



# SELF EVALUATION REPORT 2009

**University of Cordoba  
Faculty of Veterinary Medicine**

**EAEVE Evaluation Visit**





*Presented by the Veterinary Faculty of Córdoba  
in September 2009*

*Córdoba (Spain)*

*Design: Alberto Cara*

*Printed: Digital Asus*

*Depósito legal: 0000000*

# INDEX

Chapter 0	<b>INTRODUCTION</b>	005
Chapter I	<b>OBJECTIVES</b>	013
Chapter II	<b>ORGANISATION</b>	027
Chapter III	<b>FINANCES</b>	063
Chapter IV	<b>CURRICULUM</b>	073
Chapter V	<b>TEACHING AND LEARNING: QUALITY AND EVALUATION</b>	121
Chapter VI	<b>FACILITIES AND EQUIPMENT</b>	155
Chapter VII	<b>ANIMALS AND TEACHING MATERIAL OF ANIMAL ORIGIN</b>	179
Chapter VIII	<b>LIBRARY AND LEARNING RESOURCES</b>	197
Chapter IX	<b>STUDENT ADMISSION AND ENROLMENT</b>	217
Chapter X	<b>ACADEMIC AND SUPPORT STAFF</b>	235
Chapter XI	<b>CONTINUING EDUCATION</b>	263
Chapter XII	<b>POSTGRADUATE EDUCATION</b>	273
Chapter XIII	<b>RESEARCH</b>	289
	Acknowledgement	296



## Chapter 0

# — INTRODUCTION





The University of Córdoba Faculty of Veterinary Medicine is the only veterinary training centre in Andalusia, an autonomous region of southern Spain comprising eight provinces and over eight million inhabitants. Since it was first founded as the Subaltern Veterinary School, by Royal Order of 19 August 1847, the centre has trained 160 years of graduates: 75 farriers, 349 second-class veterinarians and 8,203 veterinarians.

### **Main organisational changes**

One of the main organisational changes since the first visit by the EAE-VE experts has been the transfer of all veterinary teaching departments to the University Campus at Rabanales, where veterinary students now receive the whole of their tuition. Other University faculties have also moved out to the Campus, which means that certain facilities and services are now shared: these include the classroom blocks, the laboratories, the Assembly Hall, the Library, the Hall of Residence, the central research support service, catering outlets, and sports and maintenance facilities. By sharing facilities with other faculties, the Faculty of Veterinary Medicine now has access to more resources at a much lower cost.

Recent years have also seen the development of a closer relationship with the Government and with public and private institutions. This growing cooperation has led to the signing of a whole range of agreements enabling students to undertake compulsory external pre-professional internships, through which they have gained first-hand experience of professional practice, under the supervision of professional veterinarians employed as associate staff by the Faculty. A number of qualified practising veterinarians have also been contracted as part-time lecturers, bringing to their classes their own experience in the fields of Animal Health and Production, Food Inspection and Hygiene, and Clinical Sciences.

Finally, the Faculty has undergone certain structural modifications in order to bring tuition into line with the European Higher Education Area (EHEA). This has led to the creation of a new Vice-Deanship responsible for coordinating measures designed to carry out the adaptation required (ECTS credits, teaching innovations, quality assurance systems). A number of new posts have also been created: Pilot Experiment Degree Coordinator, External Pre-professional Internships Coordinator, Course Coordinator, Academic Adviser and Academic Tutor/ Workplace Tutor for Internships.

## **New regulations relating to teaching**

The centralised educational administration originally formulated by the Spanish Parliament has been replaced by a decentralised model in which responsibility for educational matters has been divided: the Ministry of Education retains legislative power and the responsibility for coordinating the Spanish Education System as a whole, while the various autonomous regional governments, such as the Andalusian Regional Government, are politically responsible for the funding of public universities and also for minor legislative measures.

Over the last few years, legislation regarding Higher Education in Spain has undergone several changes intended to facilitate adaptation to the European Higher Education Area (EHEA) created by the Declaration of Bologna (1999) and based on quality, mobility, diversity and competitiveness in University Education.

An earlier Law on University Reform (Ley de Reforma Universitaria, LRU) was replaced by the Organic Law on Universities (Ley Orgánica de Universidades, LOU), which was passed by Congress in December 2001. The implementation of this law has prompted considerable modifications in the structure of different University Bodies, defining new academic posts and new systems of access to them. This law also created the Spanish Agency for Quality Assurance and Accreditation (ANECA) for the Evaluation of teaching and research quality. The law also provided for the creation of the Andalusian Agency for University Quality Assurance. In accordance with one of the objectives of the Bologna Declaration, an amendment of this law was approved in April 2007, establishing two cycles, graduate and postgraduate, in the Higher Education system.

Other objectives based on the Declarations of Bologna (1999), Prague (2001), Berlin (2003) and Bergen (2005) were provided for by new regulations regarding the implementation of the European Credit Transfer System (ECTS), the new system of academic marks, the European Supplement to the Degree, and the recognition of foreign Degrees.

## **New Buildings or major items of equipment**

The transfer of the Faculty of Veterinary Medicine to the University Campus at Rabanales has prompted wide-ranging structural changes, since the various Departments involved in the teaching of Veterinary Sciences are now located in a number of buildings, some of which are specifically for Veterinary studies, while others are shared with other fa-



culties. This has allowed access to a larger number of classrooms and laboratories, thus facilitating the organisation of teaching activities; it has also enabled tuition in small and medium-sized groups. Moreover, a number of additional teaching facilities have been completed and are now fully operational. For example, the following improvements have been carried out at the **Veterinary Teaching Hospital**:

- Creation of a hospitalisation area for horses with infectious diseases
- Increased number of stalls.
- Adaptation of a teaching room with four positions enabling simultaneous examination and surgery for small animals.
- Implementation of a recording and screening system in operating theatres for large and small animals.
- The adaptation of an area intended as a Breeding Centre is now in its final phase.
- Improvement of the hospital reception and waiting area.
- Creation of a pharmacy.

Newly-built facilities include three livestock sheds, a small-ruminant module measuring 207 square metres and a highly-versatile, multipurpose shed measuring 352 square metres. These buildings, together with a cowshed which is shortly to be built, make up the **Rabanales University Farm**.

A new **University Animal Nutrition Centre** has been built. This is an experimental centre for practical training in feeding and nutrition in small ruminants and rabbits, with the following facilities:

- Small-ruminants room
- Rabbit digestibility room
- Diet and feed preparation room

An **Equine Sports Medicine Centre** has been completed. It is equipped with the following facilities:

- Twelve stalls for horses

- Biomechanics and Physiology Laboratories
- Treadmill Room
- Hypoxic chamber
- Enclosed three-layer sand track measuring 70 x 30 m
- Walking area
- Enclosed sand riding area

An **Animal House** has been built as part of the University Experimental Animals Centre, equipped with:

- Research facilities
- Cat and dog unit
- Minipig unit

The **Food Technology Pilot Plant**, specially designed for the processing and control of foods for human consumption, has been fully equipped.

In addition to these facilities, all classrooms have been equipped with a computer with internet access and a projector; the classroom block has been enlarged, and new laboratories and IT rooms have been built; the Library has been enlarged, a new Degree Room and several multipurpose rooms have been built for a range of cultural and scientific activities.

### **Main changes to the study programme**

Following the introduction of the 1996 syllabus (in accordance with Royal Decree 1384/91 and European Directive 1027/78), and its subsequent analysis by the Faculty of Veterinary Medicine, a number of changes were made with a view to reducing the number of optional hours for optional subjects and increasing the number of hours for core subjects. A new subject entitled Veterinary Management has been introduced in the final year of the degree course, following one of the recommendations made at the previous visit, and another subject covering the management of animals of veterinary interest has been introduced with the aim of enabling students to work with animals from the first year onwards. Organisation of the tuition in various sub-

jects has been modified to increase the number of hands-on practical hours:

- Propedeutics is now taught on a wholly practical basis.
- Increase in the number of practical training sessions in slaughterhouses and food inspection premises.
- Practical ambulatory clinical training.
- Practical sessions in animal behaviour on farms and in zoos.
- Practical sessions on castration using animals from animal protection associations.
- Practical sessions on the inspection of livestock facilities and the evaluation of animal health and productive status.
- Practical sessions on feeding and nutrition in small ruminants and rabbits.

Adaptation to the EHEA by means of the pilot experiment has entailed a number of changes to teaching/learning systems, and the introduction of more supervised activities, requiring greater teachers to spend more time preparing, presenting and marking student projects, generally carried out in groups under the supervision of the teacher. The introduction of this system is the object of ongoing review and debate by all parties; to this end, workshops and seminars are held at both University and Faculty level.

The Faculty Board recently produced a new Draft Syllabus, which will be implemented progressively from 2010/2011, replacing the current degree course. The key feature of the new degree course is that it comprises six modules: the first five modules (**Basic Training, Clinical Sciences and Animal Health, Animal Production, Hygiene, Food Safety & Food Technology**) will be taught over the first 9 terms, leaving the sixth module **Tutored Internship and Dissertation** for the tenth term. The aim of the internship and the final dissertation is to ensure that the student attains certain First Day Skills which represent the Faculty's commitment to society. This structure also includes 6 additional optional credits, treated as a single module entitled **Recognised/Optional**.

### **Important decisions made by the management of the Faculty and by the authorities**

The Faculty, and the University as a whole, has tried hard to reduce the undergraduate intake and increase staffing levels. The intake has progressively been cut, from 250 ten years ago to 150 today. At the same time, the Faculty of Veterinary Medicine has 166 teaching staff, mostly full-time and mostly with over ten years' teaching experience.

The teaching of any given subject is no longer the sole responsibility of a single lecturer; over recent years, a programme has been implemented to train young researchers and future teachers, facilitating their gradual involvement in teaching duties, and thus ensuring a smooth transition as current staff retire. Teachers are also increasingly encouraged – by means of financial incentives and professional recognition – to take part in innovative teaching projects and to make their material available through the Virtual Classroom. Moreover, the results of student satisfaction surveys are taken into account when promoting staff. Significantly, Faculty teaching staff are highly motivated by quality-related matters. This is evident in the number of ongoing innovative teaching projects, and in the teachers' willingness to organise and carry out their tuition in accordance with new teaching/learning systems; it is also evident in the annual student satisfaction surveys.

The Faculty, through the Teaching Committee and the Pilot Experiment Degree Course Coordinator, carries out an annual review of the teaching guidelines for all subjects, in order to facilitate coordination and ensure that course goals are achieved. The Faculty also runs regular courses and seminars where teachers and students can share their teaching/learning experiences.

### **Major problems encountered by the Faculty**

As indicated earlier, the Campus structure provides a series of advantages for the Faculty; at the same time, however, it has had a negative impact in some respects. It has lost something of its identity as a Faculty amongst staff and students; and very few administrative and service staff now work solely for the Faculty. Moreover, since the University manages Campus resources directly, many services and centres (e.g. the Farm, the Animal House) are not structurally accountable to the Faculty of Veterinary Medicine; it is therefore more difficult to obtain funding for, and run veterinary training activities in, these centres.

The Veterinary Teaching Hospital is managed and run by a private University enterprise. This has led to difficulties in reconciling the demands of teaching activity and those of clinical activity, as well as strained relations with local veterinary clinics.

## Chapter I

# OBJECTIVES



## **1.1. FACTUAL INFORMATION**

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

The general objectives of the Faculty of Veterinary Medicine are based on the general and strategic objectives of the University of Córdoba (UCO), on current Spanish legislation and on European Union Directive 2005/36/EC.

### 1.1.1. General Objectives of the University of Córdoba

The University of Córdoba (UCO) is a Body governed by Public Law, enjoying the autonomy provided for under Article 27.10 of the Spanish Constitution and Article 2 of the Organic Law on Universities 6/2001, of 21 December (LOU). Both the activity and the autonomy of the University of Córdoba are rooted in the principle of academic freedom, which in turn guarantees freedom of teaching, of research and of study, as well as the provision of a public higher-education service through research, teaching and study. In thus serving Society, and as laid down in Decree 280/2007 of the Andalusian Regional Council ([http://www.uco.es/organizacion/secretaria\\_general/normativa/Estatutos\\_UCO/estatutos\\_uco.pdf](http://www.uco.es/organizacion/secretaria_general/normativa/Estatutos_UCO/estatutos_uco.pdf)), the University seeks to ensure the following:

- The creation, development, transfer and critical analysis of science, technology and culture;
- The provision of training for the pursuance of professional activities requiring the application of scientific methods and knowledge.
- The dissemination, promotion and transfer of knowledge to foster culture, quality of life and economic development.
- The dissemination of knowledge and culture through university extension and continuing education services.

As stated in the University of Córdoba's Strategic Plan 2006-2015 (<http://www.uco.es/organizacion/planestrategico/planestrategico.pdf>), approved by the Governing Council (22 December 2005), the mission of the University is as follows:

- To provide an across-the-board, high-quality education responding to local social, cultural and business needs.
- To generate and transfer knowledge.
- To play a dynamic role in all aspects of society.
- To enhance the University's international role.

With a view to fulfilling this mission, the University of Córdoba has formulated 5 strategic priorities covering the following 14 objectives:

<b>PRIORITIES</b>	<b>OBJECTIVES</b>
<b>Across-the-board Education</b>	Provide education geared to producing competent professionals, able to respond to local needs and equipped to move readily into the labour market
	Provide continuing education and refresher courses for professionals, in order to meet local needs
	Encourage critical attitudes
<b>Generation and transfer of knowledge</b>	Support research groups, with a view to fostering and ensuring high-quality research
	Support the development of R&D&I initiatives geared towards addressing local problems
<b>Internationalisation and social commitment</b>	Promote policies aimed at enhancing the University's international relations
	Develop the University of Córdoba as a driving force for social change
<b>Optimisation and development of human resources</b>	Encourage the appointment of experienced professionals fully qualified to undertake the duties required in the framework of internationalisation
	Develop executive, teaching, research and management skills, and foster teamwork by the university community as a whole
	Ensure the professional development of University staff, and encourage their promotion, depending on their performance, their ability and the University's requirements
<b>Organization and funding</b>	Streamline territorial organisation
	Streamline functional organisation
	Increase funding
	Contain/optimize expenditure

### **1.1.2. General Objectives of the Faculty of Veterinary Medicine**

The Faculty of Veterinary Medicine shares the overall aims of the University of Córdoba, and has established as the guiding principle of its policy the provision of thorough training designed to produce competent professionals; the education provided must extend to specialist



and postgraduate training, as well as continuing education. A key requirement is that training should be geared towards meeting the needs of society, with particular attention to the specific needs of the Autonomous Region of Andalusia. A further aim is to foster applied research and encourage research excellence with a view to ensuring adequate progress in the acquisition of knowledge.

#### **1.1.2.A. CONCRETE OBJECTIVE OF THE FACULTY OF VETERINARY MEDICINE**

The concrete objectives of the Faculty of Veterinary Medicine reflect the requirements of current Spanish legislation (Law 44/2003 on the Regulation of the Health Professions, Royal Decree 1384/1991, Order ECI/333/2008), the White Book on Education in Veterinary Medicine in Spain, the consensus Framework Paper issued by the Federation of Veterinarians of Europe (FVE/00/011), and the European Union Directive 2005/36/EC, which replaced Directives 78/1026 and 78/1027/EEC; essentially, the overarching aim is to provide students with the knowledge, technical skills and attitudes required to ensure animal and human health by means of the following:

- Hygiene control, inspection and monitoring of the technology used in the production and processing of foodstuffs intended for human consumption, from stable to table.
- Prevention, diagnosis and treatment of animal diseases – whether individually or in groups – with particular reference to zoonoses.
- Control of animal rearing, management, welfare, breeding, protection and feeding, and improvement of yield.
- Obtaining of products of animal origin, in optimum and economically -viable conditions, and evaluation of their environmental impact.
- Knowledge and application of legal, regulatory and administrative provisions in all areas of the veterinary profession and all areas of public health, including the ethical implications of health care in the context of a changing world.
- Development of a professional approach with regard to other healthcare professionals, acquiring the skills needed for effective teamwork, efficient use of resources and quality assurance.
- Identification of emerging risks in all areas in which the veterinary profession is involved.

In order to achieve these concrete aims, the Faculty of Veterinary Medicine is committed to ensuring that its Graduates acquire the following during their training:

- Adequate knowledge of the sciences on which the activities of the veterinary surgeon are based.
- Adequate knowledge of the structure and functions of healthy animals, of their husbandry, reproduction and hygiene in general, as well as their feeding, including the technology involved in the manufacture and preservation of foods corresponding to their needs.
- Adequate knowledge of the behaviour and protection of animals.
- Adequate knowledge of the causes, nature, course, effects, diagnosis and treatment of the diseases of animals, whether considered individually or in groups, including a special knowledge of the diseases which may be transmitted to humans.
- Adequate knowledge of preventive medicine.
- Adequate knowledge of the hygiene and technology involved in the production, manufacture and putting into circulation of animal foodstuffs or foodstuffs of animal origin intended for human consumption.
- Adequate knowledge of the laws, regulations and administrative provisions relating to the subjects listed above.
- Adequate clinical and other practical experience under appropriate supervision.

In order to provide the level of practical clinical training required by the Veterinary Degree Syllabus, the Veterinary Teaching Hospital – Hospital Clínico Veterinario de la Universidad de Córdoba, S. L. ([www.uco.es/webuco/corporacion/hcv](http://www.uco.es/webuco/corporacion/hcv)) – a company owned by the University of Córdoba - was set up in 1998. Its aim is to provide the University of Córdoba with instrumental support, since the quality of the practical training provided during undergraduate study depends on the market share that the Hospital is able to capture, and on its ability to generate sufficient resources to ensure that its current technical level is maintained and improved. The Hospital's mission is therefore to provide three major services within the Veterinary Degree Program:

- Programmed practical tuition.

- Research.
- Clinical practice.

The specific objectives of the Veterinary Teaching Hospital are as follows:

- To use and manage Hospital facilities.
- To carry out the clinical and teaching activities in the area of veterinary medicine required for the appropriate use of the facilities available.
- To provide all the services required by veterinary clinical practice, both on and off the Hospital premises, and to carry out any other activity likely to directly or indirectly improve those services.
- To promote, develop and implement any other similar or related activity involving the use and management of the resources available.

#### **1.1.2.B. OTHER OBJECTIVES OF THE FACULTY OF VETERINARY MEDICINE**

The Faculty of Veterinary Medicine provides postgraduate tuition, in the form both of official UCO Master's Degrees and of continuing education courses and other lifelong-learning activities. It also offers a range of services outside the University, thus helping society in general, and carries out research, mainly in the fields of animal health and medicine, animal production, food sciences and food technology.

Over the last three academic years, the following official Master's Degrees were taught by staff at the Faculty of Veterinary Medicine:

- “Interuniversity Master's Degree in Agrofoods”
- “Master's Degree in Animal Medicine, Health and Breeding”
- “Interuniversity Master's Degree in Zootecnology and Sustainable Management: Integrated Organic Livestock Farming”

All these courses pursue the following aims: 1) to complete the academic and professional training of our graduates; 2) to combine solid training in the specific content of each master's degree program with sufficient flexibility to enable students to be trained in all the fields and

specialisms involved in those programs; 3) to create a reliable stratum of professional researchers in order to meet the current and future needs of society; 4) to enhance the status of the University of Córdoba and of its Faculty of Veterinary Medicine as a benchmark for learning and research; and 5) to provide direct access to doctoral research, and thence to a doctoral thesis and the degree of PhD.

The Faculty of Veterinary Medicine also promotes the sharing of knowledge and culture through University Extension Courses and Continuing Education Courses. The Faculty either organises such courses itself or provides support to the departments, professional associations or companies responsible for their organisation. The Faculty is at all times mindful of social demand in the area of continuing education, and ensures that the courses offered are duly monitored and evaluated.

**The Faculty of Veterinary Medicine also provides a range of external services, including:**

LABORATORIES	DIAGNOSTIC SERVICES	OTHERS
Small Ruminants Dairy Laboratory	Infectious Diseases Service	Veterinary Teaching Hospital/Clinic
Veterinary Genetic Diagnosis Laboratory	Pathological Anatomy Service	Centralised Experimental Animal Service
Quantitative Genetics Laboratory	Parasitic Diseases Service	Andalusian Centre for Organic Farming
Animal Breeding and Conservation		Organic Beekeeping Seminar
Animal Cytogenetic Laboratory		Virtual Classroom for Animal Production and Management of Livestock Businesses
		IT service
		Library

The final secondary objective of the Faculty of Veterinary Medicine is to foster applied research and the excellence of its research groups with a view to ensuring adequate progress in the acquisition of knowledge.

### **1.1.3. Methods for evaluating the achievement of the general and secondary objectives of the Faculty of Veterinary Medicine, and for reviewing those objectives**

Six different methods are used to evaluate and review the objectives of the Faculty of Veterinary Medicine:

- 1.** Staff teaching activity is evaluated in a number of ways. Since 1995-96, a compulsory individual evaluation system has been in force, under which each teacher is assessed by means of a student survey ([http://www.uco.es/organizacion/calidad/actividades\\_propias/eval\\_prof/pdf/alumno\\_encuesta.pdf](http://www.uco.es/organizacion/calidad/actividades_propias/eval_prof/pdf/alumno_encuesta.pdf)); students are asked to evaluate teaching skills, compliance with teaching duties and student counselling duties, classroom atmosphere, compliance with the syllabus and coordination of theoretical and practical classes. Each of these aspects is scored on scale of 1 to 5. The results of this assessment are sent to each teacher for information purposes, and also to the Chancellor; where scores are lower than 3, the Chancellor writes to the teacher concerned, urging him/her to improve performance, and making available all the appropriate means/resources at the University's disposal. The Dean of the Faculty or Centre concerned receives overall reports for each degree program and each year, and the Head of Department receives an overall report on the performance of the department's teachers. In addition, contracted staff may request external assessment at national level with a view to attaining tenure ([http://www.uco.es/organizacion/calidad/informe\\_global/documentos/Procedimiento\\_UCO.pdf](http://www.uco.es/organizacion/calidad/informe_global/documentos/Procedimiento_UCO.pdf)). Finally, every 6 years a teacher may request assessment at regional level; a positive assessment results in the award of a salary increase.
- 2.** Staff research activity is assessed by various methods. First internally, by Groups, on an annual basis, leading to greater or reduced University funding for each Research Group. Secondly, individual research is assessed at national level by the National Research Assessment Committee (CNEAI) (Research Bonuses) at the request of each lecturer; assessment may be requested every 6 years, and a positive result directly affects lecturer salaries. Thir-

dly, research is evaluated at regional level (regional productivity bonuses), also at the request of the individual lecturer; positive assessment again leads to a further salary increment.

3. Departmental activity is assessed by means of an annual report produced by each department, together with a self-evaluation report produced in compliance with the Andalusian University Quality Plan (Royal Decree 408/2001, of 20 April 2001), ([http://www.uco.es/organizacion/calidad/actividades\\_ucua/eval\\_departamentos/eval\\_departament.htm](http://www.uco.es/organizacion/calidad/actividades_ucua/eval_departamentos/eval_departament.htm)). This process includes analysis of the department's profile, the tuition provided, the research carried out (profile, context, objectives), the resources available, the structure, the results obtained and the administrative and financial management of the department.
4. The performance of the Faculty of Veterinary Medicine as a whole, and its degree of compliance with the Strategic Plan, is assessed by the Vice- Chancellor for Planning and Quality; this assessment affects 30% of the Faculty's operating budget, as agreed by UCO Governing Council. Assessment is carried out in accordance with the following criteria:
  - Involvement of the Faculty in the Strategic Plan.
  - Compliance with deadlines for submission of documents to the Chancellor's office (course syllabuses, lecture timetables, examination dates, range of available optional and elective subjects, submission of invoices, budget).
  - Involvement in assessment and development programmes.
  - Involvement in extracurricular activities (conferences, seminars, workshops, etc) aimed primarily at Faculty students.
  - Involvement of students in pre-professional practical training.
  - Existence and implementation of a programme to attract new students.
  - Promotion of Tutoring programmes.
  - Student mobility.
5. The assessment of Course Planning at Faculty level is carried out by the Faculty Teaching Committee, which monitors course planning and syllabuses for each subject.

Since 2007/08, a Committee set up under the Faculty Board has been assessing the results of a pilot experiment based on collection of data from first- and second-year students of veterinary medicine, and from the teachers involved in teaching those years. The data obtained will enable a preliminary analysis of the strengths and weaknesses of the system to be performed.

In order to ensure the continuous improvement of the degrees awarded by the University of Córdoba, and to guarantee a level of quality sufficient to facilitate their ongoing accreditation, in 2008 the Faculty of Veterinary Medicine created an Internal Quality Assurance System (SGIC), which was felt to be an essential step in analysing any departure from planned procedure and in identifying areas with scope for improvement. This system also facilitates the design and implementation of proposals aimed at the ongoing improvement of syllabuses, and involves collecting and reviewing data on the following, with a view to their enhancement:

- The aims of the syllabus.
- Admission policies and procedures.
- Course Planning.
- Teaching and student assessment.
- Student advisory services.
- Staff qualifications.
- Academic resources and services.
- The outcome of training.

This Internal Quality Assurance System (<http://www.uco.es/organizacion/calidad/sgic/centrosparticipantes/centrosparticipantes.html>) was designed in accordance with the principles laid down in the AUDIT program accreditation model produced by the Spanish National Agency for Quality Assessment and Accreditation (ANECA), a full member of ENQUA, and has recently been approved by ANECA. Once implemented, the system will be put forward for ANECA certification.

6. The performance of the Veterinary Teaching Hospital is assessed every year by the Hospital Board. It is also assessed by AENOR (the Spanish Standards Agency), and has been granted quality management standard ISO 9001:2000 certification. Annual monitoring

audits (and three-yearly full audits) are carried out to ensure that the Veterinary Teaching Hospital quality system continues to meet ISO 9001:2000 requirements.

## **1.2. COMMENTS**

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

### **STRENGTHS**

A first strength to highlight is the strong involvement of the Veterinary Faculty in the strategic plan of the university of Córdoba.

#### **Teaching**

The increase of the number of teachers, the new facilities, the well equipped laboratories and the involvement of teachers in new educational experiences. The Faculty has excellent relationships with public and private institutions or centres located in Andalusia which have a positive impact in teaching aspects.

The level of collaboration of the Faculty with veterinary clinics, livestock farms and slaughterhouses is very satisfactory, allowing students the chance to carry out extramural work that has a high value in practical experience which represents direct contact with professionals in the sector and the reality of work in the profession.

The development of Erasmus and SICUE/Seneca exchange programmes bring an academic and cultural enrichment for our students.

#### **Research**

In the Faculty there are various groups which lead, at national and international level, lines of research on clinical medicine, production and animal health.



## **Management & Services**

The Faculty, through the Quality Commission, develops the Veterinary Faculty Quality Guarantee System. In addition, the Veterinary Teaching Hospital has a quality accreditation and the Faculty has services of recognised prestige at national and international level. A notable annual investment of the UCO in the Veterinary Teaching Hospital allows the maintenance of this structure of the veterinary degree.

## **Social Impact**

The participation of the Veterinary Faculty (and its teachers) in agricultural shows, congresses, courses, scientific organisations, and other acts related to the profession contribute to the social impact of the Faculty at the Andalusian and national levels. A high level of interest from local media for activities of the UCO in general, and of the Veterinary Faculty in particular due to the high number of activities organised in recent years.

## **WEAKNESSES**

### **Teaching**

The structure of our university with segregation of the teaching staff in various inter-faculty departments does not allow all the staff to be integrated into the Faculty and makes it difficult for students to access them.

The high number of laboratories in the centre does not correlate with the lack of support staff.

The current organigram of the Veterinary Teaching Hospital makes it difficult for the Veterinary Faculty to be determinant in taking strategic decisions which allow for the development of initiatives which are considered important by the centre and which affect the teaching.

The lack of both dairy and poultry farms as our own installations makes teaching difficult in the corresponding areas.

## Research

The lack of knowledge of activity between different research groups in the Faculty and their low level of collaboration prevents maximising human resources and infrastructures.

The lack of economic resources makes it difficult to carry out research in non-priority areas.

## Management & Services

The structure of the University means that in important areas such as infrastructure and investments plans, etc., the Faculty has virtually no management control.

## Social Impact

There is still a great lack of general public knowledge about the different activities a veterinarians carries out professionally.

### 1.3. SUGGESTIONS

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

To address some of the problems mentioned above, the Faculty suggests:

1. A dairy and poultry farm. The Faculty has already asked to the University for these installations.
2. The adaptation process to the European Space for Higher Education (ESHE) shows the need for small classrooms for group work, seminars and tutorials. These are needs in common with the majority of centres at the University, which requires that the Investment Plan consider this problem.
3. An increase in support staff for teaching and research.

## Chapter II

# ORGANISATION



## **2.1. FACTUAL INFORMATION**

» Please give the basic details of the establishment, starting with the name, address, telephone and fax numbers, e-mail addresses and website addresses

### **BASIC DETAILS OF THE ESTABLISHMENT**

**Name:** Faculty of Veterinary Medicine

**University:** University of Córdoba

**Address:** Campus de Rabanales, Km 396, 14071, Córdoba, Spain

**Telephone number:** +34.957.218661

**Fax number:** +34.957.218666

**E-mail addresses:**

Secretary of the Dean's Executive Team: [fv3nuvim@uco.es](mailto:fv3nuvim@uco.es)

Dean: [decanovet@uco.es](mailto:decanovet@uco.es)

**Website:** [www.uco.es/veterinaria/](http://www.uco.es/veterinaria/)

**Dean:** Librado Carrasco Otero, DVM, PhD, Professor of Pathological Anatomy

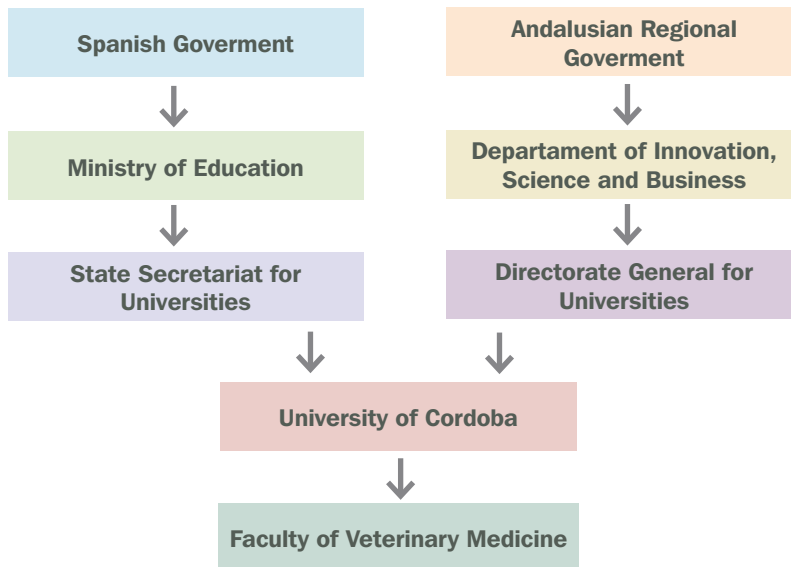
*» Provide a diagram of the administrative structures showing the establishment in relation to the university and ministerial structure of which it is part*

### **2.1.1. Structure of the University of Córdoba (UCO)**

The Faculty of Veterinary Medicine – previously administered by the University of Seville – became part of the University of Córdoba when the latter was founded in 1972. The Faculty of Veterinary Medicine, the Higher Technical School of Agricultural Engineering (ETSIAM), and the Faculty of Medicine thus formed the nucleus of a University which was to focus strongly on agrofood matters.

Veterinary studies in Córdoba began with the establishment of the Sub-altern Veterinary School, created by Royal Order of 19 August 1847; the first three-year syllabus was launched that same year. Students were required to take a final examination which qualified them as veterinarians, and the Veterinary School was also responsible for holding examinations for farriers. The Spanish Veterinary Schools of Córdoba, León, Madrid y Zaragoza did not achieve Faculty status until the University Organisation Law of 1943. The Degree of Bachelor of Veterinary Medicine was first awarded by the Faculty of Veterinary Medicine to students successfully completing the syllabus published in 1944.

The University of Córdoba (UCO) is a public university, accountable to the Spanish Ministry of Education and Innovation (MCI) at national level, and to the Andalusian Regional Government Department of Innovation, Science and Business at regional level. UCO is currently spread over four university campuses in and around the city of Córdoba: a health-sciences campus, a humanities campus, a technical campus located in the town of Bélmez, and an agrofood campus at Rabanales. The Faculty of Veterinary Medicine is at the Rabanales campus, located 12 kilometres from Córdoba. The Ministry of Education is responsible for setting the syllabus for all nationally-recognised degree courses, and for defining the main policy issues concerning higher education in Spain. At regional level, the Andalusian Regional Government Department of Innovation, Science and Business is responsible for financing and overseeing the running of Andalusia's ten universities (the Universities of Seville, Córdoba, Cádiz, Granada, Jaén, Almería, Málaga, Huelva, the Pablo de Olavide University and the International University of Andalusia). The administrative structure is summarised in Figure 1.



**Figure 1. Administrative Flowchart: showing the place of the Faculty of Veterinary Medicine within the hierarchy of the Spanish Government, the Andalusian Regional Government and the University of Córdoba.**

Some basic facts and figures about the constitution of the University of Córdoba (UCO) are shown below (Tables 2.1 and 2.2).

**Table 2.1. UCO Faculties, Schools, Associated Centres and Other Centres**

UCO structure	Total	Health Sciences Campus (Menéndez Pidal)	Humanities, Law and Social Sciences Campus	Agrofood, Science and Technology Campus (Rabanales)	University Polytechnic School (Bélmez)
<b>Faculties</b>	8	1	4	3	
<b>University Schools</b>	1	1			
<b>Associated University Schools</b>	2		2		
<b>Technical Schools</b>	2			1	1
<b>University Institutes</b>	2		1	1	
<b>Own Research Centres</b>	3		1	2	

**Table 2.2. Key numbers for the academic year 2007-08 (UCO)**

<http://www.gestion.uco.es/gestion/comunica/informacion/datos/?idt=4>

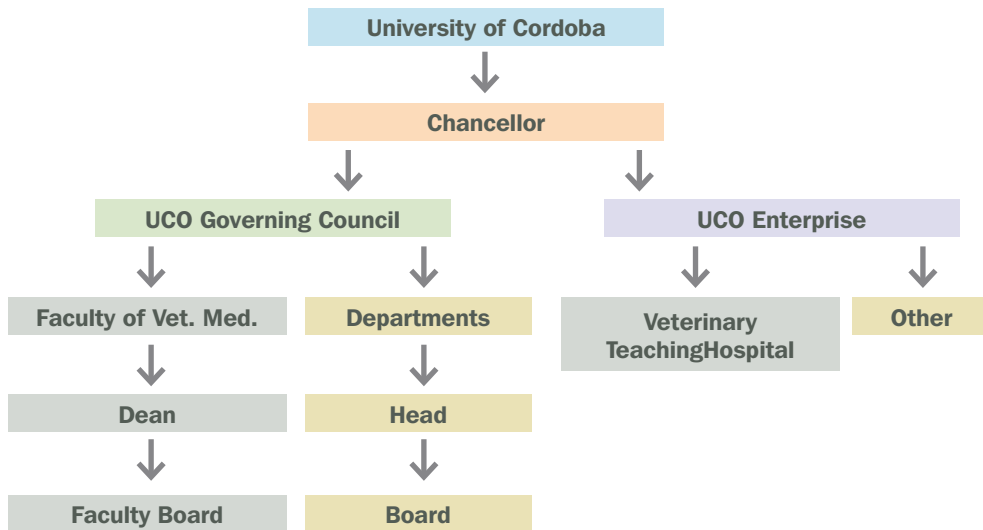
Key numbers at UCO	Total
<b>Undergraduate students, academic year 2007-2008</b>	18633
<b>Postgraduate students, academic year 2007-08</b>	2516
<b>Students enrolled in predoctoral courses</b>	618
<b>Students enrolled in Masters' Degree programmes</b>	336
<b>Students in the ERASMUS programme (from other European countries)</b>	375
<b>Students in the ERASMUS programme (UCO)</b>	339
<b>Teaching and Research Staff (PDI)</b>	1482
<b>Administrative and Service Personnel (PAS)</b>	668
<b>Degree courses offered</b>	51
<b>Doctorate/Masters' Programmes</b>	41
<b>Library – Books</b>	520,000
<b>Library – Scientific Journals</b>	11,500
<b>Library – Databases</b>	41
<b>Teachers involved in the Virtual Classroom</b>	920
<b>Students involved in the Virtual Classroom</b>	1189
<b>Teachers involved in teacher training courses</b>	520
<b>Budget for the academic year 2007-2008</b>	152,209,300

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

Current legislation (LOU) defines the organisation of Spanish universities in terms of two entities, each with a specific mandate (Figure 2):

- A.** Faculties and University Schools: Responsible for organising and supervising the carrying out of teaching activities.
- B.** Departments: Responsible primarily for research and teaching at undergraduate and postgraduate levels.

The work of these two entities is supported by centralised University services, companies and public and private bodies.



**Figure 2. Organisation of the Faculty of Veterinary Medicine and the Departments**

### 2.1.2. Organisation of the Faculty of Veterinary Medicine

The Faculty of Veterinary Medicine is accountable to the University of Córdoba through the various Vice-Chancellors that make up the University governing team:

The Faculty of Veterinary Medicine is the only Faculty in the Andalusian Region offering a degree in Veterinary Medicine. As an integral part of the University of Córdoba, it is responsible for organising the teaching and other academic, administrative and management-related procedures leading to the award of the Degree in Veterinary Medicine and the Degree in Food Sciences and Food Technology, and, in future, of any other official degree which might be instituted, provided that the degree is recognised both at national level and, where appropriate, within the European Higher Education Area. The Faculty is also responsible for ensuring the quality of these procedures.

The Faculty of Veterinary Medicine comprises:

- Teaching and research staff, either tenured or appointed by contract in accordance with Article 10a) of the University Statutes;



- Administrative and service personnel, either tenured civil servants or appointed by contract and currently working at the Faculty; and
- All the students enrolled at the Faculty.

The Faculty of Veterinary Medicine is governed by the University Statutes, approved by the Governing Council in December 2004, by the University's Academic Regulations and by the Regulations of the Faculty itself, approved by the Faculty Board and the Governing Council on 22 December 2004. [http://www.uco.es/organizacion/secretaria\\_general/normativa/index\\_normativa.html](http://www.uco.es/organizacion/secretaria_general/normativa/index_normativa.html)

[http://www.uco.es/organizacion/secretaria\\_general/normativa/Reglamentos/Reglamento%20Regimen%20Academico/Reglamento\\_Regimen\\_Academico.html](http://www.uco.es/organizacion/secretaria_general/normativa/Reglamentos/Reglamento%20Regimen%20Academico/Reglamento_Regimen_Academico.html)

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

### 2.1.2.A. THE FACULTY

The governing bodies of the Faculty of Veterinary Medicine, as defined by the University Statutes, are : the Dean, the Dean's Executive Team and the Faculty Board.

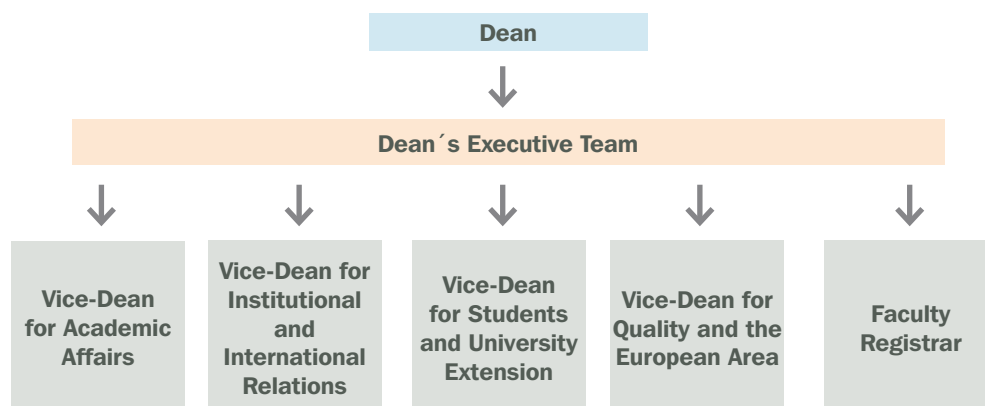
**2.1.2.A1. The Dean** (Figure 2.3) is the highest officer of the Faculty, and acts as managing director. The Dean's mandate includes:

- Calling and chairing Faculty Board meetings, and drawing up their agendas
- Implementing and enforcing agreements made by the Faculty Board
- Directing and coordinating all Faculty operations falling within his sphere of competence
- Implementing budgetary provisions within his sphere of competence

- Putting forward recommendations to the Chancellor regarding the appointment of Vice-Deans and of the Faculty Registrar
- Authorising the attendance at Faculty Board and Committee meetings of whoever he/she considers appropriate to ensure that the aims of the meeting are achieved.

The procedure for the election of the Dean is laid down in the University Statutes and in the Election Regulations, which are deemed applicable in the Regulations of the Faculty itself. The Dean is elected directly by secret ballot; all members of the Faculty are entitled to vote, although voting is weighted by sectors, as laid down in the University Statutes.

**2.1.2.A2. The dean's executive team** (Figures 2.3.A y 2.3.B) comprises the Vice-Deans – each of whom has a mandate for a specific area of academic operations – and the Faculty Registrar, who is responsible for issuing and signing all official reports and certificates. The Vice-Deans and the Faculty Registrar are chosen by the Dean from amongst the Faculty's tenured and non-tenured doctorate-holding teaching staff; they are formally appointed by the Chancellor. The Faculty of Veterinary Medicine currently has 4 Vice-Deans: (1) the Vice-Dean for Academic Affairs, (2) the Vice-Dean for Institutional and International Relations, (3) the Vice-Dean for Students and University Extension, and (4) the Vice-Dean for Quality and the European Area. The number of Vice-Deans is fixed by the Governing Council, taking into account management requirements, the number of degree courses offered and the budget available. The Faculty also has an Administrator responsible for the academic management of all Faculty affairs; the Administrator works closely with the Dean on a day-to-day basis. Finally, the Dean's Executive Team employs an Administrative Secretary.



**Figure 2.3.A. Governing bodies of the Faculty: The Dean and the Dean's Executive Team**

<b>Dean</b>	Librado Carrasco Otero
<b>Vice-Dean for Academic Affairs</b>	Rafael Gómez Díaz
<b>Vice-Dean for Institutional and International Relations</b>	Estrella Agüera Buendía
<b>Vice-Dean for Students and University Extension</b>	Rafael Astorga Márquez
<b>Vice-Dean for Quality and the European Area</b>	Inmaculada Luque Moreno
<b>Faculty Registrar</b>	Begoña Escribano Durán
<b>Head of Secretariat</b>	Nicolás Nieto Muñoz
<b>Secretary to the Dean's Executive Team</b>	Carmen Núñez Villamandos

**Figure 2.3.B. Actual Members of the Dean's Executive Team**

**2.1.2.A3. The faculty board** (Figure 2.4) is the main governing body of the Faculty of Veterinary Medicine. The Faculty Board, which acts within the bounds laid down by the Governing Council, the University Statutes, the official decisions of the Chancellor and the Academic Regulations. The Board, which is chaired by the Dean, is responsible for the governance of the Faculty, for representing the Faculty in other spheres, for taking decisions in administrative matters, for ratifying regulations, and for overseeing the activities of all the bodies and individuals forming part of the faculty. Its duties include:

- A.** Approval of the overall academic activity of the Faculty
- B.** Distribution of funds assigned to the Faculty and control of corresponding expenditures
- C.** Overseeing of teaching activities

- D. Preparation of the annual report
- E. Proposing and modifying the content of degree courses
- F. Creating or modifying Faculty services and committees

The Board is made up of: the Dean and the Faculty Registrar (ex officio), plus 40 members, 70% of whom are drawn from the teaching staff (Groups A and B), 25% from the student body, and 5% from the administrative and service personnel (PAS). There are three categories of staff members: those appointed by the Dean; those representing tenured teaching staff (Group A), and those representing other teaching and research staff (Group B). For the discussion of specific issues, the Board may invite other members of the Faculty of Veterinary Medicine, as well as representatives of enterprises and public or private institutions, to attend Board meetings as non-voting observers.

**Figure 2.4. Membership of the Board Faculty, and method of election**

Dean and Faculty Registrar	Ex officio
10 teachers (Groups A and B)	Appointed by the Dean
14 representatives of tenured teaching staff (Group A)	Elected by all Faculty members
4 representatives of non-tenured teaching staff (Group B)	Elected by all Faculty members
2 representatives of the administrative and service personnel	Elected by all Faculty members
10 representatives of the student body	Elected by all Faculty members

The Board is chaired by the Dean, or in his absence by a Vice-Dean. Meetings may be held in plenary session or in constituent Committees, and may be either ordinary or extraordinary. Ordinary meetings must be held at least once every two months. The quorum for a Board meeting at first call is a minimum of 50% plus 1 of its members. At second call, at least one third of Board members must be present. Faculty Board agreements are valid when they obtain a simple majority of votes cast.

#### **2.1.2.A4. Faculty board constituent committees (figure 2.5).**

The Faculty Board may establish whatever Committees and Subcommittees it deems necessary for the efficient performance of its duties; Committee members shall be appointed by the Faculty Board. With the exception of the Teaching Committee, whose membership is stipulated

by the University Statutes, the remaining committees comprise members of the Faculty Board, and are subject to its rules and regulations. The following committees are currently in place:

- 1. Teaching Committee:** The Teaching Committee is responsible for overseeing the overall organisation of teaching in the Faculty, for monitoring the teaching performance of Assistant and Associate Teachers in accordance with Articles 176.3 and 180.3 of the University Statutes, issuing reports on teaching performance, supervising the assessment of teaching staff, making proposals to the Faculty Board regarding the award of free-elective credits for internships in companies, and any other duties entrusted to it by the Faculty Board. The Committee is chaired by the Dean or, in his absence, a Vice-Dean, and comprises 10 members: 5 teachers with at least ten years' seniority, 3 of whom must hold doctorates; and 5 students.
- 2. Institutional and International Relations Committee:** This Committee is responsible for proposing the involvement of the Faculty in student and staff exchange schemes, and for selecting students for national and international exchange programmes, for drawing up bilateral cooperation agreements with Faculties at other Universities, and for any other duties entrusted to it by the Faculty Board. The Committee is chaired by the Dean or, in his absence, a Vice-Dean, and comprises 3 tenured teachers from Group A, 1 teacher from Group B, and 2 student representatives.
- 3. Faculty Board Regulations Committee:** This committee is responsible for preparing draft Regulations for the Faculty of Veterinary Medicine, and for reviewing potential future amendments for approval by the Faculty Board. The Committee is chaired by the Dean or, in his absence, a Vice-Dean, and comprises 4 teachers from Group A, 1 teacher from Group B, 1 representative of the administrative and service personnel, and 1 student representative.
- 4. Validation Committee:** Amongst other duties, this Committee is responsible for reviewing applications for degree validation, and for forwarding them to the Governing Council for a final decision. The Committee is chaired by the Dean or, in his absence, a Vice-Dean, and comprises 3 teachers, 1 student representative and the Head of Secretariat.
- 5. Library and Infrastructure Committee:** This Committee deals with all issues relating to libraries, infrastructure and equipment, and with any other duties entrusted to it by the Faculty Board. The Committee is chaired by the Dean or, in his absence, a Vice-Dean,

and comprises 3 teachers from Group A, 1 teacher from Group B, and 2 student representatives.

- 6. Cultural Activities Committee:** This Committee is responsible for all matters relating to the scheduling and coordination of cultural and university-extension activities (seminars, courses and additional activities), acting in conjunction with the Departments concerned, and for any other duties entrusted to it by the Faculty Board. The Committee is chaired by the Dean or, in his absence, a Vice-Dean, and comprises 3 teachers from Group A, 1 teacher from Group B, and 2 student representatives.
- 7. Tuition Planning Committee:** This Committee is responsible for reviewing all matters relating to the organisation of tuition at the Faculty of Veterinary Medicine, and for any other duties entrusted to it by the Faculty Board. The Committee is chaired by the Dean or, in his absence, a Vice-Dean, and comprises 3 teachers from Group A, 1 teacher from Group B, and 2 student representatives.
- 8. University Enterprise Committee:** Amongst other duties, this Committee is responsible for reviewing all matters relating to University of Córdoba companies, and for any other duties entrusted to it by the Faculty Board. The Committee is chaired by the Dean or, in his absence, a Vice-Dean, and comprises 5 teachers from Group A and 1 teacher from Group B.

#### **2.1.2.A5. Committees and Working groups:**

The Faculty Board may establish ad hoc Committees and/or Working Groups to deal with specific matters. These may be made up of non-Faculty members. At present, the following are in place:

- 1. The Syllabus Drafting Committee** is responsible for defining and reviewing the new syllabus in accordance with European Union Directives, with current Spanish legislation as applied by the Ministry of Education and with the resolutions of the Conference of the Deans of Spanish Veterinary Faculties, taking into account social requirements. The Committee is chaired by the Dean, and comprises 1 representative from each Department (total 10), 1 representative of the teaching staff, 1 representative of the Veterinary Hospital, 1 representative of the University Farm, 1 representative of the pilot plant, 5 students, 1 representative of the administrative and service personnel, 1 representative of the Quality Assurance Committee and an external advisory group. The advisory group is made up of 1 representative from the Regional Government Department of Agriculture and Fisheries, 1 representative from the

Regional Government Department of Health, 1 veterinary surgeon, 1 food scientist, 1 specialist in animal production and 2 graduates who completed their training less than five years earlier.

- 2. The Quality Assurance Committee** is responsible for ensuring the quality of teaching in the Faculty of Veterinary Medicine, and for reviewing and – wherever possible – improving training programmes. The Committee comprises the Dean, the Vice-Dean for Quality and the European Area, one teacher, one student and one member of the administrative and service personnel.
- 3. The Internal Working Group - EAEVE** is responsible for drafting the self-evaluation report to be presented to EAEVE, for coordinating all aspects of the evaluation visit by the team of experts, and for addressing any deficiencies noted. The Internal Working Group comprises the Dean's Executive Team, the Internal Liaison Officer, one representative of each of the 10 departments providing tuition at the Faculty of Veterinary Medicine, one representative of the University Veterinary Hospital, one representative of the Pilot Plant, one representative of the Rabanales University Farm (CEP-FAVE), one representative of the Research Results Transfer Office (OTRI), one representative of the Rabanales Campus, one representative of the teaching staff, one representative of the administrative and service personnel (PAS) and two student representatives.
- 4. The Working Group for Monitoring the Introduction of ECTS credits** is responsible for all matters relating to the progressive adaptation of tuition to the European Higher Education Area. It comprises the Vice-Dean for Quality and the European Area, the Coordinators of each of the five years of the Degree in Veterinary Medicine, one representative of the scholarship-holders and two student representatives.

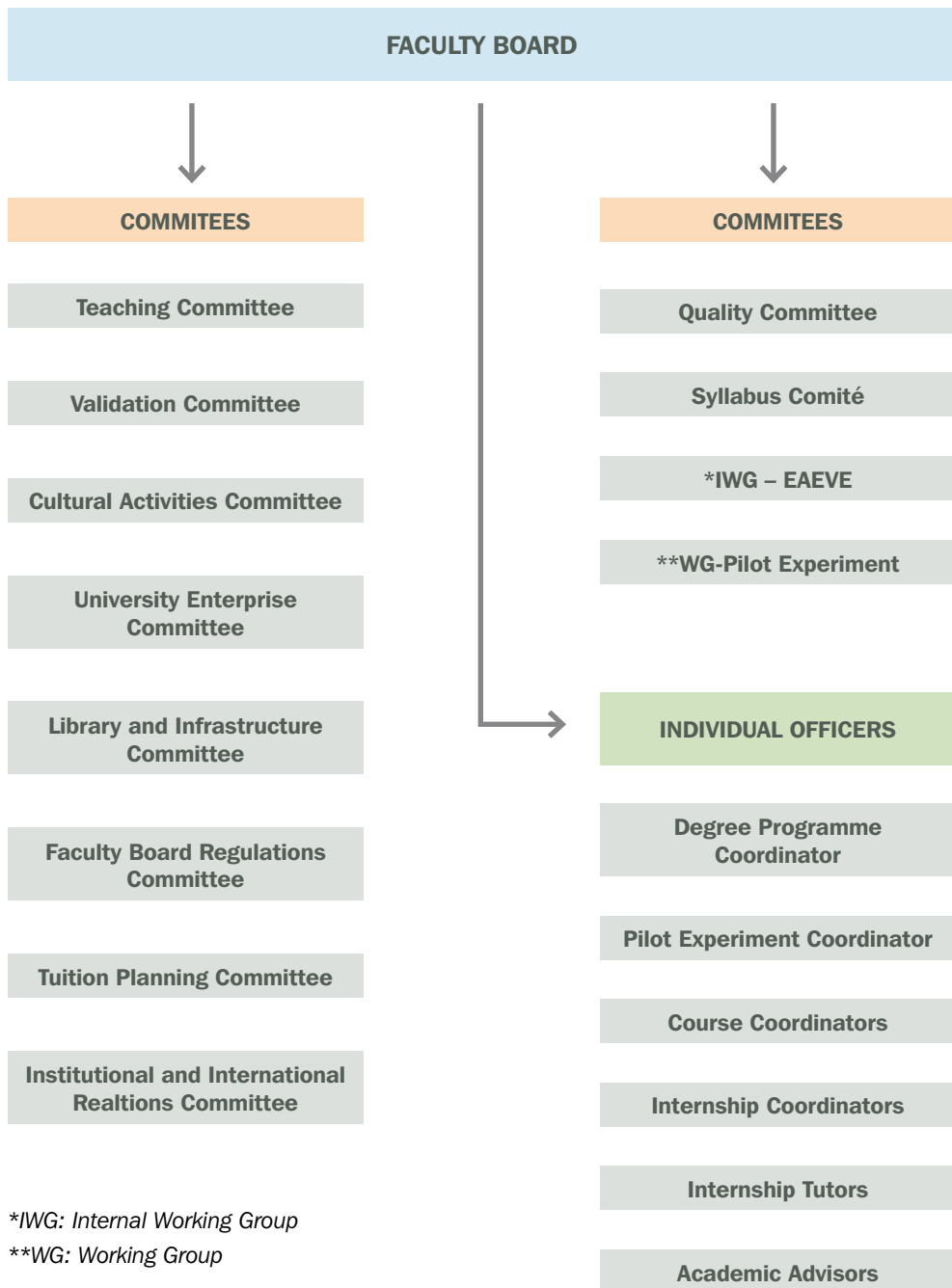
#### **2.1.2.A6. Individual officers appointed by the Faculty Board:**

Some teachers assume additional duties which are essential for the smooth running of the Faculty. They are appointed according to criteria agreed by the Faculty Board:

- **Degree Programme Coordinator:** Teacher responsible for coordinating and monitoring the compliance of course content and tuition with the established syllabus.
- **Pilot Experiment Coordinator:** Teacher responsible for directing, coordinating and supporting the introduction of new teaching technology and the ECTS credit system.

- **Course Coordinators:** Five teachers – one for each academic year – whose job is to coordinate and schedule classes and practical sessions for their year.
- **Internship Coordinator:** Teacher responsible for scheduling, coordinating and expanding internship options (preprofessional practice periods) for students, in public and private companies, and for coordinating the work of academic tutors and careers advisors.
- **Internship Tutors:** Teachers responsible for guiding the work done by the students during internships, so that they derive the greatest possible benefit from this period of preprofessional practice.
- **Academic Advisors:** The office of Academic Advisor was created recently as part of the University's strategic plan, approved in March 2007. The Academic Advisor provides advice, counselling and assistance to students on all academic matters, from their enrolment at the Faculty to the completion of their degree.





**Figure 2.5. Committees, Groups and Officers accountable to the Faculty Board**

### 2.1.2.B. DEPARTMENTS

The Departments, responsible for the teaching of one or more areas of knowledge in accordance with the University Teaching programme, enjoy a certain degree of autonomy with regard to course content, subject presentation and examinations. Each department is also responsible for coordinating the subjects taught, and for supporting teaching and research activities and initiatives developed by their staff. The Faculty of Veterinary Medicine has twelve teaching departments.

**Table 2.3. Core (C) and elective (E) subjects taught by the departments**

DEPARTMENT	SUBJECTS TAUGHT	HEAD OF DEPARTMENT
<b>Comparative Anatomy and Pathological Anatomy</b>	Embryology and Systematic Anatomy (C) Cytology and Histology (C) Neuroanatomy and Topographical Anatomy (C) General Pathological Anatomy (C) Special Pathological Anatomy (C) Applied Anatomy: Small Animals (E) Applied Anatomy: Large Animals (E) Veterinary Oncology (E)	Elena Mozos Mora
<b>Cell Biology, Physiology and Immunology</b>	Immunology (C) Animal Physiology (C) Exercise Physiology (E)	Francisco Gracia Navarro
<b>Biochemistry and Molecular Biology</b>	Biochemistry (C) Chemistry (C)	J. Antonio Bárcena Ruiz
<b>Food Sciences and Food Technology</b>	Food Technology (C) Food Control, Hygiene and Inspection (C) Food Biochemistry and Analysis (E) Meat Science and Technology (E) Introduction of the APPCC system in the food industry (E) Milk Science (E) Food Microbiology (E) Fish Technology (E)	Rafael Moreno Rojas

DEPARTMENT	SUBJECTS TAUGHT	HEAD OF DEPARTMENT
<b>Statistics, Ecometry, Operational Research and Business Organisation</b>	Mathematics (C)	José M <sup>a</sup> Caridad y Ocerín
<b>Pharmacology, Toxicology, and Legal and Forensic Medicine</b>	Pharmacology, Pharmacy and Therapeutics (C) Ethics, Legal Medicine and Veterinary Legislation (C) Toxicology(C) The Laboratory Animal (E) Livestock waste (E) Xenobiotic residues in foodstuffs of animal origin (E)	María Adela Sánchez García
<b>Physics</b>	Physics (C)	Antonio Dengra Santa-Olalla
<b>Genetics</b>	Animal Rearing and Health (C) Genetics (C) Analysis and Organisation of Genetic Controls (E) New Genetic Technologies in Animal Breeding (E) Organisation of Selection Programmes (E)	Ángeles Alonso Moraga
<b>Animal Medicine and Surgery</b>	General Pathology (C) Clinical Propedeutics (C) Radiology (C) Medical and Nutritional Pathology (C) Anaesthesiology and General Surgical Pathology (C) Obstetrics and Reproduction (C) Special Surgical Pathology (C) Behavioural Changes in Domestic Animals (E) Clinical Medicine in Horses (E)	José M <sup>a</sup> Molleda Carbonell

DEPARTMENT	SUBJECTS TAUGHT	HEAD OF DEPARTMENT
<b>Animal Production</b>	Veterinary Management (C) Animal Production and Veterinary Hygiene (C) Animal Nutrition (C) Agricultural Sciences and Economy (C) Ethology, Animal Protection and Ethnology (C) History of Veterinary Medicine (E) Extensive Livestock-Raising Systems (E) Technical Veterinary Management (E) The Fighting Bull (E) Equine Technology (E) Organic Livestock Raising and Native Breeds (E) Alternative Livestock Production Systems (E) Zootechnological Projects (E) Animal Feed Manufacture and Storage Technology (E)	Manuel Pérez Hernández
<b>Animal Health</b>	Epidemiology(C) Microbiology(C) Parasitology(C) Parasitic Diseases (C) Infectious Diseases (C) Preventive Measure and Sanitary Police (C)	Santiago Hernández Rodríguez
<b>Zoology</b>	Animal and Plant Biology (C) Aquaculture (E) Beekeeping (E)	Manuel Bustos Ruiz

Each department draws up its own rules and regulations, which must be consistent with the University Statutes. The governing bodies of the departments, as laid down in the University Statutes, are: the head of Department, the Secretary of the Department and the Department Board. Elections are carried out in accordance with the University Statutes and the Electoral Regulations. The Head of Department is elected by the Department Board, at an extraordinary meeting called for that purpose. In order to be elected in the first round, a candidate must se-

cure the majority of the votes cast by the members of the Department Board. In the second round, only on to those candidates receiving most votes in the first, the candidate obtaining the majority of votes will be elected.

#### **2.1.2.B1. Head of Department**

The Head is the supreme representative of the Department, and is responsible for its day-to-day management. In order to be eligible for the post, a candidate must be a doctorate-holding tenured lecturer at the University. The duties of the Head of Department are as follows:

- To call and chair meetings of the Department Board and establish agendas.
- To implement and enforce agreements adopted by the Board.
- To direct and coordinate departmental activities in all relevant spheres.
- To implement the departmental budget in all relevant spheres.
- To prepare an annual report on the work of the Department.

#### **2.1.2.B2. Secretary of the Department**

The Secretary of the Department is proposed by the Head of Department and appointed by the Chancellor, from amongst the non-student members of the Department Board. The remit of the Secretary is established in the University Statutes and he/she is required to undertake any other duty with which he/she is entrusted.

#### **2.1.2.B3. Department Board**

The work of the Department Board, as governing body of the Department, is bound by the dictates of the University's Governing Council, and by the decisions of the Chancellor, as laid down in the University Statutes. Its duties include:

- Drawing up the Rules and Regulations of the Department.
- Electing and dismissing the Head of Department.
- Organising and scheduling the teaching of the subjects taught by the Department.

- Preparing an annual programme of teaching, research and administrative activities
- Approving the programmes for subjects taught by the Department
- Ensuring full coverage of the syllabus and smooth coordination of teaching staff.
- Approving common criteria for student assessment.
- Administrating teaching and research funds.
- Drawing up and approving an annual report on teaching, research and administrative activities for the past academic year.
- Proposing doctoral courses and programmes and specialist Master's Degrees.
- Providing members of the Department with the resources required for the effective performance of their duties.
- The Department Board is chaired by the Head of Department, and comprises the following members:
  - Doctorate-holding members of the Department.
  - Representatives of other non-doctorate-holding teaching and research staff, and a member of each of the other groups.
  - One representative of the administrative and service personnel.
  - One student from each of the degree courses in which the Department is involved, including postgraduate courses, as laid down in the University Statutes.

Representative members of the Board hold office for a three-year period, except for student members, who hold office for only two years. Election of representatives to the Department Board is by direct vote of all the groups and sectors making up the department. Votes are cast by secret ballot. Board meetings may be held in plenary session or in constituent Committees, and may be either ordinary or extraordinary. Ordinary meetings must be held at least once every term. The quorum for a Board meeting comprises the Head of Department and the Secretary of the Department, or their substitutes, together with a minimum of 50% plus 1 of its members at first call. At second call, at least one third of Board members must be present.

### 2.1.2.C. University Teaching Hospital:

The University Teaching Hospital was founded in 1998 and is run by the University Enterprise Corporation; this provides the Faculty of Veterinary Medicine with a teaching/business link that gives students direct access to the professional and administrative aspects of a working institution. Hospital staff includes teachers from various departments, contracted veterinary surgeons, scholarship-holders and administrative/service personnel. The hospital was founded with three primary aims: to enhance the clinical training of Veterinary Faculty students; to provide high-quality specialised animal health care; and to implement research projects involving various University departments, especially Animal Medicine and Surgery. The organization of the Veterinary Teaching Hospital is shown in Figure 2.6 and Table 2.4.

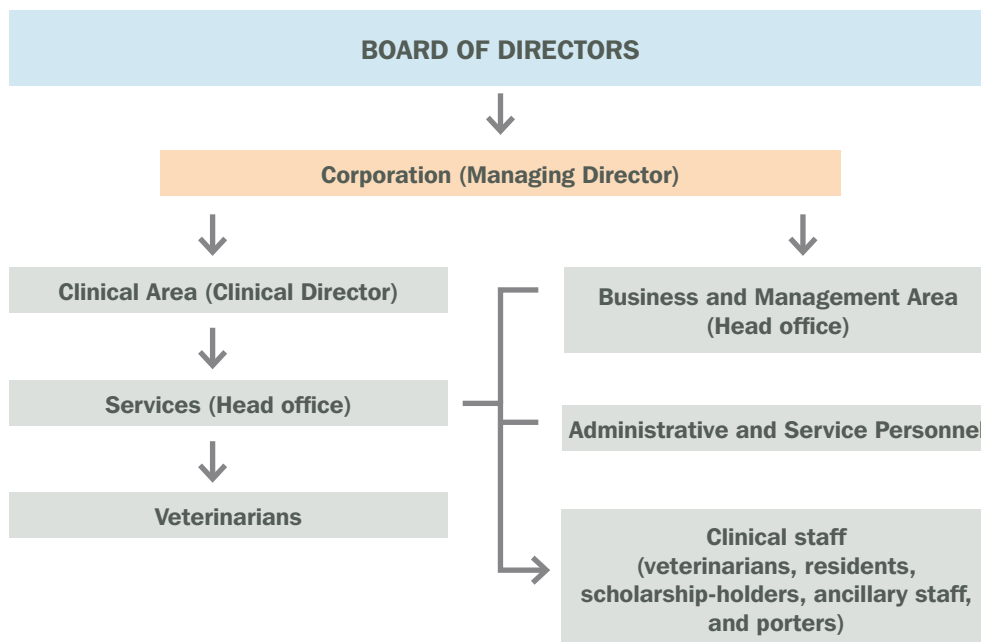


Figure 2.6. Organization of the Veterinary Teaching Hospital

**Table 2. 4. Member of the Board of Directors and Clinical Area of the Veterinary Teaching Hospital**

<b>BOARD OF DIRECTORS</b>	Chairman	Pedro Gómez Caballero
	Secretary	M <sup>a</sup> José Polo Gómez
	Managing Director	Fermín J. Cremades Márquez
	Representatives	Librado Carrasco Otero
		José M <sup>a</sup> Molleda Carbonell
Mariano Gómez Castilla		
<b>CLINICAL AREA</b>	Clinical Director	José M <sup>a</sup> Santisteban
	Clinical Committee	José M <sup>a</sup> Santisteban
		Juan Manuel Domínguez
		Rocío López Rodríguez
		Manuel Novales Durán
		Inmaculada Rodríguez Artiles
		José Carlos Estepa Nieto
		Fermín J. Cremades
Mónica Caballero Manzanares		

#### **2.1.2.D. OTHER UNIVERSITY ENTERPRISES PROVIDING SERVICES TO THE FACULTY OF VETERINARY MEDICINE**

**UCOIDIOMAS:** This company (<http://www.uco.es/empresa/ucoidiomas/>) belonging to the University provides language tuition to the Faculty and the whole University community. It was established by the University for the applied teaching of various languages. It aims to respond to the huge current demand for modern language tuition, placing emphasis on a practical and applied approach. Languages currently on offer include English, French, German, Italian, Arabic and Spanish as a Foreign Language. In addition, two years ago the Faculty of Veterinary Medicine launched a specific course of English for Veterinary Surgeons, a free-elective module providing students with an introduction to the technical/scientific English required by their future profession. This year, the course will be run jointly by UCOIDIOMAS and the Faculty of Veterinary Sciences.

**UCODEPORTES:** The Technical Sports Unit (<http://www.uco.es/empresa/ucodeporte/>) is responsible for managing the University's sports facilities, and provides a valuable service not just to the Faculty of Veterinary Medicine but to the whole University community, which has access to a wide range of sports (swimming, rugby, basketball, bea-



ch volleyball, athletics, tennis, paddle-ball, T'ai Chi, aerobics, keep-fit, sauna, gym for back exercises) both for leisure and for inter- and intra-university competitions.

*»Indicate the involvement of the veterinary profession and general public in the running of the establishment*

### **2.1.3. Centres and institutions related with the running of the establishment.**

**2.1.3.A. UNIVERSITY OF CÓRDOBA SOCIAL COUNCIL** (<http://www.consejosocialuco.org/>): The Social Council is a University collegiate governing body whose mission is to ensure that society's interests and aspirations are represented in the University, thus contributing to the development of an open University fully committed to its immediate environment and to the challenges of the future. The Social Council places emphasis on the transfer and dissemination of research and technology to industry, and seeks to encourage initiatives enabling a greater flow of knowledge between businesses, citizens and the university community, so that society as a whole can move towards a future offering greater opportunities.

**2.1.3.B. FUNDECOR** (University Foundation for the Development of the Province of Córdoba, <http://www.fundecor.es/>) was established as a means of providing veterinary students with an introduction to the working world. This non-profit-making foundation was established through an agreement between the University of Córdoba, the Córdoba Provincial Council and the Cajasur banking organisation. Its mission is to encourage dialogue and communication between the University and local businesses, and to promote all kinds of studies and research of interest to both, with a view to benefitting the province of Córdoba as a whole. Fundecor runs courses on subjects of current interest and those for which there is greatest demand. It also provides training activities enabling students to gain some understanding of the labour market.

**2.1.3.C. COLLEGES OF VETERINARY SURGEONS:** The Faculty of Veterinary Medicine maintains close links with Colleges of Veterinary Surgeons at national, regional and provincial level, thus ensuring that it always has up-to-date information on social and professional requirements. The Faculty has a permanent representative in the Official College of Veterinary Surgeons (Professor Rafael Santisteban Valenzuela), and members of the College are often asked to act as External

Advisors to the Faculty (at present, for example, Antonio Amorrinch, President of the Official College of Veterinary Surgeons, Córdoba, is acting as Advisor for the drawing up of the new syllabus).

#### **2.1.3.D. REGIONAL GOVERNMENT DEPARTMENTS, MINISTRIES**

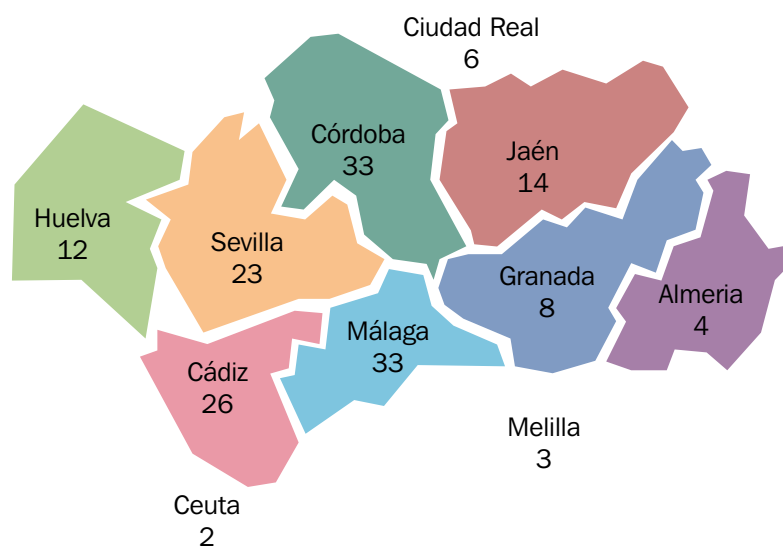
**AND OTHER PUBLIC BODIES:** The Faculty of Veterinary Medicine works with the Andalusian Regional Government Department of Agriculture, Livestock and Fisheries as an expert advisor on animal health issues, particularly in risk situations, and in joint continuing-education activities. The Dean is also a member of the joint commission on relations between the Andalusian Health Service (SAS) and the University of Córdoba. The Faculty also works with the Provincial Council (Diputación de Córdoba) on the development of livestock farming, and with the City Council (Ayuntamiento de Córdoba) on programmes designed to increase local awareness of issues relating to the welfare of pets and zoo animals.

#### **2.1.3.E. EXTERNAL PROFESSIONALS:**

A number of professional veterinarians working for public and private institutions and businesses (e.g. clinics, livestock farms, and laboratories) act as in situ tutors/supervisors to students undertaking internships, thus affording the student a valuable contact with the profession. These professional Internship Tutors are appointed annually in a purely honorary capacity, and receive no payment for their work. Additionally, the Syllabus Committee includes professional clinicians, food scientists, animal husbandry experts and government representatives (Departments of Agriculture & Livestock, and Health).

#### **2.1.3.F. COMPANIES:**

The Faculty has close links with several animal feed and medical supplies companies, including Royal Canine, Hill's, Pfizer and Elanco. It also works closely with the Pedroches Valley Agriculture and Livestock Cooperative (COVAP), which offers: (i) undergraduate internships (in slaughterhouses, lamb and calf fattening centres, feed plants, dairy farms); (ii) an official guided tour of COVAP agrofood plants for first-year students; (iii) practical classes relating to a number of subjects in the veterinary medicine degree programme (Animal Production, Preventive Medicine, Veterinary Management, Food Inspection and Hygiene); and (iv) appointment of associate University staff as company veterinarians. With a view to enhancing practical tuition, the Faculty has signed undergraduate internship agreements with a number of public institutions and private companies; the External Pre-professional Internships (EPI) features as a compulsory core subject in the degree programme. The companies involved and their location are shown in Figure 2.7 and Tables 2.5, 2.6, 2.7, and 2.8 below.



**Figure 2.7.** Number of public institutions and private companies involved in External Pre-professional Internships (EPI) practices in each province.

**Table 2.5.** List of veterinary hospitals and clinics with which the Faculty has arranged student pre-professional internships, classified by province

PROVINCE OF CÓRDOBA		
TYPE OF CENTRE	NAME	LOCATION
<b>HOSPITAL</b>	HOSPITAL CLÍNICO VETERINARIO CAMPUS DE RABANALES	Córdoba
<b>CLINIC</b>	CLINICA VETERINARIA VIANA	Córdoba
<b>CLINIC</b>	CLINICA VETERINARIA THOR	Córdoba
<b>CLINIC</b>	CLINICA VETERINARIA GRAN CAPITÁN	Córdoba
<b>CLINIC</b>	CLINICA VETERINARIA ALBEITAR	Puente Genil
<b>CLINIC</b>	CLINICA VETERINARIA COMARCAL	Pozoblanco
<b>ANIMAL CONTROL CENTRE</b>	CENTRO DE CONTROL ANIMAL SADECO	Córdoba
<b>CLINIC</b>	CLINICA VETERINARIA LA FUENSANTA	Córdoba
<b>CLINIC</b>	CLINICA VETERINARIA ALBÉITAR	Priego de Córdoba
<b>CLINIC</b>	CLINICA VETERINARIA RUTE	Rute
<b>CLINIC</b>	CLÍNICA AMBULANTE VACUNO LECHERO SERVET	Pozoblanco

PROVINCE OF SEVILLE		
TYPE OF CENTRE	NAME	LOCATION
CLINIC	CLINICA VETERINARIA VILLEN	Seville
CENTRE	CENTRO VETERINARIO LOS BERMEJALES	Seville
CLINIC	CLINICA VETERINARIA JUAN M. MEJIAS	Constantina
CLINIC	CLINICA VETERINARIA TARTESSOS	Castilleja de la Cuesta
CLINIC	CLINICA VETERINARIA GARCÍA VALLEJO	Seville
HOSPITAL	HOSPITAL EQUINO AZNALCOLLAR	Seville
CLINIC	CLINICA VETERINARIA LEPANTO	Mairena del Aljarafe
CLINIC	CLINICA VETERINARIA SAN JUAN	San Juan de Aznalfarache
CENTRE	CENTRO VETERINARIO GINES	Gines
HOSPITAL	HOSPITAL VETERINARIO CONDE BUSTILLO	Seville
CLINIC	CLINICA VETERINARIA TAIGA	Seville

PROVINCE OF JAÉN		
TYPE OF CENTRE	NAME	LOCATION
HOSPITAL	HOSPITAL VETERINARIO COLON	Linares
CLINIC	CLINICA VETERINARIA CARLOS VÁZQUEZ FERNÁNDEZ	Jaén

PROVINCE OF GRANADA		
TYPE OF CENTRE	NAME	LOCATION
CLINIC	CLINICA VETERINARIA LA RONDA	Santa Fe
HOSPITAL	HOSPITAL VETERINARIO SUR	Granada
CLINIC	CLINICA VETERINARIA OLIVARES	Granada
CLINIC	CLINICA VETERINARIA KELIBIA	Almuñecar
CLINIC	CLINICA VETERINARIA RECUERDA	Granada
CLINIC	CLINICA VETERINARIA NATURA	Salobreña

PROVINCIA DE HUELVA		
TYPE OF CENTRE	NAME	LOCATION
CENTRE	CENTRO VETERINARIO BOTELLA Y ATIENZA	Huelva
CENTRE	CENTRO VETERINARIO LA CAMPIÑA	San Juan del Puerto
CLINIC	CLINICA EQUINA JAVIER VÁZQUEZ & VETERINARIOS	Huelva
CLINIC	CLINICA VETERINARIA ISLA MASCOTA	Isla Cristina

PROVINCE OF CÁDIZ		
TYPE OF CENTRE	NAME	LOCATION
<b>CLINIC</b>	CLINICA VETERINARIA SAN ROQUE	San Roque
<b>HOSPITAL</b>	HOSPITAL VETERINARIO ÁVILA	El Puerto de Santa María
<b>HOSPITAL</b>	HOSPITAL VETERINARIO BAHÍA DE CÁDIZ	Cádiz
<b>CLINIC</b>	CLINICA VETERINARIA CUATRO PATAS	Puerto Real
<b>HOSPITAL</b>	HOSPITAL VETERINARIO ÁVILA FORNELL	Chiclana
<b>CLINIC</b>	CLINICA VETERINARIA LAS ADELFA	Jerez de la Frontera
<b>CLINIC</b>	CLINICA VETERINARIA JOSÉ M. ÁVILA	Puerto Real
<b>CLINIC</b>	CLINICA VETERINARIA VALDELAGRANA	Puerto de Santa María
<b>CLINIC</b>	CLINICA VETERINARIA PLAZA ESPAÑA	Jerez de la Frontera
<b>CLINIC</b>	CLINICA ZOOTÉCNICA JEREZANA	Jerez de la Frontera
<b>CLINIC</b>	CLÍNICA GUILLERMO GUERRERO FER-GUSSON	Jerez de la Frontera
<b>CENTRE</b>	CENTRO VETERINARIO NUEVA ANDALUCÍA	Jerez de la Frontera
<b>HOSPITAL</b>	HOSPITAL DE CABALLOS COSTA DEL SOL	Sotogrande

PROVINCE OF MÁLAGA		
TYPE OF CENTRE	NAME	LOCATION
<b>CENTRE</b>	CENTRO VETERINARIO CHURRIANA	Málaga
<b>CLINIC</b>	CLINICA VETERINARIA CAMPILLO BAJO	Antequera
<b>HOSPITAL</b>	HOSPITAL VETERINARIO LAURO	Alhaurín el Grande
<b>CLINIC</b>	CLINICA VETERINARIA ALMIJARA	Nerja
<b>CLINIC</b>	CLINICA VETERINARIA DR. NIETO	Torremolinos
<b>CLINIC</b>	CLINICA VETERINARIA ALORA	Málaga
<b>CLINIC</b>	CLINICA VETERINARIA TROYLO	Arroyo de la Miel
<b>CLINIC</b>	CLINICA VETERINARIA KOALA	Estepona
	ANIMALES ABANDONADOS DE MARBELLA /SAN PEDRO	Marbella
<b>HOSPITAL</b>	HOSPITAL VETERINARIO DE ANIMALES DE COMPAÑÍA	Málaga
<b>HOSPITAL</b>	HOSPITAL VETERINARIO BALTO	Málaga
<b>CLINIC</b>	CLÍNICA VETERINARIA PLAYAMAR	Torremolinos
	ASESORÍA VETERINARIA MALAGUEÑA	Málaga
<b>CLINIC</b>	CLÍNICA VETERINARIA CAMPANILLAS	Campanillas
<b>CLINIC</b>	CLÍNICA EQUINA	Málaga
<b>CLINIC</b>	CLÍNICA EQUINA	Ronda

PROVINCE OF MÁLAGA		
TYPE OF CENTRE	NAME	LOCATION
CLINIC	CLÍNICA VETERINARIA LA CALETA	Caleta de Vélez
CLINIC	CLÍNICA TECNIZOO	Campanillas
CLINIC	CLÍNICA VETERINARIA LAS CAMELIAS	Fuengirola
CLINIC	CLÍNICA VETERINARIA TORREBLANCA	Fuengirola
CLINIC	CLÍNICA VETERINARIA PARQUE SUR	Málaga
CENTRE	S.O.S. ANIMAL CENTRO QUIRÚRGICO Y HOSPITALARIO	Málaga
CENTRE	CENTRO GUTEMBERG	Málaga

PROVINCE OF ALMERÍA		
TYPE OF CENTRE	NAME	LOCATION
CLINIC	CLINICA VETERINARIA SANTO DOMINGO	El Ejido
CLINIC	CLINICA VETERINARIA ALBANTA	Huerca-Overa

PROVINCE OF CEUTA		
TYPE OF CENTRE	NAME	LOCATION
CLINIC	CLINICA VETERINARIA MOREY	Ceuta

PROVINCE OF MELILLA		
TYPE OF CENTRE	NAME	LOCATION
CLINIC	CLINICA VETERINARIA PINTOS	Melilla
CLINIC	CLINICA VETERINARIA ALBEITAR	Melilla

PROVINCE OF CIUDAD REAL		
TYPE OF CENTRE	NAME	LOCATION
CLINIC	CLINICA VETERINARIA VÍRGEN DE LA SIERRA II	Ciudad Real
CENTRE	CENTRO VETERINARIO ASIS	Alcázar de San Juan

**Table 2.6. List of livestock farms with which the Faculty has arranged student pre-professional internships**

Group II Livestock Centres/ Companies	Species		Activities	Location
<b>Delegation for Agricultural and Livestock Research and Development</b>	Sheep	200	Support for breeding programmes for specific sheep breeds (Reproduction)	Córdoba
	Goats	20		
	Iberian Pigs	50		
	Andalusian poultry breeds	70	Germoplasm conservation	
	Horses	20	Livestock development	
<b>ACRIFLOR (Association of "Florida" goat breeders)</b>	Goats	15,000	Genetic selection and breeding programme	Córdoba
<b>Pedroches I Health Protection Association. Córdoba</b>	Beef cattle	50,137	Activities befitting the Health Protection Association	Pozoblanco (Córdoba)
	Dairy cattle	32,735		
	Sheep	244,591		
	Goats	10,185		
	Pigs	11,243		
	Sucklings, rearing and fattening	64,877		
<b>Grupo Dehesas Cordobesas</b>	Sheep	144,789	Activities befitting the Health Protection Association	Hinojosa del Duque (Córdoba)
<b>Cooperativa Corsevilla</b>	Iberian pigs	105,000	Lamb Typing Centre	Cazalla de la Sierra (Seville)
	Sheep	18,000	Live cattle clinic	
	Goats	18,000	Marketing of animal products	
	Cows	50,000		
<b>ADS Sierra Sur de Jaén</b>	Sheep	18,000	Activities befitting the Health Protection Association.	Alcalá La Real
	Goats	100		
	Cows	17,000		
<b>Naturaves</b>	Broilers	1,200,00		Úbeda (Jaén)

Group II Lives-tock Centres/ Companies	Species		Activities	Location
<b>Ganadería San Julián</b>	Dairy Cattle	800 lactating cows	Reproduction Milk quality	Marmolejo (Jaén)
	Sheep	3,000	Management Pathology	
<b>Royal Andalusian Riding School (REAAE)</b>	Horses	60	Veterinary clinical assistance	Jerez de la Frontera (Cádiz)
<b>Cooperativa Los Remedios</b>	Sheep	40,000	Veterinary attention	Olvera
	Goats	47,000	Marketing of animal products	(Cádiz)
	Pigs	4,000		
	Beef cattle	11,000		
<b>Yeguada El Bocado (EXPASA)</b>	Horses	160 breeding mares	Reproduction Medical Pathology	Jerez de la Frontera (Cádiz)
		40 Stallions and colts of various ages	Surgery.	
<b>Jandavet</b>	Market species	10,000	Reproduction	Medina Sidonia (Cádiz)
	Fighting bulls	2,000	Healthcare Veterinary clinic	
<b>CIPSA</b>	Pigs	Around 65 hogs	Insemination centre On-farm reproductive advice	Campillos (Málaga)
<b>Piensos La Foca-Porcicultura</b>	Pigs	5 rearing farms (2,300 animals) 4 fattening centres	Integrated farm services company, i.e. the company provides the animals, the feed and the veterinary services, whilst the farmer provides premises and labour	Almería
<b>Piensos La Foca-Avicultura</b>	Poultry (Chickens)	Around 2,000,000	Integrated farm services company, i.e. the company provides the animals, the feed and the veterinary services, whilst the farmer provides premises and labour	Almería



Group II Livestock Centres/ Companies	Species	Activities	Location
<b>Albeitares 2005 SL</b>	Sheep	25.000	On-farm healthcare. Miguelturra (Ciudad Real)
	Goats	5.000	
<b>Nutevet CB</b>	Goats	20.000	Technological Management of Livestock Miguelturra (Ciudad Real)
	Sheep	60.000	
	Pigs	1.500	
	Beef cattle	7.000	
<b>A.D.S.G. La Serena</b>	Sheep	110 explotaciones	Activities befitting the Health Protection Association. Castuera de la Serena (Badajoz)
	Pigs		
	Goats	400-600 females	
	Beef cattle		
	Horses		
<b>Agroganadera Almargeña SL</b>	Pigs	Health Protection Association whose aim is to improve healthcare quality, commercial flexibility and profitability of livestock farms  Advisory service for numerous farms with between 400-600 sows.	Almargen (Málaga)

**Table 2.7. List of slaughterhouses, district health centres and food industries with which the Faculty has arranged student pre-professional internships**

TYPE DE ESTABLISHMENT	NAME	LOCATION
<b>SLAUGHTERHOUSE</b>	MATADERO PROVINCIAL	Córdoba
<b>SLAUGHTERHOUSE</b>	COVAP	Córdoba
<b>SLAUGHTERHOUSE</b>	MARTÍNEZ BARRAGAN	Fuente Palmera (Córdoba)
<b>SLAUGHTERHOUSE</b>	MATADERO INDUSTRIAL DE ANDUJAR, S.L.	Jaén
<b>SLAUGHTERHOUSE</b>	BAHÍA	Puerto Real (Cádiz)
<b>SLAUGHTERHOUSE</b>	MATADEROS INDUSTRIALES SOLER, S.A.	Cártama-Estación (Málaga)
<b>DISTRICT HEALTH CENTRE</b>	DISTRITO SANITARIO "CÓRDOBA"	Córdoba
<b>DISTRICT HEALTH CENTRE</b>	DISTRITO SANITARIO "GUADALQUIVIR"	Córdoba

TYPE DE ESTABLISHMENT	NAME	LOCATION
<b>DISTRICT HEALTH CENTRE</b>	DISTRITO SANITARIO "JAÉN"	Jaén
<b>DISTRICT HEALTH CENTRE</b>	DISTRITO ATENCIÓN PRIMARIA "SIERRA DE CÁDIZ"	Villamartín (Cádiz)
<b>DISTRICT HEALTH CENTRE</b>	DISTRITO SANITARIO COSTA DEL SOL	Marbella (Málaga)
<b>DISTRICT HEALTH CENTRE</b>	DISTRITO SANITARIO COSTA DEL SOL	Estepona (Málaga)
<b>LABORATORY</b>	LABORATORIO SAS	Córdoba
<b>LABORATORY</b>	TORCALIDAD LABORATORIO	Antequera (Málaga)
	EMPRESA DE SEGURIDAD ALIMENTARIA MELILLENSE (SEAME)	Melilla
<b>Others</b>	DGC.	Córdoba
<b>Others</b>	APLYTEC	Córdoba
<b>Others</b>	HOSPITAL CARLOS HAYA	Málaga
<b>Others</b>	CONSEJERÍA DE SANIDAD Y BIENESTAR SOCIAL	Ceuta

**Table 2. 8. District Agricultural Offices (OCAs), animal care centres, hunting grounds, animal experimentation centres, and animal health and production laboratories with which the Faculty has arranged External Pre-professional Internships (EPI)**

TYPE OF ESTABLISHMENT	NAME	LOCATION
<b>DISTRICT AGRICULTURAL OFFICE</b>	OCA Lucena	Córdoba
<b>DISTRICT AGRICULTURAL OFFICE</b>	OCA Montoro	Córdoba
<b>DISTRICT AGRICULTURAL OFFICE</b>	OCA Montilla	Córdoba
<b>DISTRICT AGRICULTURAL OFFICE</b>	OCA Baena	Córdoba
<b>DISTRICT AGRICULTURAL OFFICE</b>	OCA Vega del Guadalquivir	Posadas (Córdoba)
<b>DISTRICT AGRICULTURAL OFFICE</b>	OCA Valle del Guadiato	Peñarroya (Córdoba)
<b>DISTRICT AGRICULTURAL OFFICE</b>	OCA Pedroches I.	Pozoblanco (Córdoba)
<b>DISTRICT AGRICULTURAL OFFICE</b>	OCA Pedroches II.	Hinojosa del Duque (Córdoba)
<b>DISTRICT AGRICULTURAL OFFICE</b>	OCA La Vega de Sevilla	Cantillana (Seville)
<b>DISTRICT AGRICULTURAL OFFICE</b>	OCA Poniente de Sevilla	Sanlúcar La Mayor (Seville)
<b>DISTRICT AGRICULTURAL OFFICE</b>	OCA Los Alcores	Carmona (Seville)
<b>DISTRICT AGRICULTURAL OFFICE</b>	OCA La Campiña	Écija (Seville)
<b>DISTRICT AGRICULTURAL OFFICE</b>	OCA Campiña Sierra Sur	Osuna (Seville)
<b>DISTRICT AGRICULTURAL OFFICE</b>	OCA Sierra Norte	Cazalla (Seville)
<b>DISTRICT AGRICULTURAL OFFICE</b>	OCA Bajo Guadalquivir	Utrera (Seville)

TYPE OF ESTABLISHMENT	NAME	LOCATION
<b>DISTRICT AGRICULTURAL OFFICE</b>	OCA Serranía Sudoeste	Marchena (Seville)
<b>DISTRICT AGRICULTURAL OFFICE</b>	OCA Las Marismas	Lebrija (Seville)
<b>DISTRICT AGRICULTURAL OFFICE</b>	OCA Santisteban del Puerto	Santisteban del Puerto (Jaén)
<b>DISTRICT AGRICULTURAL OFFICE</b>	OCA Úbeda	Úbeda (Jaén)
<b>DISTRICT AGRICULTURAL OFFICE</b>	OCA Huelma	Huelma (Jaén)
<b>DISTRICT AGRICULTURAL OFFICE</b>	OCA Linares	Linares (Jaén)
<b>DISTRICT AGRICULTURAL OFFICE</b>	OCA Andújar	Andujar (Jaén)
<b>DISTRICT AGRICULTURAL OFFICE</b>	OCA Cazorla	Cazorla (Jaén)
<b>DISTRICT AGRICULTURAL OFFICE</b>	OCA Jaén	Jaén
<b>DISTRICT AGRICULTURAL OFFICE</b>	OCA La Vega	Santa Fe (Granada)
<b>DISTRICT AGRICULTURAL OFFICE</b>	OCA Aracena	Aracena (Huelva)
<b>DISTRICT AGRICULTURAL OFFICE</b>	OCA Cortegana	Cortegana (Huelva)
<b>DISTRICT AGRICULTURAL OFFICE</b>	OCA Cartaya	Cartaya (Huelva)
<b>DISTRICT AGRICULTURAL OFFICE</b>	OCA Almonte	Almonte (Huelva)
<b>DISTRICT AGRICULTURAL OFFICE</b>	OCA Puebla	Puebla (Huelva)
<b>DISTRICT AGRICULTURAL OFFICE</b>	OCA Valverde	Valverde (Huelva)
<b>DISTRICT AGRICULTURAL OFFICE</b>	OCA Palma del Condado	Palma del Condado (Huelva)
<b>DISTRICT AGRICULTURAL OFFICE</b>	OCA Jerez de la Frontera	Jerez de la Frontera (Cádiz)
<b>DISTRICT AGRICULTURAL OFFICE</b>	OCA Chipiona	Chipiona (Cádiz)
<b>DISTRICT AGRICULTURAL OFFICE</b>	OCA La Sierra	Olvera (Cádiz)
<b>DISTRICT AGRICULTURAL OFFICE</b>	OCA Medina Sidonia	Medina Sidonia (Cádiz)
<b>DISTRICT AGRICULTURAL OFFICE</b>	OCA Campo de Gibraltar	Algeciras (Cádiz)
<b>DISTRICT AGRICULTURAL OFFICE</b>	OCA DE RONDA	Ronda (Málaga)

TYPE OF ESTABLISHMENT	NAME	LOCATION
<b>ANIMAL HEALTH AND PRODUCTION LABORATORY</b>	ANIMAL HEALTH AND PRODUCTION LABORATORY	Seville
<b>ANIMAL HEALTH AND PRODUCTION LABORATORY</b>	ANIMAL HEALTH DEPARTMENT	Seville
<b>ANIMAL HEALTH AND PRODUCTION LABORATORY</b>	ANIMAL PRODUCTION AND EXPERIMENTATION CENTRE	Espartinas (Seville)
<b>ANIMAL HEALTH AND PRODUCTION LABORATORY</b>	ANIMAL PRODUCTION AND EXPERIMENTATION SERVICE (University of Granada)	Granada

TYPE OF ESTABLISHMENT	NAME	LOCATION
<b>ANIMAL HEALTH AND PRODUCTION LABORATORY</b>	ANIMAL HEALTH AND PRODUCTION LABORATORY	Aracena (Huelva)
<b>ANIMAL HEALTH AND PRODUCTION LABORATORY</b>	IAMA. ANDALUSIAN INSTITUTE OF PATHOLOGY AND MICROBIOLOGY	Málaga
<b>ANIMAL HEALTH AND PRODUCTION LABORATORY</b>	ANIMAL HEALTH AND PRODUCTION LABORATORY	Campanillas (Málaga)
<b>ANIMAL HEALTH AND PRODUCTION LABORATORY</b>	ANIMAL PRODUCTION AND EXPERIMENTATION SERVICE (University of Cádiz)	Cádiz

TYPE OF ESTABLISHMENT	NAME	LOCATION
<b>ANIMAL CARE CENTRE, HUNTING GROUND OR ANIMAL EXPERIMENTATION CENTRE</b>	SADECO Pest Control	Córdoba
<b>ANIMAL CARE CENTRE, HUNTING GROUND OR ANIMAL EXPERIMENTATION CENTRE</b>	ANDALUSIAN ORGANIC BEEKEEPING CENTRE Rábanales Campus	Córdoba
<b>ANIMAL CARE CENTRE, HUNTING GROUND OR ANIMAL EXPERIMENTATION CENTRE</b>	JEREZ ZOOLOGICAL VETERINARY CENTRE	Jerez de la Frontera (Cádiz)
<b>ANIMAL CARE CENTRE, HUNTING GROUND OR ANIMAL EXPERIMENTATION CENTRE</b>	CIFAP "El Toruño"	Puerto de Santa María (Cádiz)
<b>ANIMAL CARE CENTRE, HUNTING GROUND OR ANIMAL EXPERIMENTATION CENTRE</b>	SERRAÑÍA DE RONDA ANDALUSIAN HUNTING RESERVE	Ronda (Málaga)
<b>ANIMAL CARE CENTRE, HUNTING GROUND OR ANIMAL EXPERIMENTATION CENTRE</b>	POULTRY RECOVERY CENTRE	Villafranca de los Barros (Badajoz)
<b>ANIMAL CARE CENTRE, HUNTING GROUND OR ANIMAL EXPERIMENTATION CENTRE</b>	HUNTING RESOURCES RESEARCH INSTITUTE (IREC).	Ciudad Real
<b>ANIMAL CARE CENTRE, HUNTING GROUND OR ANIMAL EXPERIMENTATION CENTRE</b>	CERSYRA	Valdepeñas (Ciudad Real)
<b>ANIMAL CARE CENTRE, HUNTING GROUND OR ANIMAL EXPERIMENTATION CENTRE</b>	INIA (ANIMAL REPRODUCTION). Production of wild ruminants	Madrid

Legend: OCA, District Agricultural Office; CIFAP, Agriculture and Fisheries Research and Training Centre; CERSYRA, Regional Animal Breeding Centre; INIA, National Institute for Agricultural and Food Research and Technology

## **2.2. COMMENTS**

*» Add any comments on the organization and functioning of the Faculty that you feel useful for completing the description*

The University of Córdoba is a medium-sized university in terms of the Spanish university scene, with a large number of students and a moderate budget. The fact that the university is spread over four campuses gives rise to complications with regard to organisation and to the management of human and financial resources, although it also has certain advantages. The Faculty of Veterinary Medicine shares the Agrofood, Scientific and Technical Campus at Rabanales with the School of Agricultural Sciences and the Faculty of Sciences; this facilitates the joint extramural activities organised by the various student councils. The decision to establish University enterprises in order to offset the cost of certain services has been a positive development.

Córdoba has the only Faculty of Veterinary Medicine in the Autonomous Region of Andalusia. It is located in a small city at the geographical centre of the region and the majority of livestock farms are mostly located some 80 kilometres to the north of the city. Nonetheless, the Faculty enjoys a very positive relationship with local society, and has sought to enhance student access to the world of work by means of practical internships at centres throughout the region, and to encourage clinical veterinarians to take part in strategic decision-making, for example in the planning of the new syllabus.

With regard to organisational matters, it is important to highlight the fact that the Dean and the Dean's Executive Team are elected by the whole university community, and that both staff and students are actively involved in committees and other bodies. The Faculty of Veterinary Medicine has little to say in the management of the teaching resources assigned by the University, which are managed at departmental level. The departments are often made up of staff from more than one faculty; this, together with the fact that the various Deans – like the various Heads of Department and managers of University enterprises – are considered to be of the same rank and standing in terms

of their relationship with the central University governing bodies, may hinder strategic decision-making with regard to the teaching of degree programmes.

### **2.3. SUGGESTIONS**

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

Although the University's organisational structure cannot be changed, it would be useful to clarify which of the Dean's decisions should override departmental interests with regard, for example, to the appointment of staff and the assignation of teaching resources.

## Chapter 3

# FINANCES



### **3.0. FACTUAL INFORMATION**

- » *Indicate whether the Faculty's current financial model (system) meets the Faculty's mission*
- » *In addition, please specify:*
  - » *How the allocation of funding (including public funding) to the Faculty is determined, and by what body.*
  - » *If the allocation of funds, or any significant proportion of it, is linked to a particular factor (e.g. student numbers, research output), please describe this.*
  - » *How the basis for funding the Faculty compares with those teaching other courses (e.g. whether veterinary training receives a higher budget weighting compared to other disciplines).*
  - » *How the allocation of funds within the Faculty is decided.*
  - » *What are the mechanisms for funding major equipment and its replacement?*
  - » *The mechanism(s) for funding capital expenditure (e.g. building work, major items of equipment) and how decisions are taken in this matter.*
  - » *The mechanism(s) to provide the necessary support for building maintenance and how decisions are taken in this matter.*



### 3.1.1. GENERAL INFORMATION

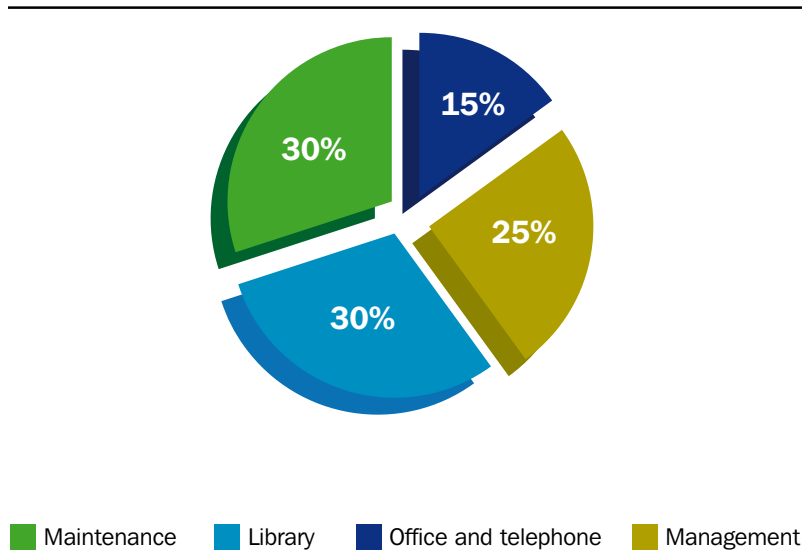
The Faculty's current financial model is imposed by the University of Córdoba, which – as a public University – depends on the funding approved by the Andalusian Regional Government Department in its annual budget. In addition to funds paid annually by the Regional Government, the Faculty also obtains income from tuition and registration fees, fees for certificates and other official documents, and from external services provided by the University, such as publications, services and events. This means that the Faculty as such does not have a budget of its own but through the departments with the exception of a small amount destined to maintenance.

The Organic Law on Universities (LOU) places strong emphasis on the economic and financial autonomy of Universities; Article 2.2h of that law recognises, in principle, the right of each University to draw up, approve and manage its own budget, and to administer its assets. Like the other University faculties, the Faculty of Veterinary Medicine operates a special system: most major items of expenditure (staff salaries and costs, services and work contracted out to external companies, maintenance, waste collection and other services) are managed and paid directly by the University's Central Services.

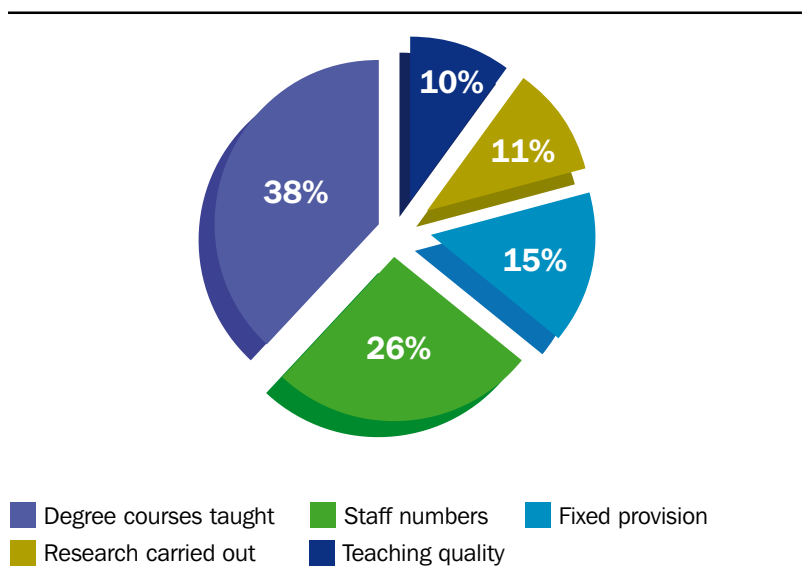
The University of Córdoba operates an annual budget, based on the calendar year (1 January – 31 December) rather than the academic year. Most of the University budget is financed by the Andalusian Regional Government. The model of distribution of funds used by the Regional Government is based largely on the number of students, staff and faculties at each of the Andalusian Universities.

As laid down in the University Statutes, the budget is drawn up by the Vice-Chancellor responsible for financial affairs (Art. 239 of the Statutes), reviewed by the Governing Council (Art. 45.22) and submitted to the Social Council for approval (Art. 34 c.); this procedure complies with the provisions of Article 14.2 of the Spanish Universities Law (LOU).

Distribution of the budget among the various University faculties and centres is based on a percentage formula reflecting four major items: maintenance (30%), library (30%), office and telephone expenses (15%) and management (25%), as shown in Figures 3.1 and 3.2.

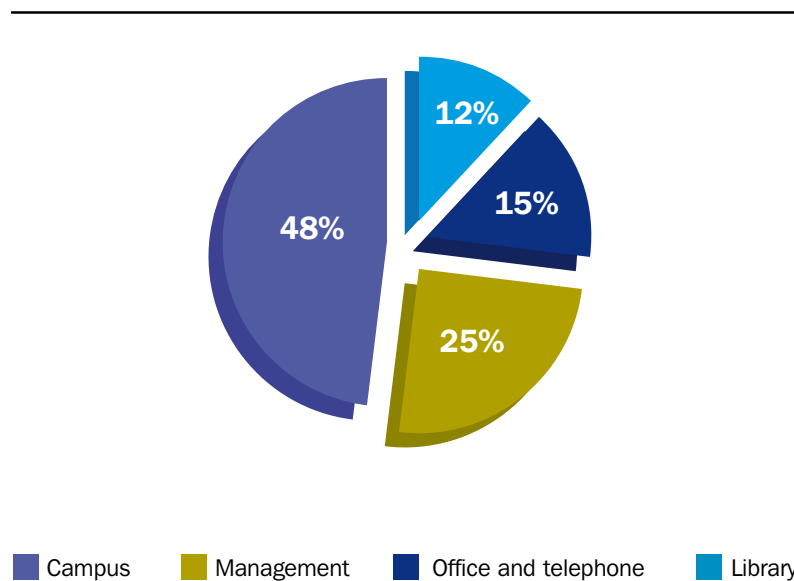


**Figure 3.1. Distribution of budget among the various University faculties and centres**



**Figure 3.2. Distribution of budget among the various departments**

Since the Faculty of Veterinary Medicine forms part of the University's agrofood campus, which comprises several faculties and centres, the portion of the budget received by the Faculty for certain items is in fact halved: the 30% assigned for maintenance and the 18% assigned for Library expenses are not received by the Faculty, since the Rabanales Campus receives specific funding from the University for this purpose, as shown in Figure 3.3.



**Figure 3.3. Distribution of the Veterinary Faculty budget**

Naturally, the repair, maintenance and purchase of infrastructure are coordinated and managed at campus level rather than at faculty level. The Faculty of Veterinary Medicine is represented on the Campus Committee, and is thus involved in decision-making on these matters. The University holds an annual review of applications for building maintenance work submitted by the faculties concerned.

### 3.1.2. Information on extra income

» *What percentage of income from the following sources does the Veterinary Teaching Faculty have to give to other bodies (university, etc)?*

- *Clinical or diagnostic work*
- *Research grants*
- *Other (please explain)*

A portion of the extra income derived from the sources listed below must be reinvested in the University, as follows:

- **Clinical Services:** The University Veterinary Teaching Hospital is run as a company whose profits are reinvested in the University.
- **Diagnostic and External Services (Article 83, LOU):** 15% of income must be reinvested in the University.
- **Research grants / projects:** 21% of income from this source is reinvested in the University to cover indirect costs.
- **Other income (Continuing Education, Diplomas, etc.):** 15% of registration fees are reinvested in the University.

» *Please indicate whether students:*

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

All students, regardless of any grants or bursaries they may be awarded to cover registration fees, are required to pay the fees established by the University. Fees for the academic year 2008/09 were 11.50 euros/credit. Student who have to retake a subject are required to pay a surcharge of between 15% and 50% of the initial fee, depending on whether it is their first, second, or third resit (average registration fee: 1000 euros/student/year).

Registration and tuition fees for higher education are established by the Andalusian Regional Government, and must lie within the limits stipulated by the Spanish Ministry of Education.

### 3.1.3. Overview of income (revenue) and expenditure

**Table 3.1. Income/Revenue**

Year	State (government)		Income generated by the Faculty			
	To University administered outside the Faculty	Direct to the Faculty	Income from services	Research	Tuition /Registration fees	Total (euros)
<b>2008</b>	121,091,000.39	7,047,000.00	842,550.02	240,757.83	1,522,000.26	130,743,308.50
<b>2007</b>	112,624,000.48	8,155,000.50	771,088.63	250,367.18	1,614,000.59	123,414,457.38
<b>2006</b>	101,177,000.80	5,611,000.32	587,950.88	492,237.87	1,535,000.30	109,403,190.17

**Table 3.2.A. Expenditure**

Year	Pay			
	Salaries			
	Teaching staff	Support staff	Research staff	Veterinary Teaching Hospital
<b>2008</b>	4,571,105.92	872,678.45	917,428.64	311,476.08
<b>2007</b>	4,440,208.02	821,156.44	1,203,804.62	263,230.88
<b>2006</b>	4,521,686.71	797,643.06	957,707.12	217,599.86

Year	Non Pay (Operating costs)			Non Pay (equipment )		
	Teaching support	Research support	Utilities	Teaching support	Research support	Utilities
<b>2008</b>	239,443.86	377,238.57	201,318.59	179,726.49	337,850.02	78,191.55
<b>2007</b>	237,042.88	431,444.20	209,600.25	171,465.63	318,149.98	51,377.21
<b>2006</b>	222,435.95	613,262.75	179,477.67	146,163.61	526,180.88	58,545.23

Year	Total expenditure (euros)
<b>2008</b>	8,086,458.16
<b>2007</b>	8,147,480.11
<b>2006</b>	7,714,521.96

### 3.2.B. Cost of veterinary training

Year	Annual direct cost of training a student (euros)	Direct cost of training for a diploma (euros)
<b>2008</b>	4,960.20	34,721.39
<b>2007</b>	4,643.63	32,505.40
<b>2006</b>	4,412.69	30,888.68

### **3.2. COMMENTS**

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

The major issues relating to the present financial situation are as follows:

#### **a) Staff**

The University’s current financial situation restricts the appointment of the new staff needed, particularly to fully cover teaching requirements.

At present, degree courses are being modified as part of the process of convergence with European Higher Education Area. Once the new syllabus has been approved, the University will have to look at the possibility of appointing additional staff.

There is a shortage of teaching support staff. Teachers often have to spend time on preparing their own teaching materials.

#### **b) Operating costs**

The budget available for tuition is insufficient, and needs to be increased, in order to provide students with high-quality practical classes. Teachers often use money obtained from various sources for research purposes to cover the cost of practical tuition.

### c) Equipment

The Faculty has no financial autonomy in matters involving equipment; there is no budget provision for equipment as such, and the departments have very little autonomy. Investment in large and medium-size equipment requires either specific funding from the University or external funding in the form of a competitive application for a grant from the national or regional government for scientific infrastructure and/or research projects.

### d) Infrastructure (Building)

The Faculty has virtually no autonomy in matters of investment in infrastructure (buildings, facilities, refurbishment), since these are dealt with at campus level rather than at faculty level. The Faculty of Veterinary Medicine is involved in decision-making on these matters, and – like all the faculties – makes annual applications for building maintenance work.

There are two chief reasons for this: first, there is no provision for building maintenance work in the budget administered directly by the Faculty; and second, according to University working regulations, these investments have to be channelled through the Vice-Chancellor for Budgets and Management.

## **3.3. SUGGESTIONS**

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

Given that the UCO depends to a high percentage on public funds, and it is therefore subject to the Contract-Programme signed with the Andalusia Government, the possibilities of relevant change are limited. Nevertheless, our principal suggestions are:

1. A model budget which within the UCO prioritises to a greater extent the experimental character of a Veterinary degree.
2. A model budget which within the UCO takes into account specific activities needed for veterinary education such as mobile clinics the maintenance of various buildings with specific characteristics (Veterinary Teaching Hospital, Farm, etc).



## Chapter IV

# **CURRICULUM**



## **4.1. FACTUAL INFORMATION**

- » *Indicate whether there is a defined national curriculum and (if applicable) how and by what body decisions are taken on this.*
- » *Describe the degree of freedom that the Faculty has to change the curriculum.*
- » *Outline how decisions on curriculum matters and course content are taken within the Faculty.*
- » *Outline how decisions are taken on the allocation of hours between the various subjects and on the balance between theoretical and practical teaching (Tables 4.1, 4.2 and 4.3).*
- » *Indicate the presence and disposition of an integrated curriculum. Describe the degree of integration present and amount of time devoted for EU- and non-EU-listed subjects (Table 4.4)*

All Higher Education studies in Spain are regulated by the Organic Law on Universities (LOU) and the Common General Guidelines on Curricula and official University Degrees valid throughout Spain, and by other laws applicable throughout the country. Following a decision by the Spanish Parliament, the centralised administration of education is gradually being devolved to the autonomous regional governments; however, the Ministry of Education (formerly the Ministry of Education and Science) retains the right to propose and implement Government policy with regard to universities, scientific research, technological development and innovation in all sectors, and is also responsible for coordinating the work of state-sponsored public research bodies. The autonomous regional governments, for example the Andalusian Regional Government, are responsible for the specific policies required for funding public universities in the region, and also for minor legislation; regional governments thus have some to say in curriculum design.

The current curriculum leading to the award of the degree in Veterinary Medicine at the University of Córdoba was officially approved by the Spanish Parliament by virtue of a Resolution passed on 26 September 1996 (published in the Spanish State Gazette, 23 October 1996), in accordance with the provisions of Royal Decree 1497/1987, of 27 November (Spanish State Gazette, 14.12.87), of the Ministry of Education, on “Common Guidelines on Curricula for official Degrees recognised throughout Spain” and subsequent amendments intended to adapt provisions to Royal Decrees 614/1997, of 25 April and 779/1998, of 30 April, via Resolutions passed on 18 November 1998 (Spanish State Gazette, 11 December 1998) and 20 December 2002 (Spanish State Gazette, 7 March 2003), once certified by the Research Committee of the Universities Coordination Council on 21 October 2002. Specifically, provisions are adapted to Royal Decree 1394/91, of 30 August, establishing the official University Degree in Veterinary Medicine and the specific general guidelines pertaining to the curricula to be completed in order to qualify for that degree, as laid down in Directive 78/1027/EEC, of 18 December 1978 (since replaced by Directive 2005/36/EU).

In accordance with the “Common General Guidelines on Curricula” (Royal Decree 1497/1987), the 1996 Curriculum is divided into two cycles. The first cycle (1st and 2nd year) covers the basic subjects and provides general training, whilst the second cycle (3rd, 4th and 5th years) is devoted to pre-specialisation and preparation for professional activity. The total study load, including practical sessions, ranges from 60 to 90 credits per academic year (1 credit equals 10 teaching hours). Course content, in both the first and second cycles, is divided into: core subjects (which must be included in all curricula leading to

the same official degree), compulsory subjects (freely established by each university) and elective subjects (chosen by the student from those offered by the University, thus allowing the flexible configuration of the curriculum). The study load, in credits, devoted to core subjects must account for a minimum of 30% of the full study load in the first cycle, and a minimum of 25% in the second cycle. Credits for elective subjects must account for no less than 10% of the total study load. The General Guidelines on Veterinary Studies (Royal Decree 1384/1991, 30 August; Spanish State Gazette, 30 September 1991) state that the study load will range from 20 to 30 hours per week, including practical sessions. A minimum of 300 credits must be obtained in order for the degree to be awarded.

More recently, new regulations have been passed, such as Royal Decree 1393/2007, of 29 October (Spanish State Gazette, 30 October 2007), defining the new regulation for Official Spanish Higher Education Studies, and replacing Royal Decree 1497/1987, and Order ECI/333/2008 (13 February; Spanish State Gazette, 15 February 2008) defining the general requirements for official university degrees entitling the holder to work as a veterinarian. The current curriculum is, therefore, is subject to ongoing review to ensure its adaptation to the new regulatory framework.

Within this new regulatory framework, a new process has been launched for the creation, modification and standardisation of university degrees. At the University of Córdoba, the newly-established Curriculum Committee is responsible for formulating a proposal to changes to the current Curriculum. That proposal will be submitted to the Faculty Board for approval. Thereafter, it will be submitted to the National Agency for Quality Assessment and Accreditation (ANECA). If this body approves the proposed changes, the proposal will be submitted to the University Governing Council and to the relevant authorities of the Andalusian Regional Government, which will issue a report on the viability and economic implications of the changes proposed. Once approved by the University and the Andalusian Regional Government, the proposal will be submitted to the University Coordination Council for final review. If it is approved, the Council will submit a positive report to the Ministry of Science, which is responsible for taking the final decision.

Although not empowered to modify the Curriculum, the Faculty enjoys a certain degree of freedom to modify individual syllabuses with a view to enhancing content coordination and integration.

Subject syllabuses are structured in accordance with Directive 36/2005/EU. There is therefore little integration of subjects, either by species (e.g. equids, cattle and small animals) or by specialism (e.g. cardiology, dermatology or neurology).

- » *“Core” subjects taken by every student.*
- » *“Electives” which each student must select from a list of permissible subjects.*
- » *Obligatory extramural work.*

### 4.1.1. Power of subjects and types of training

#### 4.1.1.A. POWER OF SUBJECT

The curriculum comprises a total study load of 403 credits (1 credit = 10 teaching hours, giving a total of 4030 hours). Core subjects (which all students must take) account for 84% (339 credits = 3390 hours) of the total; compulsory subjects freely included by the University account for 1.5% (6 credits = 60 hours); electives (designed by each Faculty) account for 4.5 % (18 credits = 180 hours); and free elective subjects (FES), chosen by the students from those offered by the university, account for 10 % (40 credits = 400 hours). The 339 credits for core subjects include obligatory extramural work. The latter is composed of 16 credits for external pre-professional internships (EPI) and 9.6 credits for practical activities of different subjects.

#### 4.1.1.B. TYPES OF TRAINING

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

The different types of training used are shown and explained in Tables 4.1 and 4.2 and their respective foot notes.

## 4.1.2. Undergraduate curriculum followed by all students

### 4.1.2.A. CURRICULUM HOURS

**Table 4.1: General table of curriculum hours taken by all students.**

Year	Hours of training							Total	
	Theoretical training		Supervised practical training				Other		
	Lecturers (A)	Seminars (B)	Self directed learning (C)	Laboratory and desk based work (D)	Non-clinical animal Work (E)	Clinical Work (F)	(G)		
<b>First</b>	325	27	23	175	32	0	53	635	
<b>Second</b>	259	53	13	160	58	16	41	600	
<b>Third</b>	332,5	29,5	3	184	24,5	51,5	50	675	
<b>Fourth</b>	336	30	19	114	55	74	17	645	
<b>Fifth</b>	362	17	46	109	61	266	34	895	
<b>Total</b>	1.614,5 (46.8%)	156,5 (4.5%)	104 (3.0%)	742 (21.5%)	230,5 (6.7%)	407,5 (11,8%)	195 (5.6%)	3.450 (100%)	
	<b>1.875 (54,3%)</b>		<b>1.380 (40%)</b>						

(B) Seminars provide theoretical tuition together with more active student involvement, on specific matters relevant to the subject syllabus.

(C) Self-directed learning includes individual tutorials and supervised group work (preparation of projects with the teacher).

(G) Other training hours include: examinations, outside field trips to farms, industries or other (non-clinical) plants, as well as unsupervised e-learning (teletuition and online learning), unsupervised self-learning, etc.

**Table 4.1.A. Core and mandatory subjects within the curriculum by year and taken by every student.**

Year	Code	Subject (Abridged English translation)	Four-month period	Total Hours	Theoretical hours	Practical hours
<b>1</b>	5308	Embryology and Systematic Anatomy	1 and 2	95	70	25
	5309	Biochemistry	1 and 2	110	60	50
	5310	Ethology, Animal Protection and Ethnology	1 and 2	90	50	40
	5311	Animal and Plant Biology	1	75	45	30
	5312	Physics	1	50	30	20
	5313	Agronomy and Agricultural Economics	2	60	30	30
	5314	Mathematics	2	50	30	20
	5315	Immunology	2	45	30	15
	20135	Chemistry	1	60	40	20
<b>2</b>	5316	Neuroanatomy and Topographical Anatomy	1 and 2	90	35	55
	5317	Cytology and Histology	1 and 2	90	45	45
	5318	Animal Physiology	1 and 2	140	80	60
	5319	Microbiology	1 and 2	100	60	40
	5320	Genetics	1	80	45	35
	5321	Parasitology	1	65	35	30
	5322	Epidemiology	2	35	25	10
<b>3</b>	5323	Animal Breeding and Health	1 and 2	95	55	40
	5324	Pharmacology, Pharmacy and Therapeutics	1 and 2	115	75	40
	5325	Animal Nutrition	1 and 2	100	55	45
	5326	Food Technology	1 and 2	130	75	55
	5327	General Pathological Anatomy	1	55	35	20
	5328	Radiology	2	45	25	20
	5329	Clinical Propedeutics <sup>1</sup>	2	55	0	55
	5330	General Pathology	1	80	45	35

Year	Code	Subject (Abridged English translation)	Four-month period	Total Hours	Theoretical hours	Practical hours
4	5331	Infectious Diseases	1 and 2	155	105	50
	5332	Parasitic Diseases	1 and 2	120	65	55
	5333	Special Pathological Anatomy	1 and 2	90	40	50
	5334	Medical and Nutritional Pathology	1 and 2	155	90	65
	5335	Anaesthesiology & General Surgical Pathology	1	70	45	25
	5336	Professional Ethics, Legal Medicine and Veterinary Legislation	2	55	40	15
5	5337	Food Hygiene, Inspection and Control	1 and 2	165	105	60
	5338	Obstetrics and Reproduction	1 and 2	130	75	55
	5339	Animal Production and Veterinary Hygiene	1 and 2	140	85	55
	5340	Toxicology	1 and 2	95	60	35
	5341	Veterinary Management*	1	60	20	40
	5342	Preventive Medicine and Health Policy	1	50	35	15
	5343	Special Surgical Pathology	2	95	45	50
	5380	Internships	1 and 2	160	0	160
<b>TOTAL</b>				<b>3450</b>	<b>1885 (54.6%)</b>	<b>1565 (45.4%)</b>

1 Credits in this subject are theoretical/practical.

\* Mandatory subject.

**Table 4.2: Curriculum hours in EU-listed subjects taken by each student. The hours allotted to the various subjects in the University of Córdoba veterinary curriculum have been adapted to the UE subject listing. Specifications are shown in the table foot notes**



Subject	Theoretical training			Supervised practical Training			Other G	Total
	Lecturers A	Se- mi- nars B	Self- direc- ted lear- ning C	Labora- tory and desk based work D	Non- clinical animal work E	Clinical trai- ning F		
<b>1.- BASIC SUBJECTS</b>								
<b>a) Physics</b>	25	5	0	15	0	0	5	<b>50</b>
<b>b) Chemistry</b>	30	5	0	20	0	0	5	<b>60</b>
<b>c) Animal biology<sup>1</sup></b>	23	0	0	13	0	0	5	<b>41</b>
<b>d) Plant biology<sup>2</sup></b>	22	0	0	12	0	0	0	<b>34</b>
<b>e) Biomathe- matics</b>	20	0	5	15	0	0	10	<b>50</b>
<b>1- Total num- ber of Hours</b>	<b>120</b>	<b>10</b>	<b>5</b>	<b>75</b>	<b>0</b>	<b>0</b>	<b>25</b>	<b>235</b>

1. Hours allotted to Animal Biology (A=23, D=13, G=5) correspond to a breakdown of the subject Plant and Animal Biology, which has a total teaching load of 75 hours, divided into 45 hours of theoretical tuition and 30 hours of practical sessions.

2. Hours allotted to Plant Biology (A=22, D=12) correspond to a breakdown of the subject Plant and Animal Biology, which has a total teaching load of 75 hours, divided into 45 hours of theoretical tuition and 30 hours of practical sessions.

Subject	Theoretical training			Supervised practical Training			Other G	Total
	Lec- turers A	Semi- nars B	Self di- rec- ted lear- ning C	Labo- ratory and desk based work D	Non- cli- nical animal Work E	Clinical Work F		
<b>2. BASIC SCIENCES</b>								
<b>a) Anatomy (including histology and embryology)<sup>3</sup></b>	143	7	0	45	65	0	15	<b>275</b>
<b>b) Physiology</b>	56	20	4	18	10	16	16	<b>140</b>
<b>c) Biochemistry, cellular and molecular biology</b>	48	5	7	50	0	0	0	<b>110</b>
<b>d) Genetics (including molecular genetics)</b>	36	0	9	20	8	0	7	<b>80</b>
<b>e) Pharmacology and pharmacy<sup>4</sup></b>	49	1	0	25	0	0	0	<b>75</b>
<b>f) Toxicology (including environmental pollution)</b>	30	0	30	35	0	0	0	<b>95</b>
<b>g) Microbiology (including virology, bacteriology and mycology)</b>	42	18	0	40	0	0	0	<b>100</b>
<b>h) Immunology</b>	21	9	0	9	0	0	6	<b>45</b>
<b>i) Epidemiology (including scientific and technical information and documentation methods)</b>	17	8	0	7	0	0	3	<b>35</b>
<b>j) Professional ethics<sup>5</sup></b>	6	0	0	3	0	0	1	<b>10</b>
<b>2- Total number of hours</b>	<b>448</b>	<b>68</b>	<b>50</b>	<b>252</b>	<b>83</b>	<b>24</b>	<b>40</b>	<b>965</b>

3. Includes hours allotted to Embryology and Systematic Anatomy (A=70, E=25, Total=95), Neuroanatomy and Topographical Anatomy (A=28, B=7, E=40, G=15, Total=90), Cytology and Histology (A=45, D=45, Total=90).

4. Includes hours allotted to Pharmacology and Pharmacy (A=49, B=1 y D=25, Total=75) as part of the subject Pharmacology, Pharmacy and Therapeutics.

5. Only includes hours allotted to Professional Ethics, as part of the subject Professional Ethics, Legal Medicine and Veterinary Legislation (A= 6, D=3 y G= 1).

Subject	Theoretical training			Supervised practical Training			Other G	Total
	Lec- turers A	Se- mi- nars B	Self di- rected lear- ning C	Labora- tory and desk based work D	Non- cli- nical animal Work E	Cli- nical Work F		
<b>3. CLINICAL SCIENCES</b>								
<b>a) Obstetrics<sup>6</sup></b>	21	2	0	0	0	17	0	<b>40</b>
<b>b) Pathology (including pathological anatomy)<sup>7</sup></b>	118	2	0	81	22,5	0	1,5	<b>225</b>
<b>c) Parasitology<sup>8</sup></b>	90	10	0	75	0	0	10	<b>185</b>
<b>d) Clinical medicine<sup>9</sup></b>	60	14	16	19	0	46	0	<b>155</b>
<b>e) Clinical lectures on various domestic animal, poultry and other animal species<sup>10</sup></b>	96	6	3	0	35	0	5	<b>145</b>
<b>f) Surgery (including anaesthetics)<sup>11</sup></b>	90	0	0	4	0	68	0	<b>162</b>
<b>h) Preventive Medicine<sup>12</sup></b>	12	1	2	2	4	1	0	<b>22</b>
<b>i) Diagnostic imaging (including Radiology)</b>	18	4	3	3	0	14	3	<b>45</b>
<b>g) Field veterinary medicine (ambulatory clinics)<sup>13</sup></b>	0	0	0	0	0	18	0	<b>18</b>
<b>j) Reproduction and reproductive disorders<sup>14</sup></b>	48	4	0	0	0	38	0	<b>90</b>
<b>k) Veterinary state medicine and public health<sup>15</sup></b>	17	1	2	6	0	0	2	<b>28</b>
<b>l) Veterinary legislation and forensic medicine<sup>16</sup></b>	34	0	0	10	0	0	1	<b>45</b>
<b>m) Therapeutics<sup>17</sup></b>	25	0	0	15	0	0	0	<b>40</b>
<b>n) Propedeutics (including laboratory diagnostic methods)<sup>18</sup></b>	0	7,5	0	0	0	37,5	10	<b>55</b>
<b>3- Total number of hours</b>	<b>629</b>	<b>51,5</b>	<b>26</b>	<b>218</b>	<b>61,5</b>	<b>236,5</b>	<b>32,5</b>	<b>1255</b>

6. Only includes hours allotted to Obstetrics as part of the subject Obstetrics and Reproduction.
7. Includes hours allotted to General Pathology (A=45, D=35, Total=80), General Pathological Anatomy (A=33, B=2, D=16, E=2.5, G=1.5, Total=55) and Special Pathological Anatomy (A=40, D=30, E=20, Total=90).
8. Includes hours allotted to Parasitology (A=35, D=30, Total=65) and Parasitic Diseases (A=55, B=10, D=45, G=10, Total=120).
9. Includes hours allotted to General and Nutritional Pathology.
10. Includes hours allotted to Infectious Diseases (A=96, B=6, C=3, E=35, G=5, Total=145), except for 10 hours included under Field veterinary medicine (ambulatory clinics).
11. Includes hours allotted to Anaesthesiology and General Surgical Pathology (A=45, D=4, F=21, Total=70) and Special Surgical Pathology (A=45, F=47, Total=92), except for 3 hours included under Field veterinary medicine (ambulatory clinics).
12. Only includes hours allotted to Preventive Medicine as part of the subject Preventive Medicine and Health Policy.
13. Includes hours allotted to ambulatory clinics under Infectious Diseases (F= 10), Preventive Medicine and Health Policy (F= 3), Special Surgical Pathology (F= 3) and Obstetrics and Reproduction (F= 2).
14. Only includes hours allotted to reproduction as part of the subject Obstetrics and Reproduction.
15. Only includes hours allotted to Health Policy as part of the subject Preventive Medicine and Health Policy.
16. Only includes hours allotted to Legal Medicine and Veterinary Legislation as part of the subject Professional Ethics, Legal Medicine and Veterinary Legislation.
17. Only includes hours allotted to Therapeutics (A=25, D=15) as part of the subject Pharmacology, Pharmacy and Therapeutics. However, treatment of the various diseases is studied as part of different subjects (Medical and Nutritional Pathology, Infectious and Parasitic Diseases, Obstetrics and Reproduction, etc.).
18. Since 2008/09, this subject is taught in practical sessions.

Subject	Theoretical training			Supervised practical Training			Other G	Total
	Lecturers A	Seminars B	Self directed learning C	Laboratory and desk based work D	Non-clinical animal Work E	Clinical Work F		
<b>4. ANIMAL PRODUCTION</b>								
<b>a) Animal Production<sup>19</sup></b>	110	5	3	43	24	0	13	<b>198</b>
<b>b) Animal Nutrition</b>	38,5	9	0	23	22	0	7,5	<b>100</b>
<b>c) Agronomy<sup>20</sup></b>	19	0	8	16	0	0	11	<b>54</b>
<b>d) Rural economics<sup>21</sup></b>	2	0	1	2	0	0	1	<b>6</b>
<b>e) Animal husbandry<sup>22</sup></b>	22.5	1.5	1	11.5	3.5	0	5	<b>45</b>
<b>f) Veterinary hygiene<sup>23</sup></b>	16	3	3	0	10	0	5	<b>37</b>
<b>g) Animal ethology and protection<sup>24</sup></b>	22.5	1.5	1	11.5	3.5	0	5	<b>45</b>
<b>4- Total number of hours</b>	<b>230.5</b>	<b>20</b>	<b>17</b>	<b>107</b>	<b>63</b>	<b>0</b>	<b>47,5</b>	<b>485</b>

19. Only includes hours allotted to Animal Production as part of the subjects Animal Production and Veterinary Hygiene (A=55, B=5, C=3, D=3, E=24, G=13) and Animal Rearing and Health (A=55, D=40, Total=95).

20. Only includes hours allotted to Agronomy (A=19, C=8, D=16, G=11) as part of the subject Agronomy and Agricultural Economics.

21. Only includes hours allotted to and Agricultural Economics (A=2, C=1, D=2, G=1) as part of the subject Agronomy and Agricultural Economics.

22. Includes hours allotted to Animal husbandry (A=22.5, B=1.5, C=1, D=11.5, E=3.5, G=5) as part of the subject Ethology, Animal Protection and Ethnology.

23. Only includes hours allotted to Veterinary Hygiene (A=16, B=3, C=3, E=10, G=5) as part of the subject Animal Production and Veterinary Hygiene.

24. Includes hours allotted to Ethology and Animal Protection (A=22.5, B=1.5, C=1, D=11.5, E=3.5, G=5) as part of the subject Ethology, Animal Protection and Ethnology.

Subject	Theoretical training			Supervised practical Training			Other G	Total
	Lec- tu- rers A	Semi- nars B	Self direc- ted lear- ning C	Laboratory and desk based work D	Non- clinical animal Work E	Clinical Work F		

## 5. FOOD HYGIENE/PUBLIC HEALTH

<b>a) Inspection and control of animal foodstuffs or foodstuffs of animal origin and the respective feedstuff production unit<sup>25</sup></b>	40	0	2	0	0	0	0	42
<b>b) Food hygiene and technology<sup>26</sup></b>	95	6	2	19	0	0	15	137
<b>c) Food science including legislation<sup>27</sup></b>	34	0	1	8	0	0	0	43
<b>d) Practical work (including practical work in places where slaughtering and processing of foodstuffs takes place)<sup>28</sup></b>	0	0	0	43	18	0	12	73
<b>5- Total number of hours</b>	169	6	5	70	18	0	27	295

25. Only includes hours allotted to Food Inspection and Control (A=40, C=2) as part of the subject Food Hygiene, Inspection and Control, except for hours devoted to slaughterhouses (E=10) and processing of foodstuffs (E= 8).

26. Includes hours allotted to Food Hygiene as part of the subject Food Hygiene, Inspection and Control (A=30, C=2), and hours allotted to Technology as part of the subject Food Technology (A= 65, B=6, D=19 y G=15).

27. Includes hours allotted to Food Sciences as part of the subject Food Hygiene, Inspection and Control (A=30, C=1) and hours devoted to Food Sciences as part of the subject Food Technology (A=4, D=8).

28. Includes hours allotted to slaughterhouses and other food-processing establishments as part of the subject Food Hygiene, Inspection and Control (D= 43, E=18) and hours devoted to food processing as part of the subject Food Technology (G=12).

Subject	Theoretical training			Supervised practical Training			Other G	Total
	Lec- tu- rers A	Semi- nars B	Self directed learning C	Labo- ratory and desk based work D	Non- clinical animal Work E	Cli- nical Work F		
<b>6. PROFESSIONAL KNOWLEDGE</b>								
<b>a) Practice ma- nagement<sup>29</sup></b>	0	0	0	0	0	160	0	160
<b>b) Veterinary certification and report writing<sup>30</sup></b>	18	1	1	20	10	0	10	60
<b>c) Career plan- ning and oppor- tunities<sup>31</sup></b>	0	0	0	0	0	0	0	0
<b>6- Total number of hours</b>	18	1	1	20	10	160	10	220

29. These hours are listed under Internships.

30. Includes hours allotted to the subject Veterinary Management (A=18, B=1, C=1, D=20, E=10, G=10, Total=60).

31. Not included in the curriculum.

Hours devoted to self-learning and/or unsupervised group work are not included, since these are clearly very difficult to estimate. Since 2007/08, the Veterinary Medicine degree course has been involved in a pilot programme aimed at adapting to the European credit system ECTS; the programme enjoys the institutional support of the Chancellor's Office through the Vice-Chancellor for the EHEA and Grade Studies. A major component of this process is the adoption of a student-centred learning model and the formulation of proposals on modularity and transversality of university subjects. The introduction of the European Credits Transfer System (ECTS) has meant changes in teaching/learning systems; the student is required to adopt a new way of learning, becoming actively involved in his own training and developing skills adapted to future professional needs. The acquisition of these generic and specific skills should be stressed throughout the degree course, and requires coordination of the various subjects comprising the degree. The pilot programme was launched with first year students in 2007/08, and has been extended since then: to the 2nd year in 2008/09 and the 3rd year in 2009/10. The Vice-Chancellor

proposed the appointment of a Pilot Programme Degree Coordinator, responsible for ensuring that tuition is properly coordinated and for encouraging excellence and innovation in university teaching. Estimated time allotted by students to examinations, e-learning and self-learning is included in section C or G.

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

Subject	Theoretical training			Supervised practical Training			Other G	Total	
	Lec- turers A	Semi- nars B	Self direc- ted lear- ning C	Labo- ratory and desk based work D	Non- cli- nical animal Work E	Cli- nical Work F			
<b>Code</b>	<b>FIRST CYCLE</b>								
	<b>Basic subjects</b>								
<b>5346</b>	Analysis and organisation of genetic controls	15	0	0	30	0	0	0	<b>45</b>
	<b>Basic sciences</b>								
<b>5344</b>	Aquaculture	20	5	0	8	6	0	6	<b>45</b>
<b>5347</b>	Beekeeping	15	3	2	6	15	0	4	<b>45</b>
	<b>Clinical sciences</b>								
<b>5345</b>	Changes in domestic animal behaviour	20	7	0	0	0	11.5	6.5	<b>45</b>
	<b>Animal production</b>								
<b>5350</b>	Extensive livestock systems	10	5	0	0	7	0	23	<b>45</b>
	<b>Professional Knowledge</b>								
<b>5348</b>	History of Veterinary Medicine	31.5	7	0	0	0	0	6.5	<b>45</b>
	<b>1- Total number of hours</b>	<b>111.5</b>	<b>27</b>	<b>2</b>	<b>44</b>	<b>28</b>	<b>11.5</b>	<b>46</b>	<b>270</b>



Subject	Theoretical training			Supervised practical Training			Other	Total	
	Lec-turers A	Semi-nars B	Self direc-ted lear-ning C	Labo-ratory and desk based work D	Non-cli-nical animal Work E	Cli-nical Work F			
<b>Code</b>	<b>SECOND CYCLE</b>								
<b>Basic sciences</b>									
<b>5351</b>	Applied ana-tomy: small animals	30	0	0	2	0	13	0	<b>45</b>
<b>5352</b>	Applied ana-tomy: large animals	30	0	0	3	0	12	0	<b>45</b>
<b>5357</b>	The laboratory animal	20	5	5	0	15	0	0	<b>45</b>
<b>5358</b>	Exercise Phy-siology	20	2	0	5	10	0	8	<b>45</b>
<b>Clinical sciences</b>									
<b>5355</b>	Medical & Clinical exa-mination in horses	20	7	0	0	0	15	3	<b>45</b>
<b>5361</b>	Veterinary On-cology	13	2	0	15	0	5	10	<b>45</b>
<b>Animal production</b>									
<b>5364</b>	Veterinary technical ma-nagement	13	1	1	4	9	0	17	<b>45</b>
<b>5365</b>	The fighting bull	15	0	10	0	20	0	0	<b>45</b>
<b>5366</b>	Horse hus-bandry	15	0	10	0	20	0	0	<b>45</b>
<b>5367</b>	Organic lives-tock farming and native breeds	10.5	1.5	0	11	9.5	0	12.5	<b>45</b>
<b>5368</b>	New genetic techniques in animal breeding	20	0	0	25	0	0	0	<b>45</b>
<b>5369</b>	Organisation of breeding schemes	20	0	0	25	0	0	0	<b>45</b>

	Subject	Theoretical training			Supervised practical Training			Other	Total
		Lec-turers A	Semi-nars B	Self direc-ted lear-ning C	Labo-ratory and desk based work D	Non-cli-nical animal Work E	Cli-nical Work F		
<b>5370</b>	Alternative livestock-far-ming systems	15	0	0	0	30	0	0	<b>45</b>
<b>5371</b>	Animal husbandry projects	13	1	1	12	6	0	12	<b>45</b>
<b>5372</b>	Livestock farm waste	10	10	10	0	0	0	15	<b>45</b>
<b>5373</b>	Feed ma-nufacture and storage technology	10.5	1.5	0	21	0	0	12	<b>45</b>
<b>Food Hygiene/ Public Health</b>									
<b>5376</b>		30	0	0	10	0	0	5	<b>45</b>
<b>5377</b>	Xenobiotic residue in fo-ods of animal origin	0	10	20	15	0	0	0	<b>45</b>
<b>5378</b>	Fish techno-logy	20	5	5	10	0	0	5	<b>45</b>
<b>15650</b>	Meat science and techno-logy	25	5	0	10	0	0	5	<b>45</b>
<b>15651</b>	Milk science	26	4	0	10	0	0	5	<b>45</b>
	1- Total num-ber of hours	376	55	62	178	119.5	45	109.5	<b>945</b>
	<b>TOTAL</b>	<b>487.5</b>	<b>82</b>	<b>64</b>	<b>222</b>	<b>147.5</b>	<b>56.5</b>	<b>155.5</b>	<b>1215</b>

\* In addition to the subjects shown in Table 4.3., offered for the academic year 2009/10, the curriculum includes other subjects offered in recent years (Introduction to Human Food and Feeding, Pathological Anatomy of Wild and Exotic Species' Diseases, Advances in Breeding, Veterinary Dermatology, Microbiological and Immunological Methods in Veterinary Medicine, Veterinary Ophthalmology, Equine Podiatry, Emergencies and Intensive, Biochemistry and Food Analysis, and Implementation of the APPCC System in the Food Industry).

» *The inherent nature of an elective is, that students make a distinction and select. However, the total number of hours to be taken by each student out of the various subject groups should be stated. Where a Faculty runs a “Tracking system” this should be indicated when completing Table 4.3. Separate tables should be provided for each track, e.g. Table 4.3a: Curriculum hours in EU-listed subjects to be taken in the “equine medicine track”.*

The first cycle covers 36.5% of all core subjects (123.5 credits), 25% of optional subjects (4.5 credits) and 60% of free electives (24 credits). In order to enter the second cycle, students must have passed a minimum of 75% of the core credits for the first cycle (93 credits).

The second cycle covers 63.5% of all core subjects (215.5 credits); this includes 16 credits for practical internships, accounting for a study load of 160 hours (1 credit = 10 hours). To be able to take part in “Internship”, a core subject, students must have passed a minimum of 189 core credits (55.75% of the total core credits for the degree course). In many cases, students have taken the “Internship” subject during the University vacation in the 5th year, so that internship does not interfere with in-term theoretical tuition and practical training.

Students are only allowed to enrol for certain subjects once they have passed other specific subjects: for example, students can only take “Neuroanatomy and Topographical Anatomy” once they have passed “Embryology and Systematic Anatomy”; similarly, they can only take the core subject “Medical and Nutritional Pathology” once they have passed “General Pathology”, and they can only study “Special Surgical Pathology” once they have passed “Anaesthesiology and General Surgical Pathology”.

In the case of optional subjects and free electives, the ratio of theoretical tuition to practical training depends on the type of subject involved; for example, the credits for the free elective “Animal Handling”, offered to first-year students, are entirely practical. Moreover, the Faculty offers a full programme of Vacation Practicals, in which all credits – recognised as free elective credits – are practical in nature.

In order to make up the total number of credits required by the syllabus, students are allowed to choose elective subjects accounting for a total

of 18 credits (180 hours). These electives are distributed as follows: 4.5 credits (45 hours) in the first cycle and 13.5 credits (135 hours) in the second cycle, of which 9 credits (90 hours) must be taken in the 4th year and the remaining 4.5 credits (45 hours) in the 5th year.

There is no defined “tracking system”, but electives are classed as first- or second-cycle subjects; second-cycle subjects are grouped in three “tracks”: “Animal Health and Medicine”, “Animal Production” and “Food Sciences & Food Technology”. Whilst there are no defined specialisms, students often have a clear orientation as to the various fields in which a veterinarian works. Basic Elective Subjects are classified as “Others”. Students can choose freely from amongst the elective subjects on offer. In accordance with University rules, and with the provisions of the Rules on Academic Regimes (Article 85), the total number of elective subjects must comply with the maximum ratio requirement of 3:1, and the Faculty must offer at least twice as many elective subjects, in terms of credits, as those which the student must complete. In other words, for every elective credit that the student must complete, the Faculty must offer between 2 and 3 possibilities.

Free electives vary in nature, with a view to enabling the student to complete his studies in his/her chosen area of interest. The aim is to ensure flexible configuration of the curriculum. The student may complete his full complement of credits by choosing subjects from those made available each year by the University, on the advice of the various Faculties and centres. Electives may also include participation in activities organised by the University – cultural, sporting, union-related, voluntary, charitable or others – as long as they are recognised for this purpose by the University Governing Council. This recognition is granted to the following activities: university studies, pre-professional practical internships in companies or institutions, participation in transversal skills-related programmes and other activities organised by the University or outside bodies, in accordance with the Rules on Academic Regimes. The University has formulated its own rules in this respect ([http://www.uco.es/estudios/sep/libre\\_eleccion/normativa/](http://www.uco.es/estudios/sep/libre_eleccion/normativa/)).

In order to complete the full requirement of credits for the syllabus, each student must choose a total of 40 credits (400 hours) in the form of Free Electives or optional subjects. These are distributed as follows: 24 credits (240 hours) in the first cycle and 16 credits (160 hours) in the second cycle. In the first cycle, electives are distributed between the 1st and 2nd years (12 credits per year). In the second cycle, 12 credits are to be taken in the 3rd year and 4 credits in the 4th year).

Table 4.4 lists the subjects offered by the Faculty of Veterinary Medicine and its Departments for the academic year 2009/2010.

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

Code	Subject	Theoretical training			Supervised practical Training			Other G	Total
		Lec-tu-rers A	Se-mi-nars B	Self di-rec-ted learning C	Labo-ratory and desk based work D	Non-clinical animal Work E	Clinical Work F		
<b>5381</b>	Animal husbandry, animal genetic resources and feeding regimes	10	5	5	5	-	-	5	30
<b>2572</b>	Transgenesis	20	8	-	-	-	-	2	30
<b>2551</b>	The horse in sport: equestrian uses	20	-	-	-	-	-	10	30
<b>2559</b>	Chromosomes in domestic animals	15	10	-	8	-	-	7	40
<b>2562</b>	Physiology and pathology of the fighting bull	10	5	-	15	-	-	-	30
<b>2570</b>	Genetics in pets	28	-	-	-	-	-	2	30
<b>2578</b>	Domestication and historical development of horse breeding	25	-	-	-	-	-	5	30
<b>2579</b>	Animal physical therapy and rehabilitation	14	4	-	-	-	10	2	30
<b>2580</b>	Animal genetic resources as the basis for rural development and protection of the environment	25	3	-	10	-	-	2	40
<b>15647</b>	Animal husbandry practices <sup>1</sup>	1	-	-	-	44	-	-	45
--	Comparative embryology (Andalusian Virtual Campus)	-	-	60	-	-	-	-	60

\* In addition to the subjects listed in Table 4.4., considered Specific Free electives, others listed in Table 4.3 as optional subjects are also offered as Elective subjects (*Exercise Physiology, Food Microbiology and Meat Science and Technology*).

(1) Included as an available free elective, this subject is compulsory for all new students, and comprises mainly practical credits.

### 4.1.3. Further information on the curriculum

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

From the Chancellor's Office downwards, all Faculty bodies are currently making a major effort to promote new teaching methods, providing greater scope for self-learning or learning based on problem-solving. Moreover, the intake of new students has been restricted; in the last few years, the intake has dropped from 250 to 150/year, thus improving the staff/student ratio both for clinical and non-clinical subjects. For experimental classes, the maximum number of students is 12. Much is also being done to encourage the use of the University of Córdoba Virtual Platform and the Andalusian Virtual Campus (which contains a number of subjects for the Veterinary Medicine curriculum, including "Comparative Embryology" and "Basic and Applied Immunology"); at the same time, steps are being taken to enhance teaching quality (creations of Teacher Groups, annual Teaching Quality Improvement Projects, grants for Teaching Activities, Academic Advisory Services). A particular effort is being made in the area of animal welfare; the Faculty is working closely with the University Experimental Farm and the Central Experimental Animal Service to instil a culture of respect for, and protection of, animals.

The subject matter of each course is decided on by the staff responsible, but both course content and timetabling are reviewed by the Faculty Teaching Committee, and ultimately by the Faculty Board. The Teaching Committee is responsible for supervising all general academic matters, including teaching performance, reports on teaching quality, supervision of teacher quality; the Committee also submits proposals to the Faculty Board regarding recognition of free electives and other related matters. Although the Committee is not obliged to meet at stipulated intervals, it generally meets whenever there is a matter requiring its attention; meetings are usually held once per term.

The Curriculum Committee has a proposal for a new Curriculum which is pending of approval by the Faculty Board.

Since 2007/08, the Veterinary Medicine degree has been part of the Pilot Experiment intended to adapt Spanish degrees to the European Higher Education Area (EHEA). This year, 3rd-year courses have been included, together with some subjects from 4th and 5th year. The new teaching method is gradually being introduced for all subjects, placing special emphasis on the study load, the teaching load, and the need for both coordination and motivation when drawing up new teaching guidelines to reflect the newly-introduced teaching methods.

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

According to the University regulations, attendance to all academic activities is compulsory. However, attendance at theoretical lectures is not monitored or checked in most subjects. Some teachers voluntarily operate their own systems for checking attendance. Attendance at practical classes, by contrast, is also compulsory for most subjects, and is checked, usually by the student signing the register.

Finally, with a view to coordinating teaching, the Faculty Board appoints practical coordinators for each year of the five years of the Veterinary Medicine degree course.

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

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

The type of practical clinical training provided under the heading “Clinical Work”, in which student participation is strictly hands-on, may be classified as follows:

**4.1.3.A. Standard practical clinical training:** includes working with live animals, with healthy animals for clinical purposes, with organs and various types of clinical material, with individual animals and herds/flocks for diagnostic purposes, and with organic systems and cadavers in order to learn methods of examination and surgical techniques (e.g. suturing, handling anaesthetic equipment, approaches to surgical techniques and laboratory work). The various kinds of standard practical training are shown in Table 4.5.



Table 4.5. Standard practical training

Subject	Year	Four-month period	Content	N° of students/Group	Hours per group
<b>Animal Physiology</b>	2nd	1 & 2	<ul style="list-style-type: none"> <li>• Taking the temperature of horses, dogs, small ruminants and pigs (2 hours).</li> <li>• Taking the pulse of horses, dogs and pigs (2 hours)</li> <li>• Heart sounds in horses, dogs, goats and pigs (2 hours).</li> <li>• Respiratory sounds in horses, dogs, goats and pigs (2 hours).</li> <li>• Electrocardiography in horses and dogs. -Genital-tract ultrasonography in mares (2 hours).</li> <li>• Rectal examination in cows (2006/07 and 2007/08, 2 hours).</li> <li>• Semen extraction in rams (2 hours).</li> <li>• Laboratory work: Blood tests (complete blood count) in ruminants and horses (2 hours)</li> </ul>	20	16
<b>Radiology</b>	3rd	2	<ul style="list-style-type: none"> <li>• Basic principles and techniques for producing high-quality radiographs, and regulations for radiation protection<sup>1</sup>.</li> <li>• Operation of X-ray equipment and image-processing techniques. Principles of interpreting radiographs in horses and small animals<sup>2</sup>.</li> </ul>	25 <sup>1</sup> /12 <sup>2</sup>	14

Subject	Year	Four-month period	Content	Nº of students/Group	Hours per group
<b>Clinical Propedeutics</b>	3rd	2	<b>Small Animals:</b> <ul style="list-style-type: none"> <li>• Clinical record, history-taking, general examination (2.5 hours).</li> <li>• Examination of the digestive tract in small animals (2 hours).</li> <li>• Examination of the heart and lungs (4 hours).</li> <li>• Examination of the urinary tract (1.5 hours).</li> <li>• Neurological examination (2 hours).</li> <li>• Eye examination (2 hours).</li> <li>• Blood sampling in various species: material, handling and techniques (2 hours).</li> </ul>	12	37.5
			<ul style="list-style-type: none"> <li>• Examination of skin and endocrine system (2 hour).</li> <li>• Laboratory work: Interpreting smears; microscopic examination of skin lesions. (2 hours).</li> </ul>	8	
			<b>Large Animals:</b> <ul style="list-style-type: none"> <li>• Pre-purchase examination of horses: Clinical history, identification, history taking (2 hours).</li> <li>• General examination of horses: assessment, external inspection by anatomical regions (2 hours).</li> <li>• Examination of the equine digestive tract and abdominal cavity (2.5 hours).</li> <li>• Examination of equine heart and lungs (2.5 hours).</li> <li>• Examination of equine locomotor apparatus (1.5 hours).</li> <li>• Examination of small ruminants and pigs (3.5 hours).</li> <li>• Examination of large ruminants: (3.5 hours).</li> </ul>	12	

Subject	Year	Four-month period	Content	N° of students/Group	Hours per group
<b>Anaesthesia and General Surgical Pathology</b>	4th	1	<ul style="list-style-type: none"> <li>• Anaesthesia: equipment and monitoring (4 hours).</li> <li>• Anaesthesia in horses (3 hours).</li> <li>• Anaesthesia in dogs (4 hours).</li> <li>• Anaesthesia in rabbits (2 hours).</li> <li>• Clinical cases: anaesthesia (2 hours).</li> <li>• Suturing (2 hours).</li> <li>• Surgery preparation (2 hours).</li> <li>• Sterilisation of surgical material (2 hours).</li> </ul>	6	21
<b>Special Surgical Pathology</b>	5th	2	<ul style="list-style-type: none"> <li>• Anaesthetic technique and surgical technique (ovariohysterectomy and orchidectomy in dogs and cats). Hospitalisation, postoperative period and post-op cleansing.</li> </ul>	3	32

Subject	Year	Four-month period	Content	Nº of students/Group	Hours per group
<b>Obstetrics and Re-production</b>	5th	1 & 2	<p><b>Large Animals Unit. Equine reproduction:</b> 6 hours.</p> <ul style="list-style-type: none"> <li>•Clinical evaluation of the male reproductive tract; sperm collection and assessment, dilution and frozen storage; artificial insemination (4 hours).</li> <li>•Diagnosis of gestation in mares by rectal palpation and ultrasonography. Foetal viability, identification of foetal structures, foetal stress signs and associated pathologies (2 hours).</li> </ul> <p><b>Small Animals Unit. Canine reproduction:</b> 6 hours.</p> <ul style="list-style-type: none"> <li>•Clinical evaluation of the male reproductive tract; sperm collection and assessment, dilution and frozen storage; artificial insemination (vaginal and intrauterine) (4 hours).</li> <li>•Clinical evaluation of the female reproductive tract. Exfoliative vaginal cytology in the bitch. Diagnosis of gestation in dogs by ultrasonography. Foetal viability and number of embryos/foetuses, identification of foetal structures, foetal stress signs and associated pathologies (2 hours).</li> </ul> <p><b>University Experimental Farm. 8 hours.</b></p> <p>Reproduction in small ruminants (4 hours):</p> <ul style="list-style-type: none"> <li>•Control of heat, including induction and synchronisation, identification of signs of heat in goats and sheep, and of the ideal time for servicing or insemination (2 hours).</li> <li>•Diagnosis of gestation at 35 days by ultrasonography (2 hours).</li> </ul> <p>Reproduction in pigs (4 hours):</p> <ul style="list-style-type: none"> <li>•Control of heat, including induction and synchronisation, identification of signs of heat in sows, and of the ideal time for servicing or insemination, handling of animals during second mating and natural servicing (2 hours).</li> <li>•Diagnosis of gestation by ultrasonography at 25 days (2 hours).</li> </ul>	6	20
<b>TOTAL</b>					<b>140.5</b>

#### **4.3.1.B. ATTENDANCE AT CLINICS:**

Includes clinical work with individual patients at the Veterinary Teaching Hospital, where students are involved real clinical cases.

Although strictly speaking the clinical training is not organised in rotations, student practical work is supervised at all times by the teaching staff responsible for the subject concerned, and takes place at the Veterinary Teaching Hospital, at the University Experimental Farm and on other partner farms, with the help of veterinary residents, student interns or veterinarians, who act as associated lecturers (part time).

At the Veterinary Teaching Hospital, hands-on clinical activity by the students includes dealing with small animals (dogs and cats), large animals (horses) and exotic species: students are actively involved in the examination, diagnosis and treatment of patients. As part of the subjects Anaesthesiology and General Surgical Pathology and Special Surgical Pathology, and in addition to the 53 hours of standard practical training described under Standard Practical Clinical Training, students are also involved in assistance clinical practical training at the Veterinary Teaching Hospital. These activities include clinical attention for small animals (dogs and cats), large animals (horses) and exotic species. Students are divided into groups of 6, two groups receiving simultaneously a fortnight's practical training; one under the supervision of a lecturer in anaesthesiology and the other under that of a lecturer in surgery. Student take part in the examination, diagnosis and surgical treatment of patients referred to the Veterinary Teaching Hospital (15 hours).

As part of the subject Medical and Nutritional Pathology, students take part in Medical Pathology consultations at the Veterinary Teaching Hospital with a total of 46 hours. The student helps the teacher to record the patient history and carry out all the procedures involved in basic physical examination and laboratory testing (e.g. diagnostic imaging, electrodiagnosis, laboratory diagnosis) of the animal in question. Once in possession of all the information on the patient, the student and the teacher discuss the case in order to arrive at a diagnosis, develop a prognosis and decide on the most suitable treatment. Similarly, in those clinical cases where hospitalisation is recommended, the student is involved in the daily monitoring of vital signs, additional in-patient diagnostic procedures, and the administration of hygiene/diet-based treatment as well as any medical treatment.

In Obstetrics and Reproduction, clinical assistance at the Veterinary Teaching Hospital is part of the Breeding Service, which comprises two separate units:

1. Large Animal Unit: During these sessions, students complete their training in equine reproduction with clinical care (17 hours) including:
  - Evaluation of reproductive status in mares and stallions (sick and healthy animals): rectal palpation and ultrasonography.
  - Reproductive Pathology.
2. Small Animal Unit: During these sessions, students complete their training in canine reproduction with clinical care: (16 hours) including evaluation of the prostate and testicles (sick and healthy animals) by digital palpation and ultrasonography, evaluation of uterus and ovaries (sick and healthy animals) by ultrasonography, and attendance at parturition.

In summary, students take 94 hours of attendance at clinics activities.

#### **4.3.1.C. MOBILE CLINIC:**

Includes wholly in-the-field practical training on individual patients and herds/flocks.

Veterinary students take 13 hours of mobile clinic activities as part of the subjects Infectious Diseases, Preventive Medicine and Health Policy, Obstetrics and Reproduction and Special Surgical Pathology.

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

Prior to the commencement of clinical rotations at the Veterinary Teaching Hospital and at consultations, where they are involved in hands-on clinical activity, the students have taken part in practical sessions as part of the following subjects: Animal Physiology, General Pathological Anatomy, Radiology, Pharmacology, Pharmacy and Therapeutics and General Pathology. In these subjects, students learn how to handle animals, how to perform a clinical examination, how to administer medication, how to identify and describe tissues and lesions associated

with various diseases; they acquire familiarity with radiographic techniques, and learn how to perform and interpret laboratory tests results and the results of other diagnostic techniques (electrocardiography, ultrasonography, etc.). However, some students may not have completed all the subjects before starting their clinical training at the Veterinary Teaching Hospital. As a result, there may be certain incompatible elements in the current curriculum. To avoid this, students can only take the core subject “Medical and Nutritional Pathology” once they have passed “General Pathology”, and they can only study “Special Surgical Pathology” once they have passed “Anaesthesiology and General Surgical Pathology”.

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

Generally speaking, students enrolled in core subjects are not involved in any specific emergency and hospitalisation activities, although they take part in emergency care of hospitalised patients. Emergency and hospitalisation activities at the Veterinary Teaching Hospital are carried out by Veterinary Residents (VR). There are 8 VR, 4 for small animals and 4 for large animals. The work of the residents is coordinated by the teaching staff and the hospital management board.

Student interns work at the Veterinary Teaching Hospital on a voluntary basis, even at weekends and during vacations; their work is coordinated by the hospital itself. Around 50 student interns (4th and 5th year students) undertake rotating emergency and hospitalisation activities, under the supervision of the veterinary residents. Student involvement in emergency activities is organised in three-week blocks, with three shifts, one per week (morning, afternoon, night). Since interns are chosen every year, almost all students wishing to receive practical clinical training at the Veterinary Teaching Hospital can participate in this rotation.

Student intern rotation is influenced by the requirements of the specific subjects, but all students do a spell at the Internal Medicine, Reproduction and Surgery units, as well as being involved in hospitalisations at each unit. Students spend around two weeks in each unit, giving a total of six weeks.

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

Clinical training sessions forming part of the core subject Infectious Diseases take place on livestock farms and are aimed at giving the student first-hand experience of the daily working life of a veterinarian, and a clear idea of the practical implications of diagnosing and controlling infectious diseases. Field trips are arranged to two farms working with different species – beef or dairy cattle, sheep, goats and pigs – and various hunting grounds specialising in particular game species (rabbit, partridges, deer and boar). Visits are in groups of 5 students, and last 5 hours per farm; students are accompanied by associate lecturers (part time), working as veterinarians for Livestock Health Protection Associations. Student activities on farms include assessment of farm sanitary status, description of the main infectious diseases, the study of actual outbreaks, the treatment applied for each disease, control measures (prevention of tuberculosis, brucellosis y leukosis in cattle, vaccination programmes, etc.) and sample collection (blood, milk, etc.).

As part of the core subject Preventive Medicine and Health Policy, students are required to visit the University of Córdoba Experimental Farm, the outbuildings and the pig module, to learn about the main aspects of a biosafety protocol. This visit lasts 3 hours, and students are divided into groups of 12. Areas covered include general biosafety measures, cleansing and disinfection protocols, control of rodents and other domestic and peridomestic animals, protocols controlling the use of veterinary medicines, vaccination and deparasitation programmes, and good hygienic practice. Students are asked to note any deficiencies observed with regard to all these matters. At the end of the practical session, students work together to establish the corrective measures required to improve biosafety.

Clinical training as part of the core subject Obstetrics and Reproduction takes place on partner farms. Students take part in a reproduction-related activity – under the supervision of the lecturer and on a voluntary basis; this practical session lasts two hours, and involves rectal palpation and ultrasonography to identify anatomical structures in the cow reproductive tract, in cyclic animals and at various stages of gestation, and learning about the material and methods used in artificial insemination. Students are divided into 16 groups of 6.



Clinical training as part of the core subject Special Surgical Pathology takes place on an ambulatory basis, as shown in Table 4.2. Groups of 6 or 7 students go on a field trip – usually on Wednesdays – accompanied by a lecturer and a clinical veterinarian, who works as a part-time associate lecturer at the Faculty. Students play an active part in all the clinical activities involved in these sessions during 3 hours: examination, potential diagnosis, administering treatments, anaesthetic protocols, surgery, etc. During the academic year 2008-09, a total of 93 case histories were processed, some individually – for a patient involved in a specific clinical procedure – and others collectively, when a whole herd was to undergo the same clinical procedure. A total of 776 small ruminants and 42 horses were seen.

#### 4.1.4. Obligatory extramural work

» *These are training periods that are an integral part of the curriculum, but which are taken outside the Faculty, for instance with practitioners, on farms, or in Food Hygiene/Public Health with commercial or government organisations.*

» *Please indicate the guidelines pertaining to this activity, and the manner by which it is assessed.*

As indicated earlier, students are required to take training periods outside the Faculty; these are included as a core subject of 160 hours in the curriculum, under the generic title “External Pre-Professional Internships”, and include all the areas of knowledge covered by the syllabus. The aim of these training periods is to enable the student to gain first-hand knowledge of veterinary working practice, thus completing the basic theoretical tuition and practical training received at the Faculty.

In order to be eligible for practical internships, students must have passed 189 core credits (55% of total core credits for the degree). “Internship” is a two-year subject; once enrolled, therefore, the student can carry out internships in two successive years.

Students are required to obtain 16 credits (160 hours) through either two “internships” of 15 days each (80 hours/internship), or one 1-month internship (160 hours). The companies, institutions, services or official centres involved suggest the periods best fitted to their re-

quirements, either a fortnight or one month. Since the aim of practical training is to give the student a firsthand idea of the various sectors in which a veterinarian might work, 15-day sessions are considered more useful, in that they provide the student with more varied practical training. The timetable for internships is worked out in conjunction with the company/organisation concerned, but must add up to a total of 80 hours for each two-week internship.

Assignment of internships is based on the student's academic record, unless - in exceptional circumstances - some other method of assignment is required, of which the student will be notified in advance.

Prior to starting the internship in the allotted company/organisation, the student is required to complete an Activity Log (available from the Secretary's Office), which he/she will use throughout the internship (1 log per student). The student is also provided with guidelines regarding the drafting and the format of the final report.

Each student is assigned an Academic Tutor - one of the Faculty lecturers - whose job is to supervise and evaluate student internship reports and to assess the experience acquired, by means of a personal interview. The student is also assigned an Workplace Tutor, who acts as an honorary assistant to the Faculty; this tutor is a professional, employed by the company or organisation at which the internship takes place.

The Dean of the Faculty and the Internship Coordinator are also responsible for academic aspects of the internship.

Internships can take place at any company or organisation approved by the Faculty - under the supervision of the Internship Coordinator - for a given academic year. Proposals for internships submitted by the students themselves are not accepted.

Available internship venues include public and private centres all over Andalusia and, more rarely, elsewhere in Spain. They can be divided into four main blocks (Table 4.5.1.):

- 3.** Veterinary Hospitals and Clinics.
- 4.** Livestock farms.
- 5.** Food Sanitary Inspection bodies and Food Industries.

6. District Agricultural Offices, Veterinary Research Institutes and Centres, Zoos and Wildlife centres.

The type and number of Establishments where students can take the “External Pre-Professional Internships” core subject are the following:

Nature of work	Nº of establishments
<b>Veterinary Hospitals and Clinics</b>	77
<b>Livestock Farms (ruminants, pigs, horses, poultry</b>	19
<b>Food Sanitary Inspection bodies, Food Industries and Slaughterhouses</b>	19
<b>District Agricultural Offices, Veterinary Research Institutes and Centres, Zoos and Wildlife centres</b>	55
<b>TOTAL</b>	<b>170</b>

There are two designated internship periods in the course of the academic year, coinciding with the Christmas and summer vacations. This cores subject is thus organised with a view to ensuring that practical internships do not overlap with theoretical tuition or practical training during term time.

To guarantee the smooth functioning of the internships, the Coordinator holds tutorials during the internship periods. Before the list of available internship placements is published, informative meetings are held (in November and June).

Once internship placements have been allotted, the Academic Tutor assigned to the company/organisation in question – who is responsible for all contacts with the Workplace Tutor at each centre – provides information on all aspects likely to be of interest to the students (location, timetable, type of practical work involved, writing the report, etc.).

Evaluation of the Internship subject is based on the following criteria:

- The student is evaluated by the Workplace Tutor during the Internship, and is given a mark which appears in the Internship Log.
- The student hands in a report on the internship to the Academic Tutor, using for this purpose the sheets provided in the Internship Log, which also offers guidelines on how to write the report.

The Academic Tutor proposes an overall mark for the internship.

The final mark for the subject “Internship” will be the average of the marks given for the two internship periods, or the single mark for a one-month internship. Students are required to pass both internship periods.

During the present academic year, the rules are being reviewed and modified – particularly with regard to the writing of the report. The aim is to obtain an overall mark reflecting the following weightings:

- Academic Tutor’s report and mark: 30%.
- Workplace Tutor’s report and mark: 70%.

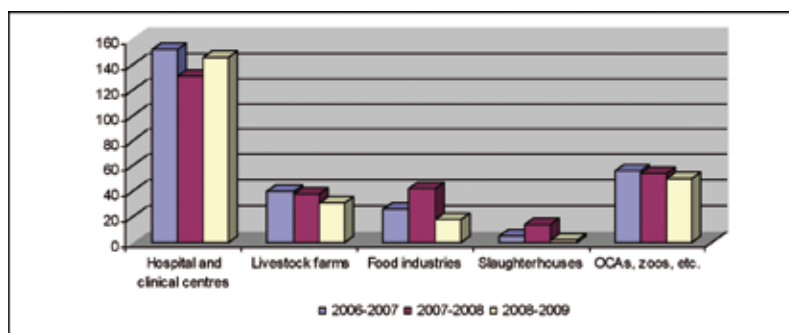
Moreover, students will now be able to include in their report a section in electronic format (e.g. Powerpoint), which will be marked by the Academic Tutor.

The Internship Log must be completed in the course of the internship itself, under the supervision of the Academic and Workplace Tutors; the student is responsible for the safe keeping of the Log, which must be handed in at the end of each internship period and is then returned to the student, who retains it until the end of the second internship. Once the second internship has been evaluated, the Log is sent to the Secretariat so that the final mark can be recorded.

The student is responsible for the Log; if it is lost, the internship will be cancelled.

Full information on the Internship subject is available at the Faculty site (<http://www.uco.es/veterinaria/veterinaria/practic-as-externas/index.html>), where students can find out about dates, application deadlines, Internship logs, guidelines for the writing of reports, and details of the various workplaces available and assignment of internships. All this information is also placed on noticeboards at the Faculty Secretariat.

Since in this subject the student’s choice governs the nature of the training received, Figure 1 shows student preferences with regard to the type of centre or institution for practical internships. Of the roughly 340 two-week internships offered in 2006/07, 2007/08 and 2008/09, 55% were in veterinary hospitals and clinics, 12% on livestock farms, 9% in food sanitary inspection centres and food industries, 3.5% in slaughterhouses and 20% in District Agricultural Offices, Veterinary Research Institutes and Centres, Zoos and Wildlife centres.



**Figure 4.1. Types of centres elected by students to take External Pre-Professional Internships**

In addition to External Pre-Professional Internships, veterinary students perform obligatory extramural work within different subjects as shown in Table 4.5.2.

**Table 4.5.2: Obligatory extramural work that students must undertake as part of their course**

Nature of work	Period		Year in which <sup>1</sup> work is carried out
	Hours	% of total study time	
<b>Extramural Pre-Professional Internships</b>	160	4.64% (160/3450)	4th and/or 5th
<b>Ethnology and Etology</b>	25	0.73 (25/3450)	1st
<b>Animal Production</b>	18	0.52 (18/3450)	5th
<b>Food Technology</b>	12	0.35 (12/3450)	3rd
<b>Food Hygiene</b>	18	0.52 (18/3450)	5th
<b>TOTAL</b>	<b>233</b>	<b>6.75 (233/3450)</b>	

<sup>(1)</sup> If these periods of extramural work take place during vacations, then the preceding academic year should be entered in the last column of Table 4.5.2.

### 4.1.5. Specific information on practical training in food hygiene/public health

» Describe arrangements for teaching in a slaughterhouse and/or in premises for the production, processing, distribution/sale or consumption of food of animal origin.

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

#### 4.1.5.A. SLAUGHTERHOUSES

With a view to designing ad hoc tuition regarding the work of veterinarians in slaughterhouses and food plants, an agreement was signed between the University of Córdoba and the Andalusian Regional Government Department of Health (Córdoba branch), since it is this body which employs authorised veterinarians in slaughterhouses. The aim of the agreement was to allow students to take part in veterinary inspections and checks. This has led to the contracting of these veterinarians as part-time associate lecturers at the Faculty. The number of Associate Lecturers involved in practical training of Food Hygiene and Public Health has grown over recent years, as shown in the next Table.

Year	Slaughterhouse		Public Health Laboratory	Official Food Inspection Centre/ Food industry
	COVAP Slaughterhouse	Lucena Slaughterhouse		
<b>2007</b>	4 (Associates 3+3)	-	2 (Associates 3+3)	6 (Associates 3+3)
<b>2008</b>	4 (Associates 3+3)	-	2 (Associates 3+3)	8 (Associates 3+3)
<b>2009</b>	4 (Associates 3+3)	2 (Associates 3+3)	2 (Associates 3+3)	9 (Associates 3+3)

Students receive a total of 10 hours' training in Food Hygiene, Inspection and Control at slaughterhouses, in two 5-hours visits (from 7:30 to 12:30).

Two options are available for slaughterhouse visits:

- COVAP (Cooperativa Valle de los Pedroches) Industrial Slaughterhouse.
- Celedonio Montilla slaughterhouse in Lucena.

Practical training in slaughterhouses is aimed at students enrolled in Food Hygiene, Inspection and Control, a subject with large student numbers (around 250). The slaughterhouses are both around 80 km from the Faculty (50-60 minutes). Students visit the each slaughterhouse once over a three-day period (Monday, Tuesday and Wednesday) in groups of 4 (COVAP) or 2 (Lucena). As indicated earlier, students are accompanied on these visits by associate lecturers, employed by the regional government as official Sanitary Control Agents; visits are coordinated by the lecturers responsible for the Food Hygiene, Inspection and Control course.

Practical training at the slaughterhouses includes the following student activities related to the obtaining of fresh meat, mainly beef and pork, and less commonly lamb and goat:

- Ante-mortem inspection. Identification of animals and official checking of paperwork.
- Supervision of Food Chain Information
- Animal welfare. Inspection of slaughterhouse hygiene and of animals; inspection of animal health status, monitoring of animals during slaughter and transport. Inspection of stunning and bleeding methods.
- Inspection and monitoring of all stages of slaughter and carcass cutting.
- Post-mortem inspection. Visual inspection of external surfaces and additional inspection of carcasses and waste, including palpation and incision.
- Specified hazardous material and other animal by-products. Monitoring of removal, separation and, where appropriate, labelling of products in batches already inspected ante-mortem. Collection and referral of samples to the laboratory; surveillance programme for transmissible spongiform encephalopathies (TSEs).
- Laboratory diagnosis and monitoring for notifiable diseases in slaughterhouses, for example trichinosis in pigs.

- Monitoring of the cold chain for fresh meat (refrigeration of carcasses).
- Recording activities in slaughterhouse logbook. Explanation by the official veterinarian. Production and issuing of reports, control sheets, and veterinary certificates.

#### **4.1.5.B. FOOD INDUSTRIES AND OFFICIAL VETERINARY INSPECTIONS**

Students enrolled in Food Hygiene, Inspection and Control receive a total of 8 hours practical training in veterinary inspections at food establishments and food industries, involving two different activities:

- Visit to the Public Health Laboratory run by the Regional Department of Health.
- Inspection of food establishments and food industries.

Public Health Laboratory. In order to ensure that students are given the broadest possible view of the work of the Public Health Laboratory run by the Regional Department of Health, in terms of the Official Inspection of food products and other work aimed at ensuring that products meet with Food Safety and Quality Assurance criteria (ISO 9000-UNE 17025), as well as a clear understanding of the structure, workload and range of services provided by the Public Health Laboratory, visits take place once a week, usually on Tuesdays. For this purpose, students are divided into groups of 10, and each group spends 2 hours at the Laboratory, accompanied by two associate lecturers.

Practical activities include:

- Introduction to Laboratory activities. Functions and flowchart Official Inspection of food products. Sample collection. Quality Assurance system (ISO 9000-UNE 17025).
- Reception and recording of samples: computer applications.
- Guided visit to the premises: Food and Water Microbiology area; Physical and Chemical Analysis area; Heavy Metal area (reference centre) and Instrumental Analysis area.

Inspection of food establishments and food industries. Visits to the Córdoba and Guadalquivir Health Districts take 3 hours (groups of 6 students/day, on Tuesdays and Thursdays). Students, accompanied by



an official inspector, visit various food plants and take part in relevant official inspection activities, including:

- Sample collection.
- Inspection of sanitary conditions in retail outlets (fishmongers, butchers, grocers, greengrocers, school dining rooms, etc.).
- Sanitary inspection of food industries (meat cutting rooms, central kitchens, etc.).
- Sanitary inspection of restaurants and catering establishments.

Similarly, and depending on the availability of inspectors, students may take part in the official inspection of fish wholesalers, in visits lasting 3 hours (groups of 2 students/day).

Practical activities include:

- Inspection of fish organoleptic properties for at least five different fish species.
- Visual inspection of two batches of fish to detect parasites.
- Investigation of preservatives (boric acid) in a batch of crustaceans using the flame method.
- Product labelling. Verification of label information on two labels (one for fish and the other for live bivalve molluscs).

Students enrolled in the Food Technology course visit two food plants: one producing meat products and the other dairy products. The food plants visited vary from year to year depending on availability. Here students learn the following:

- Milk sterilisation process, from reception through processing, bottling and storage.
- Technical conditions for fresh meat production: slaughter, meat cutting, and production of dry-cured ham, including salting, drying and cellar-ripening.

### 4.1.6. Ratios

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

#### 4.1.6.A. GENERAL INDICATORS FOR TYPES OF TRAINING

As indicated in tables 4.1, 4.2 and 4.3, the figures for the numerators and denominators are defined as follows:

Figure	Total no teaching hours
<b>A</b>	Lectures
<b>B</b>	Seminars
<b>C</b>	Self directed learning
<b>D</b>	Laboratory and desk based work
<b>E</b>	Non-clinical animal work
<b>F</b>	Clinical work
<b>G</b>	Other

Please give the following values:

<b>R6:</b>	Theoretical training (A+B+C)	1.875	1
	Supervised practical training (D+E+F)	1.380	0,74
<b>R7:</b>	Clinical work (F)	407,5	1
	Laboratory and desk based work + non-clinical animal work (D+E)	972,5	2,38
<b>R8:</b>	Self directed learning (C)	104	1
	Teaching load (A+B+C+D+E+F+G)	3.450	33,17

#### 4.1.6.B. SPECIAL INDICATORS OF TRAINING IN FOOD HYGIENE/ PUBLIC HEALTH

<b>R9:</b>	Total No. curriculum hours Food Hygiene/Public Health <sup>2</sup>	295	1
	Total No. hours vet. Curriculum <sup>1</sup>	3.450	11,69
<b>R10:</b>	Total No. curriculum hours Food Hygiene/Public Health <sup>2</sup>	295	1
	Hours obligatory extramural work In Veterinary inspection <sup>3</sup>	30	0,10

*Origin numerators, denominators*

(1) Total as derived in Table 4.1

(2) Total as derived in Table 4.1, Subject 5

(3) Figures to be taken from Table 4.5

## **4.2. COMMENTS**

» Please comment on:

- *The way in which the veterinary curriculum prepares the graduate for the various parts of the veterinary profession, especially under the specific conditions prevailing in your country/region.*
- *The way the curriculum is structured and reviewed.*
- *The major developments in the curriculum, now and in the near future.*
- *The local conditions or circumstances that might influence the ratios in 4.1.6.*

As shown in the data provided in Table 4.2, the current curriculum at the Faculty of Veterinary Medicine assigns 34.8% of total course content to basic subjects (6.81 % to Basic Subjects + 27.9% to Basic Sciences), 41% to clinical sciences (including pre-professional training), 14% to Animal Production and 8.6% to Food Hygiene and Public Health. This syllabus provides the students with a basic general training which is both flexible and balanced, and produces graduates who are skilled in many areas. This versatility means that they can rapidly enter the labour market, since they are able to adapt to the various professional profiles which society currently demands (Veterinary Medicine, Animal Production & Animal Health, and Food Science & Technology). Nonetheless, the wide scope of the veterinary profession, and the fact that, by law, the veterinary curriculum in Spain is a five-year Degree programme, gives rise an undesirable restriction on curriculum development. Moreover, the rate at which knowledge is advancing in all these areas, and the growing need for specialisation, make continuing lifelong education essential for all students, even those holding Post-graduate Degrees.

Assuming that Veterinary Professionals must currently be prepared to deal with more areas than just the classical clinical field, our Syllabus is designed to combine the acquisition of basic knowledge in all fields of Veterinary Science (through core subjects) with more advanced training in one given field (through electives and optional subjects). Since we ensure than an adequate level in the essential veterinary disciplines is attained through core subjects, our students can design their own

study programme (Minor) by choosing certain electives in order to develop a deeper understanding of their own specific areas of interest.

In recent years, many changes have occurred. At international level, food crises such as BSE, dioxins and others, as well as the emergence or re-emergence of animal pathogens (Classical Swine Fever, Foot & Mouth Disease, Blue tongue, etc.) and Zoonoses (West Nile Virus, etc.) suggest the need for greater emphasis on food safety for the whole food chain, public health issues and epidemiology. In addition, the small animal and exotic pet sector is becoming increasingly important and this must be reflected in the curriculum. Moreover, the level of awareness that the general public has about environmental issues and animal welfare suggest that concepts such as sustainable livestock production, waste management and welfare in animal production clearly need to be promoted.

Aside from traditional and emerging areas of responsibility, the Veterinary Profession must diversify into new fields such as the Handling and Management of Zoological centres, Wild and Hunting Fauna, Natural Reserves and Animal Parks, Business Management, Research, Diagnostic Laboratories, and others. These fields have not always been clearly included in the profile of the Veterinarian and will have to be reflected in the curriculum.

Evidently, all these objectives cannot be met without a substantial re-organisation of the curriculum. Future developments will focus on the implementation of the Bologna Declaration and the EHEA (European Higher Education Area). This process of European convergence is also likely to lead to major structural changes. The most significant improvements that can be made at this time are to reduce the number of in-class (mainly theoretical) hours and increase self-learning, supervised work and practical/clinical activities.

The implementation of the Bologna Declaration will also help to alleviate a severe problem affecting student performance. With the current curriculum, students are supposed to be present 4.030 hours in five years (806 hours/year or 26.8 hours/week). With this figure in mind, if students dedicate a similar number of hours of work to studying for exams, presentations, etc., the total work load for a year could be around 1612 hours (i.e. over 54 hours/week) and possibly more. The intensity of this workload must be decreased. This can be done by further promoting self-learning and autonomous work and also by reducing the number of theoretical lectures.

In this context, it is difficult to choose a satisfactory model which allows for the acquisition of both basic and specific professional knowledge that is structured and orientated towards facilitating the student's integration into the labour market. In February 2005, the Spanish Agency for Quality Assurance and Accreditation (ANECA) published the so-called "Libro Blanco" for the Veterinary Profession with the aim of providing studies and potential practical models for the future design of a degree adapted to the EHEA. Eleven Spanish Universities (nine public and two private) have taken part in the drafting of this report, which takes into account the opinions of the Conference of Deans of the Veterinary Faculties in Spain and the General Council of Spanish Veterinary Colleges. This project brings together many key aspects regarding the design of an undergraduate course model: analyses of corresponding or related studies, studies of employment opportunities, professional profiles and competences, etc.

The essential recommendation of the project is to establish a five-and-a-half-year University degree comprising 300 ECTS credits + 30 additional ECTS credits for practical fieldwork.

All these changes imply an adjustment in teaching methods, which should become learning-based rather than content-based and should establish objectives in accordance with professional competences. The teaching staff has to adapt to the new updated standards which place greater stress on student workload; the aim is to enable students to acquire greater knowledge and at the same time ensure that they are better prepared for the professional market.

Royal Decree 1393/2007, recently been passed in Spain, outlines the management of official University Education in Spain. This Royal Decree adopts a series of measures, compatible with the EHEA, intended to ensure a more flexible organisation of University Education, promote curricular diversification, and allow universities to make full use of their own ability to enhance strengths and opportunities in order to respond to the demands of society in an open and constantly-changing world. The new organisation of University Education not only responds to a structural change, but also fosters a change in teaching methods, focusing on the process of student learning in context and on making students aware of the need for active participation in lifelong learning. The acquisition of skills on the part of students should be at the heart of any curriculum leading to the obtaining of a degree; however, it should be focused on expanding – rather than excluding - the traditional approach based on content and teaching hours. But this Royal Decree limits the Veterinary Degree to 300 ECTS and five-year duration,

whilst the Conference of Deans of Veterinary Faculties in Spain has reiterated its request for 330 ECTS and 5.5 years.

### **4.3. SUGGESTIONS**

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

The reduction of theoretical hours on the curriculum is one of the consequences of adaptation to the EHEA. In designing the new study plans, which will begin in a few months, it would be wise to reduce theoretical tuition, using traditional methods only when learning objectives are best achieved by those methods.

The optional credits in the study plan should reflect true options, ensuring that students have a free choice within the limits of different professional profiles for veterinarians. This requires a wider selection of options with a greater range of profiles. At the same time, the number of optional subjects and electives on offer should double or even triple the number of credits required by the student.





## Chapter V

# TEACHING: QUALITY AND EVALUATION



## **5.1. FACTUAL INFORMATION**

*» Describe the measures taken to ensure coordination of teaching between different departments, sections, institutes and services*

### 5.1.1. The teaching program

At the University of Córdoba, coordination of teaching is the responsibility of the Teaching Coordination Unit (UCD), an administrative body approved by the Governing Council on 7 May 2004, whose main remit is to check that the Annual Faculty Teaching Organisation Plans (PAOEs) and the Departmental Teaching Plans (PDDs) are properly drawn up and are in full agreement with each other. The Unit also plays an active role in developing Staff Teaching Criteria, in reviewing the real staffing needs of Departments, and in the development and implementation of a computer program for classroom assignment.

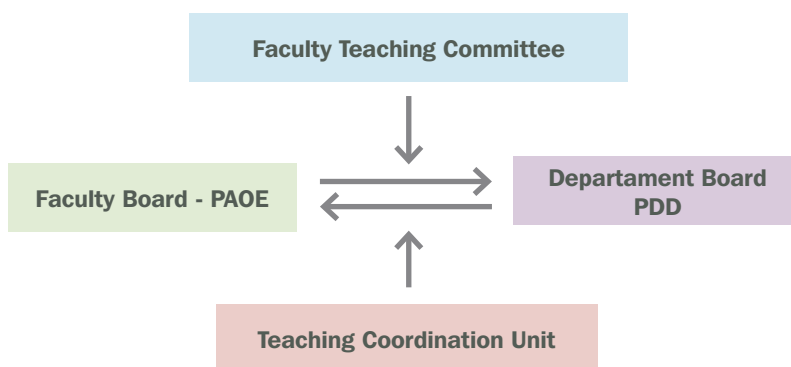
The Faculty of Veterinary Medicine is the centre responsible for organising teaching as well as the academic, administrative and management-related processes leading to the award of a degree. The current Veterinary Medicine syllabus has been in force at the University of Córdoba since 2003-2004, and is governed by current European directives, including supervision by the European Association of Establishments for Veterinary Education (EAEVE). As indicated in Chapter 2, the Faculty of Veterinary Medicine has a Teaching Committee – made up of an equal number of staff and students – responsible for overseeing the general organisation of teaching at the Faculty. The functions of the Teaching Committee are as follows:

1. To ensure that teaching duties are properly carried out.
2. To issue reports on the monitoring of teaching standards.
3. To oversee the evaluation of staff teaching performance.
4. To make proposals to the Faculty Board regarding the award of free elective credits for internships in companies.
5. Any other function entrusted to it by the Faculty Board.

Once dates for the Official Academic Year have been approved, the Faculty Board draws up the Annual Teaching Organisation Plan (PAOE), which should include timetables for all classes – theoretical as well as practical – thus helping students to choose compatible subjects and avoid registering for classes scheduled to take place at the same times. The timetable and the programme for each subject are posted on the website of the Faculty of Veterinary Medicine ([www.uco.es/veterinaria/](http://www.uco.es/veterinaria/)). A further function of the PAOE, as a tool to aid coordination, is to facilitate an appropriate distribution of the teaching load among the staff involved; at the same time, the PAOE helps to detect obstacles to the effective implementation of the curriculum, with a view to their

removal, and to catalogue the physical space and resources required for teaching.

Within each Department of the Faculty of Veterinary Medicine, teaching is organised by means of Departmental Teaching Plans (PDDs) which meet the criteria set down in the Faculty's overall PAOE. The implementation of the teaching plan is monitored by the Department Board under the supervision of the Faculty Teaching Committee. The Department is also responsible for the following: coordinating proposals for new syllabuses; coordinating teaching activities for the subjects taught by the Department; making proposals to the Department Board regarding the assignment of teaching duties and ensuring that all areas receive equitable treatment; producing and issuing any preliminary reports that might be required by the Department, either of a general nature or specifically referring to teaching activities, including reports addressing quality evaluation; and coordinating and fostering innovative teaching initiatives put forward by teachers, as well as monitoring their implementation in order to assess the results achieved.



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

The guiding pedagogical policy, both of the Faculty and of the University as a whole, is to implement and foster learning-oriented, student-centred approaches, and to apply and develop the content of the Bolog-

na Declaration (encouraging self-learning, problem-solving, teamwork, etc.). Two years ago, with this purpose in mind, the Faculty launched the so-called “Pilot Experiment” and a range of academic activities adapted to the requirements of the European Higher Education Area (EHEA):

#### 5.1.1.A. THEORETICAL TRAINING

**Lectures (A):** So called because the teacher addresses the students directly. These classes may take the form of lectures or explanations and/or be demonstrative in content (e.g. presentations chosen by the teacher, presentation of students’ work, etc). Group sizes depend on the type of subject: core subjects are taught in two groups of 75 students each, whilst for elective subjects there is a single group ranging from 25 to 75 students.

**Seminars (B):** In these activities, knowledge is attained through interaction and group work. These are supervised monographic sessions with shared input (from students, teachers, experts, etc.) They may involve large or small groups: group size for seminars varies from a theoretical maximum of 75 students down to a minimum of 6 students, the smallest number permitted in order to facilitate interaction.

#### Self-directed learning (C)

1. **Tutored Work.** Also termed “group study and group work”, in which students work together to prepare seminars, lectures, research projects and papers, to keep records, and to collect and analyse data for classroom presentation or for handing in. Group sizes vary.
2. **Independent Activity.** This may be defined as self study, and is intended to develop the student’s ability to study alone, using the same methods as for tutored work; it includes personal study (preparing for examinations, library studies, additional reading, problem-solving and exercises, etc.) which are essential for independent learning. It also includes work in the Virtual Classroom.

#### 5.1.1.B. SUPERVISED PRACTICAL TRAINING

Practical classes are intended to show students how to act, and can be classified as follows:

### **Laboratory and desk-based work (D)**

- D1** Classroom Practicals: These practical classes take the form of group work in the classroom, and involves working with documents and with the formulation of ideas without handling animals, organs, products or other objects; areas covered include problems in statistics, physics and biochemistry, clinical case studies, and diagnostic analyses. Group size varies between 25 and 75 students.
- D2** Laboratory Practicals: These take the form of group work in the laboratory and include microscope practice (where students use microscopes to study histological, histopathological and parasitological samples) and the carrying out of laboratory experiments by the students themselves (for example, in the fields of bacteriology, physiology or biochemistry). Group size varies between 12 and 25 students.
- D3** Computer work: These involve practical group work in the computer room. Group size depends on the number of computers available, and ranges from 14 to 24 students per group.

### **Non-clinical animal work (E)**

These practical classes with healthy animals cover subjects such as breeding and animal husbandry, antemortem and postmortem inspection, dissection and necropsy. Visits to livestock farms and food/feed-processing industries also fall within this category. Group size varies considerably, ranging from 24 students in the necropsy (Special Pathological Anatomy) and the dissecting room (Anatomy) to a single student in the case of antemortem and postmortem inspections at slaughterhouses. For Animal Production practice classes, groups tend to be of 24 students.

### **Clinical work (F)**

These practical classes provide the student with hands-on experience using live animals. They include not only clinical practice classes held at the Veterinary Teaching Hospital, but also any procedure involving working with live animals for clinical purposes, with organs and clinical material – from single animals or groups of animals – for diagnostic purposes, and with organic systems and corpses for the purpose of learning examination methods and surgical techniques. Group sizes range from 6 students in clinical practice classes held at the Veteri-

nary Teaching Hospital, to 12 students for practical classes addressing diagnostic methods (e.g. for the study of infectious diseases).

### **Other teacher-student activities (G)**

These include a) Evaluation, which encompasses not only ordinary, extraordinary and special official examinations, but also any activity intended to evaluate the knowledge acquired by the students; and b) Tutorials, involving personalised attention to students. These are help sessions in which the tutor provides help, guidance and support to one or more students with regard to the teaching-learning process. Although most sessions are individual, group sessions may also be held.

### **5.1.1.C. ADAPTATION TO THE EUROPEAN HIGHER EDUCATION AREA (EHEA)**

Following the criteria laid down in Chapter XIII of the LOU (Organic Law on Universities, published in Spanish State Gazette No. 307 of 24.12.2001), and in the LAU (Andalusian Law on Universities 15/2003, of 22 December), the Faculty of Veterinary Medicine has assumed an institutional commitment to becoming involved in the adaptation of its educational system to the EHEA. In order to ensure an optimal harmonisation, the Faculty has sought the assistance and cooperation of all stakeholders (teaching staff, students, managers and administrative personnel); working with the University of Córdoba, it has created a forum for debate and information-sharing on the convergence process, in order to help the university community as a whole to take part in the radical changes which are imminent. Within this context, the University of Córdoba is now running refresher courses both as part of the Teacher Training Programme and as part of a number of Projects for the Production of Common Teaching Guidelines. These initiatives have focussed on highlighting the importance of sharing experiences, not only within the University but also at Regional level. Both the University (Table 5.1) and the Faculty of Veterinary Medicine have set aside a budget for the development of Innovative Teaching projects.

**Table 5.1. Innovative Teaching projects funded by UCO and coordinated by lecturers at the Faculty of Veterinary Medicine, by Departments**

Departments	2006	2007	2008	Total
<b>Comparative Anatomy and Pathological Anatomy</b>	6	7	6	20
<b>Cell Biology, Physiology and Immunology</b>			1	1
<b>Biochemistry and Molecular Biology</b>	1	1	3	5
<b>Food Sciences and Food Technology</b>		2	4	6
<b>Pharmacology, Toxicology and Legal and Forensic Medicine</b>	1	1	2	4
<b>Zoology</b>		1		1
<b>Animal Health</b>			5	5
<b>Animal Medicine and Surgery</b>			5	5
<b>Animal Production</b>			1	1

#### 5.1.1.D. PILOT EXPERIMENT

Convergence with the EHEA represents a major challenge for the University of Córdoba Faculty of Veterinary Medicine, in terms of the need to adopt regulations, initiatives and steps aimed at joining the EHEA as a high-quality, competitive partner. One of the basic pillars of the convergence process is the Pilot Experiment currently under way, which aims:

1. To adapt and, where appropriate, renew current teaching methods in order to encourage a student-oriented learning model.
2. Create teaching teams.
3. Develop initiatives ensuring a modular and transversal approach to the subjects taught.
4. Improve the degree of coordination amongst the staff involved.

The recently-established Working Group responsible for monitoring the introduction of the European Credit Transfer System (ECTS) (see Chapter 2) is formed by the Vice-Dean for Quality and the European Area, the Coordinating Lecturers from each of the 5 years of the degree in Veterinary Medicine, a representative of the scholarship-holders and two student representatives; the Working Group is entrusted with ensuring compliance with the objectives listed above.



In 2007-08, the first academic year of the Pilot Experiment, a number of activities were organised with a view to analysing the development and outcome of the introduction of ECTS credits in the Veterinary Medicine Degree Programme. These student-centred or teacher-centred activities were as follows:

- A series of workshops worth one free-elective credit, entitled "Participation in Pilot Experiments to adapt the Veterinary Medicine Degree to the European Higher Education Area" (March-June 2008), comprising briefing sessions and seminars for teachers and students, with surveys to determine the level of satisfaction and the possible implications for the teaching-learning process.
- Prizes for the best supervised academic activity (academic year 2007-08) awarded jointly by the Dean's Office and Hills Nutrition and open to papers presented by students of all years of the Veterinary Medicine Degree; entries were scored in public by a jury who focussed on content, layout and presentation.
- Technical Seminar on the Dehesa (June 2008), organised jointly by the Dean's Office and the Andalusian Organic Farming Committee (CAAE), an academic activity forming part of the subject Agronomy and Agricultural Economics, involving a field trip to a dehesa [extensive livestock grazing on pasture with cork-oaks], followed by oral presentation of a paper to the subject staff. Three prizes were awarded to the best papers.
- Individual and group meetings with 1st year and 2nd year teachers.
- Establishment of the Pilot Experiment Monitoring Committee, comprising the Degree Programmes Coordinator and the Coordinators of all five years of the Degree Programme, a first-year student representative and the Pilot Experiment intern, responsible for organising the scheduled events and for reviewing the working system and any problems detected in any of the courses involved.
- Seminar on the Adaptation of Degrees in Veterinary Medicine and Food Sciences and Technology to EHEA requirements (November 2008), involving teachers from the Veterinary Faculties of Barcelona, Murcia, Cáceres and Córdoba, to report on the content and results of pilot experiments for specific subjects at each Faculty.

- Seminar to Assess the Process of Adaptation to the ECTS Credit System (February and June 2008), evaluating and debating the results of the experiment, and highlighting the strengths and weaknesses of the new system.

#### **5.1.1.E. VIRTUAL CLASSROOM ([HTTP://WWW.UCO.ES/MOODLE](http://www.uco.es/moodle))**

The UCO Virtual Classroom is a valuable adjunct in the process of convergence towards the new EHEA, a process requiring new teaching models and new channels for communication between teachers and students, for which information and communication technologies (ICTs) can provide a powerful tool.

The UCO Virtual Classroom makes available to the whole university a set of computer-based and audiovisual tools for creating interactive, multimedia resources, simulations, videos, etc. In other words, it provides a wide range of teaching resources, making it easy for the teacher to create high-quality teaching systems.

The main function of the Virtual Classroom is to serve as a backup to the classes comprising the curricula of the various degree programmes offered by the University of Córdoba, enabling teachers to publish their own materials in electronic format and students to access them via the Internet. But at the same time it also covers a number of needs deriving from the introduction of the new European credits system, the launching of the Andalusian Virtual Campus, and the development of distance learning courses, including Master's Degrees and Doctorates and other courses offered by the University of Córdoba. At present, 43 of the 74 subjects in the Veterinary Medicine Degree syllabus are to be found in the UCO Virtual Classroom.

---

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

---

In addition to the textbooks available in the library, Faculty staff provide student access to a varied range of teaching material intended to supplement standard veterinary textbooks. This material varies depending on the subject, and ranges from summaries of theoretical programme content to practical manuals or problems. Students can access this

material either in the form of original texts deposited at the Rabanales Campus Photocopying Service or via the Virtual Classroom. The Virtual Classroom also provides teachers with advice on the production of teaching material through a personalized assistance service covering the design of interactive, multimedia presentations, the creation of animations and other audiovisual resources, publishing e-books, designing web pages, etc.

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

The Faculty of Veterinary Medicine has contractual arrangements with a number of companies and public and private bodies in the veterinary and agrofood sectors, mostly in the Andalusia Region. These arrangements are intended to support two teaching activities: 1) Voluntary practical internships taking place during the students' holidays, for which free-elective curricular credits are awarded; and 2) External Pre-professional Internship (EPI), an obligatory period of extramural field training in veterinary clinics and hospitals, livestock farms, food sanitary control points (e.g. slaughterhouses, Health Districts), food-processing industries, local agricultural agencies, livestock health-protection centres, hunting grounds, animal experimentation centres and animal health laboratories (See Chapter 2, Table 4). Student work at these sites is supervised by a work-practice tutor (at the site in question) and by an academic tutor (from the Faculty), and is assessed by means of a internship report presented by the student.

Finally, the Faculty of Veterinary Sciences provides students and teachers with the opportunity to spend time at various European faculties with which reciprocal arrangements are in place (<http://www.uco.es/centros/facultadesyescuelas/veterinaria.html>):

- Universitatea de Stiinte Agricole si Medicina Veterinaria Cluj-Napoca (Romania)
- Université de Liege

- Tierärztliche Hochschule Hannover
- École Nationale Vétérinaire de Lyon
- École Nationale Vétérinaire de Maisons d'Alfort
- École Nationale Vétérinaire de Nantes
- Università degli Studi di Parma
- Università degli Studi di Pisa
- Universidade de Tras-os-Montes e Alto Douro
- Helsingin Yliopisto
- Oslo University
- Freie Universität Berlin
- Università degli Studi di Torino
- Università degli Studi di Perugia
- Università degli Studi di Bologna
- Università degli Studi di Messina

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

The Veterinary Faculty of Córdoba, together with all the Veterinary Faculties in Spain, was involved in producing what was known as the White Book on Degrees in Veterinary Medicine. This document sets down a list of the learning objectives of the curriculum, awarding marks/grades to the competences involved. The degree of Veterinary Studies is the subject of an EU Directive covering recognition of the degree itself and the minimum qualifications required in graduates in Veterinary Medicine. The Directive states that training as a veterinary surgeon shall provide an assurance that the person in question has acquired the following knowledge and skills:

- A.** Adequate knowledge of the sciences on which the activities of the veterinary surgeon are based.

- B. Adequate knowledge of the structure and functions of healthy animals, of their husbandry, reproduction, and hygiene in general, as well as their feeding, including the technology involved in the manufacture and preservation of foods corresponding to their needs;
- C. Adequate knowledge of the behaviour and protection of animals;
- D. Adequate knowledge of the causes, nature, course, effects, diagnosis and treatment of the diseases of animals, whether considered individually or in groups, including a special knowledge of the diseases which may be transmitted to humans;
- E. Adequate knowledge of preventive medicine;
- F. Adequate knowledge of the hygiene and technology involved in the production, manufacture and putting into circulation of animal foodstuffs or foodstuffs of animal origin intended for human consumption;
- G. Adequate knowledge of the laws, regulations and administrative provisions relating to the subjects listed above;
- H. Adequate clinical and other practical experience under appropriate supervision.

### **Specific skills provided by disciplinary and professional training**

In general terms, a Spanish graduate in Veterinary Medicine is expected to display a number of skills common to graduates in all professions, although some of these skills should be more developed. As indicated earlier, these skills can be taught in the non-core part of the course structure. For practical purposes, we have divided skills/competences into: a) those mainly involving the acquisition of knowledge; b) those requiring the development of handling skills; and c) those requiring the development of attitudes. These can broadly defined as follows:

- **Disciplinary Competences (knowing):** those which together constitute the theoretical knowledge and understanding that underpins the various disciplines involved in the training of a veterinary surgeon.
- **Professional Competences (knowing how to do):** the practical knowledge and manual dexterity which a veterinary surgeon must possess, and must acquire during training, in order to be considered eligible for his profession.

- **Attitudinal Competences (knowing how to be):** the set of attitudes and values which a veterinary surgeon should possess, and which students should make part of their daily life, as potential members of the professional group they intend to join.

It is felt that this classification responds to the need for a more integrated training, particularly with regard to aspects of 'knowing how to do', including issues relevant to the practical application of knowledge and the solving of problems, areas where – according to employers – there is currently a clear deficiency. In other areas, especially within the sphere of attitudinal competences, a number of issues appear, at first glance, to be under-developed at university, for example the capacity for analysis, synthesis or information management. The development of this set of competences should be the main aim of any new structure of veterinary studies, in order to provide the work market with graduates who meet society's expectations.

The list of competences is not intended to be either exhaustive or exclusive, since excessive detail would hinder a precise evaluation; rather, it should serve as an indication of those minimum requirements that form an essential part of any training programme for veterinarians. Thus, the following list constitutes the basic nucleus of competences common to all profiles. Nevertheless, those areas requiring greater attention are noted in brackets. According to the White Book on Veterinary Studies, graduates should attain and demonstrate the following competences:

### **Generic competences (From the Tuning project)**

- G1.** Capacity for analysis and synthesis.
- G2.** Capacity for applying knowledge in practise.
- G3.** Planning and time management.
- G4.** Basic general knowledge in the field of study.
- G5.** Basic knowledge of the profession.
- G6.** Written and oral communication in the native language.
- G7.** Knowledge of a second language.
- G8.** Elementary computing skills.
- G9.** Research skills.
- G10.** Capacity to learn.
- G11.** Information management skills.

- G12.** Capacity for criticism and self-criticism.
- G13.** Capacity to adapt to new situations.
- G14.** Capacity for generating new ideas.
- G15.** Problem solving.
- G16.** Decisions-making.
- G17.** Teamwork.
- G18.** Interpersonal skills.
- G19.** Leadership.
- G20.** Ability to work in an interdisciplinary team.
- G21.** Ability to communicate with non-experts in the field.
- G22.** Appreciation of diversity and multiculturalism.
- G23.** Ability to work in an international context.
- G24.** Knowledge of cultures and customs of other countries
- G25.** Ability to work by oneself.
- G26.** Project design and management.
- G27.** Initiative and entrepreneurial spirit.
- G28.** Ethical commitment.
- G29.** Concern for quality.
- G30.** Will to succeed

### **Specific competences:**

#### **A. DISCIPLINARY COMPETENCES (KNOWING)**

- A1.** Generic knowledge of animals, their behaviour, and basic ability to identify them.
- A2.** Structure and function of healthy animals.
- A3.** Rearing, caring, handling and wellbeing of animals.
- A4.** Basic familiarity with the chemical and molecular physics of the major processes taking place within an animal.
- A5.** Basic and applied principles of the immune response.
- A6.** Knowledge of essential aspects of biological agents of veterinary interest.

**A7.** Knowledge of the alterations in structure and function of the animal's body. **A8.** Knowledge and diagnosis of different animal diseases, both individual and collective, and of the preventive measures available, with special emphasis on zoonoses and notifiable diseases.

**A9.** General basic knowledge of medical-surgical treatment.

**A10.** Basic knowledge of the functioning and optimisation of animal reproductive systems and their repercussions for the environment.

**A11.** Principles of food science and technology. Quality control of produced food and food security.

**A12.** Knowledge of organisational, economic and management aspects of all fields of the veterinary profession.

**A13.** Knowledge of the relevant regulations and laws affecting the veterinary world, and of regulations concerning animals and their commercial use.

**A14.** Knowledge of the veterinarian's rights and responsibilities, with special reference to ethical principles.

## **B. PROFESSIONAL COMPETENCES (KNOWING HOW TO DO)**

**B1.** Create a case history and perform a clinical examination.

**B2.** Collect and send samples of all kinds with the relevant report.

**B3.** Apply basic analytical methods and interpret clinical, biological and biochemical results.

**B4.** Diagnose the most common diseases using a range of general techniques and instruments, including necropsy.

**B5.** Identify, control and eradicate animal diseases, with special attention to zoonoses and notifiable diseases.

**B6.** Deal with emergencies, and perform veterinary first aid.

**B7.** Implement the most common medical-surgical treatments

**B8.** Apply the basic treatment required to guarantee the correct functioning of the reproductive cycle and solve obstetric problems.



**B9.** Assess and perform epidemiological studies, therapeutic programmes and preventive programmes, in compliance with regulations on animal care, animal health and public health.

**B10.** Evaluate and interpret the productive and health status of a group of animals, in the light of economic and welfare considerations.

**B11.** Manage protocols and specific technologies intended to modify and improve animal production systems.

**B12.** Carry out ante mortem and post mortem inspections of animals and inspections of food intended for human consumption.

**B13.** Carry out sanitary control of the different types of businesses and restaurant and food establishments. Implantation and supervision of quality management systems.

**B14.** Carry out risk analysis, including environmental and biosafety, and its evaluation and management.

**B15.** Apply food technology to the production of food for human consumption.

**B16.** Technical and economic assessment and management of companies in the veterinary area in terms of sustainability.

### **C. ATTITUDINAL COMPETENCES (KNOWING HOW TO BE)**

**C1.** Analyse, synthesise, solve problems, and take decisions in a professional environment

**C2.** Work as part of a single-discipline or multidisciplinary team, and show respect and sensitivity when evaluating the work of others.

**C3.** Display ethical behaviour towards the profession and towards society when exercising professional responsibilities.

**C4.** Report professionally-obtained information in a fluent manner, both in speaking and in writing, to other colleagues, to the authorities and to society in general.

**C5.** Write and present professional reports, maintaining the necessary confidentiality.

**C6.** Seek and process information related to veterinary work.

- C7.** Understand and apply scientific methods in professional practice, including evidence-based medicine.
- C8.** Know how to obtain professional assessment and help.
- C9.** Be willing to learn how to use basic computer tools.
- C10.** Have a basic knowledge of a second language, especially concerning technical aspects related to Veterinary Sciences.
- C11.** Be aware of the need for up-to-date professional knowledge, skills and attitudes through continuous training.

In order to attain these goals, each subject as practised in the field must, in turn, be fully covered in teaching guidelines to be written every year; these guidelines should be approved by the Faculty Teaching Committee, and should indicate learning goals for the subject in question. Each goal should in turn be related to the general and specific competences required for the degree as a whole: to this end, the teaching guidelines should indicate the code for each competence, as indicated in the above lists. An assessment system should be developed for each subject, including a final proof that the learning goals proposed have been attained. Therefore the teachers of each subject must ensure that the goals are attained; for this purpose, an assessment system has been devised comprising clearly-defined evaluation criteria and a final classification model. All this information must be included in the teaching projects guidelines for each subject.

### 5.1.2. The teaching environment

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

As laid down in the LOU (Organic Law on Universities), the LAU (Andalusian Law on Universities), and the Statutes of the University of Córdoba, ongoing staff development, particularly with regard to teaching skills, is considered both a right and a duty for all staff; staff develop-

ment is intended as a means of reviewing and updating the teacher's knowledge, attitudes and teaching skills with a view to ensuring high-quality tuition. Following recent changes in the appointment of tenured teaching staff, the Faculty of Veterinary Medicine encourages and rewards the participation of teachers in Staff Training Courses and University Teaching Congresses. With a view to motivating staff to update their knowledge and learn new teaching techniques and methods, the Faculty also encourages teachers to take part in a newly-created exchange programme, which allow them to share experiences, acquire new knowledge, learn about new methods in teaching and research, and find out about other academic systems.

#### **5.1.2.A. STAFF TRAINING COURSES**

Staff training is the responsibility of the Teacher Training Unit, part of the Permanent Training Secretariat (SFP) belonging to the University's Institute of Postgraduate Studies (IdEP). Staff Training Courses are divided into categories: University System, Teaching Methods, ICTs in University Teaching, Cross-Curricular Training, Health & Safety at Work, and English.

#### **5.1.2.B. REWARDING TEACHING EXCELLENCE**

The University has two ways of financially rewarding teaching excellence: salary incentives known as “complementos autonómicos” at regional level and “tramos docentes” at national level. In both cases, staff teaching skills are assessed following procedure laid down by the University of Córdoba, based on the DOCENTIA model developed by the Spanish National Agency for Quality Assessment and Accreditation (ANECA), and coordinated by the Andalusian Evaluation Agency (AGAE). Members of the Evaluation Committee are required to review the information on staff teaching skills collected from student surveys, staff self-evaluation reports and the reports both of Faculty Deans and Departmental Heads (see also Chapter I).

#### **5.1.2.C. TEACHING INNOVATION AND IMPROVEMENT PROGRAMME**

The University's Teaching Innovation and Improvement Programme is designed, amongst other things, to encourage the preparation of quality teaching material, the development of self-learning programmes, and the design and implementation of new teaching strategies. Teachers can apply for specific financial assistance to cover the required material and human resources.

The Programme includes the following activities:

### 1. Innovative Teaching Projects

The projects developed by Faculty staff and approved by the University 2005 and 2008 are listed below:

Department	Project Title	Project N°	Date
<b>COMPARATIVE ANATOMY AND PATHOLOGICAL ANATOMY</b>	Plastination of anatomical specimens for practical teaching of Anatomy and Embryology.	05SA021	2005/2006
<b>COMPARATIVE ANATOMY AND PATHOLOGICAL ANATOMY</b>	Digital atlas of Pathological Anatomy. Wild and exotic animals	05NA041	2005/2006
<b>COMPARATIVE ANATOMY AND PATHOLOGICAL ANATOMY</b>	Imaging techniques in Equine Sports Medicine and Surgery	05NA011	2005/2006
<b>COMPARATIVE ANATOMY AND PATHOLOGICAL ANATOMY</b>	Interactive atlas of general Pathological Anatomy in pets	05CA042	2005/2006
<b>COMPARATIVE ANATOMY AND PATHOLOGICAL ANATOMY</b>	New tools for teaching Veterinary Pathological Anatomy	05CA040	2005/2006
<b>COMPARATIVE ANATOMY AND PATHOLOGICAL ANATOMY</b>	Surgical Anatomy (IV): neck and head-neck junction (teaching video)	05CA005	2005/2006
<b>COMPARATIVE ANATOMY AND PATHOLOGICAL ANATOMY</b>	Plastination of anatomical specimens for practical teaching of Anatomy and Embryology	06SA3078	2006/2007
<b>COMPARATIVE ANATOMY AND PATHOLOGICAL ANATOMY</b>	Atlas and collection of the Cytology, Histology and Pathological Anatomy of cat and dog mammary glands.	06NB3028	2006/2007
<b>COMPARATIVE ANATOMY AND PATHOLOGICAL ANATOMY</b>	Development of interactive teaching material on morphogenesis.	06NA3048	2006/2007
<b>COMPARATIVE ANATOMY AND PATHOLOGICAL ANATOMY</b>	Development of teaching material on comparative aspects of germ cells.	06NA3029	2006/2007
<b>COMPARATIVE ANATOMY AND PATHOLOGICAL ANATOMY</b>	Bilingual atlas (Spanish/English) of Pathological Anatomy in wild and exotic species. Book and CD.	06CA3023	2006/2007
<b>COMPARATIVE ANATOMY AND PATHOLOGICAL ANATOMY</b>	Surgical Anatomy: Head I (teaching video)	06CA3021	2006/2007

Department	Project Title	Project N°	Date
<b>COMPARATIVE ANATOMY AND PATHOLOGICAL ANATOMY</b>	Illustrated Guide to Regional and Clinical Anatomy in the horse	06CA3019	2006/2007
<b>COMPARATIVE ANATOMY AND PATHOLOGICAL ANATOMY</b>	e-learning workshop on Veterinary Osteology	07NA3089	2007/2008
<b>COMPARATIVE ANATOMY AND PATHOLOGICAL ANATOMY</b>	e-learning workshop on Veterinary Cytology	07NA3088	2007/2008
<b>COMPARATIVE ANATOMY AND PATHOLOGICAL ANATOMY</b>	Introduction to an evidence-based, problem-solving approach to the teaching and learning of General Pathology (Degree in Veterinary Medicine)	07NA3043	2007/2008
<b>COMPARATIVE ANATOMY AND PATHOLOGICAL ANATOMY</b>	Manual of Practical and Biosafety Operating Procedures at the Rabanales University Farm (CEP-FAVE)	07NA3025	2007/2008
<b>CELL BIOLOGY, PHYSIOLOGY AND IMMUNOLOGY</b>	Physiology for biologists and environmental scientists	07NA2021	2007/2008
<b>BIOCHEMISTRY AND MOLECULAR BIOLOGY</b>	Monitoring of chemical and phenolic ripeness indices in Pedro Ximénez grapes during passerillage raisining as an interdisciplinary learning tool in the EHEA model for students of Chemistry and Biochemistry studying for the Degree in Winemaking	07NB2022	2007/2008
<b>BIOCHEMISTRY AND MOLECULAR BIOLOGY</b>	Production of laboratory practical "Structure of Biomolecules (glucids)" in multimedia, multiplatform format	05NA039	2005/2006
<b>BIOCHEMISTRY AND MOLECULAR BIOLOGY</b>	Production of laboratory practical "Structure of Biomolecules (protds)" in multimedia, multiplatform format	06NA5008	2006/2007
<b>BIOCHEMISTRY AND MOLECULAR BIOLOGY</b>	Development of multimedia, multiplatform tools for improving the teaching, learning and use of English, for general academic, teaching, research, support and management purposes. I. Basic module and general applications	07NA2037	2007/2008
<b>FOOD SCIENCES AND FOOD TECHNOLOGY</b>	University of Cordoba Food Sciences and Food Technology: First Student Workshop	06NB3026	2006/2007

Department	Project Title	Project N°	Date
<b>DEAN'S OFFICE</b>	"Guide to skills and good practices in Veterinary Medicine"	06NA3013	2006/2007
<b>FOOD SCIENCES AND FOOD TECHNOLOGY</b>	Application of EHEA guidelines to subjects in the Food Sciences and Food Technology Degree Programme	07NB3084	2007/2008
<b>FOOD SCIENCES AND FOOD TECHNOLOGY</b>	Dietary Training Programme for producing diets and recipes	07NA3068	2007/2008
<b>PHARMACOLOGY, TOXICOLOGY AND LEGAL AND FORENSIC MEDICINE</b>	Design, production and update of an interactive CD on Plant Toxicology and related case histories to facilitate learning, as per EHEA guidelines	05CA014	2005/2006
<b>PHARMACOLOGY, TOXICOLOGY AND LEGAL AND FORENSIC MEDICINE</b>	Design, production and update of a CD on clinical and therapeutic toxicology in small animals to facilitate learning, as per EHEA guidelines	06NA3022	2006/2007
<b>PHARMACOLOGY, TOXICOLOGY AND LEGAL AND FORENSIC MEDICINE</b>	Planning, design and plant production at the Rabanales experimental farm as a strategy for learning the major forage, homeopathic, medicinal and toxic plant groups for livestock	07NA3094	2007/2008
<b>ZOOLOGY</b>	Introduction of dissection of various animal species as a standard practical procedure	06NA3038	2006/2007

Projects developed by Faculty staff and approved by the Faculty Board for 2008-2009 are listed below:

Department	Project Title	Project N°	Date
<b>Animal Medicine and Surgery</b>	Practical learning experience in small-animal surgery techniques	FV-IN01/2009	2008-2009
<b>Animal Health</b>	Health policy. Methods to foster independent learning	FV-IN02/2009	2008-2009
<b>Animal Health</b>	Atlas of Veterinary Parasitology	FV-IN03/2009	2008-2009
<b>Comparative Anatomy and Pathological Anatomy</b>	Introduction to the Bilingual Teaching of Cytology and Veterinary Histology	FV-IN04/2009	2008-2009
<b>Animal Production</b>	Pastures and Livestock	FV-IN05/2009	2008-2009
<b>Animal Medicine and Surgery</b>	Adaptation of the Clinical Propedeutics course for simultaneous theoretical and practical tuition	FV-IN06/2009	2008-2009
<b>Animal Health</b>	New methods for the practical teaching of Microbiology: microscopy for identifying bacteria	FV-IN07/2009	2008-2009
<b>Animal Medicine and Surgery</b>	Anesthesia and mechanical ventilation machine simulator	FV-IN08/2009	2008-2009
<b>Animal Medicine and Surgery</b>	Practical learning experience in small-animal clinical anaesthetics	FV-IN09/2009	2008-2009
<b>Animal Health</b>	Design of posters to explain major techniques for the diagnosis of Infectious Diseases, and biosafety measures in a microbiology laboratory	FV-IN10/2009	2008-2009
<b>Food Sciences and Food Technology</b>	1st Student Workshop on Health Sciences	FV-IN11/2009	2008-2009
<b>Animal Medicine and Surgery</b>	Creation/Adaptation of a classroom for "in vivo" teaching of Propedeutics	FV-IN12/2009	2008-2009
<b>Animal Health</b>	Computerised learning system for the parasitological diagnosis of parasitic diseases	FV-IN13/2009	2008-2009
<b>Comparative Anatomy and Pathological Anatomy</b>	Improved practical veterinary training in slaughterhouses	FV-IN14/2009	2008-2009
<b>Food Sciences and Food Technology</b>	Organization and implementation of practical multidisciplinary activities in food technology pilot plant	FV-IN15/2009	2008-2009
<b>Pharmacology, Toxicology and Legal and Forensic Medicine</b>	Production and updating of an interactive CD on legal regulations concerning drug residues in foodstuffs of animal origin as a support for self-learning of toxicology	FV-IN16/2009	2008-2009
<b>Biochemistry and Molecular Biology</b>	Innovation and improvement of practical classes in Chemistry and Biochemistry using interactive digital whiteboards	FV-IN17/2009	2008-2009

## **2. Teaching Groups**

Teaching Groups were established in 2007 with a view to pooling ideas and content for the production of innovative teaching material. Groups contain at least three teachers of related subjects.

## **3. Academic Advisor**

The Academic Advisor is a lecturer responsible for a given number of students, to whom he gives assistance and advice throughout their time at University, concerning academic matters and particularly concerning the degree course chosen; the Advisor thus provides permanent, efficient monitoring geared towards ensuring optimised learning. At the Faculty of Veterinary Medicine, the Adviser/Student ratio is 1:8.



### 5.1.3. The examination system

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

#### **Central examination policy for the Faculty**

Rules regarding student assessment are laid down in the University's Academic Rules and Regulations. These regulations state that student assessment procedures should take into account all activities included in the teaching plan for each subject, and in particular:

- Participation in theoretical and practical classes, seminars and other additional activities.
- Attendance and performance at practical classes
- Course-content-related work handed in.
- Mid-term and end-of-year examinations stipulated in the subject programme.
- Final examinations
- Any other activity indicated in the subject teaching guidelines

The teacher is required to teach the whole of the theoretical and practical syllabus, and to examine the students on that basis. If, due to

exceptional circumstances, it has not been possible to cover the whole syllabus, the Department Board – under the supervision of the Faculty Teaching Committee – will decide on the subject matter for the examination, having canvassed the views of the teacher responsible for that subject and of the student representative for the year concerned.

All students registered for a subject have the right to be examined or assessed according to the criteria listed above. At the end of the examination, students may request proof of their having sat it.

Teachers are required to keep end-of-year examination scripts until the end of the following academic year; mid-term examination scripts must be kept until the end of the academic year in question. The teachers responsible for that subject are also responsible for the custody of examination scripts. Any anomaly regarding the custody of completed examination scripts before the stipulated period has ended will be investigated and dealt with by the Faculty Teaching Committee.

### **Special periods during the year for examination**

The official examination timetable for each academic year is drawn up by the Faculty Board during the previous academic year; once approved by the University's Governing Council, the timetable is published on the Faculty website and included in the teaching guidelines for each subject. No teaching takes place during ordinary examination periods, which are devoted solely to ordinary and extraordinary examinations, as follows:

#### **1. Ordinary examination sessions:**

- 1.1.** One-year subjects: June and September.
- 1.2.** One-term subject:
  - 1.2.1.** First term: February and September.
  - 1.2.2.** Second term: June and September.

#### **2. Extraordinary sessions:**

- 2.1.** December. This extraordinary session is open to students who have failed, or failed to sit, the examination at ordinary sessions or in previous years.
- 2.2.** Extraordinary session for final-year students who have still to pass 10% or less of the core subjects.

Students are also entitled to a second call within the ordinary or extraordinary sessions in cases of exceptional circumstances.

### **Form(s) of examination used**

The form of examination depends on the nature of the subject matter. For most subjects, knowledge of theory is tested separately from knowledge of practice, although in certain subjects – particularly electives – theoretical and practical knowledge may be evaluated simultaneously.

For mid-term and end-of-year examinations, theoretical knowledge is largely evaluated by written examination, although students may be examined orally in some subjects, mostly in end-of-year examinations. Written examinations include multiple-choice tests, short questions and questions requiring longer answers.

Continuous assessment includes monitoring attendance at theory classes and evaluating the student's skills and attitudes; the student's ability to work alone is evaluated through the presentation of clinical case histories, clinical scenarios or problems, physiology atlases, etc.

Written examinations are marked using a scale from 0 to 10; the result is expressed to one decimal place; marks may also be expressed in terms of equivalent grades, using the table laid down in Royal Decree 1125/2003 of 5 September, published in the Spanish State Gazette on 18 September 2003):

- 0 to 4.9..... Suspenso (Fail)
- 5.0 to 6.9..... Aprobado (Pass)
- 7.0 to 8.9..... Notable (Merit)
- 9.0 to 10..... Sobresaliente (Distinction)

The minimum pass mark for all examinations is 5.0.

Students have the right to challenge individual marks in mid-term or end-of-year examinations, or their overall course grade. These marks are officially recorded, and a student may request their review following the procedure laid down in the University's Academic Rules and Regulations, approved by the Governing Council on 25 March 2008.

The teacher of a given subject may award the grade of “matrícula de honor” to students who have obtained a mark of 9.0 or more. This special distinction can only be awarded to a maximum of 5% of the eligible students of that subject; where there are fewer than 20 students, this distinction may be awarded to only one student.

### **Retakes of an examination**

All students are entitled to retake an examination at up to six sessions, but cannot sit the examination more than twice in any one academic year. Students wishing to sit the examination at their sixth session (or seventh session in the case of extraordinary circumstances) may ask the Faculty Board or, in the case of a seventh retake, the Chancellor for permission to be examined by a jury; the jury will be appointed by the Chancellor at the suggestion of the Department Board, and cannot include any of the staff responsible for teaching that subject in the academic year in question. The Chancellor’s decision must include the date for the jury examination, which must always take place during the official examination period.

### **“Filter” subjects**

In some cases, students are required to pass certain subjects - known as “filter” or “key” subjects – before being examined in any subject in the following academic year(s). These subjects are specified in the syllabus, and are as follows:

- Embriology and Sistematic Anatomy for Topographic Anatomy and Neuroanatomy.
- General Pathology for Medical Pathology.
- Anaesthesiology for Surgery.

In addition to these “filter” subjects, other filters are applied to core subjects. There is no filter for elective subjects, although students are strongly recommended to pass certain electives before studying other subjects.

### 5.1.4. Evaluation of teaching and learning

- » *Describe the method(s) to assess the quality of teaching and learning used in the Faculty.*
- » *Indicate whether the evaluation is a Faculty procedure, or one set up by individual departments, by students or by individuals.*
- » *Indicate the use of external evaluators.*
- » *Describe the role of students in the evaluation of teaching and Teachers.*
- » *Describe the follow-up given to the evaluation.*

At the University of Córdoba, assessment of teaching quality is the responsibility of the Quality Unit, accountable to the Vice-Chancellor for Planning and Quality. The Unit's mandate is to ensure the achievement of the quality goals stipulated by the Organic Law on Universities (LOU), the Law on University Autonomy (LAU) and the University Statutes with a view to enhancing the University's prestige, credibility and competitive position. For that purpose, the University has developed its own Teaching Quality Plan, whose main aim is to highlight the role of teaching as one of the basic pillars of the University.

The University has recently implemented the DOCENTIA model for evaluating teaching quality. The model was developed by the Spanish National Agency for Quality Assessment and Accreditation (ANECA), and is coordinated at regional level by the Andalusian Evaluation Agency (AGAE). Evaluation is carried out at the teacher's request, and is intended to ensure that the University's requirements are met, and that the model and the procedures on which the education system is based are sufficient both to guarantee high teaching quality and to contribute to staff development and recognition. Evaluation follows the guidelines laid down in the LOU, and is carried out in close cooperation with regional agencies, with whom specific cooperation agreements have been signed for the development of a nationwide quality assurance programme based on a common model.

In order to ensure a rigorous evaluation duly adapted to stipulated goals, the DOCENTIA programme takes into account staff-evaluation standards established by internationally-recognised institutions: the Personnel Evaluation Standards developed by the Joint Committee of Standards for Educational Evaluation, as a benchmark for the design,

development and implementation of staff evaluation procedures. At the same time, the evaluation of teaching activity within the University is seen as an internal assessment aimed at ensuring fulfilment of the objectives set by the University for each subject. This method of assessment does not preclude the involvement of external assessors, if requested by an outside body or by the University itself.

The model applied at the University of Córdoba is an adaptation of the DOCENTIA model, designed to reflect regional considerations ([http://www.uco.es/organizacion/calidad/actividades\\_propias/eval\\_prof/pdf/Manual\\_DOCENTIA-ANDALUCIA-Marzo08.pdf](http://www.uco.es/organizacion/calidad/actividades_propias/eval_prof/pdf/Manual_DOCENTIA-ANDALUCIA-Marzo08.pdf)), and was drawn up jointly and by consensus among all the Andalusian universities. Evaluation procedures require input from various agents involved in staff teaching evaluation, including:

- Students, who complete a survey on teaching quality for each of their teachers.
- Academic officials (Faculty Deans, Centre Directors and Heads of Department), who are required to file a report on each of the teachers.
- The Vice-Chancellor for quality and/or evaluation, who ensures that the procedures are carried out correctly, and who authorises and monitors each evaluation.
- The Service or Unit responsible for quality and/or evaluation, which provides the institutional data required for evaluation of staff teaching quality, as well as advice on technical issues as required by the evaluation committee.

### 5.1.5. Student welfare

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

#### **Measures taken to protect students from zoonoses (e.g. rabies) and physical hazards.**

The University operates a Risk Prevention Scheme, which estimates risks and provides solutions for their prevention. This service is run by the University itself rather than the Faculty. Each area of activity (e.g. veterinary teaching hospital, farm, laboratories) is covered by its own specific risk prevention scheme, and all schemes provide information on steps to be taken in situations of general risk (fire, terrorist attack, etc.)

#### **Facilities (not related to the teaching programme) which the Faculty provides for students.**

The University Halls of Residence provide accommodation for the community, and contribute to their social, cultural and scientific development. In addition to the Halls – Colegio Mayor Universitario “Lucio Anneo Séneca”, Colegio Mayor Universitario “Nuestra Señora de la Asunción”, Residencia Universitaria de Belmez, and Residencia Universitaria Lucano – the University also provides student flats and visitors’ accommodation at the Rabanales campus.

The University also provides a wide range of sports facilities at the Rabanales campus and the Menéndez Pidal campus. At Rabanales, students have access to football pitches, a sports centre, a gymnasium, rugby pitches, a jogging circuit, athletics tracks, tennis courts, paddle-ball courts and an indoor football pitch, as well as indoor and outdoor swimming pools and a sauna area. The Menéndez Pidal campus has a sports centre, athletics tracks, tennis and paddle-ball courts and a beach-volleyball court. The sports facilities are so numerous that they can be used not only by members of the University but also

by non-members. The university company Ucodeporte is responsible for managing the use of all the sports facilities (<http://www.uco.es/empresa/ucodeporte/>).

A free cross-campus bicycle service is available to all duly-registered students at the Rabanales campus. It comprises four pick-up points where bicycles can be collected or dropped off throughout the course of the day. The University also provides a language tuition service, though its company Ucoidiomas, located near the Health Sciences campus. Languages offered include: English, French, German, Italian, Arabic, Chinese and Spanish for Foreigners.

A Health Service is provided at the Rabanales campus through an agreement with the health company Fremap; the service is open to all university staff and students. The Rabanales campus also has a bank, a shop selling educational and sports material, a photocopying service, wifi internet connectivity, leisure rooms and student lounges equipped with microwave ovens, a train station with a shuttle service to the city centre, and a chapel.

Finally, like all the University faculties, the Rabanales campus has a full range of bar, restaurant and catering services.

### **Guidance for students with problems**

The University offers the following services for students with problems:

- Psychological Counselling Service (SAP) ([www.uco.es/servicios/sap](http://www.uco.es/servicios/sap)), set up by the University's Vicechancellor for Students and Tuition to respond to the needs of University staff and students. The service, which is wholly free of charge, is manned by professional specialists in personality problems, psychological assessment and treatment, from the University's Psychology Department.
- The Special Needs Unit (UANE) ([uane@uco.es](mailto:uane@uco.es)) is designed to meet the specific needs of students with disabilities.
- The Faculty, the department and the subject teacher are always willing to examine disabled students in conditions appropriate to their needs.
- The University Ombudsman is responsible for ensuring that the rights and freedoms of the university community are respected ([http://www.uco.es/organizacion/defensor\\_universitario/](http://www.uco.es/organizacion/defensor_universitario/)).



## **5.2. COMMENTS**

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

The teaching programme of the Faculty of Veterinary Medicine is of satisfactory quality; it meets the regulatory standards set out by the University, and is consistent with the University's overall system. The University Teaching Coordination Unit and the Faculty Teaching Committee make a major contribution to the effective coordination of teaching. Adaptation to the EHEA is progressing gradually, and in a satisfactory manner; both the University and the Faculty – which is currently implementing its pilot experiment – provide structural, economic and training-related support. A key feature is the Faculty's provision of funding for innovative teaching projects. The Faculty of Veterinary Medicine has been evaluated more positively than other University faculties.

A new syllabus is being drawn up, in which the evaluation of skills and competences is to be given greater weight.

## **5.3. SUGGESTIONS**

The process of adapting to the European Higher Education Area has increased the academic burden on students, who now have to study more subjects per academic year. As a result, there is a need for greater coordination between the teachers of different subjects in any given academic year with regard to the setting of essays and papers.

It would also be useful if the meetings currently held by teachers in the same academic year to assess the implementation of the pilot experiment could be scheduled and recorded in order to ensure effective coordination not just of the various subjects in any given year but also of subjects in different academic years.

It would be very worthwhile to introduce a system of final evaluation by external examiners, for example from professional associations, who could ensure that students displayed all the required basic knowledge and skills; this assessment would be a prerequisite for graduation and thus for entering the profession. However, the introduction of such a system is not feasible under current Spanish legislation. The new syllabus

bus includes a final-year dissertation which could serve as a means of evaluating the skills and competences of prospective graduates.

Finally, teaching quality could usefully be improved by encouraging teachers to attend the teacher training courses run by the University, in order to become familiar with the new methods required for adaptation to the EHEA, and by enhancing their self-esteem as teachers, basing the evaluation of their teaching skills not only on the degree of student satisfaction but also on objective results.

## Chapter VI

# **FACILITIES AND EQUIPMENT**



## 6.1. FACTUAL INFORMATION

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



**Figure 1. Map of Rabanales Campus. Location with respect to the city of Córdoba**

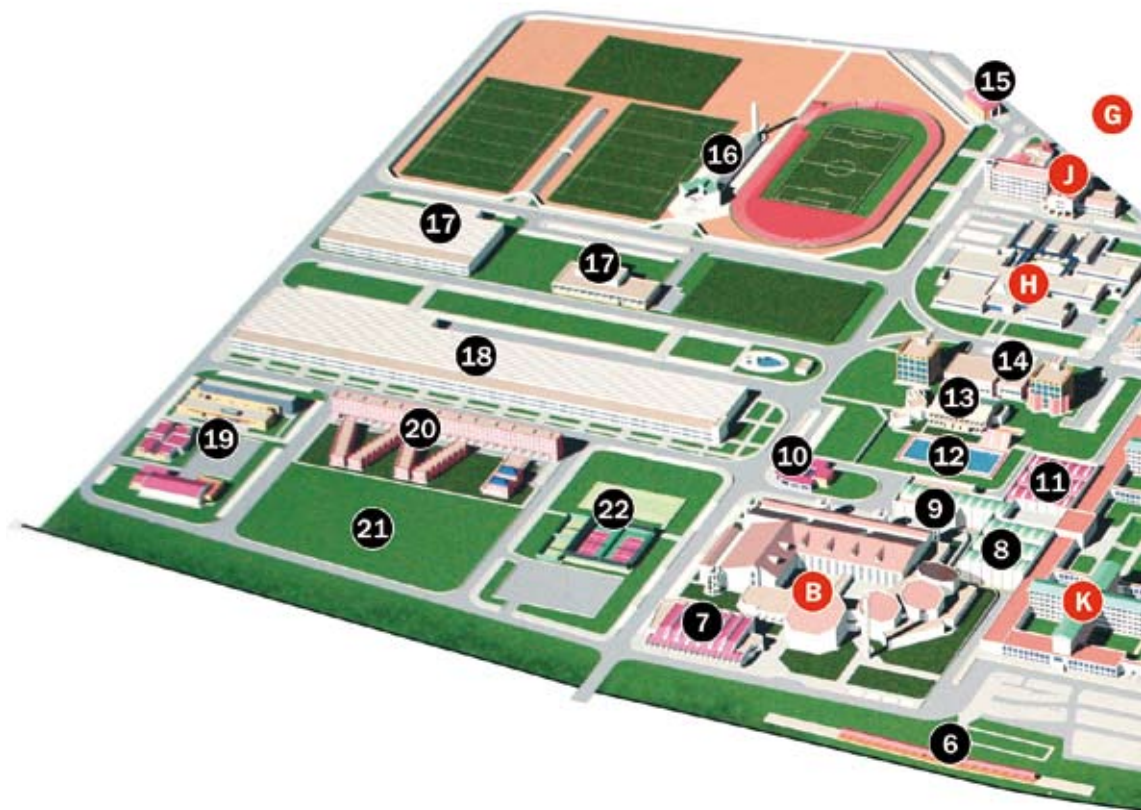
### 6.1.1. Premises in general

The Faculty of Veterinary Sciences is situated on the Rabanales Campus (463,000 m<sup>2</sup>), three kilometres northeast of the city of Córdoba. The Campus has the advantage of easy vehicle access from the nearby motorway. The fastest way of getting there from the city centre is by train (trains every hour, journey time 5 minutes), although there is also a bus service. Bicycles are available on the campus itself for any student registering for the service, which consists in four pick-up points in different areas of the Campus, at which bicycles may be collected and returned throughout the day.

Rabanales is currently the site of the Faculty of Veterinary Medicine, the Faculty of Sciences, the University Polytechnic School and the University School of Agricultural Engineering (ETSIAM).

The various departments comprising the Faculty of Veterinary Medicine are housed in a number of buildings on Campus: Charles Darwin, measuring 14,003 m<sup>2</sup>, Gregor Mendel 11,387 m<sup>2</sup>, Severo Ochoa 13,941 m<sup>2</sup> and Albert Einstein 11,110 m<sup>2</sup>: C1, C5, C6 and C2 respectively). The Campus also contains a number of other buildings, including the classroom block, the University Veterinary Teaching Hospital, the Ramón y Cajal Building (Centralised Research and IT Support Services, the Health Building, the Animal Production Pavilion, the Farm and the Organic Beekeeping Centre. Other shared facilities include the Averroes lecture-theatre block, the Juan XXIII Hall, the Assembly Hall, the Central Library, as well as sports facilities, the Lucano hall of residence and the railway station; a new Technological Research and Development Park is currently being built on Campus.

The general layout of the Campus is shown in Figure 1. Those buildings used by the Faculty of Veterinary Medicine are shown by letters, whilst general Campus services are marked by numbers.



**A:** Albert Einstein Building: This houses the Department of Statistics, Econometrics, operation Research and Business Organisation, the Department of Physics, the Department of Applied Physics, Radiology and Physical Medicine, and the Department of Mathematics.

**B:** Averroes lecture-theatre block: This three-storey block (24,678 m<sup>2</sup>) contains lecture theatres holding a large number of students, leisure areas, a cafeteria, a lobby for exhibitions, banks, audiovisual rooms, IT rooms, the Auditorium, students' union premises, a sports shop and a print shop.

**C:** Teaching Farm

**D:** Charles Darwin Building: This houses the Department of Food Sciences and Food Technology, the Department of Pharmacology, Toxicology and Legal & Forensic Medicine, the Veterinary Physiology section of the Department of Cell Biology, Physiology and Immunology, and the Department of Zoology, whose offices and research laboratories are on the 2<sup>nd</sup> and 3<sup>rd</sup> floors; on the ground floor there are three student laboratories, all fully-equipped with audiovisual equipment and Internet access.

**E:** Gregor Mendel Building: Houses the Department of Genetics.

**F:** The Francisco Santisteban Veterinary Teaching Hospital: The hospital covers a surface area of 7,377.61 m<sup>2</sup>, comprises two floors and a basement. The building houses the Department of Animal Medicine and Surgery as well as the Veterinary Teaching Hospital itself, which is under the joint management of a member of the Department and a manager directly appointed by the University.

**G:** Equine Sports Medicine Centre

**H:** Animal Production Building: This single-storey building, with a surface area of 7,568 m<sup>2</sup>, houses the Animal Production Department.

**I:** Marie Curie Building

**J:** Animal Health Building: This houses the Department of Comparative Anatomy and Pathological Anatomy and the Department of Animal Health. It comprises an east wing containing the departments of Anatomy (first floor) and Pathological Anatomy (second floor), and a three-floor west wing housing the Department of Animal Health, with a Parasitology and Parasitic

**Figure 2. Map of Rabanales. General plan of the campus. Please note that only buildings and equipment related to the Veterinary Faculty are indicated.**



Disease Unit on the first floor, an Infectious Diseases, Epidemiology and Health Policy & Preventive Health Unit on the second floor, and the Microbiology Unit on the third floor.

**K:** Severo Ochoa Building: this building houses the Department of Biochemistry and Molecular Biology.

**L:** Celestino Mutis Building

**1.** Colonia de San José. The Andalusian Organic Beekeeping Centre (CAAPE) is located on the first floor of Building 7.

**2.** Juan XXIII Hall.

**3.** The Assembly Hall (Senate House, Graduation Hall) has a total surface area 9883 m<sup>2</sup>. The second floor contains the offices of the Dean of the Veterinary Faculty, the offices of the Vice-Deans, administration offices, a boardroom and other premises.

**4.** Assembly Hall Cafeteria.

**5.** Greek Theatre.

**6.** Railway station.

**7.** Arete Sports Pavilion.

**8.** Maimónides University Library: This 10,000 m<sup>2</sup> building, with Wi-Fi internet access, houses the Technical and User Support Services: free-access reading facilities, consultation, general information, specialist information, OPACs, library loans, manual and electronic references, training and cultural activities, the General Library and a Periodicals providing online access to newspapers and periodicals, journals and abstracts, documents and documentation; there are also rooms for group work, a Research Area and automated Research Cubicles.

**9.** Publications Service.

**10.** Lecture-theatre block Cafeteria.

**11.** Secretarial offices and multi-purpose rooms.

**12.** Olympic-size swimming pool.

**13.** Indoor swimming pool.

**14.** Central Research Support Services.

**16.** Monte Cronos University Stadium.

**19.** Experimental Animal Service.

**20.** Lucano Hall of Residence.

**22.** Athletics tracks.

### 6.1.2. Premises used for clinics and hospitalisation

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

**Table 6.1: Premises available for hospitalisation and number of animals that can be accommodated, by species.**

	Species	Number of places
<b>Regular hospitalisation</b>	Horse	Total = 18 boxes Located on ground floor of Veterinary Teaching Hospital
	Small ruminants and/or pigs	Total = 6 boxes, which can be used for any of these species Located on the ground floor of the Animal Health Building
	Dogs and cats	Total = 24 cages Located on ground floor of Veterinary Teaching Hospital
<b>Isolation facilities</b>	Horses and farm animals	Total = 4 boxes in the Veterinary Teaching Hospital hospitalisation area
	Small animals	Total = 9 cages (5 intensive care cages, 2 cages for infectious diseases and 2 incubators)

### 6.1.3. Premises for animals

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

» *If the Faculty has no farm of its own, please explain in the SER the practical arrangements made for teaching such subjects as animal husbandry, herd health, and the techniques of handling production animals.*



### **6.1.3.A. RABANALES UNIVERSITY FARM (CEP-FAVE)**

The Rabanales University Farm covers an area of 1.4 hectares, and comprises various buildings:

- 1. Pig shed:** The pig shed has two maternity rooms with three maternity pens in each room, 1 stud pen, 11 gestation cages, a confirmed gestation area measuring 39.5 m<sup>2</sup>, 3 post-weaning rooms measuring 7.4 m<sup>2</sup>, 1 rearing/fattening room measuring 14 m<sup>2</sup> and two open-range maternity modules. The Farm currently has one breeding hog, 12 adult Iberico breeder sows, and 2 replacement females.
- 2. Ruminants shed:** The ruminants shed contains one milking room, 1 pen for young kids and 4 outdoor paddocks. The farm currently has 9 calves, 32 adult goats and 59 sheep.

Other facilities: 1 closed cattle shed measuring roughly 36 m<sup>2</sup> for isolation purposes, 1 closed cattle shed measuring roughly 25 m<sup>2</sup>, 1 open cattle shed and a boot-cleaning area.

### **6.1.3.B. SPORTS MEDICINE CENTRE**

The Sports Medicine Centre comprises 12 boxes, 4 offices (secretary, management, biomechanics laboratory and physiology laboratory), one treadmill room, 2 harness rooms, a lecture theatre, a courtyard, changing rooms, baths (4), a weighing shed, an altitude chamber, and equipment storage rooms. It also has an exercise physiology laboratory and a locomotory biomechanics laboratory.

The Centre has a drained, enclosed, three-tier breaking-in ground measuring 70m x 30. Operational facilities include a walking area and a sand-covered ring.

Equipment: Breathing masks, ergospirometer (flowmeter), infrared (CO<sub>2</sub>) + zirconium cell gasometer specifically designed for horses, video-endoscope, ultrasound scanner, a telemetric surface electromyography system, an optical motion capture and analysis system (SOMCAM3D), electrotherapy devices (TENS/NEMS) and therapeutic ultrasound devices for physiotherapy.

### 6.1.3.C. ANIMAL REARING FACILITIES

These include a minipig unit, an area for breeding cats and dogs, and an experimental unit. The minipig unit measures 580.29 m<sup>2</sup> and comprises: a mating-monitoring room with 16 centrally-positioned pens for breeding sows which are regularly checked for signs of heat and then subjected to supervised mounting; a gestation-lactation room with three pens for weaned piglets and 5 birthing pens; and a rearing room containing 10 pens for weaned animals. The cat and dog breeding area, which measures 424.85 m<sup>2</sup>, comprises two different buildings, separated by an open-air passage leading to the paddocks of the two buildings. The main building contains the entrance, the office, the clinic, the laboratory and staff WC facilities. It also houses 10 breeding cubicles and 1 quarantine cubicle for dogs, and similarly 10 breeding cubicles and 1 quarantine cubicle for cats. The outbuildings contain 12 cubicles for weaned and adult animals (6 for dogs and 6 for cats). Finally, the experimental unit has 8 rooms designed for keeping rodents (mainly rats and mice); 4 maintenance rooms for dogs, cats and minipigs; various research areas; a fully-equipped operating-theatre; 2 quarantine rooms and one cleaning and disinfection area.

### 6.1.4. Premises used for theoretical, practical and supervised teaching

» *The same room should not be entered under two or more headings, even if it is used, for example, for both practical and supervised work.*

**Table 6.2. Premises for clinical work and student training**

<b>Small animals</b>	No. consulting rooms	9
	No. surgery suites	3
<b>Equine and food animals</b>	No. examination areas	3
	No. surgery suites	1

**Table 6.3. Premises for lecturing**

Number of places per lecture-hall

Averroes lecture rooms	Great Hall	B7	B8	B9	B10
<b>Places</b>	560	143	143	143	143
<b>Animal Health Lecture rooms</b>	A1	A2			
<b>Places</b>	96	96			
<b>Veterinary Teaching Hospital lecture rooms</b>	HVB1	HVB2			
<b>Places</b>	92	60			
<b>Darwin Building lecture rooms</b>	C1B1	C1B3	C1B4	C1B5	C1B6
<b>Places</b>	91	49	49	91	70

*Total number of places: 1856*

**Table 6.4. Premises for group work (Number of rooms that can be used for supervised group work)**

Room	Name	Places
<b>1</b>	HVB3	24
<b>2</b>	Ramón y Cajal B1	18
<b>3</b>	Ramón y Cajal B2	23
<b>4</b>	Ramón y Cajal B3	27
<b>5</b>	Ramón y Cajal P2	30
<b>6</b>	Ramón y Cajal P3	40
<b>7</b>	Ramón y Cajal S2	30
<b>8</b>	Ramón y Cajal S3	40
<b>8</b>	SA1	24
<b>9</b>	SA2	24
<b>10</b>	Clinical lecture theatre	40
<b>11</b>	Darwin AS1	27
<b>12</b>	Darwin AS2	48
<b>13</b>	Darwin C1B2	34
<b>14</b>	Darwin C1B7	24
<b>15</b>	Darwin C1B8	24
<b>16</b>	Darwin C1B9	24

**Table 6.5. Premises for practical work**

Laboratory No.	Function	Places
<b>1</b>	Dissecting room	100
<b>2</b>	Large-animal room	15
<b>3</b>	Microscopy laboratory	25
<b>4</b>	Small-animal room	6
<b>5</b>	Necropsy room	24
<b>6</b>	Clinical lecture theatre	40
<b>7</b>	Parasitology laboratory	40
<b>8</b>	Parasitic diseases laboratory	25
<b>9</b>	Infectious Diseases Laboratory	10
<b>10</b>	Laboratory for systematic practicals	24
<b>11</b>	Microbiology laboratory	12
<b>12</b>	Veterinary Teaching Hospital laboratory	24
<b>13</b>	Biochemistry and Chemistry laboratory	14
<b>14</b>	Nutrition and Food Hygiene	25
<b>15</b>	Food Technology Laboratory	25

## Health and Safety Measures in Place

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

European Directive 89/391/CEE, known as the Mark Directive, sets out measures to promote improved security and safety for workers, while Spanish Law 31/1995 on the Prevention of Industrial Risks outlines key preventive activities and provides a collection of measures to be introduced in public and private companies with a view to improving working conditions and reducing the risks of industrial accidents.

The major objective of the University's Environmental Protection and Prevention Service ([www.uco.es/servicios/dgppa](http://www.uco.es/servicios/dgppa)) is to encourage and coordinate measures to ensure the health and safety of workers, the protection of the environment and the conservation of natural resources in the university.

The following services are involved:

- Risk Prevention and Training Service
- Environmental Protection Service (SEPA, explained in detail under Waste Management).
- Radiological Protection Service

The Risk Prevention and Training Service is responsible for the management of the equipment required for protection, evacuation and fire-fighting. All major areas are equipped with fire extinguishers, extractor fans and collection facilities for biological and chemical waste (in the relevant laboratories); all waste is regularly monitored and removed. Laboratories are equipped with extraction systems, biosafety measures and laminar flow chambers (where required). Emergency shower facilities and eye-bathing devices are available.

Students are required to wear gloves, protective goggles and breathing masks, and are informed of the basic measures to be implemented in order to comply with good laboratory practice. Use of appropriate clothing is compulsory in laboratories, the university farm, the necropsy room, the dissecting room and the veterinary teaching hospital.

Safety is a priority in all practical classes. When handling large and small animals, students are closely supervised by the lecturer, using appropriate sedation protocols where necessary. Medical assistance on campus is provided by the company FREMAP, which has a first-aid room near the lecture theatres and organises ambulance transfer where required.

## 6.1.5. Diagnostic laboratories and clinical support services

### 6.1.5.A. DIAGNOSTIC LABORATORIES

» Briefly describe the facilities available for clinical diagnostic work.

The Veterinary Faculty diagnostic services receive specimens from institutions all over Andalusia, southern La Mancha and southern Extremadura and sometimes work in coordination with these regions.

#### Infectious Disease Diagnostic Service

This service, situated on the ground floor of the Animal Health building, is equipped with incubation ovens permitting culture growth in aerobic conditions and microaerophilia growth at various temperatures; working benches for analyses of plates and specimens, an independent kitchen for preparing culture samples, and independent refrigerated and freezing chambers. The service is coordinated by the Infectious Diseases Unit, the Epidemiology Unit and the Veterinary Preventive Medicine & Health Policy Unit.



### **Pathological Anatomy Diagnostic Service**

This service, located on the ground floor of the Animal Health building, has two necropsy rooms equipped with necropsy tables of various sizes, a refrigerated chamber and a freezing chamber, a ceiling-mounted pulley system for moving large corpses, and all the necessary necropsy material. A number of side-rooms off the main necropsy room contain all the equipment required for fixing and embedding tissue samples, and for filing paraffin-embedded specimens (tissue library). The staining laboratories (for histochemical and immunohistochemical staining of sample tissues) are located on the second floor of the same building. The service is run by the Histology and Pathological Anatomy Unit, which is part of the Department of Comparative Anatomy and Pathological Anatomy. Diagnosis of disease in pets is based on the microscopic examination of cytology smears, biopsies, necropsy samples and whole-animal necropsy.

### **Parasitic Disease Diagnostic Service**

This service is located on the ground floor of the Animal Health Unit, and is equipped with numerous working benches, ovens, refrigerators, microscopes and binocular magnifying lenses, as well as all the specific material required for parasite analysis. The service is run by the Parasitology and Parasitic Disease Unit, part of the Department of Animal Health. Specimens analysed include faecal and blood samples and tissues from various organs; study techniques include flotation, sedimentation and digestion.

#### **6.1.5.B. CENTRAL CLINICAL SUPPORT SERVICES**

*» Indicate the nature of these services and how they are organised (e.g. diagnostic imaging, anaesthesia, etc.)*

### **Internal Medicine Service**

This service, located on the ground floor of the Veterinary Hospital, comprises nine small-animal consulting rooms, and two rooms specifically for examining horses. All rooms are equipped with examination tables and all the material required for physical examination. The service is run by the Veterinary Teaching Hospital Management Board, and most referrals are from the city and the province of Córdoba, although larger animals (particularly horses) are referred from all over Andalusia



and some areas of the bordering regions. The Internal Medicine Service provides specialised care for small and large animals in the fields of Internal Medicine, Cardiology, Pulmonology, Endocrinology, Neurology, Nephrology and Urology, Digestive Tract disorders, Ophthalmology, Dermatology, Clinical Ethology (prevention and treatment of undesirable behaviour) and Neonatology. A wide range of special diagnostic techniques are used, including blood, urine and faecal testing, analysis of ascitic and cerebrospinal fluid, ultrasound scanning (ocular, cardiac and abdominal), indirect digital radiography (CR), computerised axial tomography (CAT), endoscopy, biopsy and specimen analysis.

### **Surgery Service**

This service, situated on the ground floor of the Veterinary Teaching Hospital, is equipped with endoscopy instruments, electric scalpels, diode laser, arthroscopy instruments, surgical microscopes, ultrasound



scanner, surgery tables and a ceiling-mounted pulley system in the equine operating theatre. It is run by the Veterinary Teaching Management Board and most referrals are from the city and the province of Córdoba, although larger animals (particularly horses) are referred from all over Andalusia and some areas of the bordering regions. The services provided include General Surgery, Urogenital and Digestive Surgery, Abdominal Surgery, Locomotor Apparatus Surgery, Upper Airways Surgery, Genital and Urinary Tract Surgery in Horses and Mares, Neonatal Surgery, Minimally Invasive Surgery, Transendoscopic Surgery, Arthroscopy, Laser Surgery, Eye Surgery, Orthopaedic Surgery, Thoracic Surgery and Laparoscopic Surgery. The service is responsible for the diagnosis and treatment of large and small animals requiring surgery to achieve recovery and general well-being. Advice is also provided through external consultation and assistance for patients referred by other veterinarians, either by appointment or through emergency admission throughout the year.

### Anaesthesiology Service

This service, situated on the ground floor of the Veterinary Teaching Hospital, has all the anaesthetic equipment required for small and large animals, mechanical respirators, diffusion pumps and monitoring equipment. The service is run by the Veterinary Teaching Hospital



Management Board, and provides support for surgery performed in the Hospital, particularly on small animals and equids. It uses advanced anaesthesia, monitoring and catheterisation techniques, and is equipped with the latest technology. Protocols include inhalatory anaesthesia, total intravenous anaesthesia, controlled mechanical ventilation, sedation and continuous perfusion analgesia, locoregional anaesthesia and maintenance of intensive-care patients by cardiorespiratory and advanced neurological monitoring, with a view to sharply reducing morbidity and mortality.

### Hospitalisation Service

This service, situated on the ground floor of the Veterinary Teaching Hospital, has 40 hospital places for small animals, 4 intensive-care places and 25 places for large animals. The service is run by the Veterinary Teaching Hospital Management Board, and continuous surveillance for patients admitted for 24 hours or more, every day of the year.



### Diagnostic Imaging Service

This service is located on the ground floor of the Veterinary Teaching Hospital. The Radiography Unit has two rooms, one for small animals and the other for large animals. It is also equipped with computerised tomography (CAT) scanning equipment, digital radiography apparatus, an ultrasound scanner and both flexible and rigid endoscopes. The service is run by the Veterinary Teaching Hospital Management



Board. The large-animal radiography room is equipped to study any part of the horse, particularly the head, thorax, abdomen and back. Cervical–spine myelography is also carried out using appropriate contrast agents. The small-animal radiography room is equipped with an image intensifier (fluoroscope), which is particularly useful for dynamic studies (contrast radiography of the digestive and urinary tracts). The CAT scanner is useful for the diagnosis of disorders of the nasal cavity, sinuses and ears, of certain brain lesions, and of small lesions in the thorax and mediastinum; it is also valuable for the detection of lesions in the locomotor

system, and especially for the evaluation of the coronoid apophysis in the diagnosis of sacral and pelvic injuries; myelographic data can be complemented by CAT findings. Finally, the Service is equipped with a system for digitalising radiographic images captured using an indirect digital radiography (CR) system.

### Ophthalmology Service



This service, situated on the ground floor of the Veterinary Teaching Hospital, has its own surgery, fitted with the following equipment: direct, indirect (both traditional and with videocamera) and panoptic

ophthalmoscopes, split lamps (two fixed, with camera and video, and one portable), applanation tonometer, ultrasound pachymeter, fixed and portable retinographs equipped for fluorescein angiography, an electroretinograph, ocular ultrasound scanner working at 10 and 12 Mhz, phacoemulsifiers with anterior vitrectomy, a surgical microscope equipped with video and a set of lenses for fundus examination and gonioscopy. The Ophthalmology Service for large and small animals specialises in the following: eye surface disorders, glaucoma, cataracts, ophthalmoscopy and retinography, eye ultrasound scanning, fluorescein angiography, electroretinography and diagnosis and eradication of hereditary diseases. Surgical techniques performed include all surgical approaches to the anterior segment, using microsurgery where appropriate. Phacoemulsification is used for cataract surgery, and laser therapy is used where appropriate for the treatment of glaucoma. The operating theatre is equipped with a surgical microscope. The service mainly deals with cats, dogs and horses, but is open to all animal species.

### **Physiotherapy and Rehabilitation Service**

This service is currently situated on the ground floor of the Veterinary Teaching Hospital, but it is soon to be transferred to the basement of that building. It is equipped with electrical stimulation equipment and Transcutaneous Electric Neuromuscular Stimulation (TENS), therapeutic ultrasound devices, a treadmill for cats and dogs, apparatus for three-dimensional biokinematic analysis and a surface electromyograph, as well as a wide range of animal handling material. The service, which is run by the Veterinary



Teaching Hospital Management Board, provides active and passive physiotherapy for small and large animals, including horses with back problems, post-surgery rehabilitation, and treatment for neurological and locomotor disorders, as well as undertaking biokinematic studies.

### **Breeding Service**

This service, located on the ground floor and the first floor of the Veterinary Teaching Hospital, has a specific laboratory for the Animal Reproduction Unit. It is equipped with rectal ultrasound scanners and a

fixed high-resolution ultrasonograph for small animals, a fluorescence microscope, flexible and rigid endoscopes, an image analyser for sperm samples (CASA system), an embryo micromanipulator, a cryo-freezer for embryos and gametes, CO<sub>2</sub> ovens for oocyte maturation, centrifuges, containers and frozen sperm packing, sealing and printing equipment. The service, which is run by the Veterinary Teaching Hospital Management Board, offers private clients, stockbreeders and veterinarians a full diagnosis and treatment of reproductive pathologies. Clients wishing to do so can leave female animals for insemination with refrigerated or frozen sperm obtained either at the centre or at other laboratories. The Service also maintains frozen sperm banks, which are carefully monitored by hospital staff. Finally, embryo transfer programmes are available for selected mares, whether they are fertile or have gestation difficulties due to uterine inflammation and/or infection.

### **Experimental Animal Service**

This service is located at the south-western end of the Rabanales Campus, south of the Lucano Hall of Residence. It is equipped with the following: refrigerated and freezing chambers, autoclaves, carbon dioxide chamber, electrothermal microdiffuser, pig dip, a platform weighing-scale, a biochemistry analyser, anaesthetic equipment for small and large animals, a pulsoxymeter, an electric scalpel, lamps and operating tables, an ultrasound scanner and metabolic cages. The main objectives of this service are: to provide genetic- and health-standardised biological reagents for biomedical research; to offer – in conjunction with other Andalusian universities – a range and number of species, breeds and strains sufficient to meet current research demands; to ensure compliance with current legislation with regard to animal welfare and with regulations on animal experimentation; to contribute to the creation and implementation of an Animal Experimentation Ethics Committee (CEEAA); and to run training courses for researchers likely to use experimental animals and courses for auxiliary staff specialising in the breeding, care and maintenance of laboratory animals (levels A, B, C and D). The Service's facilities are also used for practical classes in Animal Handling (first year of the degree) and Reproduction and Obstetrics (final year).

### **6.1.6. Slaughterhouses**

The Faculty has arrangements with the slaughterhouse Cooperativa Andaluza Ganadera del Valle de los Pedroches (COVAP), located in Pozoblanco, 80 km north of Córdoba, and with the slaughterhouse

Cooperativa Andaluza Celedonio Montilla in Lucena, 70 km away in the south of the province, for holding practical classes in meat inspection and hygiene. According to the terms of the agreements, students will be accompanied throughout the slaughter and inspection process by a total of four veterinary inspectors. Practical classes are arranged for two students per day, under the supervision of an official veterinary inspector. These practicals are a compulsory element of the Food Hygiene, Inspection and Control course.

The COVAP slaughterhouse provides the full range of slaughtering services for cattle, pigs, goats and sheep. Its modern premises are equipped with the latest technology, suitable to high-throughput processing, and fully comply with all hygiene requirements. The slaughterhouse is involved in the following activities:

- Meat packing.
- Meat storage.
- Meat cutting.
- Cattle slaughterhouse: 1,850 heads/month.
- Pig slaughterhouse: Iberian pig (November to March), around 30,000 head/month; white pig (April to October), around 9,000 head/month.
- Sheep slaughterhouse: 7,000 head/month.
- Goat slaughterhouse: 60 head/month.

The Cooperativa Andaluza Celedonio Montilla slaughterhouse provides the full range of slaughtering services for cattle and pigs. It is involved in the following activities:

- Manufacture and/or processing and/or transformation of meat products.
- Meat cutting.
- Salting and drying of ham.
- Cattle slaughterhouse: 25-30 head/month
- Pig slaughterhouse: 2,600 to 2,800 head/month.

The Faculty has also signed agreements with these slaughterhouses regarding student external pre-professional internships.

### 6.1.7. Pilot plant

The Food Technology Pilot Plant is located in the semi-basement of the Darwin Building Annexe (C-1). The Plant, which has a total surface area of 2,428m<sup>2</sup>, is equipped with processing facilities, ripening chambers (4), refrigerated chambers (10) and freezing chambers, a certified tasting room, a kitchen, laboratories (food microbiology, chromatographic techniques, methods of preparation, instrumental analysis, physical/chemical analysis, special equipment), classrooms, offices, secretariat, computer room, meeting room, WC facilities, changing rooms, library and storage rooms.

Temperature control and chamber alarm systems are controlled from the Department using Osaka software. The program can also be accessed via password-protected internet connection to the University intranet. The program allows temperatures in each of the chambers to be monitored ( $\pm 2^{\circ}\text{C}$ ). Whenever temperatures deviate by more than  $5^{\circ}$  from the maximum and minimum temperatures established for each chamber ( $-23^{\circ}\text{C}$  for freezing,  $-2-8^{\circ}\text{C}$  for refrigeration,  $6-30^{\circ}\text{C}$  for ripening), an alarm is set off; the alarm is also triggered by power cuts. The alarm signal is sent to the security post and, by email and SMS, to the 24-hour duty technician.

Description of activities: All activities focus on the practical tuition of the various subjects taught in the Department of Food Sciences and Food Technology.

#### A. Sensory analysis

- Description: Organoleptic evaluation of foods
- Subjects involved: Food Hygiene, Inspection and Control, Basic Food industry Operations, Food Hygiene and Quality, Food Technology.
- Premises and equipment: Certified tasting room with 10 panels, equipped with light and water; sample preparation room; kitchen; meeting room.

### **B. Meat product processing**

- Description: Production of raw cured sausages.
- Subjects involved: Food Technology, Meat technology.
- Premises and equipment: 2 stainless steel benches, blender, slicer, sausage machine, stapler, mixer, refrigerated and freezing chambers.

### **C. Dairy Product Processing**

- Description: Production of crafted cheeses of various types and fermented dairy products using milk obtained at the Rabanales Campus Experimental Farm.
- Subjects involved: Food Technology, Milk Sciences.
- Premises and equipment: curd hopper, stainless steel table, manual pneumatic press, brine tank, cutting blades, pasteuriser (planned), moulds, ripening and refrigeration chambers.

## **6.1.8. Waste management**

Since it was established in 2000, the Environmental Protection Service (SEPA), now part of the DGPPA, has been responsible for environmental management at the University, focussing on the development of initiatives aimed at implementing good, environment-friendly practices throughout the University.

One of SEPA's initial tasks was to ensure compliance with current regulations regarding the disposal of hazardous waste generated in University laboratories. Since then, its scope has widened to include the implementation of selective waste collection plans, the running of training courses, the production of publications and the supervision of environmental awareness-raising campaigns.

In 2003, SEPA received a special mention in the European Good Practice Awards presented by the European Agency for Safety and Health at Work.

SEPA has set itself further ambitious challenges, including the creation of a University-wide integrated environmental management programme complying with the ISO 14001 Standard.



Corpses, organs and biological samples from the hospital, the dissecting rooms, the operating theatres, the necropsy rooms and the research laboratories are collected by an authorised waste collector (through SEPA), at the request of any Department or Service. Hazardous waste is kept in sealed drums in a freezing chamber until collected by the authorised company.

The collection of chemical waste and laboratory material is carried out on request, in compliance with the established protocol which requires identification of waste by means of correct labelling and proper packaging, using materials supplied by the waste management service.

## **6.2. COMMENTS**

Given its current location within a campus specialising in food and agriculture, the Faculty of Veterinary Medicine is strategically placed with regard to the availability of areas devoted to the rearing and management of animals. The premises and equipment in general represent an extraordinary strength in terms of the layout and function of areas specifically intended for teaching and research. In this respect, the superb facilities of the Veterinary Teaching Hospital, the excellent sports infrastructure and the library are worthy of particular mention. The most remarkable features of the campus service-related infrastructure are the hall of residence and the four catering establishments.

The environmental protection and prevention service provides safe and efficient management of chemical and biological waste collection, using clearly-defined protocols.

The animal areas were created and are managed with a view to ensuring the availability of numerous animal species, in full compliance with current regulations on ethics and animal welfare.

## **6.3. SUGGESTIONS**

There are currently around seven thousand undergraduate students on the University Campus; this requires the short-term planning, funding and building of a new classroom block fully adapted to the teaching system based on the European Higher Education Area, enabling classes to be taught in small groups in purpose-built rooms.

Certain deficiencies remain to be addressed, such as the improvement of community facilities and the provision of appropriate signs on campus; these will be taken care of as part of future scheduled building work. The maintenance of first-class facilities and the provision of appropriate equipment represent a financial challenge. To meet that challenge, the aim is to undertake funded research projects and information-transfer activities which will enable laboratory equipment to be improved. Action is also required to improve the still-inadequate equipment at the Food Technology Pilot Plant as well as to have a dairy farm as well as a poultry farm for teaching activities within the University Campus. Structural deficiencies are also present in the premises available for Animal Production hospitalization which need some modifications.

Finally, the Faculty is keen to increase the number of slaughterhouses offering students practical courses in inspection; this also represents something of a challenge, since the slaughterhouses are at some distance from the university, and have to receive students every day, within their working timetables.

## Chapter VII

# ANIMALS AND TEACHING MATERIAL OF ANIMAL ORIGIN





## **7.1. FACTUAL INFORMATION**

### **7.1.1.A. ANATOMY**

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

Bones, viscera, cadavers and live animals of different domestic animal species (dogs, cats, equids, cattle, goats, sheep, pigs, poultry and exotic species) are used for training students in practical anatomy. CT and MRI images of dogs, cats and equids are also used.

Dog and cat cadavers are obtained from a number of kennels in Andalusia, which refer animals to be put down for humanitarian reasons. The cadavers are generally those of animals that have died from non-infectious diseases. Viscera of various species are obtained from slaughterhouses. All materials are stored using a range of conservation methods, depending on their intended use: refrigeration, freezing, or other specific fixation techniques. Some specimens may be stored in containers with preserving solution for several years. The Anatomy Unit already has a complete collection of bones and skeletons of the various domestic species. This collection is stored next to the dissection room. In addition, students use resin anatomical models for training purposes.

**Table 7.1. Material used in Anatomy practical classes (academic year 2008-09)**

Specimen type	Equid	Cattle	Dog	Sheep/ goat	Pig	Poultry	Others
<b>Live animals</b>	3	-	3	-	-	30 (eggs)	-
<b>Complete cadavers</b>	-	-	16	2	-	6	-
<b>Fixed embryos and placentas</b>	2	4	4	6	10	-	-
<b>Assembled skeletons</b>	2	2	3	2	1	-	-
<b>Bones</b>	24	18	10 (collections)	1	-	-	-
<b>Fixed specimens</b>	33	7	25	17	10	-	-
<b>Plastinated specimens</b>	3	-	-	2	-	-	-
<b>Stuffed specimens</b>	5	-	-	-	-	-	-
<b>Computer assisted teaching</b>			1 programme for Osteology				

### 7.1.1.B. ANIMAL PHYSIOLOGY

*» Indicate the materials that are used in practical physiological training, and how these are obtained and stored*

Materials used for practical physiological training come from the farm, the Equine Sports Medicine Centre and the Veterinary Teaching Hospital and include blood samples and live animals of different species (canine, equine, ovine, caprine, porcine and bovine) (see also under “Standard Practical Clinical Training” in Chapter IV). Training includes blood sampling and leucocyte counts, electrocardiography in dogs and horses, pulse heart rate and temperature measurements in dogs, horses goats, swine and cattle and diagnosis of gestation by ultrasonography of bovine and ovine genital tract.

### 7.1.2. Pathology

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

Cadavers for necropsy are referred to the Histopathological Diagnostic Service and come principally from the University Veterinary Hospital and the Faculty farm, private clinics, large farms and the zoo. In addition, official diagnostic cases come to the Histopathological Diagnostic Service due to the fact that regional government laboratories lack pathologists.

Together with necropsies, this service is the support that veterinarians working in slaughterhouses (both official and private services) have to identify different abattoir lesions and diseases. Related subjects include General Pathological Anatomy, Special Pathological Anatomy and Veterinary Oncology.

Table 7.2. Number of necropsies

	Necropsies			Mean	
	Species	2008	2007		2006
<b>Production animals</b>	Cattle	33	42	35	37
	Sheep	157	137	153	149
	Goats				
	Pigs	223	287	223	244
	Other animals	7	7	4	6
<b>Equids</b>	Equids	36	52	58	49
<b>SUBTOTAL FOR ratio R18</b>		<b>456</b>	<b>525</b>	<b>473</b>	
<b>Poultry</b>	Poultry	41	35	22	33
<b>Rabbits</b>	Rabbits	7	12	8	9
<b>SUBTOTAL FOR ratio R19</b>		<b>48</b>	<b>47</b>	<b>30</b>	
<b>Pets/exotic animals</b>	Dogs	55	108	101	88
	Cats	6	15	22	14
	Reptiles	3	4	4	4
	Others	91	164	272	176
<b>SUBTOTAL FOR ratio R20</b>		<b>155</b>	<b>291</b>	<b>399</b>	

### 7.1.3. Animal production

» Indicate the availability of food-producing animals for the practical teaching of students

A) On the site of the institution;

B) On other sites to which the institution has access.

In the Veterinary Faculty there are three facilities for food-producing animals used for teaching:

**A.** In the Experimental Farm of the Rabanales University Campus there are:

- 24 sows reared intensively
- 3 beef cows

- 60 sheep
- 50 goats

These animals are used for practical teaching in the subjects of Ethology. Animal Protection and Ethnology; Agricultural Sciences and Agricultural Economics; Obstetrics and Reproduction; Animal Production, Preventive Medicine and Veterinary Management.

- B.** In the Animal Production Department there is the Experimental Animal Users Centre, in which another 40 goats and 20 rabbits are reared. These are used for the practical teaching of the subjects Animal Nutrition.
- C.** In the Centralised Experimental Animal Service there is a production unit with 40 minipigs, used in the practical teaching of the subject of Handling of Animals of Veterinary Interest.



Apart from these animals located in their own facilities, the Veterinary Faculty has established an agreement with the Provincial Council Farm, located very close to the Veterinary Faculty, in which there are 125 sheep; 14 goats; 39 pigs; 200 chickens, 200 hens and 2 ostriches. This farm is visited by the students and practical teaching of the subjects Agricultural Sciences, Obstetrics and Reproduction, Animal Production and Veterinary Hygiene, and Handling of Animals of Veterinary Interest.

In the subjects of Ethology, Animal Protection and Ethnology; Animal Rearing and Health; and Animal Production and Veterinary Hygiene, some practical teaching takes place in different livestock farms visited by the students, as shown in the next table.



Name of the company	Number of farms visited by each student	Animal species	Subject
<b>COVAP</b>	2	Dairy cows Beef Lambs	Animal Production and Veterinary Hygiene Animal Rearing and Health
<b>Fincas El Otero</b>	1	Iberian pigs Pigs Horses Hens Fighting bulls	Animal Production and Veterinary Hygiene
<b>Monesterio</b>	1	Iberian pigs Pigs Horses Hens Fighting bulls	Animal Production and Veterinary Hygiene
<b>Las Turquillas</b>	1	Horses	Ethology, Animal Protec- tion and Ethnology
<b>La Carolina</b>	1	Sheeps, Goats Cows	Ethology, Animal Protec- tion and Ethnology
<b>Cazalla Sierra</b>	1	Sheeps Pigs	Ethology, Animal Protec- tion and Ethnology

The students of Ethology, Animal Protection and Etnology have practices in zoo of the city during 5 hours and visit the regional morphological events of animal production in Pozoblanco (Córdoba).

#### 7.1.4. Food hygiene/public health

*» Indicate the availability of farm animals and products of animal origin for the practical teaching of students in veterinary public health, food hygiene, inspection and technology.*

Student carry out practical work in public health, food hygiene, inspection and technology using animals and animal products in several ways:

- Part of the practical teaching in these subjects is done on the Faculty premises: laboratories of Food Hygiene and Inspection and Food Technology (Department of Bromatology and Food Technolo-

gy). The practical work includes handling of products of animal origin like raw meat (pork, beef) meat products (dry cured sausages, cooked ham, etc), eggs, fish and shellfish, honey, among others. All these products come from food industries and food stores.

- Practices with raw and heat-treated milk and milk products (yogurt, cheeses, butter and cream) come from food industries and food stores.
- Practices with certain dairy products (cheeses) and dry cured sausages (“chorizo” y/o “salchichón”) are performed in the Pilot Plant of Food Technology.
- Practices of Sensory Analysis are carry out at Tasting Room of Department of Bromatology and Food Technology.
- In addition, students carry out practical work in slaughterhouses and food industries.

The students also take part in public health, food hygiene, inspection and technology through different agreements:

- Health district: veterinary inspection, monitoring and reporting procedures in food markets.
- Public Health Laboratory.

In the last three academic courses, students were involved in the following practical work:

- 1.** Sanitary evaluation and degree of implementation of self-monitoring systems in slaughterhouses. Cooperation agreement between the University and the Córdoba Health District.
- 2.** Sanitary evaluation and degree of implementation of self-monitoring systems in various food sector plants. Cooperation agreement between the University and the Córdoba Health District.
- 3.** Production of quality control reports for various foods: milk, eggs and fish.
- 4.** Cooperation agreement between the University and the Provincial Councils of Córdoba, Sevilla, Jaén and Huelva to evaluate honey quality in the Sierra Morena.

**Table 7.1.4. Number of samples analysed with regard to food hygiene, inspection, control and technology over the last three years.**

Type of sample (Agreement)	2006	2007	2008
<b>Abattoir Reports</b>	560	460	250
<b>Facilities Reports</b>	280	230	250
<b>Food Quality Analysis</b>	157	157	157
<b>Sierra Morena Honeys</b>	80	80	80
<b>TOTAL</b>	<b>1077</b>	<b>927</b>	<b>737</b>

## 7.1.5. Consultation and patient flow services

### 7.1.5.A. CONSULTATION

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

» State the consultation hours.

Consultation of pets and horses take place at the Veterinary Teaching Hospital, which is open 24 hours a day, all year round. Surgeries are open from Monday to Friday by appointment. The timetable for specialist consultations is 9:00 to 13:30 (see the detailed timetable for each service below). The time for general consultations is 9:00 to 21:00. The emergency timetable is from 21:00 to 9:00. The emergency services and the intensive care unit are open 24 hours a day, 7 days a week.

Consultation of production animals take place at the Animal Health Department mainly. This service is open from 09:00 to 14:00 hours, Monday to Friday, from September to June.

### 7.1.5.B. PATIENT FLOW

» *The number of animals to be stated are for all disciplines combined (medicine, surgery, reproduction, etc.). In Table 7.3 only animals coming into the Faculty should be included. Animals studied in practical teaching outside the Faculty should be entered in the section entitled "Ambulatory Clinic" (Table 7.4).*

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

**Table 7.3.A. Patients presented in the Veterinary Teaching Hospital (from 2006 to 2008)**

	2006	2007	2008	Mean
<b>Canine and feline</b>	1580	1932	2472	1994.7
<b>Equine</b>	494	498	1232*	741.3
<b>TOTAL</b>	2074	2430	3704	2736.0

*\*This number includes data of the Spanish reference centre for the diagnosis of osteochondrosis (OCD) in Spanish Thoroughbred Horses*

In addition to animals considered in Table 7.3.a, a new project has emerged during the last academic year aimed to both provide population control to a charity shelter ("Arca de Noé") and castration practices to veterinary students (80 animals per year).

Together with the former cases, the Veterinary Teaching Hospital has 8 horses and 5 dogs per year for teaching activities

**Table 7.3.B. Number of cases presented in the Animal Health Department (from 2006 to 2008)**

Species	Number of cases			Mean
	2008	2007	2006	
<b>Cattle</b>	96	54	72	74
<b>Sheep</b>	179	136	142	152
<b>Goats</b>				
<b>Pigs</b>	113	51	87	84
<b>Poultry</b>	81	70	103	85
<b>Rabbits</b>	70	44	78	64

### 7.1.6. Vehicles for animal transport

State the number of vehicles that can be used to bring sick animals to the clinics

The Veterinary Teaching Hospital has a van for the transportation of animals which is at the disposal of the clients who require it.

### 7.1.7. On-call emergency service

*» Outline what emergency service is available (full-time, 24 h service, ON-CALL or 8-22h duty) and discriminate for species.*

The Veterinary Teaching Hospital is open 24 hours a day and the services offered are:

- Emergency Consultations
- Hospitalisation and Intensive Care
- Laboratory
- Diagnostic Imaging Service
- Obstetrics and Neonatology Emergency Service

## 7.1.8. On farm teaching and outside patient care

### 7.1.8.A. AMBULATORY (MOBILE) CLINIC

» *The Ambulatory (Mobile) Clinic is defined as a unit which provides on-call outside services to farms and other institutions and is generally operated on a commercial basis.*

– *State the number of hours of operation per week. Is emergency service provided 24 h/day, 365 days per year? What is the degree of student participation (include duties)?*

– *State the number, the type and the seating capacity of the vehicles used to transport students working in the ambulatory (mobile) clinic.*

– *State the approximate number of sick animals (specify cattle, swine, equine, poultry or all ruminants, others) seen by the ambulatory clinic per year during the past three years (Table 7.4).*

– *State the average number of visits in a year made by the ambulatory clinic to farms and other institutions.*

Ambulatory clinics offers continuous service from 09:00 to 14:00 hours, Monday to Friday, and from October to May. For this purpose, the Faculty has a vehicle with 9 sitting places for students.

Over the academic year 2008-09, 75% of students enrolled in Special Surgical Pathology visited farms; this displays a highly satisfactory degree of involvement. Wherever possible, students themselves performed the surgery or clinical procedure in question. A total of 93 case histories were processed, some individually – for a patient involved in a specific clinical procedure – and others collectively, when a whole herd was to undergo the same clinical procedure. A total of 776 ruminants and 42 horses were seen. Following these practical sessions students were asked to complete an anonymous survey, in order to ascertain their view of the sessions. The following table provides a breakdown of the species seen at the Mobile Clinic as part of the Special Surgical Pathology course.

**Table 7.4.A. Number of cases seen by the Mobile Clinic**

	Species	2006-07	2007-08	2008-09
<b>Production animals</b>	Cattle	-	-	386
	Small ruminants	-	-	390
	Pigs	-	-	-
	Rabbits	-	-	-
	Poultry	-	-	-
	Others	-	-	-
<b>Equines</b>	Equids	-	-	42

The Ambulatory Clinic Service was established the last academic year with the unique objective of teaching. A practitioner has been contracted for this purpose.

#### **7.1.8.B. OTHER ON FARM SERVICES AND OUTSIDE TEACHING**

*» Other than having an on duty Ambulatory (Mobile) clinic, a Faculty may have defined contracts with farms or other institutions to allow for an outside teaching and patient care. Similarly, a Faculty may provide herd-health services. Please indicate if and to what extent this applies to your Faculty*

Fifth-year students enrolled in the Animal Reproduction course (5 students / group) take part in various practical sessions (artificial insemination, diagnosis of gestation, post-partum care, surgery of the reproductive tract and monitoring of mastitis) in the San Julián Farm, which has 700 cattle (breeding cows, stock cows and bulls).

A similar system is in operation for students of Infectious Diseases and Preventive Veterinary Medicine, at sheep, goat and pig farms (integrated health programmes and biosafety).

**Table 7.4. b Number of farms and number of animals available for outside teaching**

	Species	2006-07	2007-08	2008-09	Farm name
<b>Reproductive purposes</b>	Cattle	700	700	700	SAN JULIÁN

	Species	Number of animals	Farm name	
<b>Animal health purposes</b>	CATTLE	97	EL CALERO	
		310	MONTEALTO	
		48	LA RINCONADA	
		198	NAVAS DE CAMPO ALTO	
		55	EL ALGARROBILLO	
		100	EL PARRALEJO	
		120	LA PORRADA	
		140	PENDOLILLAS	
	SMALL RUMINANTS	697	SANTA ANA DE LA ALBAIDA	
		274	ALFAYATAS	
		521	TRECE PIES	
		951	EL ALCAIDE	
		507	NAVALAGRULLA	
		490	VALLEHERMOSO	
		313	CASILLA DEL AIRE	
		450	EL PENILLAR	
		PIGS	424	NAVALCABALLO
		RABBITS	400	VALDECAÑAS
	WILD ANIMALS	RED DEER	600	
		FALLOW DEER	300	LAS RATOSILLAS
BOAR		200		
PARTRIDGES		200	VALDECAÑAS	



### 7.1.9. Other information

- » *Indicate any notable additional outside sources of material for clinical training purposes, such as animal charities, animals awaiting slaughter, etc. Indicate how the level of clinical service that is offered by the Faculty (in small companion animals, equines and production animals) compares with outside practices in terms of facilities, hours of service, equipment, expertise, responsiveness, etc.*
- » *Provide an indication in percentage terms of the proportion of cases that are primary (i.e. first opinion), and referrals (provide a breakdown by species, if helpful). If the Faculty has a particular aim or policy as regards this mix, describe it. Indicate what areas of clinical specialisation are covered, and the extent of the coverage (for example, a veterinarian with a particular specialisation may see patients in the clinic for one day a week, 3 afternoons, etc.).*
- » *Indicate the relationship the Faculty has with outside practitioners (in small companion animals, equines and production animals) in terms of matters such as referral work, providing diagnostic or advisory services for private practitioners, practitioners participating in teaching, holiday or 'seeing practice' work for students, feedback on the level of clinical training. Describe (if applicable) any other relationships with outside organisations that are routinely used to provide students with training (in particular practical training) in other clinical subjects (e.g. pathology work, interaction with state veterinary work).*

For pre-professional practical internships (1 month, 16 credits), students are given placements at a number of centres and companies with whom the university has signed undergraduate internship agreements; centres may be public (Provincial branches of the Andalusian Departments of Agriculture, Public Health and the Environment) or private (e.g. clinics, slaughterhouses). The full description of centres with which agreements were in force in July 2009 is shown in Chapter 2. Next table shows a summary of them.

Type of Centre	Number
<b>Veterinary Hospitals and Clinics</b>	77
<b>Livestock farms</b>	19
<b>Slaughterhouses, district health centres and food industries</b>	19
<b>District Agricultural Offices (OCAs), Animal Care Centres, Haunting grounds, Animal Experimental Centres, and Animal Health and Production Laboratories</b>	55

### 7.1.10. Ratios

» See the section 'Main Indicators' in Annex Ia for the figures needed for calculating ratios. Give the figures for numerators and denominators. The ratios should then be expressed by taking the numerator as 1.

**Table 7.8: Animals available for clinical training (in the clinics of the Faculty or seen through the Ambulatory clinic) as ratio to the number of students in last full year of clinical training**

<b>(R11)</b>	n° of students graduating annually/n° of food producing animals seen at the Faculty	158/310 (1/1.96)
<b>(R12)</b>	n° of students graduating annually/n° of individual food animal consultations outside the Faculty	158/818 (1/5.18)
<b>(R13)</b>	n° of students graduating annually/n° of herd health visits	158/30 (1/0.19)
<b>(R14)</b>	n° of students graduating annually/n° of equine cases	158/741 (1/4.69)
<b>(R15)</b>	n° of students graduating annually/n° of poultry + rabbit cases	158/149 (1/0.94)
<b>(R16)</b>	n° of students graduating annually/n° of companion animals seen at Faculty	158/1995 (1/12.63)
<b>(R17)</b>	n° of students graduating annually/Poultry (flocks) + rabbits (production units) seen	158/4 (1/0.02)
<b>(R18)</b>	n° of students graduating annually/n° of necropsies food producing animal + equines	158/485 (1/3.07)
<b>(R19)</b>	n° of students graduating annually/necropsies poultry + rabbits	158/42 (1/0.27)
<b>(R20)</b>	n° of students graduating annually/necropsies companion animals	158/282 (1/1.78)

## **7.2. COMMENTS**

The EAEVE report, issued after the visit to the Faculty of Veterinary Sciences in 1999, served as the basis for a series of measures aimed at addressing the deficiencies noted.

The necessary funds were requested from the ERDF (2002/2003) for the building of a University Farm, together with other facilities for animals at the Rabanales University Campus:

- **Rabanales University Farm (2007/008)**
  - 24 sows reared intensively
  - 60 sheep
  - 50 goats
  - Beekeeping and snail-farming units.
  
- **Experimental Production Animal Center (2008)**
  - 40 small ruminants
  - 20 rabbits
  
- **Experimental Animal Service (SAE)**
  - Mini Pig Unit
  - Cat and Dog Unit.
  - Rodent Unit
  
- **Andalusian Organic Beekeeping Centre**
  
- **Equine Sports Medicine Centre**
  - 12 equids (rotation)

The development of intensive and extensive animal production units for all the major species, as an integrated production model, has done a great deal to improve teaching at the Faculty of Veterinary Sciences, and to make available a number of animals in addition to those already available in the University Veterinary Hospital and partner farms.

At all facilities, and in all practical classes, great emphasis is placed on compliance with regulations governing animal welfare; this compliance is monitored and assessed at all stages of each process.

Extramural practical work has been more thoroughly organised; activities are now planned by one academic tutor and one work-placement tutor; the skills acquired now have a direct impact on the student's overall marks.

Finally, some of the Faculty's strengths in terms of availability of practical training for undergraduates – already covered earlier in this chapter – should be stressed:

- Agreements with Veterinary Faculties and Animal Protection Societies (e.g. Arca de Noé), for practical classes in surgery (sterilisation of animals).
- Lease and ownership of Spanish Thoroughbred Horses (Expasa stud farm).
- 24-hour Emergency Service at the University Veterinary Hospital (365 days/year)
- Reference Centre for the Diagnosis of Osteochondrosis (OCD) in Spanish Thoroughbred Horses.
- Agreements with public and private centres and companies (Practical Internships).
- Sports Medicine Centre.
- Mobile Clinic.

## **7.2. SUGGESTIONS**

The Faculty needs to increase the involvement of practitioners in the mobile clinic, due to the high number of students. The Faculty needs also a dairy farm and a poultry farm. Further, the number of support staff for animal production should be increased. Finally, is very important that the Veterinary Teaching Hospital was considered a support for their activity and not a competitive structure by local and regional practitioners.

## Chapter VIII

# LIBRARY AND LEARNING RESOURCES



## **8.1. FACTUAL INFORMATION**

» Give a general description of the library/libraries of the faculty/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.

### 8.1.1. Library and other information technology services

#### Main Library

The Faculty of Veterinary Sciences Library is part of the Rabanales Campus Library, and belongs to the University of Córdoba Library Service, whose organisation and internal policies are the responsibility of the Vice-Chancellor for Information and Communications Technology (<http://www.uco.es/servicios/biblioteca/buco/reglamen.html>). The Rabanales Campus Library is housed in one of the central campus buildings, named Maimónides Library, which was opened in 1999. The Maimónides Library (BMUCO) provides all the services, book collections and document archives for the degree courses (Table 8.1) taught by 4 campus-located University faculties and centres:

- Faculty of Veterinary Sciences
- Faculty of Sciences
- University Polytechnic School
- University School of Agricultural Engineering

**Table 8.1. Degree courses taught at the Rabanales University Campus, whose bibliographical resources are centralised at the Maimónides Library**

<b>Degree in Environmental Sciences</b>
<b>Degree in Biology</b>
<b>Degree in Physics</b>
<b>Degree in Chemistry</b>
<b>Degree in Veterinary Sciences</b>
<b>Degree in Agricultural Engineering</b>
<b>Forestry Engineering</b>
<b>Degree in Winemaking Sciences</b>
<b>Degree in Biochemistry</b>
<b>Degree in Food Sciences and Food Technology</b>
<b>Degree in Industrial Electronic and Mechanical Engineering</b>
<b>Degree in Computer Sciences: Specialism in Computer Management</b>
<b>Degree in Computer Sciences: Specialism in Systems Information Technology</b>
<b>Degree in Computer Engineering</b>

The Maimónides Library was enlarged in 2006, and now covers a surface area of 10,360 m<sup>2</sup>; a new wing is soon to be added, which will house the Periodicals Room. The Library is a three-storey building, and services are arranged as follows:

- **Ground Floor:** Accessions service, Technical Processing service, soon the Periodicals Room, Reading Room, group work rooms and a Functions Hall for cultural and academic events.
- **First Floor:** Two Reading Rooms, the open book collection, computer workstations and all User Services (Loans counter, Information and Reference, Newspapers, etc.)
- **Second Floor:** Central Services available to the whole university community: Director's Office, Administration, Document Access (inter-library loans), Automation, Electronic Projects and Resources and the General University Library; Research Cubicles and group work and tuition rooms.

The following table provides specific data on the Maimónides Library for the year 2008.

#### RABANALES LIBRARY

Infrastructure and resources	
Seats in reading rooms	1,582
Listening and training rooms (no. seats)	139
Group work rooms (no. seats)	36
Shelving (metres)	11,069
Free access shelves	3,915
Deposit shelves	7,154
Staff PCs and workstations	45
Public PCs and workstations	189
Miscellaneous reading devices (microfiche readers, video, etc...)	47
Wi-Fi connection throughout the building	Yes
Photocopiers for public use	4



<b>Holdings and computerisation</b>	
Number of books at 31 December 2007	151,771
Total number of printed periodicals at 31 December 2007	4,076
Pay-per-view or licensed papers	209,144
Pay-per-view or licensed periodicals	13,596
Pay-per-view or licensed databases	84
Own electronic resources	399
Other electronic resources selected by the Library	383,307
Microfiches	6,032
Videos, CD-ROM/DVDs	3,008
Maps	1,809
Old holdings. Total for the period 1501-1800	244
Old holdings. Total for the period 1801-1900	1,923
<b>Services</b>	
Number of days open per year	264
Number of hours open per week (mean)	64
No. of library visits per year	1,934,626

Users of the Maimónides Library may be members of the university (teaching staff, interns, students and administrative and services personnel), members of University Centres and Institutes, or accredited researchers vouched for by a member of the tenured teaching staff. Library users are required to show their University Card (in the case of members of the university) or a University Library Card (in the case of non-university members).

Book holdings are available to all users, except for the Old Books, held in a special area to ensure that they are properly conserved. The collection is arranged according to the Universal Decimal Classification (see figure below):



---

**RABANALES ELECTRONIC LIBRARY : Resources**


---

**Subject: VETERINARY SCIENCES**


---

 AGRICOLA
 

---

 Biosis
 

---

 CSIC- ICYT
 

---

 Current Contents: Agriculture, Biology & Environmental Sciences
 

---

 ESPACENET
 

---

 Essential Science Indicators ISI
 

---

 FOCUS ON
 

---

 FSTA
 

---

 Medline
 

---

 Sciences Citation Index WOs
 

---

 Sciences Journal Citation Reports
 

---

 SciFinder Scholar
 

---

 SCIRUS
 

---

**Databases (79)**

 SCOPUS
 

---

 TESEO
 

---

**SERVICES**


---

 Electronic search request form, for a search to be made and results to be sent by e-mail.
 

---

 Remote access; PAPI system // VPV system – Open V.P.N; The University of Córdoba IT Service provides users with remote access to electronic resources (databases, electronic books, electronic journals) for which the University is registered. Remote access requires a user account and a university e-mail as password.
 

---

 Research analysis tools; journal impact factors, researcher profiles, etc...
 

---

 Database user manuals
 

---

 Pre-recorded user training sessions; ARANZADI online, Westlaw, EurLEX, Cochrane Library Plus, CSIC Online, EEBO, Lexis-Nexis, TIRANT On Line, Scopus, Wok Knowledge databases, WoK Tutorials (JCR "Impact Factor Indices" Journal Citation Reports, Tutorial WoS from FECYT).
 

---

---

**RABANALES ELECTRONIC LIBRARY : Resources**


---

**SOURCES**


---

<b>Electronic books</b>	Ebrary=E-libro
	Biblioteca Virtual de Manuales UCO
	Biblioteca Virtual Miguel de Cervantes
	EEBO
	Enciclopedia del Arte Universal
	Enciclopedia del Islam
	Enciclopedia Gran Espasa Universal
	Encyclopedie Diderot et d'Alambert
	Lion
	Methods in Enzymology
	Patrología Latina
	Science Direct Book
	Springer Book Series
	Full-text university thesis

---

**JOURNAL COLLECTIONS OF VETERINARY INTEREST**


---

<b>Electronic journals</b>	Comprising 623 journals classified by subject; journals of interest for the veterinary sciences include those classified under Agricultural Sciences (56), Health Sciences (223), and Biological Sciences (63)
	Access portal to the full text of journals and books published by Elsevier, Pergamon, Excerpta-Medica and North Holland. Contains over 2,500 scientific journals and over 6,000 books. Arranged by subject, the following are of particular veterinary interest; <i>Life Sciences Agricultural and Biological Sciences</i> (561 titles) and <i>Health Sciences; Veterinary Science and Veterinary Medicine</i> (205 titles)
	Interactive scientific, technical and medical databases; of particular veterinary interest is the subject area <i>Biomedical and Life Sciences</i> (918,522 elements)
	Advanced research source with technical, medical and educational content; arranged by subjects, the following being of particular veterinary interest; <i>Medical, Veterinary and Health Sciences / Veterinary Medicine</i> (142 titles) and <i>Life Sciences</i>

---

<b>Repository</b>	<b>HELVIA;</b> University of Córdoba institutional repository The aim is to provide free access to the University's scientific and academic production, broadening access to material developed by members of the University, and ensuring their conservation. The repository contains all kinds of digital material: papers published in journals or read at congresses, doctoral theses, working papers, teaching materials, learning materials, and digital versions of the University's bibliographical holdings
-------------------	---

---

RABANALES ELECTRONIC LIBRARY : Resources	
<b>On-line resources</b>	<p><i>Online Veterinary Resources</i> (<a href="http://www.uco.es/servicios/biblioteca/recursos/vet.html">http://www.uco.es/servicios/biblioteca/recursos/vet.html</a>)</p> <p>Professional Associations and Societies - Atlases, Dictionaries and Encyclopaedias - Databases- Search engines and lists of publishers and bookshops –Veterinary Hospitals - Scientific Institutions - Distribution lists – National and International Bodies and Organisations- Websites of Particular Interest – University websites - Portals</p>
<b>Reference manager</b>	<p><i>EndNote Web</i>; Online reference manager designed to help students and researchers through the process of writing a research paper. ISI Web of Knowledge, EndNote, and EndNote Web are designed to run simultaneously and simplify research (<a href="http://www.uco.es/servicios/biblioteca/gestorref/index.html">http://www.uco.es/servicios/biblioteca/gestorref/index.html</a>)</p>

The Maimónides Library provides a centralised technical service, enabling one-stop management of technical support for the online and in-person user services offered at all eight libraries which together make up the University of Córdoba Library, as well as specific technical services directly related to the Campus library:

- Centralised services: Automation, Document Access, General Library, Documentation, Electronic Projects and Resources, reference and reading-room materials, loans, Library extension services, user training, information and reference.
- Campus services: Accessions, User Services, Periodicals Library and Document Processing.

The following services are thus available to the user, either in person or online: Reading and Consultation, General and Information, OPACs, Home Loans, Reference and Electronic Reference, General Library, Newspaper and Magazines Room, Periodicals Room, Inter-Library Loans and document reproduction, Documentation and Website, ICT points, Group work and tuition rooms, computer-fitted research area and cubicles, User training sessions and cultural extension activities.

<b>RABANALES LIBRARY</b>	
<b>User Services</b>	
<b>Reference-only works</b>	<p><b>The Library holdings are available at the following times:</b></p> <ul style="list-style-type: none"> <li>• Number of days open per year; 264</li> <li>• Number of hours open per week; 64</li> <li>• Timetable in term time (<a href="http://www.uco.es/servicios/biblioteca/horarios/">http://www.uco.es/servicios/biblioteca/horarios/</a>)</li> <li>• Reading room and loans; Monday-Friday, 8.30 am to 8.30 pm (12 h)</li> </ul> <p><b>Extraordinary opening hours (<a href="http://www.uco.es/servicios/biblioteca/horarios/ae.html">http://www.uco.es/servicios/biblioteca/horarios/ae.html</a>)</b></p> <ul style="list-style-type: none"> <li>• <b>December</b> (from 9 December to start of Christmas vacation): Monday-Friday 20.30 pm to 2.00 am, Saturdays, Sundays and Public Holidays: 9.00 am to 2.00 a.m.</li> <li>• <b>January:</b> last week (examinations), Monday-Friday 20.30 pm to 2.00 am, Saturdays, Sundays and Public Holidays: 9.00 am to 2.00 a.m.</li> <li>• <b>February:</b> to end of examinations: Monday-Friday 20.30 pm to 2.00 am, Saturdays, Sundays and Public Holidays: 9.00 am to 2.00 a.m.</li> <li>• <b>June,</b> Monday- Friday and weekends, 9.00 a.m. to 02.00 a.m.</li> <li>• <b>July,</b> Monday to Friday, 9.00 a.m. to 02.00 a.m.</li> <li>• <b>August;</b> last week, Monday-Friday 17.00 p.m. – 23.00 p.m., weekend 9.00 a.m. to 14.00 p.m. and 17.00 p.m. to 23.00 p.m.</li> <li>• <b>September,</b> first three weeks, Monday to Friday, 9.00 a.m. to 02.00 a.m, weekends 09.00 a.m. to 02.00 a.m.</li> </ul>
<b>Loans</b>	<p>University members can borrow non-reference books for use outside the library, in accordance with Library regulations (<a href="http://www.uco.es/servicios/biblioteca/prestamo/index.html">http://www.uco.es/servicios/biblioteca/prestamo/index.html</a>):</p> <ul style="list-style-type: none"> <li>• <b>Home loans.</b> Students, teaching and research staff, and administration and service personnel are allowed to borrow books, renew loans and reserve loans (<a href="http://mezquita.uco.es/patroninfo*spl">http://mezquita.uco.es/patroninfo*spl</a>). To use the Loans service, users must have a University card, which also serves as a Library Card.</li> <li>• <b>Reservations and Renewals.</b> Reservations and renewals can be made online and by e-mail.</li> <li>• <b>Document Access Service (Inter-Library Loans).</b> This provides users with access to documents (originals or copies) not available at the University library, but available at other centres either in Spain or abroad. It includes Intercentre Loans, a service through which teaching and research staff and administration and service personnel may request documents housed in other sections of the University Library.</li> </ul> <p>In 2007, veterinary undergraduates and postgraduates made a total of 45,632 loans.</p>
<b>Information and Reference</b>	<p>Users can find out about University holdings through the Mezquita Catalogue (<a href="http://medina.uco.es/search*spl">http://medina.uco.es/search*spl</a>). There is also an information and reference desk at the main door on the first floor, manned by specialist librarians able to deal with any queries, book search requests, etc. (<a href="http://www.uco.es/servicios/biblioteca/centros/rab/informacionyreferencia/index.htm">http://www.uco.es/servicios/biblioteca/centros/rab/informacionyreferencia/index.htm</a>)</p>

<b>RABANALES LIBRARY</b>	
<b>User Services</b>	
<b>Library and Cultural Extension Services</b>	<p>Activities designed to enhance library services, including a whole range of events in April to celebrate National Book Day <a href="http://www.uco.es/servicios/biblioteca/servicios/extabril2009.html">http://www.uco.es/servicios/biblioteca/servicios/extabril2009.html</a></p> <p>Includes production of numerous printed and electronic texts providing bibliographical information and details of the University of Córdoba Library holdings (<a href="http://www.uco.es/servicios/biblioteca/servicios/index.html#extensionbibliotecaria">http://www.uco.es/servicios/biblioteca/servicios/index.html#extensionbibliotecaria</a>):</p> <ul style="list-style-type: none"> <li>• New Accessions Newsletter</li> <li>• Printed Catalogue of Periodicals</li> <li>• Catalogues of Special Holdings</li> </ul>
<b>Specialist online searches</b>	<p>Providing the user with access to specialist bibliographical information, using scientific databases. Searches can be requested from the Library Documentation Service using an electronic form</p>
<b>User Training</b>	<p>The University of Córdoba Library runs introductory and advanced courses on using bibliographical and documentary resources, aimed at the whole university community (<a href="http://www.uco.es/servicios/biblioteca/formacion/index.html">http://www.uco.es/servicios/biblioteca/formacion/index.html</a>)</p> <p><b>Training sessions.</b> (<a href="http://www.uco.es/servicios/biblioteca/formacion/index.html#sesionesorganizacion">http://www.uco.es/servicios/biblioteca/formacion/index.html#sesionesorganizacion</a>)</p> <ul style="list-style-type: none"> <li>• Visitors, new students and first-cycle undergraduates</li> <li>• Second-cycle undergraduates</li> <li>• Postgraduates, academic and research staff:</li> </ul> <p><b>Pre-recorded sessions.</b> Guides and presentation to help users find information, and to use library resources effectively (<a href="http://www.uco.es/servicios/biblioteca/formacion/ssgrabadas.html">http://www.uco.es/servicios/biblioteca/formacion/ssgrabadas.html</a>)</p> <ul style="list-style-type: none"> <li>• ARANZADI online, Westlaw, EurLEX, Cochrane Library Plus, CSIC Online, EEBO, Lexis-Nexis, TIRANT On Line, Scopus, Wok Knowledge databases, Wok Tutorials (JCR “Impact Factor Indices” Journal Citation Reports, Tutorial WoS from FECYT), ISI Researcher ID</li> </ul> <p><b>Study Help Guide;</b> (<a href="http://www.uco.es/servicios/biblioteca/formacion/ayestudio.html">http://www.uco.es/servicios/biblioteca/formacion/ayestudio.html</a>)</p> <ul style="list-style-type: none"> <li>• Study Help Guide, Guides and Tips on how to use the Mezquita Catalogue, Information on PINs (Personal Identification Numbers) , Guidelines on how to renew loans and how to reserve loans, Guidelines on how to consult Electronic Journals, How to find scientific information in the library, Guides and manuals for using databases, How to use the EndNote Web reference manager, How to locate Index H in WoS</li> </ul> <p><b>Guide to Getting a Job.</b> (<a href="http://www.uco.es/servicios/biblioteca/formacion/ayempleo.html">http://www.uco.es/servicios/biblioteca/formacion/ayempleo.html</a>)</p> <ul style="list-style-type: none"> <li>• How to prepare a CV: Building the Future // University of Alicante</li> <li>• Video Curriculum: University of Valencia // Adobe Curriculum Guide</li> <li>• Preparing for an interview: University of Alicante</li> <li>• Letters of introduction and promotion: University of Alicante</li> <li>• Guide to the Job Market 2007: University of Córdoba</li> </ul>

RABANALES LIBRARY	
User Services	
<b>Document Access Service</b>	<p><b>Photodocumentation:</b> Provides any university member with copies of documents belonging to the holdings of the University of Córdoba Library, for personal use, meeting specific requirements in terms of legal safeguards and document conservation</p> <p><b>Inter-Library loans:</b> provide members of the university community with original documents of all kinds (articles, doctoral theses, proceedings of congresses) or copies thereof (photocopies, microfiches, etc.), where these documents are not available in the University of Córdoba Library; also provides other libraries with documents held in the University of Córdoba Library</p>

A key service for Rabanales Campus Library users is the Periodicals Library, a special section containing over 3500 journals and periodicals. Most of the collection comprises the holdings of the Faculties of Sciences, Veterinary Science and Food Sciences & Food Technology, the University School of Agricultural Engineering, the University Polytechnic School and much of the Faculty of Medicine holdings, together with journals donated by university members, institutions and members of the public. Most journals are of a scientific nature, although the Periodicals Library also houses a large collection of cultural journals, magazines and newsletters; most of the 500 cultural journals currently stocked have been acquired by subscription, or through exchanges of Córdoba university publications with those of other universities; printed and electronic periodicals are available. The history section boasts the first Veterinary journal published in Spain (The Veterinary Newsletter, 1845), together with publications formerly held in the Córdoba School of Veterinary Sciences. Most of the journals have now been added to the University Library's "Mezquita" Catalogue.

The Periodicals Library (currently being reorganised prior to the forthcoming enlargement) is equipped with 132 seats in the reading room and newspaper area, 5 PCs with internet access, 2 OPACS for consulting library catalogues, and self-service photocopier and scanner. The following services are provided:

- Consultation of printed periodicals and indices
- Consultation of Electronic Journals
- Consultation of databases
- Bibliographical information on periodicals



- General information on journals: impact factors, ISSN, Catalogues, etc....
- Personalised user training

The Maimónides Library is able to provide these services thanks to the following human and financial resources:

<b>RABANALES LIBRARY</b>	
<b>Human Resources</b>	
Director of the University Library	1
Full-time librarians, Monday to Friday	33
Clerk	1
Caretakers	2
<b>Total staff</b>	<b>37</b>
<b>Financial resources for printed accessions</b>	
<b>Year</b>	<b>Euros</b>
2005-2006	27,612.54
2006-2007	26,009.20
2007-2008	32,956.27

These staff are responsible for providing library services to all members of the Faculty of Veterinary Sciences: undergraduates and postgraduates, teaching and research staff, and administration and services personnel.

The University of Córdoba Library has been assessed by the EFQM as part of the Andalusian University Quality Plan (PACU 2002-2006), backed by the Andalusian University Quality Unit (UCUA); this led to the creation of the University of Córdoba Library Improvement Group, comprising librarians, teaching staff and students, and to the development and subsequent implementation of an Improvement Plan covering the following measures:

- Regulatory and planning-related measures
- Staff-related measures
- Library infrastructure and equipment measures.
- User-related measures.

- Measures to improve services and documentary resources.
- Budgetary measures.

Similar, and with the backing of the Andalusian Evaluation Agency (AGAE), the Library was involved in the Final Report on the Evaluation and Implementation of Improvement Plans by Andalusian University Libraries (2004-2006) <http://helvia.uco.es/xmlui/handle/10396/1693>. Quality measures are now covered by the Andalusian Public University Quality Improvement Agreement, and by the requirements of Strategic Line 3 ("Rebiun and Quality") developed by REBIUN (Spanish University Library Network, CRUE Sectorial Committee), as part of its Second Strategic Plan (2007-2011).

### Subsidiary Libraries of the Faculty

» *Please describe the subsidiary (e.g. Departmental) libraries of the establishment, and arrangements for student access.*

» *Indicate whether the main library holds a list of individual books in the subsidiary libraries.*

Some Departments of the Faculty of Veterinary Sciences have retained a departmental library, while in others former library books are now held in the offices of the teaching staff who have requested them. In both cases, the books are listed as part of the University Library holdings, and thus appear in the Mezquita Catalogue (which gives their location). The purchase of new accessions is governed by the departmental budget, and the books in question are generally more closely related to research than to teaching, although exceptions exist. Student access and loans are neither reported to nor arranged by the University Library.

## 8.2. COMMENTS

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

Material classified under numbers beginning with “6” in the Maimónides Library includes books and journals related to the Veterinary Science degree, and specifically to veterinary medicine, agriculture, animal production and food technology and hygiene. This specific Veterinary collection may be considered generally adequate, especially since holdings are reviewed and new material requested annually by the Faculty of Veterinary Sciences.

The acquisition policy is based on the basic bibliography recommended in subject teaching guides and, especially, on specific requests made by teachers, and on the bibliographical lists put forward by the Veterinary Library Committee. Since the teaching staff intervenes directly in selection, the content of the collection is adapted to teaching needs. In the case of basic bibliography, there are a minimum of two copies of each title. The Library reviews subscriptions to periodicals every year, adding new titles and discontinuing others, as appropriate.

The Library also offers the university community an “electronic library” service, comprising a wide range of electronic resources available through custom-designed user authentication systems (PAPI, VPN and WAM), and accessible on line from any computer, 24 hours a day and every day of the year. These resources include databases and full-text electronic journal access (as described earlier) covering specific areas of Veterinary Sciences. Within the context of the European Higher Education Area, these electronic-access holdings are a valid complementary teaching tool for tuition based on ECTS credits.

The Maimónides Library belongs to the Andalusian University Library Consortium (CBUA), which comprises all ten Andalusian public universities together with the Regional Government Department of Innovation, Science and Business. The Consortium manages the budgets for the acquisition and maintenance of the joint digital collections belonging to the Andalusian Universities. Through a Consortium agreement, all Andalusian university libraries use the same library management system: Innopac Millennium, which provides public access through the Library website (<http://www.uco.es/servicios/biblioteca.>). The system contains the Mezquita Catalogue (<http://medina.uco.es/>; see figure below), which includes all material – regardless of format – held by the University of Córdoba, and allows users to do the following:

- Carry out simple and advanced searches in the full catalogue or in a specific section (journals, old books, scientific production, etc.)
- Visualise the user profile, see books currently on loan, renew loans, etc...

- Check the bibliography recommended by teachers for each subject studied
- Request the acquisition of currently-unavailable items of interest
- Access electronic resources
- Download full-text documents
- Carry out searches in the joint Consortium catalogue (CatCBUA) and other national and international catalogues



The system also alerts the user, by e-mail, of loan due-dates and availability of requested material.

The services provided by the University Library are established and reviewed by the University Library Committee, comprising librarians, teaching staff, and students. Library opening hours are determined by term dates, but respond well to student needs; the library has special opening hours during examination periods. Even so, there is often an “overuse” of library infrastructure, resources and holdings during examination periods, since the Rabanales Campus library serves students from several faculties. A properly-designed analysis of student needs during peak periods is required.

The Library employs a total of 37 staff to cover all the services provided. Given the potential number of staff and students to be served on

the Rabanales Campus, more effort and resources should be devoted to increasing Library staff numbers.

All these areas are currently being examined and discussed by the University of Córdoba Library Improvement Group.

It is important to stress the role played by the Maimónides Library User Training Service, in providing detailed information on how the library works, how to use the bibliographic and documentary resources available, and how to take full advantage of the other services provided. Of particular relevance in this respect is the course entitled Information for New Students on the University Library: Structure and Working, provided at the start of every academic year.

The Library is currently adapting its environment, resources and facilities to support the ECTS credits system for new undergraduate and postgraduate courses, and to better meet the needs of students and teaching staff within the context of the new teaching/learning model. This requires that the Library provide not only books, documents and standard library services, but also physical space for studying and group work, as well as virtual services meeting the new educational approach. In this sense, the Library has focused on the following:

#### **Adaptation of facilities and spaces**

- Group work rooms
- Wi-Fi throughout the building
- Timetables adapted to educational needs
- Virtual services 24/7

#### **New library services**

- Recommended bibliographies for all subjects taught at University faculties and centres
- Guides to all the resources acquired by the Library
- On-line tutorials
- Newsletters on new acquisitions

### Training courses

- Basic training for new students and visitors
- A la carte training sessions and courses
- Self-training

### Digital library

### Institutional repository

### Quality targets

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

The opportunity to gain access to a new approach to learning, thanks to an educational model based on open, flexible training, thanks to advances in information and communications technology (ICT) constitutes a major challenge for the university community as a whole. To meet this challenge, the University of Córdoba Virtual Classroom (<http://aula-virtual.uco.es/presentacion/>) is available to all university members, as a Virtual Teaching Centre, i.e. a centre in which teaching is supported by new ICTs.

This educational model can also be used to advantage as part of a traditional approach to teaching; in addition to learning in the classroom, the student has access to virtual classes, which provide an education of greatly-improved quality. The Virtual Classroom provides a broad, flexible and varied range of teaching-related support services, tools, technological resources and advice (a team of computer specialists and educational psychologists).

One of the main functions of the Virtual Classroom is to provide support in the subjects comprising the University degree syllabuses, making it easier for teachers to disseminate teaching materials in electronic format, to which students have online access. This is a particularly important instrument for the process of convergence towards the new European Higher Education Area (EHEA), which requires new teaching

models, new channels of communication between teachers and students, for whom ICTs represent a powerful tool. At the same time, it meets the requirements of the newly-implemented European credit system (ECTS), and the recently-created Andalusian Virtual Campus, as well as contributing to the development of distance-learning courses at undergraduate, masters and doctorate level, as well as other educational facilities offered by the University of Córdoba.

The Virtual Classroom provides the following services:

- A Moodle-based virtual tuition platform for teachers and students, allowing teachers to provide their students with subject programmes, learning materials, on-line activities, tutorials, virtual communication tools, etc., all adapted to the European Higher Education Area and the ECTS credits system.
- Creation of teaching materials, either as part of the Moodle virtual teaching platform, or using other system for electronic communication with students.
- A Virtual Library of textbooks and a Digital Library (Repository) containing teaching materials for University staff and students.
- Videoconferencing for virtual teaching, in a videoconference classroom, with 10 computers equipped for this purpose and an audiovisual projection system (particularly useful for seminars).
- Access to the Andalusian Virtual Campus (CAV), covering courses provided by any of the ten Andalusian universities, recognised as free elective credits by the student's own University. The CAV forms part of the Andalusian Regional Government's "Digital University" programme, which aims to encourage the incorporation of new technologies into university teaching, making full use of wireless internet connections in all university campuses. One of the subjects taught in this way by the University of Córdoba is "Comparative Embryology", a course prepared by the Department of Comparative Anatomy and Pathological Anatomy at the Faculty of Veterinary Sciences.

### **8.3. SUGGESTIONS**

In general, the Library services are highly-valued by its users, including Veterinary teaching staff and students. This is confirmed by the results of the Library Services Improvement Plan, which led to the Library be-

ing awarded a higher quality score in the study entitled “Digital Atlas of Spanish Universities”, carried out by the University of Cantabria; the overall quality score was raised by a mean 0.5 points (ABC Córdoba, 04-02-2007). However, there are still certain weaknesses, for which the following remedies are suggested:

- Submit the Strategic Planning Document, and a list of planned annual targets for the Library to the Veterinary Faculty Board for review.
- Design and implement a system for student access to, and loans of, the library books and resources currently held in Departments and teachers’ offices in the Faculty of Veterinary Sciences, ensuring greater control over these holdings.
- Enlarge the specific Human Resources programme for the Library.
- Review the Library Staff Training Plan as an incentive towards a more professional approach.
- Increase the number of public-access computers.
- Encourage the implementation of a plan to improve copying facilities for Library users.
- Improve the Library’s Central Services by increasing staff numbers to cover extraordinary opening hours; improve the design and content of user training courses, carry out an annual review of information resources, improve personalised user-oriented services and update the University Library website.
- Develop a system for dealing with complaints, with a reasonable response time.



## Chapter IX

# STUDENT ADMISSION AND ENROLMENT





## 9.1. UNDERGRADUATE COURSES

### 9.1.1. Undergraduate student numbers

» *Table 9.1. asks for the number of undergraduate students in the veterinary training institution.*

**Table 9.1. Undergraduate student composition (academic year 2008/09)**

Total number of undergraduate students	1154
Total number of male students	424
Total number of female students	730
<b>Foreign students</b>	
From EU countries	14
From non EU countries	15

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

Minimum number of years (MNY) allowed to successfully pass the curriculum:

The minimum number of years to successfully pass the curriculum is five. The maximum is exactly double the number of years of the course, i.e. ten. Some exceptions may be made regarding the maximum number of years, provided that written justification is submitted (Document: "Regulations on length of University study").

## 9.1.2. Student admission

- » *State the minimum admission requirements.*
- » *Indicate whether there is a limit to the number of students admitted each year.*
- » *Describe how the number of government-funded student places is determined.*
- » *Outline any selection process (or criteria) used in addition to the minimum admission requirements*
- » *Describe whether students applying for and/or starting veterinary training have an equal or very variable knowledge base in scientific disciplines from their previous studies.*
- » *Describe any circumstances under which extra students may be admitted to the undergraduate veterinary course.*
- » *Outline any changes foreseen in the number of students admitted annually. If applicable, describe how the Faculty plans to adjust to these changes.*

### 9.1.2.A. MINIMUM ADMISSION REQUIREMENTS

The Spanish education system comprises the following stages:

- I. Primary** education (compulsory, lasting six years; usually 6-12 years of age).
- II. Secondary** education (compulsory, lasting four years; usually 12-16 years of age).
- III. Baccalaureate** (non-compulsory, two years; usually 16-18 years of age). Depending on their preferences and future study plans, baccalaureate students can choose one of four different options:
  1. Arts; 2. Life and Health Sciences; 3. Humanities and Social Sciences; 4. Technology. There are two suboptions within the Life and Health Sciences Baccalaureate: 2.1 Scientific-Technical; and 2.2 Health Sciences. Students wishing to take a degree in Veterinary Science must choose the Health Sciences sub-option.
- IV. Higher Education** (university degree). Admission requirements for starting university studies are established by the Ministry of

Education and the Andalusian Regional Government Department of Education. To enrol at the University of Córdoba, students must first complete the baccalaureate, and then pass a general University Entrance Examination (PAAU), which is valid for any Spanish university. There is no additional entrance test for the Faculty of Veterinary Medicine. Foreign students are also required to pass a University Entrance Examination, usually through the National Distance Learning University (UNED).

Before the start of every academic year, the Ministry of Education passes a resolution setting out university entrance requirements for students from other EU member States or other States with which international agreements have been signed; those students who have already met the university entrance requirements in their own countries are exempted from the Spanish University Entrance Examination. These students, however, must pass a language test (set by the University) to demonstrate sufficient fluency in the language in which tuition is given.

Access to the Degree course in Veterinary Sciences at the University of Córdoba is regulated by a numerus clausus system: every academic year, taking into account the number of candidates for places, the University fixes a maximum number of students to be admitted (e.g. 150 students for 2008/2009). Candidates are required to achieve a minimum university entrance mark, made up of the average mark in the Baccalaureate (accounting for 60%) and the mark in the University Entrance Examination (40%). The minimum mark required by the Faculty of Veterinary Medicine for the academic year 2008/09 was 6.83% (on a scale of 0 – 10). Under Spanish law, the maximum number of students admitted may be increased by 5% in any year due to exceptional circumstances with regard to student selection: e.g. students with exactly the same entrance marks, late rejection of a place by a student already registered.

As there are usually more applicants than places available on the Veterinary Medicine degree course, the admission of first-year undergraduates tends to be very competitive.

#### **9.1.2.B. LIMIT TO THE NUMBER OF STUDENTS ADMITTED EACH YEAR**

As indicated earlier, a maximum limit is set to the number of students admitted each year. The final number is decided by the Andalusian Regional Government Department of Education, through the Single An-

Andalusian District Committee, on which all the Andalusian universities are represented. The University of Córdoba submits to this Committee a proposal – previously approved by the University's Governing Council – on the maximum number of students to be admitted.

### 9.1.2.C. DETERMINATION OF THE NUMBER OF GOVERNMENT-FUNDED STUDENT PLACES

Since the University of Córdoba is a public university, student enrolment fees are not very high average (1000 €/year). Nevertheless, the Education Protection Act (19 July 1994, Spanish State Gazette, 21 July) provides for indirect financial aid or even free tuition under certain circumstances:

- **Special Distinction:** In the Spanish grading system (0-10), the highest marks for any subject ( $\geq 9$ ) are awarded the Matricula de Honor (MH) (for a maximum of 5% of students). A student who is awarded an MH for a given subject may enrol for free, during the next academic year, in any subject worth the same number of credits as the subject for which he/she was awarded the MH. Moreover, new-entry students with an average Baccalaureate grade of MH are entitled to free tuition during the first university year.
- **Large Families scheme:** University fees may be reduced or waived for students from large families: those from families with 3-4 children, or of widowed parents, or with disabled siblings, are entitled to a 50% discount; students from families with  $\geq 5$  children receive a 100% discount.
- **State-funded scholars:** Students may receive a grant from the Spanish Government or from the Andalusian Regional Government, depending on the student's household income and academic record. These grants cover free registration and also a varying amount for maintenance.
- **Orphaned students:** Orphaned children of civil servants, and of military personnel killed in the line of duty, are entitled to free university tuition, provided that they are single, under 25 years old and financially dependent on the deceased parent.
- **Students with recognised "Victim of Terrorism" status:** Law 32/99 on Solidarity with the Victims of Terrorism grants free university registration to students with this status.

- **Disabled students:** In accordance with Article 30 of Law 13/1982, of 7 April, disabled students are entitled to total exemption from public education fees.
- **Civil servants employed by the University of Córdoba:** Teaching and non-teaching staff employed directly by the University, provided that they are currently employed at the start of the academic year, are entitled to free registration for any subject for which they have not been previously enrolled. Spouses and children (single and under 25) of university employees are also entitled to exemption from registration fees.

#### 9.1.2.D. SELECTION CRITERIA AND PROCESS USED IN ADDITION TO THE MINIMUM ADMISSION REQUIREMENTS

Applications from students who have passed the University Entrance Examination with the required mark in June or in previous years are processed first; then, applications are taken from candidates who passed the University Entrance examination in September, although this rarely happens, since available places are generally filled in June.

A percentage of places are reserved for students in special circumstances:

- **Students with disabilities:** 3% of places are reserved for this group. They must present an official certificate demonstrating a disability rating of 33% or more.
- **Gifted athletes:** 1% of places are reserved for this group. They are required to submit a certificate justifying their status, issued by the National Sports Institute (Consejo Superior de Deportes).
- **Graduates from other degree programmes:** The Law states that between 1% and 3% of places must be reserved for this group. At the University of Córdoba, 3% of places are reserved.
- **Foreign students (non-EU):** 1% of places are reserved for students from outside the EU. Students are required to pass a University Entrance Examination, through the National Distance Learning University (UNED).
- **Students over 25:** 3% of places are reserved for this group. These students are required to take a special University Entrance examination, but do not have to study the Bacallaureate.

- **Professional training:** 7% of places are reserved for students who have successfully completed higher-level training programmes in Management and Organisation of Farming Companies or Industries.

#### **9.1.2.E. COMPARATIVE LEVEL OF KNOWLEDGE IN SCIENTIFIC DISCIPLINES OF STUDENTS APPLYING FOR OR STARTING VETERINARY TRAINING FROM STUDIES AT SCHOOL .**

Students starting the degree in Veterinary Medicine are required to have passed the Baccalaureate in Health Studies, as laid down in Organic Law 1/1990 of 3 October (LOGSE). The compulsory subjects in the Health Sciences option are Biology and Chemistry; Mathematics and Physics are therefore optional rather than compulsory. Students do not always opt for these subjects since, in some cases, by avoiding them they obtain higher marks, and thus a higher average grade in the University Entrance examination. This may cause problems during the first year of the degree course, in which both mathematics and physics are compulsory subjects.

#### **9.1.2.F. SOME CIRCUMSTANCES UNDER WHICH EXTRA STUDENTS MAY BE ADMITTED TO THE UNDERGRADUATE VETERINARY COURSE.**

Veterinary Medicine undergraduates from other Spanish or foreign faculties may request a transfer to this Faculty. The application is submitted to the Dean of the Faculty, who is authorised by the Chancellor to accept or reject it, bearing in mind the availability of places and the applicant's average marks to date. Every year, an average of 15 to 20 students are accepted from other faculties. Foreign students are also accepted through the LLP-Erasmus International Exchange Programme. This Faculty has signed LLP-Erasmus agreements with 23 faculties in nine countries (47 outgoing students and 27 incoming students in 2008-09). Moreover, the Faculty has signed academic national exchange agreements known as SICUE/SENECA, with nine Spanish veterinary faculties (7 outgoing students and 9 incoming students in 2008/09).

**Table 9.2. International exchange students (LLP-Erasmus)**

Academic year	Incoming students	Outgoing students
<b>2008-09</b>	27	47
<b>2007-08</b>	20	38
<b>2006-07</b>	18	34



Academic year	Incoming students	Outgoing students
2005-06	20	25
2004-05	15	26

Table 9.3. Agreements with European Veterinary Faculties

Université de Liège	Belgium
Ecole Nationale Vétérinaire d'Alfort	France
Ecole Nationale Vétérinaire de Toulouse	France
Ecole Nationale Vétérinaire de Lyon	France
Ecole Nationale Vétérinaire de Nantes	France
Tierärztliche Hochschule Hannover	Germany
Freie Universität Berlin	Germany
Università di Messina	Italy
Università di Milano	Italy
Università di Torino	Italy
Università di Parma	Italy
Università di Pisa	Italy
Università di Perugia	Italy
Università di Bologna	Italy
Università di Teramo	Italy
Università di Sassari	Italy
Universidade Tecnica de Lisboa	Portugal
Universidade de Trás Os Montes do alto douro	Portugal
Escola Universitaria Vasco da Gama	Portugal
University of Veterinary Medicine in Kosice	Slovak Republic
University College Dublin	Ireland
Norwegian College of Veterinary Medicine	Norway
University of Helsinki	Finland

Table 9.4. National exchange programmes students (Sicue-Séneca)

Academic year	Incoming students	Outgoing students
2008-09	9	7
2007-08	9	6
2006-07	8	9
2005-06	11	8
2004-05	11	6

**Table 9.5. Agreements with Spanish Veterinary Faculties**

<b>Universidad Complutense de Madrid (UCM)</b>
<b>Universidad Autónoma de Barcelona (UAB)</b>
<b>Universidad de Zaragoza (UZA)</b>
<b>Universidad de León (ULE)</b>
<b>Universidad de Murcia (UMU)</b>
<b>Universidad Cardenal Herrera (UCH)</b>
<b>Universidad de Las Palmas (ULPGC)</b>
<b>Universidad de Santiago de Compostela (USC)</b>
<b>Universidad de Extremadura (UEX)</b>

### 9.1.2.G. FORESEEN CHANGES IN ANNUAL INTAKE. ADJUSTMENT TO THESE CHANGES

At present, no changes are foreseen in the annual intake of new students. Every year, the Faculty Board asks the University and the Andalusian Regional Government Department of Education to authorise the admission of 120 students (the number approved by the University of Córdoba in order to run two groups for theoretical classes, bearing in mind staff numbers and facilities available). This request is routinely denied, due to the heavy demand within this large Region (8 provinces; 8,285,692 inhabitants in 2009), in which this is the only Faculty of Veterinary Medicine; moreover, the intake requested by the Faculty would signify a drop in enrolment-fee income.

**Table 9.6. Intake of veterinary students in the past five years.**

Year	Number applying for admission	Number admitted	
		Standard intake	Other entry modes *
<b>2008-09</b>	899	151	14
<b>2007-08</b>	725	149	17
<b>2006-07</b>	736	158	13
<b>2005-06</b>	660	150	19
<b>2004-05</b>	678	147	26
<b>Average</b>	739.6	151	17.8

\* Students from other Veterinary Faculties, entering the Córdoba Faculty via Academic Transfer; they all enter in the second year or higher.

### 9.1.3. Student flow

» Table 9.1.3 establishes to what extent students make progress in their studies. To this end, we look at the students who were admitted initially and which year they have reached after the minimum number of years (MNY) has elapsed.

**Table 9.7. Student flow and total number of undergraduate veterinary students.**

Academic year	Number of students present after admitted year (2003/04)	Number of additionally admitted students
<b>1st year</b>		(2004-05): 173
<b>2nd year</b>	2	(2005-06): 169
<b>3rd year</b>	6	(2006-07): 171
<b>4th year</b>	19	(2007-08): 166
<b>5th year</b>	67	(2008-09): 165
<b>6th year</b>		
<b>&gt; 6th year</b>		
<b>Number of undergraduate students</b>		1154

Of the 151 students initially admitted in 2003-04, 35 have completed their studies and obtained the degree in Veterinary Medicine. Of the remainder, two students are still in the second year, six in the third year, nineteen in the fourth year and sixty-seven in the fifth and final year. Twenty-two students left the Faculty, either to transfer to another University or because they did not wish to continue their studies.

Thus, taking into account students who enrolled in 2003/04 who are still studying for the degree (94), students admitted in subsequent years (844), and students who initially enrolled at the Faculty prior to 2003/04 (216), the total number of registered undergraduate veterinary students is currently 1154.

**Table 9.8. Number of students graduating annually over the past five years**

Year	Total Number graduating
2008-09*	50
2007-08	161
2006-07	168
2005-06	160
2004-05	145
Average**	158

\* Until January 2009 \*\* From 2004-05 to 2007-08

**Table 9.9. Average duration of studies (distribution of students in years)**

Duration of attendance	Number
4 years	1
5 years	16
6 years	32
7 years	44
8 years	27
≥ 9 years	41
<b>Average duration of studies of the students who graduated in 2007/08</b>	<b>7.20</b>

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

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

### 9.1.3.A. REQUIREMENTS FOR PROGRESSING TO A SUBSEQUENT YEAR OF THE COURSE

The Degree in Veterinary Medicine is a five-year course, divided into two cycles:

- First cycle: 1st and 2nd years.

- Second cycle: 3rd, 4th and 5th years.

Certain requirements must be met in order to move from the first to the second cycle, and also in order to take up a pre-professional practical internship.

Before moving into the second cycle, students must have successfully completed 75% of the credits corresponding to the first cycle (i.e. first and second years of the degree). Similarly, and in accordance with Royal Decree 1497/1981 regulating requirements for external study, students cannot undertake a practical internship until they have successfully completed 55.52% of the core credits for the degree.

### **9.1.3.B. ACADEMIC CIRCUMSTANCES UNDER WHICH THE FACULTY WOULD OBLIGE STUDENTS TO LEAVE THE COURSE**

First-year students passing no subjects at all at either of the two annual examination sessions are obliged to leave the course. Students who have failed to pass a subject despite having taken the examination a maximum of six times are also obliged to leave the course. However, in certain circumstances students may apply to the Chancellor for a special examination session.

## **9.2. COMMENTS**

» *Comment on the standard of the students starting the course.*

» *Comment on the ability of the Faculty to satisfactorily decide the number of students it can accept.*

» *Comment on the factors that determine the number of students admitted.*

» *Comment on the adequacy of the facilities and teaching program to train the existing number of students.*

» *Comment on the progress made by students in their studies, and the Faculty's ability to ensure that satisfactory progress is maintained.*

» *Comment on the percentage of students that will eventually graduate.*

### 9.2.1. Comment on the standard of the students starting the course.

In general terms, first-year veterinary students enter the Faculty with intermediate-to-high grades. They also tend to be highly-motivated, since for most of them the degree in Veterinary Medicine was their first choice.

Year	2004-05	2005-06	2006-07	2007-08	2008-09
<b>Minimum mark required to enter the Faculty</b>	6.72	6.70	6.80	6.90	6.83
<b>Average student access mark</b>	7.36	7.17	7.55	7.92	8.03
<b>Number of students in the upper 20% range of access marks</b>	22	27	27	24	34

### 9.2.2. Comment on the ability of the Faculty to satisfactorily decide the number of students it can accept.

The Faculty Board does not have the final authority for deciding on the number of students it can accept every year; it can only make proposals. The Faculty recommends the number of students to whom it can provide optimum training in terms of staff numbers and available facilities, but the recommendation requires approval by the University's Governing Council and ultimately by the Andalusian Single District Committee, a body established by Decree 478/94 and answerable to the Andalusian Regional Government, which has the final decision on student intake for every academic year

### 9.2.3. Comment on the factors that determine the number of students admitted.

As indicated earlier, every attempt is made to adapt the number of students to the human and material resources available. The University also takes into account the demand for Veterinary graduates in the labour market.

#### **9.2.4. Comment on the adequacy of the facilities and teaching program to train the existing number of students.**

Although the number of students admitted every year is by no means low, the high degree of involvement shown by Faculty staff is sufficient to ensure adequate teaching quality; students play an active part in practical classes, rather than simply watching the teacher perform (skills development).

However, the maintenance of small practical groups makes extra demands on the teacher; for that reason, it is felt that – particularly in certain subjects where more teachers are required or existing teachers have a full workload – the amount of personal tuition should be increased.

#### **9.2.5. Comment on the progress made by students in their studies, and the Faculty's ability to ensure that satisfactory progress is maintained.**

One of the tasks of the Faculty's Teaching Committee, comprising an equal number of teachers and students, is to monitor teaching and learning. In its regular meetings, the Committee addresses potentially anomalous situations and attempts to make the modifications required to ensure student progress. Under the Academic Advisory system, established three years ago, teachers volunteer to provide advice to a given number of students, and to deal with any doubts they may have as undergraduates from the first year onwards.

#### **9.2.6. Comment on the percentage of students that will eventually graduate.**

The number of graduates has remained fairly stable over the last 4 years (mean: 158 per year), and is not expected to increase over the next few years, given the limited first-year intake.

Since 2004-05, there has been a considerable increase in the number of females graduates, reflecting the rising number of women entering the Faculty as undergraduates.

Year	Total number of male graduates	Total number of female graduates
<b>2007-08</b>	59 (36.65 %)	102 (63.35 %)
<b>2006-07</b>	56 (33.34 %)	112 (66.66 %)
<b>2005-06</b>	64 (40.00 %)	96 (60.00 %)
<b>2004-05</b>	71 (48.97 %)	74 (51.03 %)

The annual number of graduates outnumbers the demand for veterinarians in Spain. Even so, a recent employment study at national level showed that the number of unemployed veterinarians is very low (less than 5%), and that over 75% of graduates in veterinary medicine find work within six months of graduating. At the same time, however, it should be stressed that the same study detected a high rate of casual employment among graduates.

### **9.3. SUGGESTIONS**

- » *If you are not satisfied with the situation, please state in order of importance any suggestions that you may have concerning this Chapter if you feel unhappy about:*
- » *The number of students admitted;*
  - » *The drop-out percentage;*
  - » *The average duration of studies;*
  - » *Other aspects.*

#### **9.3.1. Student Intake**

Although the current number of students admitted is by no means ideal, the Faculty has been able to provide good training in small groups through practical sessions. Nonetheless, a slight reduction in student intake would be welcomed, especially if staff numbers are not to be increased; this would render the Faculty better able to meet the targets of the “Bologna Plan”.

It is strongly hoped that the Single Andalusian District committee will not, in future, force the Faculty to increase the student intake – as is happening in other degree courses – in order to offset the drop in



undergraduate numbers directly resulting from the ageing of the population in Spain.

### 9.3.2. Drop-out percentage

The drop-out rate at the Faculty is fairly low, averaging around 10%. Drop-outs include those students who fail to register for the second year because the Veterinary Medicine degree was not in fact their first choice, and students with financial difficulties.

### 9.3.3. Average duration of Studies

The average duration of studies is excessive. Students have a high academic level, but the current syllabus implies a heavy workload, making it difficult to complete the degree over the minimum five-year period. Students are required to complete a total of 4030 hours of training, i.e. 806 hours per academic year. The Conference of Deans of Spanish Veterinary Faculties routinely requests that the Spanish Ministry increase the duration of the degree from 5 to 5.5 years as part of the process of adapting to the EHEA.

Another factor favouring a prolonged undergraduate study duration is the academic policy implemented by Spanish universities in general, which allows the student six attempts to pass a subject, but places no limit on the number of years in which he can register for the examination; if the student fails to attend an examination, that examination is not counted as one of the six sittings that the student is allowed. Thus the student does not need to successfully complete a subject in 3 years (at 2 examinations sessions per year); he can in fact take much longer to do so. Considering, moreover, that students can register for any subject corresponding to any academic year, many students register for too many subjects, leading to an excessive workload and difficulty in attending all classes, lectures, practicals, etc., particularly since classes and practicals are more likely to overlap in such cases.

### 9.3.4. Level of knowledge on admission

As detailed earlier, the Baccalaureate via which students enter the Veterinary Medicine degree course does not make compulsory certain “related” subjects which would provide essential knowledge prior

to undergraduate study. The University of Córdoba is currently examining a range of options by which students can acquire the required knowledge, perhaps through “foundation courses” or optional/free elective courses. The University must continue to explore this issue.

### 9.3.5. Moving from one year to the next

The lack of any legal limit on the number of subjects for which a student can register, and the fact that it is not necessary to meet certain requirements in order to move from one year to the next, have given rise to the following problems:

- Many students register for too many subjects, which they therefore cannot adequately complete.
- Too many students register for subjects corresponding to different years, even though the academic timetable is published before the enrolment process begins; students should check the timetable for possible overlaps, but in practice fail to do so, causing difficulties which inevitably affect their performance and the duration of their studies.
- When drawing up the new degree syllabus, following the general EHEA guidelines, these points should be borne in mind with a view to alleviating in some measure this serious problem.

## Chapter X

# ACADEMIC AND SUPPORT STAFF





## **10.1. FACTUAL INFORMATION**

**Table 10.1 Personnel in the establishment provided for veterinary training**

1. Academic staff	Budgeted posts (FTE)		Non-budgeted posts (FTE)		Total (FTE)	
	VS	NVS	VS	NVS	VS	NVS
<b>Teaching staff</b>	121	18.75			121	18,75
<b>Research staff</b>			2.52	0.66	2.52	0.67
<b>Others (FTE)</b>						
<b>Total FTE</b>	121	18.75	2.52	0.67	123.52	19.42
<b>Total FTE (VS + NVS)</b>	139.75		3.191		142.94	
<b>2. Support staff</b>						
<b>a) Responsible for animal care and handling</b>	7 <sup>(1)</sup>		19 <sup>(2)</sup>		26	
<b>b) Responsible for preparing practical and clinical teaching</b>	32 <sup>(3)</sup>		4 <sup>(4)</sup>		36	
<b>c) Responsible for administration, general services, maintenance, etc.</b>	21 <sup>(5)</sup>		9 <sup>(6)</sup>		30	
<b>d) Engaged in re-search work</b>	24 <sup>(7)</sup>		4 <sup>(7)</sup>		28	
<b>e) Others (VTH)</b>	64 <sup>(8)</sup>		127 <sup>(9)</sup>		191	
<b>Total support staff</b>	148		163		311	
<b>3. Total staff</b>	<b>287.75</b>		<b>166.19</b>		<b>453.94</b>	

VS, Veterinary staff, NVS, no veterinary staff

(1) 1 person responsible for handling large animals, paid at campus level, 4 staff at the Animal Experimentation Service (combining manual work with the preparation of practicals and research) and 2 at the Experimental Farm (combining manual work with the preparation of practicals and research)

(2) 2 stable boys at the Veterinary Teaching Hospital (VTH), paid by the university-sponsored enterprise, 3 interns at the Animal Experimentation Service (combining manual work with the preparation of practicals and research) and 2 graduates at the Andalusian Organic Beekeeping Centre. This heading also includes 3 auxiliary staff, 8 interns and one resident at the Veterinary Hospital, paid by the Hospital itself. These staff provide technical support for veterinary operations (hospitalisation, preparation of operating-theatres, etc)

(3) Laboratory technicians and assistants (usually involved in Department staff research projects).

(4) 1 in Comparative Anatomy and Pathological Anatomy, and 3 interns at the Animal Experimentation Service (combining research work and animal care)

(5) Inter-faculty Department administrative staff are treated as 1 FTE, since they deal with 100% of student-related affairs

(6) 1 in Comparative Anatomy and Pathological Anatomy, 1 in Food Sciences and Food Technology and 4 in Animal Production (all paid for by public and private research projects), plus 3 in the university veterinary hospital, which pays their salaries

(7) In all cases, these are staff considered to be involved in preparation of practical and clinical work, since they are tenured or non-tenured staff engaged in the routine work of the Departments. Non-budgeted posts include, as indicated earlier, the 3 interns at the Animal Experimentation Service.

(8) 18 Janitors (2 in Medicine and Surgery, 3 in the Animal Production building, 2 in the Animal Health building, 2 in building C-1, 2 in the Library, 3 in the Assembly Hall, 3 in the Central Office for Research Support and 1 in the Faculty Secretariat (common to all centres). There are 10 caretakers who are also responsible for upkeep of lecture theatres and laboratories. 34 people are employed at the library, and 2 staff work for the Rabanales Campus Environmental Protection Service.

(9) 38 staff are employed by the Catering Service, 9 are involved in the upkeep and maintenance of sports facilities at Rabanales Campus, and there are 11 sports monitors, 2 lifeguards at the Rabanales Campus, 5 staff at the print and photocopying centre, 2 interns at the Environmental Protection Service and a total of 60 private security staff at the Rabanales Campus paid by the company to which security is outsourced

**Table 10.2. Teaching and research posts at the Faculty**

Permanent staff		Contracted staff		Research staff
Full Professors	Assitant Professors	Permanent	Temporary	
25	76	27	39	44
101		65		44
166				44

Research Staff: FPU, FPI, Ramón y Cajal, research-projects interns



Name of Department	Full Professor	Assistant Professor	Permanent contracted staff	Temporary contracted staff	Temporary replacement teacher	Research staff	Others	Technical/animal teaching/research	Admin / Gen
	VS-NVS	VS-NVS	VS-NVS	VS-NVS	VS-NVS	VS-NVS			
<b>Environmental Protection (SEPA)</b>							2		1/2
<b>Print shop</b>							5 <sup>3</sup>	-	-
<b>Other Campus staff</b>							60 <sup>4</sup>	1	1/1
<b>Total</b>	23 2	64 12	23 4	15.37	1.12 0.75	2.52 0.67	173	39	30/35

(1) This section includes 3 auxiliary staff, 8 interns and one resident, all employed directly by the Veterinary Hospital. They are engaged in technical hospital-related tasks (hospital admissions, preparation of operating-theatres, etc.)

(2) 34 people are employed at the Library

(3) Services outsourced to the private sector

(4) There are 60 maintenance and security staff (skilled and semiskilled), provided by external private companies

(-) No teaching work involved



Table 10.4. Ratios students / staff

**R1** = Ratio of academic FTE / undergraduate veterinary students

Total academic FTE	=	139.75	=	1
<hr/>				
No. veterinary undergraduates		1154		8.26

**R2** = Total FTE at faculty / undergraduate veterinary students

Total FTE at Faculty	=	142.94	=	1
<hr/>				
No. veterinary undergraduates		1154		8.073

**R3** = Total VS FTE in veterinary training / veterinary undergraduates

Total VS FTE	=	123.524	=	1
<hr/>				
No. veterinary undergraduates		1154		9.342

**R4** = Total VS FTE / mean students graduating annually

Total VS FTE	=	123.52	=	1
<hr/>				
Students graduating annually		158		1.279

**R5** = Total VTE academic staff / support staff

Total FTE academic staff	=	142.94	=	1
<hr/>				
Total FTE support staff		311		2.175

- » *Outline how the allocation of staff to the Faculty is determined.*
- » *Outline how the allocation of staff to the departments (or other units) within the Faculty is determined*

### 10.1.1. Teaching staff

Every Department has the right to request new teaching and support staff. Teaching staff may be divided into two groups: tenured and non-tenured (contracted); the selection process used is different in each case. In both cases, funding is provided by the University of Córdoba and the Andalusian Regional Government. The status of University teaching staff is currently governed by the Organic Law on Universities (published in Spanish State Gazette no. 8307 of 24 December 2001 and amended by no. 89 of 13 April 2007), by the regulations of the Andalusian Regional Government and by Statutes of the University of Córdoba.

Professors and tenured lecturers are civil servants, whilst non-tenured (contracted) posts are mainly intended for young lecturers and part-time teaching staff. Staff needs are determined by each Department, within the framework of the Faculty Annual Teaching Organisation Plan (PAOE); the Departments then submit a request for staff to the University. Requests to take on additional staff or replace current staff are approved or rejected by the University depending on the funds available and on overall staff needs, as determined by the Chancellor's Office, for each Department. The University Teaching Coordination Unit draws up a document setting out academic staff requirements on the basis of student numbers, teaching credits, and the type of tuition involved in each Area of Knowledge. Although the data included in this document are not final, they serve as a guideline for the Chancellor's Office to decide whether or not to grant Departmental requests for staff.

If the request is approved by the Governing Council, and if it refers to civil-service appointments (i.e. professor or tenured lecturer), the Chancellor's Office forwards the request to the Secretariat of the University Coordination Committee; if approved, the post is advertised and selection is performed following the National Accreditation Process (according to regulations laid down in the Organic Law on Universities). Candidates have to be approved by a national committee on the basis of their teaching and research background, in accordance with strict, previously-published criteria.

Posts for untenured lecturers are filled through a selection and appointment process carried out by the Chancellor's Office in accordance with the regulations currently in force. Candidates are put forward by the Chancellor and selected by an Appointments Committee designated by the Faculty Board. All non-tenured lecturers teach in the department in accordance with the terms of their contracts; in some cases, they also carry out research.

All permanent tenured and non-tenured (contracted) teaching staff are full-time employees (37.5 hours/week): eight hours of classes (21.33%); six hours of tutorials (16%) and the remaining 23.5 hours (62.66%) of research and student advisory services. The average teaching load, based on 8 hours of classes per week and 30 weeks of classes per year, is 240 hours, the equivalent of 24 full-time credits. Associate, Temporary and Assistant lecturers are generally part-time employees (3+3 = three hours' teaching and three hours' tutorial per week, or 6+6 = six hours' teaching and six hours' tutorials per week), corresponding to 9 (3+3) or 18 (6+6) credits, respectively.

### 10.1.2. Support Staff

The number and distribution of Administration and Services Personnel (PAS) is laid down in the current Employment Schedule (RPT) at University level. This schedule takes into account the requirements of each Faculty and/or Department involved. It should be noted that certain Departments in any given Faculty may also provide tuition, services or staff to other Faculties. In such cases, support staff numbers are determined on the basis of the number of staff dealing solely with Veterinary undergraduates, and the proportion of staff also working for other faculties.

There are two types of Administration and Service Personnel: permanent support staff (civil servants or long-term contracted employees) and hired staff (short-term or temporary). In both cases, funding, selection and staff appointments are dealt with at University level, i.e. funds are provided from the University budget, except for research support staff, whose salaries may be paid through research contracts and projects funded by private or public bodies outside the University.

Civil-service support staff are appointed through public examinations held by the University itself. Short-term hired support staff are paid from the University budget, and selected from a standing shortlist of qualified candidates; appointments must be approved by the Appo-

intments Committee. Posts linked to research contracts or projects are filled by the research group in question, in accordance with previously-published criteria.

- » *Indicate whether there are difficulties in recruiting or retaining staff.*
- » *Describe (if appropriate) any relevant trends or changes in staff levels or the ability to fill vacancies over the past decade.*
- » *Indicate whether it is easy to employ additional staff from service income (e.g. from revenues of clinical or diagnostic work).*

The number of new staff appointed by the Chancellor's Office tends to be lower than that recommended by the Departments, who are more directly aware of their needs.

The appointment of new staff is a highly competitive process; this is very positive, since it ensures selection from a shortlist of well-qualified candidates. Candidates for permanent posts are required to comply with a set of demanding criteria at national level. The clear criteria laid down by the appointments committee for the selection of temporary (non-budgeted) staff has also given rise to a highly-competitive field of candidates and thus to well-qualified staff. Nonetheless, the University has not yet managed to create a "teaching career" that would guarantee teachers stable employment and fair prospects for professional promotion in accordance with pre-established criteria.

In order to provide adequate clinical assistance, the Veterinary Hospital appoints non-teaching veterinary surgeons, although recently some have been given the opportunity to join the Faculty as Associate Lecturers. The Faculty may appoint veterinarians belonging to the Regional Health Department to work in the fields of Hygiene, Inspection and Food Control.

- » *Describe the regulations outside work, including consultation and private practice, by staff working at the establishment.*
- » *Describe the possibilities and financial provisions for the academic staff to:*
  - » *a) attend scientific meetings*
  - » *b) go on a sabbatical leave.*

Full-time teaching staff are not allowed to work outside the University (either as consultants or in private practice), except in official institutions with the prior approval of the University (Law 53/1984, 26 December, regulating additional work by civil servants). Part-time lecturers are allowed to take additional employment outside the University. Both the Organic Law on Universities and the University Statutes permit the signing of contracts between teaching staff and people, Universities and public or private bodies for a specific scientific task.

The University (the Vice-Chancellor for Scientific Policy) offers financial support for attendance at scientific congresses, through its own funding programme. Due to the large number of applications received in recent years, a limit has been placed on the number of annual bursaries granted to any lecturer for this purpose. Bursaries cover travel, living expenses and accommodation, but not registration fees. Applications are reviewed by a Committee headed by the Vice-Chancellor for Scientific Policy. Attendance at congresses is funded only when the applicant will be presenting a paper or poster. The maximum limit for bursaries differs depending on the location of the congress. Financial support is also available from the Andalusian Regional Council, and other sources of funding also exist.

Sabbatical leave is regulated by the University statutes. Tenured lecturers and long-term staff may request one sabbatical year for every five years of continuous service at the university. Their salary during this period is fixed by the Governing Council. Lecturers who have taken on additional administrative duties may request leave in order to undertake research or refresher courses; the maximum leave allowed is one year, and varies depending on the duration of the administrative duties undertaken.

## **10.2 COMMENTS**

*» Comment of the number of personnel in the various categories*

### **10.2.1. Academic Staff**

The number and, more importantly, the quality of the teaching staff has improved constantly over the last ten years; there were 134 lecturers in 1999, compared to 166 at present. Over the same period, the number of tenured lecturers has fallen from 116 to 101, but the number of contracted staff has increased considerably, from 18 in 1999 to 62 at present, an increase that has proved beneficial for staff renewal.

The academic staff are of high quality, and are relatively young; this is a positive situation, since it gives rise to high degree of motivation and a keen desire to engage with the challenges posed by European Convergence over the next few years: the adoption of new technologies and the application of new teaching methods.

### **10.2.2. Support staff**

The work of the support staff at Andalusia's public universities is regulated by a system of constantly-updated Collective Agreements. An agreement signed by the Andalusian Universities in May 2007 and currently in force provides for a Productivity Bonus for Improved Quality of the work carried out by support staff (both civil servants and contracted staff). The details are set down in a specific Regulation. All regulations concerning university support staff can be consulted at: [http://www.uco.es/gestion/laboral/normativa/index\\_normativa.html](http://www.uco.es/gestion/laboral/normativa/index_normativa.html)

Both teaching and support staff are eligible for Social Action grants given annually by the University of Córdoba, and for training programmes regularly provided in various specific and transversal subject areas.

The current Departmental system and Campus-based organisation – which affect 100% of students and staff at the Veterinary Faculty – mean that one person may have to work for various Faculties or Centres. A perceived advantage of this system is that it optimises the

availability of a large number of people for specific tasks (e.g. Centralised Support for research, Libraries, Sports Institutions, etc)

» *Comment on the salary levels, specially those of the academic staff in relation to the level of income in the private sector*

Compared to salaries in the private sector, and indeed in the civil service, the salaries of teaching staff are relatively low. The high qualifications required in order to secure a position as lecturer are not reflected in the salaries paid. This may negatively affect the appointment of young professionals, who are dissuaded from going into teaching or research. In order to avoid this, incentives need to be applied –in terms of both financial remuneration and career development. Gross salaries for various categories of academic staff at the Faculty are shown below.

#### **Gross monthly salaries for various categories of Tenured Academic Staff<sup>1</sup>**

Category	Full Professor	Assitant Professor
<b>Salary</b>	1157.82	1157.82
<b>Post adjustment</b>	911.92	835.22
<b>Specific bonus</b>	1028.18	479.67
<b>Three-year increment <sup>2</sup></b>	44.51	44.51
<b>Teaching Merit bonus <sup>3</sup></b>	155.92	126.29
<b>Research merit bonus <sup>4</sup></b>	155.92	126.29
<b>Andalusian Govt. bonus <sup>5</sup></b>	778.40	778.40

<sup>1</sup> Monthly salaries are subject to income tax (IRPF), pension contributions (105.42 euros) and health insurance contributions (46.34 euros). Staff receive fourteen monthly payments (extra payments in June and December).

<sup>2</sup> Paid for every three years of service. There is no limit on the number of increments.

<sup>3</sup> Renewable every five years. Maximum of six successive bonuses.

<sup>4</sup> This bonus is paid following evaluation by the National Committee on Research Work. It can be applied for every six years. Maximum of five successive bonuses.

<sup>5</sup> The Andalusian Government bonus is paid twice yearly (March and September) after evaluation by the Andalusian Regional Government. Maximum of five successive bonuses.

**Gross monthly salaries for various categories of non-tenured (contracted) academic staff<sup>1</sup>**

Category	Contracted Doctor	Assistant Doctor	Junior lecturer	Assistant	Associate 6+6 <sup>3</sup>	Associate 3+3 <sup>4</sup>
<b>Salary</b>	1157.82	1042.04	984.15	752.58	277.88	138.94
<b>Adjustment</b>	1314.89	1183.40	1117.66	854.68	315.57	157.79
<b>Three-year increment<sup>2</sup></b>	44.51	44.51	44.51	44.51	44.51	44.51
<b>PhD increment</b>	74.18	74.18	74.18	74.18	74.18	74.18
<b>Increment for Advanced Studies Diploma</b>	49.45	49.45	49.45	49.45	49.45	49.45

<sup>1</sup> Monthly salaries are subject to income tax (IRPF). Staff receive fourteen monthly payments (extra payments in June and December).

<sup>2</sup> Paid for every three years of service. There is no limit on the number of increments.

<sup>3</sup> The same salary is paid to Temporary Replacement teachers and temporary staff 6+6

<sup>4</sup> The same salary is paid to Temporary Replacement teachers 3+3

» Comment on the percentage of veterinarians in the academic staff

A total of 86.41% of the Faculty's academic staff are veterinarians. In the most specific departments involved in the degree course (Animal Medicine and Surgery; Animal Production; Food Sciences and Food Technology; Pharmacology, Toxicology and Legal & Forensic Medicine; Comparative Anatomy and Pathological Anatomy; and Animal Health), 94.73% of the academic staff are veterinarians, whilst this percentage drops to 58.06% in the Departments of Basic Sciences (Cell Biology, Physiology and Immunology; Biochemistry and Molecular Biology; Statistics, Econometrics, Operational Research and Business Organisation; Physics; Genetics; and Zoology).



### **10.3. SUGGESTIONS**

The R1; R2; R3; R4 and R5 ratios (Table 10.3) for the Faculty are fairly satisfactory. A few comments can be made in this respect:

- It is not easy to appoint new academic staff. University lecturers need to be proficient in terms of both teaching skills and research skills. In the future, it would be useful to start the teacher training process in good time in order to ensure teaching excellence. It would also be useful to develop some defined structures for professional promotion.
- Although the number of teaching staff has increased over recent years, the number of posts adapted to the EHEA must continue to increase. With regard to support staff, numbers could be increased to ensure adequate cover in both morning and evening shifts.
- Although contracts for researchers and research support staff can be funded through research projects, the Chancellor's Office, and the national and regional governments, should take full advantage of any opportunity for extra funding for the appointment of specialist teaching and research support staff.
- The job descriptions and required qualifications for support staff have not been updated by the Chancellor's office for the last few years; this should be done, in order to ensure that candidates meet more closely the Faculty's specific requirements.
- The Faculty or the Departments should have greater say in the appointment of support staff contracted by the University, in order to make sure that new staff meets specific Faculty requirements. Currently, support staff is appointed by a Committee designated by the Chancellor, on which the Department to which the new appointee will be sent has no representation although it can fix the specific requirements. This represents a marked contrast to the flexibility and independence with which staff is appointed using external funding.
- The number of students in practical classes in the various departments should be reviewed, since certain departments tend to teach practicals in smaller groups than established by law, particularly in the fourth and fifth years of the degree course.
- A new Statute for Teaching and Research Staff is shortly to come into force. Naturally, this will have a decisive influence on teaching and research activity in the Faculty.

**DEPARTMENT OF COMPARATIVE ANATOMY AND PATHOLOGICAL ANATOMY**

SURNAME, FIRST NAME	AREA OF EXPERTISE	DEGREE	EXPERIENCE (YEARS)	TEACHING-LOAD	DEVOTION
<b>Agüera Carmona, Eduardo</b>	Comparative Anatomy and Pathological Anatomy	Doctor	38	24 credits	Full time
<b>Bautista Pérez, M<sup>a</sup> José</b>	“	Doctor	16	24 credits	Full time
<b>Blanco Rodríguez, Alfonso</b>	“	Doctor	39	24 credits	Full time
<b>Carrasco Otero, Librado<sup>2</sup></b>	“	Doctor	23	24 credits	Full time
<b>Diz Plaza, Andrés<sup>4</sup></b>	“	Doctor	26	24 credits	Full time
<b>García Monterde, José</b>	“	Doctor	32	24 credits	Full time
<b>Gómez Villamandos, José Carlos<sup>1</sup></b>	“	Doctor	21	24 credits	Full time
<b>Jover Moyano, Amador</b>	“	Doctor	50		
<b>López Rivero, José Luís</b>	“	Doctor	23	24 credits	Full time
<b>Martín de las Mulas González-Albo, Juana</b>	“	Doctor	27	24 credits	Full time
<b>Martínez Galisteo, Alfonso</b>	“	Doctor	22	24 credits	Full time
<b>Méndez Sánchez, Aniceto</b>	“	Doctor	28	24 credits	Full time
<b>Miró Rodríguez, Francisco</b>	“	Doctor	27	24 credits	Full time
<b>Morales López, José Luís</b>	“	Doctor	22	24 credits	Full time
<b>Mozos Mora, Elena<sup>3</sup></b>	“	Doctor	29	24 credits	Full time
<b>Pérez Arévalo, José</b>	“	Doctor	16	24 credits	Full time
<b>Rodríguez Barbudo, M<sup>a</sup> Victoria</b>	“	Doctor	30	24 credits	Full time
<b>Vivo Rodríguez, Joaquín</b>	“	Doctor	32	24 credits	Full time

<sup>1</sup> Vice-Chancellor for Postgraduate Studies and Continuing Education, University of Córdoba

<sup>2</sup> Dean of the Faculty of Veterinary Medicine

<sup>3</sup> Head of Department

<sup>4</sup>Secretary of the Department

Number of Teaching Components in the department: 88

Number of Research Components in the Department: 56

#### DEPARTMENT OF CELL BIOLOGY, PHYSIOLOGY AND IMMUNOLOGY

SURNAME, FIRST NAME	AREA OF EXPERTISE	DEGREE	EXPERIENCE (YEARS)	TEACHING LOAD	DEVOTION
<b>Agüera Buendía, Estrella</b>	Physiology	Doctor	17	24 credits	Full time
<b>Agüera Carmona, Sergio</b>	"	Doctor	26	24 credits	Full time
<b>Castejón Montijano, Francisco Javier</b>	"	Doctor	35	24 credits	Full time
<b>Rubio Luque, M<sup>a</sup> Dolores</b>	"	Doctor	32	24 credits	Full time
<b>Santisteban Valenzuela, Rafael</b>	"	Doctor	30	24 credits	Full time
<b>Vivo Rodríguez, Rafael</b>	"	Doctor	27	24 credits	Full time

Number of Teaching Components in the department: 30

Number of Research Components in the Department: 15

## DEPARTMENT OF BIOCHEMISTRY AND MOLECULAR BIOLOGY

SURNAME, FIRST NAME	AREA OF EXPER-TISE	DEGREE	EXPE-RIENCE (YEARS)	TEACHIN-GLOAD	DEVOTION
<b>Díez Dapena, Jesús</b>	Bioche-mistry and Mo-lecular Biology	Doctor	32	24 credits	Full time
<b>García Fernández, José Manuel</b>	“	Doctor	9	24 credits	Full time
<b>Jurado Carpio, Juan</b>	“	Doctor	12	24 credits	Full time
<b>Prieto Álamo, M<sup>a</sup> José</b>	“	Doctor	9	24 credits	Full time
<b>Dorado Pérez, Ga-briel</b>	“	Doctor	20	24 credits	Full time
<b>García Alfonso, Con-cepción</b>	“	Doctor	34	24 credits	Full time
<b>Martínez Galisteo, M<sup>a</sup> Emilia</b>	“	Doctor	29	24 credits	Full time
<b>Padilla Peña, Car-men Alicia<sup>2</sup></b>	“	Doctor	20	24 credits	Full time
<b>Peinado Peinado, José</b>	“	Doctor	26	24 credits	Full time
<b>Roldán Nogueras, José Manuel<sup>1</sup></b>	“	Doctor	36	24 credits	Full time
<b>Toribio Meléndez-Valdés, Fermín</b>	“	Doctor	34	24 credits	Full time

<sup>1</sup> Chancellor of the University of Córdoba

<sup>2</sup> Secretary of the Department

Number of Teaching Components in the department: 38

Number of Research Components in the Department: 21

## DEPARTMENT OF FOOD SCIENCES AND FOOD TECHNOLOGY

SURNAME, FIRST NAME	AREA OF EXPERTISE	DEGREE	EXPERIENCE (YEARS)	TEACHING-LOAD	DEVOTION
<b>Alcalá Aguilera, Manuel</b>	Food Technology	Doctor	33	24 credits	Full time
<b>Amaro López, Manuel Ángel</b>	Nutrition and Food Sciences	Doctor	15	24 credits	Full time
<b>Cabezas Redondo, M<sup>a</sup> Lourdes</b>	Food Technology	Doctor	27	24 credits	Full time
<b>Cámara Martos, Fernando</b>	Nutrition and Food Sciences	Doctor	1	18 credits	Part time
<b>Fernández-Salguero Carretero, José</b>	Food Technology	Doctor	35	24 credits	Full time
<b>Ferrer Bas, Susana</b>	“	Doctor	1	9 credits	Part time
<b>García Gimeno, Rosa M<sup>a</sup></b>	Nutrition and Food Sciences	Doctor	13	24 credits	Full time
<b>García Viejo, Fernando</b>	“	Doctor	6	9 credits	Part time
<b>Gómez Díaz, Rafael</b>	Food Technology	Doctor	17	24 credits	Full time
<b>Hidalgo Laguna, Rosario</b>	Nutrition and Food Sciences	Doctor	1	9 credits	Part time
<b>Jodral Villarejo, Manuela Luisa</b>	Nutrition and Food Sciences	Doctor	34	24 credits	Full time
<b>Jordano Salinas, Rafael</b>	“	Doctor	30	24 credits	Full time
<b>Medina Canalejo, Luís Manuel</b>	“	Doctor	15	24 credits	Full time
<b>Moreno Rojas, Rafael<sup>1</sup></b>	“	Doctor	18	24 credits	Full time
<b>Prieto Garrido, José Luís</b>	“	Graduate	6	9 credits	Part time
<b>Rincón León, Francisco</b>	“	Doctor	26	24 credits	Full time
<b>Rodríguez Gallardo, Pedro Pablo</b>	“	Doctor	1	9 credits	Part time
<b>Serrano Jiménez, M<sup>a</sup> Salud</b>	“	Doctor	6	24 credits	Full time
<b>Vioque Amor, Monserrat</b>	Food Technology	Doctor	7	24 credits	Full time

SURNAME, FIRST NAME	AREA OF EXPERTISE	DEGREE	EXPERIENCE (YEARS)	TEACHING-LOAD	DEVOTION
<b>Zurera Cosano, Gonzalo</b>	Nutrition and Food Sciences	Doctor	30	24 credits	Full time

<sup>1</sup>Head of Department

Number of Teaching Components in the department: 54

Number of Research Components in the Department: 32

#### DEPARTMENT OF PHARMACOLOGY, TOXICOLOGY AND LEGAL AND FORENSIC MEDICINE

SURNAME, FIRST NAME	AREA OF EXPERTISE	DEGREE	EXPERIENCE (YEARS)	TEACHING-LOAD	DEVOTION
<b>Cabanás Córdoba, Federico</b>	Legal & Forensic Medicine	Doctor	34	24 credits	Full time
<b>Fernández Díez, Ana Isabel</b>	Toxicology	Doctor	8	18 credits	Part time
<b>Molina López, Ana</b>	Toxicology	Doctor	3	24 credits	Full time
<b>Moyano Salvago, Rosario</b>	"	Doctor	27	24 credits	Full time
<b>Ponferrada Abrisqueta, Carlos</b>	Pharmacology	Doctor	25	24 credits	Full time
<b>Rueda Jiménez, Andrés</b>	Toxicology	Graduate	9	18 credits	Part time
<b>Santiago Laguna, Diego</b>	"	Doctor	45	24 credits	Full time
<b>Serrano Caballero, Juan Manuel</b>	Pharmacology	Doctor	33	24 credits	Full time

Number of Teaching Components in the department: 28

Number of Research Components in the Department: 3

## DEPARTMENT OF PHYSICS

SURNAME, FIRST NAME	AREA OF EXPERTISE	DEGREE	EXPERIENCE (YEARS)	TEACHIN- GLOAD	DEVOTION
<b>Ballesteros Pastor, Jerónimo</b>	Applied Physics	Doctor	30	24 credits	Full time

*Number of Teaching Components in the department: 5*

*Number of Research Components in the Department: 2*

DEPARTMENT OF STATISTICS, ECOMETRY, OPERATIONAL RESEARCH  
AND BUSINESS ORGANISATION

SURNAME, FIRST NAME	AREA OF EXPERTISE	DEGREE	EXPERIENCE (YEARS)	TEACHIN- GLOAD	DEVOTION
<b>Martos Peinado, José</b>	Statistics and operational research	Doctor	20	24 credits	Full time

## DEPARTMENT OF GENETICS

SURNAME, FIRST NAME	AREA OF EXPERTISE	DEGREE	EXPE- RIENCE (YEARS)	TEACHIN- GLOAD	DEVOTION
<b>Delgado Bermejo, Juan Vicente</b>	Genetics	Doctor	25	24 credits	Full time
<b>Garrido Pavón Juan José</b>	“	Doctor	10	24 credits	Full time
<b>Haba Giraldo, Ma- nuel de la</b>	“	Doctor	28	24 credits	Full time
<b>Llanes Ruíz, Diego</b>		Doctor	35	24 credits	Full time
<b>Molina Alcalá, Antonio</b>	“	Doctor	17	24 credits	Full time
<b>Moreno Millán, Miguel</b>	“	Doctor	32	24 credits	Full time
<b>Morera Sanz, Luís</b>	“	Doctor	33	24 credits	Full time
<b>Muñoz Serrano, Andrés</b>	“	Doctor	27	24 credits	Full time

*Number of Teaching Components in the department: 34*

*Number of Research Components in the Department: 18*

## DEPARTMENT OF ANIMAL MEDICINE AND SURGERY

SURNAME, FIRST NAME	AREA OF EXPERTISE	DEGREE	EXPERIENCE (YEARS)	TEACHING LOAD	DEVOTION
<b>Aguilera Tejero, Escolástico</b>	Animal Medicine and Surgery	Doctor	23	***	Full time
<b>Arrebola Molina, Francisco Antonio</b>	“	Doctor	1	9 credits	Part time
<b>Blanco Navas, Beatriz</b>	“	Doctor	1	9 credits	Part time
<b>Casero Escalante, Cipriano Luís</b>	“	Graduate	1	9 credits	Part time
<b>Domínguez Pérez, Juan Manuel</b>	“	Doctor	7	24 credits	Full time
<b>Dorado Martín, Jesús Manuel</b>	“	Doctor	8	24 credits	Full time
<b>Estepa Nieto, José Carlos</b>	“	Doctor	11	24 credits	Full time
<b>Galán Rodríguez, M<sup>a</sup> del Alba</b>	“	Doctor	3	24 credits	Full time
<b>Galka, Margarita Emilia</b>	“	Graduate	1	9 credits	Part time
<b>Ginel Pérez, Pedro</b>	“	Doctor	17	24 credits	Full time
<b>Gómez Villamandos, Rafael Jesús<sup>2</sup></b>	“	Doctor	16	24 credits	Full time
<b>Granados Machuca, M<sup>a</sup> del Mar</b>	“	Doctor	7	24 credits	Full time
<b>Hernández Robles, Eduardo Manuel</b>	“	Doctor	5	18 credits	Part time
<b>Hidalgo Prieto, Manuel</b>	“	Doctor	5	24 credits	Full time
<b>López Rodríguez, M<sup>a</sup> del Rocío</b>	“	Doctor	27	24 credits	Full time
<b>López Villalba, Ignacio</b>	“	Doctor	7	24 credits	Full time
<b>Lucena Solís, M<sup>a</sup> del Rosario</b>	“	Doctor	11	24 credits	Full time
<b>Martín Suárez, Eva María</b>	“	Doctor	11	24 credits	Full time
<b>Mayer Valor, Rafael</b>	“	Doctor	47		
<b>Mendoza García, Francisco</b>	“	Doctor	2	24 credits	Full time



SURNAME, FIRST NAME	AREA OF EXPERTISE	DEGREE	EXPERIENCE (YEARS)	TEACHING LOAD	DEVOTION
<b>Morgaz Rodríguez, Juan</b>	“	Doctor	2	6 credits	Full time
<b>Muñoz Juzado, Ana María</b>	“	Doctor	10	24 credits	Full time
<b>Molleda Carbonell, José María<sup>1</sup></b>	“	Doctor	39	24 credits	Full time
<b>Navarrete Calvo, Rocío</b>	“	Doctor	1	6 credits	Full time
<b>Novales Durán, Manuel</b>	“	Doctor	22	24 credits	Full time
<b>Pérez Écija, Alejandro</b>	“	Doctor	2	6 credits	Full time
<b>Pérez Marín, Carlos Carmelo</b>	“	Doctor	12	24 credits	Full time
<b>Quesada Abad, Estíbaliz</b>	“	Graduate	5	18 credits	Part time
<b>Raya Bermúdez, Ana Isabel</b>	“	Graduate	3	6 credits	Full time
<b>Ríber Pérez, Cristina</b>	“	Doctor	33	24 credits	Full time
<b>Rodríguez Artiles, Inmaculada</b>	“	Doctor	26	24 credits	Full time
<b>Roldán Romero, Juan</b>	“	Graduate		9 credits	Part time
<b>Ruiz Calatrava, Indalecio</b>	“	Doctor	18	24 credits	Full time
<b>Sánchez de Medina Baena, Antonia</b>	“	Graduate		18 credits	Part time
<b>Santisteban Valenzuela, José María</b>	“	Doctor	24	24 credits	Full time
<b>Valera Sanz, Pablo</b>	“	Graduate	1	9 credits	Part time
<b>Villalobos Núñez, Carmen María</b>	“	Doctor	1	9 credits	Part time

<sup>1</sup> Head of Department

<sup>2</sup> Secretary of the Department

Number of Teaching Components in the department: 55

Number of Research Components in the Department: 26

## DEPARTMENT OF ANIMAL PRODUCTION

SURNAME, FIRST NAME	AREA OF EXPERTISE	DEGREE	EXPERIENCE (YEARS)	TEACHING LOAD	DEVOTION
<b>Ballesteros García, Juan Antonio</b>	Animal production	Graduate	2	9 credits	Part time
<b>Barba Capote, Cecilio José</b>	"	Doctor	1	9 credits	Part time
<b>Cabello Robles, Alejandro</b>	"	Graduate	6	9 credits	Part time
<b>Carrión Pardo, Domingo</b>	"	Doctor	1	9 credits	Part time
<b>Díaz Bueno, Esperanza</b>	"	Graduate	1	9 credits	Part time
<b>Domenech García, Valeriano</b>	"	Doctor	24	24 credits	Full time
<b>García Martínez, Antón Rafael</b>	"	Doctor	16	24 credits	Full time
<b>Garzón Sígler, Ana Isabel<sup>2</sup></b>	"	Doctor	17	24 credits	Full time
<b>Gómez Castro, Antonio Gustavo</b>	"	Doctor	43	24 credits	Full time
<b>Hernández García, Manuela</b>	"	Graduate	2	9 credits	Part time
<b>Herrera García, Mariano</b>	"	Doctor	35	24 credits	Full time
<b>Martínez Hens, Jaime</b>	"	Doctor	28	24 credits	Full time
<b>Martínez Marín, Andrés Luís</b>	"	Graduate	6	18 credits	Part time
<b>Peña Blanco, Francisco de Paula</b>	"	Doctor	25	24 credits	Full time
<b>Perea Muñoz, José Manuel</b>	"	Doctor	2	24 credits	Full time
<b>Pérez Alba, Luís</b>	"	Doctor	33	24 credits	Full time
<b>Pérez Hernández, Manuel<sup>1</sup></b>	"	Doctor	35	24 credits	Full time
<b>Rodero Serrano, Evangelina</b>	"	Doctor	17	24 credits	Full time
<b>Rodríguez Alcaide, José Javier</b>	"	Doctor	45		
<b>Rodríguez Estévez, Vicente</b>	"	Doctor	6	18 credits	Part time

SURNAME, FIRST NAME	AREA OF EXPERTISE	DEGREE	EXPERIENCE (YEARS)	TEACHING LOAD	DEVOTION
<b>Rodríguez Jurado, Francisco</b>	"	Graduate	2	9 credits	Part time
<b>Romero Vargas, María Isabel</b>	"	Graduate	1	9 credits	Part time
<b>Ruiz di Génova, Diego Ezequiel</b>	"	Doctor	2	9 credits	Part time
<b>Sánchez Rodríguez, Manuel</b>	"	Doctor	24	24 credits	Full time
<b>Santos Alcudia, Raquel</b>	"	Graduate	2	9 credits	Part time
<b>Sanz Pereda, Raúl</b>	"	Graduate	2	9 credits	Part time
<b>Velasco Portero, Francisco</b>	"	Graduate	1	9 credits	Part time

<sup>1</sup> Head of Department

<sup>2</sup> Secretary of the Department

Number of Teaching Components in the department: 58

Number of Research Components in the Department: 7

## DEPARTMENT OF ANIMAL HEALTH

SURNAME, FIRST NAME	AREA OF EXPERTISE	DEGREE	EXPERIENCE (YEARS)	TEACHING LOAD	DEVOTION
<b>Acosta García, Isabel</b>	Parasitology	Doctor	33	24 credits	Full time
<b>Arenas Casas, Antonio José<sup>2</sup></b>	Animal Health	Doctor	23	24 credits	Full time
<b>Astorga Márquez, Rafael Jesús</b>	"	Doctor	14	24 credits	Full time
<b>Becerra Martell, Cristóbal</b>	Parasitology	Doctor	34	24 credits	Full time
<b>Borge Rodríguez, M<sup>a</sup> del Carmen</b>	Animal Health	Doctor	6	24 credits	Full time
<b>Carbonero Martínez, Alfonso</b>	"	Doctor	6	24 credits	Full time
<b>García Bocanegra, Ignacio</b>	"	Doctor	1	6 credits	Full time
<b>Garrido Jiménez, M<sup>a</sup> Rosario de Fátima</b>	"	Doctor	18	24 credits	Full time
<b>Gutiérrez Palomino, Pedro Nolasco</b>	Parasitology	Doctor	25	24 credits	Full time
<b>Hernández Rodríguez, Santiago<sup>1</sup></b>	"	Doctor	39	24 credits	Full time
<b>Huerta Lorenzo, María Belén</b>	Animal Health	Doctor	7	24 credits	Full time
<b>Luque Moreno, Inmaculada</b>	"	Doctor	11	24 credits	Full time
<b>Maldonado García, Alfonso</b>	"	Doctor	21	24 credits	Full time
<b>Marín Cerdá, Juan Carlos</b>	"	Graduate	1	9 credits	Part time
<b>Martínez Cruz, M<sup>a</sup> Setefilla</b>	Parasitology	Doctor	25	24 credits	Full time
<b>Martínez Moreno, Álvaro</b>	"	Doctor	24	24 credits	Tiempo complet0
<b>Martínez Moreno, Francisco Javier</b>	"	Doctor	18	24 credits	Full time
<b>Moreno Montañez, Teodoro</b>	"	Doctor	34	24 credits	Full time
<b>Paniagua Risueño, Jorge María</b>	"	Graduate	1	9 credits	Part time
<b>Perea Franco, Miguel Ángel</b>	"	Graduate	1	9 credits	Part time

SURNAME, FIRST NAME	AREA OF EXPERTISE	DEGREE	EXPERIENCE (YEARS)	TEACHING LOAD	DEVOTION
<b>Perea Remujo, Juan Anselmo</b>	Animal Health	Doctor	33	24 credits	Full time
<b>Serrano de Burgos, Elena</b>	"	Doctor	29	24 credits	Full time
<b>Tarradas Iglesias, M<sup>a</sup> del Carmen</b>	"	Doctor	18	24 credits	Full time
<b>Uceda Gaitán, Antonia</b>	"	Doctor	31	24 credits	Full time
<b>Villafuerte Cosano, José Luis</b>	"	Graduate	4	9 credits	Part time

<sup>1</sup> Head of Department

<sup>2</sup> Secretary of the Department

Number of Teaching Components in the department: 75

Number of Research Components in the Department: 33

#### DEPARTMENT OF ZOOLOGY

SURNAME, FIRST NAME	AREA OF EXPERTISE	DEGREE	EXPERIENCE (YEARS)	TEACHING LOAD	DEVOTION
<b>Bustos Ruiz, Manuel</b>	Zoology	Doctor	36	24 credits	Full time
<b>Flores Serrano, José Manuel</b>	"	Doctor	18	24 credits	Full time
<b>Padilla Álvarez, Francisco</b>	"	Doctor	28	24 credits	Full time
<b>Puerta Puerta, Francisco de Asís</b>	"	Doctor	22	24 credits	Full time

Number of Teaching Components in the department: 18

Number of Research Components in the Department: 1



## Chapter XI

# CONTINUING EDUCATION



### **11.1. FACTUAL INFORMATION**

---

*» Please describe the role of the Faculty in providing continuing education.*

---



The Faculty of Veterinary Medicine fully recognises the need for courses and other events providing additional and updated information relating to a range of professional fields, including Clinical Sciences, Animal Health, Animal Husbandry, Food Sciences and Food Technology. The Dean's Office and/or the Departments responsible for tuition organise refresher courses and continuing education courses aimed at both undergraduates and postgraduates.

**Table 11.1. Courses organised by the Faculty itself in 2007-08**

<b>Title of course</b>	<b>Organisation</b>	<b>Number of Participants</b>	<b>Total course duration (hours)</b>
<b>Equine Studies II</b>	Dean's Office-Equine Study Group	460	30
<b>1st National Meeting of University Bullfighting Study Groups</b>	Dean's Office-Bullfighting Study Group	95	20
<b>Theoretical/Practical course on continuous kidney support techniques in critical patients</b>	Dept. Medicine and Surgery	20	20
<b>Respiratory Tract Medicine and Surgery in Small Animals</b>	Dept. Medicine and Surgery	59	25
<b>Medical and Surgical Disorders of the Respiratory Tract in Small Animals</b>	Dept. Medicine and Surgery	100	20
<b>Emergency Treatment of Cats and Dogs</b>	Dept. Medicine and Surgery	200	20
<b>The Bullfighting Debate. Bullfight Regulations</b>	Dept. Comparative Anatomy and Pathological Anatomy	54	30
<b>Slaughterhouses: Legislation and Basic Pathological Anatomy</b>	Dept. Comparative Anatomy and Pathological Anatomy	65	30
<b>11th Course on Equine Sports Medicine</b>	Dept. Comparative Anatomy and Pathological Anatomy -Dept. Medicine and Surgery	150	30
<b>Theoretical/Practical Course on Predictive Microbiology: Food Safety and Quality</b>	Dept. Food Sciences and Food Technology	20	20
<b>4th Course on Indigenous Iberian Breeds and Traditional Products: innovation</b>	Dept. Food Sciences and Food Technology	50	20

Title of course	Organisation	Number of Participants	Total course duration (hours)
<b>Andalusian Cheeses: Manufacture and Organoleptic Evaluation</b>	Dept. Food Sciences and Food Technology	60	30
<b>Getting to know HALAL foods</b>	Dept. Food Sciences and Food Technology	55	10
<b>5th Course on Food Safety and Animal Health. Food Chain Control Measures</b>	Dept. Food Sciences and Food Technology -Dept. Animal Health	44	30
<b>1st Technical Workshop on Equine Exercise Physiology</b>	Dept. Cell Biology, Physiology and Immunology –Spain-Portugal Cooperation Project	100	15
<b>3rd Seminar on Disseminating Research Results in Molecular Biology, Cell Biology, Genetics and Biotechnology</b>	Depts. Biochemistry and Molecular Biology, Cell Biology, Genetics and Biotechnology	150	14
<b>Linear Assessment of Spanish Thoroughbred Stallions and Mares</b>	Dept. Genetics	47	9
<b>14th National Meeting of Genetic Animal Breeding Experts</b>	Dept. Genetics	38	20
<b>TOTAL</b>		1729	373

Table 11.2. Courses organised by the Faculty itself in 2006-07

Title of course	Organisation	Number of Participants	Total course duration (hours)
<b>Equine Studies I</b>	Dean's Office-Equine Study Group	435	15
<b>1st Seminar on the Fighting Bull: the science, the field, the ring, the art</b>	Dean's Office-Bullfighting Study Group	29	30

Title of course	Organisation	Number of Participants	Total course duration (hours)
<b>Veterinary Refresher Course</b>	Dean's Office	203	30
<b>Careers Advisory Seminar</b>	Dean's Office	150	20
<b>Theoretical/Practical course on continuous kidney support techniques in critical patients</b>	Dept. Medicine and Surgery	20	20
<b>2nd Course on Medicine and Surgery in Cats</b>	Dept. Medicine and Surgery	100	20
<b>1st course on Bandaging Small Animals</b>	Dept. Medicine and Surgery	20	10
<b>2nd Course on Bandaging Small Animals</b>	Dept. Medicine and Surgery	20	10
<b>Course on Hygienic Handling in the Food Industry</b>	Dept. Food Sciences and Food Technology	25	40
<b>Update on Official Slaughterhouse Inspection Methods</b>	Dept. Comparative Anatomy and Pathological Anatomy	100	20
<b>4th Course on Food Safety and Animal Health. Food Chain Control Measures</b>	Dept. Food Sciences and Food Technology -Dept. Animal Health	44	30
<b>3rd Course on Food Safety and Animal Health. Management and Notification of Food Risks</b>	Dept. Food Sciences and Food Technology -Dept. Animal Health	78	30
<b>Safe Healthy Food. 3rd Edition</b>	Dept. Food Sciences and Food Technology	243	30
<b>Equids: Veterinary Medicine and Sports</b>	Dept. Cell Biology, Physiology and Immunology	78	15
<b>Seminar on Horse Husbandry</b>	Dept. Cell Biology, Physiology and Immunology	63	17
<b>Animal protection and welfare. The Duty of Society</b>	Dept. Animal Production	51	30

Title of course	Organisation	Number of Participants	Total course duration (hours)
<b>Course on Snail Farming</b>	Dept. Animal Production	71	40
<b>Equine Identification and Selection</b>	Dept. Genetics	16	18
<b>IV Course on Indigenous Iberian Breeds and Traditional Products</b>	Dept. Genetics	20	47
<b>Agriculture and Poverty</b>	Dept. Genetics	15	81
<b>TOTAL</b>		1781	553

Table 11.3. Courses organised at the Faculty by Outside Entities in 2006-08

Title of course	Organising institution	Number of Participants	Total course duration (hours)
<b>Practical Workshop on Traumatology and Orthopaedics</b>	Lab. Pfizer	20	10
<b>1st Practical Workshop on New Sedation and Anaesthesia Techniques for Small Animals</b>	Lab. Pfizer	20	10
<b>2nd Practical Workshop on New Sedation and Anaesthesia Techniques for Small Animals</b>	Lab. Pfizer	20	10
<b>3rd Practical Workshop on New Sedation and Anaesthesia Techniques for Small Animals</b>	Lab. Pfizer	20	10
<b>Practical Workshop on Traumatology and Orthopaedics</b>	Lab. Pfizer	10	20
<b>Equestrianism: the Players. Cabalcor Workshop</b>	CABALCOR Córdoba City Council	120	15
<b>Congress of AVEPA Working Groups</b>	AVEPA (Association of Veterinarians Specialising in Small Animals)	500	15
<b>3rd Course on Animal Welfare: experimentation, production, pets and zoos</b>	Experimental Animals Service. University of Córdoba	25	30

Title of course	Organising institution	Number of Participants	Total course duration (hours)
<b>The dehesa in Andalusia</b>	CORDVBA08. University of Córdoba	50	30
<b>Iberian pigs and Meat Products</b>	CORDVBA08. University of Córdoba	50	30
<b>Dairy Industry Products: Present and Future</b>	CORDVBA08. University of Córdoba	50	30
<b>Livestock farming in Andalusia. Maximising the use of local resources. Healthy Diets</b>	CORDVBA07. University of Córdoba	30	16
<b>Seminar on the Dehesa</b>	CAAE	150	10
<b>TOTAL</b>		1065	206

## 11.2. COMMENTS

» *Comment on the quality of the continuing education programmes in which the Faculty is involved.*

» *Comment on the degree of participation of teachers in the continuing education programmes organised by outside entities.*

### 11.2.1. Quality of programmes

Teachers from the Faculty of Veterinary Medicine play an active role in courses organised by Public Institutions, such as the Ministry for the Environment, Rural and Marine Affairs, the Ministry of Health and Consumer Affairs, the Andalusian Regional Government Departments of Agriculture and Fisheries and of Health, the Enterprise Board for the Development of Agriculture and Fisheries in Andalusia, TRACSA), CISA-INIA, Animal Health and Production Laboratories, Agrofood Laboratories, and the Córdoba City Council. Key developments over the last year include the organisation of various seminars on Animal Health and Production, the 1st International Workshops on Animal Health, and on the Health and Production of Marketable Species (Cows, Pigs, Sheep and Goats), and the International Course on Exotic Diseases, held in Madrid.

Faculty staff also work with a number of professional associations, such as the Official College of Veterinary Surgeons, the Royal Academy of Veterinary Sciences, as well as small-animal and large-animal associations (AVEPA, ANEMBE, SEOC, ANAPORC) and wild-animal associations (hunting grounds). Noteworthy events over the last year include the Bovine Medicine Congress and the Anaporc Congress, both held at the Faculty, the Small Animals Congress held in Granada, and several lectures on various aspects of clinical practice, animal health and zoonoses.

Mention should also be made of staff participation in Workshops and lectures organised by the pharmaceutical industry (Veterindustria, Pfizer, Esteve, Fatro-Uriach, Shering-Plough, Intervet, Elanco, Hill's Nutrition)

### **11.2.2. Distance learning (including via internet)**

The Faculty has launched a formal distance learning programme through the Andalusian Virtual Campus and the University of Córdoba Virtual Classroom. The Andalusian Virtual Campus (CAV) is a project promoted and funded by the Andalusian Regional Government, aimed at providing virtual tuition through any Andalusian University; these virtual classes are recognised by the originating University as Free Elective Credits. Subjects are taught via Internet. The University of Córdoba currently offers nine subjects through the Andalusian Virtual Campus, three of which involve departments teaching the Veterinary Medicine degree programme. These subjects, which are intended for undergraduates studying various aspects of Biomedicine, including Medicine, Veterinary Sciences, Biology, Biochemistry, Pharmacy, and Nursing, include:

- Comparative Embryology (<http://www.campusandaluzvirtual.es/node/287>); tuition provided by the Department of Comparative Anatomy and Pathological Anatomy
- Basic and Applied Immunology, (<http://www.campusandaluzvirtual.es/node/289>); tuition provided by the Department of Cell Biology, Physiology and Immunology
- Cell Integration (<http://www.campusandaluzvirtual.es/node/200>); tuition provided by the Department of Cell Biology, Physiology and Immunology.

The basic function of the University of Córdoba's Virtual Classroom is to provide support for the tuition of the University's degree courses, enabling teachers to publish teaching materials and organise activities not requiring the students' presence, as well as to interact with students and exchange information rapidly.

The main tools for distance learning are the MOODLE platform and the Teletuition Room (tuition by videoconference). The MOODLE platform is the most widely-used resource, since it enables teachers to work with the teaching methods required to meet European Higher Education Area (EHEA) guidelines, and is at the same time suitable for distance learning activities. The Teletuition Room is used less often, though it has enormous potential for distance learning purposes.

### 11.2.3. Other Comments

The process of adaptation to the EHEA and the new academic structure of syllabuses have highlighted the need for continuing education for university teaching staff. The programmes outlined above are a priority for the Faculty, but they have not yet been fully or efficiently developed, for a number of reasons, including lack of tradition (Spanish universities have traditionally focussed on undergraduate studies), lack of academic recognition in the teaching career, and finally lack of time. Teaching and research work, together with the associated administrative duties, require so much input that full-time staff have virtually no free time to devote to continuing education at the university.

Over recent years, however, continuing education has taken on a new dimension as a result of Spain's entry into the European Higher Education Area, and both teachers and students are aware that learning does not stop after graduation. Thanks to its traditional internship system, the Faculty of Veterinary Medicine has long recognised the needs of the veterinary profession and of society as a whole. The courses organised both by the Faculty and by outside institutions on Food Technology and Food Hygiene, Clinical Sciences and Animal Health, represent an attempt to meet those needs. Mention should also be made of two subject areas of considerable local interest: horse husbandry and the rearing of fighting bulls. A number of courses on these subjects have been organised in recent years by specific associations within the Faculty; the courses have not been restricted to veterinarians.

### **11.3. SUGGESTIONS**

Continuing education and lifelong learning should be fostered by the University, and indeed should be an integral part of a professional career. Participation in courses should be facilitated and recognised by the institutions themselves; institutional recognition will encourage greater staff involvement, which will in turn have a decisive impact on the successful outcome of continuing education initiatives.

Finally, more should be done to develop the infrastructure and resources relating to the Virtual Classroom (and particularly to Teletuition); this would enable courses to be organised without the need for physical attendance, as well as allowing the constant exchange of information between teachers and students. With this in mind, the Faculty has requested new infrastructure from the University, together with a programme of training activities designed to familiarise teachers with the special teaching methods involved.



## Chapter XII

# \_\_\_ POSTGRADUATE EDUCATION





## **12.1. FACTUAL INFORMATION**

### **12.1.1. Postgraduate clinical training (interns and residents)**

» *Indicate whether students involved in this training receive a grant or salary.*

» *Indicate any programmes that are certified by the European Board of Veterinary Specialisations*

The Faculty of Veterinary Medicine is involved in training members of a number of European Colleges:

- The European College of Equine Internal Medicine ([www.eceim.info/index.html](http://www.eceim.info/index.html)). Two of the Faculty staff are members of the College, and two residents are currently undergoing training. The training period lasts three years. One resident receives a grant of 900 euros/month from the Veterinary Teaching Hospital.
- The European College of Veterinary Pathologists ([www.ecvpath.org](http://www.ecvpath.org)). Eight of the staff are members of the College, and eight students are undergoing training. These students do not receive any specific grant.

Two staff in the Animal Health department are members of the European Veterinary Parasitology College (<http://www.eurovetpar.org/>), but no students are currently receiving specialist training. A veterinarian at the Veterinary Teaching Hospital has recently been awarded the Diploma from the European College of Veterinary Surgeons (ECVS) (specialising in large animals); Spain now has a total of three members ([www.ecvs.org](http://www.ecvs.org)). Her training was funded by the University of Córdoba, through a specific agreement with the Universidad Autónoma de Barcelona.

A lecturer in the Department of Animal Medicine and Surgery is currently training for membership of the European College of Veterinary Anaesthesia and Analgesia ([www.ecva.eu.com](http://www.ecva.eu.com)); she is expected to complete her studies in late 2010. Only three of the 98 current members of the College are Spanish.

### **12.1.2. Postgraduate courses taught**

For the last four years, the University of Córdoba has run an “Advanced training course in animal protection and experimentation”, for staff involved in animal experimentation. Twenty people are admitted for this 80-hour course; 5% receive grants. The course diploma is recognised by the Andalusian Regional Government, and officially entitles the person concerned to handle experimental research animals.

### **12.1.3. Postgraduate research programmes**

The official Master’s Degree programmes taught in Spanish Universities are governed by the provisions of Royal Decree 56/2005, which regulates postgraduate studies. According to Article 5 of the Decree, these programmes require the prior approval of the central government. The provisions of this decree were modified by a later law, Royal Decree 1393/2007, which established the regulatory framework for university education geared towards undergraduate and postgraduate degrees. University education is now structured in three “cycles” (Degree, Master’s Degree and Doctorate). To complete this new regulatory framework, the Resolution of 16 July 2008, issued by the Directorate General for Universities, established a fast-track procedure for the verification of Master’s degrees already authorised under Royal Decree 56/2005.

Academic regulations governing the award of Master’s Degrees are covered by Royal Decree 56/2005, of 21 January, which regulates official Postgraduate studies (Spanish State Gazette, 25 January), as modified by Royal Decrees 1509/2005 of 16 December (Spanish State Gazette, 20 December) and 189/2007 of 9 February (Spanish State Gazette, 10 February), and by Royal Decree 1393/2007, of 29 October, which establishes the structure of official university education (Spanish State Gazette, 30 October 2007).

Following this restructuring of the university education system, the University of Córdoba has introduced a number of Official Master’s Degrees, aimed at providing further academic and professional training for diplomates, graduates and engineers; the Institute of Postgraduate Studies (IdEP) is responsible for the organisation and coordination of these courses.

The University of Córdoba also has its own basic academic regulations covering Master’s Degrees, approved by the Governing Council on 2

March 2007 and modified by the Governing Council on 27 February 2008. Amongst other things, the regulations lay down the functions of the Academic Council for Master's Degrees, of its Director, and of the Quality Assurance Unit.

These Master's Degrees are recognised throughout the European Union; students with a Master's Degree can register directly for a PhD.

At present, graduates from the Faculty of Veterinary Sciences may register for any of the Master's Degrees offered by the IdEP; in 2006/2007, only research degrees were available, while from 2008/2009 onwards graduates may register for both research and taught degrees. All these degree programmes are drawn from PhD programmes graded "High Quality" in 2006-07 (Spanish State Gazette 207, 30 August 2006), 2007-2008 (Spanish State Gazette 245, 12 October 2007), and 2008/2009 (Spanish State Gazette 273, 12 November 2008). The University covers 40% of the registration fee, and may also award staff mobility grants to staff registering for research degrees.

The Master's Degrees are as follows:

- 1. Master's Degree in Animal Medicine, Health and Breeding**, part of the University of Córdoba Official Postgraduate Programme in Biosciences and Agrofood Sciences. (<http://www.uco.es/estudios/postgrado/oferta/cienciasvetalimen/msma.html>).
- 2. Master's Degree in Zootechnology and Sustainable Management: Integrated Organic Livestock Farming**. University of Córdoba (coordinator) and University of Huelva, part of the Official Postgraduate Programme in Zootechnology and Sustainable Management: sheep and goats. (<http://www.uco.es/estudios/postgrado/oferta/cienciasvetalimen/zootecnia.html>).
- 3. Interuniversity Master's Degree in Agrofoods**. University of Córdoba (coordinator) and University of Cádiz, part of the Postgraduate Programme in Viticulture, Viniculture and Agrofoods (coordinated by the University of Cádiz). (<http://www.uco.es/estudios/postgrado/oferta/cienciasvetalimen/agroalimentacion.html>; [http://www.uca.es/web/estudios/posgrado\\_doctorado/documentacion/agroalimentacion/](http://www.uca.es/web/estudios/posgrado_doctorado/documentacion/agroalimentacion/)).

**Table 12.1. POSTGRADUATE Research Training Programmes. Number of students enrolled in Master's degree programmes since they started.**

Master's Degree	2006-2007	2007-2008	2008-2009
<b>Animal Medicine, Health and Breeding</b>	22	25	31
<b>Agrofoods (*)</b>	19	7	14
<b>Zootechnology and Sustainable Management (*)</b>	--	11	21
<b>Total students</b>	41	43	66

(\*) *Interuniversity Master's Degrees, students from the University of Córdoba.*

#### 12.1.4. Grants

For the academic year 2008/2009, the IdEP has made available 20 grants for non-EU students to study for Master's Degrees at the University of Córdoba. [http://www.uco.es/idep/masteres\\_universitarios/becas\\_ayudas/documentos/bases\\_convocatoria.pdf](http://www.uco.es/idep/masteres_universitarios/becas_ayudas/documentos/bases_convocatoria.pdf).

Two grants to study for the Master's degree in Animal Medicine, Health and Breeding have been made available by the Carolina Foundation ([www.fundacioncarolina.org](http://www.fundacioncarolina.org)) for students from Latin America. The grant covers travel from the home country and registration fees, together with a monthly sum of 800 €. In the academic year 2006/2007, the University of Córdoba reduced registration fees by 50% for all registered students, and the Ministry of Education provided 3 grants. In 2007/2008, in addition to the 2 grants from the Carolina Foundation, 5 students received grants from the Ministry of Education, 2 in the form of "staff mobility bursaries" and 3 open to Master's degree students in general. Two further bursaries, both worth 300 € are provided by the Master's Degree course itself to cover costs of travel for internships in companies.

#### 12.1.5. Master's degree in animal medicine, health and breeding

This forms part of the programme for the Doctorate in "Biosciences and Agrofood Sciences", officially classed as "High Quality" (MCD2006-00320).

In addition to providing the student with the skills required to progress towards doctoral research, this course also aims to create a solid group of professional researchers in the field of Animal Medicine, Health and Breeding, fully able to respond to society's current and future needs.

The curriculum for this master's degree consists of 60 ECTS credits, which must be obtained in a single academic year. The programme comprises three blocks of compulsory and optional courses, as follows:

- Common module (16 credits)
- Specialism modules (28 credits)
- Dissertation (16 credits)

**Transversal research subjects (all worth 4 ECTS credits).**

These subjects are taught by the IdEP for the whole University. Students on any of the three Master's courses may choose two subjects, worth a total of 8 credits, provided that the student wishes to focus on the research "track", leading to the possibility of studying subsequently for a PhD. These subjects are:

- Democratic values, rights and gender equality (3 teachers)
- Bibliographical research and analysis of the quality of scientific production (3 teachers)
- Communication and popularisation of science (5 teachers)
- Experimental design and principles of data analysis (3 teachers)
- Ethics in science and professional life (3 teachers)
- Animal experimentation in research and the alternatives (4 teachers)
- Scientific research: theory, methods and evaluation (3 teachers)
- Technology transfer, protection of research results and creation of technological companies (1 teacher)

**Table 12.2. List of subjects taught in the Master's Degree in Animal Medicine, Health and Breeding, academic year 2008-2009.**

<b>COMMON MODULE (all worth 4 ECTS credits)</b>	<b>No. teachers</b>	<b>No. Students</b>
Research methods and techniques in animal medicine and surgery.	4	24
Biotechnological techniques in veterinary research.	4	7
Laboratory methods and techniques in animal health	4	28
Advances in veterinary immunology.	4	5
Advances in veterinary clinical toxicology	4	5
Genetics for animal health	4	1
<b>SPECIALISM MODULES</b>		
<b>A) Animal medicine and surgery</b>		
Diagnostic imaging	4	15
Equine breeding techniques	4	10
Equine internal medicine	4	14
Veterinary ophthalmology	4	12
Veterinary anaesthesiology	3	13
Image-guided surgery in equids	3	10
Dermatology and endoscopy in digestive disorders in small animals	3	13
Advances in equine exercise physiology and locomotion.	4	4
<b>B) Animal health</b>		
Zoonoses and public health	4	16
Advances in macropathology in slaughterhouse animals	3	14
Diseases in wild and zoo animals	4	15
Ecology of pathogenic microorganisms	3	
Analysis of risk factors and predictive models in animal health.	3	12
Controlling animal parasitoses.	4	14
Emerging and exotic diseases.	4	17
<b>C) Biotechnology and Animal Breeding</b>		
New genetic breeding methods in livestock farming.	4	2
Selection and sustainable use of local indigenous species: an introduction.	4	2
Monitoring performance and analysing genetic data.	4	2
Cytogenetics in animal reproduction.	4	2
Molecular markers in genetic breeding.	3	2
Biodiversity and conservation of animal genetic resources.	4	3
Genetics of animal behaviour and welfare.	4	3



At the end of the course, students are required to produce a Dissertation (16 ECTS credits), under the supervision of one of the course teachers. Last year, 28 students registered for this Master's degree; 24 on the "research track" and 4 on the "professional track" – the latter were required to produce a detailed report on a practical internship of at least three weeks' duration, at a company or institution with which the University had signed a specific agreement. Reports have to be presented to a tribunal, which examines and grades them in public. Specific regulations have been approved by the Academic Council for Master's Degrees. By the end of the course, the student will have completed the 60 ECTS credits required for award of the official Master's Degree, which is equivalent to the Diploma in Advanced Studies (DEA) required for subsequent registration for PhD supervision in any University department.

#### **12.1.6. Master's degree in zootechnology and sustainable management: integrated organic livestock farming.**

This forms part of the programme for the Doctorate in "Zootechnology and Sustainable Management: Sheep and Goats", officially classed as "High Quality" (MCD2006-00149).

This is an Interuniversity degree, shared with the University of Huelva. The programme, entitled "Master's Degree in Zootechnology and Sustainable Management: Integrated Organic Livestock Farming", offers two specialisations. It is a modular course, comprising a "Common Module" worth 20 ECTS credits, a "Specific module" worth 20 ECTS credits (students choose one of the two modules available) and an "Application Module" worth 20 ECTS credits. All students successfully completing the Master's Degree are thereafter eligible for continuing studies towards a PhD. The two specialisations available are: I. Sustainable Livestock Farming Systems; II. Conservation and use of local zoogenetic resources. The "Application Module" is worth a total of 20 ECTS credits: 14 of these credits are for practical internships in companies and institutions, and the remaining 6 for a detailed, publicly-examined report on the internship in question.

**Table 12.3. List of subjects, credits, number of teachers and number of students for the Master's Degree in Zootechnology and Sustainable Management: Organic Livestock Farming, academic year 2008-2009.**

Subject	Type	No. Credits	No. teachers	No. students (2008/2009)
<b>Biodiversity applied to rural development in Latin America</b>	Optional	4	2	7
<b>Biotechnology applied to animal production</b>	Optional	4	3	8
<b>Conservation of breeds at risk of extinction</b>	Optional	4	3	6
<b>Quality control and traceability of livestock systems and products</b>	Optional	4	3	
<b>Livestock farming economics: strategic analysis</b>	Optional	4	3	14
<b>Management of natural resources: multiple land use</b>	Optional	5	4	21
<b>Genetic improvement of local breeds</b>	Optional	4	3	6
<b>Nutrition and feeding. Applications in livestock farming</b>	Optional	3		15
<b>Pathology and health. Applications in livestock farming</b>	Optional	4	2	15
<b>Rotation practices</b>	Compulsory	14	----	21
<b>Animal production and welfare</b>	Compulsory	5	5	21
<b>Sustainable systems: integrated, organic and alternative production</b>	Optional	4	4	16
<b>Statistical techniques in livestock research. Scientific method.</b>	Compulsory	5	3	21
<b>Livestock reproduction techniques</b>	Compulsory	5	3	21
<b>Dissertation</b>	Compulsory	6		20

### 12.1.7. Interuniversity master's degree in agrofoods

This forms part of the programme for the Doctorate in "Viticulture, Viniculture and Agrofoods" run by the Universities of Cádiz (coordinator) and Córdoba, officially classed as "High Quality" (MCD2006-00557).

This degree course aims to provide students with the knowledge and skills required to successfully introduce and implement advanced technology in the agrofood sector, and to undertake the business management and marketing of agrofood products, using good and environment-friendly production practices, complying with current legislation and working with quality systems to ensure food safety.

This multidisciplinary programme provides a global approach “from stable to table”, covering all the factors and activities directly linked to livestock raising and agriculture, food processing, business management and marketing, compliance with food-related standards and regulations, and all the ancillary enterprises involved in the agrofood complex.

The programme reflects the vital importance of the agrofood sector for the economic development of Andalusia, as well as the wide-ranging experience of several Andalusian universities in training and research in this sector. The programme is aimed at Andalusian graduates, as well as company staff in the agrofood sector; it is also strongly aimed at students from Latin American countries

The course is designed to meet the requirements of graduates, professionals and potential researchers from a wide range of disciplines, and can be broadly reduced to two main areas of training: a) legal, economic and social training (law, economics, business sciences, humanities, etc.) and b) training in the experimental sciences (biology, food science and technology, winemaking, agricultural and chemical engineering, chemistry, veterinary medicine, etc.). The programme is divided into thematic modules, each of which has two specialities or “tracks”, each with its own specialist subject: a “Common Module” worth 20 ECTS credits, a “Specific Module” worth 20 ECTS credits, and an “Application Module”, also worth 20 ECTS credits. The common module and the specific module comprise four courses, each worth 5 ECTS credits and taught on a termly basis, from January to March and from April to June, respectively. The Common Module and the Application Module are compulsory; the specific module is selected according to the preferred specialism:

- Agrofood Production (Common Module + Specific Module 1)
- Agrofood Business Management (Common Module + Specific Module 2)

The “Application Module” comprises 15 ECTS credits for practical internships in companies or institutions, and 5 ECTS credits for the wri-

ting of a report or dissertation, which may serve as a starting point for subsequent research. This module can be completed either at the University of Cádiz or the University of Córdoba.

<b>INTERUNIVERSITY POSTGRADUATE PROGRAMME: VITICULTURE, VINICULTURE AND AGROFOODS COORDINATED BY THE UNIVERSITY OF CADIZ</b>			
<b>Master's Degree 1 Viticulture and Viniculture in Warm Climates Coordinated by UCA</b>		<b>Master's Degree 2 Agrofoods Coordinated by UCO</b>	
<b>Common Module (20 ECTS credits)</b>			
3 common courses (compulsory) C1 FOODS AND GRAPE PRODUCTS; C2 FOOD QUALITY; C3 FOOD SAFETY			
1 per specialism			
C4 VITICULTURAL AND VINICULTURAL PRODUCTS AND PROCESSES	C6 THE WINE AND AGROFOOD BUSINESS COMPLEX	C5 AGROFOOD PRODUCTS AND PROCESSES	
<b>Specific Module 20 ECTS credits</b>		<b>Specific Module 20 ECTS credits</b>	
<b>Specific Module 1 Wine Production</b>	<b>Specific Module 2 Managing a wine business</b>	<b>Specific Module 2 Managing an agrofood busi- ness</b>	<b>Specific Module 1 Agrofood produc- tion</b>
4 specific courses: • 1E1 Vine growing in warm climates • 1E2 Winemaking in warm climates • 1E3 New winemaking technologies • 1E4 Advances in the wine industry	3 common courses: • 1, 2E1 Agrofood legislation • 1, 2E2 Business Management • 1, 2E3 Product Marketing  1 specific course per Master's degree  1E4 Wine business models	2E4 Agrofood business models	4 specific courses: • 2E1 Innovations in livestock farming • 2E2 Innovations in Agriculture 2E3 New agrofood technologies • 2E4 Advances in the agrofood business
<b>Application module 20 ECTS credits</b>		<b>Application module 20 ECTS credits</b>	
Practical internship (15 credits)	Practical internship (15 credits)	Practical internship (15 credits)	Practical internship (15 credits)
Presentation of Dissertation (5 credits)	Presentation of Dissertation (5 credits)	Presentation of Dissertation (5 credits)	Presentation of Dissertation (5 credits)
<b>Total: 60 ECTS credits</b>	<b>Total: 60 ECTS credits</b>	<b>Total: 60 ECTS credits</b>	<b>Total: 60 ECTS credits</b>

**Table 12.1.7. List of subjects, credits, number of teachers and number of students for the Master's Degree in Agrofoods, academic year 2008-2009.**

Subject	No. Credits	No. teachers	No. Students
<b>Foods and Grape Products</b>	5	11	14
<b>Food Quality</b>	5	8	15
<b>Food Safety</b>	5	8	15
<b>Agrofood Processes and Products</b>	5	11	14
<b>The Wine and Agrofood Business Complex</b>	5	7	3
<b>Innovations in Livestock Farming</b>	5	8	12
<b>Innovations in Agriculture</b>	5	13	12
<b>New Agrofood Technologies</b>	5	6	12
<b>Advances in the Agrofood Business</b>	5	13	12
<b>Agrofood Legislation</b>	5	9	3
<b>Business Management</b>	5	10	3
<b>Product Marketing</b>	5	1	2
<b>Agrofood Business Models</b>	5	1	2
<b>Internships in Companies or Institutions / Research Dissertation or Application</b>	15	-	14
<b>Presentation of Dissertation/Report on Internship</b>	5	-	14

### **12.1.8. Other doctorate programmes. doctorate programmes abroad**

#### **12.1.8.A. DOCTORATE PROGRAMMES ABROAD**

The good relationship between Spain and Latin America, and the demand for PhD-holding professionals in Latin American countries, has given rise recently to the introduction of three doctorate programmes (1998 syllabus), two in Venezuela (Universidad de Zulia) and one in Chile (Universidad de Concepción), through specific agreements signed with the universities involved.

The 10 students who enrolled for the Animal Medicine and Health programme at the Universidad de Zulia (Maracaibo, Venezuela) in 2005 duly completed their two-year course and were awarded their Diploma

in Advanced Studies (DEA); they have now all registered for a PhD, and some have even registered their thesis.

The 24 students who enrolled for the Nutrition and Metabolism programme at the Universidad de Zulia (Maracaibo, Venezuela) in 2007 have now completed their two-year course, and will shortly complete the research period.

The 10 students who enrolled for the Veterinary Sciences programme at the Universidad de Concepción (Chile) in 2007 have now completed their two-year course, and will shortly complete the research period.

### 12.1.9. Doctoral theses

Having completed the training period, students go on to start the research period, by registering their doctoral thesis proposal. The whole procedure for obtaining a Doctorate is covered in the "Regulations for Doctoral Studies adapted to the EHEA", approved by the Governing Council on 30 April 2009.

**Table 12.1.5. Number of doctoral theses presented and currently being prepared in departments involved in teaching Veterinary Medicine and Food Science & Food Technology from January 2005 to the present.**

Department	Theses presented	Thesis in preparation
<b>Comparative Anatomy and Pathological Anatomy</b>	14	8
<b>Animal Health</b>	7	1
<b>Animal Medicine and Surgery</b>	7	14
<b>Food Sciences and Food Technology (*)</b>	21	15 (7)
<b>Genetics (*)</b>	35	24 (5)
<b>Animal Production (*)</b>	8	5
<b>Biochemistry and Molecular Biology</b>	19 (11)	
<b>Pharmacology, Toxicology, Legal and Forensic Medicine (*)</b>	3	2 (1)
<b>Cell Biology, Physiology, and Immunology (*)</b>	12	16 (2)

(\*) Various departmental sections, figure in brackets denotes theses presented or in preparation in veterinary sections.

## **12.2. COMMENTS**

*» Comment on the number of postgraduate diplomas/ titles awarded annually. Comment on the percentage of veterinarians participating in postgraduate research training programmes*

Given that every year around 158 students graduate in Veterinary Medicine, the proportion going on to postgraduate research is relatively high; however, the total number of postgraduates includes students from other Universities, especially in Latin America, which means that our Faculty has a high educational and social impact in those areas.

## **12.3. SUGGESTIONS**

We consider it necessary that the Veterinary Teaching Hospital should include European Diplomates, with the aim of being able to offer certified residential programmes to the European Board of Veterinary Specialisations. To achieve this, it is necessary to prioritise within the budget provisions for staff, the high cost that contracting this figure would mean.

When planning the criteria for contracting staff in clinical areas the European Diploma qualification should be highly valued. At the same time, the UCO should also establish mechanisms of academic recognition and incentives to motivate the staff responsible to obtain this European Diploma.

In addition, an effort should be made by the University in order to both let know the society the value of masters and postgraduate studies and recognise the merit of teachers involved.





## Chapter XIII

# RESEARCH



### **13.1. FACTUAL INFORMATION**

*» Indicate the involvement of undergraduate students in research, including the time spent, percentage of students involved and outcome required*

The involvement of undergraduate students in research has not hitherto been compulsory, and thus has not been closely regulated. A number of students are voluntarily involved in research within the various Departments of the Faculty, through different channels set up at University and Faculty level.

The Ministry of Education offers Collaboration Grants for research additional to undergraduate study. To be eligible for this grant, the student must have passed all three years of the first cycle of the degree course, and have obtained at least 45% of the credits for the second cycle, with an average mark of not less than 6.5/10. Students awarded the grant, worth 2,700 euros, are required to carry out a research project under the supervision of a lecturer belonging to a research group, with the approval of the relevant Department Board. Over the last three academic years, students at the Faculty of Veterinary Sciences have been awarded a total of twenty-nine such grants, as shown in Table 1 below.

**Table 13.1. Number of Collaboration Grants by department and academic year**

Department	2006-07	2007-08	2008-09
<b>Comparative Anatomy and Pathological Anatomy</b>	3	-	1
<b>Animal Medicine and Surgery</b>	2	1	1
<b>Cell Biology</b>	1	-	-
<b>Animal Health</b>	-	5	3
<b>Pharmacology and Toxicology</b>	-	1	1
<b>Animal Production</b>	-	1	1
<b>Genetics</b>	1	-	2
<b>Biochemistry and Molecular Biology</b>	5	-	-

Four years ago, the University of Córdoba introduced its own Introductory Research Grants, intended to encourage students to undertake basic research training. To be eligible for these grants, students must be enrolled in the last two years of the degree course, and must have passed the whole of the first three years; students who have received such a grant in the past are not eligible for a second grant. Student awarded the grant (6,000 euros for the 20-month research period) are required to carry out research in a University department, under the supervision of a lecturer holding a PhD. The major selection criteria are:

the student's academic record; the University's priority research areas; and the research areas where it is deemed necessary to stimulate research. Since the scheme started, seven Veterinary undergraduates have been awarded grants, in the departments of Cell Biology, Biochemistry and Molecular Biology, Food Sciences and Food Technology, Animal Medicine and Surgery, and Animal Production.

Students in the final two years of the degree course can also take part in research work by becoming Student Research Assistants. At the request of the Departments concerned, these students are involved – throughout the academic year – in research work and other duties, for which they receive no payment. This is the most common method of introducing students to research at the Faculty of Veterinary Sciences: over the last two years, a total of 359 (187+172) students have been involved.

**Table 13.2. Number of Student Research Assistants by Department**

Department	2006-2007	2007-2008
<b>Comparative Anatomy and Pathological Anatomy</b>	23	33
<b>Cell Biology, Physiology and Immunology *</b>	22	18
<b>Biochemistry and Molecular Biology *</b>	20	9
<b>Food Sciences &amp; Food Technology</b>	4	5
<b>Statistics, Economics, Operational Research and Business Organisation*</b>	15	9
<b>Pharmacology, Toxicology and Legal &amp; Forensic Medicine</b>	6	5
<b>Physics*</b>	5	3
<b>Genetics*</b>	18	24
<b>Mathematics*</b>	3	7
<b>Animal Medicine and Surgery</b>	29	24
<b>Animal Production</b>	16	14
<b>Animal Health</b>	15	12
<b>Zoology*</b>	11	9
<b>Total</b>	187	172

\* Departments involved in several degree courses

NOTE: Student Research Assistants for the 2008-2009 academic year have not yet been approved by the Governing Council, but numbers are very similar to those of previous years.

All students, whether grant-aided or not, also have the opportunity to present an undergraduate dissertation, which involves carrying out original, unpublished research in a Department of the Faculty, under the supervision of one or more PhD-holding staff. The results of the research are read in public, before an Assessment Panel comprising three PhD-holding staff. In 2006-07 and 2007-08, a total of 9 undergraduate dissertations were presented (2 in the Department of Genetics, 2 in Pharmacology, 2 in Animal Medicine and Surgery, 2 in Animal Health and 1 in Comparative Anatomy and Pathological Anatomy).

In short, regardless of the mechanism used, a fairly large number of Veterinary undergraduates (404) have become involved in introductory research; in some cases, this preliminary work has led to a career in research.

## **13.2. COMMENTS**

*» Comment on the opportunities for students to participate in active research work*

Much is being done to encourage student interest in the research carried out at the Faculty. Over the last few years, the Faculty has held **Open Days**, at which first-year students are given an overview of the degree course they have chosen and of the research opportunities open to Veterinary undergraduates throughout their training.

**Introduction to Research** sessions are also held at various levels within the University. The sessions run by the Veterinary Faculty provide information on all the key research areas, and on the chief results obtained at any given moment. This material is printed and published, and is thus available for all undergraduates to consult. The various Departments also run Introduction to Research sessions devoted to specific subjects. For example, every two years the Department of Biochemistry holds a two-day session entitled Introduction to Research in Molecular Biology and Biochemistry; the most recent session took place on 1 and 2 April, 2009.



Undergraduate involvement in research is often carried through to postgraduate level, through involvement in doctorates and master's degrees (see chapter 12).

### **13.3. SUGGESTIONS**

- » *Will students be given more opportunity to participate in research activities?*
- » *If so, how will this be done?*

The new syllabus will require all students to present a final-year dissertation, whose major aim will be to provide an introduction to research work. The Faculty also intends to continue and enhance its scheme of providing undergraduates with full information on the research carried out by its staff, through the Introduction to Research sessions described earlier.

At the same time, and in order to increase undergraduate involvement in research, it would be a good idea to make more grants available for introductory research work. This, however, does not depend directly on the Faculty of Veterinary Sciences, and would have to be part of a general strategy involving the University as a whole, the Andalusian Regional Government and the Ministry of Education.



## ACKNOWLEDGEMENTS:

This Self Evaluation Report was elaborated by the 2009 EAEVE Internal Committee, approved by the Faculty Board December the 3rd, 2008, coordinated by Prof. Juana Martín de las Mulas González-Albo (Internal Liaison Officer), and composed by Professors E. Agüera Buendía, M. Amaro López, R.J. Astorga Márquez, A. Carbonero Martínez, L. Carrasco Otero, J.C. Estepa Nieto, A. García Martínez, J.J. Garrido Pavón, R. Gómez Díaz, R. Lucena Solís, I. Luque Moreno, A. Martínez Galisteo, E. Martínez Galisteo, A. Martínez Moreno, L. Medina Canalejo, R. Jordano Salinas, F. Padilla Álvarez, M. Pérez Hernández, D. Santiago Laguna, R. Santisteban Valenzuela, E. Serrano de Burgos, S. Serrano Jiménez, and C. Tarradas Iglesias; by Mr. F. Cremades Márquez and Mr. N. Nieto Muñoz; and by Ms. A. Barquilla de la Torre and Ms. M.J. Romero Aceituno.

The following members of the 2009 EAEVE Internal Committee deserve special mention and thanks for their effort in the coordination and development of individual chapters of the Self Evaluation Report as follows:

**Chapter 1:** Librado Carrasco Otero and Juana Martín de las Mulas González-Albo

**Chapter 2:** Rosario Lucena Solís and Juana Martín de las Mulas González-Albo

**Chapter 3:** Estrella Agüera Buendía and Nicolás Nieto Muñoz

**Chapter 4:** Rafael Gómez Díaz

**Chapter 5:** Juan José Garrido Pavón

**Chapter 6:** Salud Serrano Jiménez and Alfonso Carbonero Martínez

**Chapter 7:** Rafael Astorga Márquez, Jose Carlos Estepa Nieto, Rafael Santisteban García and Librado Carrasco Otero

**Chapter 8:** Manuel Amaro López and Rafael Gómez Díaz

**Chapter 9:** Rafael Astorga Márquez and Nicolás Nieto Muñoz



**Chapter 10:** Elena Serrano de Burgos, Emilia Martínez Galisteo and Luis Medina Canalejo

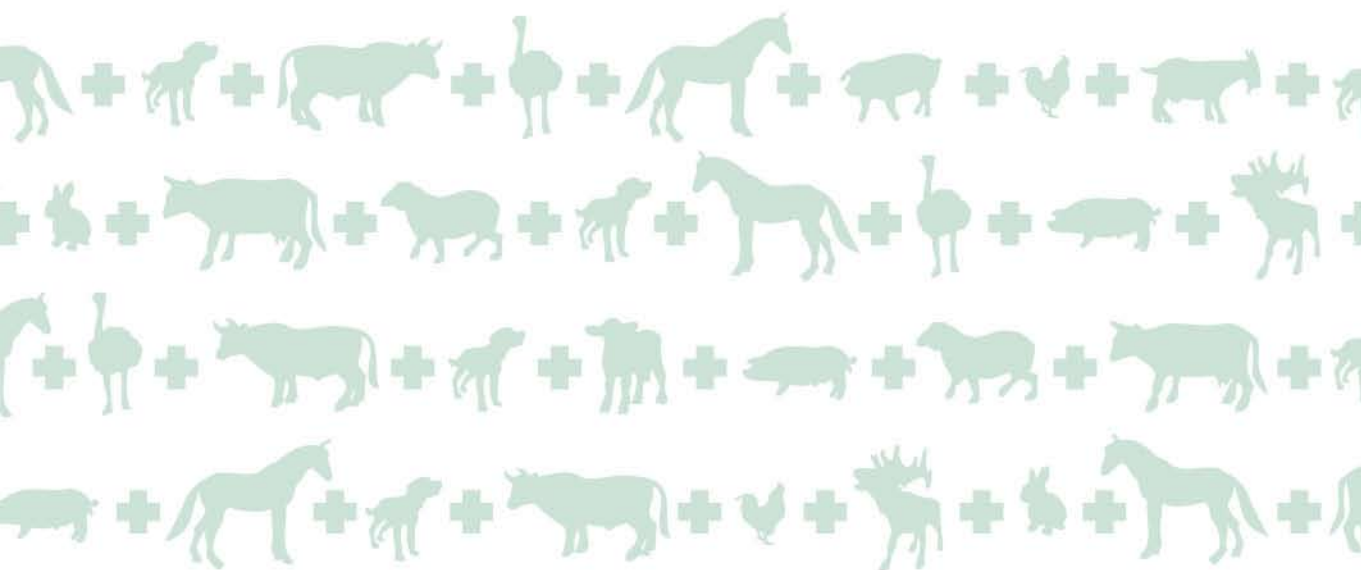
**Chapter 11:** Inmaculada Luque Moreno

**Chapter 12:** Alfonso Martínez Galisteo

**Chapter 13:** Álvaro Martínez Moreno and Carmen Tarradas Iglesias

The Faculty appreciates very much the contribution of the following professors to the revision of the original manuscript:

E. Agüera Buendía, R. Astorga Márquez, L. Carrasco Otero, R. Gómez Díaz, J.L. López Rivero, I. Luque Moreno, J. Martín de las Mulas González-Albo, A. Martínez Moreno, S. Serrano Jiménez, C. Tarradas Iglesias, and J. Vivo Rodríguez.



# SELF EVALUATION REPORT 2009

University of Cordoba  
Faculty of Veterinary Medicine

EAEVE Evaluation Visit



UNIVERSIDAD DE CORDOBA  
FACULTAD DE VETERINARIA

