Transferencia de Resultados de Investigación). The OTRI retains a 10% of the income as University structure maintenance.

-**Research grants**: Research grants and contracts managed by Murcia University Central services are retained a 15% of the total amount as a management and maintenance fee.

-**Others (courses, continuing education masters and advisory services):** These courses will have to offer a 10% of their income as grants. Meetings will be retained a 4%, and courses, a 10% by the University as a management and maintenance fee. The rest of the income will be returned to the Departments (or the proposed groups), in order to be self-financed. The advisory services, which are retained 15%, are also administered by OTRI.

Outline how the allocation of funding to the establishment is determined and by what body. If the allocation of funds, or any other significant proportion of it, is linked to a particular factor (e.g. student numbers, research output, please describe this). Outline how the allocation of funds within the Establishment is decided.

The Murcia Regional Government releases 70% of the financing funds (current transfer) to the University of Murcia. This allocation is determined on a pluriannual agreement basis. This agreement guarantees that Murcia University will receive a 100% of the personnel funds (Heading 1).

The Financial Management Office (Gerencia) allocates the following funds to the Units of Expenditure. There are four Units of Expenditure in the Faculty of Veterinary of Murcia:

1. Establishment.

2. Departments.
3. Veterinary Teaching Hospital (HCV).
4. Veterinary Teaching Farm.

The Establishment and the Departments are "finalist" expenditure units, that is, they do not have their own Central Account (caja propia). Neither will they receive income nor be able to carry out any external payments. The Establishment and the Departments receive their income from Murcia University common fund: 30% out of that fund is allocated to the Establishment and 70% is allocated to the Departments.

The criteria for the distribution of the funds between the different units of the University is:

- In the case of Establishment a portion of the fund will be lineally distributed and the rest will be distributed depending upon the teaching and management indicators.
- In the case of Departments a portion of the funds will be also lineally distributed, and the rest will depend upon teaching, research and management indicators.
- The most important indicator for the fund distribution (counts for a 70% of the funds), is the number of students.

University distributes the budget into two headings: perishable goods and equipments. There is very little flexibility, that is, there is almost no possibility of transferring funds from one heading to another.

Establishments and departments will have an additional financing source by infrastructure funds to acquire books for the library, material to do some practise or minor works.

The Veterinary Teaching Hospital (HCV) and the Farm are Expenditure Units able to produce income in order to get self-financed. They have to comply with the previous economic year budget expectancies. When that compliance occurs, the directive teams are able to require the authorities a rise in the budget. If this compliance does not occur, there will be a budget cutback, up to the limit stated by the income.The budgets of these two units are much higher and flexible; therefore, it is much easier to transfer funds from one heading to another one.

Describe briefly the mechanisms for funding capital expenditure (e.g. building work, major items of equipment), how decisions are taken on this.

Once the funds have been allocated to the Establishments, the Dean and his team decide upon how to spend the budget during the economic year. This decision must be communicated to the Faculty Board. They must be authorised by the Dean and the Secretary. The Dean office must submit a balance sheet to the Faculty Board. Two balance sheets should be drawn up, one in the middle of the academic year, and another one at the end of it.

In addition, the Faculty Board proposes what kind of expenditure should be dedicated to building works in the Establishment along with the specific Commission of the Veterinary

School instituted for these purposes. The Dean office must make sure that those funds achieved are spent accordingly.

Please, state if students:

1. Students pay enrolment fees. **Yes**
2. How much are those enrolment fees? **12,72 € per credit (10 teaching hours) during 2004-2005. 13,16 € per credit during 2005-2006.**
3. How is it decided? **The Murcia Regional Government decides it.**
4. How are those funds allocated? **They are part of the University income.**

2. COMMENTS.

a) Teaching Establishment never has enough finance**.** Please, comment on any of the "Guidelines and requirements" that are difficult to fulfil in the present financial situation.

b) What is your number one priority for the use of any increased funding? Comment on the degree of autonomy and flexibility available to the establishment in financial matters.

c) Comment on the percentage of income from outside services that the establishment is allowed to retain for its own use, and in particular on the extent to which loss of this income acts as a disincentive for the service concerned.

a) The Establishment is almost self-financed. However, one of the main problems in the financing is the lack of funds to replace equipments that can be out of date in few years. This situation makes also difficult to acquire new outstanding equipment that will be needed to promote the disciplines of Clinical Area, Veterinary Sciences and the Pilot Plant.

The Establishment has very little economic autonomy to do any investments; as a consequence, it depends upon those central bodies which distribute the Establishment and the Department budget. It takes a long time to put into practice any plan due to the bureaucratic steps that have to be taken. Finally, in broad terms, the University economic resources are so limited that Authorities can simply meet some of the demands and needs that have been made during the last few years.

b) In case additional funds are achieved, our priority would be the acquisition of outstanding equipment, and the upgrading of the existing ones. It would also be invested in the creation, expansion and updating of buildings for the Farm, in addition to the Hospital and the Area Food Technology and Food Hygiene.

Another priority would be the hiring of extra support Personnel, since the actual is insufficient. It is particularly important to hire more veterinary professionals in the Veterinary Teaching Hospital, since the current personnel are insufficient. Right now, the problem has been sorted out by hiring graduates as scholarship holders and residents, although this is not an adequate solution. If a Foundation were in charge of the management of the Hospital, the problem would be resolved in a more efficient way.

c) The Farm and the Hospital are allowed to retain their income for their own use. They can retain up to 100% of it to refund the capital previously released by the University Financial Management Office (Gerencia).

3. SUGGESTIONS.

If you are not satisfied with the situation, please list you suggestions for a change in order of importance.

The Establishment is in charge of a valuable patrimony in comparison to other Establishments of the University of Murcia. Nevertheless, the economic resources allocated to this Establishment are scarce, since they depend basically on the number of students enrolled in our Establishment. Our needs are even more obvious when the Farm, the Hospital and the Pilot Plant try to keep an investment policy in accordance with the High Standards of Education we intend to offer to our students.

Thus, we suggest that the Establishment should be provided with more funds taking into account the value and size of our patrimony instead of the number of students enrolled in the Establishment. There should be a similar proportion between the Funds released by the Regional Government to University over different disciplines, included Veterinary Science; and the other University Establishments. In addition, the Faculty should be provided with a greater budget-autonomy and a most important role in the decision making processes. The University Government should agree on the signing of monitored contract-programmes, letting the Establishment make major investments.

The Establishment has submitted to the appropriate authorities, the request for running the Hospital through a Foundation. Therefore, the Faculty would be allowed to administer their own recourses and hire their own personnel. It is expected that by 2006, the model of Foundation would be established to start running the HCV gradually.

Chapter 4: CURRICULUM

CHAPTER 4. CURRICULUM.

1. FACTUAL INFORMATION.

Indicate whether there is a defined national curriculum (if applicable). How and by what body decisions are taken on this. Describe the degree of freedom that the Establishment has to change the curriculum. Outline how the decisions are taken on curriculum and course content issues within the Establishment. Outline how the decisions are taken on the allocation of hours between the various subjects and on the balance between theoretical and practical teaching.

The Royal Decree 1497/1987, November 27th regulates studies and lays the groundwork for teaching Veterinary studies in Spanish Universities. Therefore, the Spanish legislation directly affects the Veterinary Science curriculum in the Faculty of Veterinary of Murcia. In accordance with this Law, it is compulsory:

- **Timing:** courses will be divided into 2 terms of 4 months ("*cuatrimestres*"). Examination will take place for two or three weeks after each term. The teaching-load is 30 contact-hour weeks per course.

- **Subject length:** is calculated in credits. A credit is the value allocated to each course unit (subjects) to describe the student's workload.

- **Subjects**:

  - Duration: Subjects are attended on a four-month basis or annually depending on their number of credits . In the first case, students would get a minimum of 4,5 credits. In the second case, they would get a minimum of 9 credits.

  - Types:

    - Core subjects: Compulsory for all students of Veterinary Science in Spain, no matter where they are attending studies.
    - Compulsory subjects: These subjects are compulsory for all students of this particular University. The different Universities decide which compulsory subjects offer in their Study Plan.
    - Optional subjects: The students should choose several optional subjects among a wide range included in the Study Plan of each University.
    - Elective Subjects: They are not necessarily related to the career that is being studied (e.g foreign languages, computers, sports, etc). At least a 10% of the total number of credits studied for the Veterinary degree should be obtained by studying these subjects.

- **Number of subjects that are simultaneously administered:** the student cannot study simultaneously more than 6 subjects per year (no matter whether they are core, optional or elective subjects).

- **Theory lessons:** students cannot attend theoretical lessons more that 15 hours a week (no matter whether they are core, optional or elective subjects).

Another National Law, "General Guidelines in Veterinary Studies", 1991, directly affects Veterinary Science Studies in Murcia. This Law is based on the E.U. Directive 78/1027. It states the minimum requirements for the veterinary studies and, therefore, it was compulsory to follow when drawing up the new Study Plan. Its main features are:

- Structure of the Study Plan. The veterinary degree has a duration of five years divided in two cycles. The first cycle last 2 years and the second cycle 3 years.
- Core subjects: the National Law regulating the Veterinary studies states the different core subjects as well as the minimum credits (theoretical and practical) that these subjects should have. However, the different Universities are able to increased the final number of credits of these courses up to a 25%. Although, core subjects can be split at a Study Plan level, the total number of credits must be kept. This law specify the minimum compulsory contents that must be taught in the different core subjects as well as the area of knowledge to which those subjects are being ascribed.
- Following the former Laws, the Establishment has a very little degree of freedom to change the curriculum. Nevertheless, the Establishment can make decisions on:
  - Splitting of core subjects.
  - Addition of contents in case of increasing of credits allocated to core subject.
  - Which area of knowledge will be in charge of a core subject.
  - Addition of compulsory subjects.
  - The kind and number of optional subjects (description and duration) that are being offered in the curriculum.
  - Number of elective subjects that could be studied and regulation of their validation.
    - ❖ Courses which are not being administered at University.
    - ❖ Extra-mural practical work.
    - ❖ End of career projects.

The more relevant decisions that were made by our Faculty Board during the elaboration of the current Study Plan (Plan 2001) are:

a) The process for allocating the credits to core subjects should be based on the "General Guidelines in Veterinary Studies". It was also taken into account what other Universities have done already to design the new curricula. It was paid special attention to the average credits allocated to core subjects by other universities. It was decided to include only veterinary related-subjects in our new curricula.
b) To follow the University regulations, mentioned above, to design the distribution and assignment of core subjects per cycle and term (cuatrimestre, i.e., four-month period).
c) Not to include any compulsory subject in the curriculum of our faculty.
d) To establish two main incompatibilities in our curricula:
   - ✓ It was compulsory for the students to get at least 93 credits from core subjects to be allowed to pass from the first to the second cycle.
   - ✓ It was compulsory to have completed all the credits corresponding to core subjects to be able to attend the final core subject "Pre-professional practice" (Estancias).

e) Regarding optional subjects, the different Departments/lecturers were free to propose a list of subjects. They were discussed and finally approved by the Faculty Board arranging them in different pre-specialisation tracks.
f) It was decided that all optional subjects would have the same number of credits (4,5), being the Departments/Lecturers free to distribute them into theoretical or practical activities.
g) With respect to free election credits, it was decided that credits would be given to non-regulated courses or practical activities done out of the Establishment, but never to end-of career projects.
h) It was decided that the core subject "Pre-professional practice" would consists of a rotational course among: Veterinary Teaching Hospital, Teaching Veterinary Farm, Pilot Plant of Food Technology, Slaughterhouses and External Companies.The fact that, it is compulsory to have completed all the credits corresponding to core subjects to be able to attend the final core subject "Pre-professional practice" (Estancias) has made the career last longer. Therefore, the career now lasts six years.

Overall, it was borne in mind the balance between practical and theoretical hours, establishing a 1:1 ratio, following what the Laws and Guidelines State.

4.1. CURRICULUM FOR UNDERGRADUATE STUDENTS.

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

Hours of training						
Year	**Theoretical hours**	**Practical work**	**Supervised work**	**Clinical work**	**Others***	**Total**
First	290	190	85	33	10	608
Second	362	238	55	24	1	680
Third	309	120	37	130	-	596
Fourth	390	119	-	183	-	692
Fifth	315	140	4	143	-	602
Sixth	-	35	-	210	-	245
Total	1.666	842	181	723	11	3.423

***Tutorials**

Table 4.1.2. Curriculum studies in each different year.

FIRST YEAR

Hours of training						
Subject	**Theoretical hours**	**Practical hours**	**Supervised work**	**Clinical work**	**Others**	**Total**
Anatomy and Embryology	44	26	35			105
Biochemistry	50	40	5			95
Ethology, Animal Protection and Ethnology	45	12	5	33		95
Animal and Vegetal Biology	30	30	5			65
Mathematics	30	20	8		10*	58
Chemistry	25	20				45
Agriculture, Praticulture and Forage Preservation	30	15				45
Agrarian Economy	15	15	15			45
Physics	21	12	12			50
Total	290	190	85	33	10	603

***Scheduled tutorials.**

SECOND YEAR

Hours of training						
Subject	**Theoretical hours**	**Practical hours**	**Supervised work**	**Clinical work**	**Others**	**Total**
Anatomy II	60	45				105
Cytology and Histology	37	23	30			90
Animal Physiology	75	40	10	20		145
Microbiology	60	40				100
Immunology	30	14			1*	45
Parasitology	30	30				60
Epidemiology	25	16		4		45
Genetics	45	30	15			90
Total	362	238	55	24	1	680

***Scheduled tutorials.**

THIRD YEAR

Hours of training						
Subject	**Theoretical hours**	**Practical hours**	**Supervised hours**	**Clinical work**	**Others**	**Total**
Animal Nutrition	60	20		25		105
Food Technology	60	65	5			130
General Pathological Anatomy	24	14	14			52
General Pathology	45		15	20		80
Radiology	25	10	3	10		48
Veterinary Anaesthesia	25			20		45
Pharmacy and Pharmacology	60	11		5		76
Clinical Propedeutics	10			50		60
Total	309	120	37	130	-	596

FOURTH YEAR

Hours of training						
Subject	**Theoretical hours**	**Practical hours**	**Supervised work**	**Clinical work**	**Others**	**Total**
Special Pathological Anatomy	45	45				90
Infectious Diseases	75	16		46		137
Parasitary Diseases	60	30		20		110
Medicine and Surgery	60			35		95
Obstetrics and Reproduction	75	28		37		140
Animal Production and Veterinary Hygiene	75			45		120
Total	390	119	-	183	-	692

FIFTH YEAR

Hours of training						
Subject	**Theoretical hours**	**Practical hours**	**Supervised work**	**Clinical work**	**Others**	**Total**
Breeding And Animal Health	45	30		15		90
Hygiene, Inspection and Food Control	75	65				140
Medical And Nutritional Pathology	75	8	4	65		152
Therapeutics	15			30		45
Toxicology	45	10		25		80
Deontology, Legal Medicine, Veterinary Legislation	30	15				45
Preventive Medicine, Sanitary Police	30	12		8		50
Total	315	140	4	143	-	602

SIXTH YEAR

Hours of training						
Subject	**Theoretical hours**	**Practical work**	**Supervised work**	**Clinical work**	**Others**	**Total**
“Pre-professional practice”	-	35	-	210	-	245
Total	-	35	-	210	-	245

Table 4.1.3. Curriculum hours in EU-listed subjects taken by every student.

Hours of Training						
A. Basic Subjects	**Theoretical Hours**	**Practical Work**	**Supervised work**	**Clinical work**	**Others**	**Total**
Anatomy (inc. Histology and Embryology)	122	82	45			249
Biochemistry and Molecular Biology	50	40	5			95
Biology (inc. Cell Biology)	49	42	20			111
Biophysics	21	12	12			45
Biostatistics	30	20	8		10	68
Chemistry	25	20				45
Epidemiology	25	16		4		45
Genetics	45	30	15			90
Immunology	30	14			1	45
Microbiology	60	40				100
Parasitology	30	30				60
Pathological Anatomy (Microscopic and Macroscopic)	69	59	14			142
Pharmacy	30	7		1		38
Pharmacology	30	4		4		38
Physiology	75	40	10	20		145
Physiopathology	45		15	20		80
Scientific and Technical Information and Documentation Methods						
Toxicology (Incl. Environmental Pollution)	45	10		25		80
Total	781	466	144	74	11	1,476

Hours of Training						
B. Animal Production	**Theoretical Hours**	**Practical Work**	**Supervised Work**	**Clinical Work**	**Others**	**Total**
Agronomy	30	15				45
Animal Behaviour (Incl. Behavioural Disorders)	8	6	5	10		29
Animal Husbandry (Incl. Livestock Production Systems)	75			45		120
Animal Nutrition and Feeding	60	20		25		105
Animal Protection and Welfare	7	6				13
Environmental Protection						
Preventive Veterinary Medicine (Incl. Health Monitoring Programmes)	75	42		23		140
Reproduction (Incl. Artificial Breeding Methods)	40	14		19		73
Agrarian Economy	15	15	15			45
Total	310	118	20	122		570

Hours of training						
C. Clinical Subjects	**Theoretical hours**	**Practical work**	**Supervised work**	**Clinical work**	**Others**	**Total**
Anaesthesia	25			20		45
Clinical Examination, Diagnosis and Laboratory Diagnostic Methods	10			50		60
Medical Clinic	75	8	4	65		152
Diagnostic Imaging	25	10	3	10		48
Obstetrics	15	14				29
Reproductive Disorders	20			18		38
State Veterinary Medicine, Zoonoses, Public Health and Forensic Medicine	9	6				15
Surgery and Therapeutics	75			65		140
Total	254	38	7	228		527

Hours of training						
D. Food hygiene	**Theoretical hours**	**Practical work**	**Supervised work**	**Clinical work**	**Others**	**Total**
Certification of Food Production Units	75	65				140
Food Certification						
Food Hygiene and Food Quality (incl. Legislation)						
Food Inspection, Particularly food of Animal Origin						
Food Science and Technology	60	65	5			130
Total	135	130	5			270

Hours of training						
E. Professional Knowledge	**Theoretical hours**	**Practical work**	**Supervised work**	**Clinical work**	**Others**	**Total**
Practice Management		35		210		245
Professional Ethics	7	3				10
Veterinary Certification and Report Writing	7	3				10
Veterinary Legislation	7	3				10
Total	21	44		210		275

Table 4.1.4: curriculum hours in other subjects taken by every student.

Hours of training						
	Theoretical hours	**Practical work**	**Supervised work**	**Clinical work**	**Others**	**Total**
Ethnology	30			33		63
Total	30			33		63

4.2. ELECTIVE SUBJECTS.

According to the Law, Veterinary Science students in Murcia University must get at least a 10% of the total credits from elective subjects (40,5 credits in total). This teaching is understood as a complement of the student education in disciplines that are not necessarily considered as veterinary-related. Thus, students could choose to study Arts or Fine Arts subjects, for instance. Students might choose among the following ones:

a. Core subject belonging to other careers.
b. Optional subject in Veterinary Science that have not been previously taken.
c. Elective subjects related to languages, computer studies, etc. offered by Murcia University.
d. Subjects related to sports.
e. Subjects on artistic disciplines (music, painting, ballet, etc.) offered by Murcia University services.
f. Courses offered by Murcia University services.
g. Courses offered by Summer University.
h. Practices carried out in Veterinary companies or official veterinary services (linked to the State, Autonomous Community or Local Government).
i. Courses offered by other universities.
j. Courses offered by Professional Associations.
k. Courses offered by Official Schools (such as School of Languages, Official Conservatories on Music and dance studies).

Describe how and when students are allowed to select elective subjects, and the number of hours they have to take. Is there any limitation to their freedom of choice?

The only limitation is that some of these elective credits are considered "Elective Credits per Equivalence", and they refer to non-regulated activities, which might not be organised by Murcia University. From 40,5 credits of elective courses only a total of 25 credits could be obtained per equivalence, in accordance to our curricula.

Likewise, credits per equivalence do not have the same value as "ordinary credits". For instance:

- A 15-hour course is equivalent to 1 credit in courses that can be validated by "credits per equivalence".
- 40-hour practices are equivalent to 1 credit in practical activities validated by "credits per equivalence".

Credits per equivalence do not entail the achievement of any grade, neither are they taken into account when calculating the grade point average.

The Veterinary Faculty offers a wide list of optional subjects that can be validated by free election credits as appear in the following table.

Table 4.2. Optional subjects validated as Free Election Credits in the Veterinary Faculty (2005/2006).

Training hours							
Area	**Course in which it is being offered**	**Theore-tical hours**	**Practi-cal work**	**Super-vised work**	**Clinical work**	**Others**	**Total**
Economic and Financial Analysis and Management of Farms	**All**	**15**	**15**	**15**			**45**
Laboratory Animals	**All**	**20**	**15**	**10**			**45**
Exotic Animals Biology	**All**	**25**	**20**				**45**
Molecular Biology Applied to Veterinary	**All**	**25**	**20**				**45**
Ecopathology of Wild Animals	**All**	**30**	**15**				**45**
Ecotoxicology	**All**	**30**	**15**				**45**
History of Spanish Veterinary	**All**	**45**					**45**
Ingredients, Technological Innovations and Development of New Products	**All**	**25**	**20**				**45**
Alternative Methods to Animal Experimentation	**All**	**15**	**30**				**45**
Advanced Statistical Method in Life Sciences	**All**	**20**	**25**				**45**
Food Microbiology	**All**	**25**	**20**				**45**
Mathematical Models In Life Sciences	**All**	**20**	**25**				**45**
Alternative Nutritional Resources. Environment and Farm Activity	**All**	**30**	**15**				**45**
Commercial Life of Food Stuff and Elaborates	**All**	**25**	**20**				**45**

Students have no other limitation to complete the elective credits. The Study Plan distributes them in the following way:

- First year: 13,5 credits.
- Second year: 9 credits.
- Third year 4,5 credits.
- Fourth year: 9 credits.
- Fifth year: 4,5 credits.

4.3. OPTIONAL SUBJECTS.

Undergraduate Veterinary students must study a total of 4 optional subjects. They will be distributed in the following way:

- Two subjects will be attended in the third year (one on each term).
- Two subjects will be attended in the fifth year (one on each term).

The optional subjects will be chosen by students from among 42 subjects. Any of them will have 4,5 credits, that is, 45 theoretical and/or practical hours. Therefore, the student will obtain a total of 18 credits (180 hours) from optional subjects.

Optional subjects will be grouped in pre-specialisation tracks. A particular subject might belong to one or more tracks, depending on how specific their contents are. The student who have studied all the optional subjects included into a track will be awarded with a pre-specialisation note in the degree. If the student decides to choose optional subjects that belong to different tracks, the pre-specialisation note will not be awarded.

Next, the four different tracks are described:

INTENSIFICATION: MEDICINE AND SURGERY.

- Applied Anatomy.
- Biology of Exotic Animals.
- Biotechnology in Porcine Reproduction.
- Veterinary Clinical Cardiology.
- Equine Surgery.
- Small Animal Dermatology.
- General Medicine and Propedeutics in Laboratory Animals.
- Applied Veterinary Physiology.
- History of the Spanish Veterinary.
- General Immunogenetics Applied to Xenotransplantation.
- Alternative Methods to Animal Experimentation.
- Advanced Statistical Methods in Life Science.
- Advance Mathematical Models in Life Sciences Ophthalmology.
- Veterinary Clinical Pathology.
- Exotic Animal Pathology.
- Diagnosis and Therapeutic Protocols in Internal Veterinary Medicine.
- Traumatology and Orthopaedics in Small Animal.
- Veterinary Oncology.

INTENSIFICATION: ANIMAL PRODUCTION AND ECONOMY.

- Small Animals and Other Species Nutrition.
- Economic and Financial Analysis and Management of Farms.
- Laboratory Animals.
- Apiculture.
- Exotic Animal Biology.
- Molecular Biology Applied to Veterinary.
- Biotechnology in Porcine Reproduction.
- Co-operation and Breeding Development.

- Animal Food Manufacture.
- Applied Veterinary Physiology.
- History of the Spanish Veterinary.
- General Immunogenetics Applied to Xenotransplantation.
- Marketing And Agricultural Politics.
- Advanced Statistical Methods in Life Sciences.
- Advanced Mathematical Models in Life Sciences.
- Alternative Resources on Nutrition. Environmental and Farm Activity.

INTENSIFICATION: HYGIENE AND FOOD TECHNOLOGY.

- Hygiene, Inspection and Technology of Non-Animal Food.
- History of Spanish Veterinary.
- Ingredients, Technological Innovations and Development of New Products.
- Advanced Statistical Methods in Life Sciences.
- Advanced Mathematical Models in Life Sciences.
- Food Microbiology.
- Food Technology of Foodstuff of Animal Origin: Meat, Milk, Fish, Eggs and Honey.
- Commercial Life of Foodstuff and Elaborates.

INTENSIFICATION: ANIMAL HEALTH.

- Extension in Clinical and Forensic Toxicology.
- Laboratory Animals.
- Molecular Biology Applied to Veterinary.
- Ecopathology of Wild Animals.
- Ecotoxicology.
- Infectious Diseases of Bees.
- Infectious Diseases of Fish.
- Exotic Diseases of Risk for Spain.
- History of the Spanish Veterinary.
- General Immunogenetics Applied to Xenotranplantation.
- Alternative Methods to Animal Experimentation.
- Advanced Statistical Methods in Life Science.
- Sanitary Environmental Microbiology and Parasitology.
- Importance in Livestock Exploitation.
- Advanced Mathematical Models in Life Science.
- Welfare and Breeding of Goats.

The Deparments/Lectures are able to cancel an optional subject since they might lack the time, students or fundings for it. However, the Faculty must take the necessary actions to ensure in all cases an adequate number of optional subjects for all the intensification tracks.

Every subject must have at least 10 enrolled students. If this is not the case, the Department/lecturer is able to cancel it during a particular year, and the enrolled students will have to choose another optional subject.

Table 4.3. Optional Subjects in Veterinary Curriculum.
Table 4.3.1. Optional Subjects in the Veterinary Curriculum. Track 1: Medicine and Surgery.

Hours of training								
Subjects	**Course**	**Other tracks where the same subject is also offered**	**Theoreti-cal hours**	**Practical work**	**Supervi-sed work**	**Clinical work**	**Others**	**Total**
Biology of Exotic Animals	3	2	25	20				45
History of Spanish Veterinary	3	2, 3 and 4	45					45
Alternative Methods to Animal Experimenta-tion	3	4	15	30				45
Advanced Statistical Methods in Life Sciences	3	2, 3 and 4	20	25				45
Mathemati-cal Models in Life Sciences	3	2, 3 and 4	20	25				45
Biotechnolo-gy in Porcine Reproduction	5	2	20			25		45
Veterinary and Clinical Cardiology	5	None	20			25		45
Equine Surgery	5	None	20			25		45
Dermatology in Small Animals	5	None	15		15	15		45
General Medicine and Examination of Experimenta-tion Animals	5	None	20			25		45
General Immunoge-netics Applied to Xenotransplantation	5	2 and 4	30	15				45
Ophthalmo-logy	5	None	25			20		45
Exotic Animals Pathology	5	None	25			20		45
Diagnosis and Therapeutic Protocols in Internal Veterinary Medicine	5	None	20			25		45
Traumatolo-	5	None	20			25		45

gy and Orthopaedics in Small Animal								
Tumours in Domestic Animals	5	None	15	30				45

Table 4.3.2. Optional Subjects in Veterinary Curriculum. Track 2: Animal Production and Economy.

Hours of training								
Subjects	**Course**	**Other tracks where the same subject is also offered**	**Theore-tical hours**	**Practical work**	**Supervi-sed work**	**Clinical work**	**Others**	**Total**
Economic and Financial Analysis. Management of farms	3	None	15	15	15			45
Laboratory Animals	3	4	20	15	10			45
Apiculture	3	None	15	15			15**	45
Biology of Exotic Animals	3	1	25	20				45
Molecular Biology Applied to Veterinary	3	4	25	20				45
History of Spanish Veterinary	3	1, 3 and 4	45					45
Advanced Statistic Methods Applied to Life and Health Sciences	3	1, 3 and 4	20	25				45
Mathematical Models of Life and Health Sciences	3	1,3 and 4	20	25				45
Alternative Nutritional Resources. Environment and Farm Activity	3	None	30	15				45
Breeding of Pets and other Species	5	None	28	4		8	5**	45
Biotechnology of Porcine Reproduction	5	1	20			25		45
General Immunogenetics Applied to Xenotansplantation	5	1 and 4	30	15				45

Table 4.3.3. Optional Subjects in Veterinary Curriculum. Track 3: Hygiene and Food Technology.

Hours of training								
Subject	**Course**	**Other tracks where the same subject is also offered**	**Theore-tical hours**	**Practical hours**	**Supervi-sed work**	**Clinical work**	**Others**	**Total**
History of Spanish Veterinary	3	1, 2 and 4	45					45
Ingredients, Technological Innovations and Development of New Products	3	None	25	20				45
Advanced Statistical Methods in Life Sciences	3	1, 2 and 4	20	25				45
Food Microbiology	3	None	25	20				45
Advanced Mathematical Models in Life Science	3	1, 2 and 4	20	25				45
Commercial Life and Food Stuff and Elaborates	3	None	25	20				45
Hygiene, Inspection and Technology of Non-Animal Food	5	None	25	20				45
Food Technology of Animal Origin: Meat, Milk, Fish, Egg and Honey	5	None	25	20				45

Table 4.3.4 Optional Subjects in Veterinary Curriculum. Track 4:Animal Health.

Hours of training								
Subject	**Course**	**Other tracks where the same subject is also offered**	**Theore-tical hours**	**Practical work**	**Supervi-sed work**	**Clinical work**	**Others**	**Total**
Laboratory Animals	3	2	20	15	10			45
Molecular Biology Applied to Veterinary	3	2	25	20				45
Ecopathology of Wild Animals	3	None	30	15				45
Ecotoxicology	3	None	30	15				45
History of Spanish Veterinary	3	1, 2 and 3	45					45
Alternative Methods to Animal Experimentation	3	1	15	30				45
Advanced Statistic Method Applied to Life & Health Sciences	3	1, 2 and 3	20	25				45
Sanitary Environmental Microbiology & Parasitology:	3	None	15	15	15			45

Importance in Livestock Exploitation								
Mathematical Models in Life Science	3	1, 2 and 3	20	25				45
Extension in Clinical and Forensic Toxicology	5	None	15	7		23		45
Infectious Diseases in Bees	5	None	30			15		45
General Immunogenetics Applied to Xenotransplantation	5	1 and 2	30	15				45
Welfare and Breeding of Goats	5	None	30	8	5	2		45

4.4. OBLIGATORY EXTRAMURAL WORK.

Indicate the guidelines pertaining to this activity and the manner by which it is assessed.

The only compulsory work to be undertaken out of the Establishment lasts four weeks, this is part of the core subject "Pre-professional practice" and it is developed in a supervised and tutorized way.

This activity is governed by the following Regulations:

- Students will choose a company to gain practice for 4 weeks at the end of their studies.

- These activities along with other practices carried out in services belonging the Faculty (e.g. Teaching Hospital), are part of the subject "Pre-professional practice".

- Students will be supervised by a tutor from the University, and another tutor from the company in which they are gaining practice. Both tutors will be in charge of assessing the students.

- Eventually, a Faculty committee will be in charge of assessing the whole activity.

The rest of the practices done outside the Establishment will be considered as voluntary work, but these activities are liable to be validated as Free Elective Credits.

4.5. RATIOS.

Theoretical Training / Practical and Clinical Training = 1.531 /1.463 = 1/ 0,96

Clinical Training / Theoretical and Practical Training = 677/ 2.327 = 1/3,49

4.6. FURTHER INFORMATION ABOUT THE CURRICULUM.

Provide a short description of the teaching programme in (see Table 4.1.3):

- Basic subjects
- Animal Production
- Clinical subjects
- Food hygiene
- Professional knowledge

State the parts of the programme that must be attended obligatorily by students. How is the attendance verified?

All practical activities of the different courses are compulsory. The attendance is verified by the professor at the end of each practical activity.

From the third year onwards, students will carry out the practical activities intensively, by means of a 10-day rotation per subject and term. Lecturers will teach/demonstrate the practical programme in that period for 3-4 hours/day. In the case of subjects taught on an annual basis, there will be two periods for arranging the practical activities on each term. This method of organizing the practical activities is known in our Establishment as "sistema de módulos" (system of modules"), and it has been found very useful to avoid overlapping when organizing the time-table for the practical sessions of each term.

Description of the programmes

A. Basic Subjects	Contents
Anatomy (Incl. Histology and Embryology)	Description of the embryonic development on animals of veterinary interest. Embryonic handling. Congenital anomalies. Systematic compared to anatomy of organs. Topographic basic anatomy oriented towards clinical applications, production & hygiene application & food industrialisation. Microscopic description of tissues, organs & system of pet animals. Specific applications in Veterinary.
Biochemistry and Molecular Biology	Molecular bases of life & of productive processes. Diseases, molecular alteration. Applications to diagnosis, therapy & animal production.
Biology	Structure of eukaryotic cells. Morphology, bionomics & systematic of animals, especially animals of veterinary interest. Systematic morphology & association of plants of veterinary interest.
Biophysics	A physical base of biological & industrial processes applicable to processes of veterinary interest. Applications of Physics to Veterinary Sciences.
Biostatistics	Basic principles of biometrics & statistics applied to Veterinary Sciences.
Chemistry	Chemical bases of biological processes & of medical & industrial applications. Chemical factors of environment.
Epidemiology	Descriptive, analytical & prospective study of any phenomenon affecting population, particularly those diseases that might have a greater impact on Public Health & on the ecosystem.
Genetics	Biologic heredity: localisation & structure of hereditary information, transmission & recombination, expression, regulation & variation. Genetic biotechnology. Clinical genetics. Population genetics.
Immunology	Basic principles of immune response & its technical application in Veterinary Science.
Microbiology	Morphology, biochemistry, physiology, genetics & taxonomy of virus. Bacteria & fungus that cause infectious, or with biotechnological & ecological industrial applications.
Parasitology	Morphology, bionomics, physiology & systematic of parasites on domestic & useful animals. Relations parasite-host-environment.
Pathological Anatomy (Microscopic and Macroscopic)	Study of pathological alterations on cells, tissues & organs that are grouped in systems for the differential diagnosis of animal disease. Introduction to applications of animal pathological anatomy. Necropsy.

Pharmacy and Pharmacology	General principles of pharmacokinetics & pharmacodynamics. Fundamental description of main pharmacological groups. Study of dosage forms & their applications in animals. Action mechanisms, pharmacological effects.
Physiology	Functions of organs, system & the whole organism. Study of vegetative, reproductive function, & of regulatory & integrating mechanisms in domestic animals. Application of physiology to animal medicine & animal production.
Physiopathology	Nosology, Physiopathology of the different organs & systems. Immunopathology.
Scientific and Technical Information. Documentation Methods	These are contents included in several courses.
Toxicology (inclu. Environmental pollution)	Study of agents, both natural and synthetic one, producing acute or chronic poisoning; identification, mechanism of action, clinical & experimental diagnosis. Knowledge of residues in food & environmental pollutant of potential risk. Toxicological & legal bases to preserve drugs & food additive harmlessness.

B. Animal Production	**Contents**
Agriculture	Relations soil-plant-animal. Plants used by livestock & factors affecting its quality & yield. Praticulture. Use & preservation study of food of vegetable origin of cattle.
Animal Behaviour (Inc. Behaviour Disorders)	Animal behaviour & domestication.
Nutrition and Animal Food	Appraisal of nutritional needs in domestic & useful animals according to digestive & metabolic processes. Raw materials for animal feeding, appraisal & formulation.
Livestock (Inc. Livestock Production Systems	Co-ordination & application of physiological & zootechnical knowledge to practical exploitation of animals. Livestock facilities.
Welfare and Animal Protection	Exploitation systems to lessen animals pain.
Environmental Protection	Environmental hygiene.
Preventive Veterinary Medicine (Inc. Health Control Programmes)	Bases to the preparation of sanitary programmes in order to make livestock exploitation profitable, increasing production, reducing loss & improving both parameters. Bases to prevent control & restrain diseases. Genetic applications to improvement programmes. Elimination of lethal & sublethal factors for disease resistance.
Reproduction (Incl. Artificial Insemination Systems)	Technology of reproduction.
Agrarian Economy	Agrarian economy. Economy & commercialisation of agrarian products. Production economic theory.

C. Clinical Subjects	Contents
Veterinary Anaesthesia	Anaesthesiology: physiological bases. Sedation. Injectable anaesthesia. Inhalatorial anaesthesia. Monitoring. Techniques for pain control. Special protocols of anaesthesia.
Clinical and Diagnostic Examination. Laboratory Diagnostic Methods	Methods & procedures for clinical exploration, including complementary laboratory techniques, as well as their interpretation.
Medical Clinic	Non-parasite, contagious disease; collective or individually treated, on sanitary-dietetic or on medicament treatment. Clinic for in- & out-patients as well as mobile clinic.
Imaging Diagnosis	Nature, production, properties & action of ionising radiation on living beings. Diagnostic & therapeutic application. Protection measures. Ultrasound physical basis, nuclear medicine, resonance & scanner. Other diagnostic imaging techniques.
Obstetrics	Pre-parturition & post parturition cares. Medical or surgical resolution of problems derived from pets & useful animals´ parturition.
Reproductive Disorders	Clinical physiopathology of reproductive disorders on pets & livestock.
State Veterinary Medicine, Zoonoses, Public Health and Forensic Medicine	Processes caused by prion agents, virus & fungus. It includes clinics, diagnosis, therapy, control & fight. Zoonoses. Protozooses, helmithosis & arthropodosis, considering clinical & epidemiological aspects. Influence on productive processes, public health, zoonoses & environment.
Medical Clinic	Non-parasitaric, contagious disease, collective or individually treated, on sanitary-dietetic or on medicament treatment. Clinic for in- & out-patients.
Surgery and therapeutics	Morbid processes that affect thorax, abdomen, sense organs & muscle-skeletal system. They require surgery, techniques to be applied, including surgical restitution & experimental surgery, particularly affecting pets, equines & “useful animals”.

D. Food Hygiene	Contents
Certification of Food Production	Conditions to be met by food of animal origin. Public Health. Ante-mortem & post-mortem inspection. Hygiene in establishment & food handling. Good manufacture practices in slaughterhouses and other facilities for food control, processing, distribution and sale. HACCP. Legislation to be applied to food of animal origin, food processing and food industries.
Food Production	
Hygiene and Food Quality (Incl. Legislation)	
Food Inspection, in Particular when it is of Animal Origin	
Science and Food Technology	Food properties. Food industry basic operations. Practice in food processing.

E. Professional Knowledge	Contents
Practical Management	Period of practices at the Hospital, Farm, Pilot Plant, Slaughterhouses & External Business. These practices will last 6 months.
Professional ethics	Ethic principles governing the veterinary profession.
Veterinary certification and report drawing-up	These contents will be explained in other areas in due course, since they are considered cross-subjects.
Veterinary legislation	Legislation that rules commerce. Use of animals & products as well as the knowledge of any law affecting the veterinary practice.

4.7. SPECIFIC INFORMATION ON CLINICAL PRACTICE TRAINING.

Give an outline description of how this is structured, in terms of:

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

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

Outline the student involvement in the emergency (24-hr.) and hospitalisation activities of the clinics.

FIRST YEAR

Undergraduate students start their practical clinical training in the first year; these practices represent a first contact with animals.

For one day a week, during the first term, students will be in contact with horses, learning how to handle, feeding and care them and the appraisal of animals and their morphology. These practices will last 2 or 3 hours per day. Every student will conduct practices for 33 hours in-groups of 10 students.

During the second term, students will carry out practices on animal behaviour. Any animal on the farm will be dealt with. Special attention will be paid to behaviour disorders. These practices will be conducted for 10 hours in-groups of 10 students.

SECOND YEAR

There is a more intensive contact with small animals (dogs and cats); in addition students will conduct physiological practices dealing with porcine, rabbits, birds and small ruminants, belonging the University Farm or to other collaborative farms. Practices are regulated and they take place once a week for 2 or 3 hours. Every student will conduct practices for 20 hours in-groups of 10 students.

Epidemiology practices with animals (rabbits and goats) will also be conducted in the second year. Students will conduct these practices for 4 hours in-groups of 10 students.

THIRD YEAR

Students start training at the Veterinary Teaching Hospital. Practices will be intensive. Students will have practices of a certain discipline for 10 days in a row, for 3 or 4 hours a day, once every 4 months. Thus, if the subject is administered on an annual basis, students will have two rotations and if the subject is administered in only one term, students will carry out a single rotation.

Clinical practical subjects in this course are, namely:

- **General pathology**: this subject is administered during the first term. The student learns physiopathology as well as how to draw up clinical reports. This will be a first contact with diseased animals. Students will attend these practices for 20 hours in-groups of 7 people

- **Radiology**: four-monthly subject. Students will take part in the Imaging Diagnosis at the Veterinary teaching Hospital. Students will attend these practices for 20 hours in-groups of 7 students

- **Veterinary anaesthesia**: four-monthly subject. The student will take part in the anaesthesia service at the hospital. This service as well as the former one tends large and small animals. Students will attend these practices for 20 hours in-groups of 7 people. However, these groups are subdivided into 2-3 smaller groups. Thus, there will be 2-3 students per each anaesthetic procedure.

- **Pharmacy and pharmacology**: four-monthly subject. Students will take part in the Pharmacy service at the Hospital for 5 hours in-groups of 10 people.

- **Clinical propedeutics**: four-monthly subject. Students will take part in the Reception service at the Veterinary Hospital. Students will learn how to carry out clinical examination of the animals. To that end, students will not only conduct their practices at the hospital, but also on the farm. Students will attend these practices for 50 hours in-groups of 7 to 10 students.

- **Animal nutrition**: it is administered on an annual basis. That means that students will conduct two rotations per subject. Practices will still be intensive. It means that students will attend these practices for 25 hours in-groups of 10 students. Two annual rotations will occur.

FOURTH YEAR

All the subjects are administered on an annual basis. This means that every student will carry out a total of 2 rotations per subject (one on each term). All the Practical activities will be intensive, therefore, the students will follow rotations of 10 days in a row, during 3-4 hours per day on each subject.

Subjects with clinical practices are:

- **Infectious diseases**: it is given on an annual basis. The practices are conducted in two rotations, one each term: in the infectious-contagious service of the Veterinary Teaching Hospital, as well as in the Veterinary Teaching Farm. Other practices will be carried out in the Slaughterhouses or any other farm arranged for this purpose.

- **Parasitary diseases**: Similar to the former one. Students will attend these practices for 20 hours in-groups of 10 people.

- **Medicine and surgery**. Annually administered subject. All the practices are carried out at the Hospital within the service of Large and Small Animals. This course also offers Scheduled practices on cadavers. Students carrying out practices will also attend "24-hour practices" on emergencies and hospitalisation.

- **Obstetrics and reproduction**: annual subject with two rotations. These practices will be carried out at the Hospital, Teaching Farm and any other external farms arranged to that end. Students will attend 24-hour practices on emergencies as well as hospitalisation. Students will attend these practices for a total of 37 hours in-groups of 7-10 people.

- **Animal production and veterinary hygiene**: annual subject with two rotations. These practices will be related to the handling, welfare and animal hygiene. Students will be in direct contact with Farm animals. These practices will last 45 hours and they will be administered in-groups of 10 people.

FIFTH YEAR

In this year, students will attend: (1) subjects which are being administered on a four-month basis and (2) subjects, which are being administered on an annual basis. Practices are intensive.

Practices of each discipline will take place on each term during 10 days in a row, for 3 or 4 hours per day.

- **Breeding and Animal Health:** Annual Subject that carries out practices on the Farm, handling animals related to improvement programmes. Students receive practices for 15 hours in-groups of 10 students.

- **Medical and Nutrition Pathology**: the students conduct two rotations, one on each term. Practices will be carried out at the Hospital: 24-hour emergency, mobile clinic as well as hospitalisation. Students will attend these practices for a total of 65 hours in-groups of 7 people.

- **Therapeutics**: four-monthly subject. One single rotation. Practices administering medicaments, discussion and election of the appropriate treatment and the patient's follow-up at the hospital. Students will attend these practices for 30 hours in-groups of 10 students.

- **Toxicology**: four–monthly subject. One single rotation. These practices are carried out in the Toxicology service on real cases. Students will attend practices for 25 hours in-groups of 10 people.

- **Preventive Medicine and Sanitary Police**: four–month subject carried out on the Farm. It is about sanitary programmes as well as the different bio-security systems. Students will attend these practices for 8 hours in-groups of 10 people.

SIXTH YEAR

Individual pre-professional practices: students will be in contact with animals. Practices will be developed as follows:

- Four weeks at the Veterinary Hospital. Students will carry out practical activities in each of the different services of the hospital. Those practices will last 70 hours.

- Other practices will be carried out for four weeks in an external company. Those companies are normally veterinary clinics. There is a previous arrangement agreed on, between the veterinary Faculty and the company in which students will be conducting their practices. These practices will also be individual and will last 70 hours.

- 2 weeks in a slaughterhouse. These practices will last 35 hours.

- 2 weeks on the Farm directly involved with the arranged companies and their veterinary services. These practices will last 35 hours.

The hours of practical training stated so far are included in the Former Tables.

4.8. SPECIFIC INFORMATION ON FOOD HYGIENE TRAINING.

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

Since 1993, the Faculty of Veterinary has come to a collaboration agreement with the Health Service at the Autonomous Community in Murcia to carry out practices on Hygiene, Inspections and Food Control at Slaughterhouses, at Fish Market and at Laboratories of Foodstuff Inspections.

Slaughterhouses are located 15 or 20 Km away from the Veterinary Faculty: inspections are conducted on bovine, porcine and small ruminants. Visits are done at slaughtering time and it can vary from 6:00 in the morning to 13:00 in the afternoon.

Practices are conducted in small groups (from 5 to 10 students) depending on the subject:

- **Hygiene, Inspection and Food Control.** Two visits per term (four monthly). During the first term, visits are conducted in groups of 10 students. Students will be acquainted with the slaughterhouse duties, assessing the design and logic structure of it. During the second term, groups of five students will carry out the practices in slaughterhouses, conducting activities related to ante-mortem and post-mortem inspections. Those students will be accompanied by an associate professor (profesor asociado), expert in the Area of Nutrition and Bromatology, who at the same time, is an Official Inspector at the Health and Consume Council.

- **Parasitic Diseases.** Two visits are paid per term. Students attending this subject (fourth academic year) get ante-mortem samples to make a further diagnosis at the Faculty laboratories. Likewise, inspections on the channels are conducted in order to look for any parasitic process that might be affecting those animals which have been put down.

- **Special Pathological Anatomy.** One visit per term. This visit is carried out in small groups.

On the other hand, visits are conducted at the Fish Market, in Alcantarilla, located at 15 Km away from Murcia. They are carried out in groups of 10 students, accompanied by a Lecturer. Students aim to know the hygienic conditions at the premises. Students, along with the teachers, identify the most common species of fish on our coasts, stating the freshness degree. The inspection is based on a sensorial analysis, in accordance with the currrent legislation. A three hour-visit will be paid during the second term.

With regard to the practical training received by the students in the Food Hygiene Area, 60 hours are given in the subject of Hygiene, Inspection and Food Control.

2. COMMENTS.

Comment on the way in which the veterinary curriculum prepares the graduates for the various parts of the veterinary profession, especially under the specific conditions prevailing in you country/region. Comment on the way the curriculum is structured and reviewed. Comment on the major developments in the curriculum, now and in the near future. Comment on local conditions or circumstances that might influence the ratios 4,5.

The total number of hours in the Veterinary curriculum of this Faculty are:

-**Core subjects**: 3.181 hours.

46,4% corresponds to **basic subjects.**
17,9% corresponds to **Animal Production.**
16,6 % **Clinical Subjects.**
8,5% **Hygiene subjects.**
8,6% corresponds to areas related to the **professional knowledge**, and
2% **other core subjects in the curriculum.**

Since the Hospital (1999), the Farm (2001) and Pilot Plant of Food Technology (1998) were opened, the Faculty has the appropriate infrastructure to prepare students in the most demanding aspects of the veterinary profession. During the last years Murcia has been widely developed as a tourist resort; this new situation has increased the demand of professionals dedicated to Veterinary Clinic. Likewise, the equine sector (leisure and sport) has also had a fast growth. This Region, at a National Level, is one of the most important in swine production; thus, the Veterinary Teaching Farm is large enough to hold this specie. In the livestock sector, ovine and goats are of importance, both represent a herd of high genetic value. Lastly, the Pilot Plant of Food Technology is in charge of the Food Training, responding to the Region's demand of highly developed agricultural issues.

The curriculum has been revised recently. This revision gave rise to a new Study Plan (Plan 2001) which substituted the former one (Plan 1991). The new Study Plan has been completely set up during the 2005-2006 Academic Course. It has considerably decreased the number of hours that the students have to attend: from 4.500 to 3.950. Following the Law on General Guidelines for Veterinary Studies, this decrease in the number of contact hours especially affected the theoretical hours, which improved the teaching ratios.

During the first semester of the 2006-2007 course, the first group of students following the New Study Plan will graduate. The Study Plan Commission will start thinking of a new revision of it: the immediate thing to be done is the rearrangement of optional subjects to eliminate those ones, which are not being currently taught. At the same time, other subjects, which are being requested by students, will be introduced. However it is likely that the National Academic Authorities will not allow any re-structuring process, since the Spanish adaptation process of Universities Studies is still underway. Spanish faculties of Veterinary, represented by their Deans, have recently published a document entitled "The White Book of Veterinary Degree". It lays the groundwork for the new Veterinary Career and it will be compulsory to follow it. Its main features are:

- 300 ECTS credits, that is, 5 years with 60 credits per year.

- 6-month practical rotation equivalent to 30 ECTS credits.

- Core subjects, divided into similar groups to the European Veterinary Curriculum. New modules are introduced.

- New obligatory subjects for all the establishments, for instance Scientific English, History of Veterinary, Computer Studies are introduced.

- Core and compulsory subjects must be, at least, 75% out of the 300 ETCS credits.

- Freedom in the establishment to manage their own optional subjects.

The veterinary Faculty of Murcia University has started a pilot plan programme (2005/06) of adaptation to the European System of Higher Education. Many subjects of the first cycle of studies as well as all the optional subjects are being taught using the ECTS methodology.

At the same time, a new course on Clinical Pathology has been designed in cooperation with another 9 European partner-Faculties.

3. SUGGESTIONS.

If the ratios in 4-5 for your establishment do not fall into the category "satisfactory" according to the indicative table in Annexe 1, what can be done to improve the ratios?

Theoretical ratio/clinical and practical ratio is 1/0,96. According to the table in Annex 1, this ratio will fall into the category of almost satisfactory (satisfactory category is 1≥1). It is necessary to improve slightly the first ratio. The application of the ECTS methodoloy will allow a further decrease in the number of theoretical hours and an increase of the practical and clinical workload for our students.

As far as the clinical teaching ratio/practical theoretical ratio is 1/3,44, it falls into the category of satisfactory (1/≤4).

Chapter 5: TEACHING: QUALITY AND EVALUATION

CHAPTER 5. TEACHING: QUALITY AND EVALUATION.

1. FACTUAL INFORMATION.

5.1. THE TEACHING PROGRAMME.

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

The Vicedean of Academic Arrangements is in charge of the co-ordination of the teaching in the Veterinary School. In collaboration with the Commission for Teaching Arrangement, he proposes every year a co-ordination system that appears in the "Guide of Studies" of Veterinary Sciences. This Guide of Studies must be approved by the Faculty Board before the 30th of May of each year and reflects the teaching co-ordination for the following academic year. It is available to the students in CD-ROM, as well as on the web page of the Faculty (http://www.um.es/veterinaria/estudios.php).

The main goal of this guide is to avoid the overlapping between the theoretical, practical and/or clinical activities programmed by subjects included in the same year/term. The core subjects have priority when establishing the timetable over the others and the theoretical classes are administered for a maximum of three hours a day, from 8:30 to 10:30 and then from 15:30 to 16:30. Thus, the time available for organizing practical and clinical activities is from 10:30 to 14:30.

The organization of the practical/clinical activities of ***the core subjects*** is different in the 1st cycle (1st and 2nd course) and the 2nd cycle (3rd, 4th and 5th course) of the veterinary studies:

a. During the 1st cycle, the students of each course are divided into 5 modules, in an alphabetical order (25 to 30 students per module). Each module of students will carry out the programmed activities for one day a week per subject. In the event of a term/course composed by 6 subjects, the students attend practices of two different subjects, consecutively on the same day. The module is divided in smaller groups to ensure a ratio of 10-20 students per teacher (depending on the subject).

b. During the 2nd cycle, students are also divided into 5 modules, following an alphabetical order (25 to 30 students per module). However, the students carry out the practical activities of each subject in an intensive way following rotations with an approximate duration of 10 days. Then, the group move on to carry practices of a different subject, and so on until students accomplish a global practical rotation of four-months (a term). In case a term is composed of six subjects, one slot of time is divided into two to allow following the practices of two subjects. In this cycle of studies, each module of students is divided to ensure smaller groups of 7-10 students per teacher.

The ***optional or elective subjects*** last for a total of 45 hours (including the theoretical and practical activities), and there exist several alternatives for their co-ordination:

1. To teach the subjects during all the term (theory and practice) one day a week for 3 hours from 16:30 to 19:30.

2. There are two free days between the end of a 10-days rotation and the beginning of the following one. These days amounts to a total of 10 days per term. Therefore, some optional subjects can be taught intensively on these days from 10:30 to 15:30.

3. Another alternative is a mixed compromise of the previous two, in which, a student will attend the theoretical classes from 16:30 to 19:30 and will carry out the practical activities during the days available between the different rotations.

The students are encouraged to check in the Guide of Studies before being enrolled in optional or elective subjects, that there will not be any "time-table incompatibilities" between the chosen ones.

The Deanery will ensure the availability of theatres, classrooms and laboratories to impart all the teaching activities planned. It also co-ordinates the teaching in the Veterinary Hospital and Farm.

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

During the academic year 2005/06, it was initiated a Pilot Project for the adaptation of our teaching methods to the European Higher Education Area. The University of Murcia named this action as "Adaptation to the ECTS (European Credit Transfer System)". A total of 10 core and 15 optional subjects took part in the project which was funded by the University of Murcia and the Spanish Education Ministry with 6.000 €. The main goal of this project is to establish a more interactive teaching approach which includes modern methodologies based on tutorial works and problem solving learning. Another goal is to reduce, gradually, the predominant role of the traditional lecture within the "traditional" teaching approach. The main target of this action for the 2006/07 academic course is to bring into the project the 100% of the subjects which compose the first cycle of the veterinary studies. At the same time, the lecturers of Clinical Pathology were endowed with 1.000 € to start a teaching project in co-operation with European partners.

The lecturers and students of the University of Murcia are able to use the Intranet tool SUMA (https://suma.um.es/sumav2/), which gives the student access to a wide variety of learning materials e.g. power point presentations, interactive atlas, pictures or movies as well as demonstrations, references or papers. Finally, this tool allows the interaction of students and lecturers by conducting tutorials, sending e-mails, or using a chat channel. The Establishment has three computer rooms with a total of 70 computers. Two of the rooms are of free entrance for students when are not being used for teaching purposes.

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

The course notes are considered as a supplement of the rest of the available material and are offered by the Intranet tool SUMA or by leaving them at the photocopy service of

the Faculty. In addition, the students have access in the Central Library of the Campus, the library of the Faculty and the libraries of the Departments to the textbooks recommended by the lecturers.

Describe (if applicable) any established or contractual arrangements that support undergraduate teaching between the Establishment and outside bodies, e.g., farm, breeding centres, practitioners, state veterinary services, factories, processing plants, outside laboratories, etc. Briefly, describe how these arrangements work out in practice in terms of the contact this provides for all students or for selected students

In order to carry out the subject "Pre-professional Practices" (Estancias) as well as the different summer practices offered to the students (validated as free elective credits) agreements with private companies and public bodies are arranged. These agreements are established on an individual basis (between the student, the University and the external partner) and can be renewed if it is necessary. These agreements are:

1. **With funding**: The students will carry out practices and will receive some money from the practical work done. It must be distinguished under this heading:

    a. Rural veterinary practices financed by Cajamurcia (a private bank) in order to conduct these activities mainly in rural areas.

    b. CROEM practices: These practices are funded by the Regional Confederation of Companies and Enterprises of Murcia (CROEM). The total funds depend on a yearly arrangement settled between the Regional Government, the CROEM and the University of Murcia. Regional. The practical activities must be carried out within the Region of Murcia in a Company located in this Region The practical period should be of at least 2 months with a daily dedication of 4 hours.

2. **Without funding**: These practices are not subjected to the restrictions commented for the funded activities.

The Faculty of Veterinary has agreements with many companies and institutions as it is shown in the Appendix.

In all cases, once the agreement with the external partner has been settled, the student will be under the tuition and supervision of two persons: one from the external establishment where the student is carrying out the practice, and another who must be a lecturer of the Faculty. The student and the two tutors are requested to produce a final report which is useful to evaluate the quality of the work done, and to grant the student with credits and/or money when appropriated. The student's report is also used to determine whether the arrangement with a particular company or institution should be renewed in the future.

The external practices are good to approach the student to the reality of the veterinary profession and the labour market. Moreover, in many cases, students have been employed, once graduated, by the companies, or veterinary clinics where they carried out these practices.

5.2. THE TEACHING ENVIRONMENT.

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

The University of Murcia offers to the teaching staff a wide variety of courses, work-shops as well as seminars to help developing better teaching skills. The University Service responsible for these activities is the Institute of Education Sciences (Instituto de las Ciencias de la Educación, ICE) which main goal is to provide pedagogic support to lecturers.

The courses and seminars organized by the ICE are not compulsory and cover different educational aspects such as application of new teaching technologies, knowledge on the European Higher Education Area, use new audio-visual techniques or training of the novel lecturers (FIPRUMU). The information of the courses offered is available on the web: http//www.um.es/ice/. It should be pointed out that ICE has implemented the programme EDUCA'05 to support educative and teaching innovation projects within the framework of the European Higher Education Area, and many of the projects funded had arisen from the Veterinary Faculty.

The University of Murcia also offers professional development courses to the administrative and support personnel in order to improve the general knowledge of these personnel or to train them in new techniques related to the work they done. It should be mentioned a course on "Measures to prevent work-related risks", in which many technicians and supporting personnel of the Faculty of Veterinary had taken part. The offer of courses for these personnel is available on http://www.um.es/pas/plan-formación/index.php.

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

The Spanish University System has implemented two mechanisms:

- The University of Murcia University assesses the performance of the contracted lecturers in periods of 5 years. If the result of the evaluation is considered positive, a lecturer will be awarded with an economic supplement known as "Teaching Quinquenium"

- The second mechanism is used to evaluate the researching production of the lecturers during a period of six years. If this evaluation is considered positive, lecturers are awarded with another economic supplement, known as "Researching Bonus". This evaluation process is carried out by the National Commission for the Evaluation of the Research Activity (Comisión Nacional de Evaluación de la Actividad Investigadora, CNEAI) located in Madrid.

There exists another rewarding action for those Universities located in the Region of Murcia. It is known as the "Autonomous Supplement", and it is conferred every year. However, only a 20% of it undertakes an evaluation process based on teaching, research and management criteria and the rest (80%) is directly given without any evaluation to increase the salaries of all the Spanish university lecturers.

Describe other measures taken to improve the quality of teaching.

The Faculty of Veterinary Science, in co-operation with the ICE carried out a project known as "teaching audit" three years ago. The goal of this action was to know in detail the current state of the studies of Veterinary Sciences in relation to quality of teaching and to academic failure. The final report was used to take two main measures:

- To take into account the results of the practical and clinical exams in order to grade the students with the final mark, considering for this, the proportion (weight) of the practical credits in relation to the total credits of a particular subject.
- To pass any exam with a 5 out of 10 grade (maximum grade is of 10). Since in some subjects 7 out of 10 was asked to pass the exams.

On the other hand, in the Faculty there is a Commission for Study Plan, Teaching Quality and Analysis of Examination Results, in charge of:

a) Analysing the result of the final examinations, to take actions to reduce students' failure.

b) Analysing the Study Plan to raise proposals for correcting potential deficiencies.

c) To make proposals to promote the teaching quality and the assessment of the quality of the courses.

5.3. THE SYSTEM OF EXAMINATION.

Describe the examination system of the Establishment, particularly in relation to: - Is there a central examination policy for the establishment as a whole? If "yes", by whom is it decided?

There is not a centralised policy of examination for the establishment as a whole. Therefore, the teachers of the different subjects along with the Department in charge of these subjects decide on the examination system in agreement with the Spanish Universities Regulations which considerer teachers autonomous to decide. The policy with respect to the examination system is established according with the recommendations previously described, that were derived from the "teaching audit" project, made by the Faculty of Veterinary Science in co-operation with the ICE.

The Faculty Board will decide upon the examination calendar (February, June and September) bearing in mind:

a. No exam should last more than one day.

b. No student should be required to sit more than one exam of subjects of the same term/course during the same day.

c. It would be tried that exams of subjects belonging to consecutive courses do not be scheduled on the same day.

d. A rotational yearly system in the examination dates for the different subjects will take place.

Once the examination calendar has been adopted, it is included in the CD-ROM version of the Guide of Studies as well as it is made available on the Faculty's web page. The examination calendar of each academic year (for the course starting by the end of September) is approved before the 30th of May; therefore, students will be aware of this information before they decide on the subjects to be enrolled.

There also exist particular regulations governing the examination process in the University of Murcia as a whole. These regulations appear in the Guide of Studies and were approved by the University Board on 2001.

Are there special period (without teaching) during the year for examination.

There are three different special periods for examination without teaching:

- February: final exams for those subjects which have been administered during the first term. Exams will take place at the end of January (last week approximately), and, at the beginning of February (first three weeks).

- June: final exams for the subjects taught on an annual basis (for two terms). Students will also sit the final exams of those subjects with duration of four-months, taught during the second term.

- September: This is considered as an extraordinary examination period. The students will be able to re-sit exams of any subject they have enrolled. Exams will be organized during the first two weeks of September.

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

There is not a single method of examination in our Establishment. The lecturers of the different subjects following the general rules of the University and the Faculty Board can decide on the examination methodology. However, the examination criteria must be well explained in the Guide of Studies. Moreover, two weeks before the exams took place the lecturers must use the board for posting notices to the students to explain the structure of the exam and the grading criteria.

The following table indicates the different examination methods of the core subjects*.

	1st academic year	2nd academic year	3rd academic year	4th academic year	5th academic year	6th academic year
Multiple choice	7	3	4	3	3	
Practical	2	5	4	4	2	
Written	4	5	7	4	5	
Continuous assessment		2		1		
Oral						1

*The aggregation of the columns does not correspond to the number of the core subjects of the different academic courses/years, because most of the lecturers use a mixed type of examination.

Is use made of external examiners?

No external examiners are used in the Spanish Universities at pregraduate level.

How many retakes of an examination are allowed?

Students can retake of an examination of the same subject, twice during the first time they enrolled a subject and up to three times per year when they enrol for a second time. Overall Students can re-sit for an examination of a subject a maximum of 6 times; if a particular student is no able to pass an exam after re-sitting it for 6 times, different options are possible:

1. Transfer of school records can be requested in order to continue the studies in a different University.

2. Students can request the Rector for an additional opportunity to sit for an exam. This option is only possible, if the student has only one subject failed to become graduated.

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

The teaching staff and the Department decide on the maximum time allotted for an examination, following the Faculty Board guidelines previously described and also a rule of the University of Murcia indicating that if an examination is going to last more than 3 and a half hours a break of 15 min must be scheduled.

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

There is not any regulation in this sense, but the Study Plan has two restrictions:

1. Students will not be able to progress to the second cycle unless they have been able to pass a minimum of a 75% of the credits of the core-subject of the first cycle (93 credits in total).

2. Students are allowed to enrol the subject Pre-professional Practices ("Estancias") only if they have just one annual or two four-month core-subjects failed. Ideally, they should have passed all core-subjects before enrolling this final practical subject.

5.4. EVALUATION OF TEACHING.

Describe the method(s) to assess the quality of teaching used at the establishment. Indicate whether the evaluation is an Establishment procedure, or one set up by individual departments, by students or by individuals. Describe the role of students in the evaluation of teaching and teachers. Describe the follow-up given to the evaluation

There is a Unit for Assessing the Quality in the University of Murcia that evaluates the instruction processes by a questionnaire handed over to students every two years with specific questions about the activity of the different lecturers. Students answer it anonymously, and the results, which are considered as confidential, are sent with the raw data to the assessed lecturers and as a mean of the values of all the lectures involved to each Department and Establishment (more information appear at the site: http://www.um.es/unica/evaluacion.php).

The results of the individual lecturers are confidential, and it is expected that they were useful to help the lecturers reflect about their teaching performance. In addition, during the last two years, the outcome of this individual assessment has been used by the lecturers' Vice-rectorate as an evaluation indicator to calculate the variable part of the "Autonomous Supplement" previously described.

In addition the Veterinary School make an evaluation of its own teaching activity by reports for each specific subject that analyze: (1) the degree of teaching fulfilment and (2) the proposals for teaching improvement. Two different reports are done: one by the co-ordinators of the core subjects and the second one by the representatives of the students. The Commission of Study Plans, Teaching Quality and Evaluation of Examination outcome will analyse those reports and will submit to the Faculty Board proposals for improvement of the failures or deficiencies detected. The resolutions adopted by the Faculty Board will be submitted to the Departments to be implemented.

5.5. STUDENTS' WELFARE.

Describe the facilities (not related to the teaching programme) which the Establishment for students (accommodation, sports, recreation, canteen, restaurant, etc.)

The Faculty of Veterinary is located in the main University Campus, so there are a great number of facilities available for the students.

1. **Accommodation**: The university flats known as "Apartamentos Campus" meet the students needs for a comfortable accommodation on the own Campus. Likewise, the Hall of Residents known as "Colegio Mayor Azarbe" offers accommodation in the city center. The University has started a very interesting programme called "University young students living with elderly people". Through this programme, students get free accommodation while and they provide help and company to elderly persons living on their own. Other residences, flats to be let or shared are available in the city of Murcia (for further information http://www.um.es/alumnos/alojamiento/index.php).

Likewise, the Faculty provides accommodation to the students conducting 24-hour practices, in the flat of the Veterinary Teaching Hospital and in a residence at the Teaching Farm.

2. **Sports**: A wide sport offer is available on the Campus of Espinardo:

   a. Sport University Pavilion: basket, volleyball, etc.
   b. Building including gyms, fitness, aerobics, two squash courts.
   c. Soccer pitch of artificial grass.
   d. Three polimodal outdoor fields.
   e. Five tennis courts.
   f. Two paddle courts.
   g. Athletics stadium.
   h. Indoors swimming pool.

   For further information, visit the web: http://www.um.es/deportes/instalaciones/.

3. **Canteen and restaurants:** The Faculty has a canteen offering a good service at reasonable prices. The prices are fixed by the University management office. There are other canteens and restaurants (dinning rooms) located nearby the Faculty. More information is available on http://www.um.es/alumnos/vida.php

4. **Recreation centre**: This is a center for the student welfare. It is managed by students and for students. The recreation centre provides services and it has facilities such as lounges, meeting rooms, dinning rooms, canteen, and the like. For further information, contact http://www.um.es/csu/.

Describe the guidance offered by the Establishment (or its parent institution) for students with problem (social problems, study ones, career development, and job selection).

A) COUNSELLOR AND PERSONAL ORIENTATION SERVICE. At Murcia University (SAOP) gives response to any personal, emotional, academic legal, family or work related problems. This service offers:

   - Psychological attention.
   - Legal advice.
   - Training and pedagogical orientation.
   - Overseas student adaptation programmes.
   - Personal development courses.
   - Relaxation rooms.
   - Interchange experience programme.
   - Community health programme.
   - Disable students unit.

http://www.es/universidad/publicaciones-umu/guias-umu/guia05/docum/serv/saop.htm

B) UNIVERSITY INFORMATION SERVICE (SIU). Its main target is the management and dissemination of information in the university community. It means to guide the students and also the general public with regard to the services, Departments, convening, procedures, employment, regulations, study plans and any University

activity. Likewise, it spreads information from official bodies, summer courses at the Universidad International del Mar, and, in a very general manner, it gives off information related to other Spanish Universities. The University Information Service (SIU) also provides information on other non-related aspects of the University life, such as: housing, culture and leisure, etc. (http://www.um.es/siu/).

C) CENTRE FOR EMPLOYMENT ORIENTATION AND INFORMATION (COIE). It aims to help graduates finding a job. COIE gets students in contact with companies, conducting the bureaucratic management of the extramural practices including the summer practices and the external practices for students enrolled in the "pre-professional practices" subject. COIE manages as well the external practices. For further information http://www.um.es/coie/.

D) MEDICAL ATTENTION. Students have the right to receive medical attention through an University health insurance. In addition there is a first-aid unit on the Espinardo Campus able to transfer students to different hospitals in the city.

E) DELEGATION OF STUDENTS. It provides advice to new students at the faculty. They also act as intermediary between lecturers and students.

2. COMMENTS.

Please give general comments about the quality of the teaching programmes under the above heading. Comment on the usefulness of external examiners. Comment on the participation of students in the design and monitoring of courses and of the curriculum in general.

- We believe that the quality of our current Study Plan at the Veterinary Faculty is satisfactory. Nevertheless, we think that any Study Plan is a dynamic entity that might need some precise changes, particularly in those aspects concerning the free elective subjects. Once the first promotion of students of our current Study Plan had became graduated, the Law enables us to revise of the Study Plan.

- It has been stated earlier that external examiners do not exits at a pregraduate level. The Spanish laws do not consider that possibility as feasible. Nevertheless, we believe that it would be useful the use of external examiners in the subject "Pre professional practices", since a different and a more professional viewpoint could enrich the marking process.

The students count for a 30% of the composition of the different Commissions of the Faculty Board so the Commission for Teaching Arrangement has 4 students and the one for Study Plan, Teaching Quality and Examination Result Analysis has 2. The Faculty Board must ratify the proposals arising from these commissions on the design and control over the courses and curriculum. In addition students participate with a 30% of representation (45 representatives in total) in the Faculty Board, so they also can defend their proposals at this place.

3. SUGGESTIONS.

Indicate how the examination system can be improved in such aspects as time consumption, efficacy, fairness and selectivity. What can be done to (further) improve the quality of teaching?

Students usually do not have a high performance, when are examined once at the end of the teaching period, due to the stress that they suffer during the final examinations. The new methods following the Adaptation to the European Higher Education based on continuing evaluation will palliate this situation.

The conventional teaching methodology makes students to be a passive element in the teaching-learning processes. Students do not make great efforts all the time, that is, students acquire knowledge by memory. A Pilot Plant (Adaptation to ECTS system and methodology) intends to change this situation by the application of new teaching methodologies based on interaction, problem-solution, students' personal efforts, information seeking and continuing evaluation.

In addition we will keep promoting the use of new technologies based on audio-visual as well as internet-based methods.

Teaching activity should be adequately recognized, since the Spanish University system confers little importance to the efforts made by teachers and traditionally the excellence in research has been better rewarded and recognized mainly to be promoted to a professorship. This is particularly more important in the case of the clinical teaching staff.

Chapter 6: FACILITIES AND EQUIPMENT

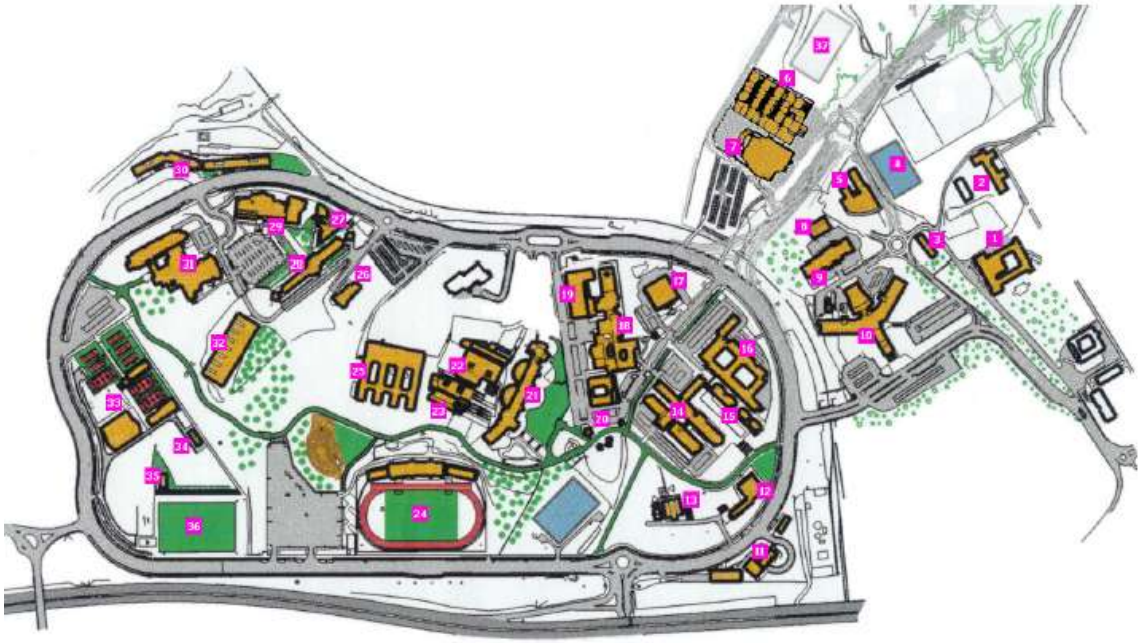
CHAPTER 6. FACILITIES AND EQUIPMENT.

1. FACTUAL INFORMATION.

6.1. PREMISES.

Please give a general description of the site(s) and building occupied by the Establishment. Include a map if available.

The Faculty of Veterinary Science of Murcia has three buildings: the main building, the Teaching Hospital (HCV) and the Teaching Farm. The main building and the Hospital are located at the Campus of Espinardo, 7 Km away from Murcia. The campus is located at the centre junction of the motorways to Andalusia, Madrid, Alicante and Cartagena. A tramway system, connecting the Universitary Campus to Murcia downtown, is going to be built by 2007. The Teaching Farm is located in Guadalupe, 1,5 Km away from the Veterinary Main Building (Map. 1 and Fig. 1 and 2).



Map. 1. No. 18 Veterinary Faculty and No. 19 Teaching Hospital.

Fig. 1: Main Building and Teaching Hospital (HCV).

Fig. 2: Teaching Farm.

A general outline on the Faculty buildings is provided next:

1. MAIN BUILDING.

This building has an area of 15.330 square metres divided into a central area and a western and eastern wings (red and yellow modules respectively).

1.A. The Central Area consists of:

Ground floor which houses:

- Administrative offices and Deanery.
- Reception.
- Library, with a seating capacity for 222 people.
- Large Conference room, with a seating capacity for 390 people.
- Small Conference room (Sala de Grados), with a seating capacity for 70 people.
- Meeting room, with a seating capacity for 25 people.
- Three lecture theatres.
- Canteen.
- A computer room, with a seating capacity for 50 people.
- The students' association headquarters: Students' delegation, VEDEMA, VETERMON and Sport associations.
- Dissection and Necropsy rooms and Anatomic Museum.

In the 1st, 2nd, 3rd and 4th floors of this area are located lecturer´s offices, the "Francisco Moreno" lecture hall and the research and teaching laboratories of most of the Departments (with the exception of the laboratories of Toxicology, Pharmacology, Mathemathics, Biochemistry as well as those related to Food Technology, Nutrition and Bromatology, and Clinical Sciences).

1.B. Western wing (red module) located behind the Teaching Hospital. It houses:

- Infectious-contagious Hospital.
- Computer-room with capacity for 24 people.
- Area of Toxicology.
- Food Technology laboratories.
- Mathematic teaching staff 's offices.
- "Jose Manuel Lasaosa" lectures theatre.

1.C. Eastern wing (yellow module). It houses:

- The Department of Food Technology, Nutrition and Bromatology and the Pilot Plant facilities, as well as a lecture theatre and the photocopying room. These facilities are on the ground floor and the basement.
- The Departments of Pharmacology (Veterinary Section) and Biochemistry and Molecular Biology "A" are on the 1st, 2nd and 3rd floors of this wing.

2. TEACHING VETERINARY HOSPITAL (HCV).

The Teaching Veterinary Hospital is adjacent to the Main Building. It houses the following facilities:

- **Two reception/administrative rooms**, and a store room to keep the medical records with a computer and a photocopier.

- **Main hall and waiting room** for small animals.

- **Internal Medicine Service**: two consulting rooms equipped with conventional examining tools.

- **Small animal reproduction service**: a consulting room equipped with examining tools and a laboratory.

- **Cardiorespiratory service**: a consulting room equipped with ECG, Doppler blood pressure monitor, Holter and an echocardiograph with three transducers provided with Doppler technology (colour and spectrum).

- **Anaesthesia service**: a room adjacent to the surgical area, equipped with two induction tables, 3 trolleys with haemodynamic and ventilatory monitors, a defibrillator, infusion pumps and a perfusor. The service has 6 small animal anaesthesia machines and 2 large animal anaesthesia machines. The room also has wardrobes (one including a strong safe box to store opioids), recovery cages and a neonatal incubator.

- **Imaging diagnostic service**: this service is provided with three rooms: a lead covered room equipped with the X-ray machine for small animals, another equipped to store and develop the films (provided with an automatic developing machine), and, finally, a room with negatoscopes to read the radiographies. In addition, there is another room with two echographs and transducers of different frequencies.

- **Dermatology service**: it houses a consulting room equipped with an examining table, a TV monitor connected to an otoscope and a bathtub to carry out therapeutic baths for some dermatological conditions.

- **Ophthalmologic service**: it houses a consulting room equipped with an examining table, an ophthalmoscope (direct and indirect), a biomicroscope, an electroretinograph and an introcular pressure device. This service has in the surgical area a surgical microscope connected to a TV monitor and a Phacoemulsification system for cataracts surgery.

- **Clinical Pathology service:** it houses two labs with the equipment needed for haematological and biochemical analysis.

- **Small animal surgery service**: it is provided with two consulting rooms equipped with examination material, a pre-operating theatre for surgical cleaning, and three small animal operating theatres fully equipped. One of the theatres has a c-arm X-ray machine. In addition, the hospital has a large number of surgical boxes to store surgical

instrumentation including high power instrumentation as pneumatic oscillating saws and drills, electrosurgery units or dental ultrasounds.

- **Exotic animal service**: it has a consulting room and a room to house the patients in the hospital, equipped with cages, terraria and aquaria for different species.

- **Hospitalisation Service**: it is provided with four rooms. Two of them are used as intensive care units (devoted to dogs and cats respectively). There are also a long-term hospitalisation room and a room to keep patients which might suffer an infectious-contagious disease. All these rooms are equipped with individual cages.

- **Large animal service**: it has a reception room, two exploration rooms with examination stanchions, a riding-ring, a X-ray room equipped with a X-ray apparatus (standing and portable), a pre-surgical room, and two fully equipped theatres. The service is provided with two anaesthesia induction padded rooms adjacent to the theatres, and a travelling crane system to carry anaesthetised patients. It also has 11 boxes to house horses.This service additionally has a large room to house bovine patients, plus another used for porcine and small ruminants.

- **Pharmacy service**: it houses an office, two store-rooms and a lab to produce medicament formulae and preparations for parenteral feeding.

- **Infectious-contagious service**: it houses 3 laboratories to analyse samples and four rooms to house patients of different species.

- **Pathological anatomy service**: it houses a reception, a laboratory to process samples and a necropsy room.

- **Sterilising room**: equipped with an autoclave, a dry heat sterilising unit, ultrasound cleaning system, and cupboards to store and classify the surgical instruments.

- **Laundry rooms**: equipped with an industrial washing machine, tumble drier machine and ironing.

- **Four-bedroom apartment**: with lounge, kitchen, toilets, and showers for veterinarians and students on 24-hour duty.

- **Administration room and small conference room**: with video and PC display used for meetings and clinical sessions.

3. TEACHING FARM.

The Veterinary Teaching Farm is situated 1,5 Km away from the Campus at the real state "La Molineta" in the district of Guadalupe. The Farm can be easily accessed by car and in addition there are buses that link it with the Veterinary Faculty (Rayo Campus, and line 38 of Lat Bus).

The teaching farm is in a real state with an area of 16 Ha, and a built area of 11.057 m^2 distributed as shown in Fig. 2. Two different places can be differentiated at the teaching farm:

3.A. Animal Production Unit: It has 8.213 square metres. It is divided into 15 buildings:

- Equine unit: 369 m^2
- Rabbit unit: 383 m^2
- Avian unit: 589 m^2
- Porcine unit: Farrowing unit (689 m^2). Gestation (975 m^2). Nursery unit (625 m^2). Gilt (490 m^2). Growing/Finishing unit (two units of 1.000 m^2 each).
- Calf finishing unit: 621 m^2
- Ovine unit: 573 m^2
- Goat unit: 1.208 m^2
- Fodder factory: 177 m^2
- Lab of multi specie insemination: 50 m^2
- Primate unit: 120 m^2 divided into 2 cages.
- Depuration of animal residue: a purifying plant (78 m^2) and a decanter pond (1.170 m^2).

3.B. Teaching Module. It has a surface of 2.844 m^2.

- The central building (2.091 m^2) houses the administration offices, 2 lecturing theatres and a computer room, a hall of residents, a conference room, 4 labs, a library, a dinning hall, a kitchen and the porter's house.
- The so-called "Service Building" houses changing rooms, storerooms and a display and auction area over a surface of 753 m^2.

6.2. PREMISES FOR CLINICS AND HOSPITALISATION

Table 6.2.1. Places available for clinics and hospitalisation.

- Number of hospitalisation places for cattle: 8
- Number of hospitalisation places for horses: 11
- Number of hospitalisation places for small ruminants: 20
- Number of hospitalisation places for pigs: 8
- Number of hospitalisation places for dogs: 13
- Number of hospitalisation places for cats: 4

Number of animals that can be accommodated in isolation facilities (infectious-contagious hospital):

- Dog and cats: 3
- Horses: 2
- Small ruminants: 20
- Pigs: 10
- Chickens: 120

6.3. PREMISES FOR ANIMALS.

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

Veterinary Teaching Hospital and Department of Medicine and Animal Surgery. Usually there are 2 horses, 11 dogs, 6 cats and 9-10 different exotic species in their appropiated facilities.

Veterinary Teaching Farm.

Equine unit: it can house up to 12 horses (2 large studs for 4 horses each and 4 individual boxes). In addition, there is a storeroom for fodder as well as a 50 m^2 riding ring.

Rabbit unit: divided into two different areas: production and growing/finishing sections. The area of production counts with 200 cages for reproduction equipped with a mobile farrowing unit stall, and automatic feed hopper and a waterers. The premises also count with the mechanical withdrawal of purines.

Avian unit: it consists of two areas, fattening and egg production. The fattening area counts with a mobile system of poultry yards, hoppers and waterers, an infrared heat system, a refrigeration and a ventilation system and 4 water tanks able to supply different treatments to each section. The section devoted to the production of eggs can hold 500 layer hens.

Porcine unit: it counts with the premises of a closed-cycle farm:

- Gilt unit. Breeding gilts. It counts with 4 rows of 7 rooms in each row, and 20 pens to breed them in-group.
- Gestation unit: 4 rows with 45 rooms and 5 pens are part of the gestation unit. In addition, there are 4 boar pens and a stud to extract semen.
- Farrowing unit: it houses 8 rooms with 6 farrowing crates each one of them.
- Nursery unit: it houses 16 rooms with 6 pens each one of them.
- Growing/finishing unit: there are 2 units having each of them 8 rooms and 10 pens per rooms.

Calf nursery unit: it counts with four pens with capacity for 25 animals each. A restriction system of the front panel allows artificial lactation by means of breast pumps. Likewise, there is a yard that leads to the mixed feed (stored in a silo) and fodder. This unit also counts with an adjacent room to store powder milk and powder milk reconstruction.

Ovine unit: it houses 6 farrowing-pens, a pen for rams and a pen for lamb finishing, distributed on the sides of a central corridor.

Goat unit: it houses two continuous pens arranged on both sides of the corridor. One for males, and an adjacent one for females that it is also used as a milking parlour.

Primate unit: it is located off biosecurity area. It counts with two connected cages of 6x10 metres, and 5 metres high (300 m^3 in total). It houses baboons (*Papo hamadryas anubis* and *Papio hamadryas ursinus*). The auxiliary building houses three handling cages, a room to take samples, storeroom and toilets.

Quarantine: quarantine area is located out of the farm fence. It counts with six pens: 2 for porcine, 1 for equine, 2 pens for ovine and 1 for cattle.

Apiculture unit: it is made up by various hives located out of the farm fence.

A fodder unit: 1,81 Ha of land are devoted to growing fodder. The recycled water from the purifying plant is used to irrigate this unit.

6.4. PREMISES USED FOR THEORETICAL, PRACTICAL AND SUPERVISED TEACHING.

Table 6.4.1. Premises for lecturing.

No. of lecture halls	1	2	3	4	5	6	7
No. of places per lecture hall	120	165	165	211	211	100	70
Name of the lecture hall	-1.1	0.1	0.2	0.3	F. Moreno	Lasaosa	Boardroom
No. of lecture halls	8	9	10	11	12	13	
No. of places per lecture hall	390	50	40	32	32	164	
Name of the lecture hall	Main Theatre	HCV-1	HCV-2	Elanco lecture hall Farm-2	Vetoquinol lecture hall Farm-3	Pfizer lecture hall Farm-1	

Total number of places in lecture halls: 1.750

Table 6.4.2. Premises for group work.

Number of rooms that can be used for group work (supervised work).

Number of places in the rooms for group and individual work in the different teaching units:

1. CENTRAL AREA OF THE MAIN BUILDING.

No. of lecture halls	1	2	3	4	5	6	7
No. of places per lecture hall	6	15	15	20	10	7	5
Name of the lecture hall *	B.1.1.015	B.1.1.016	B.1.1.021	B.1.1.049	B.1.2.008	B.1.2.022	B.1.2.040
No. of lecture halls	8	9	10	11	12	13	14
No. of places per lecture hall	6	5	8	45	15	14	10
Name of the lecture hall *	B.1.2.045	B.1.3.006	B.1.3.017	B.1.3.018	B.1.3.021	B.1.3.035	B.1.3.036
No. of lecture halls	15	16	17	18	19	20	
No. of places per lecture hall	8	10	30	3	30	25	
Name of the lecture hall *	B.1.3.043	B.1.4.021	B.1.4.011	B.1.4.023	B.1.4.031	ALA Vencejo	

2. WESTERN WING. MAIN BUILDING.

No. of lecture halls	20	21	22
No. of places per lecture hall	24	5	8
Name of the lecture hall *	B.1.0.044 ADLA Verderón	B.1.0.057	B.1.0.070

3. EASTERN WING. MAIN BUILDING.

No. of lecture halls	23	24	25	26
No. of places per lecture hall	25	10	8	6
Name of the lecture hall *	B.2.0.025	B.2.1.006	B.2.1.022	B.2.2.020

4. TEACHING HOSPITAL (HCV).

No. of lecture halls	27	28	29
No. of places per lecture hall	25	20	25
Name of the lecture hall *	First floor	Second floor	Third floor

5. TEACHING FARM.

No. of lecture halls	30
No. of places per lecture hall	16
Name of the lecture hall *	Computer room

*Name: B.1. (fixed code) + Floor code + Location on the floor.
Examples:B.1.3.018. It is on the third floor. Ethnology Teaching Unit
B.1.3.035. It is on the third floor. Nutrition Teaching Unit.

Total number of places in rooms for group work: 453.

Table 6.4.3. Premises for practical work. Number of laboratories for practical work by students.

1. CENTRAL AREA OF THE MAIN BUILDING.

No. of lecture halls	1	2	3	4	5	6	7
No. of places per lecture hall	20	6	4	3+2	4	30	25+15
Name of the lecture hall *	Anatomic Museum	Lab. of Plastination	B.1.1.012	B.1.013-1 B.1.013-2	B.1.1.014	B.1.1.020	B.1.1.039 B.1.1.039-1
No. of lecture halls	8	9	10	11	12	13	14
No. of places per lecture hall	10	10	10	16	20	10	10+14
Name of the lecture hall *	B.1.1.047	B.1.1.048	B.1.2.017	B.1.2.018	B.1.2.023	B.1.2.038	B.1.2.046 B.1.2.046-1
No. of lecture halls	15	16	17	18	19		
No. of places per lecture hall	8	25	15	10	24		
Name of the lecture hall *	B.1.2.047	B.1.3.022	B.1.3.034	B.1.4.008	B.1.4.020		

2. WESTERN WING. MAIN BUILDING.

No. of lecture halls	20	21	22
No. of places per lecture hall	10	4	20
Name of the lecture hall *	B.1.0.051	B.1.0.055	B.1.0.066

3. EASTERN WING. MAIN BUILDING.

No. of lecture halls	23	24	25	26	27	28	29
No. of places per lecture hall	15	25	10	20	10	10	5
Name of the lecture hall *	B.2.0.013	B.2.0.014	B.2.1.003	B.2.1.005	B.2.1.008	B.1.1.051	B.1.1.055
No. of lecture halls	30						
No. of places per lecture hall	20						
Name of the lecture hall *	B.2.2.015						

4. TEACHING HOSPITAL.

No. of lecture halls	31	32	33	34	35
No. of places per lecture hall	10	30	30	15	10
Name of the lecture hall *	Second floor	Third floor	Fourth floor	Infectious-1	Infectious-2

5. TEACHING FARM.

No. of lecture halls	36	37	38
No. of places per lecture hall	15	10	10
Name of the lecture hall *	Merial (Animal Production)	Bayer (Animal Nutrition)	SELCO (Genetics)

*Name: B.1. (fixed code) + Floor code + Location on the floor.
Examples:B.1.3.018. It is on the third floor. Ethnology Teaching Unit
B.1.3.035. It is on the third floor. Nutrition Teaching Unit.

Practices can also be conducted in:

- 2 Surgical labs (for 10 students each).
- Large animal examination rooms (for 20 students).
- Small animal examination room (for 20 students).
- Necropsy room (for 40 students).
- Dissection room (for 60 students).

Total number of places in laboratories: 755

Please give a brief description of health and safety measures in the premises for practical work (and in the laboratories to which undergraduate students have access).

During the clinical and farm practices, students handle animals, either large or small, under the lecturer's supervision. Those animals particularly aggressive are handled following specific sedation and/or handling/restrain protocols.

In laboratory practices, instructions are given to the students on the safety measures to be followed when conducting the specific practice. Students are given gloves and masks when appropriate. It is compulsory the use of coats and overalls in the labs, at hospital as well as in the dissection room and in the farm. There is an aspiration device to remove gases and renew air in the dissection room. Teaching labs are equipped with basic safety measures.

In the event of an accident in the Espinardo Campus, the University of Murcia is under the general emergency framework of evacuation, therefore it is possible to transfer the injured person to the nearest hospital. There is also a first-aid unit on the Campus.

6.5. DIAGNOSTIC LABORATORIES AND CLINICAL SUPPORT SERVICES.

Diagnostic laboratories:
Briefly describe the facilities available for clinical pathology, diagnostic pathology.

Laboratory of clinical pathology.
The laboratory of clinical pathology conducts haematological, biochemical analysis as well as studies of organic liquids and cytologies. It has been approved by the European College of Clinical Pathology and it is staffed by a lab technician and four vets.

Laboratories of pathological anatomy, infectious-contagious and clinical parasitology.
Pathological anatomy: the necropsy room is located on the ground floor in the central module of the Veterinary Faculty. It has a 300m^2 area including the labs, the accesses and the proper necropsy room. It has two entries: one is used for reception of the animals (provided with a large animal unloading system), and the other is used for the students conducting practices.

There are three laboratories, one used to photography and image processing, another for fixation and sectioning of the samples and the last one used for the processing, slicing and staining of the preparations.

The necropsy room is used for the practical teaching of the subject of Special Pathological Anatomy, providing, at the same time, the necessary space to hold the service

of Pathological Anatomy of the Veterinary Teaching Hospital. It is open from Monday to Friday, from 8:30 to 17:00 hours. It offers a histopathological diagnosis based on conventional staining techniques (e.g. hematoxylin-eosin, trichromics, etc.) as well as on immunocytochemical techniques.

Infectious-contagious: this service conducts virological, bacteriological and serological diagnoses on small, large and exotic animal as well as on livestock. Techniques available in this service are: bacteriological isolation, antibiograms, serological techniques such as ELISA, and PCR.

Clinical parasitology: this service conducts parasitological diagnosed in several species for the HCV and also to external practioners.

Toxicology Service.
This laboratory has been accredited as a reference lab by the SOS-POISON (SOS VENENO) within the framework of the national programme known as "Antidote". Thus, it can receive, keep in custody, analyse and give an expert appraisal of poisoned animals. The toxicology service provides with practical instruction to the last year students; and it acts as a supporting service (for practitioners, institutions and private persons) in the different Toxicology fields.

Laboratory of Genomics.
The laboratory of genomics (SELCO) at the Faculty of Veterinary counts with PCRs and thermal cycler system that allow to carry out genomic and molecular biology techniques.

Central clinical support service:
Indicate the nature of these services and how they are organized (e.g. diagnostic imaging, anesthesia, etc.).

Imaging diagnosis.
It is charge of conducting X-rays of the patients (small, exotic and large animals) admitted in the Teaching Veterinary Hospital, performing simple radiographs as well as radiographs using contrast media. Likewise, echographies of the abdominal, thoracic cavities (non-cardiac) and musculoskeletal system of all species are conducted in this service.

Anaesthesia.
It carries out procedures of sedation and general anaesthesia in small animals, equines, livestock and exotic and wild species. It is a support service for surgical, diagnostic and examining procedures. It has induction and recovery areas in the small animal anaesthesia room, and suitable equipment such as invasive and non invasive cardiovascular monitoring, ventilatory monitoring, ventilators, heated mats, intravenous and inhalant anaesthesia (halothane, isofluorane and sevofluorane), residual anaesthetic scavenging systems, perfusers, infusion pumps. It also has padded rooms to induce and recover equines and other large animals. The anaesthesia service is also responsible for the pre-operative and postoperative analgesia since one of the most important objectives of the Teaching Hospital is to guarantee good pain management.

Reproduction.
This service has a double objective:

1. To carry out clinical analysis related to the reproductive function.

2. To give response to the increasing demand of reproduction biotechnology, either to be applied to pets or to livestock. Cryopreservation of gametes (mainly, spermatozoa) and studies of reproductive efficacy (for instance, echographic studies of the ovary functional activity) are the most frequently requested by insemination establishments or by production farms.

The facilities of the service are:

1. Andrology lab.
2. Cryobiology lab.
3. In vitro production of embryos lab.
4. Cytometry lab (sex preselection by sorting of the sperm)
5. Cold chamber.

6.6. SLAUGHTERHOUSE FACILITIES.

Slaughterhouse facilities Describe briefly the slaughterhouse facility to which the establishment has access, including distances from the establishment and level of activity.

SLAUGHTERHOUSES.

The students attending the subject of Hygiene, Inspection and Food Control carry out practices in the slaughterhouse of MERCAMURCIA, located 15 Km away from the Veterinary Faculty. This is the main slaughterhouse supplying meat to the Southeast of Spain. It is part of the so-called MERCAMURCIA Food Unit, and has a surface of 7.252 m^2, including 900 m^2 of cold-storage rooms. Bovine, porcine, ovine and goats are sacrificed there, producing a total volume of 19.945 tones of meat every year. It is authorised to sacrifice animal following the HALAL ritual procedure suitable for the muslim population. Eventually, ostriches are also slaughtered. It houses six rooms devoted to cut carcasses into pieces, 2 stuffing factories and 3 fridge stores over an area of 3.000 m^2.

The Director of the slaughterhouse Veterinary Inspection Service is an Associated Lecturer in the Area of Nutrition and Bromatology, and is in charge of supervising the students' practices, under a collaboration arrangement signed between the Veterinary Faculty and the Regional Health Council.

POULTRY SLAUGHTERHOUSE.

Steps are being taken to conduct practices in the slaughterhouse of the main company of this sector in the Region "Pollos Pujante" ("Pujante's Poultry Farm"). The premises are located in Beniel about 20 Km away from the Faculty. This agreement has been expanded and new practices are foreseen to be conducted at this place in the next academic year.

FISH MARKET.

The activities regarding the Hygiene, Inspection and Control of fish are conducted in the Central Market of Alcantarilla (located 15 Km away from the Veterinary Faculty). This is

the main fish market of the Region. It is expected to build a new Central Market which will improve the quality of the practical activities carry out there.

6.7. FOODSTUFF PROCESSING UNIT.

Foodstuff processing unit
Describe briefly any access that the establishment has to foodstuff/processing unit.

PILOT PLANT OF FOOD TECHNOLOGY.

The Pilot Plant of Food Technology is located under the area of Food Technology. The plant has an area of 287 m^2. It also counts with a kitchen of 60 m^2 and a laboratory to process samples.

It is equipped with the suitable means to process and elaborate:

- Meat products: mincing machine, cutter, mixer, boiler, cocker, stuffer.
- Milk transformation: plate heat exchanger, homogenization equipment, skimming machine, cheese vats, whey drainage table, equipment for salting, equipment to produce butter, yogurt and ice-cream.
- Elaboration of canned vegetables, vegetable juices and their derived: rotatory autoclave, pasteurised and homogenised machines, dosimeter, colloidal mill, tin fastening systems, boilers and filtration equipment.

It is also equipped with an experimental cellar, a warehouse, some auxiliary material and some other facilities, such as: concentrators, vacuum packaging and modified atmosphere packaging, scales, refrigerating and freezing chambers , a -80°C freezer, tables to prepare and cleaning raw material, transporting pumps, shelves, water boiler (reaching a pressure of 7 atmospheres) and equipments to treat waters.

KITCHENS AND CENTRAL DINNING HALLS.

The Murcia University dinning halls are inspected by students carrying out practices of Hygiene, Inspection and Food Control. To this end, the Director of food safety service of the University, supervises the visit and the inspection of these facilities, and also of the dinning halls located on the Campus of Espinardo at a walking distance from the Faculty. Groups of 10 students are organized to conduct these practices and they perform a whole inspection protocol, taking samples of the food and surfaces to assess the microbiological quality of the food and the kitchens.

FOOD QUALITY CONTROL SERVICE.

The Department of Food Technology, Nutrition and Bromatology offers a Service for quality control of food including: physico-chemical, microbiological and sensorial analysis.

6.8. WASTE MANAGEMENT.

The laboratories are provided with specific containers to place biological samples, as well as the material in contact with them, and chemical residues. These containers are removed on a regular basis by the University Waste Management Service.

The bodies of small animals are removed and cremated in the Universitary Crematorium located in the Unit of Laboratory Animals. The bodies of large animals are cremated in an external plant specialised in the management of residues of animal origin (Grasas Martínez, located in Abanilla) which has been licensed by the Regional Government for these purposes.

Animal origin residues (purine and manure) are processed in the purifying plant of residues located outside of the biosecurity area on the Veterinary Teaching Farm. The technology used allows obtaining either recyclable subproducts (water) and even marketable products (solids to be used as manure for agriculture purposes).

6.9. FUTURE CHANGES.

Outline any proposed changes in the premises that will have a substantial effect on the establishment, and indicate the stage that those changes have reached.

VETERINARY TEACHING HOSPITAL.

- Installation of a magnetic resonance equipment in a room fitted for this purpose.
- Renovation of the dependences for small animal hospitalisation.
- Equine Medicine and Surgery Service:

1. Building of a room for clinical sessions.
2. Building of an ICU (intensive care unit) box.
3. Building of a neonatology unit.
4. Building of five new boxes. One for them to house ponies.
5. Building of a new storeroom.
6. Horse-ring upgrading.

ENLARGEMENT OF THE DEPARTMENT OF FOOD, NUTRITION AND BROMATOLOGY.

The available space for the Area of Food Technology, Nutrition and Bromatology are going to be enlarged by relocating the area in dependences of the former Faculty of Computer Science located close to the Veterinary main building. This relocation will provide the area with 1.000 m^2 to build new laboratories, and rooms for the student's practical and supervised works.

2. COMMENTS.

Comment on the adequacy of the buildings in general for undergraduate teaching.
Comment on the adequacy of the equipment in general for undergraduate teaching.
Comment on the maintenance of buildings and equipment.

In general the buildings are well equipped, the lecture halls are provided with updated audio-visual technology such as computers, projectors and internet connections.

The weak points regarding these issues are:

- The actual space available for the Area of Nutrition and Bromatology is spread in separated locations. This situation is particularly inconvenient when it is necessary to move expensive equipment to carry out practices.
- The Faculty needs its own maintenance service. The actual service is centralized by the University and it can be slow in solving the problems.

3. SUGGESTIONS.

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

The main projects for the future are the acquisition of updated, outstanding equipments to replace those which are getting out of date, to keep the quality of the standards in the Veterinary School.

Chapter 7: ANIMALS AND TEACHING MATERIAL OF ANIMAL ORIGIN

CHAPTER 7. ANIMAL AND TEACHING MATERIAL OF ANIMAL ORIGIN.

1. FACTUAL INFORMATION.

7.1. BASIC SUBJECTS.

Anatomy:
Indicate the materials that are used in practical anatomy training and how these are obtained and stored.

Material used for practical instruction and its maintenance:

1. Skeletons and bones. The "Osteoteca", a section of the Veterinary Anatomical Museum includes more than twenty complete skeletons and 2.450 osseous items, such as: skulls, bones, osseous and articular assemblies. The keeping of these materials consists of a regular cleaning and the conduction of an annual inventory of the bones.

2. Dog cadavers. Dissections are conducted on dog cadavers. They originate from animals sacrificed for humanitarian reasons following the legislation in force (Law of Animal Protection), at the Zoonoses Center of the Murcia Council. Thirty animals per year are used in Anatomy I and Embryology (in the first year of studies) and twenty five animals/year are used in Anatomy II (in the second academic year). Most of cadavers are embalmed, and used for up to two years for certain practices, in addition fresh cadavers are employed for some practices.

3. Organs and body regions belonging to farm animals, including, ruminants, equines and swine, that come from the slaughterhouse, the necropsy room at the Veterinary Faculty, the Laboratoty Animal Unit at Murcia University and from the animal resources centre at Virgen de la Arrixaca University Hospital. Most of this material is preserved by immersion and perfusion techniques allowing conservation in refrigeration.

4. Embryos for embryology practices obtained from abattoir pregnant ewes, sows and cows are stored frozen until the practical session.

5. Dried plastinated dog cadavers, body regions of farm animals, organs (some with vascular injections), foetuses, body sections, and others, totalling 913 items. This material kept in the Anatomic Museum and in the Dissection Room, is innocuous, long lasting and requires no specific maintenance.

Pathology:

Table 7.1. Number of necropsies performed in Pathological Anatomy teaching at Murcia Veterinary Faculty between 2003 and 2005.

Species		Number of necropsies		
		2005	**2004**	**2003**
Pets	Dogs	75	71	35
	Cats	10	5	4
	Exotic mammals	12	5	5
	Exotic, non mammals	13	11	3
Large animals	Horses	12	9	9
	Cattle	1	-	-
	Porcine	90[1] 212[2] Total: 302	32	66
	Goat	71	39	71
	Sheep	44	19	20
	Rabbits	3	5	3
	Birds	52	40	129

1 and 2. Material originating from the Veterinary Teaching hospital and Farm, respectively.

Indicate the nature and the extent on any additional sources of material for the teaching of necropsies and pathological anatomy, including slaughterhouse material. Indicate the nature of any other animal used in teaching other basic subjects.

Animals used in the teaching of pathological anatomy and necropsies come from different sources (apart from the ones obtained through the service of Pathological Anatomy at the Veterinary Teaching Hospital and the Veterinary Teaching Farm):

- Dogs: dog kennel of the City Council.
- Chickens: poultry farms.
- Porcine: porcine commercial farms.
- Small ruminants: vaccination campaigns and old animals.
- Condemned organs from Orihuela slaughterhouse that are brought to the Veterinary Faculty in authorised containers.

In addition, Physiology, Etology and Ethnology, in addition to Animal and Vegetal Biology conduct practices with live animals from the Farm and the Laboratory Animal Unit of the University.

7.2. ANIMAL PRODUCTION.

Indicate the availability of production animals for the practical teaching of students:
a) On the site of the institution.
b) On other sites to which the institution has access.

A) At the institution: The Veterinary Teaching Farm includes the following units and animals:

- Equine unit: 5 mares, 1 foal and 1 jenny
- Rabbit unit: 150 closed cycle doe-rabbit.

- Avian unit: 2.000 fattening chickens and 500 layer-hens.
- Porcine unit: 250 closed cycle sows.
- Calf finishing or growing unit: 100 calves.
- Goat unit: 120 goats and their offspring.
- Ovine unit: 120 sheep and their offspring.
- Primate unit: 28 monkeys.
- Apiculture unit: 4 hives.

Fodder unit: 1,81 Ha are devoted to the fodder production. Recycled water is used for irrigation.

B) Others:

Students visit concerted farms for doing some practices related with Animal Health, Reproduction and Propedeutics.

7.3. FOOD HYGIENE.

Indicate the availability of animals and products of animal origin for the practical teaching of students in food hygiene, inspection and technology.

Students undergo practical training on Food Hygiene, Inspection and Control training at slaughterhouses and at the faculty with the following material:

- At the MERCAMURCIA Slaughterhouse. Students work on the inspection of ante mortem and post mortem pieces and organs of porcine, bovine, caprine and ovine.

- At the Faculty laboratory: fresh meat, meat by-products, raw and processed milk, milk by-products (yogurt, cheese), fish and molluscs, and honey. Meat and fish samples come from Mercamurcia Slaughterhouse and Fish Market respectively, raw milk comes from the University Farm and other samples are acquired at supermarkets.

7.4. CONSULTATIONS.

State the number of weeks, in the course of the year, during which the clinics are open. State the number of consultation days each week. State the consultation hours.

The Veterinary Teaching Hospital (HCV) is open all year round and attends pets and large animals 24 hours a day. There are general and specialist consultations from 9:30 to 13:30 and 17:00 to 20:00, in addition there is an emergency service for companion animals and equine during 24 hours at day. The timetable of each service appears in the following table:

Table 7.4.1. Veterinary Teaching Hospital timetable.

Species	Speciality	Days	Opening hours
Small animals	Internal medicine	Monday to Friday	9:30-13:30 and 17:00-20:00
	Surgery		
	Exotics		
	Ophtalmology		
	Dermatology	Wednesday	
	Reproduction	Monday to Friday	
	Image diagnosis		
	Cardiology		
	General consultation		
	Emergency and support services (anaesthesia, clinical pathology and imaging diagnosis)	Monday to Sunday	00:00-24:00
Horses	All	Monday to Sunday	00:00-24:00

Table 7.4.2. Number of animals admitted in the Veterinary Teaching Hospital between 2003-2005.

Species	Number of patients		
	2005	2004	2003
Dogs	5.196	3.972	3.933
Cats	399	323	453
Exotics	283	277	261
Horses	798	605	593

*Porcine and ruminants consultations are not normally conducted at the Veterinary Hospital, and are managed at the Veterinary Farm or at the Mobile Clinic.

7.5. HOSPITALISATION.

The number of animal patients hospitalised in the Veterinary Teaching Hospital between 2003-2005 is shown in Table 7.5. A total of 2.100 animals were hospitalised in this period and equines were the most numerous species.

Table 7.5. Patients hospitalised in the Veterinary Teaching Hospital between 2003-2005.

Species	Number of hospitalisations *			
	2005	2004	2003	Total
Dogs	230			230
Cats	45			45
Others	30			30
Horses	718	544	533	1.795
Total	1.023	544	533	2.100

*The service of hospitalisation for small animals started in 2004, but the registration of patients began in 2005.

7.6. VEHICLES FOR ANIMAL TRANSPORT.

State the number and nature of the establishment vehicles that can be used to bring sick animals to the clinics.
State whether or not, clients are charged for this service.

Vehicles available for ambulance services include two animal trailers to transport pets and horses, respectively, to the Veterinary Hospital. Clients are not charged for this service.

7.7. EMERGENCY SERVICE.

Outline what in-house emergency service is available.

As mentioned above, there is a 24 h. emergency service for small and large animals that covers all specialities and support services including anaesthesia, clinical pathology and image diagnosis.

7.8. MOBILE CLINIC.

State the number of hours of operation per week. Indicate arrangements for out-of-hours emergency services. State the number, the type and the seating capacity of the vehicles used to transport students working in the mobile clinic. State the approximate number of sick animals (specify cattle, swine, equine, poultry or small ruminants, others) seen by the mobile clinic in a year. State the number of visits in a year made by the mobile clinic to farms and studs for cattle, swine, poultry, small ruminants, others.

The mobile clinic is carried out by the infectious and parasitic disease teaching units of the Animal Health Department involving 4th year students. Additionally, the Clinical Propedeutic teaching unit conducts on-farm practices with 3rd year students. Farm visits are routinely carried out in the morning between 10:30h-14:30h and involve groups of 6-10 students/teacher. Available vehicles include two eleven-seat minibuses and one five-seat four-wheel drive. The following table portrays the number of farms visited and animals examined by each teaching unit:

Table 7.8.1. Number of farms visited and animals examined by the Parasitic (P) and infectious (I) disease teaching units of Murcia Veterinary Faculty between 2002-2006.

Unit	Species	2005-06		2004-05		2003-04		2002-03	
		Farms	Animals	Farms	Animals	Farms	Animals	Farms	Animals
P	Porcine	11	2.750	10	2.500	10	2.500	9	2.250
	Ovine	2	1.000	4	2.000	4	2.000	4	2.000
	Goats	5	2.000	6	2.400	6	2.400	5	2.000
	Cattle	2	1.000	-	-	-	-	-	-
	All	20	7.750	20	6.900	20	6.900	18	6.250
I	Porcine	2	500	5	2.500	7	1.750	5	1.250
	Ovine	2	1.000	1	2.000	5	2.500	7	3.500
	Goats	3	1.200	1	2.400	7	2.800	3	1.200
	Cattle	3	3.000	3	3.000	0	0	3	3.000
	All	10	5.700	10	5.150	19	7.050	18	8.950
Total		30	13.450	30	12.050	39	13.950	36	15.200

The Faculty holds agreements with both Horse Racing Club in Murcia, Peña Béjar Transports and Affinity, to carry out practices with the horse mobile clinic and Los

Gabrieles, Salvador García y Micaelos S.L., to conduct practices with the cattle mobile clinic.

One associated lecturer, whose main task is the mobile clinic in cattle, conducts two visits (two hours each, a week) to farms with a group of three students. Eight exploitations holding 2.300 animals are visited on a regular basis. Students work with 20 cows in each practice, extracting blood, practising the tuberculin test, vaccines, sampling to detect encephalopaties and clinical case solving

In addition students do practices of mobile clinic at the farm. The number and type of veterinary interventions carried out during the academic year 2004-05 by the Veterinary Teaching farm is displayed in Table 7.8.2.

Table 7.8.2. Number and type of veterinary interventions carried out during the academic year 2004-05 in the Veterinary Teaching Farm.

	Porcine	Rabbits	Cattle	Birds	Horses	Goats
Vaccinations	2.196	945			15	
Iron injections	671					
Teeth liming	671					
Caudectomies	671					
Deworming		452			20	
Therapeutic acts			214	563		
Feet treatments					20	
Artificial insemination						2.300
Other disease preventions		171				

7.9. OTHER INFORMATION.

Indicate any additional outside sources of material for clinical training purposes, such as animal charities, animals waiting slaughter, etc.

Indicate how the level of clinical service that is offered by the establishment (in small companion animals, equines and production animals) compares with outside practices in terms of facilities, hours of service, equipment, expertise, responsiveness, etc.

Provide an indication in percentage of proportion of cases that are primary (i.e. first opinion), and referrals (provide a breakdown by species, if helpful). If the establishment has a particular aim or policy as regards this mix, describe it.

Indicate what areas of clinical specialisation are covered, and the extent of coverage (for example, a veterinarian with a particular specialisation may see patients in the clinic for one day a week, 3 afternoon, etc.)

Outline how the fees for clinical services are decided, and how these compare with those charged by private practitioners

Indicate the relationship that the establishment has with outside practitioners (in small companion animals, equines and production animals) in terms of referral work, providing diagnostic or advisory services for private practitioners, practitioners participating in teaching, holiday or "seeing practice" work for students, feedback on the level of clinical training.

Describe (if applicable) any other relationship with outside organisations that are routinely used to provide students with training (in particular practical training) in other clinical subjects (e.g. pathology work, interaction with state veterinary work)

Provide an outline of the administrative system(s) used for the patients, e.g., in terms of how case records are kept, how data is retrieved, whether systems are centralised, etc.

The Veterinary Teaching Hospital has an agreement with the Society for the Prevention of Cruelty to Animals (PROANIPLANT, registered office located at Sangonera la Seca) to conduct practices with their animals at the Veterinary Hospital. There is also an agreement with, both, the Centre for the Recovery of wild Fauna (La Alberca, Murcia) and Mundomar (Benidorm, Alicante) to conduct practices on exotic animals. Eight students (fifth year students) carry out practices at the Centre for the Recovery of Wild Fauna every Friday. There is another agreement with MAPFRE (an insurance company) being the Veterinary Hospital the reference centre for all those animals insured. There is another agreement with Horse Racing Club that gives the Veterinary Hospital the opportunity of receiving animals from this organization.

The Veterinary Teaching Hospital provides a wide range of specialities as well as state of the art technology. Eight Diplomates by European Colleges and a Certificate in Veterinary Anaesthesia by the Royal Veterinary College are on the staff. The Hospital also houses a Clinical Pathological lab accredited by the European College of Clinical Pathology (there are only five accredited labs in Europe nowadats). It is the only establishment in the Region of Murcia that provides two operating rooms for large animals, special rooms for induction and anaesthesia recovery, X-ray equipment and an echograph. It is also the only establishment with a 24-hour service for equine. Two other establishments provide this kind of services for small animals.

In general, the Veterinary Hospital receives 60% of referrals. Nevertheless, it can receive up to 80-90% of referrals in specialised services such as cardiology, ophthalmology, dermatology or pathological anatomy. The different services and their timetable appear under the epigraph 4.1. The Hospital Rector Council decides upon the prices to be charged. These charges are passed by the Government Council and the University Social Council. Prices are, basically, equal or superior to the ones charged in a private hospital, and they are usually superior to the ones recommended by the Official Veterinary College to avoid unfair competition.

Meetings are held with AMURVAC directive board on annual basis to state the main guidelines of negotiation between the two entities.

The COIE is in charge of keeping the agreements between the companies and the students carrying out practices. These practices usually last around one or two months. They take place on holidays and they are considered as free elective credits. Vets, as tutors, draw up a report on the students' developments in their practices. One hundred practices are conducted per year.

Clients' and patients' data are kept on a database. Clinical records are written by hand, kept in envelopes and stored with the reports of clinical pathology, echographies and echocardiographies. The X-ray file stands alone. When the patient comes to hospital for

the first time, the receptionist gives a numeric code for the patients' clinical record. The analytical data are stored on a database and in written form in an envelope.

7.10. RATIOS.

See the section "Main Indicators" in Annexe I for the figures needed for calculating ratios. Give the figures for numerators and denominators. The ratios should then be expressed by taking the numerator as I.

7.10.1. Animal available for clinical work:

Ratio: **Students / Production animals.**

Number of students graduated in the last year / number of production animals = = 100 / 4.072 = 1 / 40,72

Ratio: **Students / Companion animals.**

Number of students graduated in the last year / Number of companion animals = 100 / 5.878 = 1 / 58,78

7.10.2. Animal available for necropsies:

Ratio: **Students / Post mortem examinations.**

Number of students graduated in the last year / number of cadavers necropsied = = 100 / 595 = 1 / 5,95

2. COMMENTS.

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

Comment on local conditions or circumstances that might influence the ratios in 7.10.

- Cattle is scarce in the Region of Murcia due to the shortage of water and the importance given to porcine and goats.
- The Teaching Farm is of a great importance for our Veterinary Establishment, since it allows conducting practices on production animal.
- The hospitalisation and the 24-hour service started in 2005.
- A foundation is foreseen to be set up in the near future to manage the Veterinary Teaching Hospital in a more professional and efficient way.

3. SUGGESTIONS.

If the ratios in 7.10 for your establishment do not fall into the category "satisfactory" according to the indicative table in Annexe I, what can be done to improve these ratios?

The Establishment falls within the category of "satisfactory".

Chapter 8: LIBRARY AND LEARNING RESOURCES

CHAPTER 8. LIBRARY AND LEARNING RESOURCES.

1. FACTUAL INFORMATION.

8.1. LIBRARY.

Give a general description of the library/libraries of the Establishment/University that are available to students. Indicate how the library/libraries are managed (e.g. library committee). For each major library of the establishment, please provide the following information, either in narrative or tabular form.

Veterinary students have access to **two libraries**:

a) **The library of the Veterinary Faculty** has a surface area of 521 m^2. It has two floors.

On the first floor:

- An 80 m^2 bookstore room.
- A 250 m^2 study room. The study room has seating for up to 128 people. There is also a special area with two computers (containing an on-line catalogue and a database).
- An area used for reference service and an office.

On the ground floor, there is another study room (160 m^2) with capacity for 96 students.

In addition, there is a computer room (ALA) available for students with 34 computers connected to the Internet. This room is adjacent to the Library, but is does not depend on it.

b) **The main University General Library of the Campus of Espinardo** is located 100 m from the Veterinary School. The students have access to the following services in the General Library:

- Scientific Journals library of 420 m^2 with a capacity for 26 students. The Journals are available in both paper and electronic formats.
- A section of Health Sciences (Veterinary Science, Medicine and Nursing Studies) has a surface of 420 m^2, with capacity for 40 students. An array of 2.500 monographies is available.
- A general study room with capacity for 268 people.

A Director, a Co-ordinator and a General Commission of the Library are in charge of the Library Management (BUMU) under the authority of the Vice-Rectorate of Research. The Library of the Veterinary Faculty is run by a Responsible for Collection, and it is also managed by a Faculty Commission formed by representatives of the lecturers, students and administration and service personnel.

Library of the Veterinary Faculty:

Is this specific to the veterinary faculty?	**YES**
Is this common to two or more establishments?	**NO**

State the library's annual budget over the past three years	**Library (Euro)**	**Departments (Euro)**	**Total (Euro)**
2003	**9.216**	**13.850**	**23.066**
2004	**6.754**	**14.179**	**20.933**
2005	**5.667**	**14.210**	**19.877**

State the number of full-time employees	**1**
State the number of full time equivalents of part time employees	**0,5**

State the number of journals received each year (in addition to books)	**Veterinary Library**	**Scientific Library**
Veterinary discipline or related-sciences disciplines	**70 issues** **15 per subscription**	**20 in paper format** **100 on-line (approx.)**

Faculty Library opening hours	**Weekdays (Total working hours per day)**	**Weekends**
During term-time: **- Study room** **- Attention to the user**	 **12.30/day** **7.30/day**	**Closed**
During vacations	**5.30/day**	**Closed**

General Library opening hours	**Weekdays**	**Weekends**
During term-time	**12.30/day**	**Closed**
During vacations	**5.30/day**	**Closed**

Number of loans to students per academic year	**4.829 loans (2004-2005)**

Give an outline description of any document search system that is accessible to students.

BUMU electronic resources available for students are, namely:
BUMU on-line catalogue: http://gargoris.cpd.um.es/.
Electronic magazine Access: http://www.um.es/biblioteca/bibl_electr/revistas/.
Database access: http://www.um.es/biblioteca/bibl_electr/bases/.
Electronic books: http://www.um.es/biblioteca/bibl_electr/libros/index2.html?type=2.
Official bulletin: http://www.um.es/biblioteca/bibl_electr/boletines.html.
Electronic press: http://www.um.es/biblioteca/bibl_electr/prensa/.

Subsidiary libraries of the establishment: Please describe the subsidiary (e.g. Departmental) libraries of the establishment, and the arrangements for students' access.

The Departments have a collection of specialised bibliographic references controlled by the Library by means of ABSYS (Library Management Programme). Students, according to the Library Regulations, can make consultations during the Department opening hours.

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

Most part of the bibliographic collections of the Departments can be consulted using the Net: http://gargoris.cpd.um.es/.

8.2. INFORMATION TECHNOLOGY SERVICES.

(a) Audio-visual service

Is this specific to the veterinary training establishment?	YES
Is this common to two or more establishment?	NO

Number of full time employees	0
Full time equivalents of part time employees	0,5

Total number of videocassettes available	103
Total number of videocassettes that have been produced by the service over the past 5 years	4

Is there a viewing room?	YES
If so, indicate:	
- The number of places	4
- The number of hours it is opened each week	37,5

Opening hours	Weekdays	Weekends
During term-time	37,5	Closed
During holidays	32,5	Closed

(b) Computer service:

b.1. Computer service for maintenance and technical advice:

Is the computer service/department	
Specific to the veterinary training establishment?	NO
Common to two or more establishments?	YES

Number of full time employees	2
Full time equivalents of part time employees	-

b.2. Computer room for students:

Is there a computer room for students to use?		YES
If there is, please indicate:		
The number of places		There are three rooms (with a seating capacity of 34, 20 and 20 places, respectively) at the Veterinary School and other additional rooms at the Espinardo and La Merced Campus.
The opening hours	Weekdays	Weekends
- During term time	7.30 hours/day	No
- During holidays	5.30 hours/day	No

Does the service/department provide teaching in the use of computers?

The Computer service organises courses at users' level as well as at a more specialised level on a regular basis. Instruction about how to handle computers in the computer room is available on the Net. As an additional element, the first lecture in the Mathematics course for the first year students intends to teach students about the handling of an Intranet tool of the University of Murcia (SUMA).

Does the establishment use interactive CD-ROM for teaching?

Interactive CD-ROMs are widely used in different courses e.g Anatomy, Pathological Anatomy and Food Inspection, and some of them are available at SUMA for students.

2. COMMENTS.

Library:
Please comment on the adequacy of the books and journals, of the opening hours and of the provision of reading and support personnel.

The library books and journals are specialised in veterinary medicine, agriculture and animal production as well as hygiene and food technology. The books available in the library of Veterinary are the ones recommended to the students by the teaching staff. In addition, there is another collection of books in the General Library.

As far as the journals are concerned, the Faculty currently receives 70 titles, 15 out of which are a purchase subscription, and the rest are received by exchange with other universities or institutions and also by donation. The Faculty releases a journal called "Anales de Veterinaria" on an annual basis. The rest of the journals, in paper format, are received in the Scientific Library (Hemeroteca Científica). Twenty Veterinary-related indexed journals are received. In addition, BUMU has access to more than 1.500 on-line journals, 100, approx., out of which are Veterinary-related.

Students have access to on-line journals: http://www.um.es/biblioteca/bibl_electr/revistas/ and to a scientific database: http://www.um.es/biblioteca/bibl_electr/bases/

The study rooms of the Faculty Library are open from 8:30 to 21:00 and the reference office is open from 8:30 to 14:30, from Monday to Friday, and from 16:30 to 19:30, from Monday to Thursday. The General Library is open from 8:30 to 21:00, from Monday to Friday.

The Library's specialised personnel provides courses to train people in using the different library resources, no matter whether those users are lecturers or students. One of these courses is framed within the "welcome week for first year students".

Information technology facilities:
Please, comment on the establishment's approach to self-learning, on the adequacy of the provisions, and on any limitations on the further development in this area.

The University of Murcia has developed SUMA as an Intranet tool, that allow the lecturers to place didactic material on the Net. Therefore, SUMA Intranet can be also considered as a self-learning tool for the students. This tool has had a good acceptance for the lecturers and the students and up-dating courses on SUMA are conducted on a regular basis.

All the lecture theatres have computers with access to SUMA. Moreover, anyone from the University Community can have free access to SUMA from a remote lap-top using WIFI technology (The WIFI connection is available inside the Campus).

3. SUGGESTIONS.

It would be desirable to enlarge the timetable for public attention at the reference office at the library of our Veterinary School. Also, a greater annual budget is needed in order to buy more set of books recommended by the lectures.

Chapter 9: ADMISSION AND ENROLMENT

CHAPTER 9. ADMISSION AND ENROLMENT.

1. FACTUAL INFORMATION.

9.1. NUMBER OF STUDENTS.

Table 9.1.1. Undergraduate students.

a.	Total number of undergraduate students	681
b.	Male students	215
c.	Female students	466
d.	Nationals	675
e.	Foreign students	6
	- From EU countries	5
	- From non-EU countries	1
f.	1st year students	96
g.	2nd year students	194
h.	3rd year students	77
i.	4th year students	74
j.	5th year students	242

Table 9.1.2. Postgraduate students.

n.	Total number of postgraduate students	98
o.	Male students	38
p.	Female students	60
q.	Nationals	81
r.	Foreign students	17
	- from EU countries	1
	- from non-EU countries	16
s.	1st year students	31
t.	2nd year students	26
u.	3rd year students	20
v.	4th year students	21
w.	5th year, or subsequent, students	

Give the total number of students in the establishment (a+n): 779

9.2. STUDENTS ADMISSION.

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

Students must meet the following requirements in order to be admitted:

- Students must hold a secondary education Diploma in Nature and Health Sciences (two-years-long secondary school module).

- Students also must sit an University admission's exam at the end of the secondary studies. The students are graded on a scale from 0 to 10 points. A 40 % of the grade

corresponds to the grade point average obtained during the secondary studies. The rest (a 60% of the final grade) corresponds to the grade obtained in the University admission's exam.

The lower grade required to enter into the Veterinary Faculty during the Academic Year 2005-2006 was of 6,35 out of 10 points.

Describe whether students applying for and/or starting veterinary training have an equal or very variable knowledge base in scientific disciplines from their studies at school.

The students learn the basic principles in Nature and Health Sciences as well as other general subjects during the secondary studies. The acquired knowledge in these disciplines should allow them to pass the Upper Secondary School exams as well as the University admission's exam, so the students starting veterinary training usually have a similar knowledge base in scientific disciplines from their studies at school.

Indicate whether there is a limit to the number of students admitted each year.

A maximum number of 100 students can be admitted into the Faculty each Academic year that will be reduced to 95 by next course. By law, a limited number of these places (10%) must be granted to special students (this is considered as a positive discrimination measure). Therefore, a 2% of the places are reserved for students ageing more than 25 years old, a 2% to students who have already got an Universitary degree, a 3% to disabled students (the disability rate might be equal or superior to a 33%), a 1% to high level sportsmen students, and, finally, a 2% to students from non-European Union countries. In the event that these granted places remained vacant, normal students coming from the secondary school would take the places. In any case, the special granted students must fulfil the general requirements of holding a secondary school diploma and having passed the University admission's exam.

Describe how the number of Government-funded student places is determined.

The Ministry of Education and Science grants annual scholarships to students in the Spanish Universities. The main criteria for assigning these scholarships are the academic grades obtained by the student and the family economic status. A total number of 100 veterinary students received these scholarships during the Academic Course 2005-2006.

Describe any circumstances under which extra students may be admitted to the undergraduate veterinary course.

Students enrolled in other Veterinary Establishments can be admitted in our Faculty following a bureaucratic process known as "transfer of the student's record". These students must have got at least a total of 60 credits of the first cycle of the veterinary studies in the sending Faculty. The maximum number of students that can be admitted by this way is a 5% of the total number of students enrolled at first course in our Faculty during the previous Academic year.

Outline any changes foreseen in the number of students admitted annually. If applicable, describe how the establishment plans to adjust to these changes.

The Faculty of Murcia has requested from the Rectorate a reduction in the intake of students to 95 during the last four Academic Courses. This request has been finally accepted and it will be operational in the academic Course 2006-2007. The main reason to justify this reduction in the intake number of students are to improve the lecturers/students ratio, to implement the new didactic guidelines derived from the Bologna process, and also to reduce the excessive number of graduated students leaving the Spanish Veterinary Faculties.

Table 9.2. Intake of veterinary students.

Year	Number of applying students	*Number of students applying for a "transfer of the student's record"	Number of admitted students	
			"Standard admission"	Other enrolment mode (describe)*
2005-2006	428	24	100	12
2004-2005	402	30	100	9
2003-2004	482	23	100	10
2002-2003	457	14	100	6
2001-2002	490	5	100	2
2000-2001(a)	350	6	100	2
1999-2000	396	14	100	3
1998-1999	285	11	100	1
1997-1998	250	12	100	3
1997-1996	466	21	100	5

* "Transfer of the student's record". These students have commenced the veterinary studies in a different (national or international) University.

9.3. STUDENT FLOW.

Table 9.3.1. Student flow.

Those students admitted in the year N-5 (number a. in the Table 9.2), which course year are they currently attending (five years later)?:

b.	First year	
c.	Second year	3
d.	Third year	10
e.	Fourth year	15
f.	Fifth year	47
g.	How many of them have been graduated?	21
h.	How many have dropped out or been asked to leave?	6
i.	How many are not in any identifiable year?	

Table 9.3.2. Number of students graduating annually over the past five years:

	Year	Graduated students
j.	N- (2005) December	103
	N-1 (2004)	111
	N-2 (2003)	96
	N-3 (2002)	97
	N-4 (2001)	75

Table 9.3.3. Average duration of studies.

In the case of students graduating in 2005, how many students have attended the veterinary training course for 5,6,7,8,9,10 years or more?

	Duration of attendance	Number
k.	4 years	
l.	5 years	24
m.	6 years	24
n.	7 years	20
o.	8 years	13
p.	9 years	9
q.	10-13 years	10
r.	More than 13 years	1
Average duration of studies of the students who graduated in year N:		6,98

Describe the requirements (in terms of completing subjects and examinations) for progressing to a subsequent year of the course.

- To progress from the first to the second cycle, students must have achieved at least a 75 % of credits of the core subjects in the first cycle (first and second academic years).

- To be able to attend the subject "Pre-professional practices", students (1) must have passed all the credits corresponding to core courses or (2) being in the situation of having only need to sit exams on one annual core subject or two four-monthly ones.

Describe the academic circumstances under which the establishment would oblige students to leave the course.

It is compulsory for the students to leave the veterinary studies, if they have been unable to pass a course after having sitting exams for 6 times. However, the students have the right of not sitting exams during the examination period, avoiding that the exam be taken into this account.

2 COMMENTS

1. Comment on the standard of the students starting the course.
2. Comment on the ability of the establishment to satisfactorily decide the number of students it can accept.
3. Comment on the factors that determine the number of students admitted.
4. Comment on the adequacy of the facilities and teaching programme to train the existing number of students.

5. Comment on the progress made by students in their studies, and the establishment's ability to ensure that the satisfactory progress is maintained.
6. Comment on the percentage of students that will eventually graduate.

1. Students admitted in our Faculty have an adequate basic scientific knowledge. Furthermore, for a 90% of the applicants the veterinary studies are their first option. Therefore, there exists a clear vocational element in the students' choice.

2. The establishment has a limited ability to decide on the number of students that can be accepted as first year students. The Regional Government at the request of the University Government Council are the bodies which the power to take this decision.

3. The actual number of students admitted into our Faculty reflects a balance: On one hand, the Veterinary Faculty of Murcia wish to maintain a low intake of students to keep a good lecturers/students ratio, a high standard in all the practical activities, and to help introducing new didactic techniques related to the implementation of the ECTS for the Higher Education in Europe. On the other hand, the great social demand for a veterinary education makes the Regional Government reluctant to decrease markedly the intake number of students.

4. The actual facilities such as the Veterinary Teaching Hospital, the Teaching Farm as well as the Pilot Plant are adequate to train the number of students that the Faculty currently receives. Moreover, our curriculum is becoming adapted, both, to the ECTS methodology and to the new requirements of the European Area of Higher Education. In fact, the Veterinary Faculty of Murcia has been funded by the Vice rectorate of Quality and European Convergence as well as by the University Institute of Education Sciences to develop several projects in on-line teaching technologies, and to spread the ECTS methodology inside the Establishment. We believe that our Faculty is one of the more active Faculties in the whole University regarding this issue.

5. On an annual basis, the Commission on Teaching Quality meets with the purpose of assessing the progress of students in each academic year. Students' representatives take part of the meetings. They will also make an evaluation of each specific subject, students' results in the examination and the teaching quality.

   In addition, there is a tutorial programme, in which lecturers supervise on an individual basis the students' output and progress from the first academic year.

6. A 96% of the enrolled students become finally graduated.

3. SUGGESTONS.

If you are not satisfied with the situation, please state in order of importance any suggestion that you may have concerning this Chapter, if you fell unhappy about:

- The number of students admitted.
- The drop-out percentage.
- The average duration of studies.
- Other aspects.

- The Faculty Board will request to the University Government Council further reductions in the number of first-year students (approximately an accumulative decrease of a 5 % on consecutive year). The final objective is to reach a total number of 80-85 first-year students which could be considered as ideal to offer the highest standard of teaching quality.

- In order to decrease the actual average duration of the studies, the Dean's team is recommending to adapt the courses to the new ECTS methodology reducing the theoretical workload. These changes will facilitate the implementation of teaching methodologies more focussed on the students. Thus, they will have more time to perform practical activities, to carry out tutorial works, to study, and to be more active elements in the teaching-learning processes.

Chapter 10: ACADEMIC AND SUPPORT STAFF

CHAPTER 10. ACADEMIC AND SUPPORT STAFF.

1. FACTUAL INFORMATION.

Table 10.1. Personnel in the establishment.

	Budgeted posts (FTE)		Non-budgeted posts (FTE)		Total (FTE)
1. Academic staff					
a) Teaching staff	121,5				121,5
b) Research staff	2				2
c) Others (please, specify)					
d) Total academic staff	123,5				123,5
2. Support staff					
e) Responsible for the care and treatment of animals	8,5		7		15,5
f) Responsible for the preparation of practical and clinical teaching	16				16
g) Responsible for administration, general services, maintenance, etc.	22		0'5		22,5
h) Engaged in research work	2,5		39,5		42
i) Others (Library, Publications, Cleaning, Surveillance, Sports, SIU, Cafeteria)	22				22
j) Total support staff	71		47		118
3. Total staff	194,5		47		241,5

Table 10.2. Allocation of personnel to the various Departments.

Name of Department	Academic staff					
	CU	TU	TEU	Asociado	Investigador	Total
Anatomy and Compared Pathological Anatomy	4	8	2	3		17
Biochemistry and Molecular Biology A	4	1			1	6
Animal Biology	1	1			1	3
Physics		1				1
Veterinary Pharmacology		2	1	2		5
Statistics and Operative Research	1	1				2
Veterinary physiology		4	1			5
Toxicology		2	2	3		7
Animal Production	2	11	3	1		17
Animal Health	3	9	5	1		18
Food Technology, Nutrition and Bromatology	2	6	2	7		17
Animal Medicine and Surgery	3	14	8	5		30
HCV				5		5
Teaching Farm				8		8

CU: Full Professor (State employed, teaching doctors with full teaching and research capacity working on a full time basis)
TU: Associated professor (State employed teaching doctors with full teaching and research capacity working on a full time basis)
TEU: Lecturer (State employed lecturer with full time teaching capacity)
ASOCIADO: Associate (part time professors devoting an average of 6 hours a week). It counts as 0.5 FTE.
INVESTIGADOR: Research personnel. Contracts financed by the University or by the State or Regional Government. Our contracts are Ramón y Cajal.

Table 10.2.bis. Allocation of personnel (support staff) to the various Departments.

Name of the Department	Technical/Animal			Total
	Teaching	Research	Admin. /General	
Anatomy and Compared Pathological Anatomy	2	2	1	5
Biochemistry and Molecular Biology A	1		1	2
Animal Biology	0,5	5		5,5
Physics				
Veterinary Pharmacology		1		1
Statistics and Operative Research				
Veterinary Physiology	0,5	3,5		4
Toxicology	0,5	3		3,5
Animal Production	1	3	1	5
Animal Health	2	1	1	4
Food Technology, Nutrition and Bromatology	2	10	1	12
Animal Medicine and Surgery	4	12	1	17
HCV	13		3	16
Teaching Farm	2,5			2,5
Food Technology Pilot Plant	0,5			0,5

Table 10.3. Personnel responsible for undergraduate teaching.

A.	Number of budgeted and non-budgeted teaching staff involved in undergraduate teaching	137
B.	Number of research staff involved in undergraduate teaching	0,5
C.	Total number of personnel responsible for undergraduate teaching (A+B)	137,5

Ratios:

Ratio: teaching staff/undergraduate students

$$\frac{\text{Number of Teaching Staff}}{\text{Number of Undergraduate Students}} = \frac{137,5}{709} = \frac{1}{5,15}$$

Ratio: teaching staff/ support staff

$$\frac{\text{Number of Teaching personnel}}{\text{Number of Support personnel}} = \frac{137,5}{118} = \frac{1}{0,86}$$

Outline how the allocation of staff to the establishment is determined.
Outline how the allocation of staff to the departments (or other units) within the establishment is determined.

Teaching personnel:

The University Government Team decision on employing new personnel, either permanent or on contract, will be based on the Department Teaching Management Plan (POD). This Plan states *the teaching burden* (that will depend upon the number of credits taught, number of students, groups of practices, etc.) and the so-called *teaching capacity* (calculated in terms of number, kind and dedication of the teaching personnel). Then, the University Government Team proposes to the Ministry of Education and Science the number of positions, permanent or not, and a profile of the prospective lecturer. A period for application will be opened, after which Doctors will have to sit an examination to become nationally accredited. The University will take the final decision on which candidate is the most appropriate for the post. In any case, the National Accreditation is a requirement to be employed as a Professor at Murcia University.

Administration and Service Personnel (PAS):

The administration and service personnel financed by the University is dealt with the Rectorate team, particularly, the Manager (Gerente) depending on the Faculty needs. There is a long-term shortage of this kind of personnel. The Financial Management Office and the Trade Unions representatives are the ones in charge of stating the main guidelines to be followed when contracting new administration and service personnel; the candidates must sit a competitive examination.

The priority when employing new non-permanent staff is not the candidate's profile, but the candidate's place on a waiting list, which has been elaborated after the examination. Nevertheless, it is possible, to employ administration and service personnel with funds

from a Department's project (e.g. Researching project). This procedure is easier and more flexible because the Murcia University does not finance the contract.

Indicate whether there are difficulties in recruiting or retaining staff. Describe (if appropriate) any relevant or changes in staff level or the ability to fill vacancies over the past decade.

There is no difficulty in hiring or retaining the personnel. There is difficulty in increasing the permanent staff, since a fundamental criterion to employ more professors is the number of students. Our Establishment has "numerus clausus", that means that the number of students is quite low in comparison to other Faculties.

As regards the administration and service personnel, it is hard to increase the staff, since this is a decision that is beyond our scope. It is not easy to retain personnel in some services, since whenever they get promoted, they tend to move to a better position out of the Veterinary Faculty.

Indicate whether it is straightforward to employ additional staff from service income (e.g. from revenues of clinical or diagnostic work).

It is not possible to hire any additional personnel on the service income. The only possibility of contracting new personnel, either academic or support, is following the former procedure described above.

Nevertheless, our Establishment is considering the possibility of setting up a Foundation to manage the Veterinary Teaching Hospital. In this case, other ways of contracting personnel might arise.

Describe the possibilities and financial provisions for the academic staff to: a) Attend scientific meetings. b) Go on sabbatical leave.

The academic staff is encouraged to participate in professional conferences and transmit the outcome of their research. The only condition that needs to be met is that the Lecturer's teaching duties must be fulfilled, while they are away attending scientific meetings.

The financial provisions for the academic staff come from the funds of research projects. Those funds might be of State, of Regional Council or of private origin. The Murcia University or the Regional Council may grant, through the Seneca Foundation, some extra economic aid to those lecturers who are being trained. In other cases, the lecturers pay by themselves these activities.

At Murcia University, Lecturers can have long-term leaves (that might last up to one year). These leaves might be considered as a sabbatical (five years must pass between two leaves). Any Lecturer can apply for the post if they are able to obtain an authorization from the Department. The salary remains as such during the first three months, but, progressively, it will be reduced. At the end of the year, it will be paid an 80% of the salary, in addition to some other economic aids or grants conferred by private or public organisms if these aids are finally obtained.

2. COMMENTS.

Comment on the numbers of personnel in the various categories.

Teaching staff:

The total number of lecturers is 121:

- 81 permanent (67%).
- 40 on contract (33%).

With respect to the full time lecturers, the ratio professors/students is adequate (1/4,97).

Support staff:

Although the University has tried to improve the situation during the past few years, there is a shortage of support staff in our veterinary school. It would be desirable to come up with a solution to their lack of specialisation in certain areas.

Comment on the salary levels, especially those of the academic staff in relation to the level of income in the private sector.

The academic staff salary level is low in comparison to the liberal professions (e.g Lawyer, Doctors, etc), to officials at the same level in different administrations (e.g Justice) and to other European counterparts. The salary level is somewhat high, if we compare it to the one earned by private practitioners or veterinarians working in companies (except for some chief executives in the pharmacological field).

Comment on the ease or difficulty of recruiting and retaining personnel.

We usually do not have special difficulties to recruit academic staff, which usually comes from two sources:

- Professors or personnel formed out of Murcia University that apply and get a Faculty position.
- High qualified students that got grants to do PhD studies and visits to prestigious international centres and on this way are able to get a competitive CV to get a permanent position.

Regarding the support personnel, it is easy to recruit them, since an average of 10-15 candidates opt for each post. Retaining this kind of personnel is a lot more difficult, since they often prefer being transferred to a more comfortable working post, situation that produce many problems in our Veterinary school.

Comment on the percentage of veterinarians in the academic staff.

There are a high percentage of veterinarians within the academic staff (88%). The non-veterinary staff is mainly involved in basic subjects, such as Maths, Physics, Chemistry or Biology.

3. SUGGESTIONS.

If the ratios for your establishment do not fall into the category "satisfactory" according to the indicative table in Annexe I, what can be done to improve this situation?

The ratio Personnel/Students fall within the category of satisfactory. However, we intend to go even further: the Regional Council and the Science and Culture Ministry have been requested a decrease in the number of students enrolled and a 5% reduction has been conferred (2006-07). That means that ninety-five students will start the studies of Veterinary Science the next Academic Course. The staff will be maintained or increased.

The ratio teaching staff/Support staff falls close to the category of satisfactory. This is a matter that affects to all the Universities in Spain giving rise to inefficiencies, since the teaching staff has to conduct tasks that are not part of the academic staff' duties. So there is a new policy that increases the number and quality of the support personnel. Some actions would be:

- The creation of a Foundation for the management of the Veterinary Teaching Hospital.
- Sponsorship measures that will allow hiring the appropriate staff.
- Keep with our requests to the Financial Management Office of the University to sort out the personnel shortage problem.

Chapter 11: CONTINUING EDUCATION

CHAPTER 11. CONTINUING EDUCATION.

1. FACTUAL INFORMATION.

11.1. CONTINUING EDUCATION COURSES HELD AT THE ESTABLISHMENT.

Continuing education is a fundamental activity for the academic staff to let other professionals, and, society in general, improve their scientific knowledge and know the activities of the University in terms of research output dissemination. Continuing education also promotes specialisation courses of great importance nowadays.

Derived from the intensive work that the academic personnel develops on clinical matters, over the past few years, a varied range of activities have been organised addressed to students, graduated students, practicing veterinarians, and the other professionals related to Health Sciences or other agricultural specialities. These courses have been organised by the Faculty as well as with other organizations.

Table 11.1.1. Courses organised by the establishment itself in the most recent years (state the year).

Name of the course	Number of participants	Total number of hours	Year
Meeting of the Spanish Society of Veterinary Surgery (SECIVE), International meeting	100	14	2001-02
Theoretical-practical seminar on Plastination Techniques of Biological material as a Teaching Innovation method. Silicone Plastination Technique (II Postgraduate Course)	15	18	2001-02
Public Health: Zoonoses	40	30	2001-02
Technologic meeting on meat and goat's milk	170	8	2001-02
Course on breeding, husbandry keeping and pathology of exotic animals I	60	40	2002-03
Seminar on management culture	13	10	2002-03
Meeting on Veterinary Radiology	20	25	2002-03
Theoretical- Practical Seminar. Introduction to Plastination techniques of Biological material as a method of teaching Innovation (III Postgraduate course)	15	18	2002-03
Mediterranean cuisine. Theory and practice. 1st edition	25	50	2002-03
Zoonones: Public Health	90	30	2002-03
Overview on quality control of the food industry	100	30	2002-03
Scientific and technical meeting on new technologies. Educative overview on the milk industry	60	20	2002-03
Course to obtain the food handler accreditation	45	6	2002-03

Mediterranean cuisine. Theory and practice	30	50	2002-03
X Annual Congress of European Association of diagnostic imaging	150	20	2002-03
AVEPA congress: Workshop on radiology interpretation I	25	10	2002-03
AVEPA congress: Workshop on radiology interpretation II	25	10	2002-03
Meeting on the latest advances on food and health I	130	8	2003-04
Course on horse production: breeding and handling of horses	150	30	2003-04
Seminar on Veterinary homeopathy	35	6	2003-04
Scientific meetings on spine neurological diseases. Diagnoses and treatment	138	20	2003-04
Theoretical-practical course on clinical cytology I	20	9	2003-04
Course on breeding, keeping and pathology of exotic animals II	60	40	2003-04
Course on Advanced aquariology I	80	40	2003-04
Scientific meetings on anaesthesia, analgesia and monitoring on small animals	38	22	2003-04
Mediterranean cuisine. Theory and practice. 2nd edition	25	50	2003-04
Zoonoses: Public health	70	30	2003-04
Specialised forum of Innovaris: nutraceutics	250	20	2003-04
Course to obtain the food handler accreditation	50	6	2003-04
Theoretical-practical seminar. Introduction to plastination techniques of biological material as a method of teaching innovation. Silicone plastination techniques (IV postgraduate course)	15	18	2003-04
12th conference on Plastination	100	20	2003-04
Meeting on Veterinary Radiology	120	18	2003-04
Veterinary Faculty: informative talks (I)	100	8	2004-05
Meeting on the latest advances on food and health (II)	300	20	2004-05
9th annual conference domestic animal reproduction	400	65	2004-05
XII European Congress of carabidologist	70	30	2004-05
Technical meetings on intoxication and poisoning of wild and domestic animals	100	9	2004-05
Course on breeding, keeping and pathology of exotic animals III	60	40	2004-05
Meetings on equine ophthalmology training	25	16	2004-05
Theoretical-practical seminar on plastination techniques of biological	15	18	2004-05

material as a teaching innovation method. Silicone plastination technique (V postgraduate course)			
Course on advanced aquarology II	34	40	2004-05
Course on the introduction to wine, cheese and oil tasting in the Region of Murcia (1st edition)	30	15	2004-05
Mediterranean cuisine. Theory and practice. 3rd edition	25	50	2004-05
Course on introduction to sensorial analysis in agricultural investigation	10	40	2004-05
Course: "From the farm to the table: animal health, food quality and public health"	42	30	2004-05
Course to obtain the food handler permit	50	6	2004-05
AVEPA congress I: Ecography workshop	25	10	2004-05
AVEPA congress II: Ecography workshop	25	10	2004-05

Table 11.1.2. Courses organised by the Establishment in the preceding year.

Title of the course	Number of participants	Total number of hours	Year
National Congress of Veterinary history XI	100	30	2005-06
Meetings on the latest advances of anaesthesia and analgesia in pets	80	20	2005-06
Meetings on the latest advances of food and health III	196	16	2005-06
Meeting on Clinical Radiology in pets	117	18	2005-06
Theoretical practical seminar. Introduction to plastination techniques of biological material as a method of teaching innovation. Silicone plastination technique (VI Postgraduate course)	15	18	2005-06
Meetings on fauna and sanitary management of wild ruminants I	64	20	2005-06
Course on breeding, keeping and pathology of exotic animals IV	60	40	2005-06
Course on veterinary small animal clinic	40	64	2005-06
Cycle of informative talks at the Veterinary Faculty II	100	8	2005-06
Course on the introduction to wine, cheese and oil tasting in the Region of Murcia. 3rd edition	30	15	2005-06
Course on the introduction to wine, cheese and oil tasting in the Region of Murcia. 4th edition	30	15	2005-06
Course on the introduction to wine, cheese and oil in the Region of Murcia. 5th edition	30	15	2005-06
Mediterranean cuisine. Theory and practice. 4th edition	25	50	2005-06

Animal and public health: avian flu	70	30	2005-06
Seafood: tradition, innovation, quality and health	70	40	2005-06
Course to obtain the food handler accreditation	50	6	2005-06

Table 11.1.3. Courses organised at the Establishment by Students' Associations in the recent years.

Title of the course	Number of participants	Total number of hours	Year	Association organising the event
VII meeting on emergencies in veterinary medicine	172	30	2002-03	IVSA
X course on management and conservation of wild fauna in danger to become extinct	50	30	2002-03	VEDEMA
VIII meeting on veterinary cardiology	82	30	2005-06	IVSA

Table 11.1.4. Courses organised at the Establishment by outside bodies in the recent years.

Institution organising the event	Title of the course	Number of participants	Total number of hours	Year
AMURVAC	IV Annual meetings	185	20	2001-02
AMURVAC	III Introduction to traumatology and orthopaedics	20	25	2001-02
AMURVAC	V Annual meetings: haematology and oncology	190	20	2002-03
AMURVAC	IV Introduction to traumatology and orthopaedics	20	25	2002-03
AMURVAC	Course on Joints medicine & surgery	20	25	2002-03
Autonomic Government of Murcia Region	Courses on the introduction to wine and cheese tasting in the Region of Murcia. 1st and 2 nd edition	30	15	2002-03
Autonomic Government of Murcia Region	Course on the introduction to wine and cheese tasting in the Region of Murcia. 3rd and 4th edition	30	15	2003-04
AMURVAC	VIII Annual meetings: medicine and feline emergencies	200	20	2004-05
Autonomic Government of Murcia Region	Course on the introduction to wine cheese and oil tasting in the Region of Murcia. 1st edition	30	15	2004-05

AMURVAC	I International Congress of food safety	240	30	2005-06
AMURVAC	IX Annual meetings	275	20	2005-06

Indicate the involvement of teaching staff at the establishment involved in continuing education organised by outside organisations.

Our academic personnel are frequently involved in continuing education courses organised by external organisms. They act as lecturers, members of the organisation or executive committee.

The agreement signed between AMURVAC and our Faculty states that the academic staff at this Faculty will administer the courses organised by this Association, this is an example of the good relationship between the different organisms, professional associations and public or private institutions and the Veterinary Faculty.

11.2. DISTANCE LEARNING (INCLUDING VIA INTERNET).

If the establishment is involved in providing distance learning, please outline the nature and volume of this work.

The Establishment is involved in distance learning (included Internet). Some research groups have collaborated in this kind of a teaching and have produced Web-sites with material for this purpose. A project to teach an an optional subject in a virtual way will be operational in the course 2006-07.

2. COMMENTS.

Comment on the quality of the continuing education programmes in which the establishment is involved.
Comment on the degree of participation of veterinarians in the continuing education programmes in which the establishment is involved.

Continuing education was not one of our priorities until recently, some reasons for this situation were:

a) Lack of tradition: Spanish Universities aim to give Doctorate courses and have considered that continuing education was not a part of its responsibility and this inertia is difficult to be changed.

b) Logistic difficulties: There is no administrative, economic and organizative back up to support this kind of projects. So the activities are mainly personal initiatives by the academic staff with no support or academic recognition from the University.

Nevertheless, the efforts of teaching staff as well as students' associations have made possible the increase the number of these activities in the last year in order to fulfil the increasing demand of them by Veterinary profession.

3. SUGGESTIONS.

We intend to request the University Government the necessary administrative and logistic aids to carry out this kind of activities. Another subject to be taken into account is the recognition of certified credits for these activities and the creation of some economic complements to encourage professors to undertake this work.

Likewise, the Service of Continuing Education of Murcia University should explore and seek information from different sources about the real needs of the veterinary profession to direct the activities to be carried out in the future.

Chapter 12: POSTGRADUATE EDUCATION

CHAPTER 12. POSTGRADUATE EDUCATION.

1. FACTUAL INFORMATION.

12.1. DISSERTATION OF VETERINARY DEGREE.

Graduated students can make a Dissertation (*Tesina*) as an initiation to the researching activity. A dissertation is an original researching work carried out within a Department, under the supervision of a member of the teaching staff who must hold a PhD degree. The dissertation projects must be authorised in advance by the Department where the work is intended to be performed, and the Department will also be in charge of approving the Commission to evaluate the dissertation. The Commission consists of three PhD holder lecturers/professors from at least two Departments of the Faculty, being possible to use external examiners. The disserting student must display a public presentation of the researching work done for a maximum time of 30 minutes. The obtained grade will be included in the student's record.

The number of dissertations carried out every year is low, because graduated students are more interested in commencing a working activity instead of staying at the Faculty conducting a research. In most of the cases, graduates who have done dissertations will complete Doctorate studies obtaining a PhD degree in the future.

12.2. POSTGRADUATE CLINICAL TRAINING (INTERNS AND RESIDENTS).

The Department of Animal Medicine and Surgery together to the Veterinary Teaching Hospital award grants to train graduated students in the different clinical services of the Hospital. During the clinical training interns and residents conduct clinical activities, learning the diagnosis and treatment techniques. Clinical sessions are conducted twice a week to help improving their clinical education. In these clinical sessions, clinical studies published during the past two years, revision articles and the Teaching Hospital own cases are displayed. All the veterinary personnel of the Hospital assist and participate in the sessions.

Table 12.1.1: Postgraduate clinical training courses.

Clinical discipline	Duration of training	Number of students	Diploma or title anticipated
Diagnostic Imaging	36 months	1	ECVDI Diploma
Clinical and surgical practical instruction of equines	12 months	4	Certificate-Diploma Practical training
Clinical and practical instruction of pets	12 months	3	Certificate-Diploma Practical training
Practical instruction of anaesthesia	12 months	1	Certificate-Diploma Practical training
Practical instruction of internal medicine and exotics	12 months	1	Certificate-Diploma Practical training
Practical instruction of hospitalisation and image diagnostic service	12 months	1	Certificate-Diploma Practical training
Clinical instruction for private practitioners and vets (from foreign universities).	Variable	12	Certificate-Diploma Practical training

The interns and residents receive a salary from the Murcia University and are considered as postgraduated scholarship holders.

Although the Faculty of Veterinary is included in the training programmes of various European Veterinary Specialisation Colleges (ECVDI, ECVCP, ECRDA, ECVIM-CA Cardiology), post of residents aiming the obtention of European Diplomas have not been offered in previous years due to the high cost of these residencies considering our shortage of financing. Currently, a post for a residency in the Service of Diagnostic Imaging aiming to obtain the ECVDI European Diploma has been filled, thanks to the economic cooperation of an external sponsor.

12.3. POSTGRADUATE COURSES.

The Faculty of Veterinary organises, through the Service of Postgraduate and Extracurricular Training of the University of Murcia, courses for graduated students whishing to get more knowledge or to increase the specialisation in a particular veterinary field. There is a wide range of courses of different duration and the University of Murcia awards students with different academic diplomas or degrees. The courses offered are:

- University Master: It has a minimum duration of 50 credits (500 hours), so, a Master normally comprises two years. It includes theoretical and practical teaching, and it may also schedules external practices.

- University Specialist: It has a minimum duration of 25 credits (250 hours) with a minimum duration of one academic year. It includes both, theoretical and practical practices.

- Training Course: It has a minimum duration of 3 credits (30 hours), including theoretical and practical activities. These courses are usually given along a week.

The Veterinary Faculty offers to the graduated students a wide range of postgraduate courses to allow them to become more specialised into a particular veterinary field:

Discipline	Duration (credits)	Course	Number of students enrolled (full time)
POSTGRADUATE COURSES (DIFFERENT LEVEL FROM MASTER)			
Training Course on Quality and Safety Management in Food industry	12	2005/06	2
Training Course on Research Methodology	6	2005/06	1
University Specialist on Food Quality and Safety	32	2005/06	2
University Specialist on Food and Health	32	2005/06	1
POSTGRADUATE COURSE (MASTER LEVEL)			
I University Master in Biology and	62	2004/05	15

Reproduction Technology			
I Master in Porcine	60	2005/06	13
I Master in Food Technology, Nutrition and Health	64	2005/06	4
II University Master in Biology and Reproduction Technology	62	2005/06	12
OTHER MASTERS IN WHICH THE VETERINARY FACULTY TAKES PART			
University Master in classic Homeopathic Medicine	50	2005/6	28

- Do students involved in this training receive a grant or a salary?
- Indicate the extent to which training towards a diploma is combined with clinical training.
- Indicate the percentage of graduating students who follow such training.

The students enrolled in these courses do not get a salary. However, they might be eligible to certain sources of funding, since according to the University Regulations, the course tuition fees must be granted to a 10% of the enrolled students.

The courses at this level usually have a high content of practical and clinical training, as it can be seen in the following examples:

Training Course on Research Methodology: 3 credits (50% practice).

University Master in Biology and Reproduction Technology: 62 credits (50% practice).

Master in Porcine: 60 credits (25 practical credits, and other 10 credits corresponding to a Thesis of Master).

Training Course on Quality and Safety Management in Food industry: 12 credits (50% practice).

University Specialist on Food and Health: 32 credits (13 practical credits).

University Specialist on Food Quality and Safety: 32 credits (17 practical credits).

Master in Food Technology, Nutrition and Health: 64 credits. (24 practical credits, and 10 credits corresponding to complementary works (practices conducted in industries).

The Veterinary Faculty currently has 35 postgraduate students. The mean number of graduated students per year is of 80. Therefore, a 43.75% of the graduated students would conduct postgraduate studies. Nevertheless, these figures cannot be considered as

real ones, since some of the students enrolled in these courses were graduated time ago, or came from different faculties or even foreign institutions.

12.4. POSTGRADUATE RESEARCH TRAINING PROGRAMMES (PhD PROGRAMMES).

PhD programmes, organised by Murcia University, intend to train future researchers that, eventually, will be conducting a Doctoral Thesis in our Faculty. The postgraduate research training programmes are organised as follows:

First teaching and research period (2 years): it spans 32 credits (320 hours). During the first year, the student conducts several theoretical-practical courses with a minimum duration of 20 credits (200 hours). In the second year, the student must get 12 credits (120 hours) conducting a research related to the future Doctoral Thesis under the supervision of a PhD holder staff member. Once, the doctorate student has achieved 32 credits, it is mandatory to produce a report on all the teaching and research activities conducted, and to display a public presentation of the research work done in the second year to an examination committee. The examination committee is composed by 2 full time Doctor Professors of the Faculty Department in charge of the doctorate programme, and, another full time Doctor Professor belonging to a different Department. If the student pass this examination will be granted with a Certificate-Diploma of Advanced Studies (DEA: Diploma Estudios Avanzados) which recognises the research abilities needed to carry out a PhD Thesis.

The second period: it takes about two years. During this time, the student will develop a research project to carry out a PhD Thesis. Once the Doctoral Thesis has been finished, the candidate to the PhD degree must display a public presentation of the research work done in front of an examining committee. Five Doctor lecturers/professors will form the examining committee, two of them must be external examiners coming from other Universities. If the doctorate student is able to pass the exam and the PhD thesis is approved, the student will be awarded with the Degree of Doctor by the University of Murcia.

It is possible to be awarded with the Mention of European Doctor when the following conditions are met:

- The candidate has been conducting activities related to the scientific knowledge of the Doctoral Thesis, for at least three months, in another country of the European Union.

- Two positive reports, on the PhD Thesis conducted, produced by PhD lecturers/professors posted in a foreign European Universities or Research Establishments are attached to the PhD Thesis essay.

- A PhD lecturer/professor posted in a foreign European University or Research Establishment is invited to be part of the examining committee.

The doctoral postgraduate programmes are ascribed to the Departments, that means that the Departments are the responsible for all the teaching arrangement (course

distribution, disciplines, research lines offered, timetables, etc.) which must be approved by the Doctorate Commission of the University of Murcia.

The Faculty of Veterinary takes part in Doctorate Programmes which are administered by the Faculty´s Departments and also by other Departments of the University.

1. PROGRAMME: MEDICINE AND ANIMAL REPRODUCTION.
Academic year: 2005/06.
Total number of students attending the programme: 16.
No. of graduated veterinarians: 16.

Course	Length	No. of students
Sectional Anatomy. Application on the Image Diagnosis	3	4
Cell and Molecular Biology of the Reproductive System	4	1
Cell and Molecular Biology of the Fertilisation and of the early embryonary development	3	4
Animal Clinical Biochemistry	3	6
Porcine Cloning and Transgening	3	7
Cryopreservation of Porcine Sperm and Embryos	3	8
Statistics applied to biomedical research	3	8
Compared Clinical Haematology	4	8
Artificial Fertilisation and Embryo Transfer in the XXI century	3	8
Handling and Animal Welfare. Analgesia and Anaesthesia. Experimental and Clinical Bases	3	5
Clinical Diagnostic Methods of Exotics	3	2
Diagnostic Methods in Experimental Clinical Ophthalmology	3	5
Sex Preselection	3	9
In-Vitro Production of Porcine Embryos	3	6
Techniques of Diagnosis in Experimental Clinical Cardiology	3	5
Techniques of Image Diagnosis	4	8
Advanced Lab Technique Applied to Diagnosis and Research in Veterinary Medicine	3	3
Techniques in Cell Biology	3	6
Special Techniques of Diagnosis in Veterinary Medicine: Endoscopy, Arthroscopy and Electrocardiograph	3	6

2. PROGRAMME: PRODUCTION AND HEALTH IN PORCINE AND SMALL RUMINANTS.
Academic year: 2005/06.
Total number of students attending the programme: 0.
No. of graduated veterinarians: 0.

4 students applied to be enrolled (all of them veterinarians). However, the University regulations for doctorate programmes states that the minimum number of students to carry out these courses must be of 10.

Course	Length	Number of students
Financial Analysis of a Porcine Explotation	3	-
Pathological Anatomy of the Small Ruminant	3	-
Pathological Anatomy of the Porcine	3	-
Morphofunctional Aspects Related to the Health and Production of	3	-

Small Ruminants		
Morphofunctional Aspects related to the Health and Production of Porcine	3	-
Welfare in Porcine	3	-
Parasitic Disease of Small Ruminants	3	-
Applied Zootechnical Ethology	4	-
Lentiviruses and Crionic Disease of Small Ruminants	3	-
Mamitis and Contagious Mamary Diseases in Small Ruminants. Productive and Sanitary Aspects	3	-
Traceability Principles in the Porcine Production	3	-
Animal Health and Public Health: Role of the Small Ruminants	3	-
Health of Porcine	3	-
Systems of Caprine Production: Intensive and Extensive	3	-
Anatomopathological Techniques Applied to the Diagnosis and Investigation in Animal Health	3	-
Techniques of Diagnosis in Parasitology	3	-
Diagnostic Techniques in Clinical Microbiology and Immunology	3	-

3. PROGRAMME: FOOD TECHNOLOGY, NUTRITION AND BROMATOLOGY.

Academic year: 2005/06.

Total number of students attending the programme: 10.

No. of graduated veterinarians: 3.

Course	Length	No. of students
Foodstuff: Health Implications	4	4
Antioxidants	3	6
Techniques Involved in Food Analysis	3	3
Progress in the Elaboration and Conservation of Food	4	9
Aromatic Constituents of Food	4	5
Management of Quality and Microbiological Safety in Food Industry	3	1
Methodology of Scientific Research. Elaboration of Scientific Manuscripts.	4	12
Micronutrients and Active Compounds in Food	4	7
Food Safety and Health	4	8
Organoleptic Characteristics and Beneficial Health Effects of Wine	3	2

4. PROGRAMME: BIOLOGY OF MAMMALS REPRODUCTION.

Academic year: 2005/06.

Total number of students attending the programme: 10.

No. of graduated veterinarians: 5.

Course	Length	No. of students
Analysis of Viability and Fertility of Sperm	3	4
Compared Anatomy and Embryology of the Reproductive System in Domestic Mammals	4	3
Transgenic Animals of Interest in Animal Production	4	1
Ultrasound-Based Diagnostic Imaging Techniques Applied to Reproduction Biology	3,5	3
General Aspects of a Scientific Research	4	4
Biotechnology of Reproduction Applied to the Recovery of Endangered Breeds	4	3

Intercellular Communication in the Oviduct	3	5
Cryoconservation of Gametes and Embryos in Domestic Animals	3	4
Introduction to Cytogenetics	3	2
Assisted Reproduction in the Human Specie	4,5	6
In Vitro Maturation and Fertilisation. Culture of Embryos	4	10

5. PROGRAMME: FISH BIOLOGY. BASIC AND APPLIED ASPECTS.
Academic year: 2005/06.
Total number of students attending the programme: 10.
Nº of graduated veterinarians: 1.

Course	Length	Nº of students
Quality of Fish Flesh	3	3
Development and Growth of the Muscle: Influence of Environmental Factors	3	-
Immunopathology of the Fish	3	

Doctorate programmes ascribed to non-Veterinary departments where lecturers of the Veterinary Faculty are involved.

6. PROGRAMME: INTEGRATION AND MODULATION OF SIGNALS IN BIOMEDICINE.
Academic year: 2005/06.
Total number of students attending this programme: 64.
Nº of graduated veterinarians: 0.

Course	Duration	Nº of students
Intercellular Communication in the Oviduct	3	5
Modeling of Pharmacokinetic Analysis	3	9

7. PROGRAMME: LEGAL MEDICINE AND TOXICOLOGY.
Academic year: 2005/06
Total number of students attending this programme: 103.
Nº of graduated veterinarians: 10

Course	Duration	Nº of students
Echopathology of Toxic Processes in Wild Animals	3	4
Evaluation of Risks: Presence of Toxic Substances in Food	3	93
Diagnostic Tools in Clinical and Forensic Veterinary Toxicology	4	10
Veterinary Surveying	4	2

8. PROGRAMME: MOLECULAR BIOLOGY AND BIOTECHNOLOGY.
Academic year: 2005/06.
Total number of students attending the programme: 21.
Nº of graduated veterinariansgraduated veterinarians: 0.

Course	Duration	Nº of students
Biomembrane: Structure, Applications and Cell Signalling	3	7
Ion Transport of the Cell. Molecular Aspects. Methodology	3	9
Molecular Mechanisms of the Fusion Processes on Biological Membranes	3	11

Please indicate if:
- Students are awarded with a grant or salary.
- The ratio of graduate students inscribed in these programmes.

Those students who are able to be awarded with a grant or a salary must be attending a Doctorate programme and conducting a PhD Thesis. The funds come from public or private researching projects calls. In most cases, students awarded with a grant are also exempt to pay for the couse tuition fees. There are not specific more grants to finance the doctorate studies.

During the academic year 2005/06, 32 veterinarians were enrolled in doctorate programmes, that is, a 43.8% of the graduated students. Nevertheless, these figures are not real, since most of the students enrolled in these courses were graduated in our Faculty time ago, or came from different faculties or even foreign institutions.

2. COMMENTS.

Comment on the number of postgraduate diplomas/titles awarded annually.
Indicate the percentage of graduating students who follow such training.

In past academic years, the only postgraduate diplomas offered were those related to research activities (Dissertation, PhD Thesis). However, from the Course 2004/05 onwards, the offer in new postgraduate diplomas has become increasingly higher. Noteworthy is the increase in the offered Masters.

Diplomas	2003/04	2004/05	2005/06
Dissertation (*Tesina*)	7	10	3
Master	-	15	19
Expertise diploma	-	-	3
Training diploma	-	-	3
DEA	14	22	18*
PhD	14	12	12*

*At July 2006.

The percentage of veterinarians participating in postgraduate PhD programmes is variable, because some of this programmes are also opened to graduates from other Faculties.

Doctorate Programme	Students	Veterinarians	Percentage (%) veterinarians
Medicine & Animal Reproduction	16	16	100
Food Technology, Nutrition & Bromatology	10	3	30
Biology of Mammals Reproduction	10	5	50
Fish Biology: Basic and Applied Aspects	10	1	10
Integration and Modulation of Signals in Biomedicine	64	0	0
Legal Medicine & Toxicology	103	10	9,7
Molecular Biology & Biotechnology	21	0	0

It should be pointed out the high level and quality of the standards of the postgraduate research programmes conducted in the Veterinary Faculty. Three Doctorate Programmes have been accredited by the Ministry of Education and Science with Quality Mention. The

National Agency confers this accreditation after passing a quality control system for the National Agency for Assessment of Quality (ANECA). The doctorate programmes, which have received the quality mention are:

- Medicine and Animal Reproduction.
- Biology of Mammals Reproduction.
- Food Technology, Nutrition and Bromatology.

Three other Doctorate Programmes (Fish Biology: Basic and Applied Aspects, Integration and Modulation of Signals in Biomedicine, and Molecular Biology & Biotechnology) have been awarded with the Mention of Quality: This is an indicator of the high standard of training at this Faculty.

The doctorate Programmes of Medicine and Animal Reproduction, Biology of Mammals Reproduction, and Food Technology, Nutrition and Bromatology are going to be offered in the academic year 2006/07 as Official Postgraduate Programmes, structured in accordance with the European Area of Higher Education and Research (RD 56/2005, 21st of January, 2005). The new postgraduate programmes will consist of a first year leading to a Master, and a second year equivalent to the doctorate courses. A total of a 33,3% of the Official Posgraduate Programmes offered by the University of Murcia as a whole will be offered by the Veterinary Faculty. This fact highlights the importance given in the Faculty of Veterinary to the postgraduate instruction, research, and the European Area for Higher Education and Research.

With the new system the offer in Masters at the Veterinary School will be increased to 6 new ones.

3. SUGGESTIONS.

- Increase the number of postgraduate courses, focusing on those veterinary areas of specialisation, which have not been covered yet.

- Diversify the offer on postgraduate courses, creating specialisation courses with a shorter duration, in order to attract graduated who already been incorporated into the labour market.

- Design and organise new courses more adapted to the demands of the labour market.

- Recognise the work done by the teaching staff in the postgraduate education. Currently, the university only takes account of the teaching activity carried out in the doctorate programmes.

- Find new funding sources from the Administration and the private sector to set up new programmes of clinical residencies in agreement with the European Board of Veterinary Specialisation (ECVS) and the European Veterinary Colleges.

Chapter 13: RESEARCH

CHAPTER 13. RESEARCH.

1. FACTUAL INFORMATION.

Indicate the involvement of undergraduate students in research, including the time spent, percentage of students involved and outcome required.

Students can participate in the research activities carried out at University in the following ways:

1. Intern student.
2. Collaboration grants.
3. Voluntary work.
4. Taking part in research prizes.

1. Intern student

Each Department offers, on an annual basis, places for intern students for all those students interested in the research activity. Places are awarded through a public contest and an interview with students. The Vice-Rectorate of Staff and Training, acting as the Rector's representative, will be in charge of the appointment in view of the proposal made by the Head of Department. That appointment will be put on the students' CV records being considered as merits. Intern students' appointment will take effect during the academic year in which the student was selected. The student can only be ascribed to one Department and will get no salary.

In accordance with Murcia University regulations, the maximum number of intern students must be equal to the number of teaching and research staff employed on a full time basis and ascribed to that Department. Nevertheless, the number of places offered can be increased if necessary due to the activities of the Departments. The number of intern places that were offered during the academic year 2005/06 is the following one:

Department	No. of teachers working on a full time basis	No. of intern students
Compared Anatomy and Pathological Anatomy	14	19
Animal Medicine and Surgery	25	58
Animal Production	16	28
Animal Health	17	25
Food Technology, Nutrition and Bromatology	10	6
Other Departmental Units	17	13
TOTAL	**99**	**146**

The percentage of students taking part in research activities as intern students is 21%. The time that students devote to the research activity will be subjected to the time that the teachers can act as tutors. Once they have finished their studies, some of them decide to carry out an Undergraduate Thesis and/or a Doctorate Thesis. The possibility of taking these studies will depend on the awarding of a pre-doctoral grant.

2. Collaboration Grants

The Ministry of Education and Science offers grants called *Collaboration Grants* with the aim of allowing students to start research tasks through their collaboration at the Departments.

Students requesting these grants must be enrolled in the last year (studying all the subjects needed to became graduated). It is necessary that they obtain good marks (average grade of 6.75 out of 10 points). The students must also submit, along with their CV records, a collaboration project approved and scored by the Department Council. That project will be about some of the core subjects, describing, in detail, the duties, work and timetable to be fulfilled.

The student will be fund with, approximately, 2.300€ and fee-exempt, just for an academic year. During the academic year 2005/06, the Ministry of Education and Science offered 2.854 Collaboration Grants. Murcia University was awarded with 70 grants, that is, 2'5%. After that, the Government Council distributes them awarding a grant per Department. The Veterinary Faculty got 5 grants, however only 2 students could get them because they could not fulfil the requeriments.

The number of students awarded with a grant in the previous years was:

Five students in the academic year 2003/04.
Four students in the academic year 2004/05.

3. Voluntary Work

Students are free to take part in research works. As a result, the professor will draw up a report on the activities conducted.

4. Participating in Research Prizes

The Establishment offers students the possibility of conducting research activities, individually or in groups, financed by private companies. To encourage them there are 3 "research prizes" and to participate the students need to submit a research work as a sort of bibliographic revision related to every prize. The prizes are the following, namely:

- **Prize Bibiano Conesa (History of Veterinary Science)**: it is endowed with 300 €.

- **Prize Acalanthis (Animal Clinic).**
  - First prize: it is endowed with 200 € and an annual subscription to the journals edited by the company.
  - Second prize: an annual subscription to the journals edited by the company.

- **Prize Acalanthis (Production and Animal Health).**
  - First prize: it is endowed with 200 € and an annual subscription to the journals edited by the company.
  - Second prize: an annual subscription to the journals edited by the company.

2. COMMENTS.

Comment on the opportunities for students to participate in active research work.

Students have a great number of opportunities to participate in the work of research since the Veterinary Faculty has twenty-two active research groups. Information on the various lines of research and the scientific production can be consulted on: http://www.um.es/veterinaria/investigacion.php.

The research conducted at the Establishment is active and applied. Public research projects (from regional, national and European sources) and research contracts, charged to national and international companies, are financing the research activity at the Veterinary Faculty.

The financing sources are reflected in the following table:

	2002/03	2003/04	2004/05
Articles	151	179	222
Books	7	4	4
Chapters in Books	44	25	35
Contributions in International Congresses	79	160	96
Contributions in National Congresses	71	51	109
Subsidised Research Projects	58	66	54
Research Contracts	17	33	32

3. SUGGESTIONS.

Will students be given more opportunity to participate in research activity? If so, how will this be done?

We believe that students have many opportunities of participating in research activities at the departments.

Generally speaking, the places for intern students are increasingly requested. That's the reason why the Rectorate wants to recognise students' participation as an intern by awarding them with free elective credits after the students' submission of their activities.

Regarding the collaboration grants, the Ministry of Education and Science regulates the number of places and the requirements to be met. Thus, there is very little opportunity for the Veterinary Faculty of making any change in order to give more grants to the students of the Centre. Nevertheless, it would be interesting to ask to the Rectorate to urge the Ministry of Education and Science to increase the number of collaboration grants or, alternatively, Murcia University should consider the elaboration of grants with similar characteristics.

ANNEX

ANNEX: LISTS OF EXTERNAL PATNERS APPROVED FOR CARRYING OUT EXTRAMURAL PRACTICES.

VETERINARY CLINICS

ANA ISABEL BENETÓ MARTÍ (CLÍNICA VETERINARIA).
ANDREU-BENÍTEZ C. B.
ANIMALIA CARTAGENA, S. L.
ANTONIO CABOT LERMA.
ANTONIO ORTOLA ROMANS.
ANTONIO SÁNCHEZ SORIANO.
ANUBIS VETERINARIA S. L.
CARLOS GALVEZ MARTINEZ.
CARMEN ESTRUCH VENTURA.
CAYETANO SÁNCHEZ COLLADO CLÍNICA VETERINARIA BONAFE.
CENTRO CLINICO MON VETERINARI.
CENTRO CLÍNICO VETERINARIO CARTERS.
CENTRO EQUINO LA ALGABARRA, SOC. COOP. ANDALUZA.
CENTRO POLICLÍNICO VETERINARIO CANIS, S. L.
CENTRO VETERINARIO ALCOR.
CENTRO VETERINARIO CANTERAS.
CENTRO VETERINARIO CARTAGENA.
CENTRO VETERINARIO CHIVA.
CENTRO VETERINARIO CUATRO PATAS.
CENTRO VETERINARIO ESPERANZA.
CENTRO VETERINARIO EUSGAR, S. L.
CENTRO VETERINARIO HENARES, S. L.
CENTRO VETERINARIO HOBBYCAN.
CENTRO VETERINARIO JG, S. L.
CENTRO VETERINARIO LA VEREDA.
CENTRO VETERINARIO LEUKA, S. L.
CENTRO VETERINARIO LOS MOLINOS.
CENTRO VETERINARIO MARINA BAIXA.
CENTRO VETERINARIO PIORNOS, S. L.
CENTRO VETERINARIO SAN FRANCISCO DE ASIS.
CLEMENTE GARCIA TOVAR.
CLÍNICA AMIGOS.
CLÍNICA ANTONIO ALBALADEJO SERRANO.
CLÍNICA CENTROCAN LAS SALINAS S. L.
CLÍNICA DEL DR. BERNAL.
CLÍNICA MISLATA.
CLÍNICA SAN ANTON.
CLÍNICA VETERINARIA KENNEL.
CLÍNICA VETERINARA SAN FRANCISCO.
CLÍNICA VETERINARIA SAN BLAS.
CLÍNICA VETERINARIA SOL Y LUZ.
CLÍNICA VETERINARIA "EL CARMEN", S. L.
CLÍNICA VETERINARIA AITANA.
CLÍNICA VETERINARIA ALACANT.
CLÍNICA VETERINARIA ALAMEDA.

CLÍNICA VETERINARIA ALBEYTAR.
CLÍNICA VETERINARIA ALBORAYA.
CLÍNICA VETERINARIA ALGAR.
CLÍNICA VETERINARIA ALMANSA.
CLÍNICA VETERINARIA ALQUERIAS.
CLÍNICA VETERINARIA ANDRADA.
CLÍNICA VETERINARIA ANIMALETS.
CLÍNICA VETERINARIA AVENIDA.
CLÍNICA VETERINARIA BAHIA-ZOO, C. B.
CLÍNICA VETERINARIA BETULA.
CLÍNICA VETERINARIA BICHOS.
CLÍNICA VETERINARIA CAMINO VERDE.
CLÍNICA VETERINARIA CANIFEL.
CLÍNICA VETERINARIA CANISAN.
CLÍNICA VETERINARIA CANISAN (ALZIRA).
CLÍNICA VETERINARIA CAROLINAS.
CLÍNICA VETERINARIA CENTRAL.
CLÍNICA VETERINARIA CERVANTES.
CLÍNICA VETERINARIA CEUVET.
CLÍNICA VETERINARIA CHACÓN.
CLÍNICA VETERINARIA CLIPERS S. L.
CLÍNICA VETERINARIA DEL DR. ABELLAN.
CLÍNICA VETERINARIA DOGO S. L.
CLÍNICA VETERINARIA EL ARCA.
CLÍNICA VETERINARIA EL CABO.
CLÍNICA VETERINARIA EL CADELL.
CLÍNICA VETERINARIA EL DRAC, C. B.
CLÍNICA VETERINARIA EL PASEO.
CLÍNICA VETERINARIA EL PILAR.
CLÍNICA VETERINARIA EXPOMUNDO.
CLÍNICA VETERINARIA Fª AGUILAR ZAPATA.
CLÍNICA VETERINARIA FALCO.
CLÍNICA VETERINARIA FAUNA.
CLÍNICA VETERINARIA FLORIDABLANCA.
CLÍNICA VETERINARIA HIDRO-JARDIN.
CLÍNICA VETERINARIA HUELLAS.
CLÍNICA VETERINARIA J. VALERO.
CLÍNICA VETERINARIA LA ERMITA.
CLÍNICA VETERINARIA LA FLOTA.
CLÍNICA VETERINARIA LA JUNGLA.
CLÍNICA VETERINARIA LA LLOSA.
CLÍNICA VETERINARIA LEVANTE, S. L.
CLÍNICA VETERINARIA LOBA.
CLÍNICA VETERINARIA MANRESA.
CLÍNICA VETERINARIA MAR MENOR.
CLÍNICA VETERINARIA MASKOTA.
CLÍNICA VETERINARIA MAYOR.
CLÍNICA VETERINARIA MEDITERRANEO, S. L.
CLÍNICA VETERINARIA MONTEAZAHAR.
CLÍNICA VETERINARIA MUNDOCAN.

CLÍNICA VETERINARIA NOE.
CLÍNICA VETERINARIA PEDRO JUAN PERPIÑAN.
CLÍNICA VETERINARIA PLUTO.
CLÍNICA VETERINARIA PUERTO DE MAZARRON.
CLÍNICA VETERINARIA RUBIALES.
CLÍNICA VETERINARIA SAGRADA FAMILIA.
CLÍNICA VETERINARIA SALVADOR.
CLÍNICA VETERINARIA SALZILLO.
CLÍNICA VETERINARIA SAN CARLOS.
CLÍNICA VETERINARIA SAN ESTEBAN.
CLÍNICA VETERINARIA SAN FRANCISCO (CASTELLON).
CLÍNICA VETERINARIA SAN ROQUE.
CLÍNICA VETERINARIA SANDY.
CLÍNICA VETERINARIA SANTA ANA.
CLÍNICA VETERINARIA SANTA MARIA DE GRACIA.
CLÍNICA VETERINARIA SANTA POLA.
CLÍNICA VETERINARIA SAUCES.
CLÍNICA VETERINARIA 7 VIDAS.
CLÍNICA VETERINARIA TÁDER.
CLÍNICA VETERINARIA TRAMUNTANA.
CLÍNICA VETERINARIA UTIEL.
CLÍNICA VETERINARIA VALDELVIRA.
CLÍNICA VETERINARIA VEGA MEDIA.
CLÍNICA VETERINARIA VICTOR SERENA FERNANDEZ.
CLÍNICA VETERINARIA VIRGEN DE LA SIERRA II.
CLÍNICA VETERINARIA ZOO-CENTRO.
CLÍNICA VETERINARIA ZOOPARK.
CLÍNICA VISTALEGRE.
CLINICAN, C. B.
CONSULTA VETERINARIA FCO. SANCHEZ VERA.
CONSULTA VETERINARIA GINES HERNANDEZ RODRIGUEZ.
CONSULTORIO VETERINARIO EL BARCO, C. B.
CONSULTORIO VETERINARIO EL PANTANO.
CONSULTORIO VETERINARIO LA RAMBLA.
CONSULTORIO VETERINARIO LES ERES.
CONSULTORIO VETERINARIO LO PAGAN.
CONSULTORIO VETERINARIO RONDA SUR.
CONSULTORIO VETERINARIO SANGONERA.
CONSULTORIO VETERINARIO TORRE PACHECO.
CONSULTORIO VETERINARIO WAU.
COOP. C. V. SAN JUAN/EUROCAN.
EDUARDO LLOPIS ROCAMORA.
EL ARCA DE NOE ASOCIACIÓN PROTECTORA DE ANIMALES.
ENRIQUE PEREZ SANTAMARINA FERRER
COOP. C. V. SAN JUAN EUROCAN (EL CAMPELLO).
HOSPITAL VETERINARIO CARTAGONOVA.
HOSPITAL VETERINARIO CENTRO MEDICO ANIMAL.
HOSPITAL VETERINARIO CONSTITUCIÓN.
HOSPITAL VETERINARIO MARINA ALTA.
HOSPITAL VETERINARIO MENESCAL.

HOSPITAL ZOOLOGIC BADALONA.
IBERMASVET S. L. L. (CLINICA VET. MEGAMASCOTAS).
ISIDORO MOLLA CARRIO.
JAVIER RODRIGUEZ MORENO.
JOSE Mª LOPEZ-HERRERA LOPEZ.
JUAN GABRIEL HERRERO MIRA.
JUANA MARIA ABELLANEDA CUADRADO.
JUANA MARIA DE HARO GUEVARA.
JULIA CRISTINA SÁNCHEZ DEL ÁLAMO.
KPRA SOCIEDAD COOPERATIVA.
LAURA GAMBIN GARCIA.
LAURA SANCHEZ MATEOS (CONSULTORIO VETETERINARIO DINOS).
LAURA, ISABEL Y CARLOS VETERINARIOS C. B.
LOPEZ COBO VETERINARIOS C. B.
Mª INMACULADA CASTILLO GUILLEN.
Mª ROSARIO MOROTE MORALES.
Mª ANTONIA VIDAL BLAYA (FAUCAN CLÍNICA VETERINARIA).
MANUEL VALLS ARAGONES (CETRO VETERINARIO VALLS).
MANUEL ZAPATA ARNAO.
MARIO GÓMEZ LATORRE.
MARTINTIN C. B.
MAXWELL RICHARD DE ALMEIDA.
MEDITERRANEA VETERINARIA, S .L. (CLÍNICA LA PAZ).
MI CLINICA RAMON Y CAJAL.
MIGUEL ANGEL FERNANDEZ GONZALEZ.
OSCAR FERNANDEZ VAZQUEZ.
PATRICIA GENE FONT (CLINCA EQUINA AMBULANTE).
POLICLINICO VETERINARIO DEL SURESTE.
SOCIEDAD PROTECTORA DE ANIMALES ROQUETAS DE MAR.
VEGA MEDIA VETERINARIOS, C. B.
VETERINARIOS DE ANIMALES DE COMPAÑIA. S. L.
VICENTE GUIRAO ALAMANCOS.
VÍCTOR ROCA MEROÑO.
ZOO CENTER.

OTHER COMPANIES

AC: ESTUDIOS Y PROYECTOS, S. L.
ACRIMUR.
ADESPO CARAVACA.
ADESPO CORDILLERA SUR.
ADS CAMPOS DEL RIO.
ADS CARTAGENA.
ADS LORCA.
ADS PORCINO DOLORES (ALICANTE) ADESPAL.
ADSG SERRANÍA DE RONDA.
AGROPECUARIA CASAS NUEVAS, S.A.
AGROPECUARIA EL ESCOBAR, S.A.
AGROURBANA CARTHAGO, S. L.
ADS BOVINO DE LORCA.

AL - BEITAR CB.
ALOA, S.A.
AMUS (ACCION POR EL MUNDO SALVAJE).
AVILA FORNELL, S.A.
CARNICAS LA NORIA.
C. E. R. I. CENTRO DE ESTUDIOS DE RAPACES IBÉRICAS.
CEFU S.A.
COAG ACHRT. COOPERATIVA GANADERA CARTAGENA.
COAG-IR.
CONESA Y CIA S. A.
CONTROL AMBIENTAL ESPAÑA SUR, S. L. (CAES).
EL POZO, S.A.
EXPLOTACIÓN PORCINA INTEGRAL, S.A.
FAUNIA (PARQUE BIOLOGICO DE MADRID S. A.).
FORO, FORMACION Y PROYECTOS, S. L. L.
GESTEVET, S. L.
HERO ESPAÑA S. A.
INACER.
MUNDOMAR (AQUALANDIA ESPAÑA, S. A.).
NANTA S. A.
PARQUE SAFARI COSTA BLANCA, S. L.
PIENSOS GARLA, S.A.
PODOLMA S. L.
QUIN SOC. COOP. (SANTA CRUZ).
S.A.T Nº 9076 MIGAL.
SOCIEDAD AGRARIA DE TRANSFORMACION Nº 2439 TAS. PIENSOS ALIA.
TERRA NATURA, S.A.
TRAGSA EMPRESA TRANSFORMACIÓN AGRARIA.

GLOSSARY

GLOSSARY.

ALA: Free Access Computer Room.

AMURVAC: Murcian Association of Companion Animals Veterinarians.

ANAPORC: National Association of Porcine.

ANECA: National Agency for Quality Assessment and Accreditation.

AS: Associated Lecturer.

AVEPA: Spanish Small Animal Veterinary Association.

AY: Assistant Lecturer.

BOE: Journal of the Official Gazette.

BUMU: Murcia University Library.

CD: Hired Doctor Professor.

CNEAI: National Commission for the Evaluation of Research Activity.

COIE: Students Advice and Information Centre.

CROEM: Regional Confederation of Entrepreneurial Organisation in Murcia.

CSIC: National Center for Research.

CU: Full Professor.

DEA: Diploma on Advanced Studies.

EAEVE: European Association of Establishments for Veterinary Education.

ECTS: European Credit Transfer System.

EEES: European Space of Higher Education.

EU: University School.

FEDER: European Funds for Regional Development.

FRIPUMU: Training Course for Murcia University New Professors.

HCV: Veterinary Teaching Hospital.

ICE: Institute for Science Education.

IN: Research Personnel.

INIA: National Institute for Agrarian Research.

IVSA: International Association of Veterinary Students.

LOU: University Organic Law.

LRU: Law for University Reform.

MEC: Ministry of Education and Science.

MERCAMURCIA: Murcia Central Market.

OTRI: Research Result Transfer Office.

PAS: Administration and Service Personnel.

POD: Teaching Arrangement Programme.

RD: Royal Decree.

SAOP: Personnel Advising and Orientation Service.

SECIVE: Spanish Society of Veterinary Surgery.

SIU: Students Information Service.

SOIVRE: Surveillance and Regulation Official Service.

SUMA: Intranet Virtual Platform at Murcia University.

TU: Associated Professor.

UE: European Union.

UMU: Murcia University.

VEDEMA: Veterinarians for the Defence and the Study of the Environment.

VETERMON: Veterinarians for the Development of the Third World.