Facultad de Veterinaria
Universidad de Murcia

UNIVERSIDAD DE MURCIA

Self Evaluation Report

20-24 November 2017

CAMPUS MARE NOSTRUM
de Excelencia Internacional

Index

Chapter 3. ESEVT Standards for Accreditation

Introduction

1. Brief history of the Establishment and of its previous ESEVT Visitations (if any)

Description and brief history of the Establishment and University:

Establishment: **Facultad de Veterinaria de Murcia (FVETUM)**

The name of the establishment is **Facultad de Veterinaria (FVETUM)**, public Faculty founded in 1982 and it is within the **Universidad of Murcia (UM)**, founded in 1915. **FVETUM** is located at the Campus of Espinardo, 7 km NW from downtown. **FVETUM** has 3 main infrastructures in 2 locations (within a distance of 2 km one from the other):

ESPINARDO

- FACULTY BUILDING (Main building with 3 areas: A, B and C)
- VETERINARY TEACHING HOSPITAL (**VTH**)
  Campus de Espinardo, 30071 Murcia.

GUADALUPE

- VETERINARY TEACHING FARM (**VTF**)
  Avda. Libertad s/n, Guadalupe 30071 Murcia.

With the following contact information:

- **Telephone:** +34 868 884799, **Fax:** +34 868 884147
- **Website:** http://www.um.es/web/veterinaria
- **E-mail:** decanato.veterinaria@um.es

The Title and names of the contact and responsible one are:

- **Head of the establishment:** Dr. Gaspar Ros Berruezo, DVM, PhD.
- **Academic Director for VTH (professional, ethical):** Dr. Cándido Gutiérrez Panizo, DVM, PhD.
- **Director of VTF:** Dr. Salvador Ruiz López, DVM, PhD.

Universidad of Murcia (UM)

UM has 5 campuses (Downtown, Espinardo, El Palmar, San Javier and Lorca), being the largest one ESPINARDO. The main **address of UM** is as follows: Avda. Teniente Flomesta, 5, 30003 Murcia, Spain, with the following contact information

- **Telephone:** +34 868 88 3000, **Fax:** +34 868 88 8888
- **Website:** http://www.um.es/web/veterinaria

The Rector name is José Orihuela Calatayud, and is assisted by the Vice-Rectors team on different aspects http://www.um.es/web/universidad/equipo-rectoral. The final competent authority overseeing the establishment are the Ministry of Education, Culture and Sport of the Spanish Kingdom, and the Education Councellery of the Autonomous Community of Murcia.

Previous ESEVT Visitations

FVETUM has received 2 previous visitations. The first one was carried out in 1996 and de second one in 2006. In 1996, the **FVETUM** was visited for the first time by a team of experts designated by the European Association of Establishments for Veterinary Education (EAEVE). The team made some suggestions regarding major deficiencies, and a follow-up visitation was carried out in 1998, when our Establishment was successfully evaluated. In 2006, the **FVETUM** obtained again the EAEVE-approved status. Since then, many changes affecting the organisation, study programme, facilities and management have been introduced taking into account the comments of the Expert Group that visited our Faculty at that time, and the legal changes regarding veterinary education established during the last decade.

2. Main features of the Establishment.

The **FVETUM** and **VTH** are strategically located. The clinical assistance is highly recognised by the public and the veterinary professionals, which allows a steady and adequate caseload, needed for the hands-on practical and clinical training of the students. It is based in a fluent relationship with the Official College of Veterinary Surgeons of Murcia (COLVEMUR) and with Private Professional Associations and Public Entities. A representative of the **FVETUM** participates in the Governing Board of COLVEMUR.

The qualification of our staff, in terms of both quality teaching and research, is noteworthy in terms of fundraising from research projects. The presence of highly motivated students with a good academic background is one of the most significant strengths of our Establishment. The good relationship between students, academic and support staff allows a friendly environment for learning and education.

3. Main developments since the last Visitation (or, if there has not been a previous one, in the period since the veterinary degree programme began); it must cover the response to the recommendations of the last Visitation and a summary of the main changes e.g. in organisation, finances, curriculum, facilities and equipment, number of staff and students

A. Main organisational changes

Different organisational changes have happened since the last visitation. At University level, **UM** was granted in 2010 with the National label of RCIE (Regional Campus of International Excellence), calling this RCIE “Campus Mare Nostrum”. This is a joint

venture of **UM** and the other public University of the Region, the Polytechnic University of Cartagena (UPCT) which main goal of this RCEI is to identify the strength of the University as an international reference, oriented to the Mediterranean area mainly, regarding research, education and innovation. In this sense, the most important thematic area identified at RCEI was "Bioeconomy based on agrofood industry and health" outstanding role based on the "One Health" concept. The **VTH** or the Food Pilot Plant are two key infrastructures and the new Research Pole PLEIADES and the Mediterranean Food Science and Health centre so called VITALIS are playing an important role.

On the other hand, as recommended by the EAEVE team in the last visitation, a Quality Assurance System (QA) was implemented during the course 2010/2011. This System included the constitution of a Committee for the Assessment and Improvement of the Veterinary Degree Curriculum.

The **FVETUM** has also established a Biosecurity Committee in order to review and publish operational policies and procedures, and to train and to inform all the members of the Establishment on biosecurity issues. As suggested in the report of the last EAEVE visitation, an Official Regulation of the **VTH** was published in 2007 in order to give the **VTH** delegated authority and autonomy to deal with issues that are primarily an internal Hospital responsibility. This figure that regulate the functioning is the Foundation, Veterinary Teaching Hospital of the University of Murcia.

Finally, an Ethics and Animal Welfare Committee of the University has been set up to follow the basic standards for the protection and welfare of animals used for experimental and other scientific purposes, including teaching.

B. Main changes in finances

The crisis of the last years has had direct consequences on the funding for the Degree in Veterinary. Expenditures have increased on the basis of the consumer price index. However, revenues have been significantly reduced. The cutbacks from the public bodies have led to the impossibility to increase our human resources and to improve the infrastructures needed to adapt the studies to the ideal requirements of the European Higher Education Area.

C. Main changes to the curriculum

Many changes to the curriculum have been derived from changes in teaching regulations. In December 2001, the Spanish Parliament approved the University Organic Law 6/2001 which was modified in April 2007 (University Organic Law 4/2007, LOMLOU) in order to adapt it to the European Higher Education Area. The specific conditions that must be included in the programmes, and the requirements for qualifications to practice as veterinarians have been detailed in the Spanish Law (Resolution 21 of December 2007 and Order ECI/333/2008). The Veterinary Degree in the Spanish Universities comprises 300 ECTS delivered over 5 years. Taking into account these specific conditions, the Royal Decree 96/2014 has recognized the Veterinary Degree as equivalent to Master's level (Spanish Framework for Qualification for Higher Education, MECES, level 3).

Accordingly, the curriculum of **FVETUM** has been profoundly renovated, following also the EAEVE recommendations. The new syllabus received the verification of the Spanish Agency for Quality Assessment and Accreditation (ANECA, ENQA member) in 2010 (BOE, Spanish Official Bulletin, 11 of November, 2010). This programme was started during the academic course 2010/2011.
The main changes in the new curriculum include most suggestions of the last EAEVE report:

- A significant increase of clinical training, including a hands-on clinical rotation period in the last semester.
- A decrease in animal production training in comparison to the previous syllabus.
- The inclusion of rotations in food hygiene and safety, and in animal production.
- The inclusion of a Graduation Thesis to be presented by the student at the end of the Degree.
- A systematic inclusion of self-directed learning in most Degree subjects.

Moreover, the syllabus has been carefully revised in order to allow the acquisition of the ESEVT "Day One Competences", and the OIE recommendations on the Competences of graduating veterinarians ("Day 1 Graduates") to assure quality for the National Veterinary Services following the "One Health" philosophy.

D. Main changes in facilities and equipment.

The most significant changes in facilities and equipment since the last visitation are:

- At the Main Building
    - Adapt all lecture rooms to CMN standards with a full renovation of tables and sits to adapt to European Space of Higher Education, allowing to set in working groups.
    - Renovate all overhead projectors by smart blackboards also as slide projector. This equipment is with a "smart computer system" to centralize the management of all electronic devices.
    - Open a new computer and self-learning room within the study room, full equipped, for 32 students.
    - Set 3 lectures rooms in the basement of the study room mainly devoted to the Masters lecture.
    - Adapt spaces for student's welfare and resting area at the main corridor of the main building.
    - To open an outdoor terrace at the cafeteria area and renovate the facilities, services and atmosphere of the cafeteria.
    - To reorganise the student's offices for Associations and Representatives.
    - To reorganise the main hall for exhibitions and events.

  - To remodel the dissection room to adapt to the plastination capacity to produce specimens and to security requirements.
  - Set up a unify model of biosecurity measures at the pre-clinics, animal production, food science and animal medicine Departments.
- At VTH
  - Remodelling of Isolation Areas for Small Animals and Large Animals.
  - Opening of a new clinic room for suspected cases of transmissible diseases, with direct access to the street, independent from the waiting room.
  - Opening of a Waiting Room for Cats in the VTH.
  - Conditioned the riding arena for horse handling and a dog off-leash area.
  - Update the biosecurity measurements by animal species at VTH.
- At VTF
  - Installation of a new experimental Unit at the Teaching Farm.
  - Installation of a necropsy room.
  - To install a quarantine Unit.
  - Update the biosecurity measurements by animal species at the Teaching Farm.
  - - Important improvements in some livestock units, such as dairy and beef cattle, equine, rabbits and poultry.
  - - Building of a new store of straw and fodder.

4. Major problems encountered by the Establishment (whether resolved or not)

In the last 6 to 7 years, Spain as most of the EU countries, has suffered a dramatic international economic crisis, and the national and regional Governments have reduced funding to public universities. The effect of these reductions has had a negative impact mainly on human resources, infrastructures and investment on practical training. Regarding human resources, the policy and law of Governments have been to have a replacement of only 10% of the total retirement professors per year (1 for each 10 retired). The situation has been very difficult but now the situation has improved and this current academic year (2016-17) the number has increased, allowing the promotion of academic staff. This policy also determined new contacted professors only to part-time. It is also important to mention the strategy need to maintain in the future the clinical services because the rules at the Public University takes into consideration the research and teaching curriculum, but not the clinical activities. This is mayor concern for the capacity to enrol new clinical staff.

Talking about infrastructures, the economic restrictions made difficult to renewal of equipment and facilities. In this sense, we have underlined to the Rector and Rector Team that Veterinary studies are much more expensive than the average, and we have maintained most of the investments at the VTH and VTF, and we look forward with a good expectation to be improved. It is also important to mention that we have applied an austere and responsible management model. The weakest part of the situation was the reduction of the budget for practical training that has been optimised and complement in many cases by the research budget of the teaching units.

5. Version and date of the ESEVT SOP which is valid for the Visitation

ESEVT ‘Uppsala’ SOP May 2016.

Standard 1:
Objectives and Organisation

1.1.- Factual Information

1.1.1.- FVETUM structure, organisation, management, and relationship with UM.

UM Organisation.

The **University of Murcia** (**UM, founded in 1915**) is a **Public University**, operated under the National and Regional legislation and rules, and subsidies by Regional budget and, in part, by tuition fees. **UM** Depends on the Spanish Ministry of Education, Culture and Sport (**Figure 1.1**.), and on the Government of the Murcia Region, and it is based on 24 Faculties and 77 Departments, and in the academic year 2017-18 will offer 52 official Degrees, 72 Master programs and 33 PhD programs. Detailed information can be found in the website of UM (http://www.um.es).

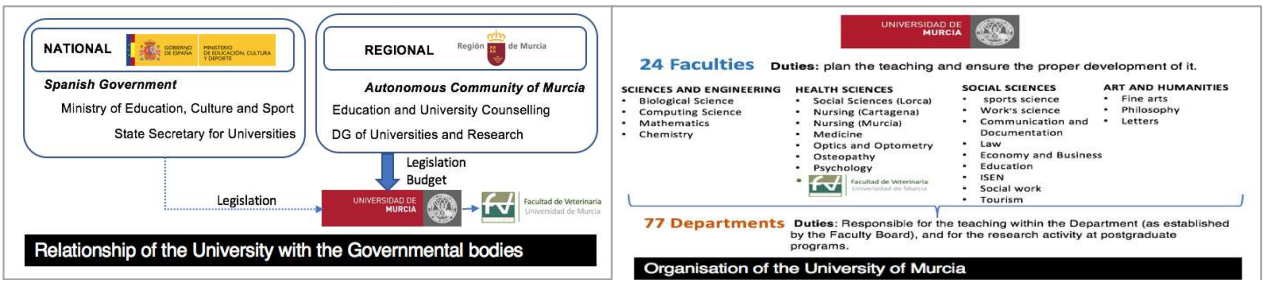


Figure 1.1.- Relationship of the **UM** with the Governmental bodies, and structural organisation of **UM**.

FVETUM Organisation.

The **Veterinary Faculty of the UM** (**FVETUM, stablished in 1982**) is organized and managed according to the **UM** Statutes (last version from 2017, previous one of 2004), which defines the composition and structure of the governing bodies of the Faculty and define the functions of the Institution.

Organisation of FVETUM.

The organisation is based on the Faculty's Departments and the Facilities/Units as shown in the following figure.

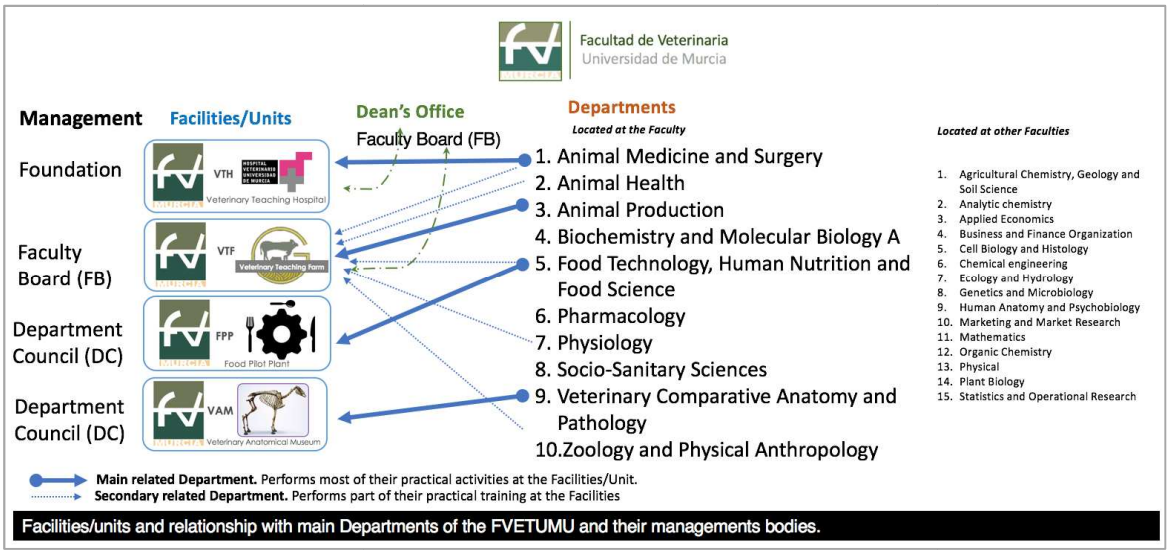


Figure 1.2.- Facilities at **FVETUM** and their relationship with the main Departments and their management bodies.

Departments are the administrative bodies of the University with the competences on coordination of teaching of one or more *Areas of Knowledge (***AoK***)* (in the Spanish University is the unit to aggregate the closest subjects) in accordance with the teaching programme of the University and under the supervision of the Faculties within specific Degrees. Departments also manage the human resources that support for teaching and research activities. Departments are also the administrative bodies that support the teaching staff initiatives (vg: extension or post-graduate courses). **FVETUM** involves 10 Departments based on the Faculty (5 are fully placed at the Faculty), and another 15 that are located at other Faculties of **UM**. Departments allocated in the Faculty are main responsible for the teaching of all the subjects included in our Veterinary syllabus. Departments are managed by the Department Board (DB), chaired by the Head of the Department and with all academic staff (Doctors) of the Department, and a representation of the rest of the teaching and research staff (70%); a representation of the students registered in subjects of the Department (25%), and a representation of the support staff assigned to the Department (5%). The Head of the Department acts as representative, and develops the functions of director and manager. The Head is elected by the Departmental Council for a two-year term and can only be re-elected once.

Facilities/Units are main infrastructures of the Faculty (**Figure 1.2**.). They actively support teaching and research. **FVETUM** has 4 Facilities/Units:

-Veterinary Teaching Hospital (**VTH**).

VTH, located at the main building of the Faculty, carries out clinical and support activities for teaching and research. Basically, it is divided into two main Services: Small Animals (companion animals) and Large Animals (equine). The organisational and functional regime of the **VTH** is governed by its own Regulations (Statutes), which are based on a Foundation structure. The main governing body is the "Patronage", chaired by the Rector of the **UM**, Vice-chaired by the Dean of **FVETUM**, and with a representation of the teaching staff as well as different public and private stakeholders. The day-by-day management is carried out by the Director, Manager and Secretary, all them academic staff. Teaching activities are organised by the **VTH** Academic Committee, chaired by the Dean and the Director and Manager of the **VTH**. The teaching staff attached to the **VTH** are members of the Animal Medicine and Surgery, and Veterinary Comparative Anatomy and Pathology Departments.

- Veterinary Teaching Farm (**VTF**).

VTF is located at less than 2 Km south of the main building, in the close village of Guadalupe. **VTF** structure has a central building subdivided into two main areas:

1. The Teaching Pavilion (TP) with classrooms, computer room, lecture hall, library and laboratories, and a changing area.
2. The Teaching Farm (TF), which is organized into 12 livestock units: 1) pigs, 2) poultry, 3) rabbits, 4) equine, 5) dairy cattle, 6) calves, 7) goats, 8) sheep, 9) beekeeping, 10) forage unit, 10) feed factory and 11) sewage plant. In addition, VTF has research facilities such as the experimentation vessel and others (kennels, primates and ship of nutrition and animal reproduction).

Daily management is run by a Director and Secretary (both academics), while teaching and other strategic activities are managed by the Governing Council (GC, chaired by the Dean and with the representation of the farm unit heads). Several Committees support the decisions of the GC and are reported to the Faculty Board. The main Department that support teaching activities at the **VTF** is Animal Production, but also other Departments are involved, Animal Health, Animal Medicine and Surgery, Physiology, Food Technology, Food Hygiene, and Zoology and Physical Anthropology.

-Food Pilot Plant (FPP).

FPP support the teaching activates in Food Science and managed by the DC of Food Technology, Human Nutrition and Food Science Department.

-Veterinary Anatomical Museum (VAM).

VAM supports teaching activities in Veterinary Anatomy. It is managed by the DC of Veterinary Comparative Anatomy and Pathology Department. VAM provides a large and well reputed number of anatomical specimens that are used by the students for regular anatomical training under academic supervision, as well as for self-training. The plastination laboratory supplies the VAM with a numerous and prestigious collection of plastinates which are not only used for direct teaching but also for exhibitions.

Management of FVETUM.

The governing bodies defined in the **UM** Statutes are the Dean, the Dean's Office and the Faculty Board (FB). Next figure summarizes the structural organisation of **FVETUM** management.

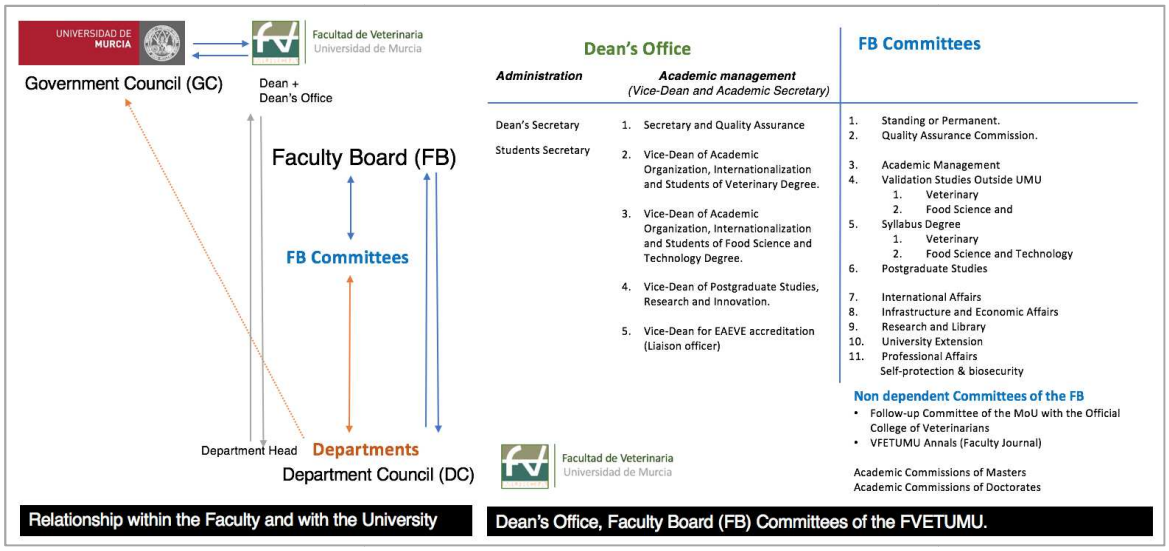


Figure 1.3.- Relationship within **FVETUM** and **UM** Governmental bodies and the FVEUM management structure.

The Dean represents the Faculty and acts as Director and day-to-day Manager (**Figure 1.3.**). The Dean is elected by the Faculty Board among the tenured academic staff (see Standard 9 and Appendix 5) for a four-year term. One re-election is possible, another 4 years.

The Dean's Office (DO) includes:

The Dean's Team (DT): 4 Vice-Deans and 1 Academic Secretary are nominated by the Dean for his/her term. The official appointment is made by the Rector. The DT are and have the following competences:

- Academic Secretary and Quality Assurance. - notary for the acts or agreements of the collegiate bodies, and the Manager responsible for the Faculty daily administration and financial services. The second main responsibility is to run the QA system of the Faculty with the support of the Internal Quality Assurance Committee.
- Vice-Dean of Academic Organization, Internationalization and Students of the Veterinary Degree. Main responsibilities are described in the title of the position.
- Vice-Dean of Academic Organization, Internationalization and Students of the Food Science and Technology (FST) Degree. The same that the previous one but focused on FST.
- Vice-Dean of Postgraduate Studies, Research and Innovation. Additionally, to the attribute defined in the title of the position she is responsible to coordinate the different activities of the PRACTICUM, and to supervise the accomplishment of the outcomes regarding the Day One Competences.
- Vice-Dean for the EAEVE Accreditation process (Liaison officer).

The DT manages the main academic areas and pursues a fruitful relationship between the study programs and research. The Dean performs his tasks in close collaboration with the Vice-Deans and the Departments Heads.

The Dean's Administrative Office (DAO) are the Administrative Secretariat and the Dean's Secretary. Both gives administrative support to all staff and students of the Faculty, and are centralized within the main building.

The Faculty Board (FB) is constituted by 178 members of the different stated (**Table 1.1.**). and it is the core governing body of the Faculty. It involves members representing all levels of the Institution. It is chaired by the Dean and renewed every four years. The main role of the FB is to take decisions, debate and approve FVETUM policies regarding to academic, professional and social. The FB meets periodically along the year (average of 6 to 8 times a year).

Table 1.1.- Faculty Board group members (figures and percentage).

• **Group A** (academic staff, doctors belonging to the teaching bodies)	55% (98 members)
• **Group B** (other teaching staff and researcher)	10% (18 members)
• **Group C** (PhD, undergraduate and master students)	30% (53 members)
• **Group D** (administration and services staff)	5% (7 members)
Total number:	**176**

Table 1.2. summarizes the Head of Management Units: Dean's Team, VTH, VTF and Department's Head (those with mayor activity in the Veterinary Degree). All Professors and PhD.

Table 1.2.- Dean's Team, Department's Head and VTH and VTF representatives.

Dean's Team		Department's Head	
• **Dean**	Gaspar Ros Berruezo	• **Animal Medicine and Surgery**	Alejandro Bayón del Río
• **Academic Secretary and Quality Assurance**	Elisa Escudero Pastor	• **Animal Health**	Francisco Alonso de Vega
• **Vice-Dean of Academic Organization, Internationalization and Students of the Veterinary Degree**	Octavio López Albors	• **Animal Production**	María Dolores Mejías Rivas
• **Vice-Dean of Academic Organization, Internationalization and Students of the Food Science and Technology (FST) Degree**	Carmen Martinez Graciá	• **Biochemistry and Molecular Biology A**	Juan Carmelo Gómez Fernández
• **Vice-Dean of Postgraduate Studies, Research and Innovation.**	Fuensanta Hernández Ruipérez	• **Food Technology, Human Nutrition and Food Science**	Magadalena Martínez Tomé
• **Vice-Dean for the EAEVE Accreditation process (Liaison officer)**	Eliseo Belda Mellado	• **Pharmacology**	Emilio Fernández Varón
		• **Physiology**	Francisca Rodriguez Mulero
		• **Socio-Sanitary Sciences**	Domingo Pérez Flores
		• **Veterinary Comparative Anatomy and Pathology**	Rafael Latorre Reviriego
		• **Zoology and Physical Anthropology**	Juan Antonio Delgado Iniesta

VTH		VTF	
• **Manager**	Josefa Fernández del Palacio		
• **Director**	Cándido Gutiérrez Panizo	• **Director**	Salvador Ruiz López
• **Secretary**	Francisco J. Pallarés Martínez	• **Secretary**	Guillermo Ramis Vidal

Teaching responsibilities' of FVETUM.

FVETUM has under its responsibility the management and quality of 2 Degrees, 4 Masters and 3 PhD Programs (**Figure 1.1.**). The Veterinary Degree started in 1982, was visited by EAEVE in 1996, Approved in 1999 and in 2007. ANECA (Spanish Agency for the Evaluation of Quality and Accreditation) accredited the Vet Degree of **FVETUM** in 2017 and the Quality Assurance System in 2013 (re-accredited in 2017). In accordance with the Statutes of the **UM**, the Faculty Manager acts as manager for the support staff. Next figure shows the services which are the responsibilities of the **FVETUM** Manager.

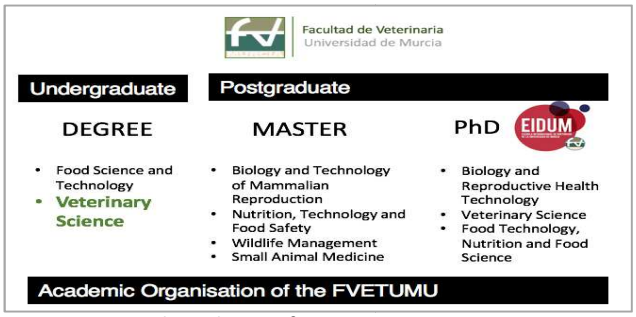


Figure 1.4.- Teaching duties of **FVETUM**.

Organisation of Management Office

Committees of the Faculty Board (FBC)

Several Committees act as advisors for the Dean and the Faculty Board. Most FBC are delegated of the FB in order to define, discuss and orientate the topics which ought to be finally approved in the FB meetings. FBC have not decision making functions, except the Permanent Committee which deals with important issues that cannot wait for the FB meeting. Representation of all the Faculty collectives in the different Committees is guaranteed, mostly from all Departments and in many cases by the Department Head or Secretary http://www.um.es/web/veterinaria/contenido/centro/organos-gobierno/comisiones. The FBC meets on agenda's demand although the Academic Affairs Committee and the QA Committee meets at least twice per year. The list of Committees and competences are as follow:

1. **Permanent:** its function is to deal with day-to-day matters in the name of the Faculty Council.
2. **QA:** Information is fully detailed in **Chapter 11 and in Appendix 4**. Input from external stakeholders is guaranteed through their participation in the QA system.
3. **Academic Affairs:** it is a very important Committee where students and professors discuss and analyse all academic issues such as the teaching aspects (methods, coordination, learning outcomes), academic performance, assessment scores, etc.
4. **Transfer and Credit Recognition:** Its competences are to establish the criteria and tables for credit recognition and transfer for those students who change their syllabus. There is one for each degree (Veterinary or Food Science and Technology).
5. **Assessment and Improvement of the Veterinary Degree Curriculum:** This is an active Committee where curriculum is reviewed or modified, mainly with a mayor change or a new Curriculum. There is one for each degree (Veterinary or Food Science and Technology)
6. **Mobility:** Its function is to support the mobility of the **FVETUM** members, especially the incoming and outgoing students. The Committee establishes the policy regarding the subject equivalences and credit transfers for those students who study abroad with Erasmus scholarships.
7. **Postgraduate studies:** It manages all the issues related to the Master and PhD programs. Its functions are to review and approve the official postgraduate courses taught at the Faculty, to admit to pre-enrolled students in official postgraduate courses, and to coordinate the teaching of the postgraduate courses.
8. **Research and libraries:** Its main competences are to propose the distribution of funds allocated for the acquisition of books and magazines, to implement the regulations of the Centre in the field of Licentiate Thesis, to evaluate the candidates to the Extraordinary Doctorate Award, and any other function assigned by the Faculty Board.
9. **Infrastructure and finances:** Its responsible for discussing the distribution of the Faculty budget, monitoring the expenditures, as well as to prepare, at the end of the budget year, the settlement of the budget, and to study and inform proposals and needs regarding repairs, works and infrastructure of the different units of the Centre.
10. **University extension:** Its function is to promote the holding of Seminars, Conferences and other cultural and sporting events which may contribute to the integral formation of the community. It also supports the initiatives of different associations either if run by students or academic staff.

Non-dependent Committees of the FB

There are 2 Committees non-dependent FBC

- **Follow-up Committee of the MoU with the Official College of Veterinarians**. This commission is responsible for monitoring the general agreement between the Professional Veterinary College and the Faculty.

- VFETUM **Annals (Faculty Journal)**. This Committee has the role of managing the Faculty Journal as well as promoting the exchange of journals with other Institutions.

Academic Committees of Masters and PhD Programs.

Additionally, there are specific Academic Committees for running the Master affairs (4, one for each) and Doctorate (3). Although these committees are directed by the Master or PhD program respective coordinators the Vicedean for Postgraduate studies, Research and Innovation is permanent member of all of them.

Other Committees.

Security is an important issue for the normal function of the **FVETUM**, mainly with regards to Self-protection & Biosecurity. There is a **Self-protection seal** which works in coordination with the University Service for prevention of occupational hazards to manage the emergencies strategy at **FVETUM**. It is responsible for inducing the community in this field and organizing the evacuation procedures and simulations. Biosecurity plays a key role in the **FVETUM** and for that reason, during the academic year (2016-17) the establishment has created a working group responsible for updating and implementing the Biosecurity policy (http://www.um.es/web/veterinaria/contenido/seguridad/bioseguridad). The Self-Protection protocols have been reviewed, and a Risk Plan Associated to all teaching activities has been set up. Specific protocols for facilities such as the VTH, the FPU and the VTF have been reviewed in depth.

The **Ethics and Animal Welfare** competences are under the University Research Vice-chancellor http://www.um.es/comisioneticainvestigacion/#.WWvmmtOLT-Y, who evaluates, advises and approves procedures to ensure the welfare of animals used for educational and research activities.

1.1.2.- Strategic Plan (SP), which includes a SWOT analysis of its current activities, a list of objectives, and an operating plan with timeframe and indicators for its implementation.

The SP (fully described on the website: http://www.um.es/documents/14554/52526/Plan+Estrat%C3%A9gico+Facultad-1.pdf/c8565517-b7b3-4ff8-8538-667e63bb7fed, Annex 1.1.2) was approved by the Faculty Board in March 2016. The SP contains a series of objectives and transversal themes of action, as well as specific lines for students, academics and supporting staff. The document ought to be reviewed and up-dated in 2018, according a participation model including all the establishment community and stakeholders.

The SP is based on the analyses of the **Strengths** and **Weaknesses**, as well as **Opportunities** and **Threats** for the Teaching, Research, Management and services, and Social impact; everything within the Economic, Financial and Demographic context of the European High Education Space. Finally, a Line of Action with objectives, strategies, actions, responsibility, and timeframe is defined for every scenario (teaching, research, management and services, and social impact). **Table 1.3.** summarizes the number of objectives, strategies and actions included in the SP.

Table 1.3.- Summary of the number of objectives, strategies and actions defined at the Strategic Plan by the four main areas of activities.

	Teaching	Research	Management and services	Social impact
Objectives	5	2	2	1
Strategies	14	2	4	2
Actions	34	8	5	6

Mission Statement

Assuming the general objectives of the **UM**, and as lines the quality policy of the **FVETUM**, Quality Assurance, could be more specific saying that its mission is the training of professionals of recognized quality and prestige, also attending to their training specialized and postgraduate courses, as well as their continuing education; all with a vocation assistance and assistance to society, with special emphasis on practitioners of the Region of Murcia.

Vision

The **FVETUM** wants to contribute to the progress of the society by offering a quality teaching and developing an advanced research, in accordance with the international requirements, with the aim of becoming a Veterinary Reference Establishment at European level.

Values

They should guide the actions and behaviour of the **FVETUM**:

- People: by ensuring that the objectives of all members of our Community are accomplished according to merit, equality and ability.
- Environment: by active cooperation with all local veterinary working fields along with a national and international implication to promote a participation of all to achieve the common objectives.
- Integrity, ethical conduct and transparency in all our actions.

- Accountability: Faculty, University, Society, and all interest groups (Employers, Professional Associations, Companies for extramural practices, etc.).
- Commitment: with our students, interest groups and the Society in general.
- Quality: Constant search for excellence from innovation.
- Strategic themes and objectives

1.1.3.- Description of how and by who the strategic plan and the organisation of the Establishment are decided, communicated to staff, students and stakeholders, implemented, assessed and revised

Procedures involve the following steps:

- Evaluation and identification of priority objectives (interviews and polls to students, staff, stakeholders)
- Construction of strategic themes (Responsibility: Dean's Office and Faculty Board
- Definition, communication and approval of strategic themes (Responsibility: Faculty Board)
- Connection with other strategic plans (University, Autonomous Community, Country)
- Assignation of committees to assess improvements (Responsibility: QA Committee)
- Assessment of improvements (Responsibility: QA Committee)
- Implementation and plan of adjustment: communication of results (Responsibility: QA Committee and Faculty Board)
- Reports to/from QA external agencies (Responsibility: QA Committee and Faculty Board)
- Implementation and plan adjustment: reassessment and redefinition of objectives (Responsibility: Dean's Office and Faculty Board)
- Over the whole process, communication via e-mail, web, social networks, COLVEMUR, etc. (Responsibility: Dean's Office)

1.2.- Comments

- The objectives of the **FVETUM** do not show major changes over the years, although creation of Strategic Plans since 2015 shall improve the achievement of the goals and assure a continuous process of improvement.
- The structure of management of **FVETUM** is the one defined by the UM statutes and determine the competences of each administrative bodies, and the Dean and Dean's Team has some limitations because the Departments have a significant degree of autonomy regarding to financial and administrative matters. Each Department is responsible for its teaching and research programmes.
- Since 2007 **VTH** became a Foundation and also provides **VTH** independence to run their own budget and resources.
- **VTF** is a large infrastructure that also is run on a daily basis with independence, but as in **VTH**, informing the Dean of the main decisions taken.
- At University level, achievement of the general and specific objectives is assessed and followed by the **UM** Social Council. This independent Council (with a significant representation of the society) has studied the professional insertion of our graduates.

1.3.- Suggestions for improvement

- The implementation of the strategic plan will be carefully designed to allow a strict follow-up. Also, this plan needs support by the **UM** Government Council.
- Coordination of the main infrastructures of **FVETUM** is a key element for successful, competitiveness and sustainability, that must be maintained, and strategic plans aligned.
- By assuming the importance of well-trained veterinarians in society, the endowment of the **FVETUM** should be increased, resulting in decreased workload of teachers, increased staff number (both teaching and support), increased funding for research, and improvement of infrastructures.

Standard 2:

Finances

2.1.- Factual Information

2.1.1. Description of the global financial process of the Establishment.

Public Universities in Spain are under strict rules for their finances. The legal frame of the global financial process is defined by the University Organic Law 6/2001 and 4/2007 (LOMLOU), whom states that the different legal bodies "…will draw up a reference model of costs that will enable the public authorities to establish adequate funding for public universities which…to promote their full participation in the European Higher Education Space". Within each University, and at **UM** as well, there is autonomy in the planning, approval and management of its budget following the INSTRUCTIONS OF BUDGET ECONOMIC REGIME OF THE UNIVERSITY OF MURCIA (http://www.um.es/documents/1922922/4373681/Normas+de+ejecuci%C3%B3n+del+presupuesto+2017.pdf/9e578a58-27fc-493e-98b3-3a11e88296e9).

The budget of the **UM** is annual, per calendar year (from January 1st to December 31st) and not per academic year (from September 1st to August 31th). Initial approval (project stage) is given by the Governing Council of the **UM** which then submits it for the final approval to the **UM** Social Council. In 2017, the budget of the **UM** is 213,992,239 € (4,67% more than in 2016), with the estimated total costs financed from the following income sources (from mayor to minor):

"Ordinary transfers" (to finance ordinary expenses)	62.29%
"Fees, public prices and other income" (fees and public prices approved by the Regional Government)	17.76%
"Financial assets"	7.49%
"Capital transfers" (to finance capital and investment expenditure)	7.17%.
"Financial liabilities"	0.96%
"Patrimonial income":	0,33%

Regarding the main expenses allocation at UM, 69.02% are for salaries, 15.89% for real investments and 13.73% are for current expenditure on goods and services.

Based on those principles, any entity (Faculty, Department or Service) follows the same general financial system that means that the **UM** (Vice-chancellor of Economy - *Vicerrectorado de Economía, Sostenibilidad y Ciencias de la Salud*-) covers and centralize the payment of all main expenditures regarding **staff salaries (A in Table 2.1.1)** (harmonized based on academic or support position, **see Standard 9**), **maintenance costs** (**C,** electricity and water supplies, cleaning and basic maintenance, air-conditioning, elevators, fire extinguishers, gardening, waste collection…) including services and work contracted out to external companies. The budget managed directly by the **FVETUM** and **VTF** is only oriented to run the **operating costs (B)** and **equipment (D)**, and some **specific maintenance costs**. **VTH** additionally covers some **personnel costs (A)** of veterinarian specialists, internships and residents. Within the budget, Faculties and Departments share the same group and for **operating costs** in 2017 the allocated budget is 2,217,072.85 €.

FVETUM receives from the Rectorate annual funds for direct management as envisaged. The annual endowment for each Centre and Department is calculates based on some consensuses criteria. For both 15% of the budget is equal and 70% is variable depending on subjects taught, credits given, credits given in practical laboratory or field classes (according to the degree of experimentability), students enrolled; plus 10% average mark of the upper quintile enrolled, degree of student mobility, percentage of students in external practices, degree of student satisfaction and degree of budget execution. For Departments are considered the following items: visiting professors, credits given, credits given in practical laboratory or field classes (according to the degree of experimentability), students enrolled; also 10% us based on efficiency rate, student satisfaction, degree of mobility of staff, recognized activity, and degree of budget execution.

VTH and **VTF** are not included into these criteria, and it is based on the real **costs of operation, maintenance and equipment** for **VTH**, and subsidiary aid of the **UM** as the Main Patron of the Foundation for **operational costs**.

Table 2.1.- Annual funds from **UM** for direct management and envisage.

	2016-2017	2015-2016	2014-2015	Mean
FVETUM (Including Departments)	111,676.64. -	90,400.20. -	106,286.94. -	102,787.92
VTH	923,402.00. -	884,842.00.-	815.182.00. -	55,333.33
VTF	164,628.58. -	164,775.34. -	154,779.02. -	161,394.31
Total	1,199,707.22	1,400,173.34	1,076,479.96	1,225,453.51

FVETUM= Facultad de Veterinaria de la Universidad de Murcia; VTH= Veterinary Teaching Hospital; VTF= Veterinary Teaching Farm.

VTF has an independent and significant budget due to the high operational costs. The livestock units of pigs, goats, cattle, goats and poultry are managed by external companies that provide both, animals and personnel for their care and maintenance, and the livestock units of rabbits, horses and sheep are managed by the **VTF** through a contract of the **UM** with a cooperative, which is paid with the **VTF** budget. So far, **VTF** does not own any staff due to the full operational contract with this cooperative.

VTH, as a Foundation, it is self- funded. As mentioned receives an annual endowment from the **UM** (as the Main Patron) which is based on estimated costs of operation on the previous year. Additionally, **VTH** Foundation define its budget every year based on clinical and diagnosis services and the other services (**Table 2.3. D** and **E**) (mainly from the **UM** to leases and fees, repairs and maintenance, services of independent professionals, insurance premiums, banking and similar services, advertising, supplies and other services. The **VTH** is managed by a Foundation ("*Fundación Veterinaria Universidad de Murcia*" **FUVEUM**) where the majority shareholder is the **UM**, which, for example, in 2016 contributed to the hospital's financing with 923,402 €, while **VTH** itself earned 701,082€. It has a stable income that allows the hiring of its own staff and the renovation of facilities when necessary. On the other hand, **UM** pays the costs related with utilities (electricity, water consumption, heating, and cleaning services) and the salaries of the support staff originally budgeted when the **VTH** was opened. With all these items, the **VTH** budget in the last 3 years has been summarized in **Table 2.2.**

Table 2.2.- Annual budget of VTH.

	2016	2015	2014	Mean
VTH	1,624,484.00. -	1,553,034.00. -	1,354,697. -	**1,510,738. -**

VTH= Veterinary Teaching Hospital.

The **UM** also calls for other types of support with its own funds to complement the Departments and Faculties in its teaching expenses, such as the call for "fungibles of practices", "works and teaching equipment (so called PORTICOS)", "projects for teaching innovation as well than quality" etc.

For an accurate summary of the annual revenues and expenditures the best tool is the "analytical costs". In 2017, the analytical accounting system has begun to be implemented, but it will not be until 2018 when it will be fully implemented with a new "**UM** ELARA software application", which will allow us to identify exactly what kind of expenses we have in the institution by administrative units, which at present it is difficult to differentiate general maintenance expenses from teacher or researcher maintenance. The data presented in **Tables 2.3.** and **2.4.** summarized both based on the aggregation of the budgets and expenses of the Departments of **FVETUM** and the one managed by the Faculty, and the differentiation of the VTF and VTH, and in this last case making a difference between the Foundation incomes and the **UM** endowment. For maintenance costs (C) it has been estimated based on the whole costs of the **UM** and the surface/space of **FVETUM**.

Table 2.3.- Annual revenues during the last 3 natural years (in Euros).

	2016	2015	2014	Mean
A Public authority (UM budget)				
A.1 Academic staff	7,205,618.31	7,073,600.23	6,700,145.08	**6,993,121.21**
A.2 Support staff				
• ***A.2.1 FVETUM (including Departments)***	1,416,779.28	1,307,306.67	1,223,388.44	**1,315,824.80**
• ***A.2.2 VTH***	443,120.64	413,418.13	383,913.12	**413,483.96**
• ***A.2.3. VTF***				
A.3 Researchers	445,737.32	441,279.95	441,279.95	**442,765.74**
A.4 Utilities (*FVETUM* + *VTH* + *VTF*)	366,796.24	275,534.37	251,490.86	**297,940.49**
A.5 Maintenance costs*	--	--	--	**--**
A.6 General equipment	133,149.69	88,392.65	110,422.86	**110,655.07**
B Tuition fee (standard students)	666,683.31	687,321.15	747,479.79	**700,494.75**
C Tuition fee (full fee students) **	--	--	--	**--**
D Clinical services VTH	467,388	445,461	359,677	**424,175.33**
E Diagnostic services VTH	233,694	222,730.66	179,838.33	**212,087.66**
F Another services VTH (UM and other Public Institutions endowment)	544,766.36	471,423.87	431,268.88	**482.486,37**
G Research grants	1,834,392.99	2,216,420.37	1,327,008.49	**1,792,607.28**
H Continuing and Postgraduate Education	NA	NA	NA	**NA**
I Donations	None	None	None	**None**
J Other sources (renting facilities)	None	None	None	**None**
Total Reveneus	13.758.126,14	13.642.889,05	12.155.913	**13.185.642,66**

FVETUM= Facultad de Veterinaria de la Universidad de Murcia; VTH= Veterinary Teaching Hospital; VTF= Veterinary Teaching Farm; NA= non-available.
*Covered directly by the **UM** Vice-Chancellor of Economy; **Not applicable at the **UM** (see section 2.1.4 for details).

Table 2.4.- Annual expenditures during the last 3 natural years (in Euros).

	2016	2015	2014	Mean
A Personnel				
A.1 Academic staff				
• ***A.1.1 FVETUM***	6,817,644.54	6,631,450.92	6,342,916.33	**6,712,339.33**
• ***A.1.2 VTH (Specialists, internship)***	387,973.77	383,785.47	357,228.75	**376,329.33**
A.2 Support staff				
• ***A.2.1 FVETUM***	1,416,779.28	1,307,306.67	1,223,388.44	**1,315,824.80**
• ***A.2.2 VTH (Paid by the Rectorate)***	443,120.64	413,418.13	383,913.12	**413,483.96**

A.3 Researchers	445,737.32	441,279.95	441,279.95	**442,765.74**
A.4 VTH internships				
A.5. Maintenance staff	347,820.62	271,689.55	778,725.56	**466,078.58**
B Operating costs				
B.1 Utilities				
• ***B.1.1 FVETUM (Including Departments)***	66,935.88	56,391.09	53,891.36	**59,072.78**
• ***B.1.1 FVM (Paid by the Rectorate)***	22,365.04	37,274.86	29,251.20	**29,630.37**
• ***B.1.2 VTH***	623,709.44	573,649.29	517,049.19	**571,469.31**
• ***B.1.3. VTF***	112,437.73	117,734.64	112,950.92	**114,374.43**
• **B.1.3. VTF (*Paid by the Rectorate*)**	12,504.18	20,840.19	16,354.20	**16,566.19**
B.2 Teaching				
• ***B.2.1. FVETUM (Including Departments)***	122,496.13	79,675.36	95,215.48	**99,128.99**
• ***B.2.2. VTH***	288,340.00	267,420.88	267,754.92	**274,505.27**
• ***B.2.3. VTF***	22,724.17	20,817.26	16,687.62	**20,076.35**
B.3 Research	206,278.86	161,660.95	151,344.59	**173,094.80**
C Maintenance costs				
C.1 Air conditioning, elevators, fire extinguishers, gardening				
• ***C.1.1 FVETUM (including Departments)***	289,262.47	325,488.99	294,710.92	**303,154.13**
• ***C.1.2 VTH***	76,779.29	114,489.59	106,661.54	**99,310.14**
• ***C.1.3. VTF***	163,177.19	182,414.85	169,390.64	**171,660.89**
C.2 Building (renovations, installations…)				
• **C.2.1 *FVETUM (including Departments)***	18,163.97	13,066.78	10,500.97	**13,910.57**
• ***C.2.1 FVETUM (including Departments) (Paid by the Rectorate)***	137,490.66	122,969.75	136,231.37	**132,230.59**
• ***C.2.2. VTH***	259,978.05	299,924.19	238,663.33	**266,188.52**
• ***C.2.3. VTF***	22,051.54	21,065.78	10,441.25	**17,852.86**
D Equipment				
D.1 Teaching				
• ***D.1.1 FVETUM (including Departments)***	35,700.36	15,849.67	13,301.75	**21,617.26**
• ***D.1.1 FVETUM (including Departments) (Paid by the Rectorate)***	9,822.32	10,262.79	7,057.99	**9,047.70**
• ***D.1.2 VTH***	5,438.00	16,347.00	58,726.00	**26,837.00**
• ***D.1.2.VTF***	1,654.00	1,494.00	3,809.03	**2,319.01**
• ***D.1.2.VTF (Paid by the Rectorate)***	5,491.61	5,737.87	3,946.09	**5,058.52**
D.2 General equipment				
• ***D.2.1 FVETUM (including Departments)***	21,177.84	23,353.83	27,478.19	**24,003.29**
• ***D.2.1 FVETUM (including Departments) (Paid by the Rectorate)***	34,021.42	34,418.63	41,061.69	**36,500.58**
• ***D.2.2 VTH***	115.00	1,648.00	196.00	**653.00**
• ***D.2.3. VTF***	19,764.47	193,878.39	26,555.39	**80,066.08**
Total expenditure	12,376,699.71	12,225,169.16	12,283,582.21	**12,295,150.36**

FVETUM= Facultad de Veterinaria de la Universidad de Murcia; VTH= Veterinary Teaching Hospital; VTF= Veterinary Teaching Farm; NA= non-available.
*Covered directly by the **UM** Vice-Chancellor of Economy; **Not applicable at the **UM**.

Table 2.4.- Annual balance between expenditures and revenues (in Euros).

Year	Total expenditures	Total revenues	Balance
2014	12,283,582.21	12.155.913,00	**127,692.10**
2015	12,225,169.16	13.642.889,05	**1,417719.89**
2016	12,376,699.71	13.758.126,14	**1,381,426.43**

Table 2.4 presents the annual balance between expenditures and revenues where the difference is on a positive balance. It is difficult to ascertain the main reason, since all expenses are covered. In some cases, it is due to the fact that Departments do not use the whole budget and in these cases, there is a carry over to the next year, in some cases needed to invest into new equipment and it is needed to add several years. Also, the last payment of the natural year is done within the first 3 months of the next year due to the slow payment at the end of the year. And probably the main reason is due to the tuition fees that are over the expected revenues. Any balance of the budget, positive or negative, is assumed by the **UM**.

2.1.2. Degree of autonomy of the Establishment on the financial process.

As it has been explained in **section 2.1.1** the financial process is very determined by legal constrains and all Public Universities have to follow the same pattern. The Faculty, it-self, only can obtain for the UM some incomes renting the facilities (mainly lecture halls for events) but it is also centralised. Talking generally, there is some degree of freedom on other activities like research, extension

courses, congresses or symposium organisation…where under the rules of the UM any academic staff can promote the desired activity with extra incomes. FVT also follow the same protocol but the business can be oriented when renting the farm for events, research projects, or the management of this facilities. The entity with more flexibility is the VTH that beside the direct clinical and diagnostic services, can stablish a business plan renting the space for practitioners or to companies for research activities, or any other that the Board of Trustees approve based on the objectives of VTH of teaching of excellence.

2.1.3. % of overhead to be paid to the official authority overseeing the Establishment on revenues from services and research grants

Overheads is mainly applied to the research projects (usually an enterprise contact is 10%), or the continuous education or extension courses, where 5 to 10% is charged. There is not a high pressure in this sense at **UM**. It is not needed to mention, but all clinical work has the adequate VAT (Value-Added Tax).

2.1.4. Annual tuition fee for national and international students

There are no "**full fee students**" in our system. The Spanish model of University funding is decentralized by the Autonomous Communities, where the University education is essentially public and covers most of the real total cost. The remaining students are "**standard fee student**". The cost of each credit is annually established by the Regional Government and depends on the experimental grading and the times the student has been previously enrolled in a subject. The Degree in Veterinary has the maximum experimental grading (level 1) and therefore the public prices are:

Table 2.5.- Public price on Euros and per ECTS and the number of enrolments.

	Enrolment			
	1st	2nd	3rd	4th & following ones
Price (€/ECTS)	16.78	33.56	72.71	100.68

With the application of this table of prices (one of the lowest in Spain for a public University, and not modified since last academic year) an **annual tuition fee** for any Spanish, EU student, or a non- EU student with the status of resident, who passed all the subjects the **1st time**, is **1,006.8 €** (60 ECTS x 16.78 €/ECTS). In accordance with the article 81.3 b of the LOMLOU, the Universities charge foreign students over 18 years old who do not have the status of residents (excluding students of Member States of the EU and those to whom the Community scheme is applicable) the fees corresponding to a fourth enrolment.

The **annual direct cost for training a student** in 2016/2017 was **16,925.26 €,** obtained as the sum of the academic staff (A.1) and support staff (A.2) expenditures, teaching operating costs (B.2), and teaching equipment (D.1) as shown in Table 2.1.1, divided by the number of students enrolled in the Veterinary Degree (564.67 students).

2.1.5.- Estimation of the utilities and other expenditures directly paid by the official authority and not included in the expenditure tables.

All the costs directly paid by the Central Services of **FVETUM** have been included in **Table 2.1.4.** as sections A (Personnel, except A.1.2, A.2.2.2 and A.4, paid by the VTH), B.1 (Utilities), C (Maintenance costs), and D.2 (General equipment).

2.1.6.- List of the on-going and planned major investments for developing, improving and/or refurbishing facilities and equipment, and origin of the funding

Every year, any Faculty at **UM** request to the Vice-Chancellor of Economy their main needs for improvement and refurnish facilities and equipment following a protocol of request using the above-mentioned PORTICO **UM** application. Previously on request, the needs and priorities are analysed by the Dean Team with Department Heads and Units, and the Committee for Infrastructure and finances, and **FVETUM** has to be co-financed. Additionally, this year, **UM** has given priority to **FVETUM**, **VTH** and **VTF** to update some infrastructures and equipment. The list of on-going and planned major investments at **FVETUM** are based on the strategic plan for renovation and improvement of the Faculty.

Common to FVETUM Main Building, VTH and VTF	Main building (Units A, B, C).	VTH	VTF
-New and updated signboard **-New biosecurity sing.** **-New and powerful wifi routers**	-Accessibility ramp in unit A, back door. -Electronic control access to Unit C and A different from the main entrance. -Additional wheel-chair access to Unit A, back door. -New electronic doors. -Hall of Unit A, Main building, adapted for exhibitions. -Elevator renovation (under study) -Laboratories renovation some specific infrastructure (example: Anatomy)	-Equine clinics floor renovation -Equine/large animal isolation unit refurnish -Area of exercise of hourse for diagnostic -Equine adaptation to vehicles -Cat waiting room -Clinical skill unit and dummies -Equipment update: Magnetic Resonance (under study by the **UM**)	-New quarantine facilities -Adequacy of barns and sidewalks -Laundry and biosecurity Adequacy

The amount of the planned major investments, already carried out, underway or planned, will sum up over 300,000 €, 80.000€ of them are under PORTICO.

2.1.7.- Prospected expenditures and revenues for the next 3 academic years. It is difficult to estimate the expenditures and revenues for the next years.

As mentioned before and after the economic crisis, **UM** budget has increased since last year and particularly this current year 4.6%. There is a plan toward 2020 with the Regional Government to maintain this trend. It is expectable that this increase in the general budget will also have a similar impact on the **FVETUM**.

2.1.8.- Description of how and by who expenditures, investments and revenues are decided, communicated to staff, students and stakeholders, implemented, assessed and revised.

The **FVETUM** Infrastructure and Finances Committee (chaired by the Dean and with Faculty Secretary and elected members of the FB) analyse the needs previously study with the Department Heads and Units. This Committee is in charge of proposing the distribution of the ordinary budget and evaluating any other source of income, expenditures or investment proposed by the Departments to the Faculty Council. The Faculty Council, subsequently, approves the budget to be implemented. The Departments and the Faculty Council are responsible for communication to staff and students, as well as for the implementation and supervision of the budget, which is managed by the administrative (administrative Secretary of **FVETUM**). Every year, the annual economic report is approved by the Faculty Council.

VTF expenditures, investments and revenues are identified by Director and Secretary that after evaluation is submitted to the Governing Council of the Farm for comments and approval. Faculty Board is also informed periodically. In the case of **VTH** follow the same pattern, and instead of the Governing Board is the Board of Trustees the body that analyse and approve the investments.

2.2. Comments

- The global finances process of **FVETUM** is legally defined and has its positive aspects such as the centralised payment of salaries or all general maintenance and operational expenses. Also, **VTH**, VTF and Departments manage their own budgets, so, Faculty centralise a very limited budget the limits the capacity of action in many cases, although and following the decision taken process (**section 2.1.8**) has the capacity to harmonise the different actions.
- Following the same idea, **FVETUM** has limited capacity for additional income and resides in the Departments and **VTF**, and especially **VTH**, have the possibility of doing so.
- The UM is sensible to the exceptional needs of the **FVETUM** due to the large and unique infrastructures of the Faculty. However, not always is conceit that the cost of a veterinary student is much higher than others and the budget distribution rarely take into consideration this fact.

2.3. Suggestions for improvement

- Any improvement in the budget according to the general budget if the **UM** is assumed that will be applied in the future, but in addition it is important to understand that the day by day cost of the whole Faculty (**FVETUM**, **VTH** and **VTF**) needs a differentiated and special support.
- Renovation equipment as well as a new more up-dated equipment it is urgently needed to maintain and be more competitive as a reference **VTH** for practical training and education of the students.
- Also, the investment on dummies to acquire clinical skills is very important and the **UM** is about to launch the call for high cost practical training infrastructures where the FVETUM together with the clinical Departments will co-finance.
- For external fundraising one potential source are the donations. In the past, it has obtained some for **VTH** and mainly for **VTF**. There some attempts to explore this funding with enterprises on specific

Standard 3

Curriculum

3.1. Factual information

3.1.1. Description of the educational aims and strategy in order to propose a cohesive framework and to achieve the learning outcome.

The curriculum of **FVETUM** was designed according to European Directive 2005/36/EC. It was formerly verified by ANECA (ENQA member) in 10/06/2009, approved by the Spanish Ministry in 12/11/2010 (BOE, 16/12/2010) and officially published in BOE 11/03/2011. Recently (08/05/2017), renewed its accreditation by ANECA.

The curriculum is built upon a list of **Competences**, which are divided into 3 categories:

- **Transversal**, formulated by the University. The same for all the Degrees of **UM**.
- **General,** taken from the "White Book of the Veterinary Degree" of ANECA (http://www.aneca.es/var/media/150400/libroblanco_jun05_veterinaria.pdf), and aimed at harmonizing the educational curriculum among the Spanish Establishments of Veterinary Education. This was relevant in a moment –around 2010- when all the Spanish Degrees were re-defined according to the European Higher Education Area.
- **Specific.** A total of 40 specific competences (**Appendix 2**), which correspond to the list of Day One Competences defined by the EAEVE.

Upon these **Competences**, the main educational purpose of the curriculum is to assure the students the achievement of competent level of knowledge and skills in all the fields of the veterinary profession. This is implemented through a progressive and comprehensive **competences-based learning-process** with the following educational aims and workload (**Table 3.1.1.**).

Table 3.1.1.- List of competences-based learning-process with the following educational aims and workload (ECTS).

	ECTS
• Achievement of knowledge and related skills in **Veterinary Basic Sciences**	88
• Achievement of knowledge and **Clinical and Sanitary** skills	113
• Achievement of knowledge and skills in **Animal Production and Welfare**	39
• Achievement of knowledge and skills in **Food Technology, Hygiene and Safety**	24
• Deeper, on-site development of the previous knowledge and skills by bringing the students into the reality of the **professional practice**, including	
o ***Indoor practical training***	21
o ***Outdoor practical training***	3
• Through **Electives**, achievement of knowledge and skills in other fields of the veterinary profession, such as *Ecophatology, Veterinary History, Taurology* and *Clinical Pathology* (6 out of 12 ECTS per student).	6
• Progressive achievement of basic Reviewing, Researching and Communication skills which culminate in the **Graduation Thesis**.	6
TOTAL	**300**

The mentioned aims pursue a series of **learning outcomes (Appendix 2 A)** associated to each specific subject of the curriculum. The relationship between the competences, the learning outcomes and how they are achieved is defined at subject level, and described in detail in the **Teaching Guide (TG)** of each individual subject (http://www.um.es/web/veterinaria/contenido/estudios/grados/veterinaria/2017-18/guias). On an annual basis, **TG** are reviewed, discussed and finally approved by the Department Councils and lately by the Faculty Board. In fact, **TG** can be considered as "formal contracts" between both academics and students which serve as a reference for the implementation and monitoring of the learning process. As a matter of fact, the whole learning process is run and assessed under a **coordination framework**, which involves interactions among representative, executive and surveying agents of the whole educational community (detailed in **3.1.3 section**).

Veterinary Degree at **FVETUM** curriculum (**Table 3.1.2**) is organized in a series of subjects with a minimum of 3 and a maximum of 24 ECTS as presented in the following Table ("Core subjects" are the conceptual entities which build the curriculum framework. "Subjects" refers to the individual educational units which are taught and assessed independently).

Table 3.1.2.- Organisation of core subjects and subjects by semester and ECTS of the Veterinary Degree at **FVETUM**.

Core subjects	Subjects	Semester	ECTS
Statistics and business	Statistics and business (management & marketing)	1	6
Physics & Chemistry	Physics & Chemistry	1	6
Biology	General and Molecular Biology	1	6
Biochemistry	Biochemistry	1	6
Animal Anatomy	Anatomy I	1	6
	Anatomy II	2	6
	Microscopic Anatomy & Histology	2	6
	Anatomy & Histology Central Nervous System (CNS) & Embryology	3	6
Physiology	Veterinary Physiology I	2	6

	Veterinary Physiology II	3	6
Genetics	Genetics	2	6
Identification, Animal Welfare, Ethics & Professional Legislation	Deontology, Legal Medicine & Veterinary Legislation	2	3
	Ethnology and Animal Handling	3	4,5
	Ethology, Animal Welfare and Animal Protection	4	4,5
Biological Agents of Disease and Structural & Functional Disorders	Microbiology I	3	4,5
	Microbiology II & Immunology	4	6
	Parasitology	3	4,5
	Nosology & Physiopathology	4	6
	General Pathological Anatomy	4	3
Basics of Diagnosis & Therapeutics	Propaedeutics	5	6
	Pharmacy and pharmacology	5 & 6	6
	Special Pathological Anatomy	5 & 6	9
	Diagnostic Imaging	6	4,5
	Pharmacotherapy	7	4,5
Clinical Sciences	Veterinary Anaesthesia	6	4,5
	General Surgical Pathology & Surgery	7	4,5
	Internal Medicine	7 & 8	12
	Reproduction & Obstetrics	7 & 8	12
	Farm Animal Clinics	9	3
	Special Surgical Pathology & Surgery	9	6
Animal Heath	Epidemiology, Zoonosis & Public Health	4	6
	Infectious Diseases I	5	4,5
	Infectious Diseases II	6	4,5
	Parasitic Diseases	5 & 6	9
	Toxicology	6	6
	Preventive Medicine & Heath Policy	9	6
Animal Husbandry	Agronomy	2	3
	Animal Nutrition	3 & 4	9
	Animal Husbandry, Farm Facilities & Welfare	7 & 8	9
	Agrarian Economy	8	3
	Animal breeding & Welfare	9	6
Hygiene, Security & Food Technology	Food Technology	7 & 8	9
	Food Hygiene, Ipection & Control I	8	6
	Food Hygiene, Inspection & Control II	9	6
	Food Security	9	3
PRACTICUM & Veterinary Degree Final Thesis	**PRACTICUM** (*Prácticas Tuteladas*)	10	24
	Veterinary Degree Final Thesis	10	6
Electives (6 ECTS out of 12)	Veterinary History	5	3
	Taurology	5	3
	Wild Fauna Ecophatology	5	3
	Veterinary Clinical Pathology	5	3

Through a total of 5 academic years - 10 semesters - subjects are annual or restricted to a semester. The first 9 semesters cover the most substantial part of the curriculum, while the 10th semester (30 ECTS) is aimed at further developing and verifying the achievement of the professional competences and skills – Day One Competences- on realistic scenarios. The list of subjects does not completely fit into structure defined by the ECCVT on the 26th March 2015, but it does include all its content, as showed in detail in **Tables 3.1.3** and **3.1.4**.

Table 3.1.3.- Curriculum hours in each academic year taken by each student.

Academic year	A*	B	C	D	E	F	G	H
1st	363	71	109	153	86		40	**822**
2nd	353	40	58	213	70		42	**776**
3rd	339	62	91	49	3	232	27	**803**
4th	341	76	117	78	31	195	30	**868**
5th	175	38	128	90	184	326	108	**1.049**

*A= Lectures; B= Seminars; C= Supervised self-learning, D= Laboratory and desk based work; E= Non-clinical animal work; F= Clinical animal work; G= Others: tutorial and evaluation; H= Total.

The teaching strategy includes a broad variety of modalities including theory lectures, seminars, problem based learning, evidence based medicine, laboratory and desk based work, non-clinical animal work and clinical animal work. For a better clarification, the next **Figure 3.1.** summarizes which are the subjects where the latest two modalities of teaching are used.

Table 3.1.4.- Curriculum hours in EU-listed subjects taken by each student.

Module	Subject	A	B	C	D	E	F	G	H
BASIC SUBJECTS	Medical physic	26	5	5	5			2	**43**
	Chemistry (inorganic and organic sections)	25	4	4	4			1	**38**
	Animal biology, zoology and cell biology	43	4	6	21			4	**78**
	Feed plant biology and toxic plants	24	6	15	10	8		2	**65**
	Biomedical statistics	18	8	20	14			2	**62**
BASIC SCIENCES	Anatomy, histology and embryology	116	16	34	36	108		12	**322**
	Physiology	58	11	16	48	16		11	**160**
	Biochemistry	43	6	6	15			8	**78**
	General and molecular genetics	43	10	16	14			4	**87**
	Pharmacology, pharmacy and pharmacotherapy	50	1	1	12	3		3	**70**
	Pathology	54	6		43			5	**108**
	Toxicology	30	5	12	18	3	12	3	**83**
	Parasitology	27	2	4	16	6		3	**58**
	Microbiology	42	5	7	32			5	**91**
	Immunology	18	4	4	15			4	**45**
	Epidemiology	36			40	3		3	**82**
	Professional communication	2	3	10	2			1	**18**
	Professional ethics	4	2						**6**
	Animal ethology	16	8	10	5	6		3	**48**
	Animal welfare	16	4	5	2	3		1	**31**
	Animal Nutrition	43		2	3	7		5	**60**
CLINICAL SCIENCES	Obstetrics, reproduction and reproductive disorders	58	17	11			82	6	**174**
	Diagnostic Pathology	54	13	14			43	2	**126**
	Medicine and surgery including anaesthesiology	253	53	82	16		290	23	**717**
	Clinical practical training in all common domestic animal species						264	44	**308**
	Preventive Medicine	12	2	4	11			1	**30**
	Diagnostic Imaging	29	6	14			24	2	**75**
	Veterinary legislation, forensic medicine and certification	8			5			3	**16**
	Therapy in all common domestic animal species	29	6	32	22			2	**91**
	Propaedeutic of all common domestic animal species	38	7	10			30	3	**88**
ANIMAL PRODUCTION	Animal Production and breeding	89	16	52	33			9	**199**
	Economics	22	4	6	9			1	**42**
	Animal husbandry	27	5	21	10	8		2	**73**
	Herd health management	12	4	4	11	78		11	**120**
FOOD SAFETY AND QUALITY	Inspection and control of food and feed	55	13	36	47	6		5	**162**
	Food hygiene and food microbiology	22	6	10	15			3	**56**
	Practical work in places for slaughtering and food processing plants					106		16	**122**
	Food technology including analytical chemistry	59	9	11	29	5		5	**118**
PROFESSIONAL KNOWLEDGE	Professional ethics & behaviour	4	5				8	5	**22**
	Veterinary legislation, forensic medicine and certification	53	5	7	8	1		1	**75**
	Veterinary certification and report writing		2	2	1			3	**8**
	Communication skills							8	**8**
	Practice management & business	8	2	10	5	7		2	**34**
	Information literacy & data management	4	3		6			10	**23**

A= Lectures; B= Seminars; C= Supervised self-learning, D= Laboratory and desk based work; E= Non-clinical animal work; F= Clinical animal work; G= Others: tutorial and evaluation; H= Total.

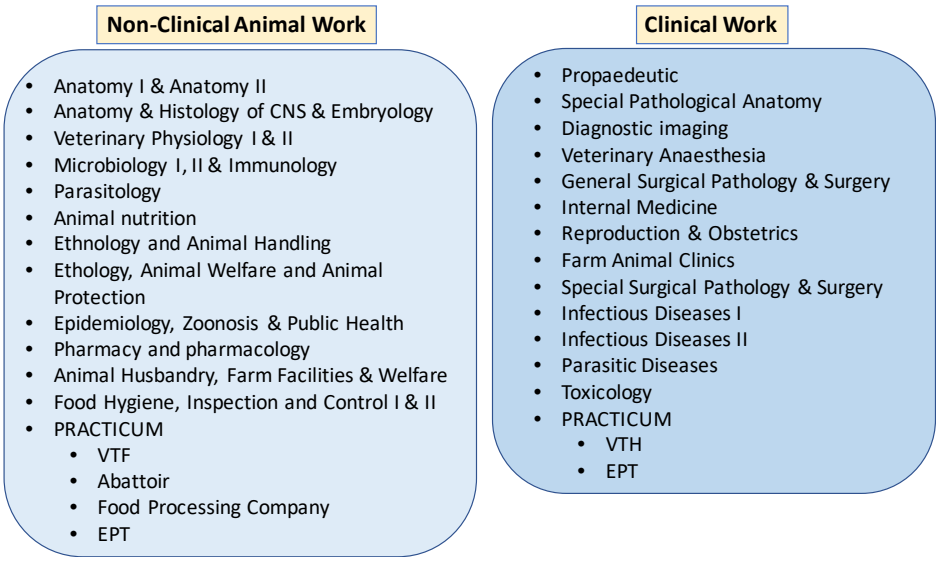


Figure 3.1.- Main subjects involved in non-clinical and clinical animal work.

In theory lectures, all the students of the same year (around 100) are taught in a single group. In the other modalities, teaching is organized in reduced groups of 4 to 20 students. Students of the 1st and 2nd years normally have 3 h of lectures and 3 h of other compulsory activities per day (seminars, laboratory work, non-clinical animal work, etc). Students of the 3rd, 4th and 5th years have a different teaching strategy. Seminars, laboratory work, non-clinical animal work and clinical work is in based on **rotations**, which means moving the students among the subjects of the same semester on a two-weeks basis. Students in the 10th semester have 15 weeks of **PRACTICUM** which is also organized in rotations among clinical and non-clinical activities. During the **PRACTICUM** students are split in groups of 4-5 people and expend 6 weeks in the **VTH**, 2 weeks in the **VTF**, 2 weeks in an abattoir, 1 week in a Food Processing Plant and 4 weeks in an external professional placement (**EPT**). During the 10th semester students are also devoted to their Veterinary Degree Final Thesis. A detailed description of the teaching timetable is available in the web site. Besides, the schedule can be checked on line at http://www.um.es/web/veterinaria/contenido/estudios/grados/veterinaria/2017-18#horarios.

3.1.2. Description of the legal constraints imposed on curriculum by national/regional legislations and the degree of autonomy that the Establishment has to change the curriculum.

The Veterinary Degree at **UM** accomplishes de requirements of **the European Directive 2005/36**, transposed to Spanish regulations in the **Royal Decree 1837/2008**. The curriculum conditions are regulated by the Resolution 17th December 2007 (BOE 21st December), and the **ECI/333/2008**, of 13th February, (BOE 15th February, 2008) which establish the conditions leading to qualification for the exercise of the Veterinary Profession. Under this legal frame, the current curriculum was verified by the National Agency for Evaluation, Quality and Accreditation (ANECA) and finally published by the Spanish Ministry and Regional Government on the 25th February 2011 (BOE 11th March and BORM of 8th of March 2011). The whole curriculum, including a Quality Assessment, was recently evaluated by ANECA and renewed accreditation (8/05/2017). All the factual information regarding the legal status and conditions of the Degree are included in the Registry of Universities, Establishments and Titles (RUCT) of the Ministry of Education, Culture and Sport, with code No.2500988(https://www.educacion.gob.es/ruct/estudio.action?codigoCiclo=SC&codigoTipo=G&CodigoEstudio=2500988&actual=estudios).

The current **Curriculum** begun in the academic year 2010/2011, and since then no major changes have been made to. During this period, implementation has been monitored by the **Committee of Quality Assurance and System of Guarantee of Internal Quality (SGIC**) which involve representatives of academics, technical staff and students as well as external stakeholders. As established by the working protocol surveys about the learning process (teaching methods, student's assessment and success, curriculum integration), the learning environment, the professional insertion, etc, are collected on a regular basis. Based upon the inputs collected in recent years, a period of potential curriculum review involving all the mentioned bodies is now in discussion (exploratory stage). No conclusions and/or recommendations are available yet, but some core guidelines are the level of integration of contents within the curriculum, and the relationship between assessment methods, learning outcomes and professional competences. This exploratory process of curriculum review is expected to serve as a basis for a broader discussion at Faculty level regarding the procedure, extent and content of any future change in the curriculum.

It is important to highlight at this site that the accurate implementation of the SGIC at the **FVETUM** has been awarded by ANECA with the stamp **AUDIT** (2th December 2013). **FVETUM** is the unique Spanish Veterinary Establishment holding this award, which is valid up to December 2017.

3.1.3.- Description of how curricular overlaps, redundancies, omissions and lack of consistency, transversality and/or integration of the curriculum are identified and corrected.

The teaching strategy in terms of coordination pursues a cohesive achievement of the competences and learning outcomes. On an annual basis, several meetings involving a total of 8 agents are responsible for assessing coordination of teaching: Dean and Vice-Deans, Semester Coordinators, Subject Coordinators, Students Representatives (one student per academic year, 5 in total), Academic Departments, Committee of Academic Affairs, Committee for Quality Assurance (SGIC), Faculty Board (Figure 2). Additionally, during the academic year 2016-17 a **Work-group for Coordination (WGC)** has been specifically set up with the main goal of improving the horizontal and vertical integration of the curriculum. This group involves the Dean, the Vice-Dean of Academic Organization, Internationalization and Students of the Veterinary Degree, the Heads of Academic Departments, the Director of the Veterinary Farm, and other representatives from different subjects who volunteered for this purpose. Refining the learning outcomes, pursuing integration, detecting overlaps, redundancies, omissions and lacks of consistency among the subjects have been assessed on a regular basis.

The **coordination strategy** of the curriculum involves 3 levels (**Figure 3.2.**): definition of coordination milestones, implementation and assessment.

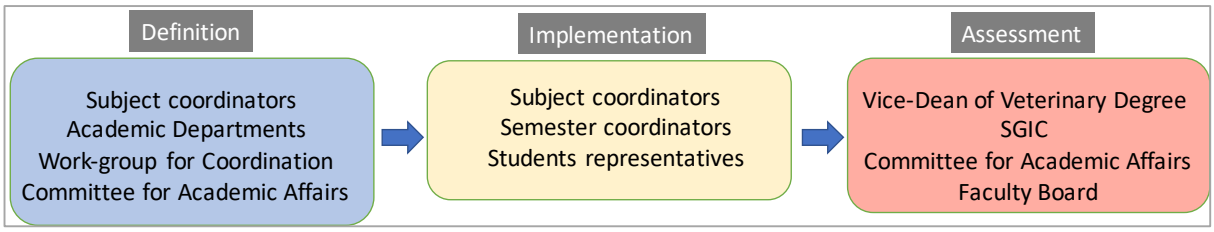


Figure 3.2.- Levels of coordination strategy.

- Definition of coordination milestones: establishing the relationship between the competences and the learning outcomes.
  - Subject coordinators are responsible for defining a competence-based list of learning outcomes, teaching and evaluation methods at subject level (Teaching Guides, TG).
  - Academic Departments approve the TG at Department level.
  - Work-group for Coordination defines horizontal and vertical coordination milestones among Academic Departments.
  - Committee for Academic Affairs defines recommendations or potential changes which are reported to the Faculty Board.
- Implementation: supervision of how the learning process and the coordination milestones are achieved during the academic year.
  - Subject coordinator supervises the process and reports to the Semester coordinator.
  - Semester coordinators supervise the learning process in those subjects included in the same semester of the academic year. Potential incidences, deviations, redundancies are reported to the Vice-Dean.
  - Student representatives collect the student's opinion on the learning process and report to the Vice-Dean.
- Assessment: evaluation of the congruence of the whole learning process.
  - Vice-Dean:
    - Chairs semester meetings between Student's Representatives and Subject Coordinators.
    - Reports to SGIC, Committee for Academic Affairs and Faculty Board.
  - SGIC: assessment of semester reports and advice about how to correct deviations from the teaching quality parameters and coordination milestones. Reports to Faculty Board.
  - Committee for Academic Affairs: assessment of semester reports and definition of recommendations to be approved by the Faculty Board
  - Faculty Board: discussion and final approval of any recommendation or change affecting the learning process or the curriculum.

3.1.4.- Description of the core clinical exercises/practical classes/seminars prior to the start of the clinical rotations.

During the 1st and 2nd years of the Degree, clinical topics and activities are considered in many subjects either with or without direct animal work. Afterwards, to allow a deep and optimum approach to clinical scenarios, from the 5th to the 10th semester, the teaching strategy is based on rotations. This situation is further illustrated in the next **Figure 3.3**.

In the **pre-clinical subjects (with or without animal work)**, in addition to a deep basic knowledge in each discipline, seminars, problem based learning activities, exercises and laboratory practices are used with a clinical orientation.

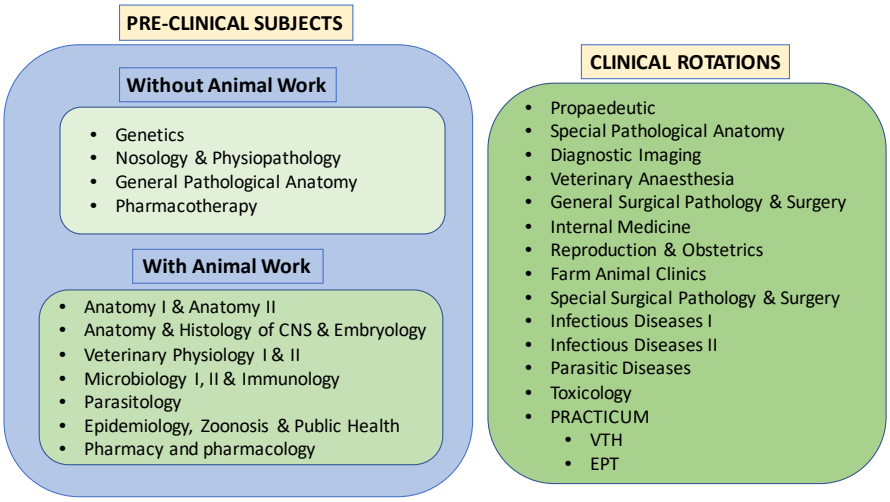


Figure 3.3.- Distribution of animal and non-animal work in pre-clinical and clinical subjects.

The clinical relevance of gross **Anatomy** is highlighted in theory lectures, seminars and practices. For instance, problem based learning is used to introduce the student in clinical pathologies affecting the locomotor apparatus. Practices on anatomical specimens and live animals are always carried out in a reduced group (4-5) for a better understanding of the normal anatomy and strategical comparison with abnormal anatomical specimens. In **Genetics** and **Embryology,** the basis of key inherited pathologies is considered.

In **Physiology** seminars and practices are complemented with discussions, exercises, simulations or presentations focused on key physiopathological processes affecting the domestic animals. Complementarily, underpinning knowledge on **Nosology** and **Physiopathology** is acquired through lectures and problem based learning seminars comprising key pathological disorders affecting different organs and systems.

In **General Pathological Anatomy**, the main pathogenic mechanisms are related with their correspondent lesions at cellular, tissue and organic levels. As an advance for future clinical knowledge, teaching is aimed at understanding how general etiological agents are linked to typical clinical signs from a macro and microscopical point of view.

Clinical thinking in **Bacteriology, Virology, Mycology, Parasitology and Immunology** is boosted by problem based learning activities and practices carried out in groups of 2-4 students. Routine and specialized diagnostic techniques are learnt in the context of clinical cases. For instance, the pathological effect of *Chlamydia abortus* is studied on infected cell cultures and by inoculation of chicken embryos, or protozoan diseases are diagnosed by working on samples from infested animals.

In **Pharmacy and pharmacology** students carry out an animal phase of a pharmacokinetic study, in which they administrate a drug and collect plasma samples at different predetermined times. This contributes to understand the importance of the proper disposition of drugs in the animal body, how to prescribe drugs and its legal implications, and to notify adverse effects of drugs to the National Pharmacovigilance Services. The clinical aspects of **Pharmacotherapy** are fully developed in seminars and practical activities where cases based learning is used to study different pathological situations, discussing the best treatment as well as alternative ones if subjacent illness or chronical diseases are present. Also, the students should discuss about the potential adverse effects of treatments or secondary effects that can appear, and consider an alternative therapy.

Clinical problems in **Epidemiology** are introduced by using the rabbit and goat breeding units from the Teaching Farm. Theoretical concepts of the statistical variables are related with the reality of animal health and production. This way, students become familiar with these variables before performing epidemiological data analyses, and also learn some of the recommended routines to safely explore animals, elaborating a basic questionnaire including productive and sanitary data such as, absence or presence of clinical sings (dermatitis, mastitis, diarrhoea and others; productive records of rabbit does or goats).

3.1.5.- Description of the core clinical rotations and emergency services and the direct involvement of undergraduate students in it.

3.1.5.1 Organization of the clinical rotations.

As mentioned above a rotation model is followed by the subjects of the 3rd, 4th and 5th years (5th-10th semesters) to enhance the student's immersion in real professional scenarios (**Table 3.1.5**).

- **5th-9th semesters. Clinical rotation modules.**
  - Students within the same semester are assigned into modules (5 rotation groups) of approximately 20 students to rotate among subjects on a 2 weeks' basis. In each rotation, students are additionally split into subgroups of 2-10 students depending on the modality of teaching: seminars, case studies to develop evidence based medicine, specialized laboratory diagnosis, clinical visits to farms (ruminants and pigs, mainly) and clinical practices in the **VTH** (small animal and equine).
  - A number of hours of direct hands-on work with individual patients and herds, making use of relevant diagnostic data are compulsory in any rotation.
- **10th semester. PRACTICUM.**
  - During **PRACTICUM** students are assigned into rotation groups for a period of 15 weeks.
  - Each group expend **6 weeks in the VTH** (2-4 students per group), **4 weeks in a selected placement (EPT)** (one student per EPT), **2 weeks in abattoir** (1-2 students per abattoir), **2 weeks in the VTF** (4-5 students per group), and **1 week in a Food Pilot-Plant/Food Industry** (**FPP,** 10 students per group). Rotations in the **VTH** and **EPT** -10 weeks in total- involve different clinical services of direct clinical animal work.
  - At **VTH** students are allocated among different clinical services, which also involve two 12 hours shifts.
    - For 2 weeks, they are focused in medicine and surgery of companion animals: *Anaesthesia, Diagnostic Imaging, Surgery, Dermatology, Cardiorespiratory, Internal Medicine, Ophthalmology, Clinical pathology and Reproduction*.
    - For 4 weeks, students rotate among the following services:
      - *Emergency and Critical Care Service and Animal Ethology* (1 week),
      - *Pathological Anatomy* (1 week),
      - *Equine Medicine, Surgery and Reproduction* (1 week),
      - *Ambulatory Cattle Clinics* and *Emergency* (1 week).
  - During the placements (**EPT**, 4 weeks) students are supervised by veterinary practitioners who allow them to deal with all aspects of routine clinics. See 3.1.8 for further information.
  - During the rotations in the **VTF** (2 weeks) students are devoted to livestock units of porcine, bovine (dairy and beef cattle), equine, caprine, ovine, rabbit and poultry. During this period, students are also involved in any clinical problem affecting those animals.
  - Abattoir Practical Training (**APT**, 2 weeks). During **APT** one or a pair of students are involved as an Official Veterinarian Inspector (OVS) in the day-by-day activities of the abattoir under direct supervision of an official vet. All abattoirs are selected and agreed with the Regional Zoonosis and Food Safety Services of the Regional Authority for Public Health. Students follow the timetable of the abattoir and perform all activities as an OVS: documents review, hygienic infrastructure and performance by abattoir workers, ante, in-limite and post-mortem inspection, laboratory analyses (trichina and microbiological contamination and others) and sampling (official residue program), offal and SRM (Specified Risk Material control). Most of the abattoirs slaughter swine, cattle and small ruminants, and other are specialized in poultry or swine. **See 3.1.6** for further information.
  - Food Pilot Plant-Food Industry (**FPP**, 1 week). During FPP a ten-students group is assigned to visit and evaluate regional food industries in order to check, at real conditions, the development of the food production chain in a company. Also, to highlight the role played by a vet professional in this area of expertise. Students know, in situ, routine working day in food industries where different products (fresh, cured and cooked meat products, dairy, winery, brewery, bakery…) are elaborated. These visits (3-4 h) are in food companies located in Murcia Region or its surroundings. All of them are provided with high hygienic and technological standards. The students go by public or private transport. Each visit is supervised by the lecturer and the manager of the company or any other technical staff from the enterprise. Prior to and after the visit, students meet twice with the academic in charge (3-4 h, mandatory), who guides them to fulfil a report with different tasks and questions related with a practising hazard analysis and critical control point (HACCP) design.

3.1.5.2. Activities carried out by students in the clinical rotations:

- **Propaedeutic.**
  - Systematic clinical examinations of all the organic systems are carried out in small groups (4-5 students).
  - Dog is the main live model but also work sessions are devoted to equine, cow and exotic animals (one day each). Besides, students work with real clinical cases in which they must use results obtained from clinical examination, haematology and biochemistry (including endocrine data), fluid analysis, etc. Students have to interpret correctly the information, make a differential diagnosis and choose the most appropriate diagnostic tests for a confirmatory diagnosis.
- **Special Pathological Anatomy.**
  - This is an annual subject where students take a 2 weeks' rotation in each semester.
  - Modules are subdivided into two groups of 10 students, which expend 7 days of work in the necropsy room in each semester.

- In the first semester rotations involve 20 hours of practical work, 9 h seminars: students expend 1 day in biosecurity topics and learning how to collect and process tissue samples from abattoir organs; 2 days in oral and written description of lesions from abattoir organs; 3 days in a necropsy of domestic mammals and writing the necropsy report; 1 day in a bird necropsy and writing the necropsy report.
- In the second semester rotations involve 27 hours of practical work and 9 h seminars: student expend 4 days performing necropsies or working with selected histopathological images, and 3 days describing and diagnosing clinical diseases affecting organs obtained from the abattoir. Additionally, all students participate in two seminars about macroscopic and microscopic lesions.

- **Diagnostic Imaging.**
  - Before starting the clinical rotations, the students of each module attend two sessions of radiographic interpretations (4 h for small animals and 2 h large animals), one session of CT and MRI interpretations (2 h) and one session about ultrasonography interpretation (3 h for small animals and 1 h for horses).
  - During clinical rotations, the module is divided in several groups of 3-6 students (depending on the number of students of each module). They spend six days (4 h/every day) at the hospital and under supervision of teachers the students are involved in the different imaging techniques (radiology, ultrasonography, computed tomography). They participate in the positioning of the animals to take radiographs, preparing the animal to perform ultrasound exam and CT study.
- **Veterinary Anaesthesia.**
  - Students are divided into 2 submodules ranging from 7 to 10 students each. Both submodules change their position in alternant days, and while one submodule is involved in the clinical rotation (5 days) the other one is developing supervised teamwork (5 days).
  - The submodule involved in the clinical rotation is divided in smaller groups of 2-5 students, depending on the daily clinical cases attending at the **VTH**. Always under staff supervision, students are directly involved in the design and discussion of anaesthetic protocols, calculation of doses and the administration of anaesthetic and analgesic drugs. They also perform venoclysis, anaesthetic inductions, orotracheal intubations and monitoring. Fulfilling the anaesthetic records and supervising patients' recovery are also among their duties.
  - On their off-clinic days, students are exposed to evidence medicine based critical discussions on a relevant topic in anaesthesia including biosecurity, anaesthetic equipment, anaesthetic monitoring and rational design of sedative and anaesthetic protocols for different domestic species. Within these days, the students are instructed in anaesthetic procedures such as venoclysis, anaesthetic induction, orotracheal intubation, etc, by e-learning with video tutorials.
  - Complementarily, all the students are called to participate in the study and discussion of a series of selected clinical cases, to boost his clinical reasoning in veterinary anaesthesia.
- **General Surgical Pathology & Surgery.**
  - The rotation in this subject includes a total of 8 sessions of direct work with surgical equipment, biomodels and cadavers.
  - Activities and topics include on-site practice about the operating theatres, surgical equipment, asepsis (patient, surgeon and equipment), dressing, sutures and cures.
  - Diverse techniques associated to skin surgery are practiced in depth.
  - Also, in small groups (4-5) students must prepare and present a selected topic on general surgery in domestic animals.
- **Internal Medicine (Medical Pathology)**.
  - All students of each module are distributed among the different Clinical Services of the **VTH** in groups of approximately 5 students.
  - As this is an annual subject, in each semester students expend 2 days in the *Internal Medicine Service*, 2 days in *Cardiology*, 2 days in *Ophthalmology* and 1 day in the *Equine Medicine*. Under direct supervision students are responsible for managing the clinical cases which attended the consultations each day. Students are directly involved in carrying out a correct anamnesis and physical examination, establishing a series of differential diagnoses, justifying the prescription of complementary clinical tests, figuring out a diagnosis, prescribing a treatment, giving a prognosis and informing the owner. They also complete the medical records of the patient and collect all the information in relation to the complementary examinations. Direct clinical work with patients is complemented with 1 session of clinical cases on *Dermatology* and 2-3 days of scientific review and evidence based medicine work on a selected clinical case.
  - Additionally, every student must take a 24h shift per semester in the *Emergency and Hospitalization Service* of the **VTH**, either in small animal or equine. During the shifts students join the staff and take part in the supervision of the hospitalized patients, included those in intensive care, or in surgery.
- **Reproduction & Obstetrics.**
  - Students' tasks are scheduled in different scenarios. In the *Reproduction Service* of the **VTH** students (groups of 5) expend a total of 3 days. During 2 days, they are involved in the clinical examination, diagnosis and treatment (surgery included) of those patients attending the service on that day. In addition, the students take care of a hospital stay (12 hours) during which they participate in the emergency care, as well as in the administration of the necessary care to hospitalized patients. Complementarily, evidence based medicine is

boosted by working on a real clinical case study of pathology of reproduction (1 day). Students are expected to make oral presentations on the potential diagnosis and treatment.

- In the **VTF** (2 days) students perform sessions of reproductive management of porcine (1 day) and caprine (1 day) species. In both situations, students are involved in the reproductive management of the male (semen obtaining and preparation of artificial insemination doses) and of the female (oestrus detection, potential hormonal treatments needed for oestrus synchronization and/or induction; insemination procedure and pregnancy diagnosis). Students are provided with a script with the tasks to be performed. Video tutorials are also used to introduce the students in their tasks.
- Finally, in groups of approximately 20 students, they participate in seminar sessions (18 hours) during which a set of activities are carried out under direct academic instruction. The purpose is to guide the students throw literature review of some key topics in animal reproduction**.** Topics are chosen according to the students' concerns or may be provided by the teacher. In any case, students are provided with a working script and bibliography for them to prepare a report and make an oral presentation of the seminar. Subsequently, a colloquium among classmates is established.

- **Farm Animal Clinics.**
  - Rotations involve a total of 21 hours of clinical work with cattle, small ruminants and pig.
  - In small groups, students visit 3 cattle farms and are directly involved in clinical herd health activities (ambulatory clinics).
  - Clinical work with small ruminants and pigs is complemented in the VTF, where students are involved in the clinical management and treatment of pathologies affecting these species.
  - Complementarily, seminars are also held to boost clinical thinking and evidence based medicine discussions.
  - The rotation also includes a training in disease prevention systems in farms.
- **Special Surgical Pathology & Surgery.**
  - During the rotations students are exposed to 3 days in the small animal surgery (including traumatology) at the **VTH**.
  - Prior to surgery students are directly involved in the anamnesis, physical examination and evidence based medicine discussion of the most appropriate diagnostic and therapeutic techniques for each patient. Once in the surgical theatre, 2-3 students of the module directly participate in the surgical scenario assisting the surgeon, while the remaining students follow the surgery by high definition video projection in a separate room and under direct supervision of another surgeon (surgery lecturer). The selected students participating in the surgery among surgeries.
  - Students also expend 3 days in surgical practice with dog cadavers. The most common surgeries in thorax (thoracotomy, thoracoscopy, tracheostomies), abdomen (gastrotomies, splenectomies, cholecystotomies) and eyes (entropion, evisceration and enucleation) are performed.
  - A whole session devoted to diagnosis and treatment of equine lameness is also included in the rotation.
  - Finally, in groups of 2-3 people all the students must work on a selected clinical case according to the methodology of evidence based medicine.
- **Infectious Diseases I & Infectious Diseases II.**
  - In small groups (7-8 students) students participate in clinical visits to farms (cows, small ruminants, exotics are the most common) presumptively suffering from infectious processes. If required, students participate in sampling of fluids or tissue for further processing in the laboratory. This is complemented by some journeys of laboratory work.
  - In the laboratory, students either work with samples taken from patients during the visit to the farms or with those submitted to the Department of Animal Health. They are aimed at getting a diagnosis (bacteriological isolation, PCR reading…) as well as at discussing the prognosis and potential treatments for the clinical cases.
  - Topics (2-3 students/each) on herd health or infectious diseases of small animals are also reviewed in depth, presented and discussed with classmates
  - Finally, during the rotations students are also involved in problem solving of 4-5 selected clinical cases.
- **Parasitic Diseases:**
  - Rotations include 9 sessions of laboratory work, divided by the different host species, where students work at the bench with samples obtained from animals affected by parasitic diseases. During these sessions students conduct etiological diagnosis and discuss prognosis and potential treatments.
  - Additionally, clinical visits to farms of different production species are organized in groups of 8 students for *in situ* management and discussion of parasitic diseases. If necessary, samples are taken for further processing and analysis in the lab.
  - Also, 2 sessions are devoted to seminars where students work cooperatively to solve virtual clinical cases with debate and discussion.
  - Finally, in groups of 2-3 students, a published research paper on a topic of parasitic diseases is presented and discussed with classmates at the end of the rotation.
- **Toxicology.**
  - Rotations involve laboratory work in the *Service of Diagnostic Toxicology* of the **UM**, as well as field work and clinical sessions. Students are instructed in analytical techniques for toxicological diagnosis and then

directly involved in the processing and diagnosis of at least one clinical and one alimentary case of toxicology selected from those submitted to the service during the rotation.

- Additionally, students expend a whole journey in the Wild Animal Recovery Centre of Alicante where they learn not only clinical management of intoxicated patients but also management and knowledge about wild species. A gastric lavage of a wild bird is routinely done and also a discussion on clinical cases related with wild animals.
- Finally, students are also involved in a session of evidence based medicine about forensic toxicology with real cases obtained by the Council Zoonosis Service of Murcia.

- **PRACTICUM**.
  - Groups of 1-5 students are incorporated into the current working protocols of intra and extramural clinical scenarios. They are always supervised by academic staff who are also responsible for evaluating the level of achievement of the Day 1 competences.
  - At the **VTH** students join the hospital staff responsible for each medical consultation, surgery or obstetrics. Students do not only do things but also are requested to keep a record of activities which allows them to produce a final clinical report that is assessed by the assigned clinical tutor. Reports must describe the clinical cases in a comprehensive, realistic and professionally way, and include a discussion based on the literature.
  - During the rotation in *Pathological Anatomy* students actively participate in the following activities: review of clinical cases, necropsies, taking and processing samples for microscopical study, staining techniques (regular and special) and pathology diagnosis.
  - In *cattle ambulatory clinics* students join the academics for diagnostic work in farms where clinical cases and emergencies have been notified. Students are responsible for assisting the clinical practice and also reporting all the clinical cases.
  - In the *Hospitalization Service* rotation students actively participate (1 week) in the treatment and care of hospitalized small animals for surgery or intensive care. In addition, in small groups (1-2), the students participate with the VTH Ethology specialist in one or two Ethology Ambulatory small animals home visits.
  - In the *Equine Medicine, Surgery and Reproduction Service*, students actively participate (1 week) in all clinical horse cases. Students are involved in the physical examination and management of the horses and they directly participate in the medical and/or surgical treatment of the pathologies diagnosed. During the stay in the Equine Service, students also take care of the hospitalized horses.
  - During 3 work days, students are involved in the clinical management and treatment of the patients attending the **VTH** in evening schedule.
  - The student take care of a hospital stay (12 hours on weekend or holiday and 12 hours- night schedule) during which they participate in the emergency care, as well as in the administration of the necessary care to hospitalized small animal patients.
  - Additionally, every student must perform an ovariohysterectomy and/or an orchiectomy on a dog or a cat.
  - Complementarily, all the **PRACTICUM** students are invited to participate in the Weekly Clinical Sessions in which participate all the **VTH** faculty members. The first session is held on Monday and the goal is to expose and discuss about the weekend patient cases. The second session is on Wednesday and consists of a patient case presented by a **VTH** faculty member.

Table 3.1.5. Clinical Rotations under academic staff supervision (excluding **EPT**).

	List of clinical rotations (Discipline/Species)	DURATION (days)	YEAR OF PROGRAMME
Intra-mural (VTH)	Propaedeutic/Dog, Cat, Equine, Cow, Wild and Exotics	11	3
	Special Pathological Anatomy/Dog, Small Rum, Equine, Cow, Pig, Birds	21	3
	Imaging Diagnosis/Dog, Cat, Equine,	10	3
	Veterinary Anesthetics/Dog, Cat, Equine,	10	3
	Internal Medicine/Dog, Cat, Equine	21	4
	Reproduction & Obstetrics/Dog, Cat, Pig, Cow, Equine, Small Rum	21	4
	General Surgical Pathology & Surgery /Dog, Cat	11	4
	Special Surgical Pathology & Surgery/ Dog, Cat, Equine	11	5
	PRACTICUM: Medicine and Surgery of Companion Animals: Anaesthesia, Diagnostic Imaging, Surgery, Dermatology, Cardiorespiratory, Internal Medicine, Ophthalmology, Clinical Pathology and Reproduction	10	5
	PRACTICUM: Equine	5	5
	PRACTICUM: Special Pathological Anatomy	5	5
	PRACTICUM: Anaesthetics	7	5
Ambulatory clinics	Farm Animal Clinics		
	PRACTICUM: Ambulatory	5	
Depart Animal Health	Infectious Diseases I & II/Dog, Cat, Pig, Cow, Equine, Small Rum, Birds	21	
	Parasitical Diseases/Dog, Cat, Pig, Cow, Equine, Small Rum, Birds	21	
Toxicology Service	Toxicology/Dog, Cat, Small Rum, Wild & Exotics		

FSQ & VPH	Food Hygiene I and Food Hygiene II/Cow, Small Rum/Pig/Rabbits	22	
	PRACTICUM: Visits to abattoirs and food industries	10	See Tables 3.1.6 and 3.1.7
	PRACTICUM: HACPP	5	
ELECTIVES	Veterinary Clinical Pathology		
	Ecopathology of Wild Animals		

3.1.6.- Description of the teaching in abattoirs and in premises for the production, processing, distribution/sale or consumption of food of animal origin.

Teaching of **Animal Production** involves both basic subject as Animal Nutrition, Ethnology and Animal Handling, Ethology, Animal Welfare and Animal Protection, and other more specific subjects such as Animal Production, Animal Breeding & Welfare, and Agrarian Economy. The production of cattle (milk and meat cows), sheep (milk, meat and woo), goat (milk and meat), pig, birds (chicken and eggs), rabbits and fish are studied in detail. Equines are also considered regarding its husbandry.

- In **Animal Nutrition**, students are taught about the basics of animal nutrition and feeding. Also, their impact on animal health and production rates, the environment and the food security for humans is considered in theory and practical activities. Practical work in the **VTF** involves definition of different rations for all species as well as evaluation of the nutritional status of animals.
- A broad knowledge about the different breeds and their associated productive aptitudes is considered in **Ethnology and Animal Handling**. Direct work with productive species is carried out in the **VTF** to learn core tips regarding animal husbandry.
- Students are broadly taught on animal behaviour and welfare in **Ethology, Animal Welfare and Animal Protection**. The typical ethograms of all domestic species (pets included) are studied in detail. A few hours of direct animal work is devoted to this purpose in the **VTF**. Abnormal ethograms are also considered and discussed to evaluate their impact on the herd and the production.
- The whole reality of animal production of ruminants, pigs, rabbits, birds and fish is considered **Animal Husbandry, Farm Facilities & Welfare, Agrarian Economy, and Animal breeding & Welfare**. The genetic, nutritional, environmental, health, economy and welfare aspects are considered for each animal species and production (milk, meat, wool, etc). In the **VTF** students are devoted to evaluate how all those aspects influence on the yield. Animal welfare is particularly considered on site with regards to the dimension and conditions of the stables and cages. Students are also requested to produce a full productive project for a selected animal species. The projects must be reasonably feasible and accomplish all the legal requirements imposed by welfare.

Teaching in abattoirs, food processing plants, markets and food consumption premises. It is carried out in **Food Hygiene, Inspection and Food Control (I) and (II)**, in **Food Security,** in **Food Technology** and for 2 weeks during the **PRACTICUM**.

- **Food Hygiene, Inspection and Food Control (I).**
  - *Laboratory and desk based work*: each student (group size 20 per teacher) spends 20h in the laboratory to learn the following analytical procedures to determine food quality and food microbiology, and food authenticity:
    - Proximate composition of food and nutritional labelling. Analysis of protein, total fat, ash, carbohydrates and moisture, calculation of caloric value.
    - Food microbiology. Determination of total aerobic mesophylls, clostridium, coliforms, enterobacteria, streptococci group D of Lancefield and molds and yeast using classical methods and biochemical identification of enterobacteria. Also, the determination of coliforms and fecal enterococci in water.
    - Control quality of water. Determination of conductivity and different forms of chlorine in tap water for use in the food industries.
    - Control quality of honey. Analysis of moisture, acidity, total insoluble solids, identification of granules of pollen.
    - Control quality of eggs. Evaluation of the external and internal parameters of eggs.
  - *Seminar work*: each student (group size 20 per lecturer) spends 6h in the lecture room to learn the importance of foodborne diseases as communicable disease and the role for the maintenance of public health. In addition, learn about the surveillance organisms and the procedure to investigate a foodborne disease. The student prepares a practical work based on the real cases of the outbreak of foodborne disease.
  - *Visits to the Catering Services of the Murcia University*. The objective of these visits is that the students know *in situ* the day-to-day working activities in two catering facilities of Murcia University (Social Center and Faculty of Economy), and receive training about the hygiene and quality control of the whole process. They are trained on the manipulation of food and raw material, dish preparation, maintenance and serving. Besides, they receive information about hygiene and sanitary control of installations, staff and activities,

HACCP, etc. This training is taught in collaboration with the Manager of the Service of Ambient Quality, Food Safety and Nutrition of the Murcia University.

- **Food Hygiene, Inspection and Food Control (II).** Practical training is divided into 4 laboratory work sessions (total 12h), 1 visit to abattoir (6h, mandatory), 1 l visit to the Fish Central Market (4h, mandatory) and 1 visit to the Milking Goat Room of the VTF.
    - *Laboratory activities* are divided by animal origin foods: *meat and meat products, raw and processed milk and dairy products, and fishery products*. During these sessions students (group size <20) receive training about the main analytical methods to apply in the quality control of foods from animal origin intended for human consumption. That includes, among others, effects of stress on meat quality (pH to control PSE and DFD meats), meat products frauds, quality of raw milk (fat and protein composition), antibiotics, validation of heat treatments (inactivation of food enzymes), grade of freshness in fishery products (sensory analyses according to EU scales and QIM method content, total volatile nitrogen, trimethylamine, ammonia), etc.
    - *Abattoir*. Students, in small groups (<5), visit a general abattoir (all species abattoir: swine, cattle, equine and small ruminants) "Matadero Cabezo de la Plata" (25.5 km from Campus de Espinardo, 35 min drive) for 6 hours), where an Associate Lecturer, who acts as on-site OVS, explains the daily work. The main objective of this visit is to learn *in situ* how to proceed at the reception of the animals, with ante-mortem and post-mortem inspection, welfare protocols, at the stunning and the slaughter process, at the official sampling, in the management of the specified risk materials and other animal by-products, health marking, controlling meat storage temperature, HACCP, etc.

Table 3.1.6.- Abattoir visited for practical training in Food Hygiene, Inspection and Food Control (II) subject in the last three academic years indicating animal species and number of visitations, and students and hours per visitation.

Academic year	Abattoir	Animal species	Visits (v)/ Students (s)/ Hours (h)*
			Food Hygiene, Inspection and Food Control (II)
2016/2017	[1]"Cabezo de la Plata" (Murcia)	Swine, cattle, equine and small ruminants	25v /4s /6h
2015/2016	[1]"Cabezo de la Plata" (Murcia)	Swine, cattle, equine and small ruminants	28v /4s /6h
2014/2015	[1]"Cabezo de la Plata" (Murcia)	Swine, cattle, equine and small ruminants	30/5s/6 h

*V=Number of visitations to the abattoir in the academic year; S= number of students per visitation; H= hours of the visitation/training.

- *Central fish market*. Students are aimed at learning the Official Controls with respect to fishery products and live bivalve molluscs. They are joined by two academics (one of them on-site Official Veterinarian). The main Fish Market is in Alcantarilla (10 Km from the Faculty). It is one of the most important central markets of fish and marine products in Spain, where a wide range of Mediterranean and Atlantic species are classified and distributed all around the country. Students must identify fish species, control the minimal fish size, the labelling, perform sensory categorization and use official sampling methods for laboratory analyses.

Table 3.1.7.- Central fish markets visited for practical training in Food Hygiene, Inspection and Food Control (II) subject in the last three academic years indicating animal species and number of visitations, and students and hours per visitation.

Academic year	Central fish market	Visits (v)/ Students (s)/ Hours (h)*
		Food Hygiene, Inspection and Food Control (II)
2016/2017	"Alcantarilla" (Murcia)	10v /10s /4h
2015/2016	"Alcantarilla" (Murcia)	10v /11s /4h
2014/2015	"Alcantarilla" (Murcia)	10v /15s /4h

*V=Number of visitations to the abattoir in the academic year; S= number of students per visitation; H= hours of the visitation/training.

- *Dairy milking hygiene*. In the milking area students learn about the hygienic conditions to minimize microbial contamination of raw milk. Also, they perform the basic analytical methods to determine the aptitude of raw milk for heating treatment (alcohol test, reductasimetry). They also take surface samples to control the cleaning and disinfection plan of the milking system.

- **Food Security.**
    - *Laboratory and desk based work*, where each student (group size 20, per lecturer) spends 10 h in the laboratory carrying the following practical work:

- Determine how different intrinsic factors of food products (pH, acidity and salinity) and extrinsic parameters of food manipulation (Tª and time of storage) can affect to the survival and growth of pathogenic food bacteria using microbiological analysis.
- Use the ComBase program https://www.combase.cc/index.php/en/ to analyse the growth curve of the pathogens in food, discussing individually the results.
- Evaluate the cleaning procedures and the ambient hygiene in the food microbiology, as prerequisite of the HACCP plan.
- Analyse of food labels and prepare a check list related to the presence of food allergens.

- *Seminar work*. Students (group size 20, per lecturer) spend 5h practicing Hazard Analysis and Critical Control Point (HACCP) design, implementation and validation with practical cases in different foodstuff.

- **Food Technology.** Practical Training is divided into 7 laboratory work sessions, 3 located at the laboratory and the other at Food Pilot Plant (**FPP**). Total 21h plus 1 seminar (3 h).
  - *Laboratory work*. Students (group size around 20) receive training about technology treatment of food as well as the influence of the different technologies in the final food properties (emulsion properties, drying, influence of thermal treatment in food properties). At **FPP** the students carry out the elaboration of different products such as: fresh cheese, jam, sausage and canned food; and identify the main parameters of production involved as well as the equipment necessary.
  - *Seminar*. A set of activities are carried out under direct academic instruction. The purpose is to guide the students throw literature review of some key topic in food technology. Topics are chosen according to the students' interests or may be provided by the teacher. In any case, bibliography is given for them to prepare a report, presentation and discussion. For this purpose, students are split into groups (3-4) which represent different sectors of the food chain (industry, consumer and inspector).

- During the **PRACTICUM** students expend 2 weeks in a selected abattoir, either of general use or specialized by species (pig, cows, small ruminants, poultry, rabbit). A maximum of 2 students are allowed at the same time in each premise. During this period, the students must deal with the usual tasks performed by the Official Veterinarians of Public Health, who act as supervisors. Students keep a daily record of activities and must produce a report that is assessed by the assigned academic tutor.

Table 3.1.8.- Abattoir visited for practical training in PRACTICUM subject in the last three academic years indicating animal species and number of visitations, and students and hours per visitation.

Academic year	Animal species	Abattoir name and location (all within the Region of Murcia). Distance range 25 to 60 km)	Visits (v)/ Students (s)/ Hours (h)*
2016/2017	**Pork**	"ElPozo Alimentación S.A" (Alhama de Murcia)	11v/2s/40h
	Pork	"Hermanos Escámez Sánchez S.L." (Bullas)	7v/2s/40h
	Rabbit	"Carnesana" (Fuente Álamo)	7v/2s/20h
	Small ruminants	"Matadero Jumilla" (Jumilla)	1v/1s/50h
	Small ruminants	"Matosa Matadero Industrial" (Totana)	8v/2s/40h
	Ungulates (pork. cattle. small ruminants)	"Matadero Industrial TorrePacheco" (Torre Pacheco)	5v/2s/50h
	Ungulates (pork. cattle. equines. small ruminants)	"Cabezo de la Plata S.L." (Murcia)	12v/2s/50h
	Ungulates (pork. cattle)	"La Comarca" (Lorca)	6v/2s/50h
2015/2016	**Pork**	"ElPozo Alimentación S.A" (Alhama de Murcia)	8v/2s/50h
	Pork	"Hermanos Escámez Sánchez S.L." (Bullas)	7v/1-2s/40h
	Pork	"Joaquín Escámez S.L." (Totana)	8v/1-2s/40h
	Pork	"Cárnicas Ciezanas S.A." (Cieza)	8v/1-2s/50h
	Poultry	"Matadero Pujante" (Beniel)	4v/1-2s/40h
	Rabbits	"Carnesana" (Fuente Álamo)	8v/1-2s/20h
	Small ruminants	"Matadero Jumilla" (Jumilla)	7v/1-2s/50h
	Small ruminants	"Matosa Matadero Industrial" (Totana)	8v/1-2s/50h
	Ungulates (pork. cattle. equines. small ruminants)	"Cabezo de la Plata S.L" (Murcia)	7v/2s/50h
	Ungulates (pork. cattle. equines. small ruminants)	"Mercamurcia" (Murcia)	4v/2s/50h
	Ungulates (pork. cattle. small ruminants)	"Matadero Industrial TorrePacheco" (Torre Pacheco)	9v/1-2s/40h
	Ungulates (pork. cattle)	"La Comarca" (Lorca)	9v/1-2s/50h
2014/2015	**Pork**	"ElPozo Alimentación S.A" (Alhama de Murcia)	11v/2s/50h
	Pork	"Joaquín Escámez S.L." (Totana)	4v/1-2s/40h
	Pork	"Cárnicas Ciezanas S.A." (Cieza)	4v/1-2s/50h
	Pork	"Hermanos Escámez Sánchez S.L." (Bullas)	3v/1-2s/40h
	Poultry	"Matadero Pujante" (Beniel)	4v/1-2s/40h
	Rabbits	"Carnesana" (Fuente Álamo)	3v/1s/20h
	Small ruminants	"Matadero Jumilla" (Jumilla)	4v/1-2s/50h
	Small ruminants	"Matosa Matadero Industrial" (Totana)	5v/1-2s/50h

	Ungulates (pork. cattle. equines. small ruminants)	"Cabezo de la Plata S.L" (Murcia)	11v/2s/50h
	Ungulates (pork. cattle. equines. small ruminants)	"Mercamurcia" (Murcia	12v/2s/50h
	Ungulates (pork. cattle. small ruminants)	"Matadero Industrial TorrePacheco" (Torre Pacheco)	10v/1-2s/40h
	Ungulates (pork. cattle)	"La Comarca" (Lorca)	4v/1-2s/50h

*V=Number of visitations to the abattoir in the academic year; S= number of students per visitation; H= hours of the visitation/training.

Table 3.1.9.- Food industry visited for practical training in PRACTICUM subject in the last three academic years indicating animal species and number of visitations, and students and hours per visitation.

Academic year	Food sector	Food industry name and location	Visits (v)/ Students (s)/ Hours (h)*
2016/2017	**Bakery products**	"La Niña del Sur" (Alquerías)	1v/4s/4h
	Brewery products	Estrella de Levante (Espinardo)	2v/17-18s/4h
	Cured meat products	Aromais Serrana (Balsapintada)	1v/17s/4h
	Cured meat products	Los Quijales (Lorca)	1v/7s/4h
	Dairy products	AMECO Quesería artesanal (Fortuna)	3v/7-18s/4h
	Wine products	Carchelo Bodegas	1v/15s/4h
2015/2016	**Bakery products**	"La Niña del Sur" (Alquerías)	3v/15s each/4h
	Candy products	Jake Golosinas (Molina de Segura)	1v/15s/4h
	Dairy products	AMECO Quesería artesanal (Fortuna)	2v/12-14s/4h
	Vegetables products	Caprichos del Paladar (Alquerías)	1v/18s/4h
	Wine products	Bodegas Finca Luzón	3v/6-7s each/4h
2014/2015	**Bakery products**	"La Niña del Sur" (Alquerías)	2v/14-16s/4h
	Dairy products	El Barranquillo (Fuente Álamo)	1v/15s/4h
	Dairy products	AMECO Quesería artesanal (Fortuna)	2v/6s each/4h
	Dairy products	Palancares Alimentación (Bullas)	1v/5s/4h
	Juices and drinks	AMC Zumos (Espinardo)	1v/6s/4h
	Pickled products	Abriliva (Lorca)	1v/14s/4h
	Vegetables products	Tropicana Alvalle (Puente Tocinos)	1v/5s/4h
	Wine products	Bodegas Finca Luzón	3v/6-7s each/4h

*V=Number of visitations to the abattoir in the academic year; S= number of students per visitation; H= hours of the visitation/training.

3.1.7.- Description of the selection procedures of the Electives by the students and the degree of freedom in their choice.

The 4 Electives of the curriculum are in the 5th semester (3rd year) and Curriculum hours (**Table 3.1.10**) taken as electives for each student is summarized in **Table 3.1.11.** Students are expected to take 6 Elective ECTS out of the 24 in offer by 2 of the Electives (3 ECTS each). A maximum number of students 32-36 are admitted per subject. Thus, the total number of potential seats for Electives is around 136-140, which guarantees admission for all of them. When the number of applications to an Elective overtakes the number of available seats in offer, a grading mechanism based on the following criteria approved at University level is applied:

- Students who failed to enrol in a previous year have preference.
- Students are listed according to the average mark obtained in subjects of the 2nd year of the Veterinary Degree.
- In case of a tie, available seats are assigned by draw.

Table 3.1.10.- Curriculum hours taken as electives for each student.

SUBJECTS	A	B	C	D	E	F	G	H
Veterinary History	18	16	36				2	**72**
Taurology	22	7	11	5			2	**47**
Ecopathology Wild Animals	12	6			12		6	**36**
Veterinary Clinical Pathology	14	7	9	13			2	**45**

A= Lectures; B= Seminars; C= Supervised self-learning, D= Laboratory and desk based work; E= Non-clinical animal work; F= Clinical animal work; G= Others: tutorial and evaluation; H= Total.

Table 3.1.11.- Number of students enrolled into the electives in the last three years are displayed in Table.

	2016/17	2015/16	2014/15	Mean
Veterinary History	36	27	20	**27.6**
Taurology	27	12	17	**18.6**
Wild Fauna Ecopathology	32	31	32	**31.6**
Veterinary Clinical Pathology	27	15	14	**18.6**

Alternatively, instead of Electives, students can accomplish the 6 optional ECTS by enrolling into different types of University Activities, which are officially approved by the **UM** (Credits Recognized for University Activities, Spanish abbreviated **CRAU** http://www.um.es/web/veterinaria/contenido/centro/secretaria/creditos-en-actividades-universitarias-crau-).

- **CRAU activities** include collaboration with Departments ("collaborator students"), placements for extra-curricular practices (clinics, abattoirs, farms or herd health management units), sport and cultural activities,

active cooperation in professional or social charities, scientific congresses and representation tasks. Placements for extra-curricular practices are regulated by the Centre of Orientation and Information of Employment (COIE). Thus, any potential destination (company) must sign a formal agreement with the **UM** to be eligible as a placement. On the other hand, the learning aims and outcomes of each placement are directly supervised by the Vice-Dean of the Veterinary Degree. Most of these placements are taken in summer months, once the academic years is up (**Table 3.1.14**).

- The most common ways of obtaining Elective Credits by University Activities (CRAU) in **FVETUM** are by applying for a seat as collaborator student within a Department or the **VTH**, and through placements for extra-curricular practices. Students can only choose placements for extracurricular practices after having passed 50% of the total ECTS (150). Among the elected destinations for placements, almost 90% of them are in small animal clinics. 150 hours of direct work accounts for 1 **CRAU.**

Table 3.1.14.-Figures illustrating the use of extra-curricular placements by Veterinary Students (data supplied by COIE).

	2013-14	2014-15	2015-16	2016-17
Students involved in placements*	41% (169/411)	39% (148/377)	41% (149/361)	Not available
Average hours per placement/student	296,5	326	260	Not available

*Percentage (%)= factual/potential).

3.1.8.- Description of the organization, selection procedures and supervision of the EPT.

External Practical Training (**EPT**) is a part of the **PRACTICUM** (4 weeks). The students must accomplish a minimum of 160 h of practices in external entities (e.g., veterinary clinics, veterinary hospitals, companies, academic institutions, scientific centers, administration institutes, etc.) in any of the areas linked to the veterinary profession. The organization of **EPT** depends on the Vice-Dean responsible for the **EPT**, with the support of two administrative staff and the institutional environment given by the COIE. Among other functions, COIE performs the administrative management of the practices and deals the legal binds (agreements) with the companies. Any student has access to the full list of available placements on the COIE website (https://www.um.es/web/coie/). Currently, more than 200 companies related to the Veterinary profession are listed. New placements can easily be added through signature of the official agreement (**Table 3.1.15**).

At different moments of the Degree, and particularly during the 8th semester, orientation meetings with students are carried out to explain the organization of **EPT** and how to apply through the COIE website. At the beginning of the 10th semester, students communicate the chosen company to the Vice-Dean. In most cases students carry out their **EPT** at their first choice. During the **EPT** students are supervised by two tutors, one academic (**UM**) and one veterinary practitioner from the company. The practitioner in charge of tuition is the one responsible for certifying the achievement of professional skills on-site, while the academic tutor evaluates a detailed report delivered by the student. As mentioned above, around 40% of students also choose placements for practical training during holidays of the 3rd to 5th years the Degree.

Table 3.1.15. Curriculum days of External Practical Training (**EPT**) for each student.

Subjects	Minimum duration (weeks)	Year of programme	Student distributions in the last three year (%)
Production animals (pre-clinical)*	4 (160 h)	5	-
Companion animals (pre-clinical)*			-
Production animals (clinical)*			**15,2**
Companion animals (clinical)*			**71,1**
FSQ & VPH*			**7,8**
Others * (wildlife animals)			**5,8**

The student can select the subject of External Practical Training among all the possible subjects related to the studies.

3.1.9.- Description of the procedure (e.g. logbooks) used to ascertain the achievement of each core practical/clinical activity (pre-clinical, clinical, ambulatory clinics, EPT) by each student.

The achievement of the competences of the curriculum is assessed through evaluation of learning outcomes. Thus, independently of its assignation -basic, pre-clinical, clinical, animal husbandry, animal health or food hygiene- each subject has a competence-based evaluation system, which pursues to guarantee that each graduated student has attained the competences of the curriculum. Thus, in most subject's evaluation not only includes the traditional theoretical exam but also a series of practical trials and verifications, which altogether guarantee that students not only know but also demonstrate competence in diverse professional fields. The most common way to verify this is through evaluation of hands-on work (continuous evaluation in some cases), demonstration of critical thinking and correct identification of problems related with diverse professional scenarios. Every modality of evaluation is pondered and students get a mark accordingly. All the information regarding the evaluation is described in detail in the teaching guides (TG).

Assessment of the Day One competences in **PRACTICUM** is carried out by both internal academic tutors (**VTH**, **VTF**) and external tutors (**EPT** and **APT**). After each rotation, students must write a specific report for each rotary: clinical cases

studied using evidence-based medicine from **VTH**, OVS activities at **APT**, **VTF** report activities, HACCP in **FPP** or agro-food company and the **EPT** report of activities. All those reports build (logbook) are assessed by the assigned internal tutors. Through logbook's evaluation and by the direct assessment of Day One Competences, both the internal and external tutors issue an assessment statement for each rotation. To illustrate this, in the case of the Clinical Rotations, the students receive a schedule with the activity to be carried out in each Rotation. The Clinical Teacher/Specialist from each Rotation must sign a weekly questionnaire evaluating the knowledge and technical skills demonstrated on-site. This includes attitude and behaviour. 60% of the grading comes from the results of those questionnaires. The remaining 40% comes from the report assessment produced by the student. The report must include the clinical cases which the student was directly involved with and discussion based on the scientific literature. A minimum mark of 5 out of 10 is compulsory for each rotation to be passed, and all rotations must be successfully passed to pass the **PRACTICUM**. The final mark of **PRACTICUM** comes from the pondered average mark obtained in each rotation.

During the 2016-2017 course, the academic tutors of **PRACTICUM** have participated in an *Innovation Educational Project* aimed at developing an **on-line logbook**, based upon the model of the Veterinary Faculty of the University of Las Palmas de Gran Canaria. This new logbook is in use at FVETUM during the present year (2017-18). Access is through the Virtual Campus (https://aulavirtual.um.es/portal) so that each rotation of the **PRACTICUM** has its own site. All the necessary resources for the student (description of activity, links to search legislation, articles research, etc.) and the folders where students have to upload reports and activities are available on-site. The tutors assess the logbook and also annotate the marks obtained during the on-site evaluation of hands-on work.

3.1.10.- Description of extension courses or non-curricular as a complementary source of students education.

Beside the curricular education and training of the students, FVETUM host several non-curricular but educational activities that in most of the cases are initiatives of individual AS, students or professional associations. FVETUM generally supervise the program and activities and provide the lecture halls and on request and if possible some additional support with financial aid (travel or accommodation of speaker…) or small gifts (pins, University books…). Some examples and student's attendance are presented in **Table 3.1.16**.

Table 3.1.16.- Optional courses proposed to students (not compulsory).

Courses:	2016/2017	2015/2016	2014/2015	Mean
Seminar Companion Animal Nutrition (15 h)	107	110	114	110
Conference on Science and Food Technology (15 h)	150	193	106	149
Course of Breeding, Maintenance and Pathology of Exotic Animals (40 h)	-	50	50	50
Course of Aquarius (25 h)	-	-	30	30
AVAFES-VEDEMA Course: Exotic Species (10h)	25	25	25	25

3.1.11.- Description of how and by who the core curriculum is decided, communicated to staff, students and stakeholders, implemented, assessed and revised.

As previously mentioned (**section 3.1.2**), **FVETUM** curriculum complies with the European and National regulations that define the curriculum frame, with the requirements of an Official Verification by ANECA. All Veterinary Establishments in Spain are under the same regulations and all issues are thoroughly debated and agreed within the Spanish Conference of Veterinary Faculties (http://www.cdve.es/), to provide homogeneity and coherence to Veterinary education and to favour exchange and mobility of students.

To **modify the FVETUM curriculum**, it can be motivated by a major change based on legislation, or after a review and accumulated experience of the application. Minor changes can be carried out by the MONITOR program (http://www.aneca.es/Programas-de-evaluacion/MONITOR) and major should follow a VERIFICA program (http://www.aneca.es/Programas-de-evaluacion/VERIFICA). In any case the decision is made following a process that has to be approved by the Faculty Board and the University Council. The initiation can be taken "**top-down**" (from the Dean Team) or "**bottom-up**" (from the Departments, staff or students). In any case, it has to be justified and proposed to the Academic Management Committee and the Quality Assurance Commission, that will submit to the Faculty Board. For the current curriculum, the FB designated the Veterinary Curriculum Degree to generate a debate and proposal with the staff (throw the Departments), students representatives and stakeholders. After the proper debate and once consensued, it is proposed to the FB, that once approved will submit to the Academic and Planification Committee of the **UM** previously to be approved by the University Council. Finally, it will be sent to ANECA. **Implementation** follow a pathway under the supervision of the Academic Management Committee and the Quality Assurance Commission (SGIC) and under the direction of the Vice-Dean with competences in the Veterinary Degree and Dean. **Assessment and revision** of the curriculum follow an internal and external process. Internally the mentioned Committees and FB will track both processes. Externally will follow the MONITOR or ACREDITA programs. All procedures are under the frame and internal support of the Quality Unit of the **UM**.

The procedures for the QA of the Degree are fully described in Chapter 11. Since the approval of the Degree, no major changes have been introduced in the annual planning. The minor modifications and improvements are communicated to all parties through meetings and publication on the website, Virtual Campus, informative displays and social networks.

3.2.- Comments.

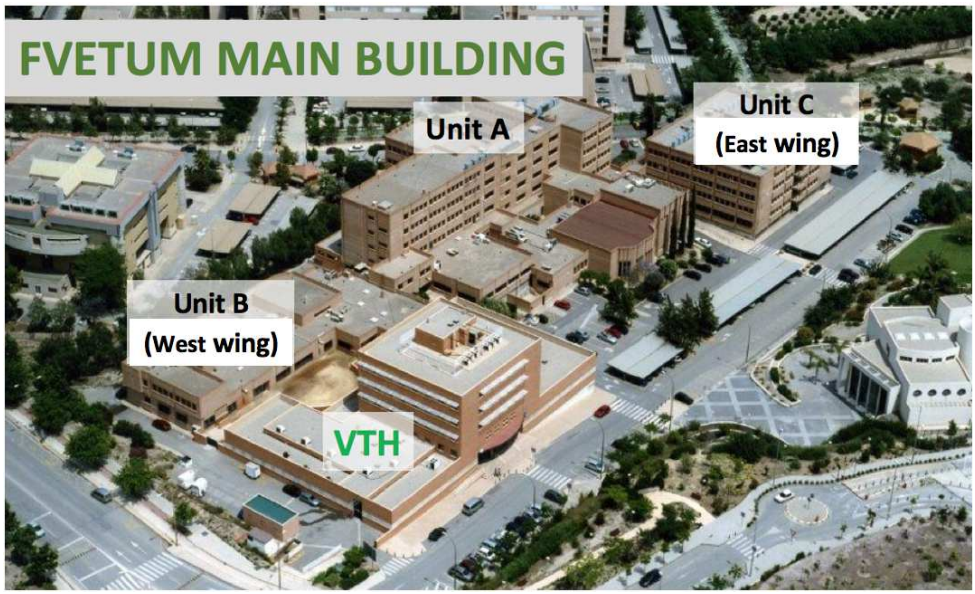
To present the comments of **FVETUM** Veterinary Degree we have structures as a SWOT analysis:

- Strengths:
  - The current curriculum includes a distribution of contents suitable for the acquisition of all the competences of the veterinary profession with an integration of the acknowledge for the one health concept.
  - Curriculum has a high level of direct teaching (30, 40 and 85% of ECTS), with an additional self-directed learning by the students.
  - There are a broad number of teaching modalities implemented. Many academics are involved in innovative teaching activities which are implemented in both theory and hands-on work.
  - There is a high degree of transference of research to taught content. For instance, animal reproduction, nutrition, anaesthesia, diagnostic imaging, animal medicine, etc.
  - Practical training has had a significant increase on Clinical Sciences, Animal Heath-Animal Husbandry and Hygiene, Security & Food Technology. There a system of rotations from the 3rd year of the Degree which establishes a factual period of hands-on work in professional scenarios. This is especially enhanced during the Practicum, when students take a period of 15 weeks of direct practical training (intra and extra-mural) which strengthens the achievement of the professional competences.
  - Other significant improvement is the establishment of rotation periods in which the student's complete hands-on practical's during time periods without theoretical teaching.
  - Internal and external premises have been consolidating for both, intra and extra-mural, where our students can develop extra-mural practical training (4 weeks).
  - Also, the inclusion of the Veterinary Degree Final Thesis in the current curriculum has improved the acquisition of different specific professional and scientific skills by the students.
- Weaknesses:
  - Due to national accreditation model, any potential change in the curriculum takes time and any improvement is delayed.
  - Horizontal and vertical integration is a reiterated issue after academic year analyses that need to be addressed.
  - Some clinics can be improved or implemented to cover a broader range of species, and more time for some clinics training. However, the curriculum may need and extension one semester for room for an adequate timeframe to carry out the broader training.
- Opportunities:
  - The ESVET visitation is an opportunity of revision and analyses of the current situation for improvement that together with the visitation recommendation will help to rank the issues to be address and the order to follow.
  - There is a clear protocol to modify and update curriculum (ANECA) and after the visitation the opportunity for improvement of the curriculum.
  - AUDIT must be renewed soon, which is another opportunity to further implement QA.
- Threats:
  - The increasing requirements to achieve the standard quality of the Veterinary Degree, also requests from the University a higher investment on infrastructures, maintenance and consumables, so in some issues may be difficult to be reached and fully cover all standards if there is a shortage of resources.
  - For clinical services, cases referral is essential to maintain and increase the cases for students training. The economic crisis had a negative impact in the last 5 to 6 years and the recovery is slow. Additionally, clinics and hospitals in the area of influence of **FVETUM** has improved also their services, and it is needed a renovation and improve the infrastructure for competitiveness and keep client's fidelity. This is especially important in equine for the special environment of the owner.
  - There is an observed trend in the students to reject the practical training on abattoir or other subjects dealing with dead animal, based on ethical issues on animal protection and rights. Even though students are informed and clarified about the holistic education to became veterinarian, mainly at the Welcome Week the 1st academic year and along Degree at the different related issues, some students refuse to attend to the rotation on abattoir as well as in the subjects related with. Fortunately, and so far, finally the dialog with the students made that all students did attend and acquire the competences and skills, but it has been considered a potential threat.
  - Although Veterinary Degree is based on a common European legislation there is some differences on the common view on some issues of the Veterinary Curriculum that can be further harmonised.

3.3.- Suggestions for improvement.

- As mentioned, Curriculum is always under review to fulfil the IQAS. Some issues have been raised such as the already mentioned horizontal and vertical coordination, and also the length in ECTS of some issues or the placement of some subjects at the curriculum.
- The innovation project to define the Logbook to verify and track the Day One Competences for **PRACTICUM** subject will also help to identify potential gaps not fully covered or properly addressed.

- Rotations within **PRACTICUM** is under review to ensure that all students achieve all clinics and other areas of training. Considering the positive experience related to the implementation of practical rotational periods, a proposal has been made by the Spanish Conference of Veterinary Faculties (after an analysis of the Veterinary education programs in Spain) to government decision- makers in the field of education (Ministry of Education, Culture and Sport) in order to extend to one additional semester, the duration of the Veterinary Degree in our county, which would allow a better redistribution of the overall on-site teaching.
- Strategies for maintaining and improving clients to clinics is a continuous need based on the strategic plan of **VTH**.
- Vocational selection of students with the acknowledge of the whole professional capacities of veterinarian (including food safety at abattoir) is already put in practice, but it is needed to advice students also at high school to be aware.



Standard 4

Facilities and equipment

4.1. Factual information

4.1.1. Description of the location and organisation of the facilities used for the veterinary curriculum

The core of the **FVETUM** infrastructures are 3 buildings, a **Main Building** divided into 3 units (A, B and C), the **Veterinary Teaching Hospital** (**VTH**) and the **Veterinary Teaching Farm** (**VTF**). The Main Building and the VTH are located at Espinardo Campus of the **UM**, in the Northern area of Murcia, 6 Km from downtown and very close to the A-7 and A-30 highways. Access is rapid and easy, as guaranteed by the three main accesses (North, East and South). Buses (up to 5 Lines) and Tram are currently communicating the Espinardo campus with the city of Murcia, and the main cities in the neighbourhood. **VTF** is less than 2 Km from the Main Building of the Faculty. It is well connected and easily reached by car, cycle or Tram. As a whole the FVETUM occupies a total area of 175,330 m^2 which corresponds to the Main Building (Units A, B and C) 15,330 m^2 and the **VTF** 160,000 m^2.

Table 4.1.1.- Description of the **FVETUM** buildings and facilities (details are in Appendix 3).

Building	Surface/Floors	Facilities
MAIN BUILDING	15.330 m^2	Unit A (Central Building), Unit B (Western wing) and Unit C (Eastern wing)
Unit A (Central Building)	5 floors	• Administrative offices and Dean's Office, • Reception, Library (seating capacity for 222 people), • Large Conference room (seating capacity for 390 people), • Small Conference room ("Sala de Grados", seating capacity for 70 people), • Meeting room (seating capacity for 25 people), • Four lecture theatres (see Table 4.1.2.1), • Canteen, • Computer room (seating capacity for 50 people), • The students' association headquarters: Students' delegation, VEDEMA, VETERMON and Sport associations, • Dissection and Necropsy Rooms and Anatomic Museum, • Research and Teaching laboratories of most of the Departments (with the exception of the laboratories of Toxicology, • Pharmacology, • Mathematics, • Biochemistry as well as those related to Food Technology, Nutrition and Food Science, and Clinical Sciences).
Unit B (Western wing)	2 floors	• Hospitalization Unit of Infectious-Contagious Animals, • Computer-room (seating capacity for 24 people), • Area of Toxicology, Food Technology laboratories, Mathematic teaching staff 's offices, • Lecture theatre (see Table 4.1.2.1).
Unit C (Eastern wing)	4 floors	• Department of Food Technology, Nutrition and Food Science and the Pilot Plant (FPU) facilities, • Lecture theatre (see Table 4.1.2.1), • Departments of Pharmacology (Veterinary Section) and Biochemistry and Molecular Biology "A".
VTH Building	6 floors	• Clinical and Support Services for Small Animals and Equine, • Two reception/administrative rooms • Main hall and waiting room for small animals (dogs and cats separately). • Internal Medicine Service: two consulting rooms • Small animal reproduction service: a consulting room • Cardiorespiratory service: a consulting room • Anaesthesia service: a room adjacent to the surgical area, • Diagnostic imaging service: with three rooms one of them lead covered, plus a room for equipment storage • Dermatology service: a consulting room • Ophthalmologic service: a consulting room • Clinical Pathology service: two labs with the equipment needed for haematological and biochemical analysis. • Small animal surgery service: two consulting rooms, a pre-operating theatre for surgical cleaning, and three small animal operating theatres fully equipped. • Exotic animal service: it has a consulting room??. • Hospitalisation Service: it is provided with four rooms, all of them with individual cages (dogs and cats separately). • Large animal service: it has a reception room, two exploration rooms with examination stanchions, a riding-ring, with eight boxes to stable horses, two neonatology boxes, a intensive care box, two anaesthesia induction/recovery rooms. • Pharmacy service: it houses an office, two store-rooms and a lab • Infectious-contagious service: it houses 3 laboratories • Sterilising room. • Laundry. • Four-bedroom apartment (1st floor) • Administrative and Economic Services of the VTH, • Department of Animal Medicine and Surgery, related teaching and research labs

		and work group rooms, clinical and research laboratories, car park.
VTF Buildings	Total area: 160,000 m^2 Built area: 16,000m^2	• Main Building: (1,900 m^2). o Administration and Direction offices, o Laboratories (4), o Classrooms (2), o Computer room, o Conference room, o Library, o Kitchen, o Residence • Locker rooms (6), • Laundry and Quarantine (658 m^2). • Horse facilities (1,640 m^2). • Fenced area for horses (14,128 m^2). • Dairy cattle facilities (850 m^2). • Beef cattle (2,000 m^2). • Sheep and goats (1,177 m^2). • Rabbits unit (380 m^2). • Poultry unit (536 m^2). • Swine facilities (including Finishers (2) (1,928 m^2), o Acclimatization (488 m^2), o Gestation (655 m^2), o Boars and laboratory (85 m^2), o Farrowing rooms (620 m^2) and o Nursery (485 m^2). • Dogs units (2) (545 m^2). • Apes (773 m^2). • Bee unit (85 m^2). • Straw (237 m^2). • Experimental Animal Center (480 m^2). • Experimental unit (Animal Nutrition and Animal Reproduction) (400 m^2). • Waste treatment plant (2,666 m^2). • Olive tree plantation (3,518 m^2). • Irrigation facilities (170 m^2). • Plantation of forage (10,000 m^2).

4.1.2. Description of the premises for:

A) lecturing

Table 4.1.2.1.a Premises and equipment for lecturing.

	Premises number				
	1	**2**	**3**	**4**	**5**
Location	Main building				
Building Unit	Unit A				
Level	Ground Floor				
Lecture room number/Model*	0.1 One level	0.2 One level	0.3 Theatre	Main Theatre *"Aula Magna"*	Graduation Room *"Sala de Grados"* One level
Name**	Prof. "Luis León"				
Seats	165	165	211	390	60
Equipment***	AC/MS/SB/WA/WG/WF	AC/MS/SB/WA/WG/WF	AC/MS/WA/WF	AC/MC/MS/WA/WF	AC/MS/WA/WF

*Model: one level or theatre.
**Name approved by the Faculty Board of FVETUM and given additionally to the lecture room number.
**AC: Air conditioning; MC: microphone system for conference and theatre room; MS: Media system (computer, overhead projector, audio system); SB: smart blackboard; WA: wheelchair accessible; WG: module system tables and chairs for working groups; WF: Wi-Fi coverage and access.

Table 4.1.2.1.b Premises and equipment for lecturing.

Premises number						
	6	**7**	**8**	**9**	**10**	**11**
Location	Main building					
Building Unit	Unit A				Unit B	Unit C
Level	**First Floor**	**Basement Level 1**	**Basement Level 1**	**Basement Level 1**	**First Floor**	**Basement Level 1**
Lecture room number/Model*	1.1 Theatre	-1.2 One level	-1.3 One level	-1.4 One level	1.2 One level	-1.1 One level
Name**	Prof. "Francisco Moreno"				Prof. "Lasaosa"	Prof. "José Luís Sotillo"
Seats	211	20	20	10	100	70
Equipment***	AC/MS/WA/WG/WF	AC/MS/WA/WG/WF	AC/MS/WA/WG/WF	AC/MS/WA/WG/WF	AC/MS/WA/WG/WF	AC/MS/SB/WA/WG/WF

*Model: one level or theatre.
**Name approved by the Faculty Board of FVETUM and given additionally to the lecture room number.
**AC: Air conditioning; MC: microphone system for conference and theatre room; MS: Media system (computer, overhead projector, audio system); SB: smart blackboard; WA: wheelchair accessible; WG: module system tables and chairs for working groups; WF: Wi-Fi coverage and access.

Table 4.1.2.1.c Premises and equipment for lecturing.

Premises number					
	12	**13**	**14**	**15**	**16**
Location	VTH		VTF		
Building Unit	Unit A		Main building		Unit B
Level	**First Floor**	**First Floor**	**Ground floor**	**Ground floor**	**Ground floor**
Lecture room number/Model*	0.1	0.2		1.1	1.2
Name**			Pfizer lecture hall	Elanco lecture hall	Vetoquinol lecture hall
Seats	50	40	164	32	32
Equipment***	AC/MS/WA/WG/WF	AC/MS/WA/WG/WF	AC/MC/MS/SB/WA/WG/WF	AC/MS/WA/WG/WF	AC/MS/WA/WG/WF

*Model: one level or theatre.
**Name approved by the Faculty Board of FVETUM and given additionally to the lecture room number.
**AC: Air conditioning; MC: microphone system for conference and theatre room; MS: Media system (computer, overhead projector, audio system); SB: smart blackboard; WA: wheelchair accessible; WG: module system tables and chairs for working groups; WF: Wi-Fi coverage and access.

Table 4.1.2.2. Summary of lecturing seats per location.

Location	Unit/Lecturing seats			Total
Main Building	Unit A	Unit B	Unit C	
	1252	100	70	1422
VTH	Main			
	90			90
VTF	Main			
	228			228
Total	**1570**	**100**	**70**	**1740**

B) group work

Premises for working groups are in different locations within the Faculty, mostly in at the Main Building, Unit A. Premises for working groups include also the computer rooms (so called "Verderón", "Verdejo" and "Vultur" all names of birds in Spanish starting with "V" from Veterinary; see section 6.1.1), located at the ground floor of the Main Building Unit A, conveniently located close to the library-study room, and are under the management of the Dean's Office. All are fully equipped with individual PC, centralizes printer and media system and smart blackboard; VTF also has a computer room of free access for the students and for practical training. Other working group premises are at different levels (see **Table 4.1.2.2.**) and managed by the different Departments, and open for working groups of the different subjects. Equipment is standard (tables, chairs, blackboard, wi-fi access) and also the Department can provide additional equipment.

Table 4.1.2.2. Premises for working groups and computers rooms (also used as working group room).

Premise number	Building / Unit	Level	Patrimonial number/Name	Seats	Premise number	Building/ Unit	Level	Patrimonial number/Name	Seats
1	Main building **A**	**1** B.1.1.	015	**6**	**21**	Main building **B**	**0** B.1.0	044	**24**
2			016	**15**	**22**			057	**5**
3			021	**15**	**23**			ADLA Verderón	**24**
4			049	**20**	**24**	Main building **C**	**2** **B.2.0.**	006	**10**
5		**2** B.1.2.	008	**10**	**25**			020	**6**
6			022	**7**	**26**			022	**8**
7			040	**5**	**27**			025	**25**
8			045	**6**	**28**	**VTH**	**1**	013	**50**
9		**3** B.1.3.	006	**5**	**29**		2	017	**20**
10			017	**8**	**30**		**3**	018	**25**
11			018	**45**	**31**		**4**	006	**25**
12			021	**15**	**32**	**VTF**	**0**	Computer room	**16**
13			035	**14**					
14			036	**10**					
15			043	**8**					
16		**4** B.1.4.	021	**10**					
17			011	**30**					
18			023	**3**					
19			031	**30**					
20			ADLA Vencejo	**25**					
				287					**172**

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

Total number of places in rooms for group work: 459.

C) practical work

Practical work facilities are within the Departments and Teaching Units, and mostly are laboratories for practical training equipment with the required tools. These premises are managed and maintained by the Departments or Teaching Units. Some of them have specific requirements (Anatomy, Necropsy, Food Technology…) and infrastructure are properly identified and equipped. **Table 4.1.2.3.** summarize the premises, including those at VTH and VTF, and more details of surface and location can be find in **Appendix 3 (maps)**.

Table 4.1.2.3. Premises for practical work.

Premise number	Building/ Unit	Level	Patrimonial number/Name	Seats / Places	Premise number	Building/ Unit	Level	Patrimonial number/Name	Seats/ Places
1	Main building **C**	**Basement level 2** B2.-2.	001 to 006 Food Technology Pilot Plant	**20**	21	Main building **A**	**Second floor** B1.2.	047	**8**
2		**Basement level 1** B2.-1.	005 Food Hygiene	**10**	22		**Third floor** B1.3.	022	**25**
3			025 Food Technology	**10**	23			034	**15**
4	Main building **A**	B1.-1.	013 Anatomy museum	**20**	24		**Fourth floor** B1.4.	008	**10**
5		**Ground floor** B1.0.	023 Dissection room	**20**	25			020	**24**
6			027 Necropsy room	**20**	26	Main building **C**	**Ground floor** B2.0	051	**10**
7			040	**5**	27			055	**4**
8			045	**6**	28			066	**20**
9		**First floor** B1.1.	012	**4**	29			013	**15**
10			013-1 013-2	**3+2**	30			014	**25**
11			014	**4**	31		**First floor** B2.1	003	**10**
12			020	**30**	32			005	**20**
13			039 039-1	**25+15**				008	**10**
14			047	**10**			B.1.1.051		**10**
15			048	**10**			B.1.1.055		**5**
16		**Second floor** B1.2.	017	**10**			**Second floor** B2.2	015	**30**
17			018	**16**		**VTF**	**Main building**	Merial (Animal Production)	**15**
18			023	**20**				Bayer (Animal Nutrition)	**10**
19			038	**10**				SELCO (Genetics)	**10**
20			046 046-1	**10+14**		**VTH**	**Main building Third floor** B1.3	018	**12**
								019	**12**
							Fourth floor B1.4	024	**12**
								025	**2-3**

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

Practices can also be conducted in:

- 2 Surgical labs (for 15 students each). B1.0.023
- Large animal examination rooms (for 20 students). B1.0.083, B1.0.064
- Small animal examination room (for 20 students). B1.0.013

Total number of places in laboratories: 755

4.1.3. Description of the premises for housing:

a) healthy animals

Table 4.1.3.1. Premises for animal housing (in compliance with Law 53/2014, animals used in teaching are intended for scientific use)

	VTH	VTF	Total		VTH	VTF	Total
Authorized Species				**Control Systems**			
Rodents	X	-	1	Temperature	X	X	2
Rabbits	X	X	2	Humidity	X	X	2
Dogs	X	X	2	Light-dark cycles	X	X	2
Cats	X	-	1	Fire	X	X	2
Small Ruminants	-	X	1	**Facilities**			
Cattle	-	X	1	Quarantine	-	X	1
Equines	X	X	2	Laboratory	X	X	2
Swines	-	X	1	Surgery Room	X	X	2
Bees	-	X	1	Necropsy Room	X	X	2
Exotic pets and wildlife	X	-	1	Store Room	X	X	2
Poultry	-	X	1	Cleaning Room	X	X	2
Apes	-	X	1	Locker Room	X	X	2
				Level 3	-	-	0

b) hospitalized animals

Table 4.1.3.3. Facilities for hospitalized animals at **VTH**.

Regular Hospitalization	Species	Number of seats
	Equine	11 distributed as follows: • 8 regular boxes, • 2 neonatology boxes and • 1 place in intensive care.
	Dogs	9 in cages, 6 in large dog boxes.
	Cats	5 in cages
	Exotic Animals	

d) isolated animals

Table 4.1.3.4. Isolation facilities at **VTH**.

VTH Isolation Facilities	Species	Number of seats
	Equine	2 boxes
	Small Animals	1 room with 2 cages for cats and 1 room with 2 cages for dogs.

Table 4.1.3.5. Quarantine facilities at **VTF**.

VTF Quarantine Facilities	Species	Number of seats
	Pigs	30
	Equine/Cattle	4
	Small Ruminants	24
	Rabbits	20

4.1.4. Description of the premises for:

A) clinical activities

These activities are developed at **VTH**.

- **Small Animal Area:** Lobby, large waiting rooms for dogs and a specific room for cats, 9 consulting rooms (2 Internal Medicine, 1 Cardiorespiratory, 1 Ophthalmology, 1 Dermatology, 1 Exotic Animals, 2 Surgery, 1 Reproduction), 2 laboratories (Clinical Pathology and Reproduction Technology), 1 Pharmacy, 1 Anaesthesia room, 1 Ultrasound room, 1 X-Ray room, 1 Film reading room, 1 CT room, 1 Student General Exam room, 5 Surgery rooms (2 student and 3 regular surgery rooms), 1 Procedures room (Dentistry and Endoscopy), Sterilization area, Hospitalization area, Medicine and Surgery animals' premises.
- The **Small Animal Internal Medicine Service** includes first-opinion consultations and specialty consultations (Internal medicine).

- The **Small Animal Ophthalmology Service** includes consultations and surgery procedures.
- The **Small Animal Dermatology Service** includes consultations and minimally invasive diagnostic and therapeutic procedures.
- The **Small Animal Neurology Service** includes consultations and minimally invasive diagnostic and therapeutic procedures.
- The **Small Animal Cardio-Respiratory Service** includes consultations, echocardiography, interventional radiology and airway endoscopy diagnostic and therapeutic.
- The **Small Animal Stem Cells Service** processes all material extramurally in the LAIB (*Laboratorios de Investigación Biosanitaria*/Biosanitary Research Laboratories)
- The **Small Animal Surgery Service** includes consultations and surgery procedures of soft tissue surgery, orthopaedics, neurosurgery and dentistry.
- The **Small Animal Hospitalization, IC and ER Service** includes hospitalization, monitoring and therapeutic, blood bank and ER consultations and therapeutic 24/7/365.
- **The Large Animal Area** comprises 2 rooms for examination and specific clinical procedures, 1 radiology room, 2 induction/recovery rooms, 2 surgery rooms, 1 riding arena and 1 area for IC.
- The **Central Services Area** of the VTH comprises different services which are common to the small and large animal areas.
    - The **Anaesthesiology Service** performs sedations and anaesthetic procedures required by the patients (exotic, small and large animals). It is equipped with 8 Anaesthesia machines in Small Animal area (2 Anaesthesia room, 3 Surgery Rooms, 1 Procedures room, 1 X-Ray room, 1 CT room) and 1 in the Large Animal Surgery Room.
    - The **Diagnostic Imaging Service** performs radiographic, ultrasound and MRI diagnosis for the VTH patients and also receives referrals from private practices. This service facilities include 1 X-ray rooms for small animals and exotic pets, 1 X-ray room for large animals, 1 ultrasound room for small animals and 1 CT unit for small animals.
    - The **Pharmacy Service/Store** serves as the control of all medicines and drugs, fungible material, instruments, laboratory equipment, sutures and other orders requested by the different services of the VTH distributed as 1 office, 1 laboratory, 2 storage rooms.
    - The **Small Animal Reproduction Service** offers a full range of techniques to improve the reproductive performance of the VTH, ranging from artificial insemination or embryo transfer to in vitro fertilization in companion and farm animals. This service facilities includes 1 consulting room and 1 laboratory.
- **Management.** Government and administration corresponds to the VTH Board and to the Director, Manager and Secretary.

B) diagnostic services including necropsy

VTH

1. **Pathology Service** carries out pathological diagnostics of necropsies and biopsies. The facilities of the **Pathology Service** are one large Necropsy Room, a Histopathology Laboratory and one Pathology Diagnostic Room which serve for pathological diagnosis from necropsies and biopsies.
2. The **Clinical Pathology Service** carries out haematological, biochemical analysis and cytological studies, and coordinates the activity of the VTH emergency laboratory. It has 4 different laboratories: one for routine tests and emergency techniques and another three for more advance techniques.
3. The **Infectious-contagious Service** conducts virological, bacteriological and serological diagnoses on small, large and exotic animal as well as on livestock. Techniques available in this service are: bacteriological isolation, antibiograms, serological techniques such as ELISA, and PCR.
4. The **Clinical parasitology Service** conducts parasitological diagnosed in several species for the VTH and also to external practitioners.
5. Toxicology services.

C) Food Science and Technology Department

Food Technology Pilot Plant (FTPP)

- FTPP of the **FVETUM** is equipped with a complete line for dairy production (butter churner machine, cheese vats, plate heat-exchanger, freezer, fermentation tank, brine vat, pneumatic press), and a complete line for meat production (cutter, meat grinder, fine meat mincer, hydraulic sausage stuffer, slicer, burger maker, convention/steam oven, electric cookers and ripening chamber). The FPU is also equipped with a piston filler, double sealers, evaporator, rotavapor, incubation chambers, freeze dryer, vacuum/modified atmosphere packaging equipment, convection/steam oven, straight line exhaust box, autoclaves, retail displayers, and general equipment such as baths, working tables, washing machine, freezers and refrigerators. In addition, we have an experimental kitchen supported with the proper equipment.

Laboratories of Food Science and Technology Department

- Equipped with instruments and reagents for the evaluation of food composition (protein, moisture content, minerals and fat) of raw materials and final products from animals, and also to determine freshness and safety of food products. Equipments for food testing analyses in Food Safety and Quality lab are spectrometers, refractometers, Kjeldahl digester and distillator, Soxtec for automatic fat extraction, muffle furnaces, balances, precision balances, laboratory incubators,

pHmeters, homogenizators, Stomacher, and baths which allows to test microbiological and physicho-chemical characteristics of foods, water and environmental hygiene.

- Our students also carry out extra-mural practical training in different slaughterhouses, food markets, food industries and reference official laboratories and catering facilities.

Abattoir (APS).

- The students attending the subject of "Hygiene, Inspection and Food Control II" carry out practices in the slaughterhouse of "CABEZO DE LA PLATA", located 18 Km away from the Veterinary Faculty. This is one of the main slaughterhouses supplying meat to the Southeast of Spain. It has a surface of 6,500 m^2, including 900 m^2 of cold-storage rooms. Bovine, porcine, ovine and goats are sacrificed there. It is authorised to sacrifice animal following the HALAL ritual procedure suitable for the muslim population.
- The Director of the slaughterhouse Veterinary Inspection Service is an Associated Lecturer in the "Area of Nutrition and Bromatology", and is in charge of supervising the students' practices, under a collaboration arrangement signed between the Veterinary Faculty and the Regional Health Council.

Poultry Slaughterhouses.

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

Fish Markets.

- The activities regarding the Hygiene, Inspection and Control of fish are conducted in the Central Market of Alcantarilla "Eurolonja 2000" (located 15 Km away from the Veterinary Faculty) with a surface of 10,000 m^2. This is the main fish market of the Region and the second most important internal fish distribution point in Spain, just behind Madrid, with a daily volume of 20 tons of fish and seafood and a turnover of 500,000 euros a day.

4.1.5. Description of the premises for:

- **study and self-learning**
  - The **FVETUM** main building has a study room with 128 seats. The **VTF** also has a room with 35 seats available for student. WIFI access is available all around the Faculty premises.
  - No further than 5 min walk from the **FVETUM** is the University Library of the Campus. A building where there are 268 seats for study, 10 working rooms. In this library, all the books recommended are stored and students have access, and in most cases also lend, for a period of 15 days (with renewal). Scientific journals, laptops, Cd-Room and DVDs are also available for the students.
  - Additionally, all our students can use any study room in other Faculties or libraries in other campuses owned by the **UM**.
  - A complete description of the Library facilities is shown in **Chapter 6 (6.1).**
- **catering**
  - The **FVETUM** has a canteen located in the main building, with 70 seats and an outdoor terrace with another extra 40 seats. Fresh cooked menus are served daily. Vending machines are also available in the hall of the **FVETUM** Main Building, as well as in the rest area of the **VTH**. Students are free to request the use of microwaves located in the canteen. **UM** also provides a wide range of canteens at each Faculty and centralised restaurants for lunch. Prices are economic and menus are supervised by the Food Safety and Nutrition Service of **UM**.
- **locker rooms**
  - Lockers at **FVETUM** has two main purposes, one is to be used for the students to keep their properties, and to keep street clothes to wear adequate clothes for practical training (specially for biosecurity requirements). The first ones (student's lockers) are distributed in the corridors in the Main Building (Unit A, at Ground floor toward Unit C, at First floor before Lecture Room 1.1.). Students manage the distribution of lockers under the supervision of the Secretary of the **FVETUM**, and covers mainly to students of the last 3 academic years. Lockers for proper dress are managed by the different Departments (Anatomy and Anatomopathology) and Services (**VTH**, 2 for staff and 1 for students, and **VTF**, 2 for students, 2 for staff and 2 in the quarantine area), including shower rooms, where needed (**VTF**).
- **accommodation for on call students**
  - The **VTH** offer accommodation for 4 on call students in two bedrooms with to beds each. Besides, accommodation is also available for students in the **VTF** with a maximum capacity of 16 seats.
  - No further than 10 min walk is the Hall of Residence (*Apartamentos Campus*) where students have full equipped rooms available for rent.
- **leisure**
  - The main leisure venue for students "Centro Social" is located at 10 min walk from the **FVETUM.** There, students have plenty of resting and meeting rooms, refectory, auditorium, exhibition areas, external theater, bank, etc. Centro Social is run by the Students Union and hosts the headquarter of the Information Service for Students at the **UM**.

- The **FVETUM** itself has some facilities for cultural activities (Auditorium, Graduates Lecture Room, Meeting Room, etc.), student association rooms and some indoor (main hall) and outdoor rest areas ("the sustainability square" is opposite the Faculty).
- Additionally, the **UM** is fully equipped with infrastructure for practicing a broad list of sports, such as rugby, football, volleyball, handball, basketball, indoor football, tennis, paddle, gyms, and indoor swimming pool. There is also a wide offer of sport schools.

4.1.6. Description of the vehicles used for:

Vehicles owned by FVETUM are those summarized in Table

Table 4.1.6. FVETUM vehicles and use.

Vehicle	Use
2 vans (8 seats each)	Students Transportation for practical training
1 VTH vehicle (small van)	Ambulatory Clinics
1 VTF vehicle (trailer)	Live Animals Transportation
1 VTF vehicle (trailer)	Cadaver Transportation
1 VTF vehicle (trailer)	Horse Transportation Van
1 VTF Land Rover	Students Transportation for practical training

4.1.7. Description of the equipment used for:

A) teaching purposes

Every teaching room has appropriate teaching facilities: blackboards, screens, video projector, speakers, etc. Besides, videoconferencing, video recording and streaming equipment are available under request.

B) clinical services

Table 4.1.7. Equipment for clinical services.

Area	Service	Basic equipment	Specialized Equipment
Small Animals Area	Internal Medicine	Available	Endoscopy
	Ophthalmology	Available	Ocular ultrasound, retinography, electroretinography, slit-lamp, direct and indirect ophthalmoscopy, laser, phacoemulsificator, Surgery microscopy.
	Cardio-respiratory	Available	ECG, Echocardiography, Holter, Blood pressure Monitor (Oscillometry and Doppler) , Bronchoscopy, C-Arm X Ray
	Dermatology	Available	
	Neurology	Available	
	Surgery	Available	Arthroscopy, Neurosurgery micromotor.
	Hospitalization/ER	Available	Ultrasound, 2 oxygen concentrators, 1 anaesthetic machine, 1 multiparameter monitor, Blood pressure Monitor (Doppler)
Large Animals		Available	Endoscopy, arthroscopy.
Central Services	Diagnostic Imagine	Available	1 X-ray equipment for small animal and exotic pets, 1 X-ray fixed equipment for large animals, 1 X-ray mobile equipment for large animals, 1 computerized radiography (indirect digital) system, 2 ultrasound equipment, one for small animals and other for large animals, 1 CT system (2 slices) for small animals, and 1 fluoroscopy system for radiographic diagnosis and surgical support
	Anaesthesiology	Available	Anaesthetic workstations with ventilator and ventilatory and anaesthetic gases monitoring, standard monitoring, BIS and Parasympathetic tone activity monitors
	Pharmacy	Available	Hand-operated capsule-filling machine, Precision scale, Thermostatic bath, Magnetic stirrer.
	Pathology	Available	Microscopes, including multi-head microscope with digital photography system, paraffin embedding vacuum system, tissue processing system, paraffin block preparation system, microtome, autostainer, cryostat, immunostainer, storage system for paraffin blocks and stained sections
	Clinical Pathology	Available	Haematological and biochemical analysers, ion-selective electrode analyser, gasometer, ELISA reader, spectrophotometers, centrifuges, cytocentrifuge, microscopes, refractometers, quimioluminiscence reader.
	Reproduction	Available	Microscopes, endoscopy, computer sperm analyzer, incubators.
	Microbiology and Parasitology	Available	Microscopes (light, inverted and fluorescence microscopes), centrifuges, laminar vertical and linear flow hoods, incubators set at different temperatures, with and without CO_2, Real Time thermocycler, electrophoretic devices, fluorimeter, a system for automatized microbial identification (i.e. Vitek, BioMérieux), autoclaves and purified and distilled water devices

4.1.8. Description of the strategy and programme for maintaining and upgrading the current facilities and equipment and/or acquiring new ones.

As explained in Chapter 2, the Financial Committees of the Establishment are responsible for the strategy and the budget distribution, which is subsequently approved at different instances. The maintenance, renewal and acquisition of equipment and facilities depend on the budget availability, which, in turn, depends on the endowment that the **FVETUM** assigns to our Faculty. In addition, funds from research activities also contribute to upgrade the **FVETUM** facilities and equipment.

VTH, as Foundation, has its autonomy to identify by the Direction Council the main needs of renovation of new investments to up-date or acquire new equipment for new or improved clinical services and teaching. This project for renovation or new equipment is presented to the Foundation Patronate, that depending on the price of the equipment is just informed (mainly in renovation or small equipment and based on the **VTH** budget, **see Standard 2**) or asked for support. The main Patron of the Foundation is the Rector and the Vice-Rector of Economic Affairs technically study the investment to allocate it for the current of future budget. Usually this request is framed on a internal call of UM for renovation or acquisition of equipment.

VTF also has an investment plan defined by the Direction Council and approved by the Governing Board and based on the **VTF** budget or supported by the Vice-Rector of Economic Affairs on a regular basis within the calls of the **UM**, or extraordinary when the situation required (vg. damage caused by the heavy rain).

4.1.9. Description of how and by whom changes in facilities, equipment and biosecurity procedures are decided, communicated to staff, students and stakeholders, implemented, assessed and revised

Facilities and equipment renovation or acquisition for teaching or working groups are mainly into the Faculty (Dean's Team) competences and the proposed to the **FVETUM** Committee of Infrastructure and Economic Affairs or the QA Commission, and from here to the Faculty Board for approval. These investments can be carried out with the **FVETUM** budget or apply to the **UM** calls. For practical training, the investment is decided by the Departments Councils based on their needs. In some cases, or special projects, the Departments join their requests to the Faculty due to the impact on the global teaching process (more students or subjects affected) and also mainly due to the high costs. The communication is made at the different decision bodies (Committees, Councils or Board), implemented, assessed and reived by the different Departments and the Faculty.

Regarding biosecurity procedures, the **FVETUM** follows the general rules of the **UM,** which has the Service for Labour Risk Prevention, which is uncharged of managing all the aspects of risk prevention, including training for staff and students, and the removal of biosanitary waste and hazardous chemicals. Moreover, the **FVETUM** has approved its own waste disposal protocol that complements that service (http://www.um.es/web/veterinaria/contenido/seguridad/carteleria).

On the other hand, there is a **Biosecurity Committee** in the **FVETUM**, which is responsible for the elaboration of specific protocols, including a document of teaching- related risk prevention. The information is public through the website and significant procedures or signalling displays are posted in the Establishment (http://www.um.es/web/veterinaria/contenido/seguridad). The academic year 2016-17 the FVETUM has begun the Centre Working Group where one of the lines of work is to reinforce and harmonization of the biosecurity protocol of **FVETUM**. To raise awareness among students, from the 1st year, receive specific mandatory training on basic risk prevention through a programme given by the supervisors of this issue both, in the **FVETUM** and in the University. Besides, students are trained on biosecurity procedures prior to any practical training activity.

4.2 Comments.

- **FVETUM** in the most complex Faculty infrastructure at **UM** due to the extension and complexity of managing 3 main infrastructures. However, the Faculty has limited capacity in many aspects since the competences are centralised (University) or decentralized (Departments). The main role of the Faculty is to harmonize and maintain the needs covered and encourage for improvement looking for the higher international standards.
- Many significant changes in facilities and equipment have been made since the last EAEVE visitation, as mentioned at the Introduction section of the present SER. However, even if many facilities have been recently renewed, most of the original buildings would need improvement in order to guarantee high-quality teaching and research activities. In the last years, due to the so called "global economic crisis" has had an important impact on the slowdown of the investments since the **UM** budget also was reduced in connection with the economic situation of the Regional Government.
- The **VTH** was built in 1998 and, as a whole, the facilities are adequate for providing practical teaching to undergraduate and postgraduate students. Its structure allows teaching in different species and specialties. Nevertheless, facilities and equipment also need appropriate maintenance and replacement, which needs continuous financial support.

4.3 Suggestions.

- Any improvement in the budget is needed to recover the status affected before the "economic crisis". It is important maintain the standards of quality of **FVETUM**.

- Some improvements are under construction at **VTH** such as the floor of large animals (horses), isolation units, anaesthesia induction/recovery rooms and exercise are of horses. That will give some better facilities to improve the service and teaching capacities. Regarding equipment there are a need of wide the capacities of **VTH** and acquire a Magnetic Resonance Imaging (MRI) for small and large animals. Some steps forward have been made to identify the financial sources and suppliers.
- One project under study and request (unformal) is to create a skills facility to simulate animal behavior and for a better train and where is a place **FVETUM** student practice a range of clinical skills. We are waiting for a **UM** call to purchase the dummies. The **FVETUM** will support with and extra budget together with the clinics Departments.

Standard 5

Animal resources and teaching material of animal origin

5.1. Factual information

5.1.1. Description of the global strategy of the Establishment about the use of animals and material of animal origin for the acquisition by each student of Day One Competences

The main goal of the **FVETUM** is to ensure an adequate training of our students based on a curriculum that full fills the Spanish legal requirements for the verification of the official university qualifications that qualify for the exercise of the profession of Veterinarian (ORDEN ECI/333/2008, http://www.boe.es/diario_boe/txt.php?id=BOE-A-2008-2675) and in accordance with the EU **Directive 2005/36/EC** (http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32005L0036&from=ES), and accredited twice by **ANECA** for **FVETUM**. With regard to the training with animals and material of animal origin, the global strategy of the **FVETUM** is to continue and, if necessary, to increase the use of these resources in order to get a correct hands-on preclinical and clinical training. This strategy is based on 4 different pillars: **clinical training, preclinical training, teaching farm and learning based on animal training models**.

The **clinical training** is mainly supported by the **VTH** and the first goal is to maintain or increase the casuistic in the areas of both small and large animals, as the main source for the clinical training of the students. Other significant priority is to correct the possible imbalance among different animal species. Concerning small animals, even if the number of cases is adequate, the **VTH** speciality appointments are scheduled in the mornings (9:30-15:00 h). Since (2005), first opinion consulting rooms have extended the work to 5 days per week in the afternoon and ER service to 24/7/365. At the same time and trying to achieve the same objective, new specialties and services have been opened at the **VTH**, such as the CT Unit, the Stem Cells Unit, the Unit of Minimally Invasive Surgery in Cardiology and Frozen Canine Semen International Exchange. These measures have resulted in an increase in the number of first-opinion and referral cases.

The **FVETUM** is located in an urban area and, thus, the number of small animals attended intra-mural is higher than that of horses and, especially, food- producing animals. Being aware of this situation, another important strategic line has been to strengthen the clinical training in horses and cattle. This goal is being addressed by increasing the number of teachers attending cattle extra-mural, and increasing the number of horses attended intra-mural. The biological material of animal origin necessary for **preclinical training** comes mainly from Zoonosis Service of the City Council of Murcia, donation programs and agreements signed with external entities, as well as the **VTH**, as detailed in chapter 5.1.5.

Other strategic pillar related with **preclinical/ clinical/animal production** training is the **Teaching Farm**. **VTF** is and independent facility located at 2 km south of the main campus in the close location of Guadalupe. **VTF** structure has a central building subdivided into two areas: teaching pavilion with general classrooms, computer room, lecture hall, library and laboratories, and a changing area. The Farm is organized in a total of 12 livestock units (pigs, poultry, rabbits, equine, dairy cattle, calves, goats, sheep, beekeeping, forage unit, feed factory and sewage plant). Likewise, it has its own research facilities such as the experimentation vessel and others (kennels, primates and ship of nutrition and animal reproduction).

Finally, we are working on the acquisition of **animal dummies** and simulators, with the purpose of completing the training of our students. This kind of training does not expect to replace the hands-on training on live patients, but it is based on an effort to reduce the use of live animals in veterinary training, when possible. Within this programme, the **FVETUM** is working in acquired animal models, especially for teaching small animal clinical examination, vein puncture, cardiology, reproduction/obstetrics, traumatology, orthopaedics and anaesthesiology.

5.1.2. Description of the specific strategy of the Establishment in order to ensure that each student receives the relevant core clinical training before graduation.

e.g. numbers of patients examined/treated by each student, balance between species, balance between clinical disciplines, balance between first opinion and referral cases, balance between acute and chronic cases, balance between consultations (one-day clinic) and hospitalizations, balance between individual medicine and population medicine.

The number and distribution of cases is evaluated annually by the **VTH** Board, Teaching Clinical Council and by the Faculty Council in order to communicate significant changes and/or to propose new strategies, if needed. The **VTH** assures that the students receive an adequate practical training, taking into account the extensive portfolio which allows the students to acquire the clinical Day One Competences.

The distribution of the clinical training hours by subject is based on the official distribution of the **FVETUM** syllabus.

The number of intra-mural cases attended at the **VTH** is, in general, high, as expressed in Chapter 12 (ESEVT Indicators). As mentioned, the **VTH** receives a higher number of small animals and horses, in comparison to ruminants and food-producing animals in general.

With regard to **small animals**, 30% of the cases attended in the General Medicine Consultation are **first-opinion cases**. This allows an adequate training of the student in the clinical approach of common diseases, from the beginning of a case. The average of **referral cases** attended in Specialty Consultations is 70%. The percentage of first opinion cases in **large animals** is around 70%, while referral cases attended is 30%. Hundred percent food-producing animals are attended extra-mural by the Associate Teachers working in the Mobile Clinic.

The percentage of **acute and chronic** cases has been estimated in 63.2% and 36.8% respectively within the last 3 years. A mean of 12,5% of small animals attended in consultations remain hospitalized. On the other hand, 80% percentage of horses need to be hospitalized, while 20% are attended on a one-day clinic basis. Finally, around 12.5% of our clinical activities are focused on population medicine, while 87.5% rely on individual medicine.

5.1.3. Description of the organization and management of the teaching farm(s) and the involvement of students in its running

The management of the **VTF** is based on a Management team (Director and Secretary, both academics), and teaching and other strategic activities are ruled by the Governing Council (GC), composed by the Dean and representatives of the different Units: Swine, Poultry, Rabbit, Sheep, Goat, Dairy and Beef, Primates, Equine, Feedstuff Production, Students' Residence and Apiculture. Beyond the Dean (President of the GC), the Director of Animal Production Department, the Vice-Dean of Students, the Delegate and Sub-Delegate of Faculty and a Representative of the Veterinary Degree are natural members of the GC. Minor decisions are taken on a daily basis by the Management Team, but major decisions are subjected to the decision of the GC.
The teaching activities have to be supervised and approved by the GC, and the Management Team have to elaborate an annual report regarding the teaching activities and the rest of activities developed in the **VTF** (changes in the number of animals, in facilities or in the relations with the managers of the units integrated in companies). Finally, several Committees support the decision of the GC and are reported to the Faculty Board (see Standard 1 for further information).

The main Department that support teaching activities at the **VTF** is Animal Production, and also other Departments like Animal Health, Animal Medicine and Surgery, Physiology, Food Technology, Human Nutrition and Food Science, and Zoology and Physical Anthropology. The involvement of the students in the **VTF** is:

- **Swine:** is the most visited unit, and hold practical teaching of different subjects such as *Reproduction and Obstetrics, Clinics of Livestock, Animal Production, Ethology, Welfare and Animal Protection, Animal Nutrition, Infectious Diseases II, Physiology I and II, Parasitic Disease and Practicum*. On these topics the students collect different samples (blood, faeces, skin and BALF), are instructed in how boar management and semen collection, evaluation and preservation; artificial post-cervical insemination, heat detection, ultrasound pregnancy detection, gilts and sow husbandry, farrowing attention, animal identification (tags), neonatal attention, new-born attention (teeth reduction, iron delivery and tail clip), nursery management, welfare assessment, environmental evaluation, behaviour evaluation and feeding.
- **Goats:** This unit is used for subjects like *Animal Nutrition, Reproduction and Obstetrics, Physiology I, Physiology II, Epidemiology, Zoonosis and Sanitary Policy, Animal Production, Clinics of Livestock, Pharmacology and Pharmacy, Food hygiene, Inspection and Control and Practicum*. In this unit, the students are involved in several processes: milking, feeding, ultrasound pregnancy detection, offspring care, and milk quality assessment (food and health quality) and milk hygiene. Some of them will attend podiatry activities (seasonal activity).
- **Sheeps:** Different subjects are involved in this unit: *Animal Nutrition, Animal Production, Clinics of Livestock and Practicum*. During the practical teaching the students will be acquired competencies like management, husbandry, clinical evaluation and some students (due to seasonality) will learn to identify sheep (electronically and tags), routinely podiatry, anti-parasitic deliverance, shearing, ultrasound pregnancy diagnosis and lambing.
- **Poultry:** Animal Nutrition, Ethology, welfare and animal protection, Animal Production and Practicum.
- **Dairy and beef:** This unit is mainly used by subjects like *Animal Nutrition, Animal Production, Ethology, welfare and animal protection, Clinic Propaedeutic, Animal Production, Physiology II and Practicum*. The students will attend practical lessons of clinical examination, external evaluation, feeding, rectal reproductive exploration, and some of them will attend milking and routinely podiatry activities.
- **Equine:** Animals in this unit are involved in the practical teaching of Ethology, welfare and animal protection, *Animal Nutrition, Clinic Propaedeutic, Animal Production, Ethnology and Animal Management and Practicum*. The student will learn management, behaviour, welfare assessment, feeding and routinely podiatry activities (seasonal activity).
- **Rabbit:** Several subjects like *Animal Nutrition, Epidemiology, Zoonosis and Sanitary Policy, Animal Production and Practicum* developed their practical training to the students in this unit. The student will learn breeder and offspring management, farrowing care, pregnancy diagnosis by palpation.

5.1.4. Description of the organization and management of the VTH and ambulatory clinics

The following Table shows the timetable of the different **VTH** Services where the students practice intra-mural.

Areas	Service	Days/week	Opening Hours	Weeks/year
Small Animals	Internal Medicine	By appointment M-F/ ER M-S	By appointment 9:30-15:00/ 17:00-20:00/ ER 24 h	52
	Ophthalmology	By appointment M-F/ ER M-S	By appointment 9:30-15:00/ ER 24 h	52
	Cardio-respiratory	By appointment M-F/ ER M-S	By appointment 9:30-15:00/ ER 24 h	52
	Dermatology	M-F	9:30-15:00	52
	Neurology	By appointment M-F/ ER M-S	By appointment 9:30-15:00/ ER 24 h	52
	Surgery	By appointment M-F/ ER M-S	By appointment 9:30-15:00/ ER 24 h	52
	Hospitalization/ER	M-S	24 h	52
Large Animals		By appointment M-F/ ER M-S	By appointment 9:30-15:00/ ER 24 h	52
Central Services	Diagnostic Imaging	By appointment M-F/ ER M-S	By appointment 9:30-15:00/ ER 24 h	52
	Anaesthesiology	By appointment M-F/ ER M-S	By appointment 9:30-15:00/ ER 24 h	52
	Pharmacy	M-F	Tu-Th-F 9:15-15:00/ M-W 9:15-20:00	52

- In the ***Small Animal Area***, the Emergency Service is available for all animals having a medical record at the **VTH**. Life-threatening emergencies are always admitted. The interns on duty are responsible for evaluating emergencies and calling the emergency surgeon/anaesthetist/specialist, if necessary. This ER Service is available 7 days a week, 24 hours a day during the entire year.
- In the ***Large Animal Area***, the Emergency Service receives medical and surgical emergencies 24 hours, 365 days a year. There is always a Medicine clinician, a surgeon and an anaesthetist on call; the interns on duty receive the emergency patient (or emergency phone call) and, if necessary, call in the rest of the clinical team.
- **Ambulatory clinic** is carried out by part-time Associate Teachers that are private practitioners of recognized standing. There are 3 teachers participating in the Ruminant Mobile Clinic. Large animals requiring immediate attention must be brought to the **VTH**. The teachers responsible for the Mobile Clinic visit different farms.

Management and administration of the **VTH** corresponds to the **VTH** Board (Director, Manager and Secretary) and the **VTH** Council composed by the **VTH** Board, the Rector of Murcia University, Vice-rector of teaching planning, the Dean, the Major of Murcia and several representatives of Murcia Region's Government, the President of the Veterinary College of Murcia, and two representatives of the Faculty Council. The **VTH** Council meet twice every year. On the daily management, the **VTH** is ruled by the **VTH** Board.

5.1.5. Description of how the cadavers and material of animal origin for training in anatomy and pathology are obtained, stored and destroyed

During the practical sessions of Gross **Anatomy** students directly work on anatomical specimens (bones, prossections or plastinated speciems) or dissect whole body cadavers (dogs, mainly). The cadaver donation program established with the Zoonosis Service of the City Council of Murcia supplies the necessary number of dogs for students' training. Equine material comes mainly from private donations through the **VTH** as well as from local abattoirs. Isolated organs and body regions of ruminants and pigs, and whole cadavers of cockerels and hens are obtained from local abattoirs. Biological material for Embryology practices such as pregnant uterus and foetuses come from donations of local abattoirs and private veterinarians.

Topographic dissection of the whole dog is performed in groups of 4-5 students per dog. Cadavers are embalmed by specialized staff in the Dissection Room with an embalming solution with minimal amount of formalin. This ensures that the levels of exposure to toxic products are kept below the levels allowed by European regulations.

The students of Anatomy use for their learning the **Museum of Veterinary Anatomy**, with one of the most important collections of osteology and plastinated specimens in Europe. An agreement with the Animal House of the University allows to perform a practice of Clinical Anatomy based on the palpation of anatomical structures in living dogs, in compliance with the European rules of animal welfare.

Cadavers and samples for the practices in **Anatomical Pathology** come from donations of the Zoonosis Service of the City of Murcia, abattoirs, **VTH**, farms, and private veterinarians that send the corpses for a post-mortem diagnosis. Necropsies are performed as soon as the corpse arrives; if necessary they can be conserved a few hours before in the cold room. The post necropsy material and slaughterhouse organs are frozen at -18 ° C until removed for destruction. The biological material used in the Anatomy and Anatomical Pathology practices is eliminated by an external company to the University that is responsible for its collection and incineration according with established regulations.

5.1.6. Description of the group size for the different types of clinical training (both intra-mural and extra- mural).

Students are distributed in modules (5 modules with a mean of 20 students each per year in the last three years). The number of students per module can slightly vary depending on the number of enrolled students. Modules are usually subdivided in different groups, and each group subdivided in different simultaneous intra-mural activities (Specialty clinics or other activities from the same Service) supervised by different teachers, in order to reduce the student: teacher ratio, that is never higher than 5 in clinical practices and 10 in laboratory practices. The maximum number of students per professor in the Mobile Clinic is 2-4. The following Table summarizes the size of the groups in each clinical rotation.

	No. students-to-teacher (and per clinical case, if appropriate)	Maximum ratio*
Small Animal Medicine	Students distributed in 4 Specialty Consultations every day.	5:1
Small Animal Surgery	Students distributed in 2 Specialty Consultations and, at least, 2 Surgery Operating Rooms every day.	5:1
Animal Reproduction	Students distributed in small animals Specialty Consultation, porcine units and small ruminants.	5:1
Anaesthesiology	Students distributed by clinical case and professor.	5:1
Diagnostic Imaging	Students distributed in Radiology, Ultrasound and CT Units.	5:1
Pathology	Necropsy room attended by 2 professors every day. Maximum ratio 5:1	5:1
Large Animal Area (Intra-mural)	Students distributed in 4 non-simultaneous groups. Maximum ratio 5:1	5:1
Ambulatory Clinics	Cattle: Students distributed in 3 groups (3 professors).	4:1
	Ethology: Students distributed in 2 non-simultaneous groups	3:1
Population Medicine	Complete group/professor	

*Ratio students: teacher

5.1.7. Description of the hands-on involvement of students in clinical procedures in the different species.

i.e. clinical examination, diagnostic tests, blood sampling, treatment, nursing and critical care, anaesthesia, routine surgery, euthanasia, necropsy, report writing, client communication, biosecurity procedures, .. (both intra-mural and extra-mural)

The students are directly involved in all the clinical procedures developed both in the **VTH** and extra-mural. Specific activities depend on the area where the student is working, and at least include:

- First-opinion and Specialty Consultations, both medical and surgical, in all animal species
  1. To carry out the patient (or the population) anamnesis and complete physical examination, including neurologic, orthopaedic and ophthalmologic exam, depending on the clinical case.
  2. To analyse the nutritional and welfare status in individual and population medicine.
  3. To prepare the list of problems, differential diagnoses, working plan and therapeutic approach.
  4. To effectively communicate with the client.
  5. To make diagnosis procedures: fine-needle aspiration cytology, blood and urine sample collection, blood pressure, Schirmer test, ocular tonometry, skin scrapings, electrocardiogram, faecal smear, Pap smear, etc.
  6. To apply therapy: through different routes of drug administration (PO, SC, IM, IV).
  7. To assist in other diagnostic and therapeutic procedures, such as endoscopic protocols, cerebral spinal fluid analysis, skin biopsy, chemotherapy administration, euthanasia, etc.
  8. To put bandages and other immobilization techniques.
  9. To write medical records and to elaborate reports.

- Hospitalization and emergencies, both medical and surgical, in all animal species
  1. To perform first aid procedures, when necessary.
  2. To review the history, to evaluate the patient through physical exam (TPR) and to actualize the clinical record.
  3. To prepare the list of problems, differential diagnoses, working plan and therapeutic approach.
  4. *To carry out routine diagnosis procedures in hospitalized animals: blood and urine sample collection, blood pressure, etc.*
  5. *To work in different therapeutic procedures: placement of IV catheters, fluid therapy (choice of fluid, dose* calculation and administration), drug administration by different routes, placement of urinary catheters, bandage, wound cleaning and dressing, and other post-surgical care procedures.
  6. To design and to administrate nutritional therapy for hospitalized cases.
  7. To assist in other diagnosis/therapeutic procedures, such as feeding tube placement, drainage tube placement and effusion drainage, blood transfusion, endotracheal intubation and mechanical ventilation, euthanasia, etc.
  8. To apply biosecurity procedures, and more especially in isolated cases.
  9. To effectively communicate with the client.

- Surgery Operating Rooms (in all animal species)
  1. To participate in the preparation of surgeries (surgical Material, room and patient), taking into account biosecurity rules and the concept of aseptic surgery. To perform by themselves easy surgical procedures (ovariohysterectomy, orchiectomy).
  2. To assist the surgeon in complex surgeries (assistant surgeon).
  3. To suture the surgical wounds and to place bandages and drains, when necessary.
  4. To be responsible for the immediate post-operative care of surgery cases.
  5. To effectively communicate with the client.
  6. To write medical records and to elaborate reports.

- Anaesthesia (in all animal species)
  1. To evaluate the pre-anaesthetic status of the patient.
  2. To discuss and to design the anaesthetic protocol to apply in every case and procedure.
  3. To carry out all the complementary work, including fluid therapy administration and orotracheal intubation.
  4. To administrate the anaesthetic protocol validated by the teacher.
  5. To monitor the anaesthetic procedure induction, maintenance and recovery.
  6. To assist the anaesthetist in taking decisions, when necessary.

- Diagnostic Imaging (in all animal species)
  1. To collaborate with patient positioning.
  2. To start ultrasound studies and to assist the teacher in complete studies.
  3. To discuss and to interpret results of radiological and ultrasound studies and to write reports based on diagnostic imaging.
  4. To participate in computed tomography, when necessary.

- Necropsies (in all animal species)
  1. To review the animal individual/population history.

2. To make a complete and systematic necropsy, discussing the macroscopic findings and determining their relationship with the clinical findings.

- Large animal reproduction
  1. To make rectal palpation.
  2. To assist in different procedures usually performed in cattle reproduction (especially, ultrasound).

- Preventive Medicine/Population Medicine (cattle, small ruminants, pigs and poultry)
  1. To assess the biosecurity measures on farms of different animal species.
  2. To evaluate the welfare conditions of animals of different ages and physiological states.
  3. To assess the possible role of environmental conditions as predisposing factors for disease in animals of different ages and physiological states, and to evaluate environmental control systems in poultry and pig farms.
  4. To clinically evaluate animals in order to identify potential disease indicators.
  5. To evaluate the body condition of animals and the feeding programme of the population.
  6. To review the health and preventive medicine programmes implemented in different farms.
  7. To collect biological samples (especially blood and milk), significant in Medicine Population for diagnosis of different types of diseases.
  8. To perform necropsies (in case of any casualty in the operation).
  9. To review mastitis control programmes in ruminant dairy farms.
  10. To describe and to analyse data record (including the use of management programmes in farms in which they are routinely used).
  11. To apply sanitary programmes.
  12. To perform different on-farm common practices as reproductive control (pregnancy diagnosis, insemination).
  13. To perform boar management and semen collection, evaluation and preservation.
  14. To perform artificial post-cervical insemination.
  15. To detect pregnancy by palpation and the use of ultrasound scan.
  16. To perform neonatal attention (teeth reduction, iron delivery and tail clip).

5.1.8. Description of the procedures used to allow the students to spend extended periods in discussion, thinking and reading to deepen their understanding of the case and its management

Within the daily activity in all the Consultations, Hospitalization, Anaesthesia and Surgery Operating Rooms, students have a round with the responsible teachers. In this round, they review the appointed cases and, if previously attended, they discuss about the procedures that have already been performed, and the approach for the next visit. At the end of the consultation, students analyse and discuss with the teacher about the patients they have attended. Beyond the daily rounds, the students are exposed to deeper discussion of clinical situations in their off-clinic days. All of this information exchange is backed by evidence-based medicine that encourages students to manage.

During the rotation of the students at necropsies, they analyse the diagnosis and therapeutic performed in each clinical case, and finally correlate this information with the lesions found during the necropsy.

As explained in Chapter 3 (3.1.9), when finishing a specific rotation, students select and present a **clinical report** about a clinical case/group of animals among those directly attended by them. They should include their personal participation, and a complete critical discussion based on the literature, which allows them to improve their understanding of the case.

5.1.9. Description of the patient record system and how it is used to efficiently support the teaching, research, and service programmes of the Establishment

All patients' information has traditionally been registered on their personal files. Every **VTH** Service has its own case-book where a fast review of the patient visit can be consulted in order to obtain the file number and the date. This information is open to staff and students. Within the last couple of years, the **VTH** has been working on the design of its own computerized record software, which is available since April 2017. This software will replace the traditional system and will allow staff and student to have access to the most relevant patient's information.

5.1.10. Description of the procedures developed to ensure the welfare of animals used for educational and research activities

The use of animals for experimental and education purposes is regulated by the Spanish transposition of the Directive 2010/63/EU on the Protection of Animals used for Scientific Purposes. Therefore, all procedures must be approved by the institutional Research Ethics Committee and, finally, the competent authority (http://www.um.es/comisioneticainvestigacion). Such approval requires the application of the 3R concept of reduction in the number of animals employed, refinement of the procedures employed, and replacement by alternative methods. Exemptions are those procedures below the established threshold, such as those where moderate animal handling is performed (e.g., basic physical exam). The animal facilities of the Establishment are under the institution administrative responsibilities. All the facilities are managed by qualified animal facility directors. Currently most teaching clinical procedures are performed at the **VTH** with client-owned patients, and the number of practical activities with experimental animals has been significantly reduced.

5.1.11. Description of how and by who the number and variety of animals and material of animal origin for pre-clinical and clinical training, and the clinical services provided by the Establishment are decided, communicated to staff, students and stakeholders, implemented, assessed and revised

The teachers responsible for each preclinical and clinical subject of the Degree design a teaching programme on the basis of the syllabus contents. The approximate number and variety of animals and animal materials to be used for optimal training is defined. This programming is done five to six months before the academic year starts. The programming is raised for discussion and approval to different governing bodies such as the Department Council, the **VTH** Board and the Faculty Council. These schedules are made public on the **FVETUM** website. All the information is evaluated annually by the Committee for Assessment and Improvement of the Curriculum, which is responsible for preparing a report that is submitted for the approval of the Faculty Council. All the Faculty collectives (academic staff, support staff and students) are represented in the governing bodies.

Table 5.1.1. Cadavers and material of animal origin used in practical anatomical training

Species	2016-17	2015-16	2014-15	Mean
Equine	• 1 complete embalmed cadaver • 3 complete skeletons • 25 skulls • 9 collections of isolated bones • 30 Joint collections (20 wet and 10 plastinated) • 14 collections of locomotor neuromuscular prossections (6 wet and 8 plastinated) • 32 collections of head dissections (20 wet and 12 plastinated) • 1 complete plastinated foal with dissections of corporal cavities • 19 hearts (13 wet, 6 plastinated) • 6 lungs (4 wet, 2 plastinated) • 4 livers (3 wet, 1 plastinated) • 9 stomachs (5 wet, 4 plastinated) • 16 kidneys (10 wet, 6 plastinated) • 5 spleens (5 wet) • 12 uterus (6 wet, 6 plastinated) • 6 penises (4 wet, 2 plastinated) • 18 brains (12 wet, 6 plastinated) • 6 fetuses of different ages with placenta (5 wet, 1 plastinated)	• 3 complete skeletons • 22 skulls • 9 collections of isolated bones • 26 Joint collections (20 wet and 6 plastinated) • 14 collections of locomotor neuromuscular prossections (6 wet and 8 plastinated) • 28 collections of head dissections (18 wet and 10 plastinated) • 1 complete plastinated foal with dissections of corporal cavities • 18 hearts (13 wet, 5 plastinated) • 6 lungs (4 wet, 2 plastinated) • 4 livers (3 wet, 1 plastinated) • 6 stomachs (3 wet, 3 plastinated) • 16 kidneys (13 wet, 3 plastinated) • 5 spleens (5 wet) • 10 uterus (6 wet, 4 plastinated) • 6 penises (5 wet, 1 plastinated) • 14 brains (10 wet, 4 plastinated) • 6 fetuses of different ages with placenta (5 wet, 1 plastinated)	• 3 complete skeletons • 20 skulls • 9 collections of isolated bones • 22 Joint collections (18 wet and 4 plastinated) • 14 collections of locomotor neuromuscular prossections (6 wet and 8 plastinated) • 25 collections of head dissections (15 wet and 10 plastinated) • 16 hearts (13 wet, 3 plastinated) • 5 lungs (4 wet, 1 plastinated) • 4 livers (3 wet, 1 plastinated) • 6 stomachs (5 wet, 1 plastinated) • 12 kidneys (10 wet, 2 plastinated) • 4 spleens (4 wet) • 10 uterus (8 wet, 2 plastinated) • 6 penises (6 wet) • 12 brains (10 wet, 2 plastinated) • 5 fetuses of different ages with placenta (4 wet, 1 plastinated)	
Companion animals	• 12 live dogs • 50 dog complete embalmed cadavers • 6 complete skeletons (4 dogs, 2 cats) • 15 skulls • 12 collections of isolated bones • 3 Dog joint collections (wet and plastinated) • 5 collections of dog locomotor neuromuscular prossections (wet and plastinated) • 10 collections of dog head cavities dissections (wet and plastinated) • 6 complete plastinated dogs with dissections of body cavities • 1 complete vascular injected plastinated dog, horizontally sectioned • 24 dog thoracic cavities (16 wet, 8 plastinated) • 12 dog hearts (8 wet, 4 plastinated) • 2 sets of dog echocardiographic plastinated heart • 21 dog abdominal and pelvic cavities (15 wet, 6 plastinated) • 12 lungs (4 wet, 8 plastinated) • 10 livers (8 wet, 2 plastinated) • 12 stomachs (5 wet, 7 plastinated) • 10 kidneys (6 wet, 4 plastinated) • 5 spleens (5 plastinated) • 5 uterus (5 plastinated) • 17 brains (12 wet, 5 plastinated) • 15 fetuses of different ages with placenta (11 wet, 4 plastinated)	• 10 live dogs • 50 dog complete embalmed cadavers • 6 complete skeletons (4 dogs, 2 cats) • 15 skulls • 12 collections of isolated bones • 3 Dog joint collections (wet and plastinated) • 5 collections of dog locomotor neuromuscular prossections (wet and plastinated) • 10 collections of dog head cavities dissections (wet and plastinated) • 6 complete plastinated dogs with dissections of body cavities • 1 complete vascular injected plastinated dog, horizontally sectioned • 18 dog thoracic cavities (12 wet, 4 plastinated) • 12 dog hearts (8 wet, 4 plastinated) • 2 sets of dog echocardiographic plastinated heart • 18 dog abdominal and pelvic cavities (15 wet, 3 plastinated) • 10 lungs (4 wet, 6 plastinated) • 10 livers (8 wet, 2 plastinated) • 10 stomachs (5 wet, 5 plastinated) • 10 kidneys (6 wet, 4 plastinated) • 5 spleens (5 plastinated) • 4 uterus (4 plastinated)) • 15 brains (12 wet, 3 plastinated) • 11 fetuses of different ages with placenta (9 wet, 2 plastinated)	• 50 dog complete embalmed cadavers • 5 complete skeletons (4 dogs, 1 cat) • 15 skulls • 12 collections of isolated bones • 3 Dog joint collections (wet and plastinated) • 5 collections of dog locomotor neuromuscular prossections (wet and plastinated) • 10 collections of dog head cavities dissections (wet and plastinated) • 6 complete plastinated dogs with dissections of body cavities • 1 complete vascular injected plastinated dog, horizontally sectioned • 12 dog thoracic cavities (10 wet, 2 plastinated) • 12 dog hearts (8 wet, 4 plastinated) • 2 sets of dog echocardiographic plastinated heart • 15 dog abdominal and pelvic cavities (12 wet, 3 plastinated) • 10 lungs (4 wet, 6 plastinated) • 10 livers (8 wet, 2 plastinated) • 9 stomachs (5 wet, 4 plastinated) • 10 kidneys (6 wet, 4 plastinated) • 5 spleens (5 plastinated) • 3 uterus (3 plastinated) • 14 brains (11 wet, 3 plastinated) • 11 fetuses of different ages with placenta (9 wet, 2 plastinated)	
Cattle	• 1 complete skeleton • 15 skulls • 4 collections of isolated bones • 5 Cow joint collections (wet and plastinated) • 1 collection of head neuromuscular prossections (wet and plastinated) • 1 collection of head cavities (wet and plastinated) • 6 hearts (4 wet, 2 plastinated) • 3 livers (3 wet) • 1 stomachs (1 plastinated) • 9 kidneys (6 wet, 3 plastinated) • 5 spleens (5 wet) • 15 uterus (10, wet, 5 plastinated) • 7 brains (5 wet, 2 plastinated)	• 1 complete skeleton • 15 skulls • 4 collections of isolated bones • 4 Cow joint collections (wet and plastinated) • 1 collection of head neuromuscular prossections (wet and plastinated) • 1 collection of head cavities (wet and plastinated) • 5 hearts (4 wet, 1 plastinated) • 3 livers (3 wet) • 1 stomachs (1 plastinated) • 9 kidneys (6 wet, 3 plastinated) • 5 spleens (5 wet) • 14 uterus (10, wet, 4 plastinated) • 7 brains (5 wet, 2 plastinated)	• 1 complete skeleton • 15 skulls • 4 collections of isolated bones • 3 Cow joint collections (wet and plastinated) • 1 collection of head neuromuscular prossections (wet and plastinated) • 1 collection of head cavities (wet and plastinated) • 4 hearts (4 wet) • 3 livers (3 wet) • 6 kidneys (6 wet) • 5 spleens (5 wet) • 13 uterus (10, wet, 3 plastinated) • 7 brains (5 wet, 2 plastinated) • 18 fetuses of different ages with	

	• 18 fetuses of different ages with placenta (9 wet, 9 plastinated)	• 18 fetuses of different ages with placenta (11 wet, 7 plastinated)	placenta (11 wet, 7 plastinated)	
Small ruminants	• 4 complete skeletons • 10 skulls • 2 collections of isolated bones • 6 hearts (4 wet, 2 plastinated) • 15 brains (10 wet, 5 plastinated) • 5 lungs (2 wet, 3 plastinated) • 4 livers (wet) • 6 stomachs (2 wet, 4 plastinated) • 7 kidneys (5 wet, 2 plastinated) • 5 spleens (5 wet) • 5 uterus (5 plastinated) • 17 brains (12 wet, 5 plastinated) • 14 fetuses of different ages with placenta (9 wet, 5 plastinated)	• 4 complete skeletons • 10 skulls • 2 collections of isolated bones • 5 hearts (4 wet, 1 plastinated) • 12 brains (10 wet, 2 plastinated) • 5 lungs (2 wet, 3 plastinated) • 4 livers (wet) • 5 stomachs (2 wet, 3 plastinated) • 5 kidneys (5 wet) • 5 spleens (5 wet) • 5 uterus (5 plastinated) • 19 brains (15 wet, 4 plastinated) • 14 fetuses of different ages with placenta (9 wet, 5 plastinated)	• 4 complete skeletons • 10 skulls • 2 collections of isolated bones • 4 hearts (4 wet) • 15 brains (10 wet) • 4 lungs (2 wet, 2 plastinated) • 4 livers (wet) • 5 stomachs (2 wet, 3 plastinated) • 5 kidneys (5 wet) • 5 spleens (5 wet) • 5 uterus (5 plastinated) • 15 brains (12 wet, 3 plastinated) • 11 fetuses of different ages with placenta (9 wet, 2 plastinated)	
Pigs	• 1 complete Skeleton • 5 skulls • 3 collections of isolated bones • 5 Joint collections (wet and plastinated) • 25 hearts (10 wet, 15 plastinated) • 6 lungs (3 wet, 3 plastinated) • 4 livers (wet) • 10 stomachs (5 wet, 5 plastinated) • 10 kidneys (5 wet, 5 plastinated) • 5 spleens (5 wet) • 12 uterus (6 wet, 6 plastinated) • 15 brains (10 wet, 5 plastinated) • 35 fetuses of different ages with placenta (12 wet, 23 plastinated)	• 1 complete Skeleton • 5 skulls • 3 collections of isolated bones • 5 Joint collections (wet and plastinated) • 20 hearts (10 wet, 10 plastinated) • 5 lungs (3 wet, 2 plastinated) • 4 livers (wet) • 13 stomachs (5 wet, 3 plastinated) • 9 kidneys (5 wet, 4 plastinated) • 5 spleens (5 wet) • 10 uterus (6 wet, 4 plastinated) • 15 brains (10 wet, 5 plastinated) • 18 fetuses of different ages with placenta (9 wet, 9 plastinated)	• 1 complete Skeleton • 5 skulls • 3 collections of isolated bones • 5 Joint collections (wet and plastinated) • 20 hearts (10 wet, 10 plastinated) • 5 lungs (4 wet, 1 plastinated) • 4 livers (wet) • 13 stomachs (5 wet, 3 plastinated) • 10 kidneys (6 wet, 4 plastinated) • 5 spleens (5 wet) • 10 uterus (6 wet , 4 plastinated) • 15 brains (10 wet, 5 plastinated) • 18 fetuses of different ages with placenta (9 wet, 9 plastinated)	
Poultry & rabbits	• 50 poultry fresh complete cadavers • 3 complete skeletons • 6 skulls • 4 collections of isolated bones	• 50 poultry fresh complete cadavers • 3 complete skeletons • 5 skulls • 4 collections of isolated bones	• 50 poultry fresh complete cadavers • 3 complete skeletons • 5 skulls • 3 collections of isolated bones	
Exotic pets	• 3 complete skeletons • 6 skulls	• 3 complete skeletons • 6 skulls	• 3 complete skeletons • 6 skulls	

Table 5.1.1.a Material of animal origin used in practical anatomical training from abattoir.

	Cattle	Small ruminants	Swine	Equine
Respiratory	70	239	85	7
Hearts	17	13	60	
Digestive	5	6	10	1
Liver	68	167	31	9
Urogenital	39	74	51	6
Skin	10	4	19	
Muscular join	6	7	2	
Spleen	3			
Thoracic cavity		4	1	

Table 5.1.2. Healthy live animals used for pre-clinical training (at VTF).

Species	2016/17	2015/16	2014/15	Mean
Cattle	175	37	72	95
Small Ruminants	157	122	144	141
Swine	2,200	2,200	2,200	2,200
Companion Animals	100 +4*	60 +3*	60 +3*	73 +3,3*
Equine	6	6	6	6
Poultry	10,840	10,840	10,840	10,840
Rabbits	350	350	0	237
Exotics pets (primates *Papio hamadryas*)	50	50	50	50
Bee (hives)	50	50	50	50
Others (*Canarius serinus*)	20	20	20	20

*Dogs used for propaedeutic training at VTH.

Table 5.1.3. Number of patients seen intra-mural.

Species	2016/17	2015/16	2014/15	Mean
Cattle	-	-	-	-
Small Ruminants*	92	90	93	91.6
Swine*	340	306	221	289
Companion Animals**	6,699	5,594	4,952	5,748.3
Equine**	549	690	431	556.6
Poultry & Rabbits	-	-	-	-
Exotics pets	4	2	7	4.3
Total number of visits	**11,895**	**9,801**	**8,283**	**9,993**

* Numbers referred to reproductive management practices in VTF
**Estimated numbers. Our data system does not differentiate if a visit is due to the same or to a different condition.

Table 5.1.4. *Number of patients seen extra-mural.*

Species	*2016/17*	*2015/16*	*2014/15*	*Mean*
Cattle	287	210	226	241
Small Ruminants	135	230	392	252,33
Pigs**	5,164	2,684	2,884	3,577.33
Companion Animals*	925	710	414	683
Equine*	11	9	5	25
Exotics pets*	123	101	58	94
Poultry & Rabbits**	7,200	82,800	5,600	31,866.66
Total number of visits	**13,845**	**86,744**	**9,579**	**5,248.47**

*Estimated numbers obtained from the EPT practicum reports.
** Data corresponding to the total census of the farms visited by the students. Due to the intensive production system for these species in our area, work only includes sporadic care of individual animals.

Table 5.1.5. Percentage (%) of first-opinion patients used for clinical training.

Species	2016/17	2015/16	2014/15	Mean
Cattle	100 %	100 %	100 %	100 %
Small Ruminants	100 %	100 %	100 %	100 %
Swine	100 %	100 %	100 %	100 %
Companion Animals	30 %	30 %	30 %	30 %
Equine	70 %	70 %	70 %	70 %
Poultry & Rabbits	100 %	100 %	100 %	100 %
Exotics pets	100 %	100 %	100 %	100 %

Table 5.1.6. Cadavers used in necropsy.

Species	2016/17	2015/16	2014/15	Mean
Cattle	6	3	15	8.00
Small Ruminants	41	58	97	65.33
Swine	39	63	67	56.33
Companion Animals	98	122	92	104
Equine	1	2	2	1.67
Poultry & Rabbits	113	229	97	146.33
Exotics pets	52	4	22	26
Others	-	1	-	0.33

Table 5.1.7. Number of visits in herds/flocks/units for training in Animal Production and Herd Health Management.

Species	2016/17	2015/16	2014/15	Mean
VTF *				
• **Cattle**	47	42	31	40
• **Small ruminants**	104	95	92	97
• **Pigs**	59	60	70	63
• **Poultry**	31	25	26	27
• **Rabbits**	29	35	31	32
• **Equine**	31	41	43	38
Extramural**				
• **Cattle**	81	68	48	66
• **Small ruminants**	8	10	12	10
• **Pigs**	2	1	2	2
• **Poultry**	0	3	3	2
• **Rabbits**	2	0	0	1
• **Wild animals and cinegetic farms**	8	3	2	4

* One academic staff and 5-10 students for each visit
** One academic staff and 3-8 students for each visit

Table 5.1.8. Number of visits in abattoirs and related premises for training in FSQ.

Species	2016/17	2015/16	2014/15	Mean
Ungulates' Abattoirs (Ruminants, pigs and equine)	79	108	103	96.7
Poultry Abattoirs	-	4	4	2.7
Rabbit's Abattoirs	7	8	3	6
Related Premises:				
Fish Central Market	10	10	10	10
Catering Industries	10	10	10	10
Others (Bakery, Brewery, Wine products, Candy products…)	9	9	11	9.7

5.2. Comments.

- Since the last visitation of the EAEVE the **FVETUM** has increase the animal origin resources for practical training, both, for pre-clinical and clinical material. It is remarkable in pre-clinical the number and quality of specimens for anatomical training and the know-how acquire in practical anatomical training. Also, the number of cadavers used for necropsy training provide a proper skill acquisition, but the equine, due to the fact of the shortage of cases for cadavers from the clinical cases and the expenses of the elimination (incineration) of the large animal, that the owners are not able to cover. See section 5.3. for improvement measurements.
- Regarding number of visits in herds/flocks/units for training in AP&HHM and visits in abattoirs and related premises for training in FSQ, both have the support of the **FVT** in one case, and the network of abattoirs under the OVS Regional Services (agreed by a Memorandum of Understanding) that provide an adequate environment for practical training. **VTH** animal resource plays also a key role at pre-clinical training is subjects related to animal health.
- For clinical training **VTH** plays the core of the training, and as a policy is to encourage an increase of case referrals. In order to do that, appropriate measures are put in place to ensure that the system works adequately based on a trust relationship with the referring practitioners, and trying to avoid competition. In this way, the owners of referred animals are encouraged not to come to the **VTH** for diagnosis or treatment of other diseases without the knowledge of their veterinarian. Nevertheless, a balance is needed because keeping a significant number of first-opinion cases provides valuable material for teaching, considering that those are the cases that our students will face most frequently after graduation.
- The number and variety of small animal cases is sufficient for a proper skill acquisition, ensuring a 24-7 service practice intra-mural for all students along the 5 years Degree. Regarding extra-mural training, the above-mentioned policy of agreement with the practitioners to be referral teaching hospital do not allow to carry out exta-mural clinical services by **VTH**. However, in rotation and EPT students are exposed and trained to small and large animals since they take this

training with practitioners that receive the students under practical training agreement and also in rotation with practitioners that are under contract with **FVETUM**.

5.1. Suggestions of improvement.

- Our teaching procedures have been revised over the last years in order to minimise the use of live animals and all protocols have been approved by the Ethical Committee for Animal Experimentation in non-clinical intervention. For that reason and un cooperation with the clinical subjects and Departments we are working to put in place a clinical skill laboratory using animal models or dummies. The request made to the Vice-Chancelor of Economy of UM is to acquire 3 dogs, 1 horse and 1 cow. Other small replicas or model are already in use in some clinical subjects. The **FVETUM** policy is to open it this academic year as an innovative tool and to be improved by year.
- Regarding necropsies, the number of necropsies may look scarce for large animals (mainly horses). As mention, there are several reasons adding also that farmers or owners use this service only when there is a serious health outbreak. This lack of material is compensated with pathological organs from abattoirs. Additionally, we have requests that all animal incineration will be covered by the Vice-Rectorate of Finances as well as cover all chemical waste in a centralize service. Still under evaluation when this SER was finished. Calculation on the number of large animals needed to reach the standards have been made by the academic teaching staff to fulfil the requirements.
- In anticipation of a new animal protection regulation that probably will limit the current cadaver donation program, alternative donation programs are being managed for educational purposes with clinics and private veterinary hospitals to ensure the training of the students.
- Practical clinical training at **VTH** can also be improved in services that where open in the past, but due to different scenarios, where closed. This is the case of exotic animals that was a service shut down 3 years ago due to the difficulties to hire a new specialist and the shortage of cases due, probably to the economic crisis.
- To ensure a better practical training on horses, the rotation in large animals has been enclose as mandatory rotation and the service has been reinforced with the request of an associate professor. All investments in infrastructure mentioned in Standard 4 are also mainly devoted to improve the quality of the facilities to provide better service in equines.
- Budgetary cutbacks have limited investments in equipment and facilities during the last years, making reinvestment necessary, especially in more competitive equipment to provide better consultation and case referral of practitioners.

Standard 6

Learning resources

6.1. Factual information

6.1.1. Description of libraries available to FVETUM students and staff.

Since de last visit the policy of the **UM** has changed, and the library of the **FVETUM** has been moved, together with other Faculties libraries, to the Central **UM** Library (http://www.um.es/web/biblioteca/). Services have been centralised to provides a more efficient service to the students, academic and support staff. However, the **FVETUM** still keep in use the previous library that is used by the students as a "Study Room" (http://www.um.es/web/veterinaria/contenido/centro/servicios/biblioteca).

- **Facilities**: location in the campus, global space, number of rooms, number of seats.
  a) **Study Room at FVETUM.**
  It is located at the Main Building Unit A, has conveniently located between the lectures halls, the free access computer room (named ADLA "Vencejo") and in the same hall where the students associations have their offices. It has a global space of 250 m^2 with 128 seats.
  Additionally, it has a students Working Group Booth (WGB) for up to 10 students, and a free access computer room of 80 m^2 with 24 seats (so called "VULTUR" http://www.um.es/web/veterinaria/contenido/centro/instalaciones/aulas#vultur). The aim of VULTUR at the "Study Room" is self-learning and training in transversal competences, mainly of languages (English), but also is a free access so that the student can review the information that they received in class, as well as perform tasks through Virtual Campus.
  b) **University Main Library ("María Moliner Library") at Espinardo Campus.**
  It is located very close located to the **FVETUM**, only 250 m (Lat 38, 1, 5 N; Long 1, 10, 13 W). It has 4 floors with a wide range of services.
  The students have access to the following services in the General Library (http://www.um.es/web/biblioteca/contenido/informacion/puntos-de-servicio/biblioteca-general):
    - A general study room with capacity for 268 seats.
    - A section of Health Sciences (Veterinary Science, Medicine and Nursing Studies) has a surface of 420 m^2, with capacity for 40 students. An array of 2.500 monographies is available.
    - Scientific Journals library of 420 m^2 with a capacity for 26 students. The Journals are available in both paper and electronic formats.
  c) **Other or subsidiaries Libraries**.
  VTF also has a small library with 20 seats (http://www.um.es/web/granjaveterinaria/contenido/infraestructuras/central), and all Faculties (at different campuses) also has a **Faculty library** with open access to any **UM** student. **Downtown Library** (Antonio de Nebrija) is another Central Library of 3776 m^2, distributed in 12 rooms of free access and a Media library. The reading posts are 745. There are 10 CTG (Working Group Booths) with 126 seats. **Departments** have a collection of specialised bibliographic references controlled by the Library by means of ABSYS (Library Management Programme). Students, according to the Library Regulations, can make consultations during the Department opening hours and books are available for borrowing or inter-lending from the Departments as well. Most part of the bibliographic collections of the Departments/University is open access at "**Catálogo Alba**" can be consulted using the Net: https://alejandria.um.es/.

- **Opening hours and days**.
  Study Room at FVETUM follows the timetable of the Faculty, opening at 8:30 and closing at 21:00 from Monday to Friday, but during holydays seasons that usually is from 9:00 to 14:00 h or the timetable defined by the General Manager of the University.
  University Main Library on Espinardo Campus also follow the same timetable that the **Study Room of FVETUM** but during holydays seasons the adapt to the final exams needs and usually the opening time open up to midnight. Timetable of the different libraries are on-line at http://www.um.es/web/biblioteca/contenido/informacion/horario.

- **Equipment**: libraries and study rooms are equipped with individual or small group seats, and in most of the cases isolating students with a frontal panel. As mention, at "VULTUR" students have free access to 24 computers that can search for bibliography and other teaching resources. Most of the students bring their own laptops or tablets to the Study Room and can access and Wi-Fi access throw EDUROAM (Education roaming, the initiative that creates a unique space of mobility between the academic and research community throughout the world). Power supply and wireless connection to the Internet are available for the **FVETUM** community.

- **Number of veterinary learning resources**
  - Books and periodicals. The policy of the University is to cover all referenced main subject's literature, and provide the number of needed copies for student and staff. The recommended bibliography is covered, with an average above 90%. All are available at the Main Campus Library.
  - e-books and e-periodicals. E-book service of the **UM** throe the Library Service can be reached at http://www.um.es/web/biblioteca/contenido/biblioteca-digital/libros-electronicos#. E-books are classified by subject area and 18 editorials. Veterinary Sciences are classified within "Health Science" with more than 3000 e-

books. For Veterinary closer subjects (veterinary, physiology, biochemistry, food,…) the number is limited to no more than 40. E-periodicals are mainly for research and can be access on-line using the identification system of e-mail and password throw proxy system when outside the **UM**. E-periodicals are contracted with the most reputed editorial companies (Elsevier, Oxford,…check the whole list at http://www.um.es/web/biblioteca/contenido/biblioteca-digital/revistas-por-suscripcion), and articles can be download for research purposes. Only last year students with the FDW (Final Degree Work) or masters have free access, other students can get it on request to the tutor or the Library Service.

- **Old bibliographical background of FVETUM**. With the donation of old books of the retires veterinarians from Murcia and regions nearby, the Library founded and **Old bibliographical background** as a collection, but also can be used for students mainly for the elective subject of Veterinary History. This bibliographic fund has a total of 203 titles, and among this background we find some specimens from the late nineteenth century and most are from the early and mid-twentieth century.

- **Staff (FTE) and qualifications.**
  Within the centralised policy of learning resources at the Main Libraries all support staff (librarian) are mainly centralised. The list of librarians is high (http://www.um.es/web/biblioteca/contenido/informacion/directorio), more than a 100 for all the University, at different categories. For periodical scientific subscriptions in Medicine, Nurse and Veterinary Sciences there is a full-time support staff additionally to the head of subscriptions (the former librarian head of **FVETUM**). The Library staff keeps its knowledge up-to-date through regular training.
- **Annual budget.**
  The annual budget of the UM Library in 2017 has been 2,151,612 € to support periodical scientific subscriptions (the most important part of the budget), as well as teaching books (98,000.00 € for the whole University, and precisely 3,856.17 € for **FVETUM**). This amount allows to cover all the reference bibliography of the different syllabus and students have several volumes of each one that are available at the Main Library and can be reserved on-line and borrowed. Students can check the recommended subject books on-line at the address http://www.um.es/web/biblioteca/contenido/biblioteca-digital/bibliografia-recomendada, selecting the academic year/Degrees/subject. Additionally, **FVETUM** has made an effort to support the subscription to specialised veterinary medicine that from this current year is under the Library Service. It can be access on –line throw the VetLibrary web page (http://www.um.es/web/veterinaria/contenido/centro/servicios/biblioteca and we have linked to Veterinary clinics of North America (Equine, Small Animals, Exotics, and Food Animal Practice) and some national journals like "*Canis et Felis*" journal.

6.1.2. Description of the IT facilities and e-learning platform.

IT is essential for accurate and quick access to information, and to for fast communication. For that reason, the **UM** policy is to provide to any member of UM with an e-mail and password to access throw **EDUROAM** or **ICARUM** (**UM** internet) via WI-FI to all IT services.

FVETUM owns 3 Computer Rooms (so called **ADLAS**, free access) with a total number of 75 seats divided into:

- Main Building:
  - ADLA Vencejo: 35 seats and located on the ground floor of the Faculty, next to the "Study Room".
  - ADLA Verderón: 24 seats, located in ground floor and close to the **VTH**.
- **VTF**
  - ADLA "José Manuel Cid Díaz" (16 seats and located at the Main Building of the **VTF**).

We need to add the 24 seats of VULTUR (described above in this section), that makes a total number of close to 100 computer seats. ADLAS are also used for lectures and practical training, and students have free access out of the schedules time for teaching.

Full support of all services is provided by the Central Computer Service (so called ATICA, http://www.um.es/atica/), that provide support for teaching projects, learning services, digital exam assessment…). For equipment or network support there are a support unit that covers the 3 Faculties: Chemistry, Biology and **FVETUM**.

The institutional **Virtual Classroom** of the University of Murcia (https://aulavirtual.um.es) is the official platform for virtual teaching (e-learning) where teachers and students have various telematic tools that facilitate the development of teaching and learning. The Virtual Classroom is an adaptation of the open source platform Sakai CLE (Collaboration and Learning Environment), which also includes development tools of the **UM**.

It in turn provides a more flexible communication channel as well as access to information and digital resources of the subjects. The Virtual Classroom is versatile: it supports classroom or face-to-face teaching, makes teaching fully virtual (on-line), and at the same time allows the creation of collaborative workspaces, useful for research groups, projects Collaboration between teachers from different universities, and so on. Among the tools offered by the Virtual Classroom are the following: Teaching Guide, Calendar, Resources, Web Content, Content (organize contents and units centrally), Announcements, Private Messages, Forums, Chat, Tasks, Exams Online, including surveys), Orla, sign up (to manage meetings), Appeals for exams, Tests in person, Qualifications, Records, and Videoconference. It is used for under and post-graduate studies, and for instance, it is under the QA System to post the Teaching Guide for the next academic year before the end on July. This learning environment is also accessible from mobile devices and it is linked in 1 click from **FVETUM**

webpage (http://www.um.es/web/veterinaria/).

For **FVETUM**, we have developed a special (innovation) project for an **on-line portfolio** to track, check and score the learning outcomes of the Rotations to fulfil the Day One Competences. Next project will be the harmonised and centralized access to **clinical cases**.

With the objective to offer the users of the **UM** a virtual desktop environment, equipped with a control and management of corporate type while providing a familiar environment for the user, **UM** has generated the project **Virtual Desktop EVA** (https://eva.um.es/). It is a set of remote virtual machines that can be deployed from a centralized hosting server. This will allow us to reduce operating costs and improve security, while maintaining the user experience. There is one EVA specialised for **FVETUM**, very useful for specific remote software.

6.1.3. Description of the available electronic information and e-learning courses, and their role in supporting student learning and teaching in the core curriculum.

The **FVETUM** Library offers an introductory course for new students on its use and services; different courses on the use of bibliographic databases (PubMed, Web of Science, Scopus, FSTA), citation tools (RefWorks, Mendeley, EndNote online, EndNote X7) and the fundamentals of scientific writing. The participation of the Library staff is also required for postgraduate and continuing education programmes.

To support on-line teaching, **FVETUM** has been always involved on Innovation programs such as OpenCourseWare (OCW) or A massive open online course (MOOC). **FVETUM** has generated 11 **OCW** with several prizes for quality and innovation (http://ocw.um.es/), and for **MOOC** a couple (http://umumooc.um.es/), that are managed by MIRIADAX platform (https://miriadax.net/).

6.1.4. Description of the accessibility for staff and students to electronic learning resources both on and off campus.

Wireless Internet connection in the whole Establishment is available. Remote access to Internet resources (including electronic library resources and learning materials) is also provided through a safe VPN connection for staff and students.

6.1.5. Description of how the procedures for access to and use of learning resources are taught to students.

At the beginning of the first academic year, the **FVETUM** organizes a Welcome Day for new students. Among other information, a brief explanation on how to access the Virtual Campus and how to manage the institutional email address is provided. This information is also provided during the Mentoring Program for new students. Furthermore, the Library offers specific user training, focused on information management: searching, selection, evaluation, ethics and communication. Students can be rewarded with 1 elective ECTS (CRAU) after receiving this training. In addition to on-site lessons, tutorials and learning materials are published on the website. All the information is also on-line at the Library website, and the most common way to access to the use of learning resources is to consult the reference or recommended literature of the subject (http://www.um.es/web/biblioteca/contenido/biblioteca-digital/bibliografia-recomendada), check the availability ("**Catálogo Alba**" using: https://alejandria.um.es/), and to reserve an collect from the Main Library or the Vet Library (http://www.um.es/web/biblioteca/contenido/servicios/prestamo-documentos). The University of Murcia has developed a mobile application (TUI Library app, see image) and a Whatsapp service for users of the University Library. The application, in particular, will facilitate the search for books, the renewal of loans, the reserve of copies that are borrowed, the consultation of active loans and know the available reserves and the expiration of loans.

6.1.6. Description of how and by who the learning resources provided by the Establishment are decided, communicated to staff, students and stakeholders, implemented, assessed and revised.

Learning resources are very close related to the subject syllabus approved by the Departments. By the end of the academic year the Teaching Guides are reviewed by the Academic Staff reasonable for the subject taking into consideration the students comments and practitioners whom collaborate with the subject, and up-dated of all items, including recommended bibliography that is also approved by the Faculty Board. With this information, the Library Committee approve to purchase a certain number of volumes for students based on the yearly Library budget (3.856,17 € for 2017). The acquisition of new resources reflects the demand expressed by both academic staff and students, and includes the recommended bibliography for the different subjects. One important criteria use to make a decision to purchase is the *ad hoc* consultations and students reached. If the situation allows the Faculty General Budget and Department Budget may also support the purchase of a larger number of volumes or special requests. This Committee is in charge of implementing, assessing and revising the Library policy. This literature is available on the website as described previously. Base on the UM policy any person who request document can borrow it following the rules described in the web of the Library.

Regarding the acquisition of new software needed for teaching, the teachers responsible for the subjects contact the computer technicians and define the best way to acquire it depending on the license. In most of the cases it is purchased by the Department/subject practical training budget, in other can be sheared with other subjects of either **FVETUM** or **UM**, and finally installed at the ADLA. Using EVA students and AS can also use the software remotely.

6.2. Comments

- **FVETUM** learning resources model (centralised library, open sources, pone WI-FI, remote desktop, e-learning,...) have been very important and changed the model of teaching and with a high impact on the students' performance. The policy of **FVETUM** has been always to participate and be part of the change based on innovative model of teaching, reason why Innovation is a key role within the Dean Team.
- The **UM** also provides students and staff with online computer training courses http://www.um.es/web/biblioteca/formacion).

6.3. Suggestions for improvement

- Measures for the improvement of learning resources include the continuous enrichment of our collections, the enhancement of user training, and the development of self-e-learning materials.
- The projects of Innovation for on-line portfolio and a centralised access to clinical cases for teaching purposes complementary of the print-out will be very useful to reinforce the use of the virtual desktop and to improve the learning skills of the veterinary students.

Standard 7

Student admission, progression and welfare

7.1. Factual information

7.1.1. Description of how the educational programme proposed by the Establishment is advertised to prospective students.

Prospectus students are bachelor students of the Region of Murcia or from other surrounding provinces. It is a Regional impact mainly in the south east of Spain, although we also receive students from different regions outside the main area of influence. There is a fact that students have the right to select any public University within Spain, there is a selection of more than one Veterinary Faculties within the so called "Single University District" waiting to be admitted based on their academic records. Also, we receive requests from EU countries, Latin America and other geographical areas that are informed via e-mail for their particular conditions.

To advertise the information to new students **FVETUM** follows different strategies.

1.- On-line and web information.

The information is kept updated on the University and Faculty webs, and there is a section devoted to "New Students" (http://www.um.es/web/veterinaria/perfil/futuros-estudiantes), where they can find the on-line information. It is also reinforced by the Academic Secretary (http://www.um.es/web/veterinaria/contenido/centro/secretaria2) that also has a section for new students and reply to all questions arise.

2.- Secondary Schools Sessions.

Annually, the **UM** organizes the Secondary Schools Student Visits (http://www.um.es/web/umusecundaria/-/encuesta-visitas-guiadas-2017?inheritRedirect=true&redirect=%2Fweb%2Fumusecundaria%2Fcontenido) to all Faculties of the **UM**, and **FVETUM** is scheduled to be visited in March every Friday. During these visits, baccalaureate students interested to enrol the Veterinary Degree take a tour where they receive an introductory session to explain the admission process at **UM**, the Degrees taught at **FVETUM** and the curriculums of each Degree. Students ask specific questions that are solved by a Dean's Office representative (Secretary or Vice-Dean normally). The second part of the tour, students visit some of the main infrastructures of the Faculty (Veterinary Teaching Hospital, Veterinary Anatomical Museum and Food Pilot Plant). **UM** also organizes informative talks about professional opportunities of Veterinary Degree each year for the prospective students (http://www.um.es/web/umusecundaria/-/sesiones-informativas-sobre-salidas-profesionales-inheritRedirect=true&redirect=%2Fweb%2Fumusecundaria%2F)., that is linked and reinforced at the **FVETUM** website (http://www.um.es/web/veterinaria/contenido/estudios/grados/veterinaria).

7.1.2. Description of the admission procedures for standard students:

All New Students are selected based on their records obtained during the 2 last years of High School and the selective test to Access to the University.

a) **Selection criteria**. After finishing the Baccalaureate, students must pass the University Access Exam (EBAU), which is the same test for all Public Universities in Murcia. There is no additional specific exam to enter the **FVETUM**. Access to the Veterinary Degree at the **UM** is regulated by a *numerus clausus* system: a certain admission rate is established attending to the number of students to be admitted (90) and the number of students demanding access. The EBAU includes two phases: a general phase (which is compulsory for all Baccalaureate students; maximum 10 points) and a specific phase with subjects related to the area of interest (which is voluntary and allows improving the mark up to a maximum of 14 points). Considering the high admission mark needed to access the Veterinary Degree, all students must pass both phases. The final mark is calculated according to the following formula:

$$\text{Admission mark} = 0.6*NMB + 0.4*CFG + a*M1 + b*M2$$

Where

NMB = Average mark corresponding to 1st and 2nd years of the Spanish Baccalaureate;
CFG = EBAU General phase mark;
M1, M2 = The two best marks of the subjects of the EBAU specific phase;
a, b = weighting coefficients of the subjects of the specific phase.

In the case of international students with recognised secondary studies the item (0.6*NMB + 0.4*CFG) is replaced by the average grade of Baccalaureate.

In the academic year 2016/2017, the admission mark was 11.25, and the number of students applying for admission was 1497. In addition to the standard procedures, there is a percentage of places reserved for students with special situations: 1% for university graduates, 5% for disable students (equal to or higher than 33% disability), 3% for high-level and high-performance athletes, 3% for students over 25 years old, 1% for students over 40 years old, and 1% for over 45 years old students. This figure is mandatory by **UM** rules.

b) **Policy for disable and ill students.** Five percent of the admissions are reserved for disable and ill students. They must present an official certificate of disability, proving a rating of 33% or higher. Applications are managed following the same criteria as for the rest of students. During the first academic year, they are not obliged to enrol all Year 1 subjects. Direct and personal attention is given by the University Office for the Integration of People with Disabilities (ADyV, http://www.um.es/adyv/diversidad/discapacidad/apoyo-discapacidad.php) and SAOP (Personal Advice and Guidance Services, https://www.um.es/universidad/publicaciones-umu/guias-umu/guia1112/guia/servicios/saop.html).

c) **Composition and training of the selection committee.** There is no specific selection committee for student admission, since it is based on the mark obtained in the University Access Exam.

d) **Appeal process**. Unsuccessful applicants and those that disagree with their mark can present their appeal addressed to the examining board for revision (http://www.um.es/documents/877924/5005551/InfoWeb-estructura.pdf/9a62ba41-f795-4e42-936e-b567c54301fb) or to the Rector of UM(http://www.um.es/web/vic-estudios/contenido/acceso/pau).

e) **Advertisement of the criteria and transparency of the procedures**. The standard admission procedure depends on the University and is fully advertised and transparent. All the information is published online (http://www.um.es/web/vic-estudios/contenido/acceso). Results of the admission procedure are also communicated online at the same time for all the public universities of Murcia, and personally to all the applicants (http://www.um.es/web/vic-estudios/contenido/acceso/pau).

7.1.3. Description of the admission procedures for full fee students.

Not applicable.

7.1.4. Description of how the Establishment adapts the number of admitted students to the available educational resources and the biosecurity and welfare requirements.

The number of students admitted per year is strictly limited. The total number of admissions is mainly based on the teaching capacity required to achieve a satisfactory standard, based on the available facilities and staff. The demand for Veterinary graduates in the labour market is also considered. In addition, the number of new-admission students should comply with that established in the official document of the **UM** Veterinary Degree approved by ANECA (ENQA member), i.e. **90 admissions**. Each year, the **FVETUM**, by means of its Faculty Board, proposes to the UM Governing Council this specific number of places to be offered, which in turn sends it to the University Coordination Committee of the Ministry of Education, Culture and Sport. This body is empowered to decide, but it usually accepts the Faculty's proposal.

Biosecurity and Protection

New students receive a first contact with these notions in the introductory course called Welcome and Training Week for the Veterinary Grade (http://www.um.es/web/veterinaria/contenido/orientacion-y-empleo/acogida), which is carried out the first week of each academic course. Students are directed to familiarise themselves with the School's Safety and Biosecurity procedures (http://www.um.es/web/veterinaria/contenido/seguridad) and all students receive relevant H&S talks prior to animal handling sessions and clinical rotations. Working with laboratory animals is covered by the University Code of Practice on Allergy to Laboratory Animals and the Code of Practice on Animal Hazards. The School has a Code of Practice covering safe working practices with domestic animals in clinical and teaching settings including working on farms.

7.1.5. Description of:

a) the progression criteria and procedures for all students

Students have to pass at least one of the course subjects at the end of the first year of enrolment at the University (6-12 ECTS). On the other hand, there are two ordinary exam sittings the first time that the student signs up for each subject, and three opportunities the following times. The students can use up to 6 exam sittings to pass each subject. The student must have passed a minimum of 70% of ECTS to be enrolled in EPT, Rotations and Graduation Thesis. They cannot present their Graduation Thesis until they have passed all the subjects of the Degree (http://www.um.es/web/veterinaria/contenido/estudios/grados/veterinaria/plan/reconocimientos).

b) the remediation and support for students who do not perform adequately

For students who need learning assistance, tutorial sessions are perhaps the best way to offer them direct personalised guidance. The teacher offers orientation and advice on all teaching aspects which may improve the teaching-learning process. All academic staff has a specific tutoring schedule that must be observed (minimum six hours per week), there is also a tutorial programme, in which lecturers supervise on an individual basis the students' output and progress from the first academic year and a specific programme at the **FVETUM** for this assistance (http://www.um.es/web/veterinaria/contenido/orientacion-y-empleo/pat). There are other systems in the **UM** to favour the permanency of the students:

- An application for the cancellation of a sitting can be presented to the Dean, accompanied by the appropriate supporting documents or certificates (http://www.um.es/web/vic-estudios/contenido/normativa/permanencia).
- If a student fails 4 ordinary sittings, he has the right to be evaluated by an Examining Board for the fifth and sixth examinations.
- Students who have failed all six regular examinations of a subject can apply to the Rectorate for an extraordinary exam (7th sitting).

c) the rate and main causes of attrition

The official attrition rate is low and without great variations in our Faculty, i.e. 7.14%, 6.38% and 6.67% in the last three years (average 6.7%). Some students who drop out of Veterinary Degree do so because it did not meet their expectations. The academic results also have influence on attrition since the lower the academic performance and success, the higher the probability of dropping out. Finally, the rise in the tuition fees and the cutbacks in scholarships in Spain increased university attrition rates 4-5 years ago.

7.1.6. Description of the services available for students. (i.e. registration, teaching administration, mentoring and tutoring, careers advice, listening and counselling, assistance in case of illness, impairment and disability, clubs and organisations, ...)

a) Provided by the FVETUM

The different services available for students in the **FVETUM** are coordinated by **the Office of the Vice-Dean with the competences for Students and International Affairs at the Veterinary Degree**. This office works closely with the Student Secretary Office, which is responsible for admission, registration, and any other administrative matters, both for undergraduate and postgraduate studies. Students can convey their needs directly to the Office of the Vice-Dean for Students. Since 2012, an Office for Student Orientation is operating in the **FVETUM**, directly attended by the student representatives of our Establishment (http://www.um.es/web/veterinaria/perfil/estudiantes/representacion/delegacion). Its mission is to support students through advice, lobbying and a range of extracurricular activities, as well as being at the heart of student social life.

The **University Ombudsman** is another important source of orientation for the university community. Collaborative dispute resolution is encouraged whenever possible, and mediation services are available on request through the University Ombudsman (http://www.um.es/web/defensor).

As explained above (Chapter 7, 7.1.5), specific tutoring sessions are offered by all teachers. All students are allocated a Personal Tutor (Academic Advisor) for the duration of their studies who is also responsible for supervision of their Professional Development Planning (PDP).

b) Provided by the UM

Specialist teams and experienced advisers are available to support students on a range of issues. The services available for students are:

- **UM** Mobility Office, for guidance and advice for incoming and outgoing students of different national and international exchange programmes.
- **UM** tutoring for pedagogical student support (http://www.um.es/adyv/diversidad/asesoramiento/pedagogico.php).
- Financial support can be obtained through grants given by the Spanish Ministry of Education, Culture and Sports or by **UM** self-funds, all the options are published at the following web page: http://www.um.es/web/estudiantes/contenido/becas
- **UM** Office for Practice and Employment, which aim is to promote the employability of students and graduates of the **UM** (https://bolsa.um.es/bolsa/bolsa.publico.inicio.do).
  - A specific page is published at the **FVETUM** web (http://www.um.es/web/veterinaria/contenido/orientacion-y-empleo/empleo).
  - A specific Service for Veterinary Students is the Orientation Office attended by the Professional Office in Murcia (http://www.veterinariosmurcia.es) in coordination with the **FVETUM**.
- **UM** Office for the Integration of People with Disabilities (ADyV).
- **UM** Office for Gender Equality.
- **UM** Programme for high performance athletes in order to help these students to reconcile sport activity and academic studies (http://www.um.es/web/deportes/competiciones/danum).
- **UM**U in Bike (http://www.um.es/web/umuenbici/) association for promoting the use of bike at the university.
- Sport Activities Service (http://www.um.es/web/deportes/)
- Student Information Service (http://www.um.es/web/siu/)
- List of available services at: http://www.um.es/web/universidad/contenido/unidades-organizativas/servicios-universitarios

All these **UM** Offices have a coordinator in each Faculty, in **FVETUM** being the Vice-Dean with competences in Students. Additionally, Veterinary students can use different medical services offered by the **UM**, at reduced fees (or free of charge). A health, accident and liability insurance policy is included in the registration fees.

Finally, parallel activities of our students through clubs and associations are prominent. At present, 5 active associations are established in the **FVETUM**. The student associations are located in 3 rooms in Building B and can use all the facilities of the **FVETUM** for their activities (http://www.um.es/web/veterinaria/perfil/estudiantes/informacion-adicional). The Student Office is composed of the elected student representatives at the Faculty Council. These students have a relevant role in the different strategies of QA, as explained in Chapter 11.

7.1.7. Prospected number of new students admitted by the Establishment for the next 3 academic years

According to the document approved by ANECA on the Degree in Veterinary, the estimated number of admission places for new students for the next 3 academic years will be similar and never higher than the current one (90).

7.1.8. Description of how and by who the admission procedures, the admission criteria, the number of admitted students and the services to students are decided, communicated to staff, students and stakeholders, implemented, assessed and revised.

Admission procedures and criteria are common for all the **UM** studies and are established by the Ministry of Education, Culture and Sports and the Autonomous Government of Murcia. The number of admitted applicants is based on the official document approved by ANECA on the Degree in Veterinary; it is evaluated and approved by the Faculty Board.

Table 7.1.1. Number of **new veterinary students** admitted by the Establishment

Type of students	2014/2015	2015/2016	2016/2017	Mean
Granted	31	40	46	39
Standard	56	48	51	52
Total	87	88	97	91

Table 7.1.2. Number of veterinary **undergraduate students registered** at the Establishment

Year	2014/2015	2015/2016	2016/2017	Mean
1st	107	107	113	109,00
2nd	123	108	105	112,00
3rd	113	117	128	119,33
4th	116	114	109	113,00
5th	47	114	141	100,66
Total	506	560	596	554

Table 7.1.3. Number of **veterinary students graduating annually**.

Type of students	2014/2015	2015/2016	2016/2017	Mean
Granted	14	36	??	??
Standard	17	27	??	??
Total	31	63	??	??

Table 7.1.4. Average **duration of veterinary studies**

Duration	% of the students who graduated on 2015/2016
5 + 0	30
5 + 1	27
5 + 2	6 (adapted)
5 + 3 or more	0

Table 7.1.5. Number of **postgraduate students** registered at the Establishment

Type of students	2014/2015	2015/2016	2016/2017	Mean
VTH				
• Interns	10	11	10	10,33
• Residents	-	3	2	1,66
Total	10	14	12	12,00
Master programmes				
• MSc in Biology and Technology of Reproduction in Mammals	21	21	26	23
• MSc in Wildlife Management	27	28	25	18
• MSc in Small Animal Medicine	20	19	12	17
• MSc in Human Nutrition, Food Technology and Safety	28	24	29	23
Total Master programmes	96	92	92	81
PhD programmes*				
• PhD Programme in Veterinary Sciences	57	43	18	39
• PhD Programme in Biology and Technology of Reproductive Health	30	23	11	21
• PhD Programme in Food Technology, Human Nutrition and Food Science	34	23	10	22
• Other PhD Programmes	3	11	18	11
Total PhD programmes	124	100	57	94

*PhD students remain at least 3 years in the program as an average.

7.2. Comments

- The number of admitted students is analysed every year and is based on the maintenance of hands-on training and teaching quality at the **FVETUM**.
- Our current syllabus is new, and conclusions regarding the progress of students probably need more time for a proper data evaluation. Nevertheless, preliminary results show a rational average time to complete the Degree

(5,0 and 5,5 years), similar to the data of the Spanish Conference of Veterinary Faculties (national average of 6.8 years).

- Studies in our Establishment are demanding, but the learning environment is friendly, our students are highly motivated and they also have a good and sound academic background, which influences the low attrition rate.
- The Faculty takes seriously the support of students and staff in their health and wellbeing.

7.3. Suggestions for improvement

- The admission of students from an Establishment other than **FVETUM** is legally possible. Our Faculty has largely reduced the number of such admissions, but a change in the current regulations would be needed.
- A rational approach of veterinary education in relation to the requirements of veterinary profession and society in general is also needed.
- A control system of the student admission in all the Spanish Veterinary Faculties based on a critical analysis would be desirable.
- A mentoring strategy would be desirable. For 2018/19 it is our intention to include a formal Mentoring programme directed to new students.

Standard 8

Student assessment

8.1. Factual information

8.1.1. Strategy of FVETUM to assess students.

The student assessment is an essential part of the learning process to ensure that the students acquire the acknowledge, competences and skills requests for the Veterinary Degree.

The Faculty coordinates the assessment process in two main ways:

- Approves the schedule of the final exams and progressing (mid-term) exams based on the consensus with the student's representatives, and approved by the Faculty Board several months in advance (before May 30th) that the academic year will begins, so the calendar will be available to the students to take decision prior to select the subjects for the next academic year. Also, this information will be stated at the syllabus of the different subjects.
- Approving the subject's syllabus where assessment timing, methodology and grading criteria must be stated and previously approved by the Department Council. All syllabus is reviewed by the Dean or Vice-Dean with competences in the Veterinary Degree to be published and available at the "Academic Guides" web http://www.um.es/web/veterinaria/contenido/estudios/grados/veterinaria/2016-17/guias and to ensure that fulfill the defined criteria by the Faculty and **UM**.

This strategy is part of the QA system and transparency, to ensure that all the information is public, debated and harmonized within Faculty and University policy.

The calendar of final examinations has to consider the following criteria:

- No exam should last more than one day.
- No student should be required to sit more than one exam of subjects of the same term/course during the same day.
- It is checked that the dates of consecutive course scores do not match on the same day.
- The dates of the final exams of the subjects rotate every year, so the last of a course become the first of the following course.

Since the last visitation (2006) the terms for final exams have been modified in order to begin earlier the academic year in September and to have summer period also available for Extra Mural Training or other personal activities. Currently the terms allocated for final exams are January, June and July.

- January: term for the final exams of the first semester.
- June: term for the final exams of the second semester.
- July: extraordinary examination period to re-sit exams.

Each term has 20 to 30 days to schedule the final exams. If a coincidence of the final exams is detected by the student or there is a justified and major cause the did not allowed the student to perform the final exam, the **UM** regulation for calls, evaluation and minutes (https://sede.um.es/sede/normativa/reglamento-de-convocatoria-evaluacion-y-actas-2011-aplicable-a-grados-y-masteres-/pdf/80.pdf), allows to the student to request to the Dean for a new date that is agreed with the professors of the subject and the date set.

Minute of the final exams have a determined period to complete in order to ensure that the administrative process followed properly, and for the students to be informed with enough time in advance for other activities like re-sit July call for final exams, Extra Mural Practical Training (**EPT**) or to Graduate, for instance.

8.1.2. Assessment methodologies.

Most subjects combine continuing assessment of the student's day-to-day activity with the evaluation of supervised works, with written exams to evaluate of theoretical knowledge, and specific exams for the evaluation of practical skills. Most of the subjects also include mid-term tests, based on the length of the subject in terms of ECTS. Lecturers certify that students who pass the subjects have acquired the knowledge, competences and skills directly related to them.

- Theoretical knowledge. Assessment of theoretical knowledge is mainly based on written exams. Specific methodologies depend on each subject, but multiple choice test, essays, and matching type tests are the most commonly used. Theoretical knowledge is also evaluated through continuing assessment and evaluation of supervised works.
- Pre-clinical practical skills. Pre-clinical practical skills are primarily evaluated through continuing assessment, written reports, supervised work evaluation, and oral presentations and exams. Practical exams are sometimes made on healthy animals, organs, cadavers, patients or in the laboratory, depending on the subject. In most cases, the attendance and a positive evaluation of practical skills are required to pass the subjects.
- Clinical practical skills. Assessment of clinical practical skills is fully explained in **Chapter 3 (3.1.9).**

8.1.3. Day One Competences assessment.

Day One Competences assessment is based on the assessment of the Rotations in the last academic year and semester. Currently the methodology used is based on 6 rubrics of the tutoring professors of each Rotation. To achieve the rubrics, the student has to complete a memorandum of the activities carried out along the different rotations, stating how competences have

been acquired during the practical activities. Currently there is not a formal logbook because it is difficult to take notes when hands are on the practical activities, reason why at the end of the day students write down the information for the memorandum. The Faculty has request an Innovation Project to the University to build a Portfolio of competences, learning outcomes and skills, that is into and advance stage at the moment that this SER has been written. This project has been led by the Vice-Dean on Innovation with the coordinators of the Rotations, whom has been working on the identification of the basic and advance skills required to warranty the different competences. The main objective is to pilot in 2017-18 academic year using the e-learning platform (Aula Virtual) to track the students whom have to be evaluated and signed by the professors.

8.1.4. Description of the processes for:

- To ensure the **advertising** and **transparency** of the **assessment criteria/procedures**. The assessment process is officially regulated in the **UM** regulation for calls, evaluation and minutes (https://sede.um.es/sede/normativa/reglamento-de-convocatoria-evaluacion-y-actas-2011-aplicable-a-grados-y-masteres-/pdf/80.pdf). The assessment criteria/procedures are published in the subject description guides before the academic year starts. Moreover, the following information must be included in the examination official announcements: date, time, type of examination, duration, evaluation criteria, and date of publication of results, which should be communicated at most 30 calendar days after examination. Students can review their exams after the publication of results.
- **Awarding grades**, including explicit requirements for barrier assessments. The process of awarding grades is also officially regulated by the **UM** and the same norm. Grades must be expressed as numbers, to which their corresponding qualitative grading is added: (Failing Grade: 0-4.9, Passing Grade: 5-6.9; Grade B: 7-8.9; Distinction: 9-10). The cut-off score is 5. Likewise, the mention "Matrícula de Honor" (Excellent) can be awarded to those students that have obtained a grade equal to or higher than 9.0, with the restriction numbers derived from national regulations (number cannot exceed 5% of students enrolled in a subject, unless the number of students registered is less than 20).
- Providing to students a **feedback post- assessment** and a guidance for requested improvement. The examination review is an essential part of the learning process and the starting point for feedback post-assessment. The improvement process is based on a follow-up of the student progress through a system of individualized tutorials by Lecturers that is considered the best method to carry out a correct guidance of the student.
- **Appealing**. In case of disagreement with the result of the review, the students can refute with arguments their grades to the Dean, who will notify to the Head of Department to appoint 2 Department Lecturers that together with the one appointed by the Dean will study the information and written report to review the assessment. Finally the student can appeal to the Rector. The specific procedure is fully described in the **UM** Student Statutes (https://sede.um.es/sede/normativa/real-decreto-1791-2010-del-estatuto-del-estudiante/pdf/7.pdf).

8.1.5. Description of how and by who the student's assessment strategy is decided, communicated to staff, students and stakeholders, implemented, assessed and Chapter 8 - SER 2017 revised

The evaluation procedures of the subjects are proposed by the Department Councils, discussed in the coordination meetings and subsequently approved by the Faculty Board Regarding the examination schedule, a draft is elaborated by a representative of the Committee for Assessment and Improvement of the Curriculum, together with academic staff and student representatives. After approval, all the information is published on the website, and on the Virtual Campus, at least 2 months before the academic year starts. This procedure complies with the official document of the Degree in Veterinary approved by ANECA and the QA system of the **FVETUM**.

8.2. Comments

- The **FVETUM** is encouraging students to participate more actively in the tutoring system, as an essential part of the learning process. Nowadays, online tutoring is more frequently used than on-site tutorials.
- The participation of external evaluators of **EPT** is appreciated by internal and external stakeholders.

8.2. Suggestions for improvement

- The **FVETUM** is currently involved in **UM** Innovation Project for the on-line portfolio to assess learning outcomes with the technical support of the Computer Service of the University. The goal is to find new methodologies for competence evaluation, especially technical skills.
- **FVETUM** Working Group includes the horizontal and vertical coordination, as well as coordination of assessment.

Standard 9

Academic and support staff

9.1. Factual information

9.1.1.- Academic staff (AS) *(PDI Personal Docente e Investigador)*

9.1.1.1.- Academic staff (AS) categories, teaching needs; selection, recruitment and promotion.

AS categories.

The current AS categories is presented and conceptually explained in **Figure 9.1**. All AS are defined by their main characteristics like tenure, civil servant or not, full/part time, PhD or national accreditation requirements:

Tenured, civil servants:

- Full Professor (*Catedrático de Universidad*) (tenured, full/part time, civil servant, PhD required, national accreditation required).
- Associate Professor (*Profesor Titular de Universidad*) (tenured, full/part time, civil servant, PhD required, national accreditation required).

Tenured, non civil servants:

- Contracted Associate Professor (*Profesor Contratado Doctor*) (tenured, full time, not a civil servant, PhD required, national accreditation required).
- Lecturer (*Profesor Colaborador*) (not compulsory to hold a PhD) (lecturer, accreditation required, to be phased out, very uncommon rank).

Non-tenured:

- Assistant Professor (*Profesor Ayudante Doctor*) (compulsory to hold a PhD).
- Teaching Assistant (*Profesor Ayudante*) (does not need to hold a PhD, but usually is a PhD student).

Other teaching positions:

- Professional Professor or Tutor (*Profesor Asociado*) (a part time instructor who keeps a parallel job).

Any AS has a limited number of credits to teach every academic year (average of 24 credits or 240 hours for tenured, and less for non-tenured or other teaching positions), but due to different key or relevant activities (for example research or managements duties) tenure AS get a reduction in the number of credits to teach, and is based on internal University rules that are calculated every year (so called VALDOC, Teacher assessment).

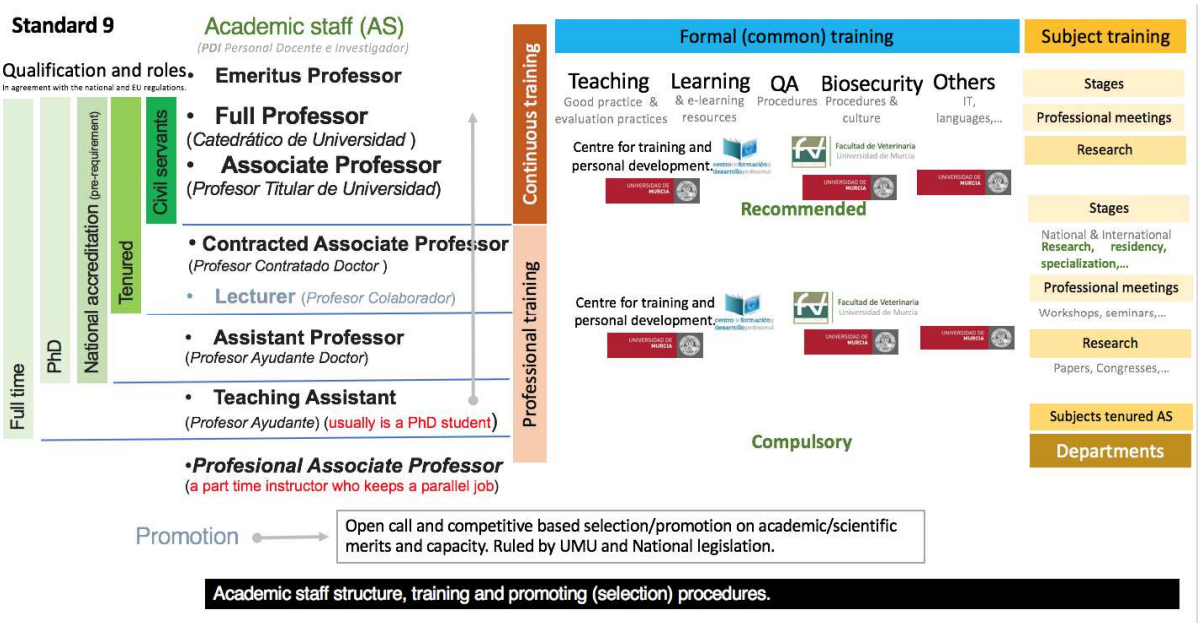


Figure 9.1.- Academic staff structure, training and promoting (selection) procedures.

Teaching needs, selection and recruitment of AS.

Teaching needs for AS.

Table 9.1.1 and 9.1.2 summarise the trend and mean of the number of AS FTE of the veterinary programme (**FVETUM**) in the last 3 academic years, and the number of AS FTE by professional category and Departments in 2016-17 AS, respectively. AS is divided into "Area of Knowledge (**AoK**)" that group all Professors within the same filed of expertise. The **AoK** are listed by National Legislation, and in some cases **UM** (as any other University) has the possibility of define them more precisely. For example, the national list of **AoK** define "Comparative Anatomy and Pathology (Code 025)" and "Human Anatomy and Embryology (Code 027)", but there are no **AoK** for the Veterinary ones, so the University defines both for Veterinary with University Codes. Departments are based on **AoK** and include the Professors and the teaching needs are based on the number of credits that can be teacher (called "teaching capacity" as the sum of all credits that all Professors are able to teach) that has to be balanced with the "teaching load"

that is calculated by the number of theoretical and practical credits (and based on the number of students to teach) of teaching capacity. If an unbalance is identified, the Department is responsible to request to the University (Vice-chancellor of Academic Staff) the new AS needed to fulfil the teaching duties, based on their teaching capacity. This request is analysed within the frame of the University by the Vice-Chancellor and supporting committee (delegated by the University Council), considering the Staff annual action plan of the University, the budget limitations of the annual budget of the University for AS, and the priorities compared to others **AoK** (the most teaching needs the first to get a new AS), and finally proposed and approved by the University Council.

Table 9.1.1.- Trend and mean of the number of AS FTE of the veterinary programme (FVETUM) in the last 3 academic years.

Type of contract	2014/2015	2015/2016	2016/2017	Mean
Tenured, civil servants				
Full time				
-Full Professor	35	34	43	37.33
-Associate Professor	60	60	54	58.00
Part-time				
-Full Professor		1	1	
Tenured, non-civil servants:				
-Contracted Associate Professor	9	9	4	7.66
-Lecturer	4	5	5	4.66
Non-tenured:				
-Assistant Professor	0	0	0	
-Teaching Assistant	0	0	0	
Other teaching positions				
-Professional Associate Professor	17 +2= 19	18	18	18.33
-Predoc with "Venia Docenci"	9	9	14	10.66
Total	**137**	**137**	**140**	**137**

FTE= Full-Time Equivalent.
Venia Docendi= authorized by the Vice-Chancellor for Academic Staff for practical teaching on a limited number of credits.

Table 9.1.2.- Number of AS FTE by professional category and Departments in 2016-17.

Department name	TCS	TNCS	NT	OTP	Total
Basic science					
- Biochemistry and Molecular Biology A	5	0	0	0	5
- Animal Biology	3	0	0	3	3
- Statistics and Operative Research	3	1	0	0	4
Pre-clinical					
- Anatomy and Compared Pathological Anatomy	14	0	0	4	18
- Veterinary Pharmacology	3	0	0	0	3
- Veterinary Physiology	5	1		4	10
Clinical					
- Animal Medicine and Surgery	22	5	0	7	34
- Animal Health	17	0	0	2	19
- Toxicology	4	0	0	5	9
Animal Production					
- Animal Production	13	2	0	1	16
Food Science					
- Food Technology, Human Nutrition and Food Science	8	1	0	7	16
Total	**97**	**9**		**30**	**137**

FTE= Full-Time Equivalent
TCS= Tenured, civil servants, TNCS=Tenured, non-civil servants, NT=Non-tenured, OTP=Other teaching positions

Selection and recruitment of AS.

Once the decision is made, there is an open call of the position for **recruitment**. Usually, The AS categories provided by the **UM** are no- tenure (Teaching Professor or Assistant Professor) because is the beginning of the teaching professional career. In addition, and depending on the credits to be covered by the teacher, the AS category is Professional Associate Professor. For temporary hired positions, the **selection** and **recruitment** is performed through contracting committees of the subject area, which evaluate the records of the candidates and score them based on predefined scale by the University. Dean has no competences on the request of new AS for the Faculty, although is in close contact with the Department Heads to overview the teaching needs to ensure that the teaching subjects are properly covered and by the adequate candidate. Usually, Dean is one of the 7 members of the contracting committee. Once the new AS start his/her academic career, the **promotion** is based on teaching, research and management merits, and there is a maximum time to promote up to the next position. In the case of permanent or tenure positions, it is constraining by the National legislation and by the Regional economic limitations to be promoted or not. In the last 6 year, the promotion to tenure has been limited due to legislation that limits a replacement ratios of 10% of the number of retired professors of the University, whatever made a long waiting list that now if beginning to move because the rate went up to 50% due to the new economic scenario. Once a tenure-civil servant is approved, the position is advertised and open to all national accredited professors of the same or close **AoK**. In this case, the committee of promotion of based on 5 national members

appointed by the University based on the Department proposition. Candidates have to present and defend their academic and research projects as the most adequate to the open position.

VTH is ruled by the Foundation and the Patronage gives the competences of hiring clinical, technical and administration staff from its own budget, as well as the internships and residents to the Management Board, which core are the Director, Manager and Secretary. The Dean is informed and is member of the recruitment committees, based on a public and open call. Selection is based on academic record, professional skills and personal interview if needed.

9.1.1.2.- Training to teach and assess students (including continuing education).

Training to teach and assess students (including continuing education).

Any person whom **vocation is teaching and research oriented in veterinary sciences** begins his or her academic carrier as a master or PhD student. During a period of 3-4 years their training is devote to research as well as some teaching activities (mainly practical) in one specific subject where the PhD director is related to. Pre and post-doctoral stages (national or international), paper publications or professional meetings cover most of the time for training.

Based on the mentioned skills, and with the opportunity of a new open position for non-tenured, and once obtained by the candidate, **non-tenured AS** have the opportunity to be trained for teaching, learning and other formal skills at the *Centre for Training and Personal Development (CTPD) of the* **UM**. Concerning teaching and research training, our teachers can attend courses on the use of different bibliographic tools and online teaching tools, such as the management and applications of the Virtual Campus (development of teaching material for students, evaluation, subject management, etc.). **UM** offered pedagogical, IT training or language course throw specialized services. Within the *National Project of International Campus of Excellence*, **UM** is promoting the English teaching in some areas and Faculties. At **FVETUM** we only have an elective subject at the Vet Degree, and one Master Program taught in English.

For other specific trainees, the Faculty and University define the special training needs and propose to the CTPD Specific training in biosecurity for support and teaching staff depends on the Labour Risks Service. Specific courses about general labour risks, and those associated to laboratory/animal facilities or use of gases in laboratories are periodically given. This last academic year (2016-17) it has been made a great effort to harmonize and up-date all biosecurity procedures at the **FVETUM**. For that purpose, the Faculty have organized the **Faculty Working Group for Excellence** which main objectives are the horizontal and vertical coordination, and the biosecurity reinforcement. The outcomes of this biosecurity are a harmonized protocol and web, as well as the redefinition of the warning icons of biosecurity. This action is under the supervision of the **UM** Labour Risks Service.

Subject training is more closely related to Department, **AoK**, Research Group or professional training at the International or National Organizations or Associations.

Competences of **tenured AS** are linked to the subjects that made up the curriculum. All teachers involved in the different subjects must be accredited by the National Accreditation Agency (ANECA) in their corresponding subject areas, including training and research activities. In each subject of the program, the lessons are assigned by the Department and approved by the Faculty to the teachers that are specialized in the different topics. Each academic year, the QA System reviews the subject description guides and elaborates an annual report (see Chapter 11).

On the other hand, the **UM** program "Innovation and Improvement of Teaching Quality projects" offers our teachers the possibility to apply for funding for new initiatives to improve and set up innovative teaching techniques, and to increase the quality of our programmes at different levels. In the last academic years, the **FVETUM** has developed an innovative project (Portfolio implementation for PRACTICUM and Day-1-Competences), while the academic staff has conducted other projects and has participated in different teaching innovation strategies.

9.1.1.3.- Evaluation of the AS.

Teaching and research activities evaluation of the AS.

Tenured and non-tenured AS is evaluated of their teaching activities every other year by the students based on a management program of **UM** for QA, using a subject and professor anonymous questionnaire with 24 criteria in a 5 points scale. The last question summarizes the "overall satisfaction" with the professor. The threshold is 3 (5 points scale) and **FVETUM** professors are mostly above that figure. These results are analysed by the IQAC, the new actions for improvement proposed, and submitted to the Faculty Board for discussion and approval. Teaching activates evaluation is needed to obtained the national accreditation by ANECA for non-tenure AS and Associate Professor for promotion, and for tenures AS every 5 years **UM** evaluate the global teaching activities that if positive is reflected in the tenured AS salaries. All AS at the **FVETUM** have been awarded with the teaching evaluation award named "quinquenio".

Research is a national evaluation (by the National QA Agency for Research) performed on voluntary based and every 6 years. As well than in "quinquenio", this 6-year evaluation ("sexenio") reflects on the salary of the AS, but only for tenured. The tenure AS of **FVETUM** have the individual right to request or not the evaluation, and in general terms the **UM** as well than the **FVETUM** has a high rate of positive evaluated "sexenios". This "sexenio" has become important for teaching in the last 3 years, because the tenured professors need to have positively approved the last potential "sexenio" otherwise there will have a teaching penalty of 8 additional credits.

9.1.1.4.- Veterinarian staff within the AS, compatibility with outside work and VTH adscription.

Veterinarian staff within the AS.

The number and percentage of AS holding a veterinarian degree within the FTE are presented in **Table 9.1.3**. As shown, **FVETUM** fulfil the formal requirement stablished by EAEVE than "most FTE academic staff involved in veterinary training must be veterinarians, and that It is expected that greater than **2/3 of the instruction that the students receive**, as determined by student teaching hours, **is delivered by qualified veterinarians**". Mainly veterinarians are in pre-clinics, clinics, animal production and food science. To reinforce the practical training the **FVETUM** for the intermural curriculum practical training, the Faculty has different Professional Professors in key areas such as food hygiene for slaughterhouse (1 OVS), for large animal reproduction and pathology (3 veterinarian practitioners), and for special surgeries as invited professional veterinarians (the number depends on the availably and special cases per year). Also for extramural practical training (**EPT**) **FVETUM** engage practitioners of different expertise that train students. The recognition of those veterinarians is an Honorary Supporting Professor.

Table 9.1.3.- Percentage of veterinarians AS FTE in the last 3 academic year and mean.

Type of contract	2014/2015	2015/2016	2016/2017	Mean
- *Tenured, civil servants*	83	81	83	82.33
- *Tenured, non-civil servants*	13	13	8	11.33
- *Non-tenured*	0	0	0	00.00
- *Other teaching positions*	21	23	26	23.33
Total	**117**	**117**	**117**	**117**

AS= Academic Staff; FTE= Full-Time Equivalent.

Compatibility with outside work, VTH adscription and specialization.

Full-time professors cannot generally talking undertake outside work as a practitioner or other related activity based on the Spanish legislation and University rules. Part-time professors are allowed to carry out a parallel work, and, in the case of Professional Professor or Tutor, outside work is a requirement to get this position. Based on these rules, **VTH** Foundation has determined stablishes an **incompatibility** between full-time professors and the relationship with clinical activities outside **FVETUM**.

Regarding **specialization**, a significant number of the veterinarian AS are members of different national and international boards, Committees and Agencies National Expert Committees and Agencies, i.e. AEMPS, AECOSAN, R&D&I Secretariat of State, etc. Special mention has to be done to those under the European Board of Veterinary Specialization (EBVS) Diplomates, that has increased since the last EAEVE evaluation, as well the under the Association of Spanish Veterinarian Specialist in Small Animals (AVEPA). Also since the last visit, 2 European residency programmes have been established at the **FVETUM**. The particular case of the **VTH** and pre-clinical the total number of EBVS Diplomates are 19 and other Board Diplomates (AVEPA) are 14. See details in Tables **Table 9.1.4** and **Table 9.1.5**.

Table 9.1.4.- AS FTE of the veterinary programme – numbers and qualifications academic course 2016-2017.

Role	Non Vets			Vets			Vet Specialists			Total
	B	M	D	B	M	D	C	C+M	C+D	
Tenured, civil servants:										
- Full Professor			8			36				44
- Associate Professor			6			48				54
Tenured, non-civil servants:										
- Contracted Associate Professor			1			3				4
- Lecturer						5				4
Non-tenured:										
- Assistant Professor										
- Teaching Assistant										
Other teaching positions:										
- Professional Associate Professor			2	8		8				18
- Researchers hired with "*Venia Docendi*"		2	2	4	2	4				14
Total		**2**	**20**	**12**	**2**	**103**				**137**

Degrees: B= Bachelor; M=Master; D=PhD; C=Board Certificate. *Venia docendi*= authorized by the Vice-Chancellor for Academic Staff for practical teaching on a limited number of credits.

Table 9.1.5.- Veterinarians specialist by the European Board of Veterinary Specialization (EBVS) and the Association of Spanish Veterinarian Specialist in Small Animals (AVEPA) for academic course 2016-2017.

EBVS		AVEPA	
College	**Number**	**Specialization**	**Number**
European College of Animal Reproduction	8	Anesthesia and Analgesia	2
European College of Porcine Health manegement	6	Cardiology	1
European College of Veterinary Clinical Pathology	1	Soft tissue surgery	1
European College of Veterinary Diagnostic Imaging	1	Dermatology	1
European College of Veterinary Internal Medicine-Companion Animals Cardiology	1	Diagnostic imaging	2
European College of pathologists	4	Internal Medicine	4
European College of parasitology	2	Neurology	1
		Ophthalmology	1
		Reproduction	1
Total	**23**		**14**

Table 9.1.6.- Research staff of the **FVETUM** (total number)*.

Type of contract	2016/2017	2015/2016	2014/2015	Mean
Permanent**	152	150	150	150,6
Temporary***				0
• **Pre-doctoral**	26	30	28	28
• **Post-doctoral**	25	32	27	28
Collaborators to Research Project/Group	192	201	185	192,6
Total	395	413	390	399

*Predoctoral and post-doctoral researchers are full-time staff. Staff associated to Research Projects can work part-time or full-time, and their dedication can change during the year. Included in this Table de AS registered at the Vice-Chancellor of Research at **UM**. Permanent researchers (AS) may also be staff from other Faculty bases on the interdisciplinary research projects.
The permanent academic staff of the **FVETUM also conducts research activities.
***The hired academic staff is not included in this table, although they also conduct research activities

Support staff (SS) *(PAS Personal de Administración y Servicios)*

9.1.2.1.- Support staff (SS) categories, selection, recruitment and training.

Support staff (SS) categories

SS is categorized into administrative (ASS), technical (TSS) and service assistant (**Figure 9.2.**). ASS and TSS are graded based on their academic degree, responsibilities and specialization of the position. ASS has basic position (administrative assistant) and advance positions (administrative), and in most of the cases an administrative unit has an administrative manager. For TSS, and depending on the unit/department/service can be also basic (lab technician) or advance (specialized lab technician), and if the number of technicians is large enough their it is designed a manager or head of the service. Usually only centralized service of the University has technical service head.

Support staff (SS) selection and recruitment.

The selection and recruitment of support staff depends directly on the **UM** (General Manager of the **UM**), whom decides the number depending on the estimations from the **UM** Staff Report in consensus with the Unions and approved by the Universitu Council of the University. For those calculations are considered the needs of the Faculties, Departments and Services of the **UM**, asked in advance. The University can hire both, permanent and temporary staff, and in most cases the **UM** has a pool of pre-selected staff (called "the bag of employment") based on open calls and selection based on records and curriculum experience. The specific needs of Faculties, Departments or Services are covered pulling from that bag of employment. These employees are under contract and for promotion to permanent (civil servant support personnel), the University has to define the profile and make an open call for competitive examinations. These examinations are called for the different categories/levels of responsibilities.

Support staff (SS) training.

Training of SS one the personnel is recruited or became tenure can be defined by personal interest of following specialization courses or getting a new Degree (master, specialization courses,…) and also the University provides a professional and continuous training throw the CTPD. Every academic year workers and Unions defined their needs for training, and in agreement with the General Manager of the **UM,** design a training schedule. Any worker can select and request the training courses based on individual or professional needs/interest that is authorized by the head of the Unit, Service, Department or Faculty. This training is made during the working time, evaluated and receive a diploma of the training that is also part of the professional records.

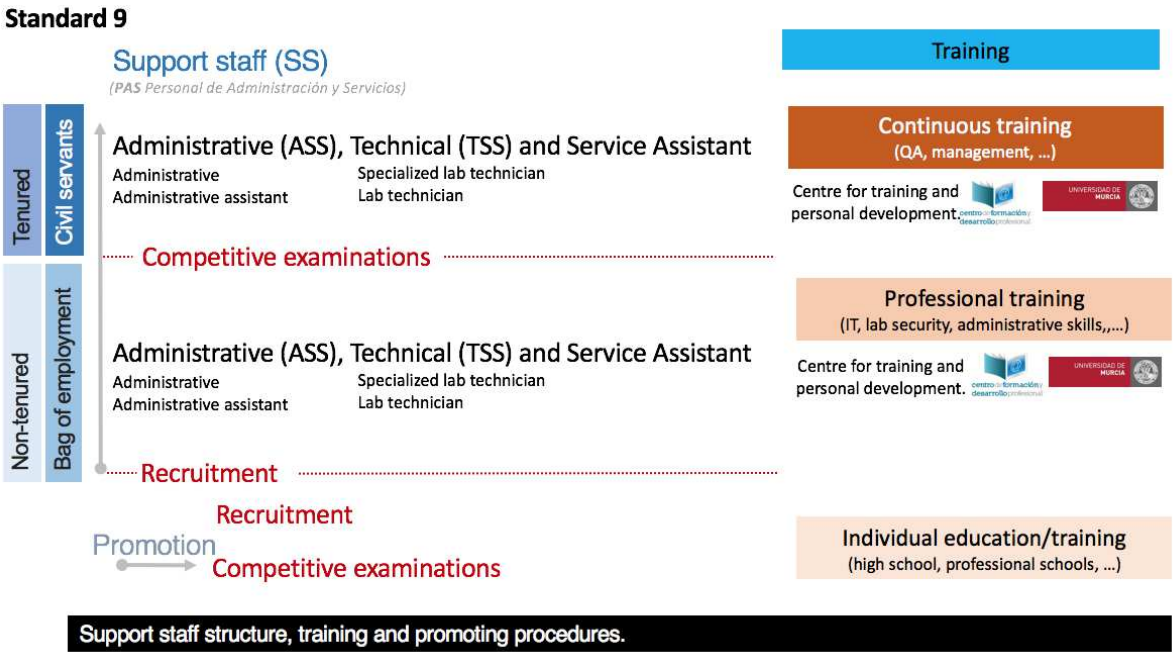


Figure 9.2.- Support Staff (SS) structure, training and promoting (selection) procedures.

Table 9.1.6.- Support staff of the veterinary programme by location, role and contract.

Main Building					
Role	**Type of contract**	**2016/2017**	**2015/2016**	**2014/2015**	**Mean**
Teaching support	Civil service	10	10	10	10
	Permanent hired	10	10	10	10
	Temporary*	1	1	1	1
Responsible for administration, general services, maintenance etc.	Civil service	15	15	15	15
	Permanent hired	2	2	2	2
	Total	**38**	**38**	**38**	**38**
VTH					
Role	**Type of contract**	**2016/2017**	**2015/2016**	**2014/2015**	**Mean**
Teaching support	Civil service	5	5	6	5.33
	Permanent hired	1	1		0.66
	Temporary*				
Responsible for administration, general services, maintenance etc.	Civil service	1	1	1	1
	Permanent hired	3	3	3)	3
	Total	**10**	**10**	**10**	**10**
VTF					
Role	**Type of contract**	**2016/2017**	**2015/2016**	**2014/2015**	**Mean**
Teaching support	Civil service				
	Permanent (hired by company that manage the VTF)	10	10	10	10
	Temporary*				
Responsible for administration, general services, maintenance etc.	Civil service				
	Permanent hired				
	Total	**10**	**10**	**10**	**10**

*Research support staff is not included in this table

9.1.3. Prospected number of FTE academic and support staff of the veterinary programme for the next 3 academic years

FVETUM has received two previous visitations of the EAEVE along this 20 years where one of the strength stressed during the first visitation was the staff youth and the promotion potential of the AS. AS and SS has increased and promoted along these 20 years, but in the last 6 years the **FVETUM** (as well as the whole Spanish public University) has reached a plateau. Causes are the so called economic crisis, the balance between the teaching load and capacity based on the **UM** standards, and the average age of the staff (>50 years old). With the economic recovery, the promotion and some new open positions have been granted and the motivation and capacities of the staff are better. It is not easy to ascertain or prospect the number of FTE academic and support staff of the veterinary programme for the next 3 academic years because of the above-mentioned reasons. AS and SS will continue their promotion and in areas where teaching duties cover other degrees (vg. Food Technology or Food Hygiene) new open positions will be available with the retirement of the tenure AS. This is especially critical for clinics, that needs to expand or reinforce new services. VTH has the capacity of hiring new veterinarians and that flexibility allows to have a good expectative. Young fellows are needed to replace or support AS and it has been requested to the Vice-Chancellor of Academic Staff to consider the especial needs of the veterinary clinics when the UM has an open call, in addition to teaching and research meritus. Within 3 years frame the environment will be not substantially different, but in 5 to 10 years' time, it is needed to implement a strategy with the **UM** to maintain the standards and ratios. Currently can be considered adequate and within the recommendations of the EAEVE the student/FTE AS and student/FTE SS ratios, although these ratios should be improved to some extent, mainly in relation to practical teaching in small groups, which requires a greater number of AS in comparison with other teaching activities. However, considering the current recruitment and replacement policies of the **UM**, and the progressive ageing of our staff, it is expected that the number of FTE academic and support personnel of our Faculty will not be significantly increased by the University in the next 3 academic years.

9.2. Comments.

- Due to the recent economic crisis, Central Government decided to stop recruitment in the public sector, including Universities, and Local Government had to reduce budget from public Universities. The shortage of replacement made a drastic reduction on the new AS and SS hiring. Regarding AS, only some part time staff (Professional Associate Professor) have been hired.

- Even in this situation, the **FVETUM** counts with a highly qualified, motivated and experienced staff, and with an adequate student- to- teacher ratio. The high percentage of veterinarians on the teaching staff (about 85%) and the fact that the majority of the Departments involved in the Veterinary Degree are located at the **FVETUM**, is a good evidence that teaching is clearly oriented to Veterinary Science.
- The increasing number of AS that have been accredited by ANECA for promotion is a good indicator of the quality and devotion of the staff.

9.3. Suggestions for improvement.

- Although our teachers are highly motivated and experienced, their average age (> 50 years old) has increased, and a programme for new recruitment and replacement should be implemented in a short/medium term. It would be desirable to increase the participation of **FVETUM**, VTH and Departments in the recruitment of both AS and SS, to better match the number and the profiles required, although the UM standards and criteria do not benefit the FVETUM needs.
- The number of EBVS Diplomates and residency programmes at the **FVETUM** should be increased and consolidates.
- The training programmes for academic and support staff also need to be strengthened in key areas and within the **FVETUM** Working Group are reinforcing these courses, such as Biosecurity (next December 2018 will be carried the first one.

Standard 10

Research programmes, continuing and postgraduate education

10.1. Factual Information

10.1.1. Description of how the research activities of the Establishment and the implication of most academic staff in it contribute to research-based undergraduate veterinary education.

One of the 3 main duties of any Academic Staff (AS) are teaching, research and extension-assistant. For promotion (see Standard 9) AS has to carry out research activities within the scientific field of her or his **AoK. UM** has settled an internal system to join professors/research staff (pre and post-doctoral, research contracts…) into Research Groups (RG), coding with and E, number of the Department (based on alphabet order) and a number of order within the Department. Most of the RG are based at the same Department and **AoW**, but this RG are open to interdepartmental organisation looking for the interdisciplinary. Also, the RG can join national or international members. Currently the academic staff of **FVETUM** are integrated into 17 RG (http://www.um.es/web/veterinaria/contenido/investigacion) and the entire tenure staff hold a PhD Degree and has a Research Leader, either the oldest tenure or the most productive in research. Every year **UM** launch a call to provide a "Complementary Aid for Research" (CAfR) where all scientific publications (JCR papers, congresses presentation or posters, research grants from European, National or Research calls, research or assistance contracts with enterprises…) that based on a balanced scale approved by the Research Commission of the University score and ranking the RG that also receive an economic support based on research production. As an indicative of the research activities of **FVETUM** groups, 3-5 of them are usually ranked top 20 and half of them are ranked top 50 out of the 330 RG of the University. Another recent indicator is the **Shangaih Subject Ranking list** (http://www.shanghairanking.com/Shanghairanking-Subject-Rankings/veterinary-sciences.html), where in "**Veterinary Sciences**" **UM** has been ranked number 36 within the top 200 worldwide (number 3 in Spain after Barcelona an Madrid), and just to mention that there is only one Veterinary Faculty at **UM**. As can be read, AS is well based on research activities and education of students in Veterinary Sciences is research-based in different ways that will be described in **section 10.1.3**. Regarding **gross scientific production**, **FVETUM** affiliated **publications in peer reviewed scientific journal** (JCR indexed journals) was 454 for the period 2014-2016 (time considered by CAfR call for grating, and the last one available). For details please see **Appendix 5**. Another important indicator if the **capacity for research training**, and as In the last 3 years, an average of 20 students/year receiving financial support to conduct their PhD training, and 22 PhD thesis/year have carried out their PhD Thesis under the direction/supervision of any **FVETUM** AS. If we talk about research incomes or grant from research the total amount if difficult to be precise, because the projects cover as an average 3 years, but in many cases the time lapse is longer or shorter. Again, as a gross figure, the income for research obtained by the RGs at **FVETUM** in the last 3 years (2014-2016) is of 6,289,322 € (**Table 10.1.1**).

Table 10.1.1.- List of the major funded research programmes in the Establishment which were on-going during the last full academic year prior the Visitation (2016).

Research programmes	Scientific topic	Number of projects	Length of time	Grant/year (euros)
European Commission				
	Food science	2	4	418,467
	Preclinical Science [1]	1	5	991,492
	Clinic Science [2]	2	3	1,455,951
Subtotal				**2,865,910**
Spanish National Science Ministry (MINECO)				
	Food science	4	2-3	487,950
	Preclinical Science [1]	5	3	622,050
	Clinic Science[2]	10	2-3	614,655
Subtotal				**1,724,655**
Regional Programmes				
	Food science	1	8	136,148
	Preclinical Science [1]	2	3	283,400
	Clinic Science[2]	4	1-4	217,315
Subtotal				**636,863**
Transfer Technologies to Innovative enterprises and Collaborative Projects (University – Enterprises)				
	Food science	17	1-4	442,600
	Preclinical Science [1]	17	1-2	143,502
	Clinic Science[2]	28	1-5	475,792
Subtotal		**62**		**1,061,894**
Total				6,289,322

[1] Preclinical Science: Biochemistry, Anatomy, Physiology, Animal Production
[2] Clinic Science: Animal Health, Pathology, Surgery, Reproduction, Toxicology and Pharmacology

10.1.2. Description of how the postgraduate clinical trainings of the Establishment contribute to undergraduate veterinary education and how potential conflicts in relation to case management between post- and undergraduate students are avoided

The current number of Specialists and Diplomates of the European Colleges among our academic staff is 23 and the

number of teachers accredited by the Spanish Small Animal Veterinarians Association (AVEPA) is 14 (**Appendix 1**). The number of postgraduates on clinical trainings at VTH nowadays is 12 (2 in Residency Programs and 10 Internship, (**Table 10.1.2**). Currently, there are two approved Residency training programmes by European Board of Veterinary Specialisation (EBVS), one by the European College of Veterinary Internal Medicine in Cardiology-Companion Animals, and the other by the European College of Veterinary Diagnostic Imaging.

Postgraduates collaborate in the practical training of undergraduate students in different subjects during degree, especially in the 5th academic year during clinical rotations at VTH. No conflict is produced between post- and undergraduate students in relation to clinical cases management.

Table 10.1.2.- Number of students registered at postgraduate clinical training

Training	2014/2015	2015/2016	2016/2017	Mean
Interns:				
• **Companion animals**	8	7	8	**7,66**
• **Equine**	2	4	2	**2,66**
• **Production animals**	--	--	--	**--**
• **Others *(specify)***	--	--	--	
Total	10	11	10	**10,33**
Residents: **EBVS disciplines *(specify)***				
• **Diagnostic Imaging**	-	2	1	**1**
• **Internal Medicine- Companion Animals Cardiology**		1	1	**0,66**
Total	-	3	2	**1,66**
Others *(specify)*				
• **Scholarships and pre-doctoral contracts (clinics)**	10	8	8	**8,66**
Total	10	8	8	**8,66**

* The last full academic year prior the Visitation

10.1.3. Description of how undergraduate students:

A) are made aware of the importance of evidence-based medicine, scientific research and lifelong learning;

Undergraduate students are exposed to evidence-based medicine and scientific research along the Veterinary Degree in different years:

- During the **1st year** students are trained to search and analyse critically the content of lectures, textbooks and scientific articles. This material is used regularly by students for study, work in seminars, clinic cases...
- At the **3rd year** students begin with clinical rotations and they use the evidence-based medicine to study clinic cases in supervised self-learning.
- During VTH Practicum (**5th year**), students perform clinical case reports, to demonstrate the use of evidence-based medicine. In fact, practicum evaluation is based partially on the marking criteria on the use of current and relevant literature in the chosen clinical area.
- All veterinary students actively participate in research through their graduation thesis project (Veterinary Degree Final Thesis), which includes an experimental research, either a laboratory experiment, a clinical study, an analytical activity or a critical review.

Nowadays, students become aware of the importance of scientific research and lifelong learning. So, other activities related to the dissemination of science organized by the **UM** where the **FVETUM** participates are the **National Science Week** (every in November) and the **European Researchers Night** (last week of September). These activities are organized annually, and one of the most welcome workshop by the public is **Anatomy Plastination**.

B) are initiated to bibliographic search, scientific methods and research techniques, and writing of scientific papers (e.g. through a graduation thesis);

On a general basis, students are taught and aware of the resources and methodology related to **bibliographic search.** Every academic year in September, during the **FVETUM** Welcome Week for the freshmen students, a conference is delivered by library staff to explain the operation and resources of the scientific library of the **UM**. This information is put in practical all along the years putting in practice at the different research-based activities (**see previous section 10.1.3**). Also, during the academic year and periodically, the library runs free course on bibliographic search methods for graduate and undergraduate students, aiming to increase students confidence in the use of the main web-based scientific databases (e.g. PubMed, Scopus and ISI web of knowledge).

One applied and specific integration of the skills and acknowledge on the use of **bibliographic search, scientific methods and research techniques, and writing of scientific papers**, is the **Graduation Thesis**. Since 2014 is a mandatory based on the legal regulation (ORDEN ECI/333/2008 https://www.boe.es/diario_boe/txt.php?id=BOE-A-2008-2675) that as a part of the curriculum that students have to defend a **scientific Graduation Thesis** (6 ECTS) as part of the End of Degree

Work. It includes an experimental research part, either a laboratory experiment, a clinical study, an analytical activity, or a critical review. Each student, under the supervision of an AS (1 or 2), put in practice their skills and acknowledge to search and handle scientific work, interpret the result and draw conclusions. An evaluation committee integrated by 3 AS, score the academic thesis after their defense in a public act. The oral presentation of the dissertation in front of an evaluation committee represents the final step for any undergraduate student to officially become a Veterinary Graduate. Topics and general guidelines are provided on the website (http://www.um.es/web/veterinaria/contenido/estudios/grados/veterinaria/2016-17/trabajo).

C) are offered to participate to research programmes on a non-compulsory basis

Several non-compulsory research programs are offered to ungraduated student:

- Most of our teachers are actively working both as teachers and as researchers in their research projects. Each year the departments offer places for **internal students** (one place/research staff http://www.um.es/web/estudios/contenido/guia-tramites/alumnos-internos-departamentos). The selected students participate in research project and their collaboration is recognized as elective ECTS (CRAU). The student can be integrated in this program **from the 1st year of Degree**, and more than 60 students/year participate in research activities.
- **Collaboration scholarships**. The Ministry of Education, Science and Sport annually calls fellowships **for the last year Degree students**. The aim of this scholarship is to facilitate to the of students to engage into research activities/training within the University Departments, in a manner compatible with their studies, in order to initiate research tasks and facilitate their future professional decision (http://www.um.es/web/consejo-social/becas-colaboracion). The average of Collaboration scholarships granted to the Departments of the **FVETUM** in the last three years has been 5 per year.
- During undergraduate studies, students may elect to **internships at research centres** (**EPT**), either in **5th year degree or extracurricular practices** in any year of their undergraduate studies. In the last 3 academic years, 180 student have selected this option
- In addition, **UM** also has its Own Research Program, with several funded programs for undergraduate research training (http://www.um.es/planpropio/index.php?ano=2016&id=2)

    - **Undergraduate scholarships to participate in RDI** (research, development and innovation) activities. The research groups finance students to complete their academic training by conducting internships in the field of RDI. In the last 2 academic years, 9 ungraduated students have hold this scholarship within **FVETUM** research groups.
    - **Research Initiation Grants**. To aware students interested in pursuing a research career, the possibilities offered in different areas by the University of Murcia, as well as to introduce the beneficiaries in the knowledge of current scientific problems and the methods used to solve them. This grant comprises two types of aid:
        - A: Students of last year and graduated from the University of Murcia
        - B: Those who are in possession of the official title of Degree or equivalent by the University of Murcia and Master by the University of Murcia.

      In the last 2 academic years, the **UM** has financed 11 students in the **FVETUM** by this program,

10.1.4. Description of how the continuing education programmes provided by the Establishment are matched to the needs of the profession and the community.

Four Official Master Programs (OMP) are taught at **FVETUM** by academics with a **researcher profile** (accredited by the Research National Accreditation Agency, ANEP) and **professionals with extensive experience** (practitioners, health science and animal science veterinarians, enterprise managers,…) (**Table 10.1.3**):

- ***Msc in Biology and Biotechnology of the Reproduction in Mammals (BBRM)***
  From a multidisciplinary point of view this Master is aimed at giving the students a broad and deep knowledge on the most relevant topics related with the professional and scientific fields of the Biology and Technology of Mammals' Reproduction (including Humans).
- ***Msc in Nutrition, Technology and Food Safety (NTFS)***
  This Master's Degree proposes an advanced scientific training and multidisciplinary in the field of Human Nutrition, Food Technology and Food Safety.
- ***Msc in Wild Life Management (WLM)***
  In this Master the students are trained to develop their professional activity in the biological and sanitary management of animal species of free life (wild).
- ***Msc in Small Animal Medicine (SAM)***
  This Master Degree provides the most advanced knowledge and skills in the following specialties: clinical pathology and oncology, diagnostic imaging, anaesthesia, reproduction and obstetrics, ophthalmology, endocrinology, nephrology, neurology, traumatology, soft tissue surgery, cardiorespiratory medicine, dermatology, urgency and veterinary intensive care.

Table 10.1.3.- Number of students registered at postgraduate research training

Type of students	2014/2015	2015/2016	2016/2017	Mean
VTH				
• **Interns**	10	11	10	**10,33**
• **Residents**	0	3	2	**1,66**
Total				
Master programmes				
• **MSc in Biology and Technology of Reproduction in Mammals**	21	21	26	**23**
• **MSc in Wildlife Management**	27	28	25	**18**
• **MSc in Small Animal Medicine**	20	19	12	**17**
• **MSc in Human Nutrition, Food Technology and Safety**	28	24	29	**23**
Total Master programmes	96	92	92	**81**
PhD programmes*				
• **PhD Programme in Veterinary Sciences**	57	43	18	**39**
• **PhD Programme in Biology and Technology of Reproductive Health**	30	23	11	**21**
• **PhD Programme in Food Technology, Human Nutrition and Food Science**	34	23	10	**22**
• **Another PhD Programmes***	3	11	18	**11**
Total PhD programmes	124	100	57	**94**

* Students enrolled in old PhD Programmes that will become discontinued by 2017 due to changes in Nacional Education Regulations

In Spain, Nacional Education Regulations for doctoral studies were changed in 2011. As a result, in 2013 the **UM** created the International School of Doctorate (EIDUM www.um.es/web/eidum) . Since, it is responsibility of the EIDUM the management of programs and doctoral students. At the moment the Doctoral Programs developed mainly in the **FVETUM** are: PhD Program in Veterinary Science, PhD Program in Biology and Technology of Reproductive Health and PhD Program in Food Technology, Nutrition and Food Science (**Table 10.1.3**). (http://www.um.es/web/eidum/contenido/estudios/doctorados).

In addition, the OMP ***BBRM*** research group is leader of Rep-Biotech. Rep-Biotech **Joint Doctoral project is a Marie-Skłodowska Curie Innovative Training Network** funded by the European Commission under the Horizon 2020 Program. It is composed of 12 leading academic research groups and 3 companies from 9 different countries: Spain, France, Ireland, Italy, Belgium, Germany, USA, Japan and The Netherlands. This program finances 15 PhD positions. The network started on November 1st 2015 and will end on October 31st 2019 (http://www.um.es/rep-biotech/).

FVETUM has a close relationship with public and private veterinary institutions and associations, such as cultural associations, Professional Board and National Health Service. One of the objectives of these relationships is the organization of continuing education seminars and seminars for postgraduates (**Table 10.1.4.**) attended by a significant number of students. (**Table 10.1.5**).Members of the teaching staff are frequently called for the organization of Continuing education courses. Examples of those can by checked at the web section "Divulgación" (http://www.um.es/web/veterinaria/contenido/divulgacion).

Table 10.1.4. Number of students registered at other postgraduate programmes (including any external/distance learning courses).

Courses:	2016/2017	2015/2016	2014/2015	Mean
Seminar Companion Animal Nutrition (15 h)	107	110	114	**110**
Conference on Science and Food Technology (15 h)	150	193	106	**149**
Course of Breeding, Maintenance and Pathology of Exotic Animals (40 h)	-	50	50	**50**
Course of Aquarius (25 h)	-	-	30	**30**
Seminar Postgraduate Course Sheet Plastination P-40 & E-12 Techniques (22h)	8	6	14	**9**
Seminar Postgraduate Course Silicone Plastination Technique, Technique S-10 (22h)	9	8	14	**10**
Course Application of Hazard Analysis and Critical Control Points in the Food Industry (13h)	22	-	23	**22**
AVAFES-VEDEMA Course: Exotic Species (10h)	25	25	25	**25**

Table 10.1.5.- Number of attendees to continuing education courses provided by the Establishment.

Courses:	2016/2017	2015/2016	2014/2015
Course of Basic Beekeeping (113h)			25
Course of Commissioner of Ring (50h)	50	-	-
Course of Caprine Tuberculosis (8h)	-	-	40
Seminar "Epigenetics in Reproductive Biology" (30h)	-	24	-
Practical Course of Management of Ofidios, Crocodiles, Saurios and Quelonios (30h)	-	40	-
Anatomic Seminars: To Science Through Art (5h)	40	-	-
Workshop: Dissection on Wildlife VEDEMA (8h)	-	-	15
Workshop: Clinic in Ferrets VEDEMA (12h)	30	-	-
Workshop: Wildlife Tracking VEDEMA (8h)	30	-	-
Workshop on Fever Q, Risk Assessment and Management, Animal Health and Public Health (4h)	50	-	-
Extensive Sheep Days in the Mediterranean: transhumance, product quality and sustainability (16h)	50	-	-
Working Day Intega-Zoetis "Strategic Drugs in fhe First Ages And Their Cost" (8 h)	-	-	20
Congress of Veterinary Teaching Vetdoc (16h)	-	-	59
Congress of the Spanish Society of Evolutionary Biology (20h)	-	72	-
Congress of New Clinical Technologies Companion Animals (12 h)	-	-	170
XXII International Congress of SECIVE (16h)	100	-	-
I Conference on Challenges in Wildlife Management (10h)	50	-	-
Hill's Multi-Thematic Veterinary Conference (15h)	100	-	-
Annual Simposium of Avedila (12h)	70	-	-
Simposium of Rabbit Breeding (ASESCU) (16h)	75	-	-

10.1.5. Prospected number of students registered at postgraduate programmes for the next 3 academic years

As in the Veterinary Degree, in the Master´s Degree and PhD Programs the number of students admitted per year is limited. The number of places to be offered is established in the official document of the UMU Master's Degree approved by ANECA (ENQA member).

OMS ***BBRM***, ***WLM*** and ***NTFS*** are extremely popular and oversubscribed (**Table 10.1.2**). In these OMS we expect to continue with the current trend. In addition, the ***BBRM*** and ***WLM*** are among the 5 best in Spain in the areas of Veterinary and Food, and Environment Management, respectively in the 2017 (http://www.elmundo.es/especiales/mejores-masters).The OMS of ***SAM*** has been the last to be implanted. Actually, 50% of the places offered are covers, and we expect that the 20 places offered for the master's degree will be covered in the coming years. For the future

10.1.6. Description of how and by who research, continuing and postgraduate education programmes organised by the Establishment are decided, communicated to staff, students and stakeholders, implemented, assessed and revised.

The **FVETUM** has a dedicated Vice-Dean of Postgraduate Studies, Research and Innovation who is member of the **Academic Commissions and Committees** of the postgraduate education programme and tracks the different activities. The Academic Commissions of OMP and PhD Programs are constituted by AS of the program, students of the program and stakeholders (representatives of the enterprises):

- **OMP Academic Commission**. It is responsible for the definition and updating of the Master. Annually, manage the student's admission process, the courses coordination and the application of the Quality Assurance System.
- **PhD programme Academic Commission**. It´s mission is to evaluate the research plan and the activities of their PhD students, and carry out an integral follow-up of the performance of the student during their whole PhD training. Annually, it is in charge of the student's admission process, the coordination of the activities and the application of the Quality Assurance System.
- **Research Committee**: It consists of members of the Dean Team and departments of **FVETUM**. Among its competences is the development of scales and the evaluation of candidates for Awards for the best doctoral thesis every academic year.
- **Postgraduate Committee**: It consists of members of the decanal team, the coordinators of different OMP of **FVETUM**, students and other academic staff. Its functions are to manage all the issues related to postgraduate studies.

Besides, each PhD and OMP has a Quality Assurance Committees that every year review the progression and results of the Thesis (PhD or master). These Committees are also part of the **FVETUM** QA System, and report to the QA Committee of the **FVETUM**. Periodically, regional and national Quality Agencies evaluate our official postgraduate programmes.

10.2.- Comments.

- We believe that research is a strong and consolidated pillar of **FVETUM** based on the impact into international and national repertories and rankings. However, research is no even in all **AoK** and it has to be included in the strategic plan the encouragement of all areas.
- All areas are awarded of the meaning of the research-based education of veterinarians and we believe that it is covered all over the curriculum.
- The **FVETUM** also believes that currently there are significant opportunities for undergraduate students to participate in research within the curriculum.
- Regarding post-graduate's studies **FVETUM** covers all relevant areas to achieve a Master or PHD Degree. However, there is some gap in the continuous education. There a desire to build a School of Professional Education and Training with the Professional Veterinary Colleges (COLVEMUR for instance) but since 2011 the National General Council of Veterinary Colleges of Spain that is working on a specialization/accreditation in equine, and companion animals with professional associations.
- Also, **FVETUM** may need to implement specialized course within the **UM** self-programs of specialization.

10.3.- Suggestions for improvement.

- Although masters and PhD are very demanded, and after several years of success, it is time to review and update the profile and syllabus, and even some of them (***NTFS*** for instance can be split into more specific ones: Food Safety, Food Technology or Human Nutrition). Also, another aspect on debate is the convenience or not to increase the number of ECTS up to 90 or 120 to harmonise with most of the European standards for Masters Programs.
- There is also a demand to train veterinary technicians (in equine as well as in animal companion) and that can be an opportunity to begin activities on a Professional School.
- It is also critical to implement the strategic plan for training, promoting or hiring diplomates on the more demanded clinical areas to warranty the sustainability of the clinical undergraduate education and permanent training of postgraduates.
- Internationalization of masters.
- On research, there is a need to encourage scientists to aggregate and cooperate to build scientific strategies. As part of this activities from the Faculty will be promoted the recovering the research institute or centre for food science and health so called VITALIS, within the frame of the RICE. Other initiatives will be discussed like the animal health institute.

SGIC
Sistemas de Garantía Interna de Calidad

Standard 11

Outcome Assessment and Quality Assurance

11.1. Factual information

11.1.1. Description of the global strategy of the Establishment for outcome assessment and Quality Assurance (QA), in order to demonstrate that the Establishment:

a) has a culture of QA and continued enhancement of quality;

f) is compliant with ESG Standards.

The **strategy** of **FVETUM** fulfils the requirement to follow and apply of quality standards on its environment. As any other Veterinary Faculty within Spain and at **UM**, **FVETUM** follows the unified procedures for quality evaluation that fully respects principles set by National Agency for Quality Evaluation and Accreditation (**ANECA**), which is full member of the European Association for Quality Assurance in Higher Education (**ENQA**), and the International Network for Quality Assurance Agencies in Higher Education (**INQAAHE**), and also listed in the European Quality Assurance Register for Higher Education (**EQAR**). Its basic principles of internal quality assurance are the following ones:

- approval, monitoring and periodic review of study programmes and academic titles;
- assessment of students;
- quality assurance of teaching staff;
- learning resources and student support;
- information systems and public information.

It is a continuous work to match and combine the national and international standards and protocols, that keeps the **FVETUM** in a continuous work related to QA.

The **culture** of **FVETUM** started to apply the principles of QA in 2009 because it was part of a Pilot Project of ANECA in our University for implementing an **Internal Quality Assurance System** (IQAS, or in Spanish SGIC), and accredited by ANECA on the 16/09/2009. From that moment onwards, it has been revised several times (2013, 2014, 2015 and 2016) by the **AUDIT programme** maintaining its certified status (http://www.aneca.es/Programas-de-evaluacion/AUDIT/Registro-de-universidades-centros-certificados) on a **continued enhancement of quality**.

A key tool in the QA System (**QAS**) is the **Quality Guidebook**. It is a collection of descriptions of how critical processes are implemented, the different agents involved in and the organization of the QAS in the centre to ensure consistent and complete implementation of these processes. The **Quality Guidebook** is available on-line on the University's web page: http://www.um.es/documents/14554/60960/MSGIC+aprobado+JF+diciembre+2015+con+mapas+procesos+y+macroprocesos.pdf/017d6175-ebc3-4043-8576-0c752e7f725f.

b) operates ad hoc, cyclical, sustainable and transparent outcome assessment, QA and quality enhancement mechanisms;

c) collect, analyse and use relevant information from internal and external sources for the effective management of their programmes and activities;

d) informs regularly staff, students and stakeholders and involves them in the QA processes;

e) closes the loop of the QA Plan-Do-Check-Act (PDCA) cycle;

FVETUM has a fully implemented **QAS** and based on a hierarchy system with 3 decision bodies:

- **Committee for Assessment and Improvement of the Veterinary Degree Curriculum (CAIVDC)**. It is the first level, and its main duty is to be in charge of the day-to-day QA (http://www.um.es/web/veterinaria/contenido/centro/organos-gobierno/comisiones/grado-planes-veterinaria). This Committee is the coordination body of the Veterinary Degree, and it is in charge of gathering information and evidences on the implementation and the development of the syllabus, according to the objectives, contents, teaching activities, assessment, communication and quality procedures established by ANECA in the document of the Degree in Veterinary (http://www.um.es/web/veterinaria/contenido/estudios/grados/veterinaria/documentacion). **CAIVDC** also collects data about the results and performance indicators of the Degree, and receives suggestions and satisfaction inputs from all parties, which are used to make improvement proposals. **CAIVDC** is also responsible for the preparation of self-evaluation reports that must be presented to **UM**, and regional and national QA agencies.
- **Quality Assurance Committee (QAC)** of **FVETUM** is an upper body that coordinates and receives information (reports, improvement proposals, etc.) from the **CAIVDC** of the undergraduate and postgraduate programmes offered by the **FVETUM**. It provides an integrated QA coordination within our Establishment (http://www.um.es/web/veterinaria/contenido/calidad).
- At the top level, the **Faculty Board** reviews the activities of the **QAC**, and evaluates the improvement proposals, which, if approved, are implemented in the programmes. The activities of the QAS of the **FVETUM** are managed by the **Quality Coordinator**. Functions and composition of the **QAC** (approved by the **Faculty Board** on January 2008) are fully described on our website (http://www.um.es/web/veterinaria/contenido/calidad/comision). **FVETUM** **QAS** guarantees that all **FVETUM** members (academic as well as support staff, and students), and stakeholders (practitioners, veterinary civil servants and other industry representatives, employers, official college of veterinarians, etc.) are represented and participate as active members in the three bodies, in order to ensure a global and cyclic input/output from all parties. The contribution of students and external stakeholders is essential to guarantee a continuous improvement of the Veterinary Degree, to match the expectations of the students for high quality training, and the prospects of the veterinary profession. On the other hand, the **UM** has a Quality Office (http://www.um.es/web/unica/), dependent of the Vice-Rectorate for Education Scheduling. This Office gathers institutional academic indicators, evaluates the self-

evaluation reports of all UM programmes, and submits those reports to the external regional and national QA agencies. It also conducts institutional satisfaction surveys for all stakeholders, and runs the programme for teacher assessment (http://www.um.es/web/unica/contenido/profesorado).

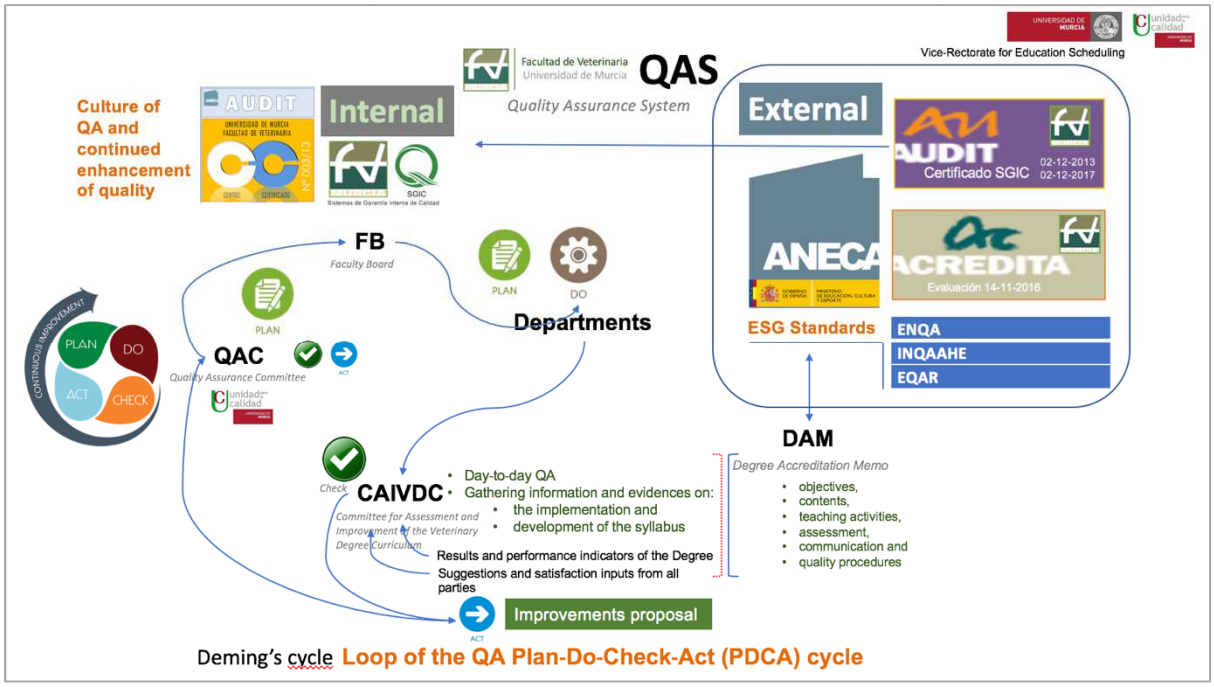


Figure 11.1: Schematic diagram of **FVETUM** Quality Assurance System, loop of the QA Plan-Do-Check-Act cycle.

The **QAS** of the **FVETUM** includes the following procedures:

- **Academic follow-up report of the Degree.** Each academic year, a performance report is prepared from data on academic results, which is compared to those of previous years.
- **Teaching follow-up meetings.** Two types of meetings are held to monitor the progress of the Degree during each academic year; one of them is held with subject coordinators, and the other one is open to all the Faculty stakeholders, with students playing a central role. These meetings are considered a key tool of our **QAS**.
- **Direct input from student representatives (Student Office), which actively collaborate in both coordination and quality assessment.** The students participate in different evaluation surveys and are represented in all central and faculty committees. In relation to the evaluation of the educational programmes, the student participates in: the mid-term course evaluation (a collective evaluation made by the students participating in a course), the final course evaluation (anonymous individual evaluations), coordination and management meetings (between the programme coordinators and representatives of students).
- **Complaint and suggestion mailbox**, at the disposal of students, teachers and support staff, is available physically at the deanery and in all pages of the web site (http://www.um.es/web/veterinaria/buzon-de-sugerencias).
- **Internal surveys completed by students, teachers and support staff.** The system also receives external input from the following sources:
    - **Satisfaction surveys conducted by the UM Quality Office**, which are completed by students, teachers, support staff, and external stakeholders, including **FVETUM** alumni.
    - **Teachers assessment** made by the students and carried out by the **UM** Quality Office.
    - **External QA Agencies** (ANECA).

Regarding the participation of students in the QA system, it is important to mention that not only **FVETUM** undergraduates, but also students from other Universities, take part in assessment, mainly in relation to communication, transparency, evaluation and support during ANECA Accreditation process.

The activity of our **QAS** is summarised in an annual Self-Evaluation Report (*Memoria de Seguimiento del Grado*), based on the aforementioned procedures and data sources. The items evaluated are:

- Communication and transparency.
- Structure and functioning of the QA.
- Performance indicators.
- Implementation of systems for quality improvement.
- Implementation of the recommendations by QA Agencies in previous evaluations.

- Modification of the syllabus.
- Evaluation of the strengths and weaknesses of the programme.

The **QAS** is evaluated annually by the **UM** Quality Office, and periodically by national QA Agency (ANECA). The issues and recommendations received from these evaluations are analysed by the QAS to implement the corresponding improvement measures. Since 2009, the **FVETUM** set up an Internal Quality Assessment System. As established by the Ministry of Education, Culture and Sport, a complete accreditation of the Veterinary Degree syllabus took place in 2013 by the national QA agency. As a result of the implementation of the QA internal system, the **FVETUM** obtained a special government seal quality, **AUDIT**, valid until 2/12/2017, which will be re-evaluated again in 2018. (http://www.um.es/documents/14554/1775289/DIPLOMA+CERTIFICADO+ANECA+SGC.pdf/5b65b491-84f9-4de7-a35f-4dadb612d1eb;). **This award also reflects the quality performance of our Establishment**.

11.1.2. Description of the form by which the strategy, policy and procedures are made formal and are publicly available.

All the proposals and actions of the **QAS** are discussed and approved by the corresponding bodies, and finally if approved by the Faculty Board, they will be implemented in the programmes and planning for the next academic year. Complete information about our quality policy, procedures and performance is available on the **FVETUM** website (http://www.um.es/web/veterinaria/contenido/calidad), which includes, among other items the following ones:

- The composition of the **QAC** and their internal regulations.
- Self-evaluation reports.
- Improvement plans.
- Results on satisfaction surveys.
- Reports issued by QA agencies (**UM** Quality Office, ANECA) on the assessment of the **FVETUM** QA internal system.
- The Strategic Plan of the **FVETUM** (2015-2018) http://www.um.es/documents/14554/52526/Plan+Estrat%C3%A9gico+Facultad-1.pdf/c8565517-b7b3-4ff8-8538-667e63bb7fed.
- Innovative projects.
- Complaint and suggestion mailbox.
- Information about awards of excellence given to our teachers and students.

The activities of the **QAS** are also disseminated as headlines on the **FVETUM** website (http://www.um.es/web/veterinaria/contenido/calidad), Virtual Campus, classroom screens, informative displays screens, e-mail and social networking (mainly Facebook https://www.facebook.com/Facultad-de-Veterinaria-de-Murcia-782579485218509/) and occasionally through printed posters and leaflets.

11.1.3 Description of the regular publication of up to date, impartial and objective information, both quantitative and qualitative, about the educational programmes and awards the Establishment is offering.

Information regarding the academic planning of our educational programmes (once approved by the Faculty Board) is available on the **FVETUM** website at least two months in advance the academic year will starts; so, students are able to plan ahead their activities for the following academic year before enrolment. General information about the Veterinary Degree (description of the syllabus, subjects and admission) is published in the link http://www.um.es/web/veterinaria/contenido/estudios/grados/veterinaria. Detailed information on the planning for each academic year is also available. Finally, specific information on each subject is available for teachers and registered students through the **UM** Virtual Campus (http://www.um.es/web/universidad/campus-virtual).

Quantitative and qualitative information about the programme (performance indicators, results of satisfaction surveys, etc.), and awards, is regularly published on the website (http://www.um.es/web/veterinaria/contenido/calidad).

To reinforce the dissemination of the continuously update information, other electronic resources are used as described in section **11.1.2**.

11.1.4. Description of the QA processes not yet described in the other 10 Standards.

All the QA processes of the **FVETUM** have already been described in the corresponding standards.

11.1.5. Description of how and by who the QA strategy of the Establishment is decided, communicated to staff, students and stakeholders, implemented, assessed and revised.

The QA strategy of the **FVETUM** is defined by our internal QA System, within the framework of the **UM** Quality Office. Strategy is revised on the basis of self-evaluation reports, data collection from internal and external stakeholders, and the inputs from external QA agencies.

The **QAC** of the **FVETUM** is based on academic and support staff, students and external stakeholder's representatives with the aim to achieve an integral quality culture in our Establishment. In particular, the participation of the President or representative of the Official College of Veterinarians in Murcia in the Committee for Assessment and Improvement of the Veterinary Degree Curriculum, and in the Quality Commission, ensures the connection with society, the veterinary profession and the veterinary

education in Spain. All the information about our QAS is available online (http://www.um.es/web/veterinaria/contenido/calidad), and is fully described in **Appendix 4**. Information is also disseminated as explained in **11.1.2.**

11.2. Comments

- The implementation and development of a **QAS** has been a key objective for the FVETUM, and noticeable changes can be observed in comparison to the last EAEVE visitation (2006). A remarkable achievement of **FVETUM** was to pilot the first Veterinary Faculty in Spain and also at **UM** to obtain the AUDIT recognition as the Quality Certificate of the **QAS**. It has been very useful to understand the philosophy of Quality and review the protocols and procedures.
- However, as it depends on the Quality Office of the **UM**, our **QAS** must conform to general rules that do not always adapt to the characteristics and requirements of the **FVETUM**. We believe that quality cannot be measured by using fixed and common parameters for all **UM** academic programmes; our teaching distinctive features demand specific attention and resources different to other Degrees.
- Some of the improvements implemented by the **QAS** is especially recognized by the students, such as the follow-up meetings with teachers, and the publication of the teaching planning previous to enrolment, which allows students to organize their future activities. People are our main asset. The high number of applicants for our Veterinary programme requires the selection of students with the best academic records, and highly motivated, which is complemented by a team of committed teachers, experts in their fields, with initiative, and keen to participate in any aspect related to the improvement of teaching quality. Our staff is also a key factor for a good performance of our **QAS**.

11.3. Suggestions for improvement

- Certain autonomy would be desirable to develop the improvement potential of the **FVETUM** in relation to specific QA standards and management procedures.
- Although human and equipment resources are remarkable, an effort should be needed to improve the infrastructures of the **FVETUM**.
- Many QA actions have already been implemented and incorporated into the curriculum and the global activity of the **FVETUM**, but, as stated in the Strategic Plan, those initiatives will help to face new challenges, including the review of the Veterinary Degree syllabus (a review within the frame time of 7 years), optimisation of subject content coordination, promotion of permanent education and postgraduate programmes, online training and employability studies, among other objectives.

ESEVT Indicators

ESEVT Indicators

	Name of the Establishment:	**Facultad de Veterinaria de Murcia (FVETUM)**				
	Name & mail of the Head:	**Gaspar Ros Berruezo, gros@um.es**				
	Date of the form filling:	**September 19th 2017**				
	Raw data from the last 3 full academic years	**2014-15**	**2015-16**	**2016-17**	**Mean**	
1	n° of FTE academic staff involved in veterinary training	137	136	139	137,33	
2	n° of undergraduate students	561	569	564	564,67	
3	n° of FTE veterinarians involved in veterinary training	110	110	110	110,00	
4	n° of students graduating annually	50	70	90	70	
5	n° of FTE support staff involved in veterinary training	60	70	80	70	
6	n° of hours of practical (non-clinical) training	900	900	900	900	
7	n° of hours of clinical training	900	900	900	900	
8	n° of hours of FSQ & VPH training	300	300	300	300	
9	n° of hours of extra-mural practical training in FSQ & VPH	90	90	90	90	
10	n° of companion animal patients seen intra-murally	4952	5594	6699	5748,33333	
11	n° of ruminant and pig patients seen intra-murally	314	396	432	380,666667	
12	n° of equine patients seen intra-murally	431	690	549	556,666667	
13	n° of rabbit, rodent, bird and exotic patients seen intra-murally	7	2	4	4,3	
14	n° of companion animal patients seen extra-murally	414	710	925	683,0	
15	n° of individual ruminants and pig patients seen extra-murally	3276	2914	5299	3829,7	
16	n° of equine patients seen extra-murally	5	9	11	8,3	
17	n° of visits to ruminant and pig herds	2416	2359	2532	2435,7	
18	n° of visits of poultry and farmed rabbit units	10910	11240	11240	11130,0	
19	n° of companion animal necropsies	92	122	98	104,0	
20	n° of ruminant and pig necropsies	179	124	86	129,7	
21	n° of equine necropsies	2	2	1	1,7	
22	n° of rabbit, rodent, bird and exotic pet necropsies	119	233	165	172,3	
23	n° of FTE specialised veterinarians involved in veterinary training	12	15	17	14,7	
24	n° of PhD graduating annually	18	24	25	22,3	
The boxes within the red frames must be filled in by the Establishment (the other values will be automatically calculated)						

ESEVT Indicators

Appendix explaining the calculation of the indicators	
All values represent an annual average calculated from the last 3 complete academic years. All values (except I22) concern the training of undergraduate veterinary students.	
1	Total number of full-time equivalent (FTE) academic staff in veterinary training (e.g. 100 persons employed full-time (100%) + 50 persons employed half-time (50%) + 10 persons employed quarter-time (25%) = 127,5 FTEs). Post-graduate students who are registered for a specialised or doctoral degree (i.e. interns, residents, PhD students or equivalent postgraduate students) are not included in these figures unless they are paid and trained to regularly perform structured practical and/or clinical training (for a minimal of 10% and for a maximum of 50% of their annual workload) and are supervised by permanent academic staff (e.g. 10 residents employed half-time (50%) for clinical training of undergraduate students + 8 PhD students employed quarter-time (25%) for practical training of undergraduate students = 7 FTEs). Researchers, invited speakers, unpaid lecturers and other persons who only occasionally contribute to the training of undergraduate students are not included in these figures but should be reported for information in the SER.
2	Total number of undergraduate veterinary students. These students have to be officially registered in the database of the Establishment.
3	Total number of FTE veterinarians (DVM or equivalent degree) in veterinary training
4	Total number of graduate veterinary students. These students have to be officially granted the veterinary degree (i.e. at least five years of full-time theoretical and practical study in agreement with the EU Directives) provided by the Establishment being evaluated.
5	Total number of FTE support staff involved in veterinary training. Only support staff who are dedicated to administrative, teaching or research tasks related to students and to care of facilities, equipment or animals in the Establishment are taken into account in the Indicators.
6*	Total number of hours of supervised practical (non-clinical) training. It includes inter alia laboratory experiments, microscopic examination of histological and pathological specimens, work on documents and idea-formulation without the handling of animals (e.g. assay work, clinical case studies, handling of herd-health monitoring programmes, risk assessment for VPH, computer-aided exercises), work on normal animals (e.g. physiology, ante mortem inspection), work on cadavers, carcasses and organs (e.g. dissection, post mortem inspection, Food Safety and Quality).
7*	Total number of hours of supervised clinical training. This training strictly focuses on hands-on procedures by students, which include the relevant diagnostic, preventive and therapeutic activities in the different species. It concerns individual patients, herds and production units and normal animals in a clinical environment. Propaedeutic, diagnostic necropsies, therapeutic and surgical hands-on activities on cadavers, organs and animal dummies are also classified as clinical training but may not replace the hands-on training on live patients. Simply observing the teacher doing clinical tasks is not considered as
8*	Total number of hours of theoretical and practical training in Food Safety and Quality(FSQ) and Veterinary Public Health (VPH).
9*	Total number of hours of extra-mural practical training in FSQ& VPH (e.g. slaughterhouses, meat inspections, VPH institutes).
10**	Total number of companion animal (dogs and cats) patients seen at the VTH. Each patient has to be officially recorded in the electronic patient record system of the Establishment and has to be individually examined/treated by at least 1 student under the supervision of at least 1 member of

ESEVT Indicators

11**	Total number of ruminant and pig patients seen at the teaching hospital/clinic. Each patient has to be officially recorded in the electronic patient record system of the Establishment and has to be individually examined/treated by at least 1 student under the supervision of at least 1 member of								
12**	Total number of equine patients seen at the teaching hospital/clinic. Each patient has to be officially recorded in the electronic patient record system of the Establishment and has to be individually examined/treated by at least 1 student under the supervision of at least 1 member of staff.								
13**	Total number of rabbit, rodent, bird and exotic pet patients seen at the VTH. Each patient has to be officially recorded in the electronic patient record system of the Establishment and has to be individually examined/treated by at least 1 student under the supervision of at least 1 member of								
14**	Total number of companion animal (dogs and cats) patients seen extra-murally (e.g. dispensaries). Each patient has to be officially recorded and has to be individually examined/treated by at least 1 student under the supervision of at least 1 member of staff. Patients seen during EPT are not taken into account in the Indicators.								
15**	Total number of individual ruminant and pig patients seen extra-murally (e.g. ambulatory clinics). Each patient has to be officially recorded and has to be individually examined/treated by at least 1 student under the supervision of at least 1 member of staff. Patients seen during EPT are not taken into account in the Indicators.								
16**	Total number of equine patients seen extra-murally (e.g. training centres). Each patient has to be officially recorded and has to be individually examined/treated by at least 1 student under the supervision of at least 1 member of staff. Patients seen during EPT are not taken into account in the Indicators.								
17	Total number of visits to ruminant and pig herds under the close supervision of academic staff.								
18	Total number of visits to poultry and farmed rabbit units under the close supervision of academic staff.								
19	Total number of post-mortem examinations carried out on whole carcasses of companion animals (dogs and cats).								
20	Total number of post-mortem examinations carried out on whole carcasses of ruminants and pigs.								
21	Total number of post-mortem examinations carried out on whole carcasses of equines.								
22	Total number of post-mortem examinations carried out on whole carcasses of rabbits, rodents, birds and exotic pets. Necropsies of other animals (e.g. sea mammals, wild animals) must be mentioned in the SER in table 5.1.6. in the item 'others'.								
23	Total number of FTE specialised veterinarians in veterinary training. The specialised veterinary status must be officially recognised by the relevant National Accreditation body for national specialisations and/or by the European and/or American Board of Veterinary Specialisation								
24	Total number of graduate students who are officially granted a third cycle degree (PhD or equivalent doctoral degrees in agreement with the relevant EU directives).								
*	The number of hours given in items 6 to 9 must apply to ALL undergraduate veterinary students, independently of electives/tracking. Specific data for each track (i.e. pre-specialisation) may be given in an annex.								
**	Each live animal having received a given procedure (e.g. vaccination, surgery) or treated for one specific clinical episode during a year is counted as 1 single patient, even if it has been examined/treated by several departments/units/clinics (including revisions). Only other visits of the same animal with a different condition would be considered as a different patient in the given year.								

ESEVT Indicators

Date of the form filling:									
Calculated Indicators from raw data							**Establishmen values**	**Median values[1]**	**Minimal values[2]**	**Balance[3]**
I1	n° of FTE academic staff involved in veterinary training / n° of undergraduate students						0,243	0,16	0,13	0,117
I2	n° of FTE veterinarians involved in veterinary training / n° of students graduating annually						1,571	0,87	0,59	0,982
I3	n° of FTE support staff involved in veterinary training / n° of students graduating annually						1,000	0,94	0,57	0,434
I4	n° of hours of practical (non-clinical) training						900,000	905,67	595,00	305,000
I5	n° of hours of clinical training						900,000	932,92	670,00	230,000
I6	n° of hours of FSQ & VPH training						300,000	287,00	174,40	125,600
I7	n° of hours of extra-mural practical training in FSQ & VPH						90,000	68,00	28,80	61,200
I8	n° of companion animal patients seen intra-murally / n° of students graduating annually						82,119	70,48	42,01	40,110
I9	n° of ruminant and pig patients seen intra-murally / n° of students graduating annually						5,438	2,69	0,46	4,975
I10	n° of equine patients seen intra-murally / n° of students graduating annually						7,952	5,05	1,30	6,654
I11	n° of rabbit, rodent, bird and exotic seen intra-murally / n° of students graduating annually						0,062	3,35	1,55	-1,483
I12	n° of companion animal patients seen extra-murally / n° of students graduating annually						9,757	6,80	0,22	9,210
I13	n° of individual ruminants and pig patients seen extra-murally / n° of students graduating annu						54,710	15,95	6,29	48,415
I14	n° of equine patients seen extra-murally / n° of students graduating annually						0,119	2,11	0,60	-0,476
I15	n° of visits to ruminant and pig herds / n° of students graduating annually						34,795	1,33	0,55	34,248
I16	n° of visits of poultry and farmed rabbit units / n° of students graduating annually						159,000	0,12	0,04	158,955
I17	n° of companion animal necropsies / n° of students graduating annually						1,486	2,07	1,40	0,086
I18	n° of ruminant and pig necropsies / n° of students graduating annually						1,852	2,32	0,97	0,882
I19	n° of equine necropsies / n° of students graduating annually						0,024	0,30	0,09	-0,069
I20	n° of rabbit, rodent, bird and exotic pet necropsies / n° of students graduating annually						2,462	2,05	0,69	1,769
I21*	n° of FTE specialised veterinarians involved in veterinary training / n° of students graduating						0,210	0,20	0,06	0,146
I22*	n° of PhD graduating annually / n° of students graduating annually						0,319	0,15	0,09	0,231
1	Median values defined by data from Establishments with Approval status in April 2016									
2	Recommended minimal values calculated as the 20th percentile of data from Establishments with Approval status in April 2016									
3	A negative balance indicates that the Indicator is below the recommended minimal value									
*	Indicators used only for statistical purpose									