



faculdade
de medicina
veterinária

European Association of Establishments for Veterinary Education
(EAEVE)

**SELF-EVALUATION REPORT
(SER)**

**FACULTY OF VETERINARY MEDICINE OF UNIVERSIDADE
LUSÓFONA DE HUMANIDADES E TECNOLOGIAS**



Lisbon
2017

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ABREVIATION

A3ES	Assessment and Accreditation of Higher Education
CASES	Cooperative Antonio Sergio for Social Economy
CBIOS	Research Center for Biosciences & Health Technologies
CET	Technological Specialization Courses
COFAC	Cooperativa de Formação e Animação Cultural
CTeSP	Advanced Professional Technical Courses
DGES	General Direction of Higher Education
DL	Decree-Law
DRIE	International Career & Entrepreneurship Office Department
EBVS	European Board of Veterinary Specialists
ECTS	European Credit Transfer System
EPT	External Practical Training
ESEVT	European System of Evaluation of Veterinary Training
ESEVT	European System of Evaluation of Veterinary Training
FMV	Faculty of Veterinary Medicine
FTE	Full-Time Equivalent
FUC	Subject / Curricular Unit Form
GGA	Student Counseling Office
ILIND	Lusófona Institute for Research and Development
IMVM	Integrated Master of Veterinary Medicine
IQAS	International Quality Assurance System
LLP	Lifelong Learning Program
LMS	Learning Management System
MCTES	Ministry of Science Technology and Higher Education
MQ	Quality Manual
PC	Pedagogical Council

PPE	Personal Protection Equipment
PPT	People, Processes and Technologies
QA	Quality Assurance
R&D	Research and Development
RCAAP	Portuguese Open Access Scientific Repository
ReCiL	Lusófona Scientific Repository
RUC	Subject / Curricular Unit Report
SACEE	Service Support for the Creation of Employment and Internships
SASE	Social and Educational Support Services
SATA	Technical and Administrative Support Services
SC	Scientific Council
SEN	Support for Students with Special Educational Needs
SOP	Standard Operating Procedures
SPCGA	Planning, Control and Academic Management Service
ULHT	Universidade Lusófona de Humanidades e Tecnologias
VEA	Veterinary Establishment Associates
VPN	Virtual Private Network
VTH	Veterinary Teaching Hospital
VTH-CA	Companion Animal Veterinary Teaching Hospital
VTH-E	Equine Veterinary Teaching Hospital

INTRODUCTION

Brief history of the Establishment

Universidade Lusófona de Humanidades e Tecnologias (ULHT)

The Faculty of Veterinary Medicine is part of the Universidade Lusófona de Humanidades e Tecnologias, Lusófona University (ULHT). The ULHT was created in 1998 by Decree-Law no. 92/98, of April 14, by a merge of two different universities. The University name comes from the word “Lusofonia” which names all the Portuguese-speaking countries and their common linguistic and cultural background and is part of the group of institutions jointly organized under the name of “Lusofona Group”. The entity legally responsible for the management and development of the “Lusofona Group” is COFAC – Cooperativa de Formação e Animação Cultural, a non-profit charity in the educational sector based in Lisbon, and is currently the largest non-profit, non-state funded educational organization in the country (Data: CASES: 2015 - <http://www.cases.pt/setor-cooperativo-em-portugal/>).

The Founders of the University have created an ambitious vision for the Institution whose mission includes the promotion of educational and research activities that contribute to the scientific, cultural and economic enrichment of all the countries that share the Portuguese language as a common heritage: The Lusófona Group – a leading institution responsible for the development of this geographical, economic and cultural space with more than 200 million inhabitants has educational establishments in the majority of Portuguese-speaking countries and is present in several Countries of three Continents: Europe (Portugal) Africa (Angola, Mozambique, Cape Verde) and America (Brasil) distributed as follows: thirteen higher education institutions and eight non-higher education institutions, in Portugal and ten higher education institutions and three non-tertiary institutions in Cape Verde, Mozambique, Angola and Brazil.

- In America – Brazil, ULHT maintains FAP (Paraíso Faculty – in Rio de Janeiro), FMS (Mário Schenberg Faculty – in Sao Paulo), UNICENID (Faculty of Management Sciences of Bahia) and filed with dozens of Colleges and Universities for postgraduate training. We are expecting the beginning of activities of the Luso-Capixaba Faculty in Vitória, Espírito Santo State and FLSP - Lusófona Faculty of São Paulo.

- In Africa, ULHT maintains the ULCV (Lusófona University of Cape Verde), Mindelo, Cape Verde, IEG (Institute of Education and Management) and ISG Mozambique - Institute of Management, Administration and Education in Mozambique, ULG Lusófona Guiné), in Guinea-Bissau and ISUPE - Higher Polytechnic Institute of Humanities and Technologies "Ekuikui II", in Angola, in Huambo;

- In Portugal, the "Lusófona Group" is made up of the following higher education institutions: School of Health Ribeiro Sanches (ERISA) in Lisbon, Higher Institute of Management (ISG) in Lisbon, Higher Institute of Management Sciences (ISCAD) in Lisbon, Almeida Garrett Higher Education School (ESEAG), Manuel Teixeira Gomes Higher Institute (ISMAT) in Portimão-Algarve, Superior Polytechnic Institute of the West (ISPO) in Torres Vedras, Dom Dinis Higher Institute (ISDOM) in Marinha Grande, and Higher Institute of New Professions (INP) in Lisbon. In addition, the Polytechnic Institute of Management and Technology (IPGT) in Gaia, the Superior Institute of Management and Administration of Santarém (ISLA) in Santarém and ISLA in Leiria, the Lusófona University of Oporto (ULP), in Oporto and the University of Humanities and Technologies (ULHT) situated in the center of Lisbon city, the capital of Portugal.

The changes in the profile of the target audiences of institutions have been accompanied by profound changes in teaching and training models, including those resulting from the implementation of the Bologna Declaration. Above all, today, higher education institutions are called to clearly define what they want their role in society to be and what their contribution to the social, economic and social development of the community of which they are part.

The ULHT has established itself as the largest private university in Portugal and is an integral part of the private and cooperative subsystem of Portuguese higher education. Started with an organizational structure relatively original at a national level. This structure was based on “departments” as the main academic unit possessing scientific and pedagogical autonomy. Along the years several arrangements have been done to improve this structure. This organizational model was not only a sign of the University desire for innovation but also its attempt to work differently from traditional public Universities in balancing management and academic needs. Departments are a highly flexible structure and the organizational of the University around this type of structure became one of its main past competitive advantages. Several years having passed the University faces new challenges that implied in the recent past the implementation of a more stable structure based on Academic Units. Since 2013 it was established an organizational model closer to Portuguese people cultural background and conceptions based in academic units that allow for institutional innovation and development. There are currently ten academic units (<http://www.ulusofona.pt/faculdades-e-escolas>):

- School of Health Sciences and Technologies (ECTS)
- School of Economical Sciences and Organizations (ECEO)
- School of Communication, Architecture, Arts and Information Technology (ECATI)
- School of Psychology and Health Sciences (EPCV)
- Institute of Social Service (ISS)
- Faculty of Social Sciences, Education and Administration (FCSEA)
- Faculty of Law (FD)
- Faculty of Physical Education and Sports (FEFD)
- Faculty of Engineering (FE)
- Faculty of Veterinary Medicine (FMV)

The University Lusofona campus is located in the center of the city of Lisbon, the capital of Portugal, with great accessibility in terms of public transport.

With a student body of about 11,000 students and 1000 members of academic staff the University offers an appropriate educational, social and cultural environment. The number of foreign students coming from Lusophone countries contribute to a significant international dimension in the university. ULHT currently offers 43 undergraduate courses, 3 integrated master's degrees, 45 master's degree courses, 10 doctoral courses, as well as several free courses, postgraduate courses, MBA's and continuing education as part of its long-term education offer of life. The ULHT considers scientific research as a structuring element of its activity and in the search for the articulation between the research activity and the teaching activity in the COFAC teaching establishments, ULHT created the Lusófona Institute for Research and Development (ILIND) as an organic research unit.

Faculty of Veterinary Medicine – Integrated Master in Veterinary Medicine

The Integrated Master Degree in Veterinary Medicine (IMVM) proposed by Lusofona University to the Portuguese General Direction of Higher Education (DGES) was approved by this National authority in 2004 through the publication of the legislation DL 1107/2004 of 7th September.

The degree started in October 2004 and was included in the Department of Health Sciences of ULHT. In 2007 the Department of Veterinary Medicine was created giving an independent organic departmental structure responsible for the Degree. In June 2013 the University adopted a new organizational system dividing the

Departments into Faculties and Schools and today the IMVM is part of the Faculty of Veterinary Medicine of ULHT (FMV-ULHT). Besides the IMVM, FMV-ULHT also comprises the Bachelor's degree in Agronomical Sciences and Continuing Educational Programs in the area of Veterinary Sciences. Professor Laurentina Pedroso was appointed as Foundation Dean in 2004 and has since led the IMVM and since 2013 the FMV-ULHT.

Complying with the National and European legislation, and to the requirements of the Bologna process in Portugal, the curricular structure and study plan of the Degree in Veterinary Medicine was adjusted in 2007 published in the Deliberation no. 19107-A/2007 (Diário da República, 2ª série – 23rd August, 2007) and Deliberation no. 15989/2009 (Diário da República, 2ª série – 13th July, 2009). Due to national mandatory designations the degree in Veterinary Medicine became an Integrated Master of Veterinary Medicine (IMVM).

In 2012 we performed a revision improving the curriculum structure and study plan, officially approved and published as Deliberation no. 15652/2012 (Diário da República, 2ª série – December 7th, 2012).

According to DL 369/2007 of 5th November all registered courses to be able to provide education in their field need to be audited, and formally approved /accredited by the Portuguese Quality Agency for the Assessment and Accreditation of the Higher Education (A3ES), “Agência de Avaliação e Acreditação do Ensino Superior”. A3ES mission is to promote and ensure the Quality of Higher Education in Portugal. Only courses that are evaluated positively and accredited by A3ES can be registered in the DGES and allowed to function in Portugal.

Main Features of the FMV-ULHT

In 2014 the University Lusofona submitted the accreditation process by A3ES for the IMVM. In 2015 a delegacy of 3 auditors, 2 Portuguese and 1 from a European country audited all Public and the Private Institutions that run degrees in Veterinary Medicine in Portugal. In July 2016 the A3ES announced the successful accreditation and approval of the IMVM of FMV-ULHT. The Quality System approval was granted for a period of 6 years, giving to our degree the same level of the highest approval has to the Public Institutions providing education in Veterinary Medicine in Portugal.

The IMVM provides an opportunity for young well-motivated students that really want to be veterinarians as their first professional option. In Portugal, according to DGES data, on average, more than 50% of undergraduates initiating Veterinary studies in Public Institutions did not choose this Degree as their first option to pursue their profession wills. Often, they choose Medicine and other Health Sciences Degrees and as a second or third option Veterinary Medicine.

The students that undergo the IMVM of FMV-ULHT have a high component of practical classes and a great contact with the reality of the Veterinary profession. The practical classes are given by a large number of specialists in specific areas of the educational program and classes occur in a real situation context thanks to the relationship established with several private and public sectors. The quality of the program and the success of our students is reflected in a high level of employability.

We were the first institution in Veterinary Medicine in our country to develop a solid innovative program for long life continuing education for the Veterinary profession. More than a thousand of Veterinarians participated in these programs increasing their knowledge and their skills to be applied in the Veterinary sector.

We created innovative community social programs helping thousands of animals from shelters, associations and families with a low income contributing to increased levels of animal wealth, welfare and public health in the society.

Major problems encountered by the Establishment

The ULHT is still a very young University and the Degree and the Faculty of Veterinary Medicine even younger. Being a private institution our budget depends mainly on the students that we are able to attract. This is deeply related with economics and during the last years Portugal has been struggling to get out of an economic crisis that affected the all country and specially the middle class.

Being a private institution we always have to work for a high quality education raking among other institutions, public and private, to attract students and so always need to be improving our educational project, expanding infrastructures in terms of building and equipment and recruiting staff.

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

The version of the ESEVT SOP used is "Uppsala SOP May 2016".

1. OBJECTIVES AND ORGANISATION

1.1 Factual Information

1.1.1. Details of the Establishment, i.e. official name, address, phone number, Email and website addresses, Establishment's Head, name and degrees of the person(s) responsible for the professional, ethical, and academic affairs of the VTH, official authority overseeing the Establishment

Universidade Lusófona de Humanidades e Tecnologias

Address: Campo Grande, 376 1749-024 Lisbon

Phone: +351 21751 55 00

Email: informacoes@ulusofona.pt

Website: www.ulusofona.pt

Faculty of Veterinary Medicine

Address: Campo Grande, 376 1749-024 Lisbon

Phone: +351 21751 55 00 (ext: 667)

Email: sec.medvet@ulusofona.pt

Website: <http://fmv.ulusofona.pt>

The Rector of the ULHT is Professor Mário Moutinho, PhD and the Administrator is Professor Manuel Damásio, PhD.

The Dean of the Faculty is Professor Laurentina Pedroso, DVM, PhD.

The persons responsible for the professional, ethical and academic affairs of the VTH and other premises are:

- Director of the IMVM, Laurentina Pedroso (DVM, PhD);
- Companion Animal VTH (VTH-CA), Pedro Almeida (DVM, MSc) and Margarida Fragoso Costa (DVM, MSc);
- Equine VTH (VTH-E), José Prazeres (DMV, MSc) and Manuel Pequito (DVM, MSc, PhD);
- Farm Animals, João Cannas da Silva (DVM, PhD, Dipl ECBHM), Sofia van Harten (DVM, PhD) and João Paisana (DVM)
- Clinical Pathology and Pathology Lab (LACH), Maria Nazaré Pinto Cunha (DVM, PhD, Dipl ECVCP) and Pedro Faísca (DVM, PhD)
- Ethical and Welfare Commission, Raquel Estevão de Matos (DVM, PhD), João Requicha (DVM, PhD) and Ana Oliveira (DVM, MSc, Dipl. ECVD)

The Official authority overseeing the Establishment is the State body of the Ministry of Science Technology and Higher Education (MCTES) <http://www.portugal.gov.pt/pt/ministerios/mctes.aspx>

This MCTES acts through the General Directorate of Higher Education (DGES), which is responsible for the conception, execution and coordination of the politics of this Ministry in what relates to the Higher Education in Portugal <http://www.dges.gov.pt/pt>

Agency for Assessment and Accreditation of Higher Education (A3ES) is an independent foundation with legal status which mission is to contribute to improve the quality of Portuguese higher education, through the assessment and accreditation of higher education institutions and their study programs, and to ensure the integration of Portugal in the European quality assurance system of higher education. <http://www.a3es.pt/en/>

1.1.2. Summary of the Establishment Strategic Plan with an updated SWOT analysis the mission and the objectives

ULHT belongs to the largest group of Portuguese higher education with an ambitious and innovative project and an international vision that integrates higher education institutions in Portuguese-speaking countries. More than 25000 students attend in Portugal and Portuguese-speaking countries the educational institutions of the "Lusophone Group". The educational, scientific and cultural project aims to promote the educational, cultural, scientific and economic development of Portugal and the Portuguese-speaking countries.

The creation and institutionalization of courses in veterinary sciences in ULHT corresponds to the implementation of the statutory and programmatic design of the institution, to be open to all disciplines, particularly those that, such as Veterinary Sciences, contribute decisively to the advancement of knowledge and evolution of the societies. The objectives of the course of Veterinary Medicine is consistent with this diversification and scope in order to promote programs in different areas of training and research, appropriate to the developmental needs, employment, training and innovation in Portugal and Portuguese-speaking Countries.

The ULHT core objectives for the coming years imply the institution educational activities are mostly focused on reinforcing already established areas, always with a focus on increasing its overall position, attracting better students and sediment top-class postgraduate research, namely via a reinforcement of its international profile. From previous analysis we have identified the following SWOT variables:

Strengths	Weaknesses
<ul style="list-style-type: none"> - International dimension of the University (students and partner institutions in the Portuguese speaking countries) - Degrees offered (quantity and range) - Localization - Dimension - Notoriety in specific areas: i.e – sports and physical education; health sciences; media and communication; veterinary medicine. - Laboratorial facilities. 	<ul style="list-style-type: none"> - Institutional youth - Cost of tuition fees - Capacity to attract top students in some areas due to legal and economic constraints; - Level of research; - Levels of technology transfer; - National prejudice in relation with privately run education; - High complexity of administrative services provided to students.
Opportunities	Threats
<ul style="list-style-type: none"> - Research and integration of young teachers/researchers - Entrepreneurship - Liaison with Portuguese speaking countries - Mature students (+23) - Vocational training (Ctesp) - Blended and e-learning initiatives - Consortiums with other HEI at national and international level (I.e Erasmus + Joint Masters) 	<ul style="list-style-type: none"> - Decrease in the number of secondary students and general decrease in the number of applicants; - Public institutions hiring of academic staff; - Economic environment in the country - Drop-out due to economic constraints - Inability to access outside facilities for core education or research activities.

Success in the future implies we resolve our weaknesses, take advantages of our strengths and embrace the opportunities around us to realize our vision of ULHT as the main non-public University in Portugal and an essential partner for all those wanting to promote the scientific, cultural and economic development of the Portuguese speaking countries. This vision implies our University is regarded as a valuable partner; an institution that nourishes innovation and promotes societal development.

The FMV embraces in general the SWOT analysis of ULHT but also at the specific level, we have identified the following SWOT variables:

Strengths:

- High number of contact hours in practical subjects essential for the acquisition of skills in Clinical activities, Hygiene, Food Safety and Public Health, Well-being and Animal Protection;
- Syllabus with innovative elective subjects according to the evolution of the labor market in Veterinary Medicine;
- High contact with the reality of the profession, through practical teaching in real situations of work and the labor market, with the collaboration of a large number of specialized academic staff;
- Study plan requires and values the ethical use of animals in teaching and research activities;
- High number of social support projects allowing interaction with the needs of local communities, national and international solidarity with outstanding contributions to the health of animals, their welfare and public health;
- Staff with appropriate degree and highly dynamic;
- Highly qualified staff, PhD, recognized national specialists and specialists from international colleges;
- Strong student motivation for being on the course which they choose has a first option
- High employability of the graduates;
- Strong commitment to continuation of veterinary education by offering post-graduate programs of excellence;
- Part of a comprehensive and diverse scientific and cultural educational project of ULHT
- Possibility of the students to attend to other curricular units in areas transversal to other courses in the University.

Weaknesses:

- High cost of the tuition fee;
- Elements of the Faculty still in career development, undertaking PhD Degree;
- High teaching load and / or academic activities of the Academic Staff;
- Limited time of academic staff to dedicate to research and scientific publication
- Absence of a 3rd cycle of studies;
- Absence of Internship or Residence Program in accordance to the European Board of Veterinarian Specialisations;
- Quality management system in recent review and implementation to comply with the European System of Evaluation of Veterinary Training (ESEVT) Uppsala Standard Operating Procedures (SOP).

Opportunities:

- Increased research funding opportunities, innovation and technological development
- Possibility of capturing students and professional integration in the Portuguese-Speaking Countries
- Increased international and national partnerships
- Improving conditions and incentives for research
- Creating a 3rd cycle in Veterinary Sciences
- Improvement of the Quality Management System
- Strengthening the hiring of full-time faculty / researchers and PhDs in Veterinary Science
- Improving facilities and acquisition of new equipment
- Promote the mobility of academic staff and students
- Actions to reduce the timing that students take to complete the Master thesis preparation

Threats:

- Economic crisis with impact on access to education
- High cost of tuition fee
- Economic crisis with inevitable consequence on the activity of the veterinarian and in particular the appropriate employability of veterinarians
- Economic and financial conditions to obtain funding for research projects

Our mission is to benefit the society by improving the health and welfare of animals and humans, based on the respect of all beings, through the provision of education programs aimed to prepare veterinarians in animal protection and welfare, human and environment health.

Being an organization which operates with private funds to serve the society we are fully responsible to have a high respect for our financial resources in the achievement our goals preparing students for the profession and life-long learning and provide educational programs at both undergraduate and graduate levels.

Our main objectives are to provide our students the knowledge, the skills and the attitudes that will allow them to perform Day One Competence when starting their professional activity at various recognized areas of the Veterinary profession and understanding the importance of lifelong learning.

The course aims the formation of Veterinarians in accordance with EU Directives 2005/36/EC and 2013/55/UE. The study plan ensures adequate knowledge underpinning the veterinarian's activities; structure and functions of animals in good health, production, reproduction, hygiene in general, including food technology in the manufacture and storage of food; the behavior and animal welfare; causes, nature, course, effects, diagnosis and treatment of animal diseases either individually or in groups; a special knowledge of diseases transmissible to humans; preventive medicine; hygiene and technology involved in the production, manufacture and distribution of animal foodstuffs or foodstuffs of animal origin intended for human consumption; of laws, regulations and administrative provisions relating to the subjects listed above; and ensuring adequate clinical experience and practice.

1.1.3. Summary of the Establishment Operating Plan with timeframe and indicators of achievement of its objectives

For the period 2017-2020 the University will focus on People, Processes and Technologies (PPT) as its main areas of investment.

- People comprise human resources, and concerns not only the capacitation of the academic staff but most of all the seamless integration between education, research and administrative personnel in order to improve the overall quality of teaching, research and services provision activities. One key aspect of this, concerns the promotion of employability;
- Processes refer to the University internal organization and the way information and processes flow within it. For this period the University intends to implement the vision of “the Omni channel University” via the digitization of most internal procedures and academic processes;
- Technologies concerns both the social technologies involved in the learning process as the physical technologies necessary for the support of all services, training and research activities, besides a focus on the innovative use of information and communication technologies in order to improve blended and distance e-learning based initiatives;
- Operating on all levels PPT deals with, involves changing our organization towards a future status where both its internal and external dimensions are fully present in the institutional dynamics. This implies we reinforce innovation and quality at an internal level in order to promote a positive external attitude that prompts all exterior entities to regard the University as a valuable partner and one that actively helps in promoting societal development.

The University's future depends greatly on its ability to improve our students and different stakeholders' satisfaction, namely in order to reinforce its national and international profile.

Today the University offers a broad range of options and career paths and is always investing in improving its existing facilities and equipment's, namely those in the Campo Grande campus in Lisbon. The University is currently developing a major effort at an organizational and management level with a desire to promote the satisfaction of both staff and students, the most important driving forces for the University's success.

The FMV embraces the ULHT establishment-operating plan and specifies its own PPT operating plan for the period of 2017-2020.

Our main strategic objectives are to continue to attract veterinary students maintaining and improving our reputation in providing high skills in Day One Competences and long life learning.

Strengthen the hiring of full time Faculty / Researchers and PhDs in Veterinary Sciences will allow highly qualified human resources to improve research activities. We plan to submit a 3rd cycle program in Veterinary Sciences to the A3ES as we had a previous limitation to do so because our IMVM had not yet been evaluated or accredited.

We aim to start EBVS recognized specialty training programs, internships and residence program namely in companion animals.

The Faculty aims the accreditation of EAEVE under the ESEVT Uppsala SOP version.

The Faculty is also interested in improving its existing facilities and equipment, developing major efforts to promote the excellence of the Veterinary Medicine education and satisfaction of both staff and students.

1.1.4. Organisational chart of the Establishment

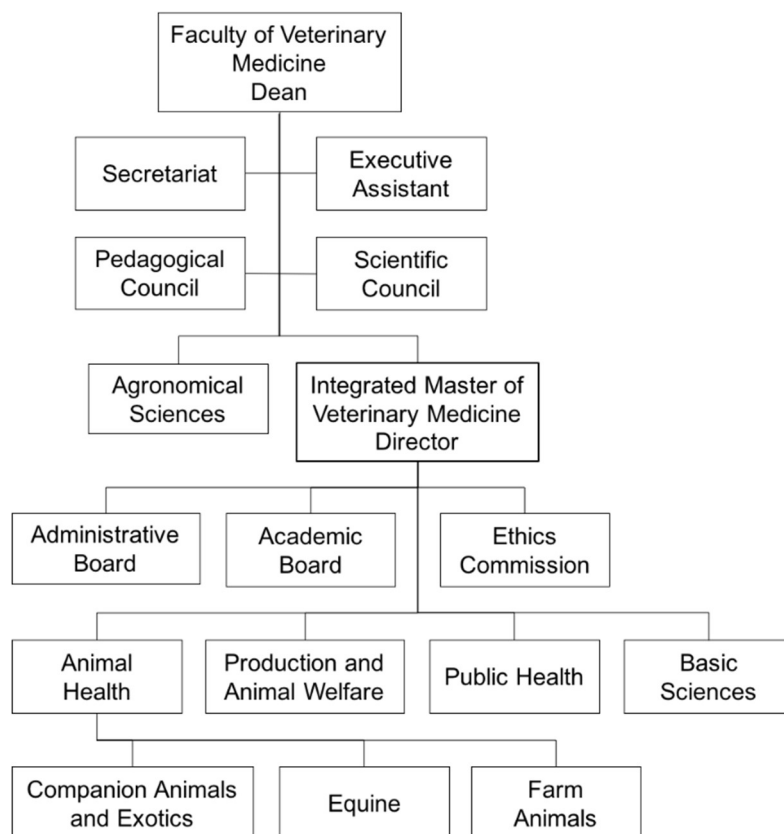


Figure 1 - Organogram of the Faculty of Veterinary Medicine of the ULHT

1.1.5. List of departments/units/clinics and councils/boards/committees with a very brief description of their composition/function/responsibilities

There are several decision-making levels for academic policy-making and activities under ULHT organizational structure. The Statutes of ULHT (Dispatch 15417/2016) define the institution's bodies according with the following organization: Rector, Administrator, General Strategic Council, University Council, Scientific Council and Pedagogical Council.

The Rector of the Lusofona University represents and rules the institution and the Administrator is the organ intended to ensure the normal functioning of the University.

The General Strategic Council of the University presents proposals for the development of ULHT and the achievement of its objectives within COFAC. The Rector, the Administrator and invited personalities of recognized merit outside the University and stakeholders are members of the General Strategic Council of ULHT.

The University Council is responsible for defining the general guidelines as well as ensuring the coordination of corresponding actions. Its members are the Rector, the Vice-rectors, the Administrator, the directors of the Faculties and Schools. The directors of the courses, representative of professors, researchers, president of the Academic Association, employees and Library Director. The Faculty of Veterinary Medicine is represented by its Director.

The University Scientific Council is responsible for defining the broad lines of the scientific policy to be pursued by the University in the fields of education and research. In its relationship with the scientific councils of the faculties, schools, institutes or departments, the Scientific Council of the University acts in accordance with the principle of the autonomy of the organic units. The members of the scientific council of the University are the Rector, who presides, the Vice-Rectors and the directors of the Faculty / Schools and Research units as well as the representatives of professors and career researchers. Besides the Director of the Faculty of Veterinary Medicine, a member of the Academic Staff (PhD) of the IMVM is represented in the Scientific Council of the University.

The University Pedagogical Council is the organ that studies and appreciates the orientations, methods, and results of teaching and learning at the Lusofona University. In its relationship with the pedagogical councils of the faculties, schools, institutes or departments, the Pedagogical Council of the Lusofona University acts in accordance with the principle of the autonomy of the organic units. Besides the Director of the Faculty of Veterinary Medicine, there are two members of the Academic staff and two students of the IMVM in the Pedagogical Council.

The Faculty of Veterinary Medicine has its own internal operating rules which define its organizational structure. FMV-ULHT has scientific and pedagogical autonomy and is presided by one Dean, nominated by the Rector and the administrator.

The Dean of the Faculty of Veterinary Medicine is assisted by an Executive Assistant, which is a member of the Academic Staff, and by permanent Secretariats.

The coordination of scientific and pedagogical activities is carried out by Scientific and Pedagogical boards.

The Scientific Council is responsible to draw up the internal regulations; appreciate the plan of scientific activities; submit for approval of the rector, the proposal of distribution of academic service; decide on the creation of study cycles and approve the existing ones; propose to the rector the composition of the jury of thesis. The members of the Scientific Board are the Dean, who presides, and up to twelve PhD representatives the academic staff;

The Pedagogical Council has the responsibility to drawn pedagogical guidelines and methods of teaching and evaluation; promote regular surveys of the unit's pedagogical performance and its analysis and dissemination; promote the evaluation of the pedagogical performance of the academic staff; assess complaints about pedagogical failures and propose the necessary measures; pronounce on the creation of a cycle of studies and

on the existing ones; pronounce about the academic calendar and the map of exams. Members of the Pedagogical Board are the Dean, who presides, two members of the academic staff and three students. Ethics and Animal Welfare Commission main aim is to ensure that all activities carried out in the FMV-ULHT involving live animals have adequate and clear ethical justification for their use. The Committee assesses expected benefits for the use of animals in relationship to people, other animals and to society in general and oversees that procedures involving animals fall under the Animal Welfare rules, called three Rs: "Alternative replacement," "Alternative reduction" and "Refinement Alternatives." This is an independent and advisory body of the faculty.

Division structures ensure an excellent communication between the academics and the remaining staff of the faculty and guarantee a clinical work integration, namely:

- The Academic Board is constituted by the Heads of each Academic Division and is responsible to help the Director of the IMVM with the logistics related with organization of facilities, in campus and outside campus, ensure animal resources and teaching material;
- The Administrative Board is constituted by the Executive Assistant and secretariats and undertakes a number of administrative functions traditionally fulfilled by the academic staff;
- Academic Divisions, namely Animal Health, Public Health, Animal Production and Welfare and Basic Sciences Divisions, directly assist the Course Director in the organization and management of the IMVM and ensure clinical input throughout all years of the course. The Animal Health integrates the Division of Companion Animals and Exotics, Division of Equine and Division of Farm Animals.

1.1.6. 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

Both the strategic plan of the organization and its general organization are, in accordance with Portuguese Legislation, defined by the governing institution, in this case COFAC – Cooperativa de Formação e Animação Cultural, Crl. These plans are then assessed and revised by the rector and general councils of the University and communicated by these entities to all stakeholders. The plans are implemented by the management board of the University, the rector and the academic board of each of the University Units (i.e schools).

1.2. Comments

We consider to have met our short-term objectives. We deliver an innovative curriculum which allows to reach a good level of professional and scientific differentiation and a high level of employability. The establishment provides an important contribution to veterinary knowledge through long life learning programs. Last year, we achieved accreditation by the Portuguese external recognition Agency for Assessment and Accreditation of Higher Education (A3ES).

1.3. Suggestions for improvement

The Faculty continues to invest in facilities and equipment either at the main campus or with other establishments outside the campus and will continue to improve the number and qualifications of the academic staff.

2. FINANCES

2.1. Factual Information

2.1.1. Description of the global financial process of the Establishment

The University's main source of income are the students' tuition fees. Other sources of revenues are related with services provision and the development of research based activities. According with National legislation, the University is run by a non-profit organization – COFAC, Cooperativa de Formação e Animação Cultural, Crl – which is also responsible for assuring the maintenance and development of the University. COFAC is the largest higher education non-public provider in Portugal.

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

The entity legally responsible for the management of the University – COFAC – runs the yearly budget and provides each academic body – such as the Faculty of Veterinary Medicine – with a percentage of that budget for functioning and development in accordance with the total number of teachers; students and activities enrolled in that same unit for each year. Each academic unit presents a yearly plan of activities based on which the central management body defines the budget for that year based on the foreseen revenue and costs.

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

30%

2.1.4. Annual tuition fee for national and international students

7205€ for the academic year 2016/2017

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

All costs are included in the official expenditure tables

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

All funding is internal. Major investments for 2017 include upgrading the University Library's; improving facilities for equine and bovine teaching; renovating the entire University computer labs; a new sports arena; new robotic labs; upgrading basic sciences labs and refurbishing parts of the existing veterinary hospital and staff facilities.

2.1.7. Prospected expenditures and revenues for the next 3 academic years

Direct revenues and expenditures for the next three years for the Faculty of Veterinary Medicine are: Revenues 13.458.574,67 / Expenditures 9.346.940,68

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

Budget operational decisions are taken by the board of managers and discussed with the board of the Faculty based on a yearly plan and budget. Yearly budget is discussed and approved by the management board upon position of the scientific council and consultation council. Assessment and revision is made by SPCGA – the internal control office and monthly discussed with the board of each school. Yearly revision of executed budget and financial provisions is made by a charter accountant, the internal control body and CASES the public body responsible by monitoring "Cooperativas" activities. All expenditures and revenues are yearly published in the form of legally bind reports.

The University yearly budget including all expenditures, investments and revenues allocation is decided by the University governing organization upon proposal of the University Administration/management board. Both the yearly budget and each academic unit budget are produced and discussed with each academic unit based on an analytical accountancy model. Yearly budget is implemented by each unit in an autonomous manner under the supervision of the internal cost control office. Communication procedures are run by the University management board. Table 2.1. shows the overall allocation received by COFAC (including salaries) and the amount specific to the Faculty between 2013 and 2015.

Table 2.1. – Overall allocation received by COFAC (including salaries) and direct to the FMV-ULHT

Year	Outside the Faculty	Direct to Faculty
	(A)	(B)
2015	82.180,24	3.465,41
2014	81.178,72	4.247,15
2013	125.295,00	4.758,85

In table column A represents the overall allocation received by COFAC (including salaries) and column B represents the amount specific of the Faculty in the period

Table 2.1.1. Annual expenditures during the last 3 academic years (in Euros)

Area of expenditure	2015	2014	2013	Mean
Personnel	2.552.978,31	2.626.891,32	2.533.899,97	2.571.256,53
Operating costs	416.299,16	398.167,39	238.580,94	351.015,83
Maintenance costs	11.443,50	9.011,26	3.355,19	7.936,65
Equipment	12.898,47	30.240,14	6.403,76	16.514,12
Total expenditure	2.993.619,44	3.064.310,11	2.782.239,86	2.946.723,14

* The last full academic year prior the Visitation

Table 2.1.2. Annual revenues during the last 3 academic years (in Euros)

Revenues source	2015	2014	2013	Mean
Public authorities				
Tuition fee (standard students)	4.536.182,23	4.273.755,36	4.559.877,19	4.456.604,93
Clinical services/Research	48.545,43	49.125,63	13.018,43	36.896,50
Diagnostic services	14.128,56	22.712,72	6.498,95	14.446,74
Other services	364,00	1.282,75	322,50	656,42
Research grants		45.630,15	30.911,60	25.513,92
Continuing Education	0,00	28.046,21	67.671,51	31.905,91
Donations				
Other sources**				
Total revenues	4.599.220,22	4.392.506,61	4.610.628,67	4.534.118,50

Table 2.1.3. Annual balance between expenditures and revenues (in Euros)

Academic year	Total expenditures	Total revenues	Balance***
2013	2.782.239,86	4.610.628,67	2.828.388,81
2014	3.064.310,11	3.392.506,61	1.328.196,50
2015	2.993.619,44	4.599.220,22	1.605.600,78

*** Total revenues minus total expenditures

2.2. Comments

The financial situation of the Faculty is very balanced. Positive balance from previous years has been allocated to overheads and investment. Foreseen balance is adequate in order to support needed investments.

2.3. Suggestions for improvement

Better mechanisms should be implemented linking specific expenses and investments to the different cost centers within the Faculty. Further efforts should be conducted in order to assure all investments actually fit the needs of the different sections and laboratories within the Faculty. Further efforts should be conducted to reinforce research activities as a source of income.

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 IMVM of FMV-ULTH aims the formation of Veterinarians in accordance with the EU Directives 2005/36/EC and 2013/55/EU and to so the study plan of the course is designed to provide an adequate training for the student to acquire the following knowledge and skills: adequate knowledge of the sciences on which the activities of a veterinarian are based and of the Union law relating to those activities; adequate knowledge of the structure, function, behavior and physiological needs of animals, as well as the skills and competences needed for their husbandry, feeding, welfare, reproduction and hygiene in general; clinical, epidemiological and analytical skills and competences required for the prevention, diagnosis and treatment of the diseases of animals, including anesthesia, aseptic surgery and painless death, whether considered individually or in groups, including specific knowledge of the diseases which may be transmitted to humans; adequate knowledge, skills and competences for preventive medicine, including competences relating to inquiries and certification; adequate knowledge of the hygiene and technology involved in the production, manufacture and putting into circulation of animal feedstuffs or foodstuffs of animal origin intended for human consumption, including the skills and competences required to understand and explain good practice in this regard; the knowledge, skills and competences required for the responsible and sensible use of Veterinary medicinal products, in order to treat the animals and to ensure the safety of the food chain and the protection of the environment.

The organization of the study plan for the first cycle of studies confers the Degree in Basic Veterinary Sciences and provides knowledge in the Basic Sciences, on the function and organic structures, in Propaedeutic, Animal Nutrition and Improvement Sciences, as well as in Food Technology of products of Animal Origin, Control of Quality Systems, Hygiene and Food Safety. The organization of the study plan at the level of the second cycle with the designation of Integrated Master in Veterinary Medicine, confers the degree of Master in Veterinary Medicine and includes subjects on Clinical work (Medical and Surgical), Veterinary Public Health and Sanitary Inspection, Preventive Medicine of Populations and Animal Production Systems. At the end of the 2nd cycle the students must acquire competences to practice Veterinary Medicine at a primary care level on their own with acquired skills to starting point for a variety of roles in the Veterinary profession: Practitioner, Hygienist, Scientist, National Veterinary Services Officer, Animal Welfare Officer, and others of Veterinary profession.

The Course is structured according to the European Credit Transfer System (ECTS) defined by the Decree-Law 42/2005. The FMV-ULHT considers that 1 ECTS equals to 28 hours of workload for the student and the number of credits corresponding to 2 semesters of 30 ECTS each so that the work of one full-time academic year is 60 ECTS. Students may register to a maximum of 45 ECTS per semester.

A total of 330 ECTS is required to obtain an Integrated Master in Veterinary Medicine. In compliance with the applicable legislation the curricular structure and the study plan have a duration of 11 semesters, 5,5 years. From the 330 ECTS required to complete the IMVM of FMV-ULHT, 282 ECTS include compulsory curricular units and 18 ECTS are dedicated to Elective / Optional Curricular Units. The electives are offered in the 1 year of the 1st cycle and in the 4th and 5th years of the 2nd cycle of studies.

A Bachelor's degree in Basic Studies in Veterinary Science is conferred to students upon completion of 180 ECTS which is equivalent to the first 3 years of the program, corresponding to the first six semesters (1st cycle of studies). The 2nd cycle of studies of the IMVM leads to the degree of Master in Veterinary Medicine, corresponding to more 5 academic semesters with completion of more 150 ECTS (2nd cycle of studies). In the 6th year, 11th semester, the students have an obligatory extramural traineeship equivalent to 30 ECTS. The extramural practical training (EPT) corresponds to a minimum of 600 hours of practical work in one or more

areas chosen by the student and allows an innovative research curriculum with a dissertation that culminates with a public defense. The public defense for assessment of the dissertation has usually an evaluator external to the Faculty.

The subjects of the curriculum are distributed in terms of theoretical and practical training as listed in Appendix 3.1. The learning outcome for all subjects are described in Appendix 3.

The number of hours in each academic year taken by each student is shown in table 3.1.1. This table does not include the curriculum hours of the elective/optional subjects.

In average electives correspond to 70 h in the 1st year, 28h in the 4th year and 168h in the 5th year, respectively, and depend on the elective subjects chosen by the each student to comply with an obligatory number on the following way:

- Option I in the 1st year, 1st semester, 5 ECTS;
- Option II in the 4th year, 8th semester, 2 ECTS;
- Option III in the 5th year, 9th semester, 7 ECTS;
- Option IV in the 5th year, 10th semester, 4ECTS

The IMVM of FMV-ULHT curriculum hours in EU-listed subjects taken by all students are shown in table 3.1.2. Table 3.1.3 represents the electives hours that took place during the academic year of 2015/2016.

Table 3.1.1. - Curriculum hours in each academic year taken by each student.

Year	Lectures	Seminars	Supervised self learning	Laboratory and desk based work	Non-clinical animal work	Clinical animal work	Others	Total
	A	B	C	D	E	F	G	H
1st Year	337	23	20	316	114	0	0	810*
2nd Year	404	12	22	352	110	0	0	900
3rd Year	338	16	19	203	229	65	0	870
4th Year	350	10	26	220	50	274	0	930*
5th Year	238	2	26	142	117	285	0	810*
6th Year	0	60	0	0	0	600	0	660
TOTAL	1667	123	113	1233	620	1224	0	4980

*The curriculum hours of the elective subjects depend on student's choice but always to an obligatory number of 5 ECTS in the 1st year, 2 ECTS in the 4th year and 12 ECTS in the 5th year. In average this corresponds to 70 h in the 1st year, 28h in the 4th year and 168h in the 5th year, respectively.

Table 3.1.2. Curriculum hours in EU-listed subjects taken by each student.

Subjects	Lectures	Seminars	Supervised self learning	Laboratory and desk based work	Non-clinical animal work	Clinical animal work	Others	Total
	A	B	C	D	E	F	G	H
1. Basic subjects	0	0	0	0	0	0	0	0
Medical physics	30	0	4	26	0	0	0	60
Animal biology, zoology and cell biology	30	0	4	26	0	0	0	60
Biomedical statistics	30	0	0	30	0	0	0	60
Total number of hours	90	0	8	82	0	0	0	180
2. Basic Sciences								
Anatomy, histology and embryology	180	0	0	120	180	0	0	480
Physiology	52	8	0	52	8	0	0	120
Biochemistry	45	0	8	52	0	0	0	105
General and molecular genetics	41	0	12	52	0	0	0	105
Pharmacology, pharmacy and pharmacotherapy	60	0	0	0	0	0	0	60
Pathology	60	0	0	52	8	0	0	120
Toxicology	30		4	18		8		60
Parasitology	30		4	26				60
Microbiology	30		2	28				60
Immunology	26	4	4	26				60
Epidemiology*	15		2	13				30
Animal ethology	7,5	7,5		15				30
Animal welfare	7,5	7,5		15				30
Animal nutrition	30			30				60
Total number of hours	614	27	36	499	196	8	0	1380
3. Clinical Sciences								
Obstetrics, reproduction and reproductive disorders	54	6	0	40	30	80	0	210
Diagnostic pathology*	30		0		30			60
Medicine and surgery including anaesthesiology	324	6	16	110	9	105	0	570
Clinical practical training in all common domestic animal species	0	0	26	55	3	350	0	434
Preventive medicine*	15		2	13				30
Diagnostic imaging	30	0	0	44	8	8		90
State Veterinary services and public health	7,5	0	0	0	15	0	0	22,5
Veterinary legislation, forensic medicine and certification								0

Therapy in all common domestic animal species				48	12	30		90
Propaedeutics of all common domestic animal species	120	0	7	71	135	27	0	360
Total number of hours	580,5	12	51	381	242	600	0	1866,5
4. Animal Production								
Animal Production and breeding	112	8	4	80	42	0	0	246
Economics	30			26	4			60
Animal husbandry	30	0		18	18			66
Herd health management**	0	0	0	0	34	0	0	34
Total number of hours	172	8	4	124	98	0	0	406
5. Food Safety and Quality								0
Inspection and control of food and feed	7,5	0	0	0	15	0	0	22,5
Food hygiene and food microbiology	68	16	6	62	28	0	0	180
Practical work in places for slaughtering and food processing plants	60	0	6	51	33	0	0	150
Food technology including analytical chemistry	60	0	2	34	24	0	0	120
Total number of hours	195,5	16	14	147	100	0	0	472,5
6. Professional Knowledge								
Professional ethics & behaviour	15	0	0	0	0	0	0	15
Veterinary legislation*	(32)	0	0	0	0	0	0	32
Veterinary certification and report writing*								0
Communication skills*	(2)							0
Practice management & business*								0
Total number of hours	47	0	0	0	0	0	0	47

*Veterinary Legislation: At least 32h transversal to the subjects of Toxicology; Epidemiology and Veterinary Preventive Medicine; Behaviour, Welfare and Animal Protection; Nutrition and Food; Reproduction, Obstetrics and Gynecology; Pathologic Anatomy; Infectious Diseases Clinical Pathology; Veterinary Public Health; Pharmacology; Zootechnics and Animal Improvement; Hygiene, Safety and Health; Sanitary Inspection; Food Technology

*Communication skills: At least 2h in Hospital and Field Activities X

*Practice management & business: At least 7,5h transversal to Zootechnics I and II, Equine and Small Animal Clinics I and II and Hospital and Field Activities XII

* Veterinary certification and report writing: At least 9h transversal to Pathological Anatomy I, II and III, Equine and Small Animal Clinics II

**Veterinary legislation, Veterinary certification and report writing, Communication skills and Practice management & business are not given as distinct and separate activities but are given through a variety of activities that students participate in.

***Herd Health Management is given through a variety of activities that students participate in both in Animal Production and Clinical Sciences

Table 3.1.3. Curriculum hours taken as electives for each student.

Electives	Lectures	Seminars	Supervised self learning	Laboratory and desk based work	Non-clinical animal work	Clinical animal work	Others	Total
	A	B	C	D	E	F	G	
Total Basic subjects	15	0	2	13	0	0	0	30
Total Basic sciences	15	0	0	0	0	22,5	0	15
Total Clinical Sciences	224	0	13	33,5	0	359,5	0	630
Total Animal Production	45	0	0	30	15	22,5	0	112,5
Total Food Safety and Quality	15	0	0	15	0	0	0	30
Total Professional Knowledge	30	0	0	52,5	0	0	0	67,5
TOTAL	344	0	15	144	15	404,5	0	885

The learning outcomes of IMVM subjects are listed in appendix 3.

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

There is no obligatory national curriculum for Veterinary studies but the need to comply with the legal framework of National and European legislation.

Alterations of the Curriculum Structure must be in accordance with Strategic Objectives of the Faculty and the University and should be approved by the Faculty Councils and University Councils.

All these will need further approval of the statutorily competent bodies of the higher education establishment in Portugal.

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 Director of the IMVM, with the help of the academic staff, is responsible to evaluate possible overlaps, redundancies, omissions and lack of consistency of the curriculum. There are in place various mechanisms to identify and correct such situations:

- a) The program of each subject / curricular unit is described in a proper file – Curricular Unit Form (FUC) that contains the learning outcomes, syllabus, demonstration of the syllabus coherence with the curricular unit's learning outcomes, teaching methodologies, assessment and bibliography. The FUC is elaborated by the academic staff responsible for the subject and must be approved each year by the IMVM Director. This document is communicated to students and Professors during classes and by the Moodle platform of the Veterinary Medicine Degree (<https://secure.grupolusofona.pt/ulht/moodle/>) and in A2AS platform for access to the MCETS that administrates the course.
- b) At the end of each semester, the academic staff team responsible for the teaching of each subject elaborates the Curricular Unit / Subject Report (RUC). The RUC contains information on the functioning of the subject / curricular unit in respect with the objectives defined, syllabus, assessment methodologies,

ECTS and work load of the student; classification of the working conditions namely logistics and equipment available; results obtained by the student; and a SWOT analysis relating all this information.

The information provided in both the FUC and RUC are evaluated by the Course Director with the help of the Academic Staff and possible overlaps, redundancies, omissions, and lack of consistency are corrected.

c) For each year of the Course, two Student Delegates are elected by their peers to represent them. These Delegates are closer to the Course Director and are important links between the students and the Faculty. The Course Director meets with these Student Delegates a minimum of twice per semester or whenever they consider essential to discuss assessment dates, improvements and adjustments, possible syllabus overlaps or redundancies. The actions that are necessary for immediate improvement are discussed and undertaken with the responsible(s) for the subject(s) and decisions and improvements communicated to student delegates.

d) Evaluation by the Course Director and Academic Staff of the student enquires. Students are asked to fill in online or contribute otherwise in annual surveys allowing two distinct components: a focused review of the teaching and assessment results of each subject / curricular unit and a review of the administrative support processes, spaces and conditions of the University itself.

e) - Three students are elected by their peers to represent them at the Pedagogical Council of the Faculty / IMVM course. The Council meets at least once per semester and anytime as needed. It is the decision-making body on pedagogical matters that can identify and propose measures to correct curricular overlaps, redundancies, omissions and lack of consistency, transversality and/or integration. Improvements needed may be undertaken by the Course Director with the academic staff or seek approval and follow up from the Scientific Council of the Faculty / IMVM course.

3.1.4. Description of the core clinical exercises/practicals/seminars prior to the start of the clinical rotations

From the 1st cycle of the curriculum the students are exposed to core clinical situations, which makes the teaching of core skills continuous during the entire course as it is approached in several curricular units starting as early as the 1st year.

Undergraduate students experience their first contact with animals promptly in their 2nd semester at the Faculty in the curricular unit of Exognosis and Animal Identification, in which they acquire knowledge about the main morphological characteristics of the different groups of animals, learn their different breeds and are trained on the approach, handling and identification of animals. In the 1st curricular year they are also exposed to clinical situations in the curricular unit of Basic Practices in Veterinary Medicine (BPVM), in which they begin their learning on communication skills, the perspectives of Veterinary Medicine in Portugal and some basic technical medical procedures. Besides, also in the 1st curricular year, they have the option to study Equine Podology and Farriery (EPF), in which the students begin also to be exposed to some basic horse health problems, related to equine locomotion, hoof health and shoeing. Both BPVM and EPF are optional.

The practical training is reinforced in the 2nd curricular year on “Physiology II” where students acquire understanding of reproductive physiology and where they have their first practical approach to breeding and milk protocols. This practical contact is also covered on Genetics and Improvement II, also on the 2nd curricular year, in which students are involved in identifying different animal breeding programs, to conserve genetic animal resources.

As from the 3rd curricular year, students are more intensively taught in observation of the patients, taking a medical history, physical examination and decision of the beneficial complementary exams and their interpretation. This trains the students to understand and recognize the clinical signs of abnormalities in the different organs and to do a list of medical problems presented by the patient. Students are also trained on specific clinical procedures and nursing care. The above described teaching encompasses fundamental

knowledge underlying clinical practice and allowing the students to build clinical competence and confidence. The preclinical work described above is part of Medical Propaedeutics I and II (MP I and II), and it is complemented with more pre-clinical training in Hospital and Field Activities II and IV (HFA II and IV), in which the students apply the theoretical knowledge learned in MP I and II. The practical teaching of MP I and II and HFA II and IV complements the theoretical concepts learned in MPI and II, with non-invasive training with live animals and with laboratory work.

Further preclinical training on pharmacotherapy, administration routes and handling of large animals is approached, also on the 3rd curricular year, on Pharmacology and Therapeutics I and II (PT I and II). In this curricular unit the students learn the fundamentals and general concepts related to the development and use of drugs in veterinary practice. PT I and II also has a practical component where the students are exposed to non-invasive live animal training.

Furthermore, also on the 3rd year, they study how to induce anesthesia to animals and how to maintain it in Surgical Propaedeutics I and II (SP I and II). In SP I and II the students also learn all the clinical issues connected to anesthesia, such as the pre-anaesthetic evaluation end, eventual, stabilization, the understanding, handling and management of anesthesia equipment, the different anesthesia techniques available and their indications and limitations, as well as pain recognition and different options of treatment. In Hospital and Field Activities I and III the students further train the concepts acquired on SP I and II.

Before starting clinical activities in the 5th year the students attend an orientation class. The aim is to reinforce professional attitude as well as written and oral communication skills towards VTH-CA staff and general public. Previously acquired knowledge relevant for the rotations is also reviewed in the first weeks of AHC X. Practical procedures are performed in all curricular units that take place at VTH-CA during the 4th and 5th years.

All the described training contributes towards improving basic knowledge and further understanding of clinical work

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

COMPANION ANIMALS:

Companion Animal classes are divided in rotations and are part of the training given to undergraduate students with no exceptions. Rotations attendance is during the hours dedicated to clinical work of Companion Animal curricular units according to the student time schedule, emergency and hospitalization service.

Practical rotations of companion animal is done on the following curricular units from the 4th curricular years: Imagiology I (Im I), Reproduction, Gynecology and Obstetrics (RGO I), Surgical Pathology and Clinics (SPC I), Hospital and Field Activities VI (HFA VI), Medical Pathology and Clinics I (MPC I) and Hospital and Filed Activities VII (HFA VII). These practical rotations are also done on the following curricular units from the 5th curricular Year: Companion Animal and Equids Clinics I and II (CAEC I and II) and Hospital and Filed Activities X and XII (HFA X and XII). The total hours include emergency and hospitalization service.

Small group sizes are valued, in order to allow a better communication between the teacher and students. In small animal medicine and surgery the groups vary between 4-5 students per teacher. Students are involved in the various areas of veterinary medicine practiced at the VTH-CA, such as: Animal Medicine which includes internal medicine, feline medicine, cardiology, oncology, endocrinology, clinical pathology and Small Animal Specialities (Complementary Medicines, Dermatology, Exotic Animals, Physiotherapy and Rehabilitation Medicine, Neurology, Veterinary Dentistry and Ophthalmology); Small animal Surgery and anesthesia (soft tissues, orthopedics, traumatology and neurosurgery) and Imaging Service. The surgeries are performed daily from 9 a.m. to 2:00 p.m. (preferably). The students participate at all cases presented to the VTH-CA.

Students are also involved in emergency and intensive care clinical cases, under guidance and supervision of the veterinarian on duty and staff. All students in the 4th and 5th year are enrolled in an emergency rotation. There are two students for rotation. Each student has a contact time of 21 hours divided in three shifts (4 pm–12 pm; 12pm–8 am; Saturdays 9 am–2 pm or 2 pm–7 pm). Emergency service includes consultations, hospitalization and surgery. Students are welcome to join teachers and staff for case-rounds in the morning and evening. For surgery cases the students participate in the surgical procedures and anaesthesia.

During the time in which there are no classes, the VTH continues to provide clinical and surgical services. Companion animals consultations/rotations consist of in-house training with first opinion and specialized consultations. Students are encouraged to participate in the daily practice (consultations, surgery and hospitalization) and in emergency/out-of-hours services during this period through volunteering or extra-curricular internships.

In companion animals, students are expected to collect anamnesis, perform clinical examinations and establish major differentials in the 4th year; in the 5th year, each student is expected to perform the previous items, plus major complementary exams and procedures as well as to suggest a treatment plan and prognosis on individual basis. Students are encouraged to follow individual cases from presentation to discharge and are involved in case management through all clinical work under the direct supervision of teachers and hospital supporting staff. Report writing is mandatory in the 5th for clinical cases that attend consultations during small animal medicine classes.

LARGE ANIMALS:

The core clinical rotations occur between equines and farm animals in the following curricular units: Medical Propaedeutics II (PM II), Hospital and Field Activities IV (HFA IV), Pharmacology and Therapeutics II (PT II), Surgical Clinical Pathology II (SCP II), Hospital and Field Activities VIII (HFA VIII), Medical Clinical Pathology II (MCP II), Hospital and Field Activities VII (HFA VII), Hospital and Field Activities IX (HFA IX) and Hospital and Field Activities XI (HFA XI). In these curricular units the students learn how to carry out the general approach and clinical examination of equids (MP II and HFA IV), the general concepts related to the development and use of drugs in veterinary practice (PT II), acquire knowledge on the common diseases commonly or possibly benefiting from surgical resolution (SCP II and HFA VIII), develop the pathophysiological concepts directly related with the most significant disorders affecting the organic systems of equids, under a medical perspective (MCP II and HFA VII), and to put into practice the clinical concepts learned throughout the curriculum (HFA IX and XI).

Core clinical rotations occur also, but between equines and small animals in the following curricular units: Equine and Small Animal Clinic I (ESAC I) and Equine and Small Animal Clinic II (ESAC II). In these curricular units the students learn clinical subjects directly related to the clinical equine practice and deepen concepts already acquired on these matters, related to different specific organs and organic systems. This type of rotations, mentioned above, is part of the training of all undergraduate students and the total contact hours of the listed curricular units is equally divided between the mentioned animal species. For all these curricular units, each student stays a day every 2 weeks (a total of 6 per semester) at the Equine VTH (with the exception of MP II, HFA IV, and PT II, in which students also laboratory and desk practical training, besides visits to the equine VTH). This day comprises 7 hours of practical lecture for the 5th year and 8 hours of practical lecture for the 4th year.

Besides the above described core clinical rotations, in which equine teaching rotates exclusively with either farm animals or small animals, there are also other rotations in which equine teaching rotates with all studied animal species. This happens in the following curricular units: Surgical Propaedeutics II (SP II), Hospital and Field Activities III (HFA III), Infectious Diseases Clinical Pathology II (IDCP II), Diagnostic Imaging II (Im II) and in Reproduction, Gynaecology and Obstetrics II (RGO II). In these rotations the students do specific clinical work on the areas of each subject, always directly related to equine clinics.

These rotations occur on the clinical sciences courses, so on the 3rd (MP II, HFA IV, PT II, SP II and HFA III), 4th (SCP II, HFA VIII, MCP II, HFA VII, Im II, RGO II and IDCP II) and 5th years (ESAC I, ESAC II, HFA IX and HFA XI).

In the Equine VTH the different areas covered by the studied clinical cases are broad spectrum, covering from lameness to surgery and internal medicine. However they are directly dependent of the cases consulted or hospitalized on each day, hence the time spent in each area is difficult to quantify. On ambulatory practice classes the cases are also broad spectrum, from prophylaxis, to consultations or follow ups. A 4th year student spends 49 hours on the Equine VTH. On all those classes the students are expected to answer a written clinical question on one of the cases studied. The 5th year students are expected to do a written report of one of the clinical cases they studied during the semester. All the students, also do a case log containing all the clinical cases they studied during the semester, which they must deliver at the end of the semester. In equine, each 3rd year student spends 42 hours in equine training, 30 hours at the Equine Hospital (5 classes of 6 hours) and 12 at the laboratory (2 classes of 6 hours).

In equine, each 4th year student spends 49 hours in equine training, 35 hours on the Equine Hospital (5 classes of 7 hours) and 14 hours on ambulatory practice (2 class of 7 hours).

In equine each 5th year student spends 36 hours on the Equine Hospital (6 visits of 6 hours) and 6 hours on ambulatory practice (1 class of 6 hours).

The attendance of this pre-clinical and clinical training is during the hours dedicated to equine lecturing on the student's time schedule.

From 2016/17, all the 5th year students are enrolled in an emergency rotation. 3 students are on duty one day per semester and if needed (if there is an emergency or the need for intensive care) are called to the Equine Hospital. This rotation is from 19h00 to 8h00 of the next day.

During the scheduled equine classes the student's activities and case responsibilities are mainly related to handling horses, take patient's medical histories, do physical examinations, help in complementary examinations, help in surgery, clinically watch over needing horses and take nursing and medical care of hospitalized horses. During the class the students are also expected to clearly define the principal problems of the studied horses, establish major differential diagnosis and choose and interpret the, eventually, needed complementary exams.

The sizes of the groups during the scheduled equine classes are the same that are used for other courses, divided by the number of present clinical cases, tutored by one or more teachers, depending also on the number of clinical cases to be studied during the class. During emergencies and intensive care the groups are of 3 students. The students are on call, on a voluntary basis, 3 nights per year, on their 5th year.

Ambulatory hours in Equine practical teaching are included on the number of scheduled practical lectures. The number of hours each student passes on ambulatory practice is specified above and is the following: each 4th year student spends 14 hours on ambulatory practice (2 classes of 7 hours) and each 5th year student spends 6 hours on ambulatory practice (1 class of 6 hours). Their activity and clinical responsibility on those classes are similar to when they are at the equine VTH.

Regarding farm animals, in order to achieve these objectives, each student goes every two weeks (a total of 6 times during one semester) to the dairy cattle farm and twice on beef cattle ambulatory farm animal training in one semester (following the consultations of a veterinary private practitioner on farm animals). So, the hours dedicated to farm animal in these curricular units in the 4th year are as follows: 42 hours on the dairy cattle farm (6 classes of 7 hours) and 8 hours on beef cattle ambulatory practice (2 classes of 4 hours).

In Im II the rotations continue between farm animals and equines and each student spends 4 hours on farm animal classes. Students enrolled in these classes learn the basics of radiology, ultrasonography and endoscopy enabling them to interpret medical imaging of large animals. In RGO II students learn how to perform reproductive diagnosis exams in livestock species. In these classes, students rotate between a dairy cattle farm

(2 classes of 5 hours) and the CEBA – Herdade da Abóboda where students alternate between several livestock animals (beef cattle, small ruminants, swine) and a laboratory class on sperm analysis in a total of 30 hours.

On the 1st semester of the 5th year, students continue to rotate between farm animal and equine classes. In Farm Animals Clinic I and Hospital and Field Activities IX students learn how to apply knowledge obtained from clinical subjects from previous years, how to recognize a clinical problem performing a physical examination, how to attain a diagnosis and how to establish a treatment plan in dairy and beef cattle. Each first semester 5th year student spends 48 hours on the dairy cattle farm (6 visits of 8 hours) and 8 hours on beef cattle ambulatory practice (1 visit of 8 hours). During these visits students are exposed and participate hands-on on the diagnosis and management of farm animals with a large spectrum of diseases, covering all areas of Large Animal Medicine, Surgery, Anaesthesia, Clinical Pathology, Reproduction, Obstetrics, Herd Health and Diagnostic Imaging. The ambulatory practical classes also cover several areas but are mainly focused on herd health and emergency cases.

On the 2nd semester of the 5th year, students rotate internally in Farm Animals Clinic II and Hospital and Field Activities XI between poultry (one visit of 6 hours), pigs (two visits of 6 hours), small ruminants (two visits of 6 hours), rabbits (one visit of 6 hours) and bees (one visit of 6 hours) farms. These farm visits are intended to train the students to identify herd or flock problems based on the individual clinical examination and the monitorization of clinical parameters, data recorded and obtained in the farm and assessment of the environment and husbandry. They also should learn to establish prognoses for the productive life of the herd population and apply corrective measures (herd health management). The students also go once on 6-hour beef cattle ambulatory farm animal training reinforcing practical training on these farm animal species. On the second semester, each 5th year student spends 6 hours in each of the different animal farms (poultry, rabbits and bees), 12 hours (two visits of 6 hours) on pig and small ruminant farms and 8 hours on beef cattle ambulatory practice (1 visit of 8 hours).

Emergency services in large animal clinic is provided by four veterinarians who are on-call 24 hours. The 4th and 5th year students are voluntarily enrolled in cattle and pig emergencies, and are called.

Each student of the 4th and 5th year follows clinical cases, participates in clinical examinations, complementary exams and, eventually, treatments. All students of the 4th and the 5th year are expected to prepare one medical clinical case, to be presented in group by the end of the semester. All the students, also do a case log containing all the clinical cases they studied during the semester, which they must deliver at the end of the semester.

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

Types	List of clinical rotations (Disciplines/Species)	Duration (weeks)	Year of programme
Intra-mural (VTH) Companion animals	Imagiology I Medical Pathology and Clinics Surgical Pathology and Clinics I Hospital and Field Activities V and VI Reproduction, Gynaecology and Obstetrics II Infectious Diseases I	5 weeks (171* hours)	4 th year (7 th + 8 th semester)
	Companion Animal and Equine Clinics I and II Hospital and Field Activities X and XII	3,5 weeks (117* h)	5 th year (9 th + 10 th semester)
Total		8,5 weeks (288 hours)	
Intra-mural (VTH) Equines	Imagiology II Medical Pathology and Clinics II Surgical Pathology and Clinics II Hospital and Field Activities VII and VIII	1,5 weeks (53 hours)	4 th year (7 th + 8 th semester)
	Companion Animal and Equine Clinics I and II Hospital and Field Activities IX and XI	2 weeks (72 hours)	5 th year (9 th + 10 th semester)
Total		3,5 weeks	

		(125 hours)	
Intra-mural (VTH) Farm Animals	Imagiology II Medical Pathology and Clinics II Surgical Pathology and Clinics II Hospital and Field Activities VII and VIII Reproduction, Gynaecology and Obstetrics I	2,5 weeks (86 hours)	4 th year (7 th + 8 th semester)
	Farm Animal Clinics I Hospital and Field Activities IX	1,5weeks (48 hours)	5 th year (9 th + 10 th semester)
Total		4 weeks (134 hours)	
Ambulatory Clinics Equine	Reproduction, Gynaecology and Obstetrics I Medical Pathology and Clinics II Surgical Pathology and Clinics II Hospital and Field Activities VII and VIII	2 weeks (67 hours)	4 th year (7 th + 8 th semester)
	Companion Animal and Equine Clinics I and II Hospital and Field Activities IX and XI	0,5 weeks (12 hours)	5 th year (9 th + 10 th semester)
Total		2,5 weeks (79 hours)	
Ambulatory Clinics Farm Animals	Medical Pathology and Clinics II Surgical Pathology and Clinics II Hospital and Field Activities VII and VIII	1 week (32 hours)	4 th year (7 th + 8 th semester)
	Farm Animal Clinics I and II Hospital and Field Activities IX and XI	1 week (50 hours)	5 th year (9 th + 10 th semester)
Total		2 weeks (82 hours)	
FSQ & VPH	Sanitary Inspection I and II Public Health	6 weeks (210 hours)	5 th year (9 th + 10 th semester)
Total		6 weeks (210 hours)	
Electives Companion animals	Physiotherapy and Rehabilitation Medicine	0,25 weeks (8hours)	4 th year (7 th + 8 th semester)
	Cardiology Introduction to Acupuncture, Homeopathics and Phytotherapy Neurology Oncology Ophthalmology Small Animal Surgery I Small Animal Surgery II Veterinary Dentistry	5 weeks (174 hours)	5 th year (9 th + 10 th semester)
Total		5,25 weeks (182 hours)	
Electives Equine	Equine Emergencies and intensive Care Equine Sports Medicine	0,5 weeks (14 hours)	5 th year (9 th + 10 th semester)
Total		0,5 weeks (14 hours)	
Electives Farm animals	Bovine Sanity	0,5 weeks (16 hours)	4 th year (7 th + 8 th semester)
Total		0,5 weeks (16 hours)	
Other (Specify)			

*21 hours of this total refers to participation of the students in the Emergency and Hospitalization Unit of the VTH

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

Severall external visits for FSQ students practical training are performed :

- In the 3rd, in Food Hygiene and Safety and Food Technology classes and 5th year Public Health, several arrangements are made to visit food premises of food from animal origin, distribution sale or consumption. Premises are diverse and selected with the purpose of allowing the student the integration of the knowledge acquired in, general Food Hygiene principles, Food safety Systems - HACCP, Food Technology, Veterinary Food controls and others. Visits may last up to 2 h or up 4 others accordingly to the subjects involved. Group visiting size is of 10 up to 15 students per teacher academic staff.

- In the 5th year, in Sanitary Inspection classes, are organized severall slaughterhouse visits and related premises. These visits are organized in accordance to provide the essential knowledge and skills of the Day One Competences in accordance to the EU Regulations such Regulation no 852, 853 and 854 of 2004, Regulation EU 1099/2009 and EU 429/2016, in such a way that each student is able to observe *in loco* what is required of an official veterinarian. In the 1st semester are organized 6 visits, 3 to a read meat slaughterhouse and 3 to a meat-cutting room (each student perform a 6 hour visit to each establishment), where students follow animals from the time they are taken in to the slaughterhouse up until the time their meat is transformed into various products.

In the 2nd semester are organized a total of 8 visits (2 to a poultry slaughterhouse, 2 to a rabbit slaughterhouse, 2 to docks and 2 to an egg classification center), each student perform a 6 hour visit to each of these establishments. Each visit comprises about 35 students, which are divided into 2 small groups of 12 students that are accompanied by one teacher (12 students/teacher). Group sizing varies between 9 up to 12 students.

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

For the conclusion of the IMVM of FMV-ULHT each student must obtain 330 ECTS:

- 282 ECTS correspondent to “core subjects” taken by every student
- 30 ECTS correspondent to the master thesis offered in the 6th year (11th semester)
- 18 ECTS correspondent to “elective subjects”

Students are free to choose the “elective subject” offered during the 1st, 4th and 5th year to accomplish a total of 18 ECTS obligatory as follows:

- Option I: 5 ECTS in the 1st year, 1st semester
- Option II: 2 ECTS in the 4th year, 8th semester
- Option III: 7 ECTS in the 5th year, 9th semester
- Option IV: 4 ECTS in the 5th year, 10th semester

Every year elective subjects can be proposed by Academic Staff and Students. The list of optional / elective subjects for each year must be approved by the Scientific Council of FMV. The students proposals are presented to the Course Director by students, delegates or students represented at the Pedagogical Council of FMV.

The list of optional / elective subjects per semester is available in the beginning of each academic year. Once the process of student enrolment is finalized the Administration of the University with the FMV Dean authorizes the opening of the elective subjects according to minimum number of students for the required ratio professor – students for each elective subject.

The list of optional / elective subjects is communicated to the students through the electronic system of the University and through the secretariat of the Faculty. Students choose the elective subjects according to their preference in the beginning of each semester at the time of enrolment. Table 3.2 of the appendix 3 exhibits the list of the elective subjects offered and that took place during the academic years of 2013/2014, 2014/2015 and 2015/2016.

Table 3.1.6. Optional courses proposed to students (not compulsory)

Subjects	A	B	C	D	E	F	G	H
n.a.*								

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 (specify); H: total

*Optional courses are proposed to students in relation with our continuous education veterinary programs and of the "Horizonte Veterinário" Program which are further explained in Chapter 10.

3.1.8. Description of the organisation, selection procedures and supervision of the EPT

The obligatory 21 weeks of EPT during the 6th year of the course constitute a very important activity in the curriculum as it provides the student with the opportunity to apply the knowledge, skills and attitudes acquired during their studies to the reality of the labor market and research to accomplish the elaboration of a dissertation.

The EPT represents a minimum of 600 hours of contact work per student corresponding to a minimum of 21 weeks and 240 hours for data preparation and dissertation elaboration in a total of 840 hours, equivalent to 30 ECTS. Table 3.1.4. shows the curriculum days (weeks) of EPT for each student

3.1.4. Curriculum days of External Practical Training (EPT) for each student

Subjects	Minimum duration (weeks)	Year of programme
Production animals (pre-clinical)	Non-applicable	
Companion animals (pre-clinical)	Non-applicable	
Production animals (clinical)	21	6 th
Companion animals (clinical)	21	6 th
FSQ & VPH	21	6 th
Others – students are allowed to choose other areas	21	6 th

Students who have obtained approval in all the subjects of the IMVM have access and are free to choose the scientific area and the Establishment for their EPT. Exceptionally the students who have not been approved to all subjects, to a maximum of two subjects, may start the EPT, with the agreement of the Director of the IMVM. All subjects are required to be completed before the dissertation evaluation.

EPT organization and functioning is provided in a formal document, the Regulation for the Traineeships of the FMV-ULHT ("Regulamento de Estágios"), that is distributed and orally presented to all the 5th year students prior to the organization of their ETP program on 6th year. According to the above Regulation the Scientific and

Pedagogical Traineeship Commission composed of 3 elements - the Director of the IMVM and two doctorate full time professors – is responsible for all the technical and scientific organization of the ETP. The Commission follows the whole EPT process by pronouncing on the approval of proposals of areas of study received from the students, and the topics proposed for the EPT dissertation. All the projects that involve live animals have to be evaluated and approved by the Ethics Committee and Animal Welfare. The EPT Commission is also responsible for the approval of the external supervisor of the Establishment where the EPT takes place. The external supervisor must follow the student and provide an evaluation form of its performance during their EPT and also provide feedback on the EPT program and possible improvements. For each student the Commission designates a member of the academic staff, doctorate, responsible for the overall supervision of the EPT and will be part of the jury for the final assessment of the EPT work and thesis.

The International, Career & Entrepreneurship Office Department (DRIE) (<http://www.ulusofona.pt/en/international-office>) and The Service Support for the Creation of Employment and Internships (SACEE) of DRIE maintains contacts with national and international institutions to expand training opportunities. In <http://emprego.ulusofona.pt> students can access useful information on the Student-Enterprise relationship and international placements that take place under programs such Lifelong Learning Program/Erasmus (LLP/Erasmus) and Overseas.

The DRIE is responsible for all the agreement with the External Establishment of EPT and the student in order to fix a protocol with rights and duties, including insurance matters.

DRIE is also responsible for all the administrative and protocol details for any extra trainee programs that the students may voluntarily decide to take during their studies. The Director of the IMVM ensures proper communication and coordination with DRIE associated with all matters and procedures related with trainee programs.

3.1.9. Description of the procedures used to ascertain the achievement of each core practical/clinical activity by each student

Each student is required to have a written log of the cases and procedures observed during the 4th and 5th year. This log is kept by the Department at the end of each curricular semester and provides evidence of student attendance to core practical/clinical activities. The log includes animal identification, diagnosis and procedures performed to the case. Log is mandatory in all curricular units that have practical clinical teaching.

For the VTH training and to ascertain the achievement of each core clinical activity the students of the 4th and 5th are also required to write a more comprehensive record of the clinical cases. This record is part of the continuous evaluation of core clinical curricular units. The students are also required to write exhaustive descriptions of one surgical and two medicine cases observed during the 4th and 5th year. Several shorter written reports are mandatory for consultations during small animal medicine classes and surgery procedures. The students also maintain a skills diary. The Skills Diary is a paper based record of practical procedures performed and is signed by the teacher supervising the procedure.

Students are responsible to keep a proper record of their experience during the EPT as to be able to comply data and write their dissertation thesis.

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

The core curriculum is defined by the Dean and the Academic Board of the course and approved by the Scientific Council and the Pedagogical Council of FMV and must be further rectified by the Scientific Council and Pedagogical Council of the University. Any changes to the core curriculum seek approval from the legal higher education entities in the Country (DGES/A3ES).

The curriculum is communicated and disseminated to the staff, students and stakeholders through the dedicated website of the institution, the e-learning platform and through its integration in dissemination printed versions. In addition, at the beginning of each school year professors and students receive in digital form relevant information through the secretariat of the course.

3.2. Comments

Our curriculum has been reviewed twice in their structure involving the necessary approval by the national authorities. One review was mainly due to the Bolonha adaption and the second to improve the number of elective subject.

After being approved by A3Es we will perform a review with internal and external inputs in the next five years.

Curriculum with high contact hours in anatomy I, II, III and IV with the double of contact hours practiced in other National Veterinary Degrees

High Number of disciplines to allow hands on work, namely 12 Hospital and Field Activities subjects, a much higher number then curricula of other National Veterinary Degrees.

3.3. Suggestions of improvement

We will look into the contact hours of Anatomy I, II, III and V as the subjects have all the double of hours for the practical work.

We will look into Equine and Small Animal Clinic I and II, and Farm Animal Clinic I and II as to decide on a separation of these species on their own rotations.

In the next review and before our next evaluation by A3Es we will continue to revise and incorporate all the situations appointed by the external agency.

4. FACILITIES AND EQUIPMENT

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 (surface area, distance from the main campus for extramural facilities, ..) (maps to be provided as appendices).

The University Campo Grande Campus covers an area of around four hectares and integrates a total of 22 different buildings attached to the different schools and services. The majority of theoretical lectures and practical work in laboratories and group work for the veterinary curriculum take place at the Campo Grande Campus in Lisbon. Clinical and pre-clinical practical training in companion animals, dogs and cats, and exotic animals' subjects are also essentially performed in the Companion Animal Veterinary Teaching Hospital (VTH-CA), in the Campus. Clinical and pre-clinical practical training in farm animals and equine subjects and food inspection and technology are performed outside the Campus.

a) Premises at Campo Grande Campus in Lisbon

The Faculty of Veterinary Medicine currently occupies and utilizes the facilities of seven buildings in the Campus.

Building M integrates the Veterinary Teaching Hospital for Companion Animals (VTH-CA), Anatomy and Necropsy laboratories, Pathology and Clinical Pathology laboratories and Hospital and ambulatory Pharmacy

Buildings S and E integrate the Laboratories for Basic Subjects and Basic Sciences teaching.

Buildings D, G, I and U integrate both offices and lecture halls.

These areas are complemented by several joint facilities like major auditoriums, library, computer rooms and bars, all within the space of the main campus, in Lisbon (Figure 2).

a) Premises outside Campo Grande Campus

The Faculty has decided to establish relationships with a number of veterinary premises outside the Campus to cover the need of premises for the teaching of Pre-Clinical and Clinical Work on Farm Animals, Equine and Food Technology and to comply and strengthen the acquisition of Day One Competences of our students. These facilities designated as Veterinary Establishment Associates (VEAs) and provided at Table 4.1. All the necessary facilities meet the legal national standards and the partnership allows important synergies in financial and personnel resources beneficial for both. The use of the facilities on a regular basis are formalized by contracts that include agreed payment and/or contracts with the highly recognized veterinary staff of those premises hired as Faculty Academic Staff.



- A** – Administration | Law School | Rectory | Classrooms | Academic Services
- B** – Amphitheatres | Bar | Department of Health Sciences | Classrooms | Study rooms
- C** - IT Support Center | School of Aeronautical Sciences | Faculty of Architecture, Urbanism, Geography and Arts | Faculty of Social and Human Sciences | Faculty of Engineering and Natural Sciences | Institute of Educational Sciences | Single Information Point (PUI) | Classrooms
- D** – Bar | Technological Work Center | Faculty of Veterinary Medicine | Faculty of Psychology | Institute of Medical Education | Computer Labs | Reprography | Classrooms
- E** - Laboratories of Health Sciences | Labs of Engineering and Exact Sciences
- F** - Atlantic Auditorium | Center for Audiovisual and Multimedia Production | Animation Studio | School of Communication, Arts and Information Technology | MovLab | Drawing rooms
- G** - Architecture Technological Work Center | Laboratory of Electronic Engineering | Laboratory of Physics | Laboratory of Informatics | Laboratories of Languages | Classrooms | Drawing rooms
- H** - Bar / esplanade | Gymnasiums | Laboratory of Physical Education | Gymnastic Pavilion
- J** - Canteen and Bar
- L** - Professors Area | Faculty of Economics and Management | Faculty of Physical Education and Sport | Book store | Administrative services
- M** - Veterinary Teaching Hospital | Laboratories of Veterinary Medicine
- N** – Library | Center for Postgraduate Studies
- P** - Academic Association | Studio of Radio | Gymnasiums | Laboratory of Civil Engineering | Laboratory of Sound
- Q** – Auditorium | Center of Audiovisual and Multimedia Production | Laboratory of Informatics | Networking Laboratories
- R** - Experimental Laboratory of Natural Sciences
- S** - Office Supplies | Laboratory of Pharmaceutical Techniques | Laboratory of Microscopy | Offices of Design
- T** - Classrooms
- eA** - Students Area
- U** - Classrooms

Figure 2 – University Lusófona campus with the identification of the buildings.

Table 4.1 – Premises outside Campo Grande campus used on a Regular Basis

Veterinary Establishments Associate		Area/Species	Academic staff also works at VEA	Distance to the campus (Km)
Equine Veterinary Hospital VTH-E		Medicine and Surgery/Equines	✓	53
Equine Rehabilitation Center Hidrovet		Rehabilitation/Equines	✓	35
Reproductive Biothechnology Center Embriovet		Reproduction/Equines	✓	60
“O Paddock”	Equestrian Center	General practice/Equines	✓	35
Digitalvet	Equestrian Center Gala’Op	General practice/Equines	✓	43
Naturasin	Donkeys Farm	Donkey milk/Equines	✓	95
Herdade dos Coelhoos		Dairy Cattle	✓	72
J. C. Silva Unipessoal	Quinta das Palmeiras	Dairy Cattle	✓	40
	Manuel Santos Miranda Farm	Dairy Cattle	✓	40
	Pecbom 1 Farm	Dairy Cattle	✓	20
	Pecbom 2 Farm	Dairy Cattle	✓	40
	Naciolindo Morgado Farm	Dairy Cattle	✓	60
CampoVet	Herdade da Carrasqueira	Beef Cattle	✓	35
	Acrigado OPP	Beef Cattle	✓	50
Serbuvet*	Casa do Gaiato	Beef Cattle	✓	50
	Policarpo Farm	Dairy Cattle	✓	35
	Baleia Farm	Dairy Cattle	✓	43
	Bexiga Farm	Dairy Cattle	✓	70
Vetttotal	Herdade das Fontainhas	Beef Cattle	✓	219
	Casa Nova da Alcaria	Beef Cattle	✓	213
	Vale dos Coelhoiros	Dairy Cattle	✓	164
CEBA - Herdade da Abóboda	Farm and Research Center	Bovine (Beef) Small Ruminants Pigs	✓	205
PMS Serviços Veterinários Lda	Suigranja	Swine	✓	190
	Suigranja Malveira	Swine	✓	35
	Agropecuária Valinho	Swine	✓	36
	Valsuinos	Swine	✓	52
	Carmongado	Swine	✓	30
Avipronto	Poultry Farm	Poultry	✓	52
National Institute for Agrarian and Veterinarian Research (INIAV)		FSQ Technological Plants (meat and milk)	✓	22
Hospital VetArrabida		Medicine and Surgery/Companion Animals	✓	47
Vet Arrabida		Rehabilitation Center/Companion Animals	✓	47
Veterinary Center “Referência Veterinária”		Medicine, Surgery and IRM/Companion Animals	✓	30

*Up to 2015

The Faculty has also established a wide range of protocols or semester arrangements to facilitate the extramural work to ensure the widest caseload in terms of Food Safety and Quality and Veterinary Public Health, such as slaughterhouses premises for the production, processing, distribution, sale and consumption of food of animal origin and a variety of other premises related with the veterinary profession. Some examples provided in table 4.2. The use of these relationships ensures an appropriate learning environment with exposure to the forefront reality of the veterinary profession. The students are always accompanied by at least one member of the academic staff that is responsible for the training of all students and overall supervision of the students and premises.

Table 4.2 – Other Premises used for classes outside Campo Grande campus

Premise	Area/Species	Distance to the campus (Km)
Government Lisbon Shelter	Shelter/Companion Animals	8
Government Loures Shelter	Shelter/Companion Animals	14
Government Sintra Shelter	Shelter/Companion Animals	27
Various Private Shelters/ Associations of Animal Protection	Shelter/Companion Animals	5-80
Lisbon Zoo	Zoo	5
ITS – Recolha e Tratamento de Cadáveres	Necropsy Anatomical Pathology/Farm animals and equines	80
Raporal Slaughterhouse	FSQ Slaughterhouse (Ruminants, Small Ruminants, Swine)	30
Intercoelho Slaughterhouse	FSQ Slaughterhouse (Ruminants, Small Ruminants, Swine)	60
Nobre Industry	FSQ Meat Industry	78
Montalva Izidoro Industry	FSQ Meat industry	22
Azeitão Cheese	FSQ Cheese industry	45
Egg Industry CACII	FSQ Egg Industry	45
Dried salted cod - Ribeiraves	FSQ Fishery products factory	35
Schreiber Foods	FSQ Dairy industry	225
Mercado da Carne	FSQ Meat cutting room	20
Sesimbra Docks	FSQ Fish	65
Canteen Facilities	FSQ Catering Unit	5
Cheese Factory Flor do Vale	Cheese Production Unit	97

4.1.2. Description (number, size, equipment, ...) of the premises for:

-) lecturing and group work

The majority of theoretical lectures and group work take place at the Campo Grande Campus. Routinely the Veterinary Course utilizes classrooms and amphitheatres. The type of premises is systematized in the table 4.2. and 4.3. with number of seats and area for each premise.

Table 4.2 – type of premise indicating the number of seats available and area (m²)

Facility	Area (m ²)	Nr of seats	Facility	Area (m ²)	Nr of seats
Classroom A.2.2	33.9	25	Amphitheater A.2.10	105.1	115
Classroom A.2.12	52.5	49	Amphitheater B.1.1	118.5	108
Classroom A.3.4	57	60	Amphitheater D.1.1	88	96
Classroom D.1.7	37.2	35	Amphitheater D.2.1	132.9	145
Classroom D.1.8	46.9	47	Amphitheater D.2.9	69	86
Classroom D.1.11	37.6	35	Amphitheater I.1.2	132.6	145
Classroom D.1.12	46.5	47	Amphitheater S.0.9	101.3	108
Classroom D.1.13	46	47	Amphitheater S.0.10	101.2	108
Classroom D.1.14	57.9	28	Amphitheater S.0.11	101.9	108
Classroom D.2.2	63.5	64	Amphitheater Agostinho da Silva	258.5	197
Classroom D.2.3	63.5	61	Amphitheater Armando Guebuza	103.4	90
Classroom D.2.6	40.5	36	Amphitheater Pessoa Vaz	240.9	248
Classroom G.1.2	59.5	61	Laboratory of Informatics (G.0.6)	59.5	40
Classroom G.1.4	120.3	137	Laboratory of Informatics (G.0.7)	59.5	36
Classroom G.1.5	59.5	54	Laboratory of Informatics (I.0.1)	70.4	31
Classroom G.1.2	59.5	61			
Classroom G.1.4	120.3	137			
Classroom G.1.5	59.5	54			

Table 4.3 – Premises used for group and tutorial work.

	Area (m ²)	Number of seats
Group work		
Library, reading room	572,5	148
Library, three work rooms	18 each	6 each
Center for Technological Work 24h (room D.0.4)	68,9	24
Center for Technological Work 24h (room D.0.5)	142	51
Tutorial work		
Teacher space, tutorial room 1	6,2	4
Teacher space, tutorial room 2	8,6	6
Teacher space, tutorial room 3	6,4	4

-) practical work (laboratories, rooms for clinical skills room on dummies, ..)

The total area occupied by the laboratories in the Campus of Campo Grande is around 800 m² and includes the Laboratory of Biology (E.0.1 e E.2.3) and Laboratory of Genetics (E.0.3), Laboratories of Biotechnology, Biochemistry and Chemistry (E.0.5, E.2.3 and E.0.6), Laboratory of Microscopy (S.0.12), Laboratory of Pharmacy (S.0.13), Computer Laboratory (F.2.3, F.2.7), Laboratory of Clinical Analysis and Histopathology (M1.13.2; E2.1), and the Necropsy + Dissection room (M0.12). The characteristics of each laboratory (area and capacity) is systematized in the table 4.4. and 4.5.

Table 4.4 – list of laboratories with area and capacity (places) in the Campo Grande Campus

TYPE	Room	Area (m ²)	Capacity
Biology and Biochemistry Laboratory	E.0.1	55,4	20
Microbiology Laboratory	E.0.3	58,1	20
Biotechnology and Genetics Laboratory	E.0.5	60,2	20
Chemistry Laboratory	E.0.6	58,8	20
Pharmaceutical Sciences Laboratory	E.1.3	56,8	20
Chemistry and Biochemistry Laboratory	E.1.5	57,4	20
Biology and Biochemistry Laboratory	E.2.3	53,0	20
Microbiology and Molecular Biology Laboratory	E.2.4	54,9	18
Chemistry Laboratory	E.2.5	54,7	20
Pharmaceutical Sciences Laboratory	S.0.13	126,9	50
Veterinary Medicine Laboratory	S.0.12	68,5	36
Computer Laboratory	F.2.7	71,9	58
Computer Laboratory	F.2.3	74,0	60
Computer Laboratory	F.2.5	74,0	60
Necropsy Room	M.0.12	95.3	48
Laboratory of Veterinary Medicine Clinical Pathology and Research	E.2.1	53,2	-
Laboratory of Clinical Analysis and Histopathology	M.1.13.2	63,0	-

Table 4.5 – Main laboratories used for practical training of the IMVM students

Subject	Anatomy II, III, IV	Pathological Anatomy I and II	Cell Biology
Room	M.0.12	S.0.12.	E.2.3 / E.2.4
Number of places	48	36	20 / 18
Subject	Molecular Biology	Biochemistry I/II	Cytology and Histology I/II
Room	S.0.13	E.1.3 / E.1.5	S.0.12
Number of places	50	20 in each lab	36
Subject	Physiology I/II	Food Hygiene and Safety I/II	Immunology
Room	S.0.12	S.0.12	S.0.13
Number of places	36	36	50
Subject	Microbiology I/II	Nutrition and Animal Feed I/II	Biomathematics
Room	E.0.3 / E.0.5	F.2.3 / F.2.5 / F.2.7	F.2.3 / F.2.5 / F.2.7
Number of places	20 in each lab	60 / 60 / 58	60 / 60 / 58
Subject	Parasitology	Infectious Diseases Pathology and Clinics I/II	Food Technology I/II
Room	S.0.12	S.0.13	E.0.6 / E.0.1
Number of places	36	36 / 50	20 in each lab

4.1.3. Description (number, size, species, ..) of the premises for housing:

-) healthy animals, hospitalized animals and isolated animals

a) Premises for housing in the VTH-CA at Campo Grande Campus

Table 4.6 - Premises for animal housing in the Companion Animals VTH-CA

	Species	Number	Size (area)
Healthy animals	Dog	6	41 m ²
	Dog	14	41,7 m ²
Hospitalized animals	Cat	16	26,5 m ²
	Other	1	0,3 m ²
Isolated animals	Dog	4	3,2 m ²
	Cat	5	1,2 m ²
	Other	1	0,3 m ²

b) The premises for housing outside Campo Grande Campus

The premises for healthy, hospitalized and isolated animals outside Campus of the various food-producing animals and Equids are exposed in table 4.7. For biosecurity measures swine and poultry intensive production farms are not permitted by law to have isolation buildings, hence the non-existing values for these animal species.

Table 4.7 Premises for healthy animals, hospitalized animals and isolated animals outside Campo Grande campus (VEA):

	Cattle	Equids	Small Ruminants	Pigs	Dogs	Cats	Poultry
Healthy Animals	VTH-E	5					
	Hidrovet	1					
	Embriovet	0					
	O Padock	40					
	Naturasin	50					
	Gala'Op	40					
	Herdade Coelhos	300					
	Suigranja				3000		
	Suigranja Malveira				3450		
	Valsuínos				3800		
	Valinho - Moita				1950		
	Carmongado				10000		
	Avipronto						1 Million poultry
	Abobada Farm	418		1250	413		
Hospitalized Animals	VTH-E	8					
	Hidrovet	3					
	Embriovet	24					
	Suigranja				20		
	Suigranja Malveira				20		
	Valsuínos				20		
	Valinho - Moita				12		
	Carmongado				20		
Isolated Animals	VTH-E	1					
	Herdade Coelhos	3					

4.1.4. Description (number, size, equipment, species, disciplines, ...) of the premises for:

I – Premises for clinical activities:

a) Premises for clinical activities and diagnostic services in VTH-CA, at Campo Grande Campus

The small animal clinical building consists of two areas namely internal medicine and surgery.

Internal medicine

- Consultation rooms, there are four consultation rooms, with a total area of 88,6 m². These are equipped with computers, attending table, wall otoscope and ophthalmoscope, tono pen vet, portable slit lamp and portable wood lamp. One consultation room also has an optic microscope.
- Intensive care unit, which is divided by species: canine and feline. Both sub-units have oxygen exits, infusion pumps, syringe drivers, independent room temperature control, cabinet with related material for intravenous access and fluid therapy, laryngoscopes, electrocardiograph, blood pressure measurement device, portable oxygen concentrator system.
 - The canine intensive care room has an area of 15,8 m², with 6 cages. Two cages have 1m² and 4 have 0,5m², for big and small animal breeds respectively.
 - The cat intensive care room has 9,7m² containing four cages with an area of 0,4m² each, one work table, a washbasin, and a hemodialysis machine.
- Dog hospitalization unit has 10.8 m² of total area with five cages, four with 0,4 m² and a bigger one with 0,8m². Also, has independent temperature control. It also has space to install two more temporary cages.
- Cat hospitalization unit with 6,4 m², accommodating ten cages with an area of 0,3m² each, and a washbasin.
- Exotic animal hospitalization unit, is allocated within the feline intensive care unit , corresponding to a proper exotic cage.
- Isolation unit has 11,4m² of total area, with a separation between the clean and contaminated zones, comprising five cages (dogs) of which four are 0,6m², one of 0,8m² and four cages (cat) with 0,4m². A stainless-steel cage with an adapted oxygen therapy system (Shor-line), a work table and a washbasin. This unit has restricted access, where only authorized staff is allowed. It also has an independent ventilation system and a sanitation protocol according to the internal good practice guidance.
- Diagnostic imaging unit
The X-ray room of 10,2m² of total area has been built according to the legal standards. It is equipped with a computerized digital radiography system machine, two computers with Fujifilm interface software, imaging access by digitalization system, four x-rays sensors, four lead aprons with thyroid and hands protectors.
Diagnostic imaging equipments also comprise: one mayray dental x-ray machine with oral sensor, one portable ultrasound (Esaote) and four smaller portable ultrasounds (CVM EcoVet), with several possible probes for use: linear, crossectorial and cardiac.
A storz endoscope tower with a gastroscope a bronchoscope and 4 rigid optics. Whenever required, CAT scans and MRI scans are performed at the Hospital Veterinário Vasco da Gama and the Centro de Referência Veterinária (Lisbon) according to the established agreement.
- Pharmacy has 22 m² of total area, it has a refrigerator and freezer for specific products, a computer with the products database and a logbook for use registry.
- Residual unit of 42,4 m², and were all the biological and chemicals waste is kept until the authorized residues disposal company collects it. Students aren't allowed in this room.

Surgical unit

- Two surgical rooms, with a total area of 74,6m², both with independent temperature regulation.
The smaller room is equipped with one multiparametric anesthesia monitor, one sevoflurane anesthetic tower machine, one hydraulic surgery table, one surgical microscope, a surgical light, an oxygen exit and a smoke evacuation system
The bigger room has 6 hydraulic surgery tables, 5 multiparametric anesthesia monitors, 6 anesthesia towers for isoflurane, a CO2 laser, a surgical light, one anesthetic ventilator, six oxygen exits and multiple smoke evacuation systems.
- Induction room of 6,3m², with an O₂ exit, one anesthetic tower, several endotracheal tubes (full range of sizes available), 1 laryngoscope, material for intravenous access.
- Medical surgical preparation room with 12m² and 5 water taps (movement-sensitive commands and soap dispenser), and an autoclave with a capacity of 85 liters.

Beneficial disciplines: Medical Propaedeutics I; Hospital and Field Activities II; Hospital and Field Activities III; Hospital and Field Activities IV; Hospital and Field Activities VI; Imagiology I; Infectious Diseases I; Pathology and Medical Clinics I; Pathology and Surgical Clinics I; Physiotherapy and Rehabilitation Medicine; Reproduction, Gynecology and Obstetrics I; Cardiology; Companion Animals and Equine Clinics I; Companion Animals and Equine Clinics II; Hospital and Field Activities X; Hospital and Field Activities XII; Introduction to Acupuncture, Homeopathy and Phytotherapy; Oncology; Ophthalmology; Veterinary Dentistry; Small Animal Surgery I; Surgical Clinic I and II

b) Premises for clinical activities and diagnostic services outside Campo Grande Campus

Short Description of the facilities is as follows:

Equine Veterinary Hospital – St Estevão (VTH-E)

The VTH-E is located at 53 km from the Faculty. It is a purpose built equine hospital, constructed in 2009. It has around 900 m² exclusively dedicated to equines. It is equipped with 4 examination rooms, several complementary exams techniques and a surgical theater. It currently handles problems related to equine locomotion, surgery, anesthesia and all areas of internal medicine. The owner of the VTH-E is a veterinarian and a Faculty academic staff member and there is an official protocol between the University

Beneficial disciplines: Medical Propaedeutics II, Hospital and Field Activities IV, Pharmacology and Therapeutics II, Surgical Pathology and Clinics II, Hospital and Field Activities VIII, Medical Pathology and Clinics II, Hospital and Field Activities VII, Imagiology II, Reproduction Gynecology and Obstetrics II, Companion Animal and Equine Clinics I, Companion Animal and Equine Clinics II, Hospital and Field Activities IX, Hospital and Field Activities XI, Equine Emergencies and intensive Care, Equine Sports Medicine

Equine Rehabilitation Center – Hidrovet

HidroVet is located at 35 km from the Faculty. It offers differentiated rehabilitation and equine physiotherapy services, with purpose built facilities and adequate high-level equipment. Hidrovet focuses on equine performance enhancement and contribution to lesion prophylaxis to sound equine athletes, as well as injury recovery and functional recovery after injury to horses with locomotor lesions. The owner of Hidrovet (as well as O Padock, described below) is a veterinarian and a Faculty academic staff member and there is an official protocol between the University and Hidrovet.

Beneficial disciplines: Companion Animal and Equine Clinics I, Companion Animal and Equine Clinics II, Hospital and Field Activities IX, Hospital and Field Activities XI

Biotechnology Reproduction Center – Embriovet

Embriovet is located at 60 km from the Faculty. It is fully dedicated to equine reproduction and biotechnology. Embriovet offers semen freezing, embryo transfer, artificial insemination, as well as all techniques related to infertility analysis and diverse equine reproduction related techniques. The owner of Hidrovet is a veterinarian and a Faculty academic staff member and there is an official protocol between the University and Embriovet.

Beneficial disciplines: Reproduction Gynecology and Obstetrics II

Equestrian Center – O Padock

O Pacock is located at 35 km from the Faculty. It is an equestrian center that received the 4 star classification from the Portuguese Equestrian Federation. O Padock has around 42 horses permanently and offers services of a riding school, poney club, hypoterapy, equestrian turism, training for competition and equitation exams. The owner of O Padock and Hidrovet is a veterinarian and a Faculty academic staff member and there is an official protocol between the University and O Padock.

Beneficial disciplines: Companion Animal and Equine Clinics I, Companion Animal and Equine Clinics II, Hospital and Field Activities IX, Hospital and Field Activities XI

Naturasin

Naturasin is located at 35 km from the Faculty. It is a high-level donkey milk farm. Naturasin does everything from producing donkey milk to lyophilizing it. Nuturasin has 40 milk donkeys. The students go to Naturasin under a particular agreement between Naturasin and one of the Faculty teachers.

Beneficial disciplines: Surgical Pathology and Clinics II, Hospital and Field Activities VIII, Medical Pathology and Clinics II, Hospital and Field Activities VII

Equestrian Center Gala'op

This particular equestrian center is located at Faias, at 43 km from the Faculty. It has around 30 horses in box and 10 in paddock and offers high-standard services of training for competition. The students go to this particular equestrian center under a particular agreement between Naturasin and one of the Faculty teachers.

Beneficial disciplines: Surgical Pathology and Clinics II, Hospital and Field Activities VIII, Medical Pathology and Clinics II, Hospital and Field Activities VII, Companion Animal and Equine Clinics I, Companion Animal and Equine Clinics II, Hospital and Field Activities IX, Hospital and Field Activities XI

Dairy Cattle Farm – Herdade dos Coelhos

“Herdade dos Coelhos” is a dairy cattle farm located approx. 70 km from the Faculty. It covers an area of 156 ha with a capacity for harboring 300 animals in 2 distinct pavilions: calf rearing and adult cows. Its daily clinic routines cover various problems; mainly related to reproductive management, claw treatments and calf rearing. The owner of the farm is a veterinarian and a Faculty academic staff member and there is an official protocol between the University and the farm.

Beneficial disciplines: Exognosis and Animal Identification; General Agriculture and Agrarian Economy; Behaviour, Welfare and Animal Protection; Medical Propedaeutics II, Hospital and Field Activities IV, Pharmacology and Therapeutics II, Reproduction, Gynaecology and Obstetrics I, Medical Pathology and Clinics II, Hospital and Field Activities VII, Surgical Pathology and Clinics II, Hospital and Field Activities VIII, Farm Animal Clinics I and Hospital and Field Activities IX.

Suigranja

This industrial swine farm located 190 km from Campus has the aim to produce female breeders. It has a total of 6 distinct barns: gestation (350 animals), farrowing (128 animals), nursery, finisher (1560 pigs), infirmary (20 pigs) and quarantine barn. Daily routine practice includes artificial insemination, vaccination and management regarding newborn piglets. The veterinary responsible for this farm is a Faculty academic staff member.

Beneficial disciplines: Animal production and breeding I, Farm Animal Clinics II and Hospital and Field Activities XI.

Suigranja Malveira

Located 35 km from Campus, this swine farm is dedicated to the production of piglets of 25 kg. It has a total of 5 barns in 5010 m²: gestation, farrowing, nursery, infirmary and quarantine barn with a total of 700 breeders and 2750 piglets. The veterinary responsible for this farm is a Faculty academic staff member.

Beneficial disciplines: Animal production and breeding I, Farm Animal Clinics II and Hospital and Field Activities XI.

Agropecuária Valinho – Herdade do Brejo - Moita

This industrial swine farm located 36 km from Campus has a total of 5 distinct barns with a total capacity for 1730 pigs: gestation, farrowing, nursery, 3 parks for infirmary and quarantine. Artificial insemination, vaccination and management regarding new born piglets are the routine practices from this farm. The veterinary responsible for this farm is a Faculty academic staff member.

Beneficial disciplines: Animal production and breeding I, Farm Animal Clinics II and Hospital and Field Activities XI.

Valsuínos

This industrial swine farm located 52 km from Campus has a total of 3 distinct barns: finisher barn, infirmary and quarantine barn. The finisher barn has a total capacity for 1170 animals. This farm is destined solely for pig fattening. The veterinary responsible for this farm is a Faculty academic staff member.

Beneficial disciplines: Animal production and breeding I, Farm Animal Clinics II and Hospital and Field Activities XI.

Carmongado

This industrial swine farm located 30 km from Campus has a total of 5 distinct barns: gestation, farrowing, nursery, finisher, infirmary and quarantine barn. The total capacity for this farm is 8816 animals (sows and piglets). Daily routine practice includes artificial insemination, vaccination and management regarding new born piglets. The veterinary responsible for this farm is a Faculty academic staff member.

Beneficial disciplines: Animal production and breeding I, Farm Animal Clinics II and Hospital and Field Activities XI.

Avipronto

This Poultry farm located 50 km from Campus is one of the industrial farms that belong to "Avipronto". It comprises 19 pavilions each with an area of approx. 1500 m² and the whole farm has the capacity of harboring 1 million broilers. This farm is exclusively destined to the fattening of chicks. The veterinary responsible for this farm is a director of Avipronto and a Faculty academic staff member.

Beneficial disciplines: Farm Animal Clinics II and Hospital and Field Activities XI.

Quinta das Palmeiras

This dairy cattle farm is located 40 km from Campus and comprises 7 barns for the housing of 600 adult cows and 700 rearing calves. This farm has also a milk parlor, a maternity and infirmary.

The veterinary responsible for this farm is a Faculty academic staff member.

Beneficial disciplines: Farm Animal Clinics I and Hospital and Field Activities IX.

Pecbom 1

Pecbom 1 is a dairy cattle farm located 20 km from the Faculty. It is destined for the housing for 500 milk production cows and 150 rearing calves in 5 barns. A maternity barn and a milk parlor also exist.

The veterinary responsible for this farm is a Faculty academic staff member.

Beneficial disciplines: Bovine Sanitary

Pecbom 2

Pecbom 2 is a dairy cattle farm located 40 km from the Faculty. It is destined for the housing for 400 milk production cows in 3 barns that includes a maternity, an infirmary and various individual boxes for the new-born calves.

The veterinary responsible for this farm is a Faculty academic staff member.

Beneficial disciplines: Bovine Sanitary

Naciolindo Morgado

This dairy cattle farm is located 60 km from the Faculty. It is destined for the housing for 450 milking cows in 3 barns that includes a maternity, several outside parks and individual boxes for calves.

The veterinary responsible for this farm is a Faculty academic staff member.

Beneficial disciplines: Bovine Sanitary

Manuel Santos Miranda Farm

Located 40 km from Campus, this dairy cattle farm houses 550 adult cows in open parks and barns with cubicles. It also holds a bull which is housed with fresh cows. This farm, besides milk production also rears calves.

The veterinary responsible for this farm is a Faculty academic staff member.

Beneficial disciplines: Bovine Sanitary

Herdade Carrasqueira

This beef cattle farm, located 35 km from the Faculty is mainly dedicated to the fattening of cattle. It has 2 barns each with 500 animals and several feedlots with a total capacity of 6000 animals. Clinical work is mainly focused on herd health.

The veterinary responsible for this farm is a Faculty academic staff member.

Beneficial disciplines: Medical Pathology and Clinics II, Hospital and Field Activities VII, Surgical Pathology and Clinics II, Hospital and Field Activities VIII, Farm Animal Clinics I and Hospital and Field Activities IX.

Farm Mr. Baleia

Located 43 km from Campus, this dairy cattle farm has 1 barn with a milking parlor and houses 130 milk production cows.

The veterinary responsible for this farm is a Faculty academic staff member.

Beneficial disciplines: Medical Pathology and Clinics II, Hospital and Field Activities VII, Surgical Pathology and Clinics II, Hospital and Field Activities VIII, Farm Animal Clinics I and Hospital and Field Activities IX.

Bexiga Farm

Located 70 km from Campus, this dairy cattle farm has 3 barns with a milking parlor and houses 600 milk production cows.

The veterinary responsible for this farm is a Faculty academic staff member.

Beneficial disciplines: Medical Pathology and Clinics II, Hospital and Field Activities VII, Surgical Pathology and Clinics II, Hospital and Field Activities VIII, Farm Animal Clinics I and Hospital and Field Activities IX

Acrigado - OPP

Acrigado is an association of several cattle producers with a total of 900 beef cattle and 2200 small ruminants. These animals are divided between 120 farms that are located in an area 50 km from Campus and the veterinary responsible performs sanitary programs according to the veterinary legislation.

The veterinary responsible for this farm is a Faculty academic staff member.

Beneficial disciplines: Medical Pathology and Clinics II, Hospital and Field Activities VII, Surgical Pathology and Clinics II, Hospital and Field Activities VIII, Farm Animal Clinics I and Hospital and Field Activities IX

Casa do Gaiato

This small cattle farm has a total of 40 beef cattle housed in one farm and is located 50 km from the Faculty. It also produces calves.

The veterinary responsible for this farm is a Faculty academic staff member.

Beneficial disciplines: Medical Pathology and Clinics II, Hospital and Field Activities VII, Surgical Pathology and Clinics II, Hospital and Field Activities VIII, Farm Animal Clinics I and Hospital and Field Activities IX

Policarpo Farm

With 400 dairy cattle in production, this farm is located 35 km from Campus. It has 3 different barns for adult cows, calves and heifers. Besides milk, it also produces calves who are housed in appropriated accommodations.

The veterinary responsible for this farm is a Faculty academic staff member.

Beneficial disciplines: Medical Pathology and Clinics II, Hospital and Field Activities VII, Surgical Pathology and Clinics II, Hospital and Field Activities VIII, Farm Animal Clinics I and Hospital and Field Activities IX

Sinai

This beef cattle farm with 120 cows is located 35 km from Campus. It has 3 different barns for adult cows, calves and heifers. Besides milk, it also produces calves who are housed in appropriated accommodations.

The veterinary responsible for this farm is a Faculty academic staff member.

Beneficial disciplines: Medical Pathology and Clinics II, Hospital and Field Activities VII, Surgical Pathology and Clinics II, Hospital and Field Activities VIII, Farm Animal Clinics I and Hospital and Field Activities IX

Herdade das Fontainhas

This farm, specialized in production of beef cattle “Limousine”, is situated 219 km from Campus. It is an extensive farming with 180 ha, 60 of those dedicated to irrigation with 100 purebred animals.

The veterinary responsible for this farm is a Faculty academic staff member.

Beneficial disciplines: Farm Animal Clinics I and II and Hospital and Field Activities IX and XI

Vale dos Coelheiros

This farm is located 164 km from the Faculty. It is a dairy farm with 100 milk production cows housed in one barn with a milking parlor. One of the duties of the veterinary responsible is reproductive management (ecography).

The veterinary responsible for this farm is a Faculty academic staff member.

Beneficial disciplines: Farm Animal Clinics I and II and Hospital and Field Activities IX and XI

Casa Nova da Alcaria

This farm, specialized in production of beef cattle “Limousine”, is situated 205 km from Campus. It is an extensive farming with 108 ha and with 50 purebred cattle.

The veterinary responsible for this farm is a Faculty academic staff member.

Beneficial disciplines: Farm Animal Clinics I and II and Hospital and Field Activities IX and XI

Centro de Experimentação do Baixo Alentejo – “Herdade da Abóbada”

This experimental center is located 210 km from Campus and is a governmental farm dedicated to the protection of local genetic resources. For this purpose, the center harbors beef cattle, small ruminants and pigs, all breeds considered endangered species and has a laboratory licensed for Semen Collection and Storage of Ovine and Caprine Semen and for Storage of Germ Products of Cattle, Goats and Sheep. In its premises besides the animal facilities and the laboratory, it has a dairy milk parlour, traditional sheep and goat cheese manufacturing unit, a class room with audiovisual equipment, lodging for teachers, staff and students and a canteen and bar.

Beneficial disciplines:

Genetics and Improvement II, Physiology II, Reproduction, Gynaecology and Obstetrics I, Farm Animal Clinics II and Hospital and Field Activities XI

Hospital VetArrabida:

The Hospital VetArrabida is located about 35 km from the Faculty. It has veterinary experts and highly qualified veterinarians. Services include: emergencies, surgical interventions, hospitalization and therapeutic recovery of patients. VetArrabida is pioneer center for animal rehabilitation with proper premises equipped in its Rehabilitation Center. The Clinical Director of the Hospital is a Faculty academic staff member.

Beneficial disciplines: Surgical Pathology and Clinics I, Companion Animal and Equine Clinics I and II, and Equine, Physiotherapy and Rehabilitation in Veterinary Medicine

Veterinary Center “Referência Veterinária”

Referência Veterinária provides state-of-the-art technologies and services, in order to complement the regular activity and capacity of most veterinary care centers. Referência Veterinária brings together the most qualified professionals in the different areas of expertise (neurology, cardiology, oftalmology, dermatology, oncology and orthopedics, physiotherapy, imagiology) with state-of-the-art equipment (Magnetic resonance, endoscope, ultrasound) in top facilities designed to the highest standards of quality and functionality, with good location and easy access to/from Lisbon (27 km). Two Faculty academic staff members are Veterinarians of Referência Veterinária.

Beneficial disciplines: Applied Clinic Neurology

II) Premises for diagnostic services including necropsy

a) Diagnostic Services including necropsy

The diagnostic services include the laboratory of clinical analysis and the histopathology/ necropsy. They provide only internal services for means of the requirements of student classes.

Table 4.8 – List of facilities of the diagnostic services including necropsy

Facility	Area (m²)
Necropsy (M.0.12)	95.3
Laboratory of Clinical Analysis and Histopathology (M1.13.2)	9.8
Laboratory of Veterinary Medicine Clinical Pathology and Research (E2.1)	53.2

Clinical analysis and Histopathology laboratories (M.1.13.2. and E2.1). Clinical analysis (M1.13.2), the diagnostic capacity is fulfilled by several technics: immunofluorescence, hematological, biochemistry, cytometry, virology, microbiology and histopathology.

Beneficial disciplines: support mainly Pre-clinical and clinical Classes.

Necropsy / anatomy rooms - Provides services only to the support of internal client ie classes of all the disciplines that need the use of cadavers or part of cadavers

Beneficial disciplines: Pathological Anatomy, II, III, Sanitary Inspection, Aquaculture, Pharmacology and Therapeutics I, Reproduction Gynecology and Obstetrics I and II, Surgical Propaedeutics, Surgical Pathology, Clinic of Livestock Species, and several postgraduate courses take place and the necropsy service

To increase the number of necropsy for students these are performed outside the campus in ITS. This facility specializes in the processing of animals carcasses Category I and II slaughterhouse waste as well as from other sources, such as domestic and farm animals, animal origin subproducts - meat and fish. The facility includes a room for storage and handling of carcasses (skinning, salting of pelts, removal of brain samples for BSE testing).

Table 4.9 – List of facilities at the ITS

Facility	Area (m ²)
Bovine and Equine necropsy area	1400
Carcass handling and skinning area	1100
Necropsy area	100
Brainstem storage area	25
Others	175
Locker room / Student preparation room	100

III) FSQ & VPH (slaughterhouses, foodstuff processing units, ..)

Practical laboratory / classes: for Food Hygiene and Safety, Food Microbiology and Food Technology mainly occur at Campo Grande designated laboratories E.1.3, E.0.3, E.0.5, S.0.12, S.0. 13. Food Technology also uses the technological plants of meat and milk products at the National Institute of Agrarian and Veterinary Research (INIA) in Oeiras

Technology Plants: The technological plant of meat and meat products of INIAV has an area of around 200 m² with the aim of developing innovation activities in the field of processed meat products, in support of teaching, research and development (R&D). This pilot unit is equipped to the production of meat products, namely: fresh products (fresh sausage, hamburgers), cooked products (cooked ham, *mortadella*), dried matured fermented sausages (dried meat sausage) and raw cured products (dry ham). The technological plant of milk and dairy products of INIAV has an area of around 90 m² with the aim of developing innovative activities in the dairy sector, support for teaching and research and development (R&D). This pilot unit has the necessary equipment for the elaboration of dairy products, namely: cheese, curd cheese and yoghurts.

Slaughterhouses, other Food Sanitary Inspection establishments and Food Company Premises: There are several extramural industries and slaughterhouses visited by the students (see table 4.10).

Description of the facilities as follows:

Raporal, S.A.: Company with 45 years of history, with a vertical production, including corn production and drying, compound feed factory, cattle and pig farms, slaughterhouse, cutting / deboning units, production of meat products, end consumer shops and catering. With the veterinary control number R62, the Raporal Slaughterhouse, is located in the industrial area of Pau Queimado in Montijo, which is 30 km from ULHT. It is a

unit that has been certified by FSSC 22000 since May 2016. The slaughterhouse has two automatic lines, in physically separated spaces from each other, for the slaughter of cattle and pigs, in the first area there is a semi-automatic secondary line for the slaughter of small ruminants. It develops its activity in a single daily shift of eight hours from Monday to Friday, also slaughtering pigs on Saturdays (until noon). It has the capacity to slaughter 1,500 cattle, 5,000 small ruminants and 10,000 pigs a week.

Meat cutting room: Started its activity in 2009 as a Butchery Chain, initially with only 5 Stores, currently has 23 Stores and with the purpose of supplying all their butchers, since 2014, they have a Meat Processing center. In this meat processing center it is carried out the cutting, subsequent packing and distribution of beef, pork and poultry butchers, it has also a freezing tunnel, where some products are frozen for later export. In the same unit are also processed some meat products such as minced meat, hamburgers, meat balls, nuggets, pre-cooked products and smoked sausage.

Avipronto: It is a company located in the industrial zone of Azambuja, about 49 kms from ULHT, began its activity in 1980. Its main activity is the production, slaughtering, processing, marketing and distribution of poultry and trade in food products in general. Each day, approximately 12 poultry batches are slaughtered, and with a slaughter capacity of 8 500 chickens per hour, around 65 000 to 70 000 poultry are slaughtered each day are slaughtered. Work begins at 1a.m. and ends around 13 p.m., depending on the number of animals presented to slaughter. In addition to the slaughter of poultry, the following products are also produced in this unit: Unpacked or bulk unpackaged whole products (Standard Chicken, Chicken, Quails, Chickens, Roosters, Capons, Rabbits etc.) and their offal; Portioned Products (Parts of Standard Chicken, Chicken of Village, Chicken, Coelho, turkey) and offal; Whole products and seasoned parts (Chicken, Chicken of the Village, turkey and Rabbit); Prepared meat products (poultry sausages, and chicken meat products of, turkey and rabbit, dry and moist marinades, breaded and tempered parts); Blood packing. The products are marketed fresh, chilled or frozen.

Intercoelho: This industry performs the production and trade of rabbits. Located 58 kms from ULHT. Their products are: fresh rabbit in bulk, rabbit frozen in bulk, fresh rabbit packed, rabbit parts packed. The slaughterhouse has the capacity to slaughter about 1,200 rabbits in a hour, killing between 7000 to 8000 animals per day.

CAC II: Eggs classification, packaging and Dispatch Company, located 142 kms from ULHT. At the moment this company works in a closed circuit where they receive the day chicks, that are supplied, in an exclusive regime, directly from an accredited multiplication farm, and they own also 6 recruitment Centers, where the chicks grow until they are Hens and then are sent to one of their 40 egg farms, including organic eggs, ground eggs and hens in the open air. Their main focus being on animal welfare and eggs quality, and hens feeding is also entirely controlled by the company that owns 2 feed production centers. The company has also 2 Packing Centers where eggs samples are collected for routine analysis in a laboratory, and later, to be packaged, eggs are selected by their type and weight, the sorting machine can reach 100 000 eggs per hour, dividing the eggs by classes: S - Small eggs up to 53 grs.; M - Medium eggs from 53 to 63 grs. ; L - Large eggs with 63 to 73 grams; XL - Giant eggs with more than 73 grs. The sorting and packaging centers are capable of working 24 hours a day, packing around 250 million eggs and producing 2555 tons of liquid egg each year. The company also integrates several distribution centers, distributed from north to south of the country, from where the eggs are sent, in their own isothermal vehicles, to the supermarket chains or directly to eggs manufacturing industry.

Sesimbra Docks: Located in the port of Sesimbra, which is about 65 km from the ULHT. Performs the auction and first sale of fish to traders. The most commonly traded species are mackerel, sardines, black swordfish, horse mackerel and octopus. They sell about 250 tons of fish each year the number of employees should be around 30.

4.1.5. Description (number of rooms and places, ..) of the premises for:

-) study and self-learning

The University has a working room available 24 hours a day, 7 days a week equipped with snack machines, tables and chairs (building C). The Library Vitor de Sá and the 24 hours work center – Total area of 606 m². The University also provides two Technological Work Centers, equipped with computers and printers, both available at the same time (building D and G).

-) catering

At the University, there is a main canteen and 3 cafeterias opened since 8am to 22pm.

-) locker rooms

At the VTH-CA there are dressing rooms, WC and locker rooms for the students and staff which occupy a total area of 161 m²

-) accommodation for on-call students

A room included in the building of the VTHCA is use by the students to stay and to rest during on call periods.

-) leisure

In the campus of University Lusófona there are several areas for culture and recreation including the amphitheatres and the rooms B.0.2 and B.0.3 of the Students' Association. A Sport Hall and a Gym are available for the practice of several sports.

4.1.6. Description (number, size, equipment, ..) of the vehicles used for:

Student transportation for classes held outside the Campus uses mainly a 55-place bus owned by the University and also a variety of size buses rented by the University. For Smaller group's student transportation for ambulatory training we have two 9-place van owned by the University.

-) live animals transportation

We don't have any live animals transportation

-) cadavers transportation

The cadaver's transportation is carried out by certified services for transport and incineration of material, namely: Ambimed (Stericycle Portugal) for companion animals and exotic cadaver's transportation; For large animals cadavers transportation accordingly to The National Cadavers Collecting System, ITS, *Indústria Transformadora de Subprodutos*)

4.1.7. Description of the Equipment used for

-) teaching purposes

Classrooms are properly equipped with audiovisual and other equipment and to ensure good quality teaching.

-) clinical services

Clinical services have the necessary equipment for diagnostic, treatment, prevention, surgery, anaesthesia and physiotherapy. Tables 4.11 lists the equipment of the VTH-CA and VTH-E.

Table 4.11 - List of the Equipment used in the VTH-CA:

Name of the equipment	Number	Company	Used for:
Ultrasound	1	Esaute	Diagnostic and treatment
Portable Ultrasound	4	CV Ecovet	Diagnostic and treatment
X-ray with computerized digital radiography system	1	Fujifilm	Diagnostic and treatment
Dental x ray and intra-oral sensor	1	MyRay	Diagnostic
Tono pen Vet	1	Medtronic	Diagnostic
Slit Lamp	1	Kowa	Diagnostic
Portable otoscope	1	Heine	Diagnostic
Wall otoscope and oftalmoscope	1	Heine	Diagnostic
Blood pressure mesure device	1	PETMAP	Diagnostic
Blood pressure mesure device	1	HDO	Diagnostic
Infusion pump infusomat	5	BBraun	Treatment
Infusion pump	8	HESKA	Treatment
Syringe drivers	2	BBraun	Treatment
Fluid warmers	3	Eickemeyer	Treatment
Laser therapy equipment	1	Konf	Treatment
Electronic Acupuncture Treatment Instrument	1	HWATO	Treatment
X ray equipment	1	Sedecal	Diagnostic
Dental x ray	1	MyRay	Diagnostic
Surgical video system HD	1	Sony	Teaching
HD monitors	2	Sony	Teaching
Portable oxygen concentrator system	1	Respironics	Treatment
Multiparametric anesthesia monitor	1	Cygnus	Monitorization
Multiparametric anesthesia monitor	1	Mindray	Monitorization
Multiparametric anesthesia monitor	2	Cardell	Monitorization
Multiparametric anesthesia monitor	2	Bbraun	Monitorization
CO2 surgical LASER	1	Miran	Treatment
Endoscope tower	1	Storz	Diagnostic, treatment and Monitorization
Hematology analyzer	1	IDEXX	Diagnostic and Monitorization
Hematology analyzer	1	Menarini	Diagnostic and Monitorization
Chemistry analyzer	1	IDEXX	Diagnostic and Monitorization
Chemistry analyzer	1	Menarini	Diagnostic and Monitorization
Electrolyte and blood gas analyzer	1	IDEXX	Diagnostic and Monitorization
Lactate	1	Apex Biotecnology	Monitorization
Coagulometer	1	Micropoint	Monitorization
Glucometer	1	Alkray	Diagnostic and Monitorization
Glucometer	1	Abbott	Diagnostic and Monitorization
Sevoflurane anesthetic tower	1	McKinley	Anesthesia
Isoflurane anesthetic tower	6	McKinley	Anesthesia
Isoflurane anesthetic tower with ventilation	1	Mindray	Anesthesia
Refrigerated centrifuge	1	HEITICH	Sample process
Optical microscope	1	Olympus	Diagnostic
Optical microscope	1	Olympus	Diagnostic
Electrocardiograph	1	Cardioline	Diagnostic and Monitorization
Electrocardiograph	1	Edan	Diagnostic and Monitorization
Destartarizator	1	Eickemeyer	Treatment
Destartarizator	1	Satelec	Treatment
Destartarizator	1	Woodpecker	Treatment
Autoclave	1	Tuttlover	Material process

Table 4.12 - List of the Equipment used in the VTH-E:

Name of the equipment	Number	Company	Used for:
Videoendoscope (330 cm)	1	Storz	Digestive endoscopy
Videoendoscope (160 cm)	1	Storz	Respiratory endoscopy
Gastropack	1	Storz	Endoscopy
Aida system	1	Storz	Recording of endoscopies
Ultrasound	1	Esaote MyLab 30 Gold	Ultrasonography
Ultrasound linear probe	1	Esaote	Ultrasonography
Ultrasound convex probe	1	Esaote	Ultrasonography
Ultrasound phased array probe	1	Esaote	Ultrasonography
x-ray generator	1	Atmoscope HF 300	x-ray
x-ray digital revelator	1	Fujifilm FCR Prima	x-ray developement
Phosphor screen x-ray cassettes	4	Fujifilm	x-ray
Contention stock	1	Costume made	Contention
Centrifugator	1	Hettich Eba 85	Centrifugation of blood
Centrifugator	1	Hematocrit 24	Centrifugation of blood
Microscope	1	Olympus CX-31	Citology
Biochemistry	1	Reflotron	Blood biochemistry
Hematlogy	1	Mascot CDC	Blood hematology
Stove	1	Melag	Laboratory work
Autoclave	1	Matachana 21 E	Sterilisation
Surgical table	1	Snell	Surgery
Anesthesia circuit	1	Matrix	Anesthesia
Isoflurane vaporisor	1	Vaporisor	Anesthesia
Arthroscopy kit	1	Storz	Arthroscopic surgery
Liquid nitrogen container	1	Liquid nitrogen	Equine sperm conservation

Further detailed lists of equipment is shown in appendix 4.

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

As a recent establishment we are willing to upgrade and improve our facilities and equipment both at the Campo Grande Campus premises and at our VEAs.

Because we are a private institution resources always need to be integrated with other strategy of the University.

A team of experienced engineers and workers of ULHT takes care of the maintenance of the buildings and, whenever necessary, external professionals are required.

All facilities management is done by the internal service responsible for facility management. This service work in close articulation with the Dean of FMV to assure all standard procedures and bylaws are fulfilled.

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

The Dean is advised by the Academic Board and Academic Staff on measures implementation, assessment and revision of health and safety management for people and animals, including waste management that needs improvement. The Dean is responsible for the proposals to the Administration and the Rector involving changes in the facilities, equipment and biosecurity procedures ensuring that the highest standards possible are premises both at campus and outside facilities. Communication to staff, students and stakeholders is assured by this same centralized service.

4.2. Comments

The majority of the facilities for teaching and adequate.

The University has invested creating its own structures for the FMV in the Campo Grande Campus, laboratories, VTH-CA and others. Being at the Center of Lisbon we face limitations for expanding so we will continue to look and provide solutions outside the Campus

Improving of the facilities and equipments of the VTH-CA, VTH-E and “Herdade dos Coelhos” Bovine Farm has been done and is still ongoing. We are also improving facilities for accommodation of students at our VTHs and Farms.

Maintenance of buildings is an ongoing process.

4.3 Suggestions for improvement

As a young Faculty we plan to expand and improve our facilities and equipment for teaching and research. We are currently already improving the VTH-CA, VTH-E and “Herdade dos Coelhos” Farm both in terms of facilities and equipment.

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 Global Strategy for the use of animals and material of animal origin aims to comply with the most ethical and welfare rules for animals (1) and the assurance of the most adequate rules for human health (2).

1- Ethics and animal Welfare

The Faculty has a policy that, no live animal should be used for most preclinical and clinical work unless the main procedure or others related bring benefit to the animal.

This policy is well established among academic staff and students and is supported by the Ethical Commission

To comply with necessary One day Competences, knowledge and skills and maintain this policy, a high number of animals is needed. This need is sustained by the high number of collaboration with external premises with contracts / protocols and agreements mainly with Farms, Shelters , Animal Welfare Associations among others.

At the VTH-CA and at the VTH-E, all the clinical activity undertaken by the students is aimed to provide knowledge based on actual reality in clinical practice in Portugal and worldwide, to apply evidence based medicine principles and to provide expertise in solving clinical cases. Clinical teaching is intended to train clinicians with a global view including prevention, diagnosis and treatment in a safe and animal friendly environment. The students also have access to various food-producing animals, such as cattle, small ruminants and pigs where they perform non-invasive procedures in accordance with animals' welfare. The animals are used in pre-clinical training classes mainly concerning animal production as well as in clinical training concerning hands-on clinical examination of live animals.

Teaching of core clinical skills is continuous during the entire course and approached in several curricular units starting in the 1st year. Students are taught in observation of the patients, physical examination, specific clinical procedures and nursing care. Students are also involved in the realization of necessary complementary exams in the real clinical cases approached (clinical pathology and imagiology)

The workup of the clinical/surgical cases is realized by the students, either individually or in small groups under the supervision of the teacher.

The majority of patients attending the VTH-CA in outpatient consultation are dogs and cats, which are observed either for prophylactic actions or disease. In the VTH-E the majority of patients are horses observed for disease.

Being the FMV-ULHT a faculty where the student's training is executed along the accomplishment of animal welfare, the number of healthy dogs and cats used for that is limited to necessary procedures or training of clinical examinations, in healthy animals volunteered by the students as well with the guidance and supervision of a teacher, in the preclinical training. Regarding equine, on the preclinical training live horses are used. These horses are two resident horses, which live at the EVTH-E. These horses are only used in non-invasive procedures. A teacher from the faculty is responsible for their well-being.

For equine clinical training, real clinical cases are also used, which students follow and in which they collaborate hands on. These real clinical cases correspond to either daily consultations at the VTH-E, hospitalized horses at the VTH-E and horses treated on the ambulatory visits. For their clinical training, students do only the strictly necessary procedures, which have a clear indication, are done. Students only manipulate animals under the strict surveillance of a teacher.

Clinical practical training of food producing animals occur in the 4th and 5th year, where students have contact with cattle (beef and dairy), small ruminants, pigs, poultry and rabbits. These practical classes take place in

diverse farms where students go on an ambulatory basis and where students work closely and in a small group with the practitioner. The practice work load is composed of a wide range of first opinion farm animal work, predominantly scheduled routine health visits, general surgery, herd and flock disease investigations, routine farm animal procedures, individual farm animal medicine and tuberculosis testing. These several farms have a signed protocol or particular semester agreements with the Lusófona University

In all species, all students are encouraged to participate in research activities developed by the teachers; studies involving the participation of animals are only carried out with the approval of the ethics committee. Students are hence encouraged to carry out scientific work in order to develop the necessary skills for scientific writing.

For this training, intramural work is considered to be the core pre-clinical and clinical training, such as the VTH-CA, Veterinary Teaching Hospital for Equines (VTH-E), Herdade dos Coelhos and others VEAs regularly used through the entire academic curriculum. The students attend classes in these intramural facilities regularly, for all pre-clinical and clinical subjects. The VTH-CA is owned by the University and was purpose built as a Companion Animal Hospital. The VTH-E is owned by a third party and was purpose built to be an Equine Hospital. The Herdade dos Coelhos is also owned by a third party and a rent is also paid, insuring practical, highly regular, pre-clinical and clinical training of the students. Also, extramural work is considered to be the pre-clinical and clinical training which complements the core training. It is done at different and numerous locations, all listed below. For most extramural training the students visit premises at which, the Faculty's academic staff work: The students go to these premises following an agreement which allows them to follow the teacher in its regular work at the extramural AE premises, whenever considered useful for their training.

Concerning pathology training, and cadavers, in the first years, fresh and preserved complete and part cadavers of the major domestic species, are used for practical teaching. Students are divided in small groups and have as material: fresh cadavers of dogs or cats, preserved complete cadavers and specimens fixed in Fine Fix®, complete skeletons of dog, equine, swine, sheep, and several exotic species, and a large collection of dry bones from dogs, cats, cattle, small ruminants and horses. Further use of cadavers is made in the following years in Pathology, Sanitary Inspection, Aquaculture, Pharmacology, and Surgical classes.

Cattle necropsies are performed outside the campus in an enterprise of transformation of sub products called ITS, that receive cattle and equine cadavers from outside farms.

2- Assurance of the most adequate rules for human health

Assurance of the most adequate rules for human health is a major concern of our faculty, especially when dealing with cadavers and material of animal origin.

Specific biosecurity measurements, attitudes and behaviors are adopted in relation to the origin of cadavers, its transportation, storage, and destruction in order to reduce public health risk.

Cadavers originate from the VTH-FMV-ULHT, public kennels, outside private clinics, farms, and slaughterhouses on the basis of agreements.

Outside cadavers are brought in by an enterprise specialized in hospital waste management.

All the material used is properly stored in freezers, located in the anatomy room and transported for incineration by the enterprise specialized in hospital waste management according to the national law in black containers with red cap (M1 sub products of animal origin)

Students are provided with extensive health and safety guidance from day 1 of the course.

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 hospitalisations, balance between individual medicine and population medicine

The clinical teaching is organized in two blocks per year, corresponding to two semesters. Students of the 4th year receive the relevant clinical training in companion animals in one semester of the year and in large animals, divided between equine and farm animals, in the other semesters. Students are divided into groups throughout the year and each group during 15 weeks in each semester receives the appropriate clinical training. The curriculum is structured according to the European legislation and the Portuguese Agency for Quality Assurance in Higher Education (A3ES). Each discipline requirements includes learning goals, learning outcomes, syllabus, demonstration of the syllabus coherence with the curricular unit's goals, teaching methodologies, evaluation methods and demonstration of the teaching methodologies coherence with the curricular unit's goal are demanded. Descriptions are under the supervision of senior lecturers for each disciplinary area, who reports to the departments involved in teaching and to the Scientific Council.

The teaching method adopted follows, in general, the traditional lecturing model addressing to the state of art on subjects, which are constantly actualized according to the scientific knowledge, and practical classes, where students have the opportunity to practice diagnostic techniques, therapeutic and surgical approaches, as well as to apply medical prophylaxis. Teaching methods includes lectures, field classes, laboratory classes, group discussion work and case studies, interpretation of results of diagnostic tests and solving practical problems. The practical preclinical and clinical classes of the 3rd, 4th and 5th year are taught in VHT-CA and VTH-E and production animal teaching farms, with real cases. Some curricular units, especially the ones assigned to the last year of the veterinary medicine program use the problem solving approach adapted to different situations, in order to apply previously acquired knowledge by the students.

All lecturers and students use the learning management system "Moodle". This system is used as message board and file and media server for uploaded course materials and also provides a practical structure of interactive computer-assisted learning and evaluation.

Clinical cases received at the VTH-CA and VTH-E, as well as the teaching farms, provide material for surgical and clinical practice component. In practical lessons, students divided into small teams in clinical rotation. At the VTH-CA, in order to make the treatments in hospitalized animals as well as any emergency medical situation, students are divided into groups of 4.

Particularly, within the framework of the various solidarity projects developed by the VTH-CAFMV-ULHT, between 2013 and 2016 more than 1600 animals were assisted through general medical consultations, specialty consultations and elective and non elective surgeries, including hematological, biochemical, microbiological and imaging tests if required. Students were also exposed to almost 600 equine clinical cases. Students are exposed to almost every clinical cases of the VTH-E, the only ones they do not interact with are the ones that are consulted or hospitalized during the days with no classes, witch is clearly avoided as much as possible. When the duration of the class does not allow for the analysis of all available clinical cases, they are preferably exposed to the ones they see the most rarely. During the weeks in witch there are no clinical rotations in the Equine Hospital, the students are encouraged to be present for seeing practice and helping with clinical cases, as during emergencies and critical care patients. The students being exposed to almost the entirety of clinical cases during their yearly 30 weeks of classes, they interact with a variety of situations, witch prepares them for the Portuguese based case log to which they are expected to be exposed, when practicing.

During the same period and more than 13000 farm animals cases. Particularly in farm animal clinical training, during the first semester is more focused on dairy cattle and 2nd semester is divided between several other animal species (small ruminants, beef cattle, swine, poultry, rabbits and bees). All the students participate in individual clinical cases and population medicine

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

The main teaching farm “Herdade dos Coelhos” is managed by the owner who is a veterinarian and a Faculty academic staff member. The work load is that of a normal dairy cattle farm and therefore its organization depends on the clinical cases that appear daily and on the herd management. During class hours’ students are integrated in the function of the farm, mainly helping with births and feeding of new-born calves. CEBA- Abóbada Farm is a farm which main purpose is the preservation of endangered food-producing animals and the management is done by the director of the centre who is a veterinarian and a Faculty academic staff member. This type of teaching farm allows students in the field to participate in the activities and daily occurrences of an agricultural and livestock farm with this type of genetic diversity and size of herds, such as milking procedures, births when applicable, application of identification marks.

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

Hospital service, either at the VTH-CA and the VTH-E, is available 24 hours a day, 7 days a week throughout the entire year.

Hospital regular working hours is from 08am to 08pm. The cases are scheduled according to the classes. The aim is to provide case-studies for the clinical and surgical classes of the 3rd, 4th and 5th year.

Emergency service operates from 08pm to 08am at the VTH-CA and the head of the emergency service is a Clinical Assistance Professor at Faculty of Veterinary Medicine of ULHT. This service provides emergency care for Hospital clients. At the VTH-E the emergency service functions 24/7, on a voluntary on-call basis for the students.

At the VTH-CA and VTH-E, the clinical consultations/rotations consist of in-house training with first opinion and specialized consultations. We receive direct clients and referred cases by practices located outside the University.

At VTH-CA and VTH-E students are encouraged to participate in the daily practice (consultations, surgery and hospitalization) and in emergency/out-of-hours services.

At the VTHs, reference consultation and, in the case of VTH-CA, shelter medicine (as a social support service) are the main care services performed. Some first opinion appointments/first medical evaluation and vaccination consults are performed, in order to provide the experience to students.

Outside practitioners are welcome to attend consultations, diagnostic exams and surgery at VTH-CA and VTH-E. We also contribute to continuous education of the practitioners with advisory phone calls and emails. Referral cases are continuous seen in our specialty services.

Whenever required, for companion animals, CAT scans and MRI scans are performed at the Veterinary Hospital Vasco da Gama and the Center “Referência Veterinária” (Lisbon) according to the established agreement.

Our main of outsource material for the VTH-CA are clinical cases from approximately 13 shelters. The level of clinical service that is offered by VTH is higher when compared to the outside practices in the following items: specialized consultations in different clinical areas, larger number of diagnostic exams in terms of laboratory and imaging service and soft tissue and orthopaedics surgery in state of the art facility.

The specialist consultation in the VTH-CA includes: Small Animal Medicine, Small Animal Surgery, and its subspecialties.

Small animals are hospitalised when it is considered indicated for animals whose treatment/clinical situation require appropriate care hosting. Each patient has a responsible veterinarian during the hospitalization period. Clinical assistant veterinary staff has continued responsibility to monitor the case and whenever necessary

exchange information with the case-responsible or with a specialist. All the hospitalization process is done according to the internal good practice guidance.

Concerning emergencies and intensive care: the VTH-CA runs a 24-hour emergency service. Surgery service is on-call during nights and weekends. Species attended at the VTH include dogs, cats and exotics animals.

The aim is to ensure the hospitalization of animals requiring medical care 24 hours a day, post-surgical patients, hosting patient recovery and patients under diagnostic evaluation. Animals admitted to the intensive care are under permanent vigilance.

The surgery department of the VTH-CA organises the surgeries from Monday to Friday. Minimal staff for a surgery includes one surgeon, one anesthetist and one nurse. The surgeries are scheduled from 09 am to 14 pm and the students are always involved. We perform soft tissue surgery, orthopedic surgery, neurosurgery and oncology surgery.

Regarding the particularities of the VTH-E, it is notorious that it is opened for emergencies 365 days per year/7 days per week/24 hours on-call for the emergency and intensive care. The specialties covered by the VTH-CA are the same that are present at the VTH-CA. Some teachers, practicing specialties transversal to different animal species also collaborate on the VTH-E.

Concerning the ambulatory clinical training in equine and farm animals, the students follow the teacher, either to contracted premises or to one with a personal semester arrangement with the teacher. The students are then exposed to the normal daily clinical work and take part in it, always under close supervision of the teacher. It is tried to arrange visits so that the ambulatory visits close to one another, so that the time spent on transit is as minimized as possible. Students are encouraged to participate in on-call emergency services from the teaching farm. They are also encouraged to participate on the on-call services resulting from the private practice of their teachers on our VTH_E establishment.

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

Concerning anatomy, cadavers and specimens used in practical anatomical training are the following:

Dog and cat cadavers, including specimens; for ruminants, equines and other (swine): lungs, heart, liver, spleen, genital organs, digestive tract; for equines only: fore and hind-limbs; cadavers of fish.

Dog and cat cadavers are obtained from public kennels. Fish cadavers are obtained from local markets, and other specimens are obtained from slaughterhouses on the basis of agreements. Both are transported to the University by an enterprise specialized in hospital waste management.

In addition, complete series of bones and skeletons of several domestic species are available.

All the material used is properly stored in freezers, located in the anatomy room

In the dissection week, the cadavers are transferred to the refrigerator chamber until used, by the anatomy supportive staff

After use, the carcasses and specimens are collected in black plastic bags laced with a plastic glove, for future identification, and stored in one specific freezer.

The enterprise specialized in hospital waste management collect the used cadavers once a week and collect them according to the national law in black containers with red cap (M1 sub products of animal origin) for incineration.

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

Species	AY*	AY-1	AY-2	Mean
Cattle	39 (p)	38 (p)	38 (p)	38,3
Small Ruminants	53 (p) 1(s)	53 (p) 1(s)	53(p) 1 (s)	53 1
Pigs	29 (p) 1 (s)	29 (p) 1 (s)	29 (p) 1 (s)	29 1
Companion Animals	223 (p) 1(s) 84 (c)	223 (p) 1(s) 84 (c)	223 (p) 1(s) 84 (c)	223 1 84
Equine	45(p) 1 (s)	45(p) 1 (s)	43 (p) 1 (s)	44,3 1
Poultry & rabbits	1 (s)	1(s)	1 (s)	1
Exotic pets				
Fish	40	50	50	46,7

p- pieces, s- skeleton, c- cadaver

Details of material used in practical anatomy room

	Example	Origin	Storage	Dogs/Cats			Equine			Ruminants			Suine			Others				
				15/16	14/15	13/14	15/16	14/15	13/14	15/16	14/15	13/14	15/16	14/15	13/14	15/16	14/15	13/14		
Cadavers	Cats/ dogs	Shelter	Fridge/ freezer	84	84	84	0	0	0	0	0	0	0	0	0	0	0	40	50	50
Bones	prepared in house/ donation		dry storage	>200	>200	>200	15	15	15	40	40	40	0	0	0	0	0	0	0	0
Complete skeleton	purchased	purchased	dry storage	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	2	
Specimens	viscera/ organs	abattoir	Fridge/ freezer	15	15	15	30	30	30	50	50	50	29	29	29	0	0	0		

Concerning Pathology: cadavers examined at the Pathological Anatomy section originate from the VTH-FMV-ULHT, public kennels, outside private clinics and farms, and slaughterhouses on the basis of agreements.

Outside cadavers are brought in by the enterprise Stericycle Portugal. All the material used is properly stored in freezers, located in the anatomy room. In the necropsy weeks, the cadavers are transferred to the refrigerator chamber until used, by the anatomy supportive staff.

After use, the carcasses and specimens are collected in black plastic bags laced with a plastic glove, for future identification, and stored in one specific freezer.

In cattle and pigs, the students also observe organs or organ fragments sent by practitioners who perform necropsies and sometimes slaughterhouse material that in case of ruminants it is restricted due to Portuguese law related to transmissible spongiform encephalopathies.

Cattle necropsies are performed outside the campus in an enterprise of transformation of sub products ITS – “Indústria Transformadora de Sub-Produtos, S.A.” located in Herdade da Palmeira 2100-406 Santarém – Coruche, that receives cattle cadavers from outside farms.

Further access to cattle and equine necropsies are provided during the equine and large animal clinics and surgery in the 4th and 5th years

5.1.6. Description of the group size for the different types of clinical training

For different types of clinical training intramurally at VTH – CA the number of students is 4-5 per group. Also, at the VTH - E the ratio is never more than 5 students per teacher. At the ambulatory extramural clinical work the ratio is 4 students per teacher and at the extramural work at the establishments the number of students in some situations can be up to 7 per teacher, but this number is compensated by the high number of clinical cases seen and accompanied by the students.

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, ...

The VTH-CA and VTH-E provide clinical and surgical services. The students are exposed to all medical and nursing procedures, either for the diagnosis, management and treatment of first and second opinion clinical cases and to the evaluation of the evolution of hospitalized animals. As early as before the preclinical training, the students are given instruction in health and safety issues both for live animal workout and post-mortem examinations. They are clearly and thoroughly exposed to rules covering biosecurity, which they must respect them at all times.

After the preclinical training, when students do their clinical training, they are exposed and participate hands-on on the diagnosis and management of diverse clinical cases. Companion animal and equine consultations consist of in-house training with first opinion and specialized consultations. Students are encouraged to participate in the daily practice (consultations, surgery and hospitalization) and in emergency/out-of-hours services during this period through volunteering or extra-curricular internships.

Students participate actively in the activities of the VTH-CA and VTH-E stimulating hands-on learning and teamwork by interacting with clinicians, professors and students from various years.

Before involvement in clinical activities the students attend an orientation. The orientation reinforces written and oral communication skills and a professional attitude towards general public and VTH-CA and VTH-E staff.

The students follow the daily hospital work where their practical involvement in clinical procedures is assured by the practical classes and respective hospital activities in the 4th and 5th year. Students perform various procedures at VHT, such as performing clinical examination, diagnostic testing, blood sampling, treatment, nursing and intensive care. They are encouraged to perform anaesthesia protocols, understand and participate in routine surgeries, how to proceed in cases of euthanasia, reporting and communication with the client. All students comply with biosafety rules during hospital work.

The nursing skills are continuous during the entire course and approached in several curricular units. Teaching starts with Praticas Basicas de Medicina Veterinarias/Basic Practical skills in Veterinary Medicine curricular unit in the first year with welfare care concepts of the patient undergoing consultation, hospitalization and surgery according to the animal friendly practice. In the 5th year, acquired knowledge is reviewed in the first weeks of AHCX. Practical procedures are applied in all curricular units that take place at the VTH during the 4th and 5th years. The practical nursing procedures are supervised by the clinicians, nurses and supporting staff.

In particular in farm animals, all the students are involved in milking procedures, calving, claw treatments, clinical examination, medicine administration, ultrasonographic examinations, surgeries, euthanasia, necropsy and herd health (vaccination, desparasitation).

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

Teaching methods include lectures, field classes, laboratory classes, group discussion work and case studies, interpretation of results of diagnostic tests and solving practical problems. In some curricular units, especially the ones assigned to the last year of the veterinary medicine program use the problem solving approach adapted to different situations, in order to apply previously acquired knowledge by the students.

Cases are exposed in such manner as to encourage and develop problem solving, constructing logical differential diagnoses based on presenting clinical signs and case management skills.

During the practical classes the students go through periods of discussion, reflection and reading to deepen their understanding of the clinical case and its management. This reflection can be extended to an extra-class period, with elaboration of a group or individual report. The students have the opportunity to participate in hospital, ambulatory and farm clinical daily work, always supervised by a clinical teacher.

Students are expected to research large animal cases, assist with clinical investigations and produce reports, as directed and at the discretion of the clinicians with whom they work.

For the large majority of the rotation, students work on small groups with a teacher.

At the end of most class the students are expected to answer to a practical question.

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.

Clinical data is available as electronic patient records (*Boomedt* software), facilitating the consulting process, either for teaching proposals or for student tutorial-supervised work. Medical imaging has electronic support with the implementation of the digital X-ray facility. Other sectors, as hematology and clinical chemistry, pathological anatomy, microbiology and parasitology have their records in digital format.

Students have access to all clinical information deposited in Boomed, through a specific login. This application is online.

In the VTH-E, each horse is filed and has a daily record on paper support. These medical records are available for consultation, under the surveillance of a clinician or teacher, and partial, strictly anonymous, clinical information is provided to students whenever needed

In the intra-mural farm, individual animal record data is available (Dairy plan), facilitating the consulting process, either for teaching proposals or student tutorial-supervised work

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

Small Animals:

The adequacy of the ventilation system, the design, construction and placement of cages and containers, the numbers of animals housed, the effectiveness of cleaning, and the frequency of bedding changes aims to maintain at minimal levels the microbiological load, odours and allergens. The size of the cages are adequate

for the animal housed. Measures are taken to reduce the stress of hospitalization (enrichment of the environment). The animals are taken for a walk (when allowed) and fed as stipulated.

Air exchanges within the animal rooms, temperature, humidity, light and noise levels are maintained within limits compatible with the health and wellbeing of both workers and animals.

All persons involved in the study, handling and care of animals receive appropriate induction training and information regarding standard work practices, potential hazards and how to deal with them. Written Standard Operating Procedures (SOPs) include the demarcation and restrictions applying to different areas and animals as well as the routine procedures applicable to each. New workers and researchers are supervised by animal care staff until they have demonstrated their ability to work with the animals without damage or stress to the animal itself and to themselves.

Farm Animals:

All persons involved in the handling and care of animals receive appropriate training and information regarding standard work practices, potential hazards and how to deal with them at the teaching farm. Written Standard Operating Procedures (SOPs) include the demarcation and restrictions applied to different areas and animals as well as the routine procedures applicable to each.

Equine:

The horses are used for educational purposes maximum once per day, for the physical examination and exposition of the clinical case.

The diagnosis procedures are realized by the teacher and all the students have the possibility to see and participate in the clinical procedure. Concerning treatments, all the procedures done are absolutely necessary for the animal health and welfare and have a clear medical indication.

The students never participate alone in any procedure. No procedure is ever made in live horses only for demonstration to the students.

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 Dean takes in consideration the opinions of Academic Staff of various disciplines and Students through regular meetings including Scientific Council and Pedagogical Council. The Dean with the assistance of the Academic Board and the Ethical Commission is responsible to evaluate and decide and revise the needs for materials for pre-clinical and clinical training and clinical services. The needs require approval of the Management Board of the Faculty and is communicated through the regular channels of the University.

Table 5.1.2. Healthy live animals used for pre-clinical training

Species	AY*	AY-1	AY-2	Mean
Cattle	92	87	95	91
Small Ruminants	358	348	343	350
Pigs	134	128	120	127
Companion Animals	72	70	88	77
Equine	7	2	2	4
Poultry & rabbits				
Exotic pets				
Others (specify)				

Table 5.1.3. Number of patients seen intra-murally**

Species	AY*	AY-1	AY-2	Mean
Cattle	1053	1242	635	977
Small Ruminants	99	80	75	85
Pigs	77	51	60	63
Companion Animals	2417	2624	2521	2521
Equine	179	123	73	125
Poultry & rabbits				
Exotic pets	44	95	58	66
Others (specify)				

** 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. Each live animal affected by one specific clinical episode is counted as 1 single patient, even if it has been examined/treated by several departments/units/clinics.

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

Species	AY*	AY-1	AY-2	Mean
Cattle	1254	1087	278	873
Small Ruminants	530	2185	210	975
Pigs	5			2
Companion Animals				
Equine	64	72	70	69
Poultry & rabbits	20			7
Exotic pets				
Others (specify)				

** 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. Each live animal affected by one specific clinical episode is counted as 1 single patient.

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

Species	AY*	AY-1	AY-2	Mean
Cattle				
Small Ruminants				
Pigs				
Companion Animals	93,2%	96,8%	98,3%	96,1%
Equine	73,3%	67,5%	76,7%	72,5%
Poultry & rabbits				
Exotic pets	100%	100%	100%	100%
Others (specify)				

Table 5.1.6. Cadavers used in necropsy Species

Species	AY*	AY-1	AY-2	Mean
Cattle*	12	14	0	8.6
Small Ruminants	3	6	0	3
Pigs*	35	34	0	23
Companion Animals	63	77	80	73
Equine	4	3	3	3
Poultry & rabbits	146	175	100	140
Exotic pets	1	0	1	0.7
Others (specify)	10 otters + 60 fish	2 Dolphins + 60 fish	60	64

*In cattle and pigs, the students also observe organs or organ fragments sent by practitioners who perform necropsies and sometimes slaughterhouse material that in case of ruminants it is restricted due to Portuguese law related to transmissible spongiform encephalopathies (not recorded in the table).

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

Species	AY*	AY-1	AY-2	Mean
Cattle	33	27	8	23
Small Ruminants	29	25	11	22
Pigs	10	11	7	9
Companion Animals				
Equine	2	2	3	2
Poultry & rabbits	4	2	2	3
Exotic pets				
Others (specify)	2 (bees)			1

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

Species	AY*	AY-1	AY-2	Mean
Ruminant's slaughterhouses	3	3	3	3
Pig's slaughterhouses	3	3	3	3
Poultry slaughterhouses	2	3	3	2.6
Rabbit slaughterhouses	2	3	3	2.6
Related premises: meat cutting room, cooked ham and sausages, dry ham, soft cheese, catering unit, cheese production unit, Food Technology Center	13	9	9	10.3
** Others (specify) Docks- fish inspection; Eggs inspection and classification center fish processing and shellfish center, freeze codfish, honey production unit, yoghurt and fermented milk unit	6	8	4	6

** Premises for the production, processing, distribution or consumption of food of animal origin

Related premises:

- meat cutting room- 3 visits each year, 1 visit per student each year
- cooked ham and sausages- 2 visits each year, 1 visit per student each year
- dry ham- 2 visits each year, 1 visit per student each year
- soft cheese-2 visits in 2015/2016, 1 visit per student each year
- catering unit- 2 visits in 2015/2016, 1 visit per student each year
- cheese production unit, 2 visits in 2015/2016 and 2 visits in 2015/2014, 1 visit per student each year
- Food Technology Center- 2 visits in 2014/2013, 1 visit per student each year

** Others (specify)

- Docks- fish inspection- 2 visits in 2015/2016, 3 visits in 2014/2015, 1 visit per student each year
- Eggs inspection and classification center - 2 visits in 2015/2016, 1 visit per student each year
- Fresh fish processing and shellfish center - 5 visits in 2014/2015 (3 in inspection + 2 in Food Technology), 1 visit per student each year
- freeze codfish- 2 visits in 2015/2016, 1 visit per student each year
- honey production unit- 2 visits in 2014/2013, 1 visit per student each year
- yoghurt and fermented milk unit- 2 visits in 2014/2013, 1 visit per student each year

5.2. Comments

We work daily towards to improve the quality of the service in VTH-CA. Our main aim is to continue to provide a high load of clinical cases to our students in a teaching and safe environment. We also aim to provide community and social support to several shelters and private animal owners by contributing with specialized health care to many companion animals.

We are aware that main gaps of VTH are the lack of space. Despite our limitations, biosafety of people and animals is always a top priority.

The VTH-E was the first Portuguese equine hospital with the capacity to do colic laparotomies. This was true until last year were a similar service started at Lisbon Public Faculty.

Although the indicators for number of intramural equine patients are slightly above the indicative recommended minimal values, it is worthy of notice that Portugal is a country where the horse owners are clearly less available

to spend large amounts of money with their horses. Horses, as a consequence of being large and heavy animals, have a difficult logistics for transportation to the equine hospital and for handling at the hospital, which implies a high cost of treatments. Besides, the weight of the horses also implies that equine treatment are expensive. Both reasons exposed above have as a consequence that horses receive less treatments than in other, richer, European countries. This explains why there are less horses at the VTH-E than in other, richer countries. The fact that Portugal is just exiting from an economical crisis also contributes for the low renumber of equine clinical cases. The most clear evidence of these statements is that the VTH-E is the only private equine hospital in Portugal.

This low number of equine clinical cases is being counteracted by the engagement as teachers of high-level practitioners, which desire a more academic component of their work. These teachers expose the students more, both ambulatory and hospitalar, clinical cases. The celebrating of more protocols and contracts with equine private enterprises, reproduction centers, rehabilitation centers and equestrian centers, is also part of a clear strategy aiming to create more exposure of the students to equine clinical cases.

All these years we had students for all the Portuguese public establishments of Veterinary Medicine taking their EPT at our VTH-E under supervision of our academic staff.

The high caseload in farm animals shows that the students are well prepared in terms of contact with food producing animals and reveals the high effort made by the faculty in providing these numbers although the long distances made by the students.

One short-term objective is to increase visits to different food producing animal farms, such as aquaculture exploitations, although it is difficult to obtain visitation permits by the owner. The reason for this is that the stress caused by a large group of students leads to a reduction of productivity and rentability.

5.3. Suggestions for improvement

We would like to contract more qualified staff both with PhD and recognized clinical qualifications such as EBVS to better improve our VTHs second opinions on a variety of areas. We have been doing so but would like that in the short period of time we could improve the academic staff that would also help in research activities.

We would like to improve equipment and electronic patient record systems at the VTH-CA, VTH-E and other VEA facilities.

We would look to motivate the manage board of the University for these needs.

6. LEARNING RESOURCES

6.1 Factual Information

6.1.1. Description of the main library of the Establishment:

The Library staff includes:

- 7 Librarians
- 2 Library assistants

Staff qualifications:

- 3 with Master Degree in Librarianship
- 4 with Postgraduate Studies in Librarianship
- 1 with a Degree in Social Service
- 1 with Professional Training in Librarianship

The Library is open six days a week from Monday to Friday, from 10.00 a.m. until 10.30 p.m. On Saturdays, the Library opens from 10.00 a.m. until 6.00 p.m.

The budget is subjected to a certain degree of variation according to the information needs. All the acquisitions must be approved by the director in charge of each department and authorized by the head librarian, always following an adjusted and articulated acquisitions policy.

The Library works in a dedicated building in the campus. It has 210 seats and 2 study rooms. It has 6 PC for bibliographical and database search.

The global space of the Library can be summed as it follows:

Space Designation	Useful area (m2)
Reading Area 1	415,40
Reading Area 2	180,5
Study Room 1	18,0
Study Room 2	18,0
Study Room 3	18,0
Reference Service	40,4
Staff Office	29,0
Director's Office	22,5
Archive	55,0

Through the reading room there are 113 sockets to charge the laptops and there is a dedicated space to use this kind of equipment that has sockets embedded on the tables for portable PC's.

The available software for bibliographical search is DocBase, a Portuguese software, which allows the users to locate documents using information like author, subjects and/or titles. The bibliographical database includes paper resources and digital resources – theses and dissertations, journals of restricted access, etc.

Regarding other digital resources, we have the following databases:

- Ebsco SPORTDiscus (sport)
- Proquest Psychology Journals (psychology)
- Proquest Business Collection:
 - ABI/Inform
 - Accounting & Tax
 - Banking Information Source
 - International Bibliography of the Social Sciences (IBSS)
 - ProQuest Asian Business & Reference

These databases can be accessed in the campus, using the provided wireless network, or at home, using VPN access.

The databases allow users to search documents in full text, abstracts or both, by date of publication, source type, document type, among other filters, in order to obtain a more refined search result.

Users can also search the institutional repository of Grupo Lusófona, ReCiL, that is part of RCAAP – The Portuguese and Brazilian Repository.

ReCiL presents the scientific research that is developed in all of the higher education institutions that belong to Grupo Lusófona. We can find here the master and doctoral theses, along with other documents – journal publications, conference publications, etc.

Concerning specifically the Veterinary area, the University has:

- 206 books in paper;
- 9 periodicals in paper ;
- 9 optical support documents (CDROM/DVD)
- The following online Databases:
 - Proquest regarding Veterinary Science:
 - 100.367 articles in full text, along with 1.202 abstracts.
 - EBSCO SPORTDiscus Full Text regarding Veterinary Science:
 - 668 articles in full text, along with 515 abstracts;
- e-Periodicals:
 - 10 acquired by subscription;
 - 122 organized in open access.
- eBooks:
 - 25 organized in open access.

In the Library's webpage the Information is organized by subject areas – including Veterinary – where the students can find every electronic resource available. This area is online at: <http://biblioteca.ulusofona.pt/index.php/areas/165-veterinaria>

6.1.2. Description of the subsidiary libraries

The Library is responsible for managing all the libraries of Grupo Lusofona in Portugal, Africa and Brazil (a total of fourteen libraries). All the students are allowed to use everyone of the subsidiary libraries with full access to their services.

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

Since its inception and in line with the best practices followed at Universidade Lusófona, Faculdade de Medicina Veterinária has taken the decision to embrace the opportunities offered by Information Technologies to meet the expectations and better support and enhance the educational experience of its students and teachers. The University believes that the effective use of IT, AV and online materials produces economies and efficiencies as well as enhances the learning experience, though large investments have been made on granting students and staff constant access to adequate hardware and software at all moments of their learning and teaching experiences.

The University uses IT in all aspects of its interactions with students, from admission (online application “COL”), conversion (electronic marketing via tailored CRM), pre-registration (online application “MOL”) through to most teaching materials being delivered online and supported via Moodle (e.g. almost no paper handouts are provided, videos have been produced in the past to teach clinical skills and are available via dedicated space). A fully mobile version of moodle is made available and used for instance as a support for the communication between students and school when in remote sites. In addition the infrastructure has been designed to maximize e-learning for example by investing in video technology in the clinical rooms at the hospital and interactive boards in dedicated classrooms. A substantial component of the assessment strategy is delivered entirely online via Digitalis Questionnaires. Another core component of this strategy and a relevant one in case of students and teachers that are “always on the move” like the veterinary ones, is the intensive use of two dedicated mobile Apps – Lusofona Mobile and Lusofona Mobile docents – that allow students and teachers to conduct most of their academic activities via mobile based interactions.

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

The curriculum is communicated and disseminated to the staff, students and stakeholders through the dedicated website of the institution, the e-learning platform and through its integration in dissemination printed versions. In addition, at the beginning of each school year professors and students receive in digital form relevant information through the secretariat of the course.

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

There are 2 wi-fi networks available in the campus – one for sporadic accesses (intended to visitors) and other one, meant to intensive use. Off campus, users can use a VPN to access all the electronic learning resources.

There are open access resources in the Library website, retrieved, organized and diffused by the Library, that only require an internet connection.

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

Training of users occurs both formally (when there is a request from a professor, usually for a group of students) and informally, when a user addresses the staff in the reference service, looking for books.

There is also the Library Regulation (available on the website) that states all the procedures regarding the access and use of the Library.

6.1.7. 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

The management board of the library decides and communicates on all learning resources management and acquisition. Budget allocation for investment is done on a ratio-based system considering size and scientific production of each area. Each individual School/Faculty is free to provide as many recommendations for acquisitions as deemed necessary and if no specific budget is available procedures are in place to provide extra budget. Online dedicated forms and tools are available in order to manage this recommendation system.

6.2. Comments

The Library has a broad range of subjects available in the most diverse supports, in paper and digital formats, concerning all the areas and courses of our University, always trying to be up-to-date in all those areas, namely Veterinary.

Our users have direct access to all those supports, in different circumstances – locally, by home loan and through online access (including the use of VPN) .

6.3. Suggestions for improvement

One of the questions that concerns us nowadays, has to be the growth of the collections and consequently the lack of space to store the new acquisitions.

Also the budget as it occurs in other libraries is not unlimited, so the acquisitions must follow though a strict filter concerning their relevancy and pertinence to users.

7. STUDENT ADMISSION, PROGRESSION AND WELFARE

7.1. Factual Information

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

The main instrument for dissemination of the educational program is the university's website (<http://www.ulusofona.pt/en/>). Each year, this portal exhibits the study cycles' list offered in each school and information about each study cycle. Other relevant means of disclosure are the "Access Guide" published annually. The advertisement events in secondary schools and the organization of visits to the university, as well as other forms of advertisement, such as participation in fairs and other events considered relevant, are coordinated by the Marketing and Communication Department of the University, in articulation with Organizational Units and Services. The Marketing and Communication Department, in addition to the promotion and advertisement of the university's image and training offer, is also responsible for the management of various Internet channels (e.g. Facebook, ULHT's Digital Newsletter) which advertise all information related to the training offer and actions developed within the scope of the study cycles.

7.1.2. Description of the admission procedures for standard students:

-) selection criteria | -) policy for disable and ill students | -) composition and training of the selection committee | -) appeal process | -) advertisement of the criteria and transparency of the procedures

Non-applicable

7.1.3. Description of the admission procedures for full fee students

-) selection criteria

Access and admission to private higher education are organized through applications according to the nature and provenance of each candidate. The following modalities are foreseen:

1. Institutional competition: Students who satisfy, cumulatively, the following conditions may apply for admission to a particular course at this higher education institution:

- Hold a secondary education diploma or hold a legally equivalent qualification
- Have completed the entrance examinations for the institution / course pair and have obtained a grade of 95 or more on a scale of 0 to 200

Ranking is based on the Final Application Classification (CFC) calculated using the following formula: $CFC = (\text{classification of 10}^{\text{th}} \text{ and } 11^{\text{th}} \text{ grade} * 0,60 + \text{classification } 12^{\text{th}} \text{ grade} * 0,40) + (\text{Entrance assessments} * 0.35)$

2. Special Applications: In parallel, higher education institutions organize special competitions for students who meet the following specific conditions and who compete for vacancies defined for each application, namely:

- Holders of Technological Specialization Courses (CET)
- Holders of Advanced Professional Technical Courses (CTeSP)
- Holders of other higher education courses
- Students over the age of 23 who did not have access to higher education after secondary education.

3. Peer / Settlement Application: Also foreseen is the possibility of students who had previously attended another course of higher education. In this case presentation of proof of approval on the entrance exams fixed for the course is mandatory.

Specific regulations for each type of application define the selection criteria. Final grade is calculated as follows:

- Institutional access application - weighing between the grade of completion of the secondary education and the grade of the specific test of Biology and Geology;
- Contest Seniors of 23 years - weighing between evaluation of curriculum vitae, interview and written test;
- Change of Institution / Course Pair - grade of the specific Biology and Geology test;
- Holders of higher degree, holders of technological specialization diploma and holders of professional higher technical diploma – grade of the most recent qualification.

Following the above criteria, the existence of vacancy is a condition for course admission.

4. External students: It is legally foreseen that any interested individuals may enroll in separate subjects of a higher education course, to which the student receives a certification of approval and future credit in any subject successfully completed, upon later admission to this course (Article 46-A of law 74/2006 of March 24th, amended by law 63/2016 of September 13th).

-) policy for disable and ill students

There is legal Statute for Students with Special Educational Needs homologated by Dispatch nr. 14/2016. This Statute establishes a set of principles and norms which guarantee the integration and accompaniment of students with special needs, both in the process of teaching and learning and in the assessment of knowledge. The Regulation of Knowledge Assessment specifies rules for students with special educational needs and includes special conditions for students with illness or in situation of clinical risk, namely regarding the justification of absence to classes or assessment periods.

-) composition and training of the selection committee

The validation of the admission results is the responsibility of ULHT Bodies. The Regulation of Admission Tests for People Over 23 Years states that the jury is composed of at least three ULHT professors. The Jury is appointed by the Director of each Course and approved by the Rector.

-) appeal process

According to University Regulations, candidates may always appeal the admission result by presenting a reasoned statement addressed to the Rector.

-) advertisement of the criteria and transparency of the procedures

Criteria are advertised through the website and in printed formats (brochures, leaflets). According to Portuguese legislation, results of the various applications are public, and thus posted on a visible location specifically set for this purpose at the University, in addition to the personalized information sent to each candidate. Table 7.1.1 shows the number of new veterinary medicine students admitted by the Faculty in the last three years.

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

Type of students	AY*	AY-1	AY-2	Mean
Standard students				
Full fee students	104	57	68	76,3
Total	104	57	68	76,3

* The last full academic year prior the Visitation

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 vacancies is proposed annually by the Scientific Council of the Faculty and approved by the Scientific Council of the University, considering the legal limits resulting from the accreditation process by the A3ES. The establishment of vacancies is dependent on the demonstration of the existence of human resources (qualified teaching staff, non-teaching staff) and materials (facilities, equipment) adequate to the proper functioning of the activities of each study cycle. The number of vacancies is communicated to the General Directorate of Higher Education and published on the University's website. In Portugal, anti-tetanus vaccination is compulsory, as well as screening for tuberculosis. All students are required to present an up-to-date vaccination book prior to join the School. In terms of biosecurity, for the first year students in the first practical classes and throughout the course in various subjects, the students are advised by the teachers about biosecurity, health and safety rules, Personal Protection Equipment (PPE), risks associated with laboratory practice or clinical activity, good laboratory practices, personal hygiene, etc. This is supported by extensive information in the Moodle platform of those subjects and posted in several locations in Faculty facilities. All the laboratories are equipped with manual fire extinguishers, fire blanket, sand fire bucket, eye washing devices and a complete first-aid kit. Each lab corridor has, at least, one emergency shower. Also, all laboratories are equipped with biological and/or chemical hoods, depending on the laboratory specificity. Use of lab coat, gloves and, whenever necessary, safety glasses is mandatory in all laboratory classes.

7.1.5. Description of:

-) the progression criteria and procedures for all students;
-) the remediation and support for students who do not perform adequately;
-) the rate and main causes of attrition;
-) the exclusion and appeal procedures;
-) the advertisement to students and transparency of these criteria/procedures
-) the progression criteria and procedures for all students;

According to national legislation each complete curricular year corresponds to the realization of 60 ECTS. Each semester, students may transit to the next year with 15 ECTS still pending. To transit to the 6th year and start the External Practical Training (EPT), students who lack approval on a maximum of two subjects may, exceptionally, with the express agreement of the Director of the IMVM, start it as well, if the subjects don't belong to a scientific area falling under that of the EPT. Tables table 7.1.2 and 7.1.3 show the number of veterinary medicine undergraduate students at the establishment and the number of veterinary medicine students that graduate annually, respectively.

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

Type of students	AY*	AY-1	AY-2	Mean
First year	99	32	63	64.7
Second year	32	50	50	44
Third year	53	64	85	67.3
Fourth year	63	88	101	84
Fifth year	89	127	122	112.7
Sixth year	130	69	62	87
Total	466	430	483	459.7

Table 7.1.3. Number of veterinary students graduating annually

Type of students	AY*	AY-1	AY-2	Mean
Standard students				
Full fee students	68	42	24	45
Total	68	42	24	45

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

Every semester a report is written up containing the results that students obtained on each subject and the results of the pedagogical inquiries. The information is analyzed by the Direction of the study cycle and discussed within the pedagogical organs of the Faculty. Measures to improve school performance include, but are not limited to: improving the continuous evaluation methodology, alteration of the teaching methodology and adjustment of school calendar to achieve better results.

-) the rate and main causes of attrition;

Table 7.1.4. explains the average duration of veterinary studies. Because a high percentage of students take more than the expected time to complete the course, this is considered an issue to be addressed. The major reason for this is the time students take to present their final EPT dissertation. Some measures have already been adopted since 2014/2015 such as the introduction of an additional fee in case of failure to deliver the dissertation within the stipulated period.

Table 7.1.4. Average duration of veterinary studies

Duration	% of the students who graduated on AY*
+ 0**	9%
+ 1 year	38%
+ 2 years	24%
+ 3 years or more	29%

** The total duration of the studies matches the minimum number of years of the programme (e.g. 5 or 6 years)

The other main causes of attrition are adequacy of school calendar to student needs and number of evaluations. All these causes are discussed within the pedagogical organs and adapted whenever possible each semester.

-) the exclusion and appeal procedures;

The Regulation for Assessment of Knowledge foresees that a student fails a subject when the result of the evaluation is below to 9,5 values (scale of 0 to 20 values). Students who have not obtained approval by continuous evaluation must perform an exam. There are two periods for exams per student, per semester. A third period exists, but is reserved to students who fulfill certain requirements and have missed to the two other periods of exams. This period is dedicated to students who work, high competition athletes, students' present in Commissions and Pedagogical Councils, or students who lack up to a limit of 30 ECTS for Course completion. Students have 5 working days after publication of their grades to request revision of evidence and any student, whenever necessary, can turn to the pedagogical council of the Faculty and to the pedagogical council of the University to resolve pedagogical questions.

-) the advertisement to students and transparency of these criteria/procedures

The evaluation and progress criteria were defined in the General Regulation for the Assessment of Knowledge of the University and in the specific Regulations of the Faculty. These regulations are available on the University website, in the Moodle access platform and internal document repositories (e.g. share point). The results of the

evaluations are made available by the academic staff on the personal page of the student (NetP@) accessible through a personalized username and password, which is attributed to the student at the moment of enrollment in the study cycle.

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,).

Academic Services: responsible for the administrative management of students' school processes.

SATA – Technical and Administrative Support Services: personalized service spaces which provide specific support to students as facilitators of the student's integration and development process in academic life, as well as access to the supports and services available at the institution.

Student Counseling Office (GAA): arises from the specific needs of higher education students and aims to promote well-being and personal development, as well as support for the student in the educational process.

Support for Students with Special Educational Needs (SEN): ULHT promotes and advocates a set of ethical values such as diversity, freedom, equal opportunities and the quality of life and work of all students. Guided by these values, and adopting a policy of inclusion, all efforts are made to integrate students with Special Educational Needs (SEN).

Student Ombudsman: is a professor at the Universidade Lusófona, appointed by the Rector and the Administrator, with the capacity to intervene, proposing concrete solutions, in eventual problems of an academic or administrative nature that are not immediately resolved in the proper organs.

Social and Educational Support Services (SASE): work in the area of direct social support, such as scholarships and emergency aid, in order to provide students from the poorest households with equal access to higher education. It also acts at the level of articulation with other internal and external services, in order to provide a greater integration / inclusion of the students, namely through the fulfillment of protocols.

Directorate of International Relations, Internships, Employment and Entrepreneurship: coordination, accompaniment, and support to the development of initiatives of internationalization of education, namely cooperation and academic mobility, for the creation of jobs and internships. It ensures contacts and development of protocols with higher education institutions and coordinates entrepreneurial projects. During the last three years:

- 34 of our students did their EPT abroad under the Erasmus program in several countries such as United Kingdom, Spain, France, Italy, Belgium, Switzerland, Sweden, Poland, Romania, Ireland, Germany and Slovenia. They were received both in Universities as well as in private clinics and hospitals.

-11 of our students were enrolled in overseas exchange program in several different countries such as USA, Mexico, Brazil and New Zealand

- Our Faculty received 13 students of other countries under the ERASMUS+ and Overseas exchange program. We received students from Italy, Poland, France, United Kingdom, and Brazil.

Computing and IT support services: The University provides several laboratorial and online services to students including free wi-fi access all-over the campus; 24-hour available computer labs; web vpn for access to network storage and library; printing and copy selfservice machines; online storage up to 1TB; email and several support tools, namely dedicated LMS and mobile app.

Audiovisual and multimedia services: The University offers state of the art facilities and services in the area of audiovisuals and multimedia that in the case of the FMV are used for the production of didactic content namely multimedia-based b-learning lessons. With this in mind, remote video-monitoring has been set up in the campus hospital that allows recording and live feed of all ongoing classes and interventions

Student Association: Académica Lusófona – University’s Academic Association

Sports Clubs: Lusófona University Judo Club, Volleyball Club and the Gym

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

The prospected number of new students admitted by the Faculty is 90 students per year (270 students in the next 3 years).

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

The number of vacancies is proposed annually by the Scientific Council of the Faculty and approved by the Scientific Council of the University considering the legal limits imposed by A3ES. The establishment of vacancies is dependent on the existence of human resources (qualified teaching staff, non-teaching staff) and materials (facilities, equipment) adequate to the proper functioning of the activities of each cycle of studies.

The number of vacancies is communicated to the General Directorate of Higher Education and published on the University’s website.

Table 7.1.5. Number of postgraduate students registered at the Establishment

Programmes	AY*	AY-1	AY-2	Mean
Interns	-	-	-	
Residents	-	-	-	
PhD Students	-	-	-	
Post-graduations	-	-	86	64
Spring School	-	20	-	
Programa Horizonte	86	-	-	
Veterinário				

7.2. Comments

Being a private we face the pressure to attract a reasonable number of students to fulfil our open vacancies.

Our students have the urge to transfer themselves to a public institution in the first years of the course, to avoid paying the fees. As a Faculty, we continuously work to create an attractive, stimulating and challenging environment to reduce the percentage of dropouts. We also have already received students transferred from public veterinary institutions, which is a public recognition of our value in the eyes of the student population.

In terms of admissions, the students are generally well prepared from secondary education. The major problem that might occur lies with students admitted via other modes of entry, namely those older than 23 years, who may have less preparation. However, our experience states that those students are usually highly motivated, which allows them to follow the course with a reasonable degree of success.

7.3. Suggestions for improvement

As already explained, the main problem that must be addressed is the high percentage of students who take more than the expected time to complete the course. The EPT is one of the major reasons for that. Measures have already been adopted such as the introduction of an additional fee in case of failure to delivery the dissertation within the stipulated period.

8. STUDENT ASSESSMENT

8.1 Factual Information

8.1.1. Description of the global student's assessment strategy of the Establishment

The global assessment strategy for the veterinary medicine students is defined by the Faculty's Specific Regulation for the Assessment of Knowledge, that is based in the General Regulation for the Assessment of Knowledge of Lusofona University. This regulation is available on line on the Lusofona webpage.

The teaching at FMV-ULHT is organized in 2 two semesters. Each semester has 15 weeks' duration where teaching and evaluation occur.

After fifteen weeks of classes per semester, there is a special period without teaching activities, where the final examination process takes place. Each subject classification can result either from continuous evaluation or final exam. The evaluation process, depends on each subject nature, but is generally divided in theoretical and practical evaluation.

Continuous evaluation takes part during the block of 15 weeks, and occurs during classes. By being continuously evaluated, students have the opportunity to be aware of their performance, skills and knowledge acquisition in real time, rather than in a single evaluation in the term of the semester.

If students are unable to be evaluated by continuous evaluation, they must present themselves for final examination, on the two available evaluation periods.

The final exam has both theoretical and practical evaluation, and must be equivalent in terms of duration and difficulty to the continuous modality.

In general, the theoretical component is usually a written evaluation test with a defined duration, while the practical component, in agreement with the hands-on approach policy of the curriculum, occurs in different modalities more suitable for the students to fundament practical skills and decisions (oral and clinical evaluation, interpretation of results of diagnostic tests, solving practical problems).

The practical classes are mandatory, and the students must attend 2/3 of practical classes to be considered for examination.

At the end of the first cycle (third year) and at the end of the second cycle (fifth year) students lacking no more than 30 ECTS to finish the cycle are allowed to have a third evaluation period.

The final year, devoted to the external practical training (EPT), aims at consolidating and applying the theoretical and practical knowledge acquired by the students during the course through the exercise of Veterinary Medical activities.

By the end of the EPT, students must elaborate and publicly present and defend a dissertation. This evaluation method allows the assessment of students' ability to integrate knowledge and professional skills acquired at EPT, as well as research critical thinking skills.

8.1.2. Description of the specific methodologies for assessing:

-) theoretical knowledge;

Theoretical knowledge can be assessed in continuous evaluation or in final exam.

The continuous evaluation occurs during classes, individually or in small groups, by means of small quizzes, group discussion work and/or oral presentations.

For the final exam, in general, the theoretical component is usually a written evaluation test with a defined duration

Various methods of evaluation are used in the different subjects (multiple-choice questions, open questions, brief or extended reports). Each method can be used separately or in combination.

-) pre-clinical practical skills;

In the first three years the pre-clinical practical skills are assessed by various methods depending on the nature of the different subjects: quizzes, work groups, small projects development, anatomy dissection and identification of anatomic preparations, histology slide identification and description, necropsies, microscopic and macroscopic lesion interpretation, oral evaluations, etc.

-) clinical practical skills

From the third to the fifth year, in the second cycle, all units have a strong practical component aiming integrating the theoretical knowledge and its applicability in the performance of clinical, surgical and hospital activities.

The clinical practical skills assessment of these units occurs through the exposure to clinical cases in the context of hospital medical consultation, in which students interact with problem solving approach adapted to different situations. Students are assessed in relation to communication skills, teamwork, application of knowledge and proactivity. They must develop protocols of clinical performance, solve clinical cases and organize case logs.

Clinical cases received at the VH-FMV, as well as those from the equine, and farm hospital and the ambulatory clinics, provide material for the surgical and clinical practice component.

8.1.3. Description of the assessment methodology to ensure that every graduate has achieved the minimum level of competence, as prescribed in the ESEVT Day One

Day one competences are acquired throughout the curriculum by promoting constant contact of students with clinical, hospital and field practices, making it possible to continuously assess their progress towards acquiring critical and thorough understanding of fundamental and general concepts within the current practice of veterinary medicine.

Students participate actively in the activities of the veterinary hospital, equine hospital and large animal clinics, stimulating hands-on learning and teamwork by interacting with clinicians, professors, students from various years and the general public. The ambulatory clinics enable students to follow clinics and animal production outside the University.

In those units, teachers require elaboration of case logs, promoting student interest in acquiring skills, methodology, and clinical vision toward a better resolution of clinical cases. Teachers also request, for evaluation purposes, that students prepare protocols for specific clinical activities, improving their ability to select and use the techniques learned for efficient, consistent, and substantiated clinical practice.

During the last years, the clinical sciences, skills and behavior of every student is permanently assessed by staff working with the student. Moreover, during the externship, Day one competences are assessed by external supervisors who grade the student in several aspects such as: assiduity, punctuality, student's interest, technical performance, spirit of initiative and innovation, amount of work done, quality of work, interpersonal relationships, learning and applying new skills, reporting if students act in a professional manner and apply the ethical codes of the veterinary profession.

8.1.4. Description of the processes for:

-) **ensuring the advertising and transparency of the assessment criteria/procedures;**
-) **awarding grades, including explicit requirements for barrier assessments;**
-) **providing to students a feedback post-assessment and a guidance for requested improvement;**
-) **appealing**

All lecturers and students at the FMV-ULHT use the learning management system “Moodle”. This system is used as message board and file and media server for uploaded course materials and also provides a practical structure of interactive computer –assisted learning and evaluation. <http://moodle.ulusofona.pt>.

This platform is the official form of advertisement and communication of assessment criteria and procedures between professors and students.

In the beginning of each semester the professor responsible for each unit must upload the Curricular Unit / Subject Form (FUC) to the moodle platform.

In each FUC, it is explained the learning outcomes of the subject; syllabus; demonstration of the syllabus coherence with the subject's learning; teaching methodologies (including evaluation); demonstration of the coherence between the teaching methodologies and the learning outcomes; and bibliography.

In the teaching methodologies (including evaluation) paragraph, the requirements for various assessments are explained. The same information is available in the regulation for assessment of knowledge of the Faculty. Students must have a grade of 9,5 out of 20 in each component (theoretical and practical) in order to be approved. Attendance of theoretical classes is not mandatory, but the practical classes are mandatory, and the students must attend at least at 2/3 of the practical classes.

The grades are communicated to the students via the Lusofona webpage NetP@.

Since all units can be evaluated by continuous evaluation, and the partial grades are immediately transmitted to the students, a continuous feedback post-assessment is easily achieved as well as a a guidance for improvement.

All students also have one opportunity to improve an individual grade of a subject, on a date set specifically for that purpose.

Appealing is a right of the student that is safeguarded by the Regulation for the Assessment of Knowledge. The student may ask for a revision of the evaluation via the academic services. In the University, there is also the figure of “Student Ombudsman”, a professor appointed by the Rector and the Administrator, with the capacity to intervene, proposing concrete solutions in case of eventual problems of an academic or administrative nature that are not immediately resolved by the proper organs.

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 revised

The strategy for student assessment is decided by the University Scientific and Pedagogical Councils upon proposals from the Rector and each academic unit. Implementation, assessment and revisions, as well as communication, are all assured by each School/Faculty.

8.2. Comments

The implementation of continuous evaluation in both the theoretical and practical component has allowed the students to be aware of their performance, skills and knowledge acquisition in real time, rather than in a single evaluation by the end of the semester. The students greatly appreciate this method and the percentage of participation is near 100%

8.3. Suggestions for improvement

There is no perfect method for assessment of knowledge, and the continuous evaluation apart from its positive side, has also some negative effects such as the number of evaluations during the semester, which that can be stressful and over demanding for both students and teachers. A rational, conscientious approach with the integration of all units is necessary every semester to overcome these obstacles.

9. ACADEMIC AND SUPPORT STAFF

9.1. Factual Information

9.1.1. Description of the global strategy in order to ensure that all requested competences for the veterinary programme are covered and that staff are properly qualified and prepared for their roles

For the success of a private and young program on Veterinary Medicine that pretend that students are qualified for the acquisition of Day-One Competences we made the decision to appoint both staff that possess both PhDs and clinical qualifications such as Specialists from European Colleges or equivalent bodies and/or national recognized Specialists according to Portuguese legislation. The A3ES considers academic qualified staff for teaching and accessing students the recognized national Specialists with an outstanding quality and relevant curriculum that comply with legislation (DL 74/2006 of 24th March, DL 107/2008 of 25th June, DL 230/2009, 14th of September and DL 115/2013 of 7th August) and were evaluated and approved by the Scientific Council of a higher education institution in Portugal.

Because of the specific subject areas in veterinary formation, and the lack in Portugal of high number of Veterinarians that hold a PhD Degree or Diploma, for the strategy of a high level of education and acquisition of skills, and according to the Bologna strategy of mobility and collaboration between institutions, the Course has always invited high qualified professors and specialists from abroad.

All staff allocated to the Faculty is considered budgeted posts and financed by the University to the Faculty by its own resources.

Table 9.1.1. briefly describes the personnel structure of the FMV-ULHT. All the honorary/invited professors, national and from abroad, that provide modules are not taken into account for the FTE calculation and not presented in table 9.1.1.

Table 9.1.1. Academic staff of the veterinary programme**

Type of contract	AY*	AY-1	AY-2	Mean
Permanent (FTE)	60,85	58,55	56,35	58,5
Temporary: Interns (FTE) Residents (FTE) PhD Students (FTE) Practitioners (FTE) Others (FTE)	4,6	4,6	7,3	5,5
Total (FTE)	65,45	63,15	63,65	64,08

* The last full academic year prior the Visitation

** All staff included in this table must have received a training to teach and to assess undergraduate students. Practitioners involved with EPT are not included in this table.

The percentage of Veterinarians in academic staff is shown in table 9.1.2. Most FTE academic staff involved in veterinary training are veterinarians (82%) indicating that more than 2/3 of the academic staff are qualified veterinarians according to the EAEVE rules.

For the total number of FTE specialized veterinarians in veterinary training we consider the Specialists recognized by the EBVS or ABVS (FTE 3,8) and the recognized national Specialists (FTE 20,6).

Table 9.1.2. Percentage (%) of veterinarians in academic staff

Type of contract	AY*	AY-1	AY-2	Mean
Permanent (FTE)	83%	78%	84%	82%
Temporary (FTE)				

Temporary staff had a fixed term contract paid by a research grant. The Faculty had an Equine Biomechanic research project that had a duration of 3 years. In terms of Research staff, table 9.1.4. represents the academic staff that performs research.

Table 9.1.4. Research staff of the Establishment

Type of contract	AY*	AY-1	AY-2	Mean
Permanent (FTE) CBIOS	11,30	11,50	11,50	11,43
Permanent (FTE) FMV-ULHT in CBIOS	6,4	6,6	5	6
Temporary (FTE)		1	1	
Total (FTE)				

The Faculty does not have staff members fully dedicated to research. The academic staff, under their teaching activities both clinical and laboratorial, carried out research works in collaboration with the undergraduate students. Although there is not an own research staff, these members are involved in several extramural research institutions.

The ULHT is a private university, and its staff members are private employees. In some situations, the public employees from other veterinary institutions that collaborate with our course in an exchanging lectures program. In some cases the ULHT pays the institution itself the number of hours of collaboration and not to the invited professor.

The Academic Staff is structured/categorized as follows:

Assistant Lecturer and Clinical Lecturer

Have a minimum of a MSc Degree and normally assist the Auxiliary Professor, Associate Professor or Full Professor providing support in classes and clinical teaching.

Auxiliary Professor and Invited Auxiliary Professor

- Auxiliary Professor: staff on the lecturer scale with extensive experience within their subject/discipline with a PhD Degree.
- Invited Auxiliary Professor: staff that has an extensive recognized experience and hold international and/or national reputation in their field, postgraduate clinical qualification or equivalent professional qualifications such as the Portuguese title of National Recognized Specialist.

Associate Professor

Held a PhD degree and has more than 10 years of experience in research and teaching and/or community service.

Full Professor

Holds a PhD degree with an extensive experience and significant work done in research, teaching and/or community service. This is the highest rank in Portuguese Academic career defined by the Statute of the University Teaching Career (DL 19/1980 16th July).

Honorary/Invited Professors

Include external teaching deliverers considered invited for special subjects due to their highly qualified knowledge. At a national level they include Veterinarians from private companies or public institutions, such as

other Veterinary Faculty and Schools in Portugal. At an international level they include professors with academic and clinical skills holding a PhD degree and or a Diploma. Honorary/Invited Professors are not considered for the FTE calculations.

The total number, qualification and skills of all staff involved with the program is sufficient and appropriate to deliver the educational program and fulfill the establishment's mission according to the external.

Staff contributes to the establishment direction and decision-making processes according to their participation in the University and Faculty Councils.

The Faculty promotes teaching skills and improvement of the academic qualifications of motivating the staff to undertake MSc, PhD Degrees and / or Diplomas. Members of the academic staff already undertook Master Degrees at our Faculty with external examiners. Other members are enrolled in PhD Programs. The Faculty promotes teaching knowledge and skills by motivating our staff to participate in our CPD Programs.

9.1.2. Description of the formal programme for the selection, recruitment and training to teach and assess students (including continuing education) of the academic staff

The University has an ongoing recruitment program, which draws new employees and replacements.

The Dean evaluates and proposes the needs for hiring teaching staff based on the needs of the subjects according to the number of students of the discipline, type of classes, teaching hours, and other specific needs. Proposals and relevance of the background, scientific production and professional experience of the candidate are appreciated by the Scientific Council of the FMV-ULHT. The final allocation of teaching staff at the FMV is the responsibility of the Rector and Administration accordingly to teaching needs and budget availability in articulation with the Human Resources Department.

Recruiting academic staff members Veterinarians with a Ph.D. degree has been not so easy because of the lack of Portuguese Veterinarians with this high qualifications. The strategy has been so to also have very qualified and recognized hired staff that pursue its title for PhD while already is contracted by the Faculty. It has also been strategy for the delivery of the Day-One Competences to every year in the course and in determined subjects to hire invited professors with a PhD degree and Specialization recognized by European or other international Veterinary institutions. This strategy has been followed for the FMV-ULHT Continuous Education Programs delivered at the Faculty where more than 90% of the course delivers are International recognized lecturers with a PhD and/or a Diploma.

In total, since 2006, more than 40 professors from other countries, Europe, North America and South America, holding a PhD and/or Diploma have contributed to the knowledge as invited professors in modular programs of the subjects taken by our students (see appendix 9).

The Faculty holds many post-graduations/continuous education programs and advanced courses and academic staff is motivated to attend and participate.

9.1.3. Description of the formal programme for the selection, recruitment and training to perform their specific duties (including continuing education) of the support staff

The University has an ongoing recruitment program accordingly to the needs identified by the Deans of the Schools/Faculties and Departments.

The University provides to all Faculties and Schools through the organized departments general support staff. This include common legal, financial and organizational framework such as Human Resources Advisor, Management, Accountant, Marketing, Student Support, Information Services, Informatics' Departments, International and Employment Support, and others. There is specific support staff specially hired by the University for the Faculty of Veterinary Medicine which includes all posts regardless of the work undertaken; administrative staff, secretariats, cleaners, security, maintenance personal, technical staff dedicated to

supporting teaching, drivers, preparation of material for dissection, organizing and demonstrating clinical equipment, looking after animals, or clinical and analytical support work at the VTHs, nurse work and others (Table 9.1.3).

Table 9.1.3. Support staff of the veterinary programme

Type of contract	AY*	AY-1	AY-2	Mean
Permanent (FTE)	36	33	33	34
Temporary (FTE)				
Total (FTE)				

Specific staff for the University is hired according to the needs and is proposed by the Dean of the Faculty to the Rector and the Administration in articulation with the Human Resources Department.

Supportive staff is usually hired in a permanent basis. The University provides training to the support staff according to their specific duties. For the support staff the institution promotes often advanced training courses with particular focus in the areas of information technology and communication to improve the skills related to organization and management processes. In addition, it promotes regular actions that focus on specific aspects of academic activity, particularly those involving legal and financial aspects. Some of these actions are intended to promote not only the acquisition of information about innovations and developments in the higher education sector but also match the skills of employees to organizational innovations that have implications on their activity particularly those that concern the use, in perspective of the user, of the software tools provided by the University as part of its integrated management system. In the context of the FMV-ULHT the Faculty annually promotes advanced training courses of free access to its employees.

9.1.4. Description of the formal programme for the appraisal, development, promotion criteria and procedures, supporting and mentoring of both academic and support staff

Promotion is based on high achievements those areas and are proposed to the Rector and the Administration by the Dean or by suggestion of the Scientific Council. The University's promotion process recognizes a high level of achievement in teaching and learning activity, research and academic service. Each individual case will be judged on its merits.

Each level of staff has a pay scale. The initial placement on that scale is on the basis of negotiation at the time of job offer. Progression on the salary scale is related to annual appraisal.

Academic staff has the possibility to participate in technical and scientific national or international meetings. They must require previous authorization to the Dean, permission is normally granted, with guarantee that teaching activities is not compromise. Staff should seek financial support from external sources to attend scientific meetings to cover costs with inscriptions, travel, accommodation and others. These funds may come from research grants, projects or from the research centre to which the teacher is associated, company sponsoring, research institutes, etc. The Faculty holds many post-graduations/continuous education programs and advanced courses and academic staff is motivated to attend and participate.

The University holds mobility programs for teachers that are usually granted as requested.

9.1.5. Description of the formal rules governing outside work, including consultation and private practice, by staff working at the Establishment

The University encourages members of staff to undertake external professional work considering that the outside relation with market, industry, public and organizations can benefit the experience and enhanced the reputation of the University.

9.1.6. Description of the formal programme of the Establishment for the assessment of teachers by students and its outcome

The University established a formal program for the assessment of teachers by students and its outcomes based on regular surveys. Regular application of annual surveys allows 2 distinct components: a focused review of the own teaching results and a review of administrative support processes.

Satisfaction surveys are one of the main tools used in order to improve the teaching / learning process. First the results of these surveys are evaluated and discussed in the appropriate bodies of organization of the institution and communicated to the Course Directors. The officers identify any situations that should be improved and ensure the implementation of measures to be taken. This reflection follows an improvement plan that is presented to students in the organ established in the Bylaws (Pedagogical Council). The results of these surveys are processed by the Quality Management Service and used also for monitoring the quality of the institution's actions, benchmarking and monitoring of students and faculty. Finally, these results are one of the elements of evaluation of the faculty and of each course.

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

For the next 3 years, according to the budget available, we expect to increase the FTE academic staff with the recruitment of 6 full-time veterinarians with PhD degree. With this we expect to increase the number of full-time faculty / researchers which will allow the current teaching load to be alleviated, as well as allowing highly qualified human resources for research activities.

9.1.8. Description of how and by who the strategy for allocating, recruiting, promoting, supporting and assessing academic and support staff is decided, communicated to staff, students and stakeholders, implemented, assessed and revised

The strategy for allocating, recruiting, promoting, supporting and assessing academic and support staff is decided by the Dean / Director of the IMVM after consulting the responsible of the divisions/departments and subjects of the course. Decisions of allocating, recruiting and promoting academic staff are addressed in the Scientific Council.

Academic and support staff strategy is decided by the University Management board upon proposal from the Dean of the Faculty. Implementation, assessment and revision is done by each Faculty and the University Human Resources services.

Communication to staff, students and stakeholders are provided by the Faculty and the University via secretariats and by general communication via the newsletters and / or the university website <http://www.ulusofona.pt/mestrados-integrados/medicina-veterinaria>.

9.2. Comments

We consider that the Faculty staff is highly qualified for the objectives of the course and we consider adequate the distribution of the personnel in various categories.

Since the beginning of our Degree, we have always been increasing the number of Veterinarians with a PhD and with Diploma, clinical staff and nurse support for clinical work.

More than 2/3 of our Academic Staff are Veterinarians.

We have been able to recruit some national qualified PhD and / or a Diploma but considering our objective of providing a very high standard Day-One Competences, we compensate the lack of national professionals by inviting highly recognized PhD / or Diploma Professors to lecture at our Degree from other countries.

9.3. Suggestions for improvement

We rely on the highly qualified invited professors and academic staff to help us starting up postgraduate clinical training such as PhD programs, Internships and Residence programs.

To ensure appropriate balance of teaching and research activities we would like to hire in the future more Researchers. Strengthening the hiring of full-time faculty / researchers and PhDs in Veterinary Science will allow the current teaching load to be alleviated, as well as allowing highly qualified human resources to devote themselves to research activities. The institution, by developing recognized research activity in the scientific area of the Veterinary Sciences, will give Veterinary Medicine students the opportunity to participate in research projects together with their professors. With a suitable body of researchers in the area of Veterinary Sciences there will be a consequent increase in scientific production within the FMV-ULHT and will create favorable conditions of financing at national and international level suitable for the creation of a 3rd cycle of studies.

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

The ULHT considers scientific research a structuring element of its activity. In order to articulate research and teaching activities at COFAC teaching establishments, ULHT created the Lusófona Institute for Research and Development (ILIND) an organic research unit with the main objectives of: i) promoting research and development (R&D) and disseminate knowledge in the various scientific areas in which it is concerned, ii) coordination and systematization of research activities carried out by the R&D units, ensuring, in particular, the follow-up of the process of preparation, submission and management of research projects, as well as the support to the processes undertaken by Individual researchers and iii) promoting scientific exchange with national and international institutions and researchers.

There are at the moment 11 PhD programs among the various Schools and Faculties (<http://www.ulusofona.pt/doutoramentos>). The PhD Program in Health Sciences, in a partnership with the University of Alcalá Henares (Spain), aims to promote a high quality offer in research and advanced education in Biomedical Sciences through the Research Centre for Biosciences & Health Technologies (CBIOS) where members of the FMV academic staff are integrated. About 34% of the permanent members of CBIOS are from FMV-ULHT.

The FMV also encourages its academic staff to develop partnerships with other R&D institutions in Portugal. Examples of such collaborations are the Science and Animal Studies Department at University of Porto, the Interdisciplinary Research in Animal Health (CIISA) at the University of Lisbon, National Institute of Health Dr Ricardo Jorge, Institute of Tropical Medicine and Hygiene of the University Nova of Lisbon, Genomics and Biotechnology Centre at University of Trás-os-Montes and Alto Douro, Institute Gulbenkian of Science, Institute of Molecular Pathology and Immunology of the University of Porto and 3B's Research Group at the University of Minho. ULHT has a Biomechanics Laboratory which was granted by FCT (between 2010 and 2014) with a Scientific Research Project on Equine Biomechanics entitled "Kinematic and Dynamometric Analysis of the normal equine locomotion and comparison of the effect of different conformations and orthopaedic treatments" (<http://movlab.ulusofona.pt/cms2014>). This project involved in the research FMV-ULHT academic staff, temporary research staff and undergraduate students and held the organization of 2 International Spring Schools in 2012 and 2014 dedicated to Equine Biomechanics (<http://movlab.ulusofona.pt/springschool2014/>) and opened to the attendance of students and Veterinary professionals. The 2014 edition had the participation of 20 Veterinarians with interest in the field. The project yielded the following scientific indicators: 3 Integrated Master thesis, 2 full papers submitted to peer reviewed international journals, 1 full paper accepted in a peer reviewed international journals, 1 oral communications in an international congress, 5 oral communications in a national congress and 2 poster communications in a national congress.

Since 2007, FMV-ULHT publishes the Lusófona Journal of Science and Veterinary Medicine with referee, which is available at <http://revistas.ulusofona.pt/index.php/rlcmv>. This journal aims the publication and promotion of activities and knowledge related to Veterinary Medicine and has great acceptance among the Lusophone community in the world, with several publications submitted from Brazil and Mozambique. The journal is currently in its 8th edition with 41 published articles with involvement of students, either with publications or through discussions of the published articles in classes.

FMV considers scientific research a structuring element of its mission in order to articulate research and teaching activities. As research should be the main source of information for teaching, research generated knowledge is taught in classes in order to provide students up-to-date contents. Students are also encouraged

to collaborate in research projects being developed in the FMV-ULHT laboratories or extra-mural R&D institutions. Students contact with research occurs, mainly, during the 6th year of the IMVM, through EPT, when they perform an original laboratorial or clinical research work.

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 FMV does not offer yet a Postgraduate research based program. At the moment no programmes are certified by the European Board of Veterinarian Specialisations, Internships / Residences.

The Faculty offers veterinarians the possibility of clinical training Internships in the fields of Companion, Farm Animals and Equine, where they can update and deepen their skills and acquire additional competences through specialized education, leading to better qualifications in the clinical and para-clinical fields, including the achievement of national specialist recognition.

As the Faculty does not have a very high number of students in the postgraduate clinical program, the Dean and staff organizes work in a way so that conflicts are minimized.

Whenever highly qualified PhD and/or Diplomats professors visit from other countries to teach as part of our postgraduate continuing education programs for Veterinarians, the Faculty invites these professors to also speak in seminars or lectures organized for DVM students. These seminars / classes have been great opportunities to bring diversified clinical skills and research based knowledge to student's formation, contributing to the high level of veterinary undergraduate education.

Also, to contribute to undergraduate veterinary education, in 2015 the Faculty started an innovative program called "Horizonte Veterinário" (<http://fmv.ulusofona.pt/formacao-avancada/programa-horizonte-veterinario-2/>). The program is held by international highly qualified PhDs and Diplomats who are invited to share their knowledge and skills as invited professors in classes for our undergraduate students. These include Veterinary training modules and programs in relevant thematic areas of Veterinary Medicine selected by the subject coordinators and the Dean. Aiming to streamline our students' approach to the labour market, this program is freely open to participation of Veterinary professionals. We also motivate other veterinary undergraduate students from other establishments to participate. The program is organized around the classes and usually further extended to additional days of training to cover subjects of interest in the Veterinary profession. Students are obliged to attend their subject-organized classes, but can voluntarily take the whole program. When they do take the whole program, they receive extra ECTSs at the end of the IMVM which attest to their participation in these complementary activities of the course. Table 10.1.4 provides some information about the involvement and participation of veterinary professionals in these free programs. Twenty two students from all the Public Veterinary Higher Education Establishments also participated in these programs (Univ Évora, Univ Trás-os-Montes, Univ Oporto, Univ Lisbon), and of a total of 293 undergraduate students from FMV-ULHT who participated in the obligatory modules of their course 65 students further participated in the courses and received extra ECTSs for their Diploma.

The FMV-ULHT has suitable premises for the staff to organize distinct post-graduate training at the same time, taking into consideration the needs of the Portuguese veterinary community. In case of conflict, the organizers of the program act as mediators between the students and the Direction of the FMV-ULHT.

10.1.3 Description of how undergraduate students:

-) are made aware of the importance of evidence-based medicine, scientific research and lifelong learning;
-) are initiated to bibliographic search, scientific methods and research techniques, and writing of scientific papers (e.g. through a graduation thesis);
-) are offered to participate to research programmes on a non-compulsory basis

In clinical classes students are faced with the fact that decisions to particular clinical problems, that emerge in everyday practice, need to be scientifically sustained and validated by evidence-based medicine. Also, they are challenged with the fact that this implies the need of updated information, which will accompany them throughout their entire professional career.

During the two first year's students develop the basic scientific knowledge and are encouraged to collaborate in research projects being developed in the laboratories of FMV-ULHT or extra-mural R&D institutions. Since the 1st year, in curricular units like Molecular Biology, Genetics, Cell Biology or Toxicology, students are encouraged to search for validated scientific information in databases like PubMed, Scopus and ISI Web of Knowledge to elaborate oral or written essays on certain topics. The peer review process is also explained to them.

Some subjects, namely Equine and Small Animal Clinics I, include evidence-based medicine lectures on their curricula. Some classes' contents (eg. Equine and Small Animal Clinics I and II) are prepared and discussed based on peer review scientific clinical papers. During practical clinical classes students are encouraged to seek updated scientific substantiation for daily cases discussion, showing them the complementarity between scientific research and clinical practical. As students' progress in their studies, some basic clinical concepts are studied and reviewed, each and every time more thoroughly, showing them the need for continuous learning and deepen knowledge. In addition, students are made aware for the continuous evolution of the knowledge in biological systems and veterinary medicine and that lifelong learning and evidence-based practice are fundamental in order to accomplish a better practice.

During the elaboration of the dissertation that occurs after the EPT at the 6th year, students' projects are supervised by an academic advisor which is a FMV-ULHT PhD professor who guides them through all the phases of the scientific method: bibliographic research, scientific methods and research and writing scientific papers during the elaboration and necessary communication skills for the presentation of their thesis work.

Many of our professors are members of National and International Scientific Societies and, in recent years, they have been involved in the organisation of national and international Scientific Congresses and Meetings. Some examples are the European Society of Veterinary Oncology (ESVONC) Annual Congress (2013), 9th International Veterinary Behaviour Meeting (2013), 6th ICAZ Archaeozoology Genetics and Morphometrics Working Group Meeting (2014), VI Congress of the Portuguese Society of Veterinary Science (2014), 27th Annual European Congress of Veterinary Internal Medicine - Companion Animals (ECVIM-CA) (2015), 17th European Society of Veterinary Clinical Pathology (ESVCP) Congress (2015), XX Portuguese Society of Animal Pathology Meeting (2015) and the XXI Portuguese Society of Animal Pathology Meeting (2016). In these congresses FMV-ULHT students were called to participate as volunteers. Those students were able to attend oral and poster presentation sessions, as well as to communicate with participating researchers and other delegates, being an excellent opportunity for them to contact with the most updated scientific topics and breath a scientific atmosphere.

Scientific communications are of primordial importance to our research activities and thus our students are encouraged to present their work in national and international meetings. In the Lusofone Journal of Science and Veterinary Medicine 13 articles from the total of 41 published articles were co-authored by undergraduate students (<http://revistas.ulsofona.pt/index.php/rlcmv>). They are encouraged and have published their work in scientific peer-reviewed journals. In some cases, our student's performance has granted prizes for best oral and poster presentations, what is a major satisfaction to our academic staff. For the last 3 academic years'

undergraduate students work resulted in 5 scientific peer reviewed papers, 27 poster communications and 13 oral communications.

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

The Faculty makes a strong investment in holding courses in our facilities. We were pleased to have welcomed national and international organizations that provided Congresses, Workshops, short Courses and others at our premises. As example: XXVII Workshops of World Buiatrics Congress and of the European Congress in Veterinary Dentistry (2012); 9th International Veterinary Behaviour and Animal Welfare Congress (2012); The Use of Animals in the Education (2013) Support to the implementation of Animal Traction Course in 2014 and use of Animals in Research (2015) with OMV; 17th European Society of Veterinary Clinical Pathology (ESVCP); Portuguese Society of Animal Pathology (2016); National Congress of the Portuguese Meat Industry (APIC) (2008 to 2016) and pioneered training on the animal welfare area with APIC and RSPCA Bristol University forming the first veterinarians at post-graduation level on welfare rules for slaughter; ESAVS Courses (2009 to 2011).

In 2006, FMV-ULHT was the first Veterinary Medicine institution in Portugal, and has been pioneer since then, offering a consistent program in postgraduate continuing training for Veterinarians in several fields, which constituted an important and huge step to increase the knowledge in the Veterinary Profession in our Country. Since 2006 we held several editions (ed.) of 1 year Postgraduation programs, with classes on weekends every two weeks on monthly: Medicine in Companion Animals (8 ed.), Surgery in Companion Animals (4 ed.), Diagnostic Imaging (3 ed.), Exotic Clinics (2 ed.), Equine Clinics (2 ed.), Acupuncture (2 ed), Bovine Clinic and Herd Management, and a total of more than 200 programs of short-courses in postgraduate training. These programs were provided with more than 50 invited professors, Doctorates and Diplomats from Europe and America and were widely accepted by the Veterinary Professionals in Portugal with the attendance of more than 1500 Veterinarians – almost 1/3 of the Veterinarian Professionals in Portugal. Table 10.1.4 shows the number of attendees to continuing education courses in the last 3 years.

Table 10.1.4 - Number of attendees to continuing education courses provided by the Establishment

Courses	AY*	AY-1	AY-2	Mean
Post-Graduation in Soft Tissue Surgery in Companion Animals (Nr. hours: 96h Annick Hamaide DVM, PhD, Dipl ECVS; Paolo Buraco DVM, PhD, Dipl ECVS; Gilles Dupré DVM, PhD, Dipl ECVS; Cristina Fraggio DVM, PhD; Hervé Brissot DVM, PhD Dipl ECVS; Henrique Armés DVM, PhD; Felix Garcia DVM, PhD)	-	-	27	35
Post-Graduation in Clinics of Companion Animals and Exotic Pets (Nr. hours: 120h Jon Wray DVM, RCVS; Josep Pastor DVM, PhD, Dipl ECVCP; Suzanne Murphy DVM, Dipl ECVIM; Carlos Melian DVM, PhD; Xavier Roura DVM, PhD, Dipl ECVIM; Kerry Simpson DVM, PhD, RCVS; David Williams DVM, PhD; Maria Dolores Tabar Rodriguez DVM, PhD; Alejandro Lujan DVM, Dipl ECVN)	-	-	34	
Diagnostic Imaging in Companion Animals (Nr. hours: 40h Panagiotis Mantis DVM, Dipl ECVDI, FHEA, MRCVS)	-	-	25	
Mov Lab Spring School Equine Biomechanics (Nr hours: 24h Hilary Clayton DVM, PhD, Dipl ACVSM)	-	20	-	

Courses Program “Horizonte Veterinário”		Veterinary Practitioners		
Physical and Rehabilitation Medicine: Applications in Equine Athletes (Nr. hours: 8 Marta Garcia Piqueres DVM)	7	-	-	29
State of the Art: Clinical Challenges in Equine Athletic Management (Nr. hours: 13 Imma Roque DVM, DipACVS)	3			
Present and Future in Veterinary Dental Medicine - State of the Art. The Experience of the First Veterinary Dentistry Center in Brazil and Latin America and the Second World (Nr. hours: 5 Daniel Ferro DVM, PhD, Michele Venturini DVM, DDS)	14			
Reproductive Ultrasound in Dairy Cows - State of the Art (Nr. hours: 11 Giovanni Gnemmi DVM, PhD, DipECBHM)	8			
Minimal Invasion Surgery: Current and Future Applications. Arthroscopy in Small Animal Clinics (Nr. hours: 7 José Sampayo DVM)	12			
Theoretical and Practical Course of Atrophic Rhinitis in Pigs (Nr. hours: 9 Pedro Silvério Lopes DVM, Gil Ricardo Sena DVM, Martos Raich DVM)	12			
State of the Art: Advanced Osteosynthesis and Wound Closure Surgical Techniques (Nr. hours: 6 Ron Ben-Amotz DVM, Dip ACVS)	7			
Veterinary Acupuncture (Nr hours: 15 Stélio Pacca L Luna DVM, PhD, Dipl ECVA)	23			

FMV-ULHT gives the foremost importance to its connection with the main stakeholders of the different veterinary intervention areas in Portugal. It's through the establishment of these contacts that it is possible to identify the market needs and to define future strategies. In this way, the Faculty in articulation with the main veterinary stakeholders and Professional Associations tries whenever possible to identify the needs of the veterinary practitioners in Portugal. Furthermore, during all events organized in the institution, the participants are invited to suggest and give ideas for the organization of new courses or congresses which usually are validated by the Dean. Since members of the faculty academic staff are also members or make part of the board of Portuguese and International Scientific Societies, their broad knowledge of the profession and community needs is valuable in the organization of continuous education programmes.

10.1.5. Prospected number of students registered at post-graduate programmes for the next 3 academic years

This year the Faculty is already running 3 postgraduate continuing training programs, 2 for the Veterinary Professionals (Diagnostic Imaging in Companion Animals, Clinic and Surgery of Exotic Animals) and an innovative postgraduation program in Veterinary Nursing.

In 2017 FMV-ULHT expects to organize, at least, the following Post-graduations: Emergencies and Critical Care in Companion Animals, Medicine in Companion Animals, Surgery in Companion Animals (includes Soft tissue, Orthopedics and Neurosurgery), Equine Clinic, Physiotherapy and Veterinary Rehabilitation and Veterinary Acupuncture.

The Faculty is always organizing post-graduation programmes that meet the needs of the profession and community. We predict around 300 Veterinarians to be registered in the next 3 academic years.

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

Research policy of the University is decided by the institute for research support (ILIND) in articulation with each research unit and each Faculty and then implemented in an autonomous manner by each research unit. Assessment and revision is done by ILIND in articulation with each Faculty.

The majority of the academic staff members of FMV-ULHT has a strict contact with stakeholders of different veterinary areas. This gives them the possibility to suggest the development of continuing and post-graduation programs whenever they perceive the need of certain professional qualifications, training skills and education according to the needs of the profession and community. The Dean of the Faculty was the President of the Veterinarian College for 6 years (2009-2015), which allowed a network of contacts and knowledge indispensable for the accomplishment and development of research areas, continuing and post-graduate programs.

Suggestions for continuing and post-graduate education programs are evaluated by the Dean and operationalized by the Continuous Education Department. This Department in articulation with the academic staff members, who suggested the course, draws up the program and selects the lecturers by their recognized experience. All the logistics related with travel and accommodation details of the invited lecturers, rooms, equipment and material needs is organized. The post-graduations are presented and in the Scientific Council of the Faculty which may also decide for other continuous education programs. The courses are usually held during the weekends minimizing any potential conflicts among participants and undergraduate students on sharing facilities, equipment or others.

Programs are announced on the FMV-ULHT website at <http://fmv.ulusofona.pt> as well as via e-mail for the Faculty contacts that include former students, veterinarians, academic members, non-academic staff members and stakeholders. Courses are also announced through professional magazines and newsletters. There is a dedicated site of the University to announce these courses at <http://fmv.ulusofona.pt>

All courses are evaluated by their students/participants that fill a questionnaire about the overall quality related with the course. In this questionnaire, participants are also inquired in order to suggest further topics that may be of interest for future courses.

Table 10.1.1 - Number of students registered at postgraduate clinical training

Not applicable

Table 10.1.2 - Number of students registered at postgraduate research training

Not applicable

Table 10.1.3 - Number of students registered at other postgraduate programmes (including any external/distance learning courses)

Not applicable

Table 10.1.5. List of the major funded research programmes in the Establishment which were on-going during the last full academic year prior the Visitation (AY*)

The Scientific Research Project on Equine Biomechanics occurred between 2010 and 2014.

10.2. Comments

FMV-ULHT has a high number of international and national partnerships and Inter-institutional collaborations, which allow the enrolment of teachers and students in R&D projects.

FMV-ULHT has a good dynamic and diversity of post-graduations and continuous education programs, with the courses being positively evaluated by the Veterinarians participants. Nearly all the academic staff participates in the planning and teaching of continuing education programs. Many internationally recognized specialists are invited lecturers on these courses; some theoretical lectures are open to undergraduate students which is an excellent opportunity for them to contact with the most recent and up-to-date information in the various areas of knowledge.

It is our intention to keep motivating students to develop research during their undergraduate programs. The potential for students to participate in research has been increasing as attested by the number of works presented and published during the last 3 years.

Our aim is, within the next 3 years, being able to establish a Postgraduate research-based program and start an Internship program, a step towards a Residence program, in close collaboration with our invited Diplomat Professors.

During the last 3 years, we provided less continuing education programs since attendance was so high, in previous years, that there was a need for creating space between programs, in order to achieve the desirable attendance as our programs are heavily-costed because they run with more than 90% of European and USA Diplomats.

10.3. Suggestions of improvement

The high workload of the academic staff in teaching activities should be reduced in order to allow highly qualified human resources to be dedicated to research activities. This could be done by hiring full-time teachers/researchers and PhDs in various areas of Veterinary Science.

The development of recognized research activity in the various scientific areas will increase the opportunity of Veterinary Medicine students to participate in research projects together with their professors. The Establishment should seek to improve the conditions and incentives for research in order to increase the number of projects and publications in the main areas of veterinary science.

Also it is important that COFAC continues to guarantee budget to support the collaboration of Diplomats, which is crucial for the set up an Internship / Residence program.

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:

-) has a culture of QA and continued enhancement of quality;
-) operates *ad hoc*, cyclical, sustainable and transparent outcome assessment, QA and quality enhancement mechanisms;
-) collect, analyse and use relevant information from internal and external sources for the effective management of their programmes and activities (*teaching, research, services*);
-) informs regularly staff, students and stakeholders and involves them in the QA processes;
-) closes the loop of the QA Plan-Do-Check-Act (PDCA) cycle;
-) is compliant with ESG Standards.

The Universidade Lusófona de Humanidades e Tecnologias have a policy for quality assurance as a form of its strategic management.

The commitment to quality assurance is settled in the ULHT Statutes since its publication in 2009 (Order no. 21137/2009, of 18 September) and was reinforced in posterior amendments with publications in Dispatches 7444/2013 on June 7th, 14181/2013 on November 4th and 15417/2016 on December 22nd. The current statutes define the mission and purposes of the ULHT (Article 2, nrº 2, item h) "The permanent development of processes for evaluating its activities, units and services, in accordance with the law, in articulation with the competent entities of evaluation and accreditation, as well as through its own institutional mechanisms, observing internationally recognized principles and quality criteria."

Under the statutory terms, the administrator is responsible for "Establishing, in collaboration with other institutional organisms, the mechanisms for regular self-assessment of the performance of Universidade Lusófona, in view of the national accreditation and evaluation system" (article 16, item e, Administrator' competences).

The commitment to quality assurance was concretized with the creation of the Office of Evaluation and Quality (Dispatch 27/2008), with the purpose of promoting the quality policy in the institution according to the guidelines introduced for the evaluation and quality of teaching Introduced by Law 38/2007 August 16th.

In 2010, the Quality Management Service was created, being responsible for the operational coordination of activities for the implementation of the internal quality assurance system.

The Universidade Lusófona de Humanidades e Tecnologias has chosen to build its own quality assurance system, being able to respond to internal quality requirements and standards, integrating, in its formulation, the guidelines contained in the "*Standards and Guidelines for Quality Assurance in the European Higher Education Area* ", in accordance with the Agency for Assessment and Accreditation of Higher Education (A3ES) recommendations, ISO 9001 standards, current legal regulations, good practices of other higher education institutions and, of course, the own culture of Universidade Lusófona.

We aimed to structure a dynamic quality assurance system, adaptable to the natural evolution of Universidade Lusófona, as well as the demands of the external context.

Considering the institutional culture, a rigorous and "disciplinary" orientation was defined, without impairing the culture of dynamism that characterizes the institution. That is, a formalized but sufficiently "flexible" system that allows quick and non-demotivating adjustments to changing initiatives.

It was intended that the system did not increase the bureaucracy, seeking the integration of quality assurance procedures in a transversal way, in the activities that contribute to the development of the mission and the objectives of the institution.

Finally, it was intended to implement quality mechanisms that can be regularly, evaluated and audited, in whole or in part, by external entities.

In this way, the Internal Quality Assurance System IQAS based itself in the ISO 9001 on all aspects of the ULHT mission (training, teaching and learning, human resources and materials, services, community relations, internationalization, research, information systems and information publicity, government bodies of the institution).

The implementation of this quality management system allows the Universidade Lusófona to create and maintain a set of procedures and instructions that guide the administrative activity in a structured way, enabling a more efficient and effective management. The certification of services by ISO 9001 seems to us adequate to guarantee greater confidence in the administrative processes of the institution by the various stakeholders.

The IQAS consists in a vast and comprehensive set of structures, regulations, processes and procedures available, covering, as already mentioned, the various areas of the University Mission.

The IQAS is supported by flows that feed the University's information system, administered by the Informatic Services and Academic Management Planning and Control Service and by a set of other information collection and processing instruments (surveys, scripts and indicators).

Quality assurance procedures involve the participation of all stakeholders, including the participation of students and external entities.

The system involves the regular assessment of the processes and results' adequacy to the mission and strategic planning of the University. It is organized as a continuous process of evaluation of the institution, its different units, courses and services, in order to identify in advance the areas that need intervention in order to ensure its continuous improvement.

The Administrator, through the Quality Management Service, and in cooperation with each of the University's governing bodies and administrative and support services, promotes the continuous monitoring of the IQAS, namely with regard to the:

- Degree of execution of the different procedures of the system in each organic unit and in the ULHT as a whole;
- Collection of indicators and surveys' application;
- Effectiveness of the information system;
- Deadline accomplishments;
- Degree of depth and comprehensiveness of the carried out analysis;
- Relevance and applicability of plans of action for improvement and their evaluation.

The Quality Management Service produces an annual report on the functioning of IQAS, identifying the difficulties encountered and the strengths and weaknesses of the system, and proposing the necessary adaptations.

The Administrator reviews and approves this report and makes recommendations for improving the system. The Rector and the Administrator, after consulting the Scientific, Pedagogical and University Council, decide on the actions to be taken in response to the recommendations issued. In order to ensure that students take an active role in this process, they are invited to participate both in the Pedagogical Council of the University and in the Specific Pedagogical Council of each Faculty.

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

The Quality Manual (MQ) presents itself as the fundamental document in the definition of the Internal Quality Assurance System of Universidade Lusófona. The (MQ) defines the organization and functioning of the system, namely on i) how the University strategy is articulated with the quality policy; ii) which are the competencies and relations between the governing bodies involved in the formulation, validation, implementation and improvement of normative guidelines and quality assurance processes and iii) processes, plans and reports for quality assurance in organizational practices.

The strategic coordination of the internal quality assurance system is ensured by the Administrator, in close liaison with the Directors of each Faculty, after consultation of the Pedagogical, Scientific and University Council where it is discussed and approved.

After formally approved, the documents that make up the IQAS are disclosed via e-mail by the internal stakeholders of the University, available on the internal work platforms (ex.intranet Sharepoint) and on the university's website.

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.

Transparency and availability of information to the ULHT community is a key element of the internal quality assurance system. In this sense, the Institution provides the support from informatics resources in terms of both data availability to the different stakeholders, which intends to be as "friendly" as possible in order to allow efficient management of their time and ensure data reliability, not only regarding the availability and ease of access to reports and other relevant outputs for quality assessment as well as analysis in its various aspects.

Since the evaluation of teaching and learning is the most complex aspect of the Internal Quality Assurance System, the system provides the maximum informatic support for the registration and collection of information regarding the following data and indicators:

- A) Organization and planning of each Curricular Unit (CU), as well as the results achieved on them
- B) Formative efficiency
- C) Internationalization
- D) Human Resources
- E) The attractiveness of study cycles
- F) Student profile
- G) Employability
- H) School success
- I) Other indicators specific to each area

As described in the Quality Manual, the results operation evaluation are widely disseminated within the academic community, both for its pedagogical effect and facilitator of a sustained process of improvement and to stimulate a greater commitment and participation of all elements in the pursuit of the objectives outlined.

European standards and guidelines for quality assurance in higher education place a strong emphasis on regular, up-to-date, unbiased and objective information, both quantitatively and qualitatively, about the programs and degrees offered. In accordance with these guidelines, ULHT maintains on its website updated information covering, in particular, the following items:

- A) The training offered;
- B) The learning objectives, qualifications conferred and perspectives of employability in relation to each course;
- C) The policies of access and students orientation;
- D) Courses planning;
- E) The methodologies of teaching, learning and students evaluation;
- F) Mobility opportunities;
- G) Mechanisms to deal with suggestions and complaints;
- H) The qualification of the teaching staff;
- I) Access to material resources and education support services;
- J) The results of education, in terms of academic results, Insertion in the labor market and degree of internal and external practitioners;
- K) Internal quality assurance policies.

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

Not applicable

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 purpose of the IQAS is to address the various dimensions of the institutional mission, systematically covering all activities undertaken by the university.

In its double dimension of support for strategic planning and continuous promotion of quality and information and accountability to the community, its purpose is to promote the definition and documentation of structuring elements for the implementation of quality policy, namely:

- A) Institutional strategy and standards for quality;
- B) The responsibilities of different bodies and levels of management in quality assurance processes;
- C) The processes of monitoring, control, reflection, and subsequent intervention, with a view to continuous improvement;
- D) The forms of student's participation, teaching staff, researchers and external partners;
- E) The organization and continuous improvement of the system and the way of monitoring and reviewing the quality policy.

As already mentioned, the IQAS is based on the recommendations of A3ES, takes into account the European Standards and Guidelines for Quality Assurance as well as the principles and standards expressed in ISO 9001, and integrates the values and culture of quality developed throughout the history of the ULHT. The IQAS also considers the requirements of the various professional associations related to the courses taught at ULHT and comprises the intervention of multiple actors at various organizational levels and with different degrees of responsibility.

To ensure quality assurance, the complexity of the interactions between all actors, and the various levels, must be properly regulated and strategically oriented and monitored. The achievement of quality in each of these areas is based on the individual and collective action of students, teachers, researchers and employees.

At the level of structures and intermediate management quality assurance requires a consistent and permanent intervention of the Organic Units - Faculties / Schools; Departments and Units / Research Centers and Courses.

The articulation at the strategic level materializes through the action of the governing bodies of the University that work in close articulation with the central coordination organs of scientific and pedagogical activities: Scientific Council and Pedagogical Council.

The University Council and the Student Ombudsman play a key role in supporting and improving the system within their competencies.

Administrative services, support services and offices are a fundamental basis of the system for the implementation and enforcement of procedures and monitoring of teaching, research, internationalization, community service and system activities as a whole.

External entities contribute directly to the system, in particular regarding knowledge transfer objectives, lifelong learning, social and cultural development.

The strategic coordination of the internal quality assurance system is ensured by the Administrator, in close liaison with the scientific leaders of each organizational unit, from the consultation of the organs, namely the Pedagogical, Scientific and University Council.

Functional coordination is ensured by the Quality Management Service, which is responsible for:

- Ensuring technical and administrative support for the functioning of IQM bodies;
- Managing the process of achieving quality assurance and self-assessment;
- Managing the collection, systematization and analysis of quality information;
- Managing the articulation of the IQAS with the services, units and structures of the ULHT;
- Managing IQAS articulation with the external entities related to the management and quality assurance;
- Supporting the organizational units in carrying out the self-assessment;
- Preparing the institutional self-assessment report;
- Ensuring constant updating of the indicators and information on the IQAS;
- Proposing revisions to the Quality Manual.

Monitoring, Evaluation and Continuous Development of the Internal System of Quality Assurance

The Administrator, through the Quality Management Service, and in cooperation with each of the University's governing bodies and administrative and support services, promotes the continuous monitoring of the Internal Quality Assurance System, namely regarding the:

- Degree of execution of the different procedures of the system in each organic unit and in ULHT as a whole;
- Collection of indicators and surveys application;
- Effectiveness of the information system;

- Deadline accomplishments;
- Degree of depth and comprehensiveness of the carried out analysis;
- Relevance and applicability of plans of action for improvement and their evaluation.

The Quality Management Service produces an annual report about the functioning of the Internal Quality Assurance System, identifying the difficulties encountered and the strengths and weaknesses of the system, and proposing the necessary adaptations.

The Administrator reviews and approves this report and makes recommendations for improving the system. The Rector and the Administrator, after consulting the Scientific, Pedagogical and University Council, decide on the actions to be taken in response to the recommendations issued.

Also, ULHT promotes, periodically, an external institutional evaluation, with a particular focus on the IQAS. The periodicity and form of the external evaluation are defined according to the national framework adopted by the Agency for Evaluation and Accreditation of Higher Education (A3Es).

11.2. Comments

In Portugal the A3ES has the responsibility for procedures relating to quality assurance in higher education, including those of evaluation and accreditation. All veterinary courses of all the universities in the country went through a process of accreditation by A3ES on 2015. In the case of FMV-ULHT, we were accredited for 6 years without conditioning .

The objective of the IQAS is to consolidate a quality assurance system being able to respond not only to the external evaluation and accreditation processes of study cycles, but also to promote a global and integrated quality culture and create mechanisms to improve working conditions and overall performance.

Our Quality Manual defines the organization and functioning of the internal quality assurance system, particularly in relation to the university's articulation with the quality policy, the competencies of the internal organs involved in the enunciation, validation, implementation and improvement of normative guidelines and means of ensuring quality, defining the processes, plans and reports necessary for the process of quality assurance in organizational practices.

Considering the amendments to the Standards and Guidelines for Quality Assurance in the European Higher Education Area approved at the Yerevan ministerial meeting in May 2015 (ESG2015) and the updates to Standard NP EN ISO 9001: 2008 (December 2015), only at the end of 2016 did the final guiding document for Portuguese higher education institutions receive approval; The Lusófona University is currently in the process of revising the Quality Manual.

The revision proposal will be evaluated, as foreseen in the Statutes of the ULHT, in formal meetings of the administration bodies (Pedagogical, Scientific and University) which will be held on January 18th.

11.3. Suggestions for improvement

The system is being submitted to refinement in several aspects, namely with respect to a greater formalization of some procedures, dematerialization of others, simplification of some support documents, more effective scheduling of evaluation routines processes, results divulgation policy, participation of students and teachers in the evaluation process and also the articulation between the various actors.

Despite the necessary improvements identified, the IQAS that has been developed at Universidade Lusófona is effective in guaranteeing quality standards, capable of promoting a culture of quality, and the corresponding dissemination of good practices by the academic community and effective to ensure a continuous improvement process.

LIST OF ESEVT INDICATORS



ESEVT Indicators

Name of the Establishment:		Faculty of Veterinary Medicine - Univ Lusófona Humanidades Tecnologias			
Name & mail of the Head:		Laurentina Pedroso lrpedroso@ulusofona.pt			
Date of the form filling:		16/01/2017			
Raw data from the last 3 full academic years		Year -1	Year -2	Year -3	Mean
1	n° of FTE academic staff involved in veterinary training	65,45	63,15	63,65	64,08
2	n° of undergraduate students	466	430	483	459,67
3	n° of FTE veterinarians involved in veterinary training	50	44,3	46,4	46,90
4	n° of students graduating annually	68	42	24	44,67
5	n° of FTE support staff involved in veterinary training	36	33	33	34
6	n° of hours of practical (non-clinical) training	1853	1853	1853	1853
7	n° of hours of clinical training	1244	1244	1244	1244
8	n° of hours of FSQ & VPH training	472,5	472,5	472,5	472,5
9	n° of hours of extra-mural practical training in FSQ & VPH	126	142	110	126
10	n° of companion animal patients seen intra-murally	2417	2624	2521	2520,67
11	n° of ruminant and pig patients seen intra-murally	1229	1373	770	1124
12	n° of equine patients seen intra-murally	179	123	73	125
13	n° of rabbit, rodent, bird and exotic patients seen intra-murally	44	95	58	65,7
14	n° of companion animal patients seen extra-murally	0	0	0	0,0
15	n° of individual ruminants and pig patients seen extra-murally	1789	3272	488	1849,7
16	n° of equine patients seen extra-murally	64	72	70	68,7
17	n° of visits to ruminant and pig herds	72	63	26	53,7
18	n° of visits of poultry and farmed rabbit units	4	2	2	2,7
19	n° of companion animal necropsies	63	77	80	73,3
20	n° of ruminant and pig necropsies	50	54	0	34,7
21	n° of equine necropsies	4	3	3	3,3
22	n° of rabbit, rodent, bird and exotic pet necropsies	147	175	101	141,0
23	n° of FTE specialised veterinarians involved in veterinary training	24	24,5	24,7	24,4
24	n° of PhD graduating annually	0	0	0	0,0

The boxes within the red frames must be filled in by the Establishment (the other values will be automatically)



ESEVT Indicators

Name of the Establishment:		Faculty of Veterinary Medicine - Univ Lusófona Humanidades Tecnologias			
Date of the form filling:		16/01/2017			
Calculated Indicators from raw data		Establishment values	Median values¹	Minimal values²	Balance³
11	n° of FTE academic staff involved in veterinary training / n° of undergraduate students	0,139	0,16	0,13	0,013
12	n° of FTE veterinarians involved in veterinary training / n° of students graduating annually	1,050	0,87	0,59	0,460
13	n° of FTE support staff involved in veterinary training / n° of students graduating annually	0,761	0,34	0,57	0,195
14	n° of hours of practical (non-clinical) training	1853,000	305,67	595,00	1258,00
15	n° of hours of clinical training	1244,000	332,32	670,00	574,00
16	n° of hours of FSQ & VPH training	472,500	287,00	174,40	298,100
17	n° of hours of extra-mural practical training in FSQ & VPH	126,000	68,00	28,80	97,200
18	n° of companion animal patients seen intra-murally / n° of students graduating annually	56,433	70,48	42,01	14,424
19	n° of ruminant and pig patients seen intra-murally / n° of students graduating annually	25,164	2,63	0,46	24,701
110	n° of equine patients seen intra-murally / n° of students graduating annually	2,739	5,05	1,30	1,501
111	n° of rabbit, rodent, bird and exotic seen intra-murally / n° of students graduating annually	1,470	3,35	1,55	-0,075
112	n° of companion animal patients seen extra-murally / n° of students graduating annually	0,000	6,80	0,22	-0,223
113	n° of individual ruminants and pig patients seen extra-murally / n° of students graduating annually	41,410	15,35	6,23	35,116
114	n° of equine patients seen extra-murally / n° of students graduating annually	1,537	2,11	0,60	0,342
115	n° of visits to ruminant and pig herds / n° of students graduating annually	1,201	1,33	0,55	0,654
116	n° of visits of poultry and farmed rabbit units / n° of students graduating annually	0,060	0,12	0,04	0,015
117	n° of companion animal necropsies / n° of students graduating annually	1,642	2,07	1,40	0,242
118	n° of ruminant and pig necropsies / n° of students graduating annually	0,776	2,32	0,37	-0,134
119	n° of equine necropsies / n° of students graduating annually	0,075	0,30	0,03	-0,018
120	n° of rabbit, rodent, bird and exotic pet necropsies / n° of students graduating annually	3,157	2,05	0,63	2,464
121*	n° of FTE specialised veterinarians involved in veterinary training / n° of students graduating annually	0,546	0,20	0,06	0,483
122*	n° of PhD graduating annually / n° of students graduating annually	0,000	0,15	0,03	-0,088
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				

APPENDICES

Appendix Chapter 3

Table 3.1. Curricular Structure of the IMVM of FMV-ULHT

Year	Semester	Curricular Units	TOTAL HOURS CONTACT	STUDENT WORKING HOURS	TOTAL HOURS	ECTS 1ECTS=28h	Observation
1st Year	1st Semester	Anatomy I	90	78	168	6	Compulsory
		Citology and Histology I	60	52	112	4	Compulsory
		Biochemistry I	45	39	84	3	Compulsory
		Cell Biology	60	40	100	4	Compulsory
		Biophysics	60	40	100	4	Compulsory
		Biomatemathics	60	40	100	4	Compulsory
		Option I			140	5	Optional
	2nd Semester	Anatomy II	90	78	168	6	Compulsory
		Citology and Histology II	60	80	140	5	Compulsory
		Biochemistry II	60	52	112	4	Compulsory
		Molecular Biology	45	45	90	3	Compulsory
		Exognosia and Animal Identification	60	40	100	4	Compulsory
		General Agriculture and Agrarian Economy	60	40	100	4	Compulsory
		Behaviour, Welfare and Animal Protection	60	40	100	4	Compulsory

Year	Semester	Curricular Units	TOTAL HOURS CONTACT	STUDENT WORKING HOURS	TOTAL HOURS	ECTS 1ECTS=28h	Observation
2nd Year	3rd Semester	Anatomy III	90	70	160	6	Compulsory
		Pathological Anatomy I	90	10	100	4	Compulsory
		Microbiology I	60	52	112	4	Compulsory
		Genetics and Improvement I	60	40	100	4	Compulsory
		Physiology I	60	52	112	4	Compulsory
		Nutrition and Animal Feed I	60	52	112	4	Compulsory
		Parasitology	60	52	112	4	Compulsory
	4th Semester	Anatomy IV	90	70	160	6	Compulsory
		Pathological Anatomy II	60	40	100	4	Compulsory
		Microbiology II	60	52	112	4	Compulsory
		Genetics and Improvement II	60	52	112	4	Compulsory
		Physiology II	60	52	112	4	Compulsory
		Nutrition and Animal Feed II	60	40	100	4	Compulsory
		Immunology	60	52	112	4	Compulsory

Year	Semester	Curricular Units	TOTAL HOURS CONTACT	STUDENT WORKING HOURS	TOTAL HOURS	ECTS 1ECTS=28h	Observation
3rd Year	5th Semester	Surgical Propedaeutics I	60	52	112	4	Compulsory
		Hospital and Field Activities I	30	26	56	2	Compulsory
		Medical Propedaeutics I	60	52	112	4	Compulsory
		Hospital and Field Activities II	30	26	56	2	Compulsory
		Pharmacology and Therapeutics I	75	65	140	5	Compulsory
		Food Tecnology I	60	66	126	4,5	Compulsory
		Food Hygiene and Safety I	60	66	126	4,5	Compulsory
		Pathological Anatomy III	60	40	100	4	Compulsory
	6th Semester	Surgical Propedaeutics II	60	52	112	4	Compulsory
		Hospital and Field Activities III	30	26	56	2	Compulsory
		Medical Propedaeutics II	60	52	112	4	Compulsory
		Hospital and Field Activities IV	30	26	56	2	Compulsory
		Pharmacology and Therapeutics II	75	65	140	5	Compulsory
		Food Tecnology II	60	66	126	4,5	Compulsory
		Food Hygiene and Safety II	60	66	126	4,5	Compulsory
		Toxicology	60	52	112	4	Compulsory

Year	Semester	Curricular Units	TOTAL HOURS CONTACT	STUDENT WORKING HOURS	TOTAL HOURS	ECTS 1ECTS=28h	Observation
4th Year	7th Semester	Infectious Diseases Pathology and Clinics I	60	52	112	4	Compulsory
		Parasitic Diseases Pathology and Clinics I	60	52	112	4	Compulsory
		Medical Pathology and Clinics I	60	52	112	4	Compulsory
		Hospital and Field Activities V	15	13	28	1	Compulsory
		Surgical Pathology and Clinics I	60	80	140	5	Compulsory
		Hospital and Field Activities VI	30	20	50	2	Compulsory
		Reproduction, Gynecology and Obstetrics I	105	21	126	4,5	Compulsory
		Diagnostic Imaging I	45	39	84	3	Compulsory
		Epidemiology and Preventive Veterinary Medicine	45	39	84	3	Compulsory

Year	Semester	Curricular Units	TOTAL HOURS CONTACT	STUDENT WORKING HOURS	TOTAL HOURS	ECTS 1ECTS=28h	Observation
4th Year	8th Semester	Infectious Diseases Pathology and Clinics II	60	52	112	4	Compulsory
		Parasitic Diseases Pathology and Clinics II	60	52	112	4	Compulsory
		Medical Pathology and Clinics II	60	52	112	4	Compulsory
		Hospital and Field Activities VII	15	13	28	1	Compulsory
		Surgical Pathology and Clinics II	60	80	140	5	Compulsory
		Hospital and Field Activities VIII	30	20	50	2	Compulsory
		Reproduction, Gynecology and Obstetrics II	105	21	126	4,5	Compulsory
		Diagnostic Imaging II	45	39	84	3	Compulsory
		Option II			56	2	Optional

Year	Semester	Curricular Units	TOTAL HOURS CONTACT	STUDENT WORKING HOURS	TOTAL HOURS	ECTS 1ECTS=28h	Observation
5th Year	9th Semester	Farm Animal Clinics I	45	39	84	3	Compulsory
		Hospital and Field Activities IX	60	24	84	3	Compulsory
		Equine and Small Animal Clinics I	60	52	112	4	Compulsory
		Hospital and Field Activities X	60	24	84	3	Compulsory
		Sanitary Inspection I	75	65	140	5	Compulsory
		Zootecnics and Animal Improvement I	75	65	140	5	Compulsory
		Option III			196	7	Optional
	10th Semester	Farm Animal Clinics II	45	39	84	3	Compulsory
		Hospital and Field Activities XI	60	15	75	3	Compulsory
		Equine and Small Animal Clinics II	60	24	84	3	Compulsory
		Hospital and Field Activities XII	60	24	84	3	Compulsory
		Sanitary Inspection II	75	51	126	4,5	Compulsory
		Zootecnics and Animal Improvement II	75	25	100	4	Compulsory
		Veterinary Public Health	45	81	126	4,5	Compulsory
		Deontology, Legal Medicine and Veterinary Legislation	15	13	28	1	Compulsory
		Option IV			112	4	Optional

Year	Semester	Curricular Units	TOTAL HOURS CONTACT	STUDENT WORKING HOURS	TOTAL HOURS	ECTS 1ECTS=28h	Observation
6th Year	11th Semester	Master Thesis	660	180	840	30	Compulsory

Table 3.2. - Optional / Elective Subjects taken by the students between 2013/2014 and 2015/2016

		Elective Subjects	ECTS	2013/2014	2014/2015	2015/2016
Option I/Electives I*	1st Year / 1st Semester	Introduction to Conservative Medicine	2	√	√	√
		Education and Training of Companion Animals	1	√	√	√
		Basic Practices in Veterinary Medicine	2	√	√	√
		Equine Podiatry and Farriery	1	√		√
		Natural and Veterinary Medicine History	2		√	√
		Food Chemistry	3			

*Students must choose 5 ECTS

		Elective Subjects	ECTS	2013/2014	2014/2015	2015/2016
Option II/Electives II**	4th Year / 8th Semester	Clinical Pathology	1	√	√	√
		Physiotherapy and Rehabilitation in Veterinary Medicine	1	√		√
		Clinical Dermahistopathology	1	√	√	√
		Equine Neonatology	1	√	√	√
		Behavior Studies, Animal Welfare and Ethics	1			
		Bovine Health	1	√	√	√
		Management, Communication and Marketing in Veterinary Medicine	1	√		√
		Animal Behaviour Medicine	1	√		
		Laboratory Animal Medicine	1			
		Applied Epidemiology	2			
		Introduction to Statistical Models in Health	2			
		Applied Clinical Antibiotherapy	1			

**Students must choose 2 ECTS

		Elective Subjects	ECTS	2013/2014	2014/2015	2015/2016
Option III/Electives III***	5st year / 9th semester	Conservation Medicine	2	√	√	√
		Introduction to Acupuncture, Homeopathy and Phytotherapy in Veterinary Medicine	3	√	√	√
		Equine Emergencies and Intensive Care	2	√	√	√
		Introduction to Clinical Oncology	2	√	√	
		Food Industry Audits	2	√	√	
		Hoof Pathology	2			
		Aquaculture	3	√	√	√
		Measurement Techniques in Veterinary Epidemiology and Preventive Medicine	2			
		Surgical Clinics I	2	√	√	√

***Students must choose 7 ECTS

		Elective Subjects	ECTS	2013/2014	2014/2015	2015/2016
Option IV/Electives IV****	5th Year / 10th Semester	Pathology and Clinics of Exotic, Wild and Zoo Animals	2	√	√	√
		Equine Sports Medicine	2	√	√	√
		Farm Management Challenges	2	√	√	√
		Clinical Ophthalmology	2	√	√	
		Applied Clinical Neurology	2	√	√	√
		Clinical Cytological Diagnosis	2			
		Veterinary Dentistry	2		√	√
		Veterinary Cardiology	2	√	√	√
		Surgical Clinics II	2	√	√	√
		Endoscopy and Endosurgery	2		√	√
		Experimental Design: How do I plan my dissertation?	2	√	√	
		Equine Biomechanics	2			

****Students must choose 4 ECTS

Appendix Chapter 4

Lists of main equipment's used for the IMVM

List of equipment existent at the technological offices of meat and meat products and milk products.

Equipment	Quantity
Technological office of meat and meat products	
Controlled environment chamber	1
Cooling chamber	1
Cooling chamber at 0-2°C	1
Forced ventilation freezer	1
Cutter	1
Cutter 50 liter	1
Vacuum packing machine	1
Modified atmosphere and vacuum packaging machine	1
Piston filling	1
Injector	1
Vacuum massager	1
Electric cook tank	1
Mixer with vacuum system	1
Colloidal mill	1
Meat mincer machine	1
Manual sausage	1
Sausage clipper machine	1
Sausage clipper machine	1
Vertical autoclave 50 liters	1
Vertical metal cans sealing machine	1
Technological office of milk products	
Plate pasteuriser	1
Batch pasteuriser	1
Tank for cheese production (80 liters)	1
Table for drainage during cheese production	1
Trays for serum drainage	
Cheese press	1
Chamber for cheese maturation	1
Chambers for cheese conservation	4
Metal and plastic forms for the manufacture of cheeses	several
Equipment for the yogurt production.	1

List of the main equipment available at the Campus Laboratories

Equipment	Quantity
Atomic absorption spectrometer	1
Orbital shaker	10
HPLC Chromatography apparatus	1
Freezer -80 ° C	1
Freezer	3
Cabinet thermoregulatory	1
Autoclave	4
Balance	35
Water bath	25
Vacuum pump	14
Laminar flow chamber	5
Photo camera	1
Microscope camera	1
Centrifuge	14
Refrigerated Centrifuge	8
Centrifuge Haematocrit 24	1
HPLC Column H x 737801	1
Conductivimeter	8
Colony counter	1
Distiller Kjeldahl semi-automated	1
Multi-channel dispenser	1
O ₂ Oxygen electrode	1
Ph Electrode Ag/Ag Cl	13
Fluoride Ion Selective Electrode	7
Spectrophotometer	12
Spectrophotometer NanoDrop	1
Oven	18
CO ₂ Oven	1
Electrophoresis source	6
Refrigerator	12
Combined Refrigerator-Freezer	9
UV Lamp	4
Plate washer	1
Plate reader	1
Magnifying Glass	28
Ice Machine	3
Washing machine	2

Ocular micrometer	5
Platinum micrometer	4
Microwave	5
Micropipettes Gilson P100	6
Micropipettes Gilson P10	12
Micropipettes Gilson P1000	31
Micropipettes Gilson P2	5
Micropipettes Gilson P20	21
Micropipettes Gilson P200	24
Micropipettes Gilson P5000	2
Micropipettes 18 x 20	2
Microscope	79
Reverse Phase Fluorescent Microscope	1
Inverted Microscope	1
Mufle furnace	1
Ocular indicator	2
Thermocycler	4
Shaker heating plate	54
Digester plate	1
Potentiometer	28
Ramp filter	2
Refractometer	5
Rotavapor	3
Hairdryer	3
Sealer	1
Chromatography Syringe 10µl	2
Stomaker	1
Electrophoresis tank	8
Transilluminator	2
Ultrasound bath	7
Vortex	24

List of the equipment available for the theoretical classes (lecturing)

Equipment	Quantity
Fixed Video projector	All classes where lectures are taught have one
Portable Video projector (by request)	18
Portable PC/Netbook (by request)	20
Freezer -80 ° C	1

List of equipment existent at the Veterinary Teaching Hospital of Companion Animals.

Equipment	Quantity
Ultrasound	1
Portable Ultrasound	4
X-ray with computerized digital radiography system	1
Dental x ray and intra-oral sensor	1
Tono pen Vet	1
Slit Lamp	1
Portable otoscope	1
Wall otoscope and oftalmoscope	1
Blood pressure mesure device	1
Blood pressure mesure device	1
Infusion pump infusomat	5
Infusion pump	8
Syringe drivers	2
Fluid warmers	3
Laser therapy equipment	1
Electronic Acupuncture Treatment Instrument	1
X ray equipment	1
Dental x-ray	1
Surgical video system HD	1
HD monitors	2
Portable oxygen concentrator system	1
Multiparametric anesthesia monitor	1
Multiparametric anesthesia monitor	1
Multiparametric anesthesia monitor	1
Multiparametric anesthesia monitor	2
CO2 surgical LASER	1
Endoscope tower	1
Hematology analyzer	1
Hematology analyzer	1
Chemistry analyzer	1
Chemistry analyzer	1
Electrolyte and blood gas analyzer	1
Lactate	1
Coagulometer	1
Glucometer	1
Glucometer	1
Sevoflurane anesthetic tower	1
Isoflurane anesthetic tower	6
Isoflurane anesthetic tower with ventilation	1

Refrigerated centrifuge	1
Optical microscope	2
Electrocardiograph	1
Electrocardiograph	1
Ultrasound scaler	1
Ultrasound scaler	1
Ultrasound scaler	1
Autoclave	1
Cages	several

List of equipment existent at the Clinical Analysis and Histopathology Laboratory (LACH).

Equipment	Quantity
Tissue embedding center	1
Tissue processor	1
Tissue float bath	1
Rotary microtome	1
Fluorescence microscope	1
Olympus high pressure mercury burner	1
Shaking & boiling bath	1
Photographic camera	1
Universal tabletop refrigerated centrifuge	1
Real-time PCR cyclor	1
Chemistry analyzer	1
Auto hematology analyzer	1
Dry chemistry analyzer	1
Electrophoresis system	1
Scan semi-automated agarose gel electrophoresis system	2
Incubator	1
Minicentrifuge	1
Nanodrop 2000 UV-Vis spectrophotometer	1
Centrifuge	1
Power supply	1
Safety Cabinet	1
Scientific single UV bulb PCR workstation	1
-85°C Deep freezer	1
Optic microscopes	20

List of the main equipment used in the Veterinary Hospital and Rehabilitation center VetArrabida

Equipment	Quantity
Ultrasound	1
x-rax	2
Device for analyzes biochemistry	1
Device for blood count	1
Device for T4, bile acid, and adrenal tests	1
Lactate analyses	1
Coagulation tests	1
Multiparemeter monitor	2
Anesthetic device	2
Electrocardiogram ambulatory device	1
Blood pressure counter ambulatory device	1
Terrestrial treadmill	1
Underwater treadmill	2
Eletromyostimulation device	4
Ultrasound device	1
LASER classe IV device	1
LASER 3b	1
Cryotherapy device	1
Shock wave device	1
Stance analyzer	1
Magnetoherapy device	1
Diathermy device	1

List of the main equipment existent at Referencia Veterinária

Equipment	Quantity
Ecography/acocardiography	1
Magentic Ressonance	1
Anesthesiology equipment	1
X-Ray	1
Biochemistry analyser	1
Haematology analyser	1
Electrophysiology equipment	1

List of equipment existent at the Equine Veterinary Teaching Hospital.

Equipment	Quantity
Videoendoscope (330 cm)	1
Videoendoscope (160 cm)	1
Gastropack	1
Aida system	1
Ultrasound	1
Ultrasound linear probe	1
Ultrasound convex probe	1
Ultrasound phased array probe	1
X-ray generator	1
X-ray digital digitalization system	1
Phosphorous screen x-ray cassettes	4
Contention stock	1
Centrifugator	1
Centrifugator	1
Microscope	1
Biochemistry	1
Hematlogy	1
Stove	1
Autoclave	1
Surgical table	1
Anesthesia circuit	1
Isoflurane vaporisor	1
Arthroscopy kit	1
Liquid nitrogen container	1

List of equipment existent at the dairy cattle facilities Agro-Pecuária Paisana.

Name	Quantity
Hoof trimming chute	1
Head gate	1
Ultrasound	1
Refractometer	1
Centrifuge	1

List of equipment existent at Hidrovet.

Equipment	Quantity
Solarium with infrared and ultraviolet lights	1
Cold and hot water shower, over a slip-resistant ground	1
Cryotherapy SPA system for horses	1
Under water treadmill	1
Vibrating plate	1
Rriding arena	1
Walker for 6 horses	1
Proprioception track (20 m)	1
Paddocks	6
X-ray digital digitalization system	1
Phosphorous screen x-ray cassettes	1
Contention stock	1

List of equipment existent at Embriovet

Equipment	Quantity
Refrigerated showcase	1
Centrifugator	1
Filling and sealing of semen straws	1
Refrigerator and freezer	1
Computerized system for semen analysis	1
Straw printing machine	1
Microscopes	1
Heated platens and hoven for bacteriological cultures	1
Laminar flux camera	1
Magnifying glass	1
Hoven	1
Mare boxes	4
Stallion boxes	2
Semen collecting mannequin	1
Artificial vaginas	1
Hoven	1

List of equipment existent at the beef cattle, small ruminants and swine research center (CEBA) used for semen collection and evaluation.

Equipment	Quantity
Semen collection	
Bovine electrojav IV	1
Rams and bucks electroejaculator	1
Artificial vaginas	1
Memmert Stoves	1
Water bath 14 and 30 liters	
Semen evaluation	1
Microscopes	1
Olympus CX41	1
Olympus CH30	1
Binocular microscope	1
Binocular zoom microscope	1
Sperm cell density meter photometer	1
Laparoscopy lighting device 150 W	1
Ultrasound device for pregnancy diagnosis	1
Nitrogen containers	1

Appendix Chapter 9

List of current academic staff, qualifications, FTE, teaching responsibilities and departmental affiliations

Name	Qualifications	FTE	Teaching responsibilities	Divisions
Álvaro Augusto Teixeira Lopes	Pharmaceutical, PhD	0,3	Pharmacology and Therapeutics, Toxicology	Basic Sciences
Amílcar Elizeu Rato Roberto	Pharmaceutical, PhD	1	Pharmacology and Therapeutics, Toxicology	Basic Sciences
Ana Alexandra Veríssimo Varandas	Biologist, PhD	1	Microbiology	Basic Sciences
Ana Elisabete Godinho Pires	Biologist, PhD	0,2	Biochemistry, Immunology, Genetics and Improvement	Basic Sciences
Ana Lúcia Filipe Rodrigues	Biochemistry	1	Biochemistry, Hospital and Field Activities IV, Medical Propaedeutics II, Toxicology	Basic Sciences
Ana Margarida Pedroso de Oliveira	DVM, MSc, Dipl. ECVD	1	Equine and Small Animal Clinics, Hospital and Field Activities X, Hospital and Field Activities XII	Animal Health (Companion Animals and Exotics)
Ana Maria Duque de Araújo Munhoz	DVM, PhD	1	Farm Animal Clinics, Parasitic Diseases Pathology and Clinics, Parasitology, Sanitary Inspection	Basic Sciences Animal Health (Companion Animals and Exotics, Equine and Farm)
Ana Paula Álvaro Santana	DVM, MSc, National Specialist	1	Hospital and Field Activities V, Imaging, Pharmacology and Therapeutics	Animal Health (Companion Animals and Exotics)
Ana Rita Santos Serras	DVM, Dipl. ECVIM-ca (oncology) residency trained	1	Equine and Small Animal Clinics, Hospital and Field Activities V, Hospital and Field Activities X, Introduction to Clinical Oncology, Medical Pathology and Clinics, Small Animal Emergencies and Intensive Care	Animal Health (Companion Animals and Exotics)
Ana Sofia de Sousa Lopes	DVM, PhD	1	Cell Biology, Physiology, Reproduction, Gynaecology and Obstetrics	Basic Sciences
Andreia Alexandra Ferreira dos Santos	DVM, PhD	1	Equine and Small Animal Clinics, Hospital and Field Activities II, Hospital and Field Activities V, Hospital and Field Activities XII, Medical Propaedeutics	Animal Health (Companion Animals and Exotics)
Andreia da Silva Nunes	DVM, MSc	1	Biophysics, Basic Practices in Veterinary Medicine	Animal Health (Companion Animals and Exotics)
Andreia Lara Conde Alves	DVM, MSc, National Specialist	1	Anatomy, Deontology, Legal Medicine and Veterinary Legislation, Exognosis and Animal Identification, Pharmacology and Therapeutics, Toxicology	Basic Sciences
Ângela Filipa Bártoło Dâmaso	DVM, PhD	0,2	Farm Animal Clinics, Imaging, Infectious Diseases Pathology and Clinics, Medical Pathology and Clinics, Surgical Pathology and Clinics	Animal Health (Farm Animals)
Ângela Paula Neves Rocha Martins	DVM, MSc, National Specialist	1	Basic Practices in Veterinary Medicine, Equine and Small Animal Clinics, Hospital and Field Activities X, Hospital and Field Activities XII, Medical Pathology and	Animal Health (Companion Animals and Exotics)

			Clinics, Physiotherapy and Rehabilitation in Veterinary Medicine, Small Animal Emergencies and Intensive Care	
António Ricardo Frazoa Batista	DVM, National Specialist	0,3	Farm Animal Clinics, Hospital and Field Activities XI, Infectious Diseases Pathology and Clinics, Zootecnia and Animal Improvement	Animal Health (Farm Animals)
Armindo Carrasco Lourenço	DVM, National Specialist	0,2	Food Hygiene and Safety, Food Technology	Public Health
Carlos Alberto dos Santos	DVM, PhD	0,2	Food Technology	Public Health
Carlos Alexandre Pereira da Silva	DVM, National Specialist	1	Farm Animal Clinics I, Hospital and Field Activities VII, Hospital and Field Activities VIII , Hospital and Field Activities XI, Medical Pathology and Clinics Surgical Pathology and Clinics	Animal Health (Farm Animals)
Carlos Manuel Varela Bettencourt	DVM, PhD	0,3	Farm Animal Clinics, Infectious Diseases Pathology and Clinics, Physiology, Reproduction, Gynaecology and Obstetrics	Animal Health (Farm Animals) Basic Sciences
Carolina da Silva Nascimento	DVM, MSc	1	Equine and Small Animal Clinics, Hospital and Field Activities IV, Hospital and Field Activities IX, Hospital and Field Activities VII , Hospital and Field Activities VIII , Hospital and Field Activities XI, Medical Pathology and Clinics, Medical Propaedeutics, Pharmacology and Therapeutics, Physiotherapy and Rehabilitation in Veterinary Medicine, Surgical Pathology and Clinics	Animal Health (Equine)
Daiana Rodrigues Cardoso	DVM, MSc	1	Basic Practices in Veterinary Medicine, Endoscopy and Endosurgery, Medical Pathology and Clinics, Reproduction, Gynaecology and Obstetrics	Animal Health (Companion Animals and Exotics)
Daniel de Moura Murta	DVM, PhD	1	Cell Biology, Immunology, Physiology, Reproduction, Gynaecology and Obstetrics	Basic Sciences
David Orlando Alves Ferreira	DVM, PhD	0,3	Anatomy	Basic Sciences
Eduardo Miguel Baptista Ferreira Marcelino	DVM, PhD	1	Anatomy, Hospital and Field Activities IX, Surgical Clinics	Basic Sciences Animal Health (Companion Animals and Exotics)
Henrique Mário da Silva Armés	DVM, PhD	0,6	Hospital and Field Activities VI, Surgical Clinics, Surgical Pathology and Clinics, Surgical Propaedeutics	Animal Health (Companion Animals and Exotics)
Hugo Miguel Matos Pereira	DVM, National Specialist	1	Equine and Small Animal Clinics, Hospital and Field Activities I , Hospital and Field Activities III, Hospital and Field Activities VI, Hospital and Field Activities XII, Small Animal Emergencies and Intensive Care , Surgical Clinics, Surgical Pathology and Clinics, Surgical Propaedeutics	Animal Health (Companion Animals and Exotics)
Hugo Miguel Sampaíno de Oliveira	DVM	0,5	Reproduction, Gynaecology and Obstetrics	Animal Health (Companion Animals and Exotics)
Inês Ferreira Viegas	DVM, PhD	1	Biomathematics, General Agriculture and Agrarian Economy, Veterinary Public Health	Basic Sciences Production and Animal Welfare

				Public Health
Inês Freitas Lopes	DVM, MSc	1	Physiology	Animal Health (Companion Animals and Exotics)
Isabel Mousinho dos Santos	DVM	0,2	Sanitary Inspection	Public Health
Joana Cristina Tavares de Oliveira	DVM, PhD	1	Equine and Small Animal Clinics, Hospital and Field Activities X, Hospital and Field Activities XII, Introduction to Clinical Oncology , Medical Pathology and Clinics I	Animal Health (Companion Animals and Exotics)
Joana Margarida do Couto Fonseca	DVM, MSc	1	Clinical Pathology, Hospital and Field Activities IV, Medical Propaedeutics, Parasitic Diseases Pathology and Clinics	Animal Health (Companion Animals and Exotics)
Joana Maria Rodrigues Mendes Gomes	DVM, MSc	1	Surgical Clinics, Surgical Pathology and Clinics, Veterinary Dentistry	Animal Health (Companion Animals and Exotics)
João António Martins Cannas da Silva	DVM, PhD, Dipl. ECBHM	1	Bovine Sanity, Farm Animal Clinics, Hospital and Field Activities IX, Hospital and Field Activities XI, Infectious Diseases Pathology and Clinics, Medical Pathology and Clinics, Surgical Pathology and Clinics	Animal Health (Farm Animals)
João Carlos Gil da Silva Ribeiro	DVM, National Specialist	0,3	Applied Clinical Neurology, Equine and Small Animal Clinics, Hospital and Field Activities X, Hospital and Field Activities XII, Imaging	Animal Health (Companion Animals and Exotics)
João Filipe Martins Freire Requicha	DVM, MSc, PhD	1	Equine and Small Animal Clinics, Hospital and Field Activities X, Hospital and Field Activities XII, Imaging, Medical Pathology and Clinics, Surgical Pathology and Clinics, Veterinary Dentistry	Animal Health (Companion Animals and Exotics)
João Guilherme dos Santos Paisana	DVM, National Specialist	0,7	Farm Animal Clinics, Farm Management Challenges, Hospital and Field Activities IV, Hospital and Field Activities IX, Hospital and Field Activities VII , Hospital and Field Activities VIII , Medical Pathology and Clinics, Medical Propaedeutics, Pharmacology and Therapeutics, Surgical Pathology and Clinics, Zootecnicns and Animal Improvement	Animal Health (Farm Animals)
João Paulo Gonçalves Borges	DVM	0,5	Equine and Small Animal Clinics, Hospital and Field Activities IX, Hospital and Field Activities VII, Hospital and Field Activities VIII, Medical Pathology and Clinics, Surgical Pathology and Clinics, Equine Emergencies and Intensive Care	Animal Health (Equine)
João Ribeiro Lima	DVM, PhD	0,1	Epidemiology and Preventive Veterinary Medicine, Farm Animal Clinics	Basic Sciences, Animal Health (Farm Animals)
José Carlos Barrinha Pintado	DVM	0,3	Sanitary Inspection	Public Health
José Girão Correia Bastos	DVM, National Specialist	1	Parasitic Diseases Pathology and Clinics, Parasitology	Basic Sciences Animal Health (Companion Animals and Exotics, Equine and Farm)

José Manuel Cardoso de Sousa Prazeres	DVM, MSc, National Specialist	1	Equine and Small Animal Clinics, Equine Emergencies and Intensive Care, Hospital and Field Activities IX, Hospital and Field Activities VII , Hospital and Field Activities VIII, Hospital and Field Activities XI, Medical Pathology and Clinics, Surgical Pathology and Clinics	Animal Health (Equine)
Laurentina Maria Rilhas Pedroso	DVM, PhD	1	Food Hygiene and Safety, Veterinary Public Health	Public Health
Lénio Bruno Martins Ribeiro	DVM, PhD	0,6	Hospital and Field Activities I, Hospital and Field Activities III, Pharmacology and Therapeutics, Surgical Propaedeutics	Basic Sciences Animal Health (Companion Animals and Exotics)
Luís Filipe Loureiro	DVM, PhD	0,3	Veterinary Public Health	Public Health
Luís Miguel do Amaral Cruz	DVM, National Specialist	0,3	Endoscopy and Endosurgery, Equine and Small Animal Clinics, Hospital and Field Activities II, Hospital and Field Activities V, Hospital and Field Activities XII, Imaging	Animal Health (Companion Animals and Exotics)
Luís Pedro Rodrigues de Lima Lobo	DVM, PhD	0,6	Equine and Small Animal Clinics, Imaging, Medical Pathology and Clinics, Veterinary Cardiology	Animal Health (Companion Animals and Exotics)
Luísa Cristina Pereira Roseiro	DVM, PhD	0,35	Food Technology	Public Health
Manuel Mário de Araújo Pequeto	DVM, MSc, PhD	1	Equine and Small Animal Clinics, Equine Emergencies and Intensive Care, Equine Neonatology, Equine Sports Medicine, Hospital and Field Activities IV, Hospital and Field Activities IX, Hospital and Field Activities VII, Hospital and Field Activities VIII , Hospital and Field Activities XI, Imaging II, Infectious Diseases Pathology and Clinics, Medical Pathology and Clinics, Medical Propaedeutics, Pharmacology and Therapeutics, Surgical Pathology and Clinics, Surgical Propaedeutics, Zootecnics and Animal Improvement	Animal Health (Equine)
Margarida Pires Simões	DVM, PhD	1	Epidemiology and Preventive Veterinary Medicine, Immunology, Infectious Diseases Pathology and Clinics, Reproduction, Gynaecology and Obstetrics	Animal Health (Companion Animal and Exotics, Farm Animals)
Maria Alexandra D'Abreu Pinto Sanfins	Zootecnic Engineer, MSc, PhD	1	Cell Biology, Genetics and Improvement	Basic Sciences
Maria de Magalhães Gaivão Sepúlveda	DVM, MSc, National Specialist	1	Hospital and Field Activities IV, Medical Propaedeutics, Pharmacology and Therapeutics, Reproduction, Gynaecology and Obstetrics	Animal Health (Equine and Farm Animals)
Maria do Carmo Mateus Feliciano	DVM, MSc, National Specialist	1	Exognosis and Animal Identification, Hospital and Field Activities IV, Hospital and Field Activities VII, Hospital and Field Activities VIII , Medical Pathology and Clinics, Medical Propaedeutics, Pharmacology and Therapeutics, Reproduction, Gynaecology and Obstetrics, Surgical Pathology and Clinics	Animal Health (Farm Animals)

Maria Isabel da Silva Santos	Pharmaceutical, PhD	1	Food Hygiene and Safety, Microbiology, Veterinary Public Health	Public Health
Maria João da Costa Soares da Silva	DVM, PhD	1	Anatomy, Clinical Dermahistopathology, Cytology and Histology, Cytology and Histology	Basic Sciences
Maria Margarida Ferreira Alves	Biologist, MSc, PhD	1	Biochemistry, Genetics and Improvement, Infectious Diseases Pathology and Clinics, Molecular Biology, Toxicology	Basic Sciences
Maria Margarida Fragoso Costa	DVM, MSc, National Specialist	1	Equine and Small Animal Clinics, Hospital and Field Activities I, Hospital and Field Activities III, Hospital and Field Activities VI, Hospital and Field Activities XII, Surgical Clinics, Surgical Pathology and Clinics, Surgical Propaedeutics	Animal Health (Companion Animals and Exotics)
Maria Nazaré Pinto da Cunha	DVM, PhD, Dipl. ECVCP	0,6	Clinical Pathology, Equine and Small Animal Clinics, Equine and Small Animal Clinics, Hospital and Field Activities X, Hospital and Field Activities XII, Medical Pathology and Clinics	Animal Health (Companion Animals and Exotics)
Mário António Pestana Cruz	Biologist, PhD	100	Biochemistry	Basic Sciences
Marisa Helena Nicolai	Pharmaceutical, PhD	100	Nutrition and Animal Feed	Basic Sciences
Michelle Karen Brasil Serafim	DVM, PhD	1	Cell Biology, Exognosis and Animal Identification, Molecular Biology	Basic Sciences
Miguel Louro Bliebernicht	DVM	0,3	Reproduction, Gynaecology and Obstetrics	Animal Health (Equine)
Mónica Roriz	DVM, PhD	0,3	Equine and Small Animal Clinics, Hospital and Field Activities X, Hospital and Field Activities XII	Animal Health (Companion Animals and Exotics)
Nuno Alberto Palma Pinheiro da Silva	DVM, National Specialist	1	Nutrition and Animal Feed	Basic Sciences Production and Animal Welfare
Nuno Gonçalo de Sá Guerra Marques Pereira	DVM, National Specialist	0,2	Anatomy, Aquaculture, Immunology, Infectious Diseases Pathology and Clinics, Physiology, Sanitary Inspection	Basic Sciences Production and Animal Welfare Animal Health
Odete Catapirra de Almeida	DVM, MSc, National Specialist	1	Equine and Small Animal Clinics, Hospital and Field Activities II, Hospital and Field Activities V, Hospital and Field Activities X, Hospital and Field Activities XII, Infectious Diseases Pathology and Clinics, Medical Propaedeutics, Surgical Pathology and Clinics	Animal Health (Companion Animals and Exotics)
Pedro Alexandre Morais de Almeida	DVM, MSc, National Specialist	1	Equine and Small Animal Clinics, Hospital and Field Activities X, Hospital and Field Activities XII, Imaging, Infectious Diseases Pathology and Clinics, Small Animal Emergencies and Intensive Care	Animal Health (Companion Animals and Exotics)
Pedro Manuel de Pina Bragança Parreira	DVM, National Specialist	0,3	Imaging, Veterinary Cardiology	Animal Health (Companion Animals and Exotics)
Pedro Miguel Silvério Lopes	DVM, MSc, National Specialist	0,3	Farm Animal Clinics, Hospital and Field Activities XI, Infectious Diseases Pathology and Clinics, Zootecnics and Animal Improvement	Production and Animal Welfare Animal Health (Farm Animals)

Raquel Estevão de Matos	DVM, PhD	1	Behaviour, Welfare and Animal Protection, Biomathematics, Deontology, Legal Medicine and Veterinary Legislation, Farm Animal Clinics, Hospital and Field Activities XI, Sanitary Inspection, Zootecnics and Animal Improvement	Production and Animal Welfare
Rui Filipe Galinho Patrício	DVM, MSc, National Specialist	1	Equine and Small Animal Clinics, Exognosis and Animal Identification, Hospital and Field Activities X, Hospital and Field Activities XII, Imaging, Infectious Diseases Pathology and Clinics, Pathology and Clinics of Exotic, Wild and Zoo Animals, Pharmacology and Therapeutics, Reproduction, Gynaecology and Obstetrics, Surgical Propaedeutics	Animal Health (Companion Animals and Exotics)
Rui Jorge Geada Ferreira Onça	DVM, National Specialist	1	Equine and Small Animal Clinics, Hospital and Field Activities I , Hospital and Field Activities III, Hospital and Field Activities VI, Hospital and Field Activities XII, Surgical Clinics, Surgical Pathology and Clinics, Surgical Propaedeutics	Animal Health (Companion Animals and Exotics)
Rui Jorge Lamberto Silva	DVM	0,5	Farm Animal Clinics, Hospital and Field Activities IX	Animal Health (Farm Animals)
Rui Pedro Martins Brás Faísca	DVM, PhD	1	Pathological Anatomy, Cytology and Histology, Clinical Dermahistopathology	Basic Sciences
Rui Pedro Ilhéu Bernardino	DVM, National Specialist	0,3	Endoscopy and Endosurgery, Infectious Diseases Pathology and Clinics	Animal Health (Companion Animals and Exotics)
Rute Marina Garcia da Noiva	DVM, PhD	1	Cytology and Histology, Pathological Anatomy, Pathological Anatomy	Basic Sciences
Sofia Varela van Harten	DVM, PhD	1	Farm Animal Clinics, Genetics and Improvement, Hospital and Field Activities IX, Hospital and Field Activities XI, Nutrition and Animal Feed II, Zootecnics and Animal Improvement	Production and Animal Welfare, Animal Health (Farm Animals)
Someia Rashid Umarji Castro	DVM, National Specialist	0,3	Equine and Small Animal Clinics, Hospital and Field Activities X, Hospital and Field Activities XII	Animal Health (Companion Animals and Exotics)
Sónia Catarina da Silva Ramos	DVM, PhD	0,5	Microbiology, Sanitary Inspection	Basic Sciences Public Health
Sónia Patrícia Seabra Campos	DVM, PhD	1	Biophysics, Equine and Small Animal Clinics, Hospital and Field Activities V, Hospital and Field Activities VI, Hospital and Field Activities XII, Medical Pathology and Clinics, Reproduction, Gynaecology and Obstetrics, Surgical Clinics, Surgical Pathology and Clinics, Surgical Propaedeutics, Veterinary Dentistry	Animal Health (Companion Animals and Exotics)
Walter Baumgartner	DVM, PhD, Dipl. ECBHM	0,3	Farm Animal Clinics, Hospital and Field Activities IX, Medical Pathology and Clinics	Animal Health (Farm Animals)

Invited Professors 2016/2017:

Stélio Pacca Loureiro Luna, DVM, PhD, Dipl ECVA, Cert. IVAS – professor of Anesthesiology and Acupuncture to the 4th and 5th year student.

Imma Roquet, DVM, MVSc, Dipl ACVS – 4th and 5th year students on equine clinics.

José Carlos Estepa Nieto, DVM, PhD, Dipl ECEIM – 4th and 5th year students on equine clinics.

Gaby van Gallen, DVM, PhD, Dipl ECVS – 4th and 5th year students on equine clinics.

Denis Verwilghen, DVM, PhD, Dipl ECVS – 4th and 5th year students on equine clinics.

Panagiotis Mantis, DVM, PhD, Dipl ECVDI, GHEA, MRCVS

Albert Martinez Silvestre DVM, MSc, PhD, Dipl ECZM-Reptiles – 5th year students on exotic pets.

Lorenzo Crosta DVM, PhD – 5th year students on exotic pets.

Søren R. Boysen DVM, Dipl ACVECC – 5th year students on emergencies and critical care.

Jennifer Devey DVM, Dipl ACVECC – 5th year students on emergencies and critical care

Kris Gommeren DVM, PhD, Dipl ECVIM – 5th year students on emergencies and critical care.

Invited International Professors of the IMVM FMV-ULHT:

Since 2008 until the present:

- **Stélio Pacca Loureiro Luna**, DVM, PhD, Dipl ECVA, Cert. IVAS (Brasil, UNESP University) – professor of Anesthesiology and Acupuncture to the 4th and 5th year student.
- **Walter Baumgartner**, DVM, PhD, Dipl ECBHM (Austria, University of Vienna) – professor of Bovine Health Management to the 4th and 5th year students.

2016/2017:

- **Imma Roquet**, DVM, MVSc, Dipl ACVS – 4th and 5th year students on equine clinics (Spain)
- **José Carlos Estepa Nieto**, DVM, PhD, Dipl ECEIM – 4th and 5th year students on equine clinics (Spain).
- **Gaby van Gallen**, DVM, PhD, Dipl ECVS – 4th and 5th year students on equine clinics (University of Copenhagen).
- **Denis Verwilghen**, DVM, PhD, Dipl ECVS – 4th and 5th year students on equine clinics (University of Copenhagen).
- **Panagiotis Mantis**, DVM, PhD, Dipl ECVDI, GHEA, MRCVS (RCVS, UK)
- **Albert Martinez Silvestre** DVM, MSc, PhD, Dipl ECZM-Reptiles – 5th year students on exotic pets (Spain).
- **Lorenzo Crosta** DVM, PhD – 5th year students on exotic pets (Spain).
- **Søren R. Boysen** DVM, Dipl ACVECC – 5th year students on emergencies and critical care (University of Calgary, Canada).
- **Jennifer Devey** DVM, Dipl ACVECC – 5th year students on emergencies and critical care (Ontario Veterinary College, Canada)
- **Kris Gommeren** DVM, PhD, Dipl ECVIM – 5th year students on emergencies and critical care (Ghent University, Belgium).

2015/2016:

- **Daniel Ferro**, PhD and **Michele Venturini**, MD (Brasil, Odontovet) – 5th year students on Dental Medicine.
- **José Sampayo** (Spain, Tierarte Veterinária e Veterinary Endoscopy Support) – 5th year students on Endoscopy (Arthroscopy and Laparoscopy)
- **Ron Ben-Amotz**, Dipl ACVS, Dipl ECVS (USA, Veterinary Specialty and Emergency Center) – 4th and 5th year students on Minimally invasive subcutaneous osteosynthesis (MIPO)
- **Giovanni Gnemmi**, PhD, Dipl ECVBHM (Italy, Bovinevet) – 4th and 5th year students on Reproductive Ultrasound
- **Marta Garcia Piqueres**, DVM (Spain, Equidinamia) and **Mar de Eschevarria Ruiz-Oriol**, Physioterapist – 4th and 5th year students on Equine Rehabilitation.
- **Imma Roquet**, Dipl ACVS (Spain, Extremadura University) – 4th and 5th year students on equine minimal invasive surgery.

Other academic years:

- **Panagiotis Mantis**, DVM, PhD, Dipl ECVDI (England, RCVS) – 4th year students on Imaging – invited professor during 2008/2009, 2012/2013, 2013/2014 and 2014/2015.
- **Julius M. Liptak**, DVM, Dipl ACVS, Dipl ECVS (Canadá, Alta Vista Animal Hospital) – 5th year students on Small Animal Surgery – 2014/2015.
- **David Williams**, DVM, PhD (England, Cambridge University) – 4th year and 5th year students on Ophthalmology – 2013/2014, 2014/2015.
- **Cristina Fragio**, DVM, PhD, Dipl ECVIM (Spain, Autonoma University) – 5th year students on Small Animal Emergencies and Critical Care – 2011/2012, 2012/2013, 2013/2014.

- **Josep Pastor**, DVM, PhD, Dipl ECCP (Spain, Autonoma University) – 4th year students on Clinical Pathology – 2009/2010, 2010/2011, 2013/2014.
- **Xavier Roura**, DVM, PhD, Dipl ECVIM (Spain, Autonoma University) – 5th year students on Small Animal Clinic – 2009/2010, 2010/2011, 2012/2013, 2013/2014.
- **David Arguelles**, DVM, PhD, Dipl ECVS (Finland, University of Helsinki) – 5th year students on Equine Surgery – 2013/2014.
- **Maria Dolores Rodriguez**, DVM, Dipl ECVIM (Spain, Vet Hospital San Vicente) – 5th year students on Small Animal Gastroenterology – 2013/2014.
- **Escolastico Aguilera-Tejero**, DVM, PhD (Spain, Cordoba University) – 4th and 5th year students on Equine Medicine – 2013/2014.
- **Gilles Dupré**, DVM, Dipl. ECVS (Austria, Vienna University) – 4th and 5th year students on Small Animal Surgery – 2012/2013, 2013/2014.
- **Hervé Brisot**, DVM, Dipl ECVS (England, Veterinary Referrals) – 4th year students on Small Animal Clinics – 2013/2014.
- **Manuel Jiménez Peláez**, DVM, Dipl ECVS (Spain, Hospital Veterinario Valencia Sur) – 5th year students on Small Animal Surgery – 2013/2014.
- **Angel Sainz**, DVM, PhD (Spain, Complutense University) – 4th year students on Small Animal Medicine – 2011/2012.
- **Annick Hamaide**, DVM, PhD, Dipl ECVS (Belgium, University of Liège) – 5th year students on Small Animal Surgery – 2011/2012.
- **John Sofos**, PhD (USA, Colorado University) – 3th year students on Hygiene and Food Safety – 2010/2011.
- **Reto Neiger**, DVM, Dipl ECIM, Dipl ACIM (Alemanha, Justus-Liebig University) – 4th year students on Imaging – 2009/2010, 2010/2011.
- **Bruce McGorum**, DVM, PhD, Dipl ECEIM (England, University of Edinburgh) – 5th year students on Equine Medicine – 2009/2010.
- **Kevin Corley**, DVM, PhD, Dipl ACVIM, Dipl ECEIM, Dipl ACVECC (Ireland, Private Clinic) – 5th year students on Equine Emergencies – 2009/2010.
- **Scott Pirie**, PhD, Dipl ECEIM (England, University of Edinburgh) - 5th year students on Equine Medicine – 2009/2010.
- **Michelle Borgarelli**, DVM, PhD, Dipl ECVIM (USA, Kansas University) – 5th year students on Small Animal Cardiology – 2009/2010.
- **João Loureiro**, DVM, Dipl ECVS (England, RCVS) – 5th year students on Small Animal Cardiology – 2009/2010.
- **Simon Wheeler**, DVM, PhD (England, Bristol University) – 5th year students on Small Animal Medicine – 2009/2010.
- **Tim Gruffyd-Jones**, DVM, PhD (England, Bristol University) – 5th year students on Feline Medicine – 2009/2010.
- **Neil MacEwen**, DVM, PhD, Dip ECVD (England, University of Edinburgh) – 5th year students on Dermatology – 2008/2009.
- **Tim Nutall**, DVM, PhD (England, University of Edinburgh) – 5th year students on Dermatology – 2008/2009.
- **Henri Van Bree**, DVM, PhD, Dipl ECVS (Belgium, Ghent University) – 4th year students on Imaging – 2008/2009.
- **Martha Cannon**, DVM, PhD (England, Cat Clinic) – 5th year students on Feline Medicine – 2008/2009.
- **David Spreng**, DVM, PhD (Switzerland, Bern University) – 5th year students on Small Animal Surgery – 2008/2009.

Appendix Chapter 10

Scientific publications from the establishment's academic staff in peer reviewed journals

	Number of Full Papers in International Journals			
	2013	2014	2015	2016
Academic Staff	22	26	35	40

2016

Mestrinho L, Louro JS, Gordo I, Niza MM, Vilela CL, Requicha JF, Force J, Gawor J. 2016. Oral and dental anomalies in 50 brachycephalic cats. *Journal of the American Veterinary Medical Association*. Accepted for publication

Campos, S., L. Felix, C. Venancio, M. de Lurdes Pinto, F. Peixoto, P. G. de Pinho and L. Antunes (2016). *In vivo* study of hepatic oxidative stress and mitochondrial function in rabbits with severe hypotension after propofol prolonged infusion. *Springerplus* 5(1): 1349.

Campos, Sónia P; de Lurdes P. M; Gomes, Gabriela; de Pinho, P. G; Monteiro, Joaquim A; Félix, Luis M; Branco, Paula S; Ferreira, Luísa M; Antunes, Luís M. (2016) Expression of CYP1A1 and CYP1A2 in the liver and kidney of rabbits after prolonged infusion of propofol. *Experimental and Toxicologic Pathology* 68(9): 521 - 531. doi: 10.1016/j.etp.2016.07.006

Campos, Sónia; Monteiro, Joaquim; Valenzuela, Belén; Gonçalves, Helena; de Pinho, P. G; Fresco, Paula; Félix, Luis; Antunes, Luís. (2016) Evidence of Different Propofol Pharmacokinetics under Short and Prolonged Infusion Times in Rabbits, *Basic & Clinical Pharmacology & Toxicology* 118(6): 421 - 431. Doi: 10.1111/bcpt.12521

Carvalho, M.I., Pires, I., Prada, J., Gregório, H., Lobo, L., Queiroga, F. (2016) Intratumoral FoxP3 expression is associated with angiogenesis and prognosis in malignant canine mammary tumors. *Vet Immunol Immunopathol.* 1;178: 1-9.

Carvalho, M.I., Pires, I., Prada, J., Lobo, L., Queiroga, F. (2016) Ki-67 and PCNA Expression in Canine Mammary Tumors and Adjacent Nonneoplastic Mammary Glands: Prognostic Impact by a Multivariate Survival Analysis. *Vet Pathol.* 53(6):1138-1146.

Carvalho, M.I., Pires, I., Prada, J., Raposo, T., Gregório, H., Lobo, L., Queiroga, F. (2016) High COX-2 expression is associated with increased angiogenesis, proliferation and tumoral inflammatory infiltrate in canine malignant mammary tumors: a multivariate survival study. *Vet Comp Oncol.* doi: 10.1111/vco.12206.

Critti, A., Requicha, J. & Martins, A. (2016). Cold intermittent pneumatic compression: application in the rehabilitation of multiple trauma dogs and cats or after surgery. *Journal of Community & Public Health Nursing*, 2(2): 121

de Oliveira JT, Santos AL, Barros R, Ribeiro C, Gomes C, de Matos AJ, Reis CA, Gärtner F. (2016) Characterization of Sialidases Neu1, Neu2, and Neu4 in a Canine Model of Breast Cancer. *Glycobiol Insights* 2016:6 11-19.

Felisberto, R.; Matos, J.; Alves, M.; Cabeçadas, J.; Henriques, J. (2016). Evaluation of Pax5 expression and comparison with BLA.36 and CD79 α cy in feline non-Hodgkin lymphoma. *Vet Comp Oncol*, doi: 10.1111/vco.12262.

Félix, Luís M; Serafim, Cindy; Valentim, Ana M; Antunes, Luís M; Campos, Sónia; Matos, Manuela; Coimbra, Ana M. (2016) Embryonic Stage-Dependent Teratogenicity of Ketamine in Zebrafish (*Danio rerio*). *Chemical Research in Toxicology* 29(8): 1298 - 1309. doi: 10.1021/acs.chemrestox.6b00122

Félix, Luís M; Vidal, Ana M; Serafim, Cindy; Valentim, Ana M; Antunes, Luís M; Campos, Sónia; Matos, Manuela; Monteiro, Sandra M; Coimbra, Ana M. (2016). Ketamine-induced oxidative stress at different developmental stages of zebrafish (*Danio rerio*) embryos, *RSC Adv.* 6(66): 61254 - 61266. doi: 10.1039/c6ra08298j

Gonçalves, D., Pires, A.E. (2016) Cremation under fire: a review of bioarchaeological approaches from 1995 to 2015 *Archaeol Anthropol Sci.* DOI: 10.1007/s12520-016-0333-0.

Gonçalves, F.; Martins, A.; Alves, M. (2016). Functional Neurorehabilitation in Dogs with Cervical Neurologic Lesion. *J Vet Sci Technol*, 7(2): 301. doi:10.4172/2157-7579.1000301.

Marisa Nicolai, Paula Pereira, Rute F. Vitor, Catarina Pinto Reis, Amilcar Roberto, Patrícia Rijo. (2016). Antioxidant activity and rosmarinic acid content of ultrasound-assisted ethanolic extracts of medicinal plants. *Measurements* 89, 328–332

Martins Â., (2016) Physical medicine and rehabilitation of dogs with peripheral vestibular syndrome *J Vet Sci Med Diagn* 2016, 5:5

Martins Â., (2016). The Role of Spasticity in Functional Neurorehabilitation-Part I: The Pathophysiology of Spasticity, the Relationship with the Neuroplasticity, Spinal Shock and Clinical Signs. *Arch Med.* 8(3):7 ISSN 1989-5216

Martins Â., (2016). The Role of Spasticity in Functional Neurorehabilitation-Part II: Non-Pharmacological and Pharmacological Management-A Multidisciplinary Approach. *Arch Med.* 8(3):8 ISSN 1989-5216

Mendes J, Pinto C, Bernardo S, Ribeiro-Lima J, Maia C. (2016) Prevalence of *Ostertagia ostertagi* lesions in slaughtered dairy cattle from São Miguel Island, Azores, Portugal. *Veterinary Parasitology: Regional Studies and Reports*, 3–4:60-65

Miguélez S., Araújo A.M., Francisco I., Suárez J., Sánchez-Andrade R., Paz-Silva A., Arias M.S. (2016). Exposure to *Gasterophilus* spp. in horses in NW Spain by ELISA. *J Entomol and Zoology Studies*, 4(5): 621-624.

Murta, D., Batista, M., Silva, E., Trindade, A., Henrique, D., Duarte, A. & Lopes-da-Costa, L. (2016). Notch signaling in the epididymal epithelium regulates sperm motility and is transferred at a distance within epididymosomes. *Andrology* 4: 314–327.

Noiva, R., Menezes, A., Peleteiro, C. (2016) Effects of Manipulating Incubation Environment On Embryonic Growth. *Experimental Pathology and Health Sciences*: 8 (1): 17-18

Oliveira M, Serrano I, Van Harten S, Bessa LJ, Bernardo F, da Costa PM (2016). Fecal contamination of wastewater treatment plants in Portugal, *Environ Sci Pollut Res Int*, 23(14):14671-14675

Ramos S., Chafsey I., Hébraud M., Sousa M., Poeta P., Igrejas G. (2016). Ciprofloxacin stress proteome of the extended-spectrum β -lactamase producing *Escherichia coli* from slaughtered pigs. *Curr Proteomics*, 13: 1-5.

Ramos S., Silva N., Hébraud M., Santos H., Nunes-Miranda J.D., Pinto L., Pereira J.E., Capelo J.L., Poeta P., Igrejas G. (2016). Proteomics for Drug Resistance on the Food Chain? Multidrug-Resistant *Escherichia coli* Proteomes from Slaughtered Pigs. *OMICS*, 20(6):362-74.

Raposo, L.R.; Roma-Rodrigues, C.; Faísca, P.; Alves, M.; Henriques, J.; Carvalheiro, M.C.; Corvo, M.L.; Baptista, P.V.; Pombeiro, A.J.L.; Fernandes, A.R. (2016). immortalization and characterization of a new canine mammary tumor cell line FR37-CMT. *Vet Comp Oncol*, doi: 10.1111/vco.12235.

Requicha, J.F., Carvalho, P.P., Pires, M.A., Dias, I., Gomes, M.E., Reis, R.L. & Viegas, C.A. (2016). Evaluation of the response to the implantation of canine adipose-derived stem cells in a healthy mice subcutaneous model. *Journal of Stem Cell Research & Therapy*, 6(9): 358

Ribeiro C, Santos MS, DE Matos AJ, Barros R, Gärtner F, Rutteman GR, de Oliveira JT. (2016) Serum Galectin-3 Levels in Dogs with Metastatic and Non-metastatic Mammary Tumors. *In Vivo*. 30(1):13-6.

Ribeiro-Lima J, Carstensen M, Cornicelli L, Forester JD, Wells SJ (2016). Patterns of cattle farm visitation by white-tailed deer in relation to disease transmission risk in Minnesota, US. *Transbound Emerg Dis*. doi: 10.1111/tbed.12544.

Ribeiro-Lima J, Oakes M, Bender J, Schwabenlander S, Thompson B, Wells SJ. Risk profiling of cattle farms as a tool for bovine tuberculosis risk-based surveillance in disease free areas, Minnesota, US. (2016) *J Am Vet Med Assoc*. 248(12):1404-13. doi: 10.2460/javma.248.12.1404.

Ryu, Y., Barceló, D., Barron, L., Bijlsma, L., Castiglioni, S., de Voogt, P., Emke, E., Hernández, F., Lai, F., Lopes, A., Alda, M., Mastroianni, N., Munro, K., O'Brien, J., Ort, C., Plósz, B., Reid, M., Yargeau, V., Thomas, K. (2016). Comparative measurement and quantitative risk assessment of alcohol consumption through wastewater-based epidemiology: An international study in 20 cities. *Science of the Total Environment*, 565: 977-983

Santos, M.I.S., Fradinho, P., Martins, S.R., Lima, A.I.G., Ferreira, R.M.S.B., Pedroso, L., Ferreira, M.A.S.S., Sousa, I. Impact of a new postharvest disinfection method based on fermented cheese whey on the organoleptic profile of minimally processed lettuce. *Postharvest Biol Tec*, submitted with manuscript number POSTEC_2016_248.

Santos, M.I.S., Lima, A.I., Monteiro, S.A.V.S., Ferreira, R.M.S.B., Pedroso, L., Sousa, I., Ferreira, M.A.S.S. (2016). Preliminary study on the effect of fermented cheese whey on *Listeria monocytogenes*, *Escherichia coli* O157:H7 and *Salmonella* Goldcoast populations inoculated onto fresh organic lettuce. *Foodborne Pathog Dis*, 13(8), 423-427.

Santos, M.I.S., Verissimo, C.S.C., Nunes, M.J. C., Lima, A.I.G., Ferreira, R.M.S.B., Pedroso, L., Sousa, I., Ferreira, M.A.S.S. Essential oils as antibacterial agents against food-borne pathogens: are they really as useful as they are claimed to be? *Journal Appl Microbiol*, submitted with manuscript number ID: JAM-2016-2007

Silva CO, Molpeceres J, Batanero B, Fernandes AS, Saraiva N, Costa JG, Rijo P, Figueiredo IV, Faísca P, Reis CP (2016). Functionalized diterpene parvifloron D-loaded hybrid nanoparticles for targeted delivery in melanoma therapy. *Ther Deliv*. 7(8):521-44. doi: 10.4155/tde-2016- 0027.

Silva CO, Rijo P, Molpeceres J, Ascensão L, Roberto A, Fernandes AS, Gomes R, Pinto Coelho JM, Gabriel A, Vieira P, Reis CP. (2016) Bioproduction of gold nanoparticles for photothermal therapy. *Therapeutic Delivery*. 7(5):287-304. DOI: 10.4155/tde-2015-0011.

Soares, M., Correia, J., Peleteiro, M.C., Ferreira, F. (2016). St. Gallen molecular subtypes in feline mammary carcinoma and paired metastases disease progression and clinical implications from a 3 year follow-up study. *Tumour Biol*, 37(3): 4053-64.

Soares, M., Madeira, S., Peleteiro, M., Correia, J., Cardoso, F., Ferreira, F. (2016). Molecular based subtyping of feline mammary carcinomas and clinicopathological characterisation. *The Breast Journal*, 27: 44-51

Soares, M., Ribeiro, R., Carvalho, S., Peleteiro, M., Correia, J., Ferreira, F. (2016). Ki-67 as a Prognostic Factor in feline mammary carcinoma: what is the optimal cutoff value? *Vet Pathol*, 53(1): 37-43.

Soares, M., Ribeiro, R., Najmudin, S., Gameiro, A., Rodrigues, R., Cardoso, F., Ferreira, F. (2016). Serum HER2 levels are increased in cats with mammary carcinomas and predict tissue HER2 status. *Oncotarget*, 7(14): 17314-26.

Wagemaker TA, Campos PM, Fernandes AS, Rijo P, Nicolai M, Roberto A, Rosado C, Reis C, Rodrigues LM, Carvalho CR, Maia NB, Guerreiro Filho O. (2016) Unsaponifiable matter from oil of green coffee beans: cosmetic properties and safety evaluation. *Drug Development and Industrial Pharmacy*. 42(10):1695-9. DOI: 10.3109/03639045.2016.1165692

Lopes, A., Nunes A., Niza, M.M.R.E., Dourado, A. Intra-abdominal Pressure is Influenced by Body Position? *American Journal of Clinical Medicine Research*. Vol. 4, No. 1, 2016, pp 11-18

2015

Cardoso, L., Gilad, M., Cortes, H.C.E., Nachum-Biala, Y., Lopes, A.P., Vila-Viçosa, MJ., Simões, M. Rodrigues, P.A. and Baneth, G. (2015). First report of *Anaplasma platys* infection in red foxes (*Vulpes vulpes*) and molecular detection of *Ehrlichia canis* and *Leishmania infantum* in foxes from Portugal. *Parasites & Vectors*. 8(144). doi: 10.1186/s13071-015-0756-y.

Carvalho, M.I., Pires, I., Dias, M., Prada, J., Gregório, H., Lobo, L., Queiroga, F. (2015) Intratumoral CD3+ T-Lymphocytes Immunoexpression and Its Association with c-Kit, Angiogenesis, and Overall Survival in Malignant Canine Mammary Tumors. *Anal Cell Pathol (Amst)*. 2015:920409. doi: 10.1155/2015/920409.

de Oliveira JT, Ribeiro C, Barros R, Gomes C, de Matos AJ, Reis CA, Rutteman GR, Gärtner F. (2015) Hypoxia up-regulates galectin-3 in mammary tumor progression and metastasis. *PLoS One*. 29;10(7):e0134458. doi: 10.1371/journal.pone.0134458.

de Oliveira JT, Ribeiro C, Gärtner F. (2015) GRP78 expression in canine mammary tumors: association with malignancy. *Journal of Molecular Biochemistry*, 4(1):5-10 .

de Oliveira JT, Ribeiro C, Gärtner F. (2015) Role of galectin-3 in cancer metastasis. *Glycobiol Insights*. 5:1-13. doi: 10.4137/GBI.S13916

de Oliveira JT, Santos AL, Gomes C, Barros R, Ribeiro C, Mendes N, de Matos AJ, Vasconcelos H, Oliveira MJ, Reis CA, Gärtner F. (2015) Anti-influenza neuraminidase inhibitor oseltamivir phosphate induces canine mammary cancer cell aggressiveness. *PLoS One*. 7;10(4):e0121590. doi: 10.1371/journal.pone.0121590.

Diniz S, de Oliveira JT, Buffington CAT, Dinis P. (2015) From bladder to systemic syndrome: concept and treatment evolution of interstitial cystitis. *International Journal of Women's Health*, 23;7:735-44. doi: 10.2147/IJWH.S60798.

Duque de Araujo A.M., Miguélez S., Balán F.L.A., Hernández Malagón J.A., Rullán A.O., Sánchez-Andrade J.S., Arias Vázquez M.S., Madeira de Carvalho L.M., Suárez García J.L., Paz Silva A., Sánchez-Andrade R. (2015). Habronemosis: diagnóstico y control integrado de la infección. *Equinus: Medicina y cirugía equina*, 41, págs. 36-47.

Ferreira, F.C., Soares, M.J., Carvalho, S., Borralho, L., Vicente, G., Branco, S., Correia, J., Peleteiro, M.C. (2015). Four cases of cell cannibalism in highly malignant feline and canine tumors. *Diagn Pathol*, 10: 199.

Gomes-Costa M., Roupa I., Pequito M., Prazeres J., Gaivão M., Abrantes J., Clayton H. (2015). The Use of Pressure Plates for Static Center of Pressure Analysis in Horses. *J. Equine Vet Sci*, 35(4): 315-320.

Gomes-Costa, M. , Roupa, I. , Pequito, M. , Prazeres, J. , Gaivão, M., Abrantes, J. , Clayton, H. M. (2015). The Use of Pressure Plates for Static Center of Pressure Analysis in Horses. *J Equine Vet Sci*, 35(4), 315-320

Gomes-Costa, M., Roupa, I., Pequito, M. , Prazeres, J. , Gaivão, M. , Abrantes J. and Clayton, H. (2015) The Use of Pressure Plates for Static Center of Pressure Analysis in Horses. *J. Equine Vet. Sci.* 35 (4):315–320. Doi:<http://dx.doi.org/10.1016/j.jevs.2015.02.002>

Maia C, Almeida B, Coimbra M, Fernandes MC, Cristóvão JM, Ramos C, Martins A, Martinho F, Silva P, Neves N, Nunes M, Vieira ML, Cardoso L, Campino L. (2015). Bacterial and protozoal agents of canine vector-borne diseases in the blood of domestic and stray dogs from southern Portugal. *Parasites and Vectors*, 8:138.

Maia C, Annoscia G, Latrofa MS, Pereira A, Giannelli A, Pedroso L, Otranto D. (2015). *Onchocerca lupi* nematode in cat, Portugal. *Emerging Infectious Diseases*, 21: 2252-2253.

Maia C, Sousa C, Ramos C, Cristóvão JM, Faisca P, Campino L. (2015). First case of feline leishmaniosis caused by *Leishmania infantum* genotype E in a cat with concurrent nasal squamous cell carcinoma. *Journal of Feline Medicine and Surgery Open Reports* (DOI: 10.1177/2055116915593969).

Maia C., Coimbra M., Ramos C., Cristóvão J., Cardoso L., Campino L. (2015). Serological investigation of *Leishmania infantum*, *Dirofilaria immitis* and *Angiostrongylus vasorum* in dogs from southern Portugal. *Parasites and Vectors*, 8:52.

Maia C., Cortes H., Brancal H., Lopes AP., Pimenta P., Campino L., Cardoso L. (2014). Prevalence and correlates of antibodies to *Neospora caninum* in dogs in Portugal. *Parasite*, 21:29.

Martins Â., (2015). Functional Neurorehabilitation - The Locomotor Quadrupedal Animal Training Adapted to the Bipedal Human. *International Archives of Medicine*, 8(2015) DOI: <http://dx.doi.org/10.3823/1778>

Martins Â., (2015). The importance of the quadruped animal model in functional neurorehabilitation for human biped. *International Archives of Medicine*, 8(2015) <http://dx.doi.org/10.3823/1777>

Martins-Bessa A, Cardoso L, Costa T, Mota R, Rocha A, Montenegro L. (2015) Reproductive emergencies in the bitch: a retrospective study. *J Hellenic Vet Med Soc* 66(4): 231 – 240

Matos, A.J.F., Santos, A.A. (2015). Advances in the understanding of the clinically relevant genetic pathways and molecular aspects of canine mammary tumours: Part 1. Proliferation, apoptosis and DNA repair. *The Veterinary Journal* 205, 136-143.

Morais de Almeida, P., Pedroso, L.. (2015). Relato clínico sobre o tratamento de um gato infectado com vírus da leucemia felina (FeLV) com o antivírico inibidor da integrase – Raltegravir. *Veterinary Medicine* (16)99: 9-12.

Murta, D., Batista, M., Trindade, A., Silva, E., Mateus, L., Duarte, A. & Lopes-da-Costa, L. (2015). Dynamics of Notch signalling in the mouse oviduct and uterus during the oestrous cycle. *Reprod Fertil Dev*. doi: 10.1071/RD15029

Noiva, R., Guy, J. S., Hauck, R., and Shivaprasad, H. L. (2015) Runting Stunting Syndrome Associated with Transmissible Viral Proventriculitis in Broiler Chickens. *Avian Dis*: September 59(3):384-387.

Ramos S., Chafsey I., Silva N., Hébraud M., Santos H., Capelo-Martinez J.-L., Poeta P., Igrejas G. (2015). Effect of vancomycin on the proteome of the multiresistant *Enterococcus faecium* SU18 strain. *J Proteomics*,113: 378-387.

Requicha, J.F., Pires, M.A., Albuquerque, C.M. & Viegas, C.A. (2015). Neoplasias da cavidade oral do cão - breve revisão. *Revista Brasileira de Medicina Veterinária*, 37(1): 41-46

Sanchis J., Suárez J., Hillyer G.V., Hernandez J.A., Solari M.A., Cazapal-Monteiro C., Duque de Araujo A.M., Madeira de Carvalho L.M., Paz-Silva A., Sanchez-Andrade R., Arias M.S. (2015). Determination of exposure to *Fasciola hepatica* in horses from Uruguay using a recombinant-based ELISA. *Veterinari Medicina*, 60 (9): 483–488.

Sanfins, A., Plancha, C.E., Albertini, D.F. (2015). Pre-implantation developmental potential from in vivo and in vitro matured mouse oocytes: a cytoskeletal perspective on oocyte quality. *J Assist Reprod Genet*, 32(1): 127-136.

Santos, A.A., Matos, A.J.F. (2015). Advances in the understanding of the clinically relevant genetic pathways and molecular aspects of canine mammary tumours. Part 2: Invasion, angiogenesis, metastasis and therapy. *The Veterinary Journal* 205, 144-153

Santos, M., Correia-Gomes, C., Marcos, R., Santos, A., Matos, A., Lopes, C., Dias Pereira, P. (2015). Value of Nottingham Histological Grading Parameters and Nottingham Prognostic Index in Canine Mammary Carcinoma. *Anticancer Research* 35, 4219-4228.

Santos, M., Correia-Gomes, C., Santos, A., Matos, A., Dias Pereira, P., Lopes, C. (2015). Interobserver Reproducibility of Histological Grading of Canine Simple Mammary Carcinomas. *Journal Comparative Pathology* 153, 22-27.

Santos, M.I.S., Martins, S.R., Pedroso, L., Sousa, I., Ferreira, M. A. S. S. (2015). Potential bio-activity of whey fermented extract as sanitizer of organic grown lettuce. *Food Control*, 50, 477-481.

Simões, M., Martins, C., Ferreira, F. (2015). Early intranuclear replication of African swine fever virus genome modifies the landscape of the host cell nucleus. *Virus Research* 210:1-7. doi.org/10.1016/j.virusres.2015.07.006

Simões, M., Rino, J., Pinheiro, I., Martins, C., Ferreira, F. (2015). Alterations of Nuclear Architecture and Epigenetic Signatures during African Swine Fever Virus Infection. *Viruses*, 7, 4978-4996.

Waugh, E.M.; Gallagher, A.; McAulay, K.; Henriques, J.; Alves, M.; Bell, A.J.; Morris, J.S.; Jarrett, R.F. (2015). Gammaherpesviruses and canine lymphoma: no evidence for direct involvement in commonly occurring lymphomas. *J Gen Virol*, 96(7): 1863-1872

2014

Benazzi C, Al-Dissi A, Chau CH, Figg WD, Sarli G, de Oliveira JT, Gärtner F. (2014) Angiogenesis in Spontaneous Tumors and Implications for Comparative Tumor Biology. *The Scientific World Journal* 2014:919570. doi: 10.1155/2014/919570.

Bourdeau P, Saridomichelakis M, Oliveira A., Oliva G, Kotnik T, Gálvez R, Manzillo T, Koutinas A, Pereira da Fonseca I, Miró G. (2014). Management of canine leishmaniosis in endemic SW European regions: a questionnaire-based multinational survey. *Parasites and Vectors*, 7: 110.

Brás S, Georgakis A, Ribeiro L, Ferreira DA, Silva A, Antunes L, Nunes CS (2014) Electroencephalogram-based indices applied to dogs' depth of anaesthesia monitoring. *Res Vet Sci*. 97(3):597-604.

Brás, S., Georgakis, A., Ribeiro, L., Ferreira, D.A., Silva, A., Antunes, L. & Nunes, C.S. (2014) Electroencephalogram-based indices applied to dogs' depth of anaesthesia monitoring. *Res Vet Sci*, 97: 597-604.

Campos, S., Monteiro J., Antunes, L., Branco, P. S., Ferreira L. M., Félix L., de Pinho, P. G., (2014) Simultaneous Quantification of Propofol and its Non-Conjugated Metabolites in Several Biological Matrices Using Gas Chromatography/Ion Trap – Mass Spectrometry Method. *Journal of Analytical & Bioanalytical Techniques*. 5(3); doi: 10.4172/2155-9872.1000195

De Oliveira JT, De Matos AJ, Barros R, Ribeiro C, Chen A, Hespanhol V, Rutteman GR, Gärtner F. (2014) Differential expression of galectin-1 and galectin-3 in canine non-malignant and malignant mammary tissues and in progression to metastases in mammary tumors. *Anticancer Res*. 34(5):2211-21.

Elise A. Lamont, Harish K. Janagama, Joao Ribeiro-Lima, Lucy Vulchanova, Meetu Seth, My Yang, Kiran Kurmi, W., Ray Waters, Tyler Thacker and Srinand Sreevatsan. (2014). Circulating Mycobacterium bovis Peptides and Host Response Proteins as Biomarkers for Unambiguous Detection of Subclinical Infection. *J. Clin. Microbiol*. 52(2):536. DOI: 10.1128/JCM.02433-13.

Elise A. Lamont, Joao Ribeiro-Lima (2014). Ray Waters, Tyler Thacker and Srinand Sreevatsan. Mannosylated lipoarabinomannan in serum as a biomarker candidate for subclinical bovine tuberculosis. *BMC Research Notes*, 7:559.

Figueira A, Gomes C, de Oliveira JT, Vilhena H, Carvalheira J, de Matos A, Pereira P, Gärtner F. (2014) Aberrant P-cadherin expression is associated to aggressive feline mammary carcinomas. *BMC Vet Res*. 26;10(1):270.

Gaivão, M.M.F., Rambags, B.P.B., Stout, T.A.E. (2014). Gastrulation and the establishment of the three germ layers in the early horse conceptus. *Theriogenology*, 82(2):354-65

Lopes, A., Silva, N., Bronze, M.R., Ferreira, J., Morais, J. (2014). Analysis of cocaine and nicotine metabolites in wastewater by liquid chromatography–tandem mass spectrometry. Cross abuse index patterns on a major community. *Science of the Total Environment*, 487: 673-680.

Maia C., Ferreira A., Nunes M., Vieira L., Campino L., Cardoso L. (2014). Molecular detection of bacterial and parasitic pathogens in hard ticks from Portugal. *Ticks and Tick-borne Diseases*, 5: 409–414.

Maia C., Ramos C., Coimbra M., Bastos F., Martins A., Pinto P., Nunes M., Vieira ML., Cardoso L., Campino L. (2014). Bacterial and protozoal agents of feline vector-borne diseases in domestic and stray cats from southern Portugal. *Parasite and Vectors*, 7: 115.

Mestrinho LA, Faisca PB, Niza MM. (2014). Parotid salivary duct stenosis following caudal maxillectomy. *J Vet Dent*.31(1):40-3.

Mestrinho LA, Pissarra H, Faisca PB, Bragança M, Peleteiro MC, Niza MM. p63 and E-cadherin Expression in Canine Oral Squamous Cell Carcinoma. (2014) *Vet Pathol*. 52(4):614-20.

Mestrinho LA1, Faisca P, Peleteiro MC, Niza MM. PCNA and grade in 13 canine oral squamous cell carcinomas: association with prognosis. (2014) *Vet Comp Oncol*. doi: 10.1111/vco.12134. [Epub ahead of print]

Neves, D., Lobo, L., Simões, P.B., Cardoso, L. (2014). Frequency of intestinal parasites in pet dogs from an urban area (Greater Oporto, northern Portugal). *Vet Parasitol*. 200(3-4):295-8.

Noiva R., Menezes, A., Peleteiro, C. (2014) Influence of temperature and humidity manipulation on chicken embryonic development, *BMC Vet Res*, 10:234.

Requicha, J.F., Pires, M.A., Albuquerque, C.M. & Viegas, C.A. (2014). Canine oral cavity neoplasia: a retrospective study. *Journal of Pathology Research*, 3(1): 46-48

Ribeiro-Lima J, Enns EA, Thompson B, Craft ME, Wells SJ. (2014) From network analysis to risk analysis-An approach to risk-based surveillance for bovine tuberculosis in Minnesota, US. *Prev Vet Med*. 118(4):328-40. doi: 10.1016.

Rodrigues, J.B., Requicha, J.F., Bastos, E., San Roman, F., Viegas, C.A. & Gama, A. (2014). Focal gingival hyperplasia in a donkey. *Journal of Veterinary Dentistry*, 32(1): 54-57

Sargo R., Loureiro F., Catarino A., Valente J., Silva F., Cardoso L., Otranto D., Maia C. (2014). First report of *Thelazia callipaeda* in red foxes (*Vulpes vulpes*) from Portugal. *Journal of Zoo and Wildlife Medicine*, 45: 458–460.

Silva, A., Ortiz, A., Venâncio, C., Souza, A., Ferreira, M., Branco, P., Pinho, P., Amorim, P. & Ferreira, D.A. (2014). Effects of Acute Bleeding Followed by Hydroxyethyl Starch 130/0.4 or a Crystalloid on Propofol Concentrations, Cerebral Oxygenation, and Electroencephalographic and Haemodynamic Variables in Pigs. *Vet Med Int*, 2014:710394. doi: 10.1155/2014/710394.

Silva, A., Venâncio, C., Ortiz, A., Souza, A., Amorim, P. & Ferreira, D.A. (2014). The effect of high doses of remifentanil in brain near-infrared spectroscopy, brain venous blood oxygenation and in electroencephalographic parameters in pigs. *Vet Anaesth Analg*, 41: 153–162.

Sousa, J., Ribeiro, L., Silva, A. & Ferreira, D.A. (2014). Evaluation of the cerebral state index in cats under isoflurane anaesthesia: dose-effect relationship and prediction of clinical signs. *Vet Med Int*, Article 2014:481460. doi: 10.1155/2014/481460.

Zancajo, V., Brito, J., Carrasco, M., Bronze, M.R., Moreira, R., Lopes, A. (2014). Analytical profiles of “legal highs” containing cathinones available in the area of Lisbon, Portugal. *Forensic Science International*, 244: 102-110.

2013

Bettencourt, F., Almeida, C., Santos, M.I., Pedroso, L., Soares, F (2013) Microbiological monitoring of *Ruditapes decussatus* from Ria Formosa Lagoon (South of Portugal). *J Coast Conserv*, 17(3), 653-661.

Brás S, Gouveia S, Ribeiro L, Ferreira DA, Antunes L, Nunes CS. (2013) Fuzzy logic model to describe anesthetic effect and muscular influence on EEG Cerebral State Index. *Res Vet Sci*. 94(3):735-42.

Brás, S., Gouveia, S., Ribeiro, L., Ferreira, D.A., Antunes, L.M. & Nunes, C.S. (2013) Fuzzy logic model to describe anesthetic effect and muscular influence on EEG Cerebral State Index. *Res Vet Sci*, 94(3): 735-742

Campino L., Cortes S., Dionísio L., Neto L., Afonso MO., Maia C. (2013). First detection of *Leishmania major* in naturally infected *Sergentomyia* minutain Europe. *Memórias do Instituto Oswaldo Cruz*, 108: 516-518.

Cardoso, L., Cortes, H.C.E., Reis, A., Rodrigues, P., Simões, M., Lopes, A.P., Vila-Viçosa, M.J., Talmi-Frank, D., Eyal, O., Solano-Gallego, L., Baneth, G. (2013). Prevalence of *Babesia microti*-like infection in red foxes (*Vulpes vulpes*) from Portugal. *Vet Parasitol*. 196(1-2):90-5. doi: 90-95.10.1016/j.vetpar.2012.12.060.

Correia, J., Crespo, A., Noiva, R., Pissarra, H., Fernandes, T., Bernardino, R., Afonso, F., Lapão, N., Vaz, Y., Carvalho, L., Peleteiro, C (2013) New Insights into the Importance of Rodent Populations in a Zoo Ecosystem in the Pathology and Spread of *Calodium hepaticum* in Primates, *J Comp Pathol*, 148(1), 56.

Davis, S., Svensson, E., Albarella, U., Detry, C., Götherström, A., Pires, A.E., Ginja, C. (2013) - Evidencia de mejoras de ovino y vacuno durante época andalusí y cristiana en Portugal a partir del análisis zooarqueológico y de ADN antiguo. *Debates de Arqueologia Medieval*, 3: 241-287.

Knust B., Patton, E., Ribeiro-Lima, J., Bohn, J., Wells, S.J. (2013) Evaluation of the effects of a killed whole-cell vaccine against *Mycobacterium avium* subsp paratuberculosis in 3 herds of dairy cattle with natural exposure to the organism.. *J Am Vet Med Assoc*. 242(5):663-9. doi: 10.2460/javma.242.5.663.

Maia C., Dionísio L., Afonso MO., Neto L., Cristóvão J., Campino L. (2013). *Leishmania* infection and host-blood feeding preferences of phlebotomine sandflies and canine leishmaniasis in an endemic European area, the Algarve Region in Portugal. *Memórias do Instituto Oswaldo Cruz*, 108: 481-487.

Maia C., Nunes M., Marques M., Henriques S., Rolão N., Campino L. (2013). In vitro susceptibility of *Leishmania infantum* isolated from humans and dogs. *Experimental Parasitology*, 135: 36-41.

Mottola, C., Freitas, F.B., Simões, M., Martins, C., Leitão, A., Ferreira, F. (2013). In vitro antiviral activity of fluoroquinolones against African swine fever virus. *Vet Microbiol*. 165(1-2):86-94. doi: 10.1016/j.vetmic.2013.01.018.

Noiva, R., Pissarra, H., Fernandes T., Bernardino R., Madeira de Carvalho L., Afonso, F., Peleteiro, C. (2013) Extramedullary Hematopoiesis Mimicking a Neoplasm in a Goeldi's Monkey (*Callimico goeldii*), *Journal of Life Sciences*, 7 (12), 1228-1235.

Pacheco R., Correia S., Monteiro R., Gonçalves A., Radhouani H., Ramos S., Carvalho E., Carvalho J., Igrejas G., Poeta P. (2013). Multi-resistant extended-spectrum β -lactamase producing *Escherichia coli* in human urine samples. *J Microbiol Immunol*, 46 (5):399-404

Pequito M., Amory H., de Moffarts B., Busoni V., Serteyn D., Sandersen C. (2013). Evaluation of acepromazine-induced hemodynamic alterations and reversal with norepinephrine infusion in standing horses. *Can Vet J*, 54(2): 150-156

Pires, A.E., Ginja, C. (2013). Why look back? Methods and relevance of ancient DNA studies. Review. *Cadernos do GEEvH* 2(1): 7-23

Ramos S., Silva N., Caniça M., Capelo-Martinez J.L., Brito F., Igrejas G., Poeta P. (2013). High prevalence of antimicrobial-resistant *Escherichia coli* from animals at slaughter: a food safety risk. *J. Sci. Food Agr*, 93(3): 517-526.

Ramos S., Silva N., Jones-Dias D., Sousa M., Capelo-Martinez J.L., Caniça M., Igrejas G., Poeta P. (2013). Clonal Diversity of ESBL- Producing *Escherichia coli* in Pigs at Slaughter Level, in Portugal. *Foodborne Pathog Dis*, 10(1): 74-79.

Silva, A., Sousa, E., Palmeira, A., Amorim, P., Pinho, P. & Ferreira, D.A. (2013). Interaction between Hydroxyethyl Starch and Propofol: Computational and Laboratorial Study. *J Biomol Struct Dyn*, 32(11): 1864-75.

Simões, M., Martins, C., Ferreira, F. (2013). Host DNA damage response facilitates African swine fever virus infection. *Vet Microbiol*. 165(1-2): 140–7. doi: 10.1016/j.vetmic.2013.01.007.

Soares, M., Correia, J., Murta, A., Ferreira, F. (2013). Immunophenotyping of primary and metastatic lesions in feline mammary tumors – are they equal? *Microsc Microanal*, 19(Supl 4): 19-20.

Soares, M., Correia, J., Rodrigues, P., Simões, M., de Matos, A., Ferreira, F. (2013) Feline HER2 protein expression levels and gene status in feline mammary carcinoma: Optimization of immunohistochemistry (IHC) and *in situ* hybridization (ISH) techniques. *Microsc Microanal*. 19(4): 876-82. doi: 10.1017/S1431927613001529.

Soares, M., Correia, J., Rodrigues, P., Simões, M., de Matos, A., Ferreira, F. (2013). Feline HER2 Protein Expression Levels and Gene Status in Feline Mammary Carcinoma: Optimization of Immunohistochemistry (IHC) and In Situ Hybridization (ISH) Techniques. *Microsc Microanal*, 19(4): 876-82.

Book chapters *

**The following published book chapters are not included in the table above regarding the peer reviewed scientific papers.*

Félix, Luís; Antunes, Luís; Campos, Sónia; Venâncio, Carlos; Coimbra, Ana M. (2016) Recreational Use of Ketamine and Its Interaction with NMDA Receptors. *In Neuropathology of Drug Addictions and Substance Misuse*, 672 - 680. ISBN: 9780128002124. Amsterdam: Elsevier. doi: 10.1016/B978-0-12-800212-4.00062-5

Mestrinho L, Gordo I, Serrano M, Requicha J, Velazquez I Rodeia M, Castejón A. (2015). Estomatologia do gato. Companhia Portuguesa Consumer Health, Lisbon (ISBN: 978-989-99118-0-2)

Rodrigues JB, McLean A, Garrett C. (2015) Chapter 15 - Animal traction and work. Volume 2: Functionalities of the donkeys. Current Donkey Production and Functionality. In press.

Sanchís Polto J., Madeira de Carvalho L.M., Bonilla R., Duque de Araujo A.M., Arroyo F., Suárez J., Solari M.A., Romero J.A., Sánchez-Andrade R. (2014). Chapter 6. Horse Handling Conditions and Emergence of Neglected Infections: Fasciolosis. In *Horses: Breeding, Health Disorders and Effects on Performance and Behavior*. Nova Science Publishers. ISBN: 978-1-63117-560-2

Communications in congresses from the establishment's academic staff

	Number of communications			
	2013	2014	2015	2016
Oral	11	14	10	10
Poster	20	16	11	10
Without information	-	15	-	-

2016

Oral communication

Caldeira IS, Viegas I, Viegas C, Bastos-Silveira C, Requicha JF, Pires AE. Study of the prevalence of dental pathology in a museum collection of Iberian wolf (*Canis lupus signatus*). IV Congresso Ibérico do Lobo. Castelo Branco: 27-30 October 2016

Cardoso R, Viegas I, Cruz L, Almeida O, Requicha J. Evaluation of the relationship between intraocular pressure and central corneal thickness in dogs. European Society of Veterinary Ophthalmology Annual Meeting. Toulouse, France; 6-10 October 2016

Radar A., Abreu M, M. Oliveira, Payan Carreira R; M. Pires*. Caracterização do estroma dos Adenocarcinomas do Endométrio da Gata (FEA). XXI Meeting of the Portuguese Society of Animal Pathology. Lisbon 2016

Radar, A. Carvalho, J. Macedo J, M. Abreu, M. Oliveira, A. L. Saraiva, P. Faísca, R. Payan-Carreira, M. A. Pires. Feline endometrial adenocarcinomas. Stromal characterization for muscle invasion identification. ESVP Meeting Bologna 2016

F.Almada, A.G.Duarte, S.Besson, B.P.Rosa, F.Viegas, J.I.Robalo, J.J.Moura, L.B.Maia, P.Félix, J.L.V.Costa & J.J.Calvete. A simple and practical technique for fish venom extraction – Protein content analysis for future biotechnological applications. International Meeting on Marine Research (IMMR), Peniche (Portugal), 14-15 de Julho de 2016

Joao Cannas da Silva- Angola um gigante adormecido da Agro pecuária- Congresso da CPLP 28 de Outubro de 2016

Requicha J. Medicina Regenerativa Veterinária: considerações gerais. I Jornadas de Reabilitação Veterinária e Medicina Regenerativa, Vila Real, Portugal; 10-11 September 2016

Murta, D. Reunião Geral da Indústria dos Alimentos Compostos para Animais, Fátima, Portugal. (2016) Insetos: de desperdício alimentar a nova fonte nutricional.

S.Besson. Animal venom toxins: fabulous playground – promising toolbox. Workshop “Venomics and drug development”, Lisboa (Portugal), 18 de Janeiro de 2016

Ramos, S.C.M., Matos, A.J.F, Ribeiro, J.N., Martins, L.R.L, Ferreira, R.R.F, Santos, A.A., 2016. Serum levels of urokinase-type plasminogen activator in canine patients with cancer. Abstracts do 3rd World Veterinary Cancer Congress, pp 65. Foz do Iguassu, Brasil, 2016.

Poster communication

Coelho C, Bordelo J, Dias I, Viegas C, Carvalho P, Requicha J. Terapias à base de células estaminais em osteoartrite: estado da arte em Medicina Veterinária. I Jornadas de Reabilitação Veterinária e Medicina Regenerativa, Vila Real, Portugal; 10-11 September 2016

Coelho C, Bordelo J, Dias I, Viegas C, Carvalho P, Requicha J. Utilização de sinais moleculares no tratamento da osteoartrite em Medicina Veterinária: estado da arte. I Jornadas de Reabilitação Veterinária e Medicina Regenerativa, Vila Real, Portugal; 10-11 September 2016

Mestrinho LA, Louro J, Gordo I, Niza ME, Requicha JF, Gawor JP, Force J. Oral and dental abnormalities in 50 brachycephalic cats. XXV European Congress of Veterinary Dentistry. Dublin, Republic of Ireland; 19-22 May 2016

Raposo Duarte, L.; Almeida, B.; Ramos, J.; Henriques, J.; Alves, M.; Santos, A.S. "Coxiella burnetii screening in Pets". MedVetNet European Symposium "Current findings in Q fever". Bruxelas, 2016

Pinheiro FL, Anjo N, Queirós M, Albuquerque C, Morinha F, Requicha J, Dias I, Viegas C, Bastos E. Analysis of TLR9 gene in periodontal disease in Canis familiaris, XL Portuguese Genetics Conference, Coimbra, Portugal; 2-3 June 2016, pp. 71

Rocha C, Silva H, Assunção R, Requicha JF, Estudante M, Lobo L, Rodrigues LM. Application of photoplethysmography to monitor heart rate in dogs. International Society for Biophysics and Imaging of the Skin World Congress Lisbon, Lisbon Portugal; 31 May to 3 June 2016

Simões G, Mestrinho LA, Viegas I, Requicha JF. Evaluation of C-reactive protein levels in dogs with periodontal disease: preliminary results. XXV European Congress of Veterinary Dentistry. Dublin, Republic of Ireland; 19-22 May 2016

Teixeira A, Anjo N, Albuquerque C, Morinha F, Requicha J, Dias I, Viegas C, Bastos E. Variações genéticas no gene TNFRSF11A na doença periodontal canina. VIII Jornadas de Genética e Biotecnologia. UTAD, Vila Real, Portugal; 10-12 March 2016

Gomes D., Almeida O., Faísca P., Bragança M., dos Santos J.D., Santos A.A. (2016). Neoplasias oculares do cão: estudo retrospectivo de 5 anos. Abstracts do Congresso Hospital Veterinário XII, Portugal.

Santos M, Correia-Gomes C, Santos A, Santos J, Ribeiro J, Leite-Martins L, de Matos A, Lopes C, Dias-Pereira P (2016). Searching for new grading parameters and a specific prognostic index in canine mammary malignant tumors – a survival study. Abstracts do ESVCP-ESVONC congress, pp 214. Nantes, 2016.

2015

Oral communication

Devesa, J., Alves, M., Oliveira, A.. "Resistência a antibióticos em Staphylococcus pseudintermedius de isolados cutâneos de cães com piodermatite superficial". VI Encontro de Formação da Ordem dos Médicos Veterinários. Lisboa, 2015.

Raposo Duarte, L.; Alves, M., Santos, A.S. "Pesquisa de Coxiella burnetii em animais de companhia". 3º Congresso Nacional de Medicina Tropical. 1º Congresso Lusófono de Doenças Transmitidas por Vectores. Lisboa, Portugal, Abril de 2015.

Almeida P. Assessing the antiviral effect of the integrase inhibitor, raltegravir in 3 cats naturally infected with feline leukaemia virus (primeiro orador). 21st FECAVA EuroCongress/ IX Southern European Veterinary Conference/ 50 Congreso Nacional SEVC/ AVEPA. 15-17 October 2015, Barcelona, Spain.

Bordelo JP, Requicha JF, Bardet JF, Viegas CV, Dias MI. Aplicação da prototipagem rápida no estudo pré-cirúrgico de um caso de displasia bilateral do cotovelo em cão. VI Encontro de Formação da Ordem dos Médicos Veterinários. Lisbon, Portugal; 12-13 December 2015

Bordelo JP, Requicha JF, Bardet JF, Viegas CV. Produção de modelos físicos e de modelos virtuais para medicina dentária veterinária. XI Congresso Hospital Veterinário Montenegro - Geriatria. Santa Maria da Feira, Portugal; 21-22 February 2015

Critti A, Requicha JF, Martins A. Técnica de compressão fria pneumática intermitente: aplicação na reabilitação de cães e gatos politraumatizados ou após cirurgia. VI Encontro de Formação da Ordem dos Médicos Veterinários. Lisbon, Portugal; 12-13 December 2015

Martins, A, Carvalho C, Viegas I. Physical medicine and rehabilitation of dogs with peripheral vestibular syndrome 5th Animal Health and Veterinary Medicine Congress - OMICS International, September 26th – 27th, Valencia, Spain. (conference proceedings) 2015

Martins, A, Viegas I. Functional Neurorehabilitation in Dogs with Cervical Neurologic lesion 5th Animal Health and Veterinary Medicine Congress - OMICS International, September 26th – 27th, Valencia, Spain. (conference proceedings) 2015

Requicha JF. Medicina Dentária Veterinária: conceitos básicos e de enfermagem veterinária. Congresso de Enfermagem Veterinária da Escola Superior Agrária de Viseu. Viseu, Portugal; 23-24 May 2015

Batista, M; Murta, D; Diniz, P; Mateus, L; Lopes-da-Costa, L; Silva, E (2015) Notch signaling in the bovine oviduct and spermatozoa: a regulator of the spermatozoa-oviduct interaction?. Proceedings of the 2015 Annual Conference of the Society for Reproduction and Fertility, 20-22 July 2015, Oxford, United Kingdom.

Poster communication

Soares DG, Requicha JF, Langley-Hobbs SJ, Mestrinho LA. 2015. Pelvic fractures in cats: treatment approach and implications for neurological recovery. Journal of Feline Medicine and Surgery, 17

Almeida A, Dias C, Magro C, Ribeiro S, Requicha J, Patrício R. A importância da tomografia computadorizada como meio de diagnóstico e prognóstico das doenças da cabeça do coelho. VI Encontro de Formação da Ordem dos Médicos Veterinários. Lisbon, Portugal; 12-13 December 2015

Martins, A, Carvalho C, Viegas I. Functional Neurorehabilitation in Dogs with peripheral vestibular syndrome 5th Animal Health and Veterinary Medicine Congress - OMICS International, September 26th – 27th, Valencia, Spain. (poster) 2015

Bordelo JP, Requicha JF, Bardet JF, Dias IR, Viegas CV. 2015. Application of a 3D model from dicom file in the surgical resolution of malocclusion in rabbit. European Veterinary Conference Voorjaarsdagen, Amsterdam, The Netherlands, 11-15 April 2015

Bordelo JP, Requicha JF, Bardet JF, Dias IR, Viegas CV. 2015. Application of the Rapid Prototyping technology in the production of anatomical models for veterinary dentistry. European Veterinary Conference Voorjaarsdagen, Amsterdam, The Netherlands, 11-15 April 2015

Bordelo JP, Requicha JF, Bardet JF, Dias IR, Viegas CV. 2015. Application of a Rapid Prototyping from a DICOM file in the surgical resolution of radius curvus in dog. European Veterinary Conference Voorjaarsdagen, Amsterdam, The Netherlands, 11-15 April 2015

Bordelo JP, Requicha JF, Nóbrega MF, Viegas CV, Dias MI. Aplicação da prototipagem rápida e da digitalização 3D na conceção de uma prótese do membro pélvico em cão: estudo piloto. VI Encontro de Formação da Ordem dos Médicos Veterinários. Lisbon, Portugal; 12-13 December 2015

Requicha JF, Rocha J, Assunção R, Silva H, Estudante M, Lobo L, Rodrigues LM. 2015. Application of photoplethysmography to monitor heart rate The XXXI LIAC Meeting on Vascular Research. Lisbon, Portugal; 9-12 September 2015

Soares DG, Requicha JF, Langley-Hobbs SJ, Mestrinho LA. 2015. Pelvic fractures in cats: treatment approach and implications for neurological recovery. International Society of Feline Medicine European Congress. Oporto, Portugal; 1-2 July 2015

Lourenço, C.M.M., Patrício, R.F.G., Lopes, H.; Araújo, A.M. Ocorrência de parasitas gastrointestinais em aves de falcoaria e psitacídeos no distrito de Lisboa. VI Encontro de Formação OMV 2015

Lança, F., Araújo, A, Pinto, C., Mendes J., Barbosa, R., Flor, I., Soares, L., Paz-Silva, A. Seroprevalência da fasciolose nos bovinos leiteiros da ilha de São Miguel - Açores VI Encontro de Formação OMV 2015

2014

Oral communication

Cannas da Silva, J., Jos Noordhuizen (2014) Keynote speaker WBC – Integrated Herd Health Management Programmes . What and How. WBC Cairns Australia in CD proceedings 27 July – 1st August 2014

Cannas da Silva, J., Damaso, Angela (2014) Keynote Speaker WBC – Tropical Diseases WBC Cairns Australia 27 July – 1st August 2014 in CD proceedings

Abrantes J. “Biomechanical inputs to Podiatry using three-dimensional foot models”. In, XLV Congresso Nacional de Podologia de Espanha. 2-4 Outubro 2014, Sevilha. Espanha.

Henriques J., Felisberto R., Alves M. “Hematologic abnormalities in canine diffuse large B cell lymphoma: what we have found in a group of 37 dogs”. European Society of Veterinary Oncology Annual Congress. Viena, Austria, Maio de 2014.

Cannas S "Integrated Herd Health Management Programmes. What and How" - World Buiatrics Congress, Cairns Australia 27 July – 1st August 2014

Cannas S "Tropical Diseases" World Buiatrics Congress - Cairns Australia 27 July – 1st August 2014

Correia-de-Sá M., Magalhaes-Cardoso T., Lobo, L., Pedro B., Faria M., Correia-de-Sá P., Fontes-Sousa A.P. "Measurement of plasma adenosine as a putative biomarker of canine heart failure." Heart without borders, Cardiovascular development, disease & repair international conference, Porto, 28 e 29 de Novembro de 2014.

Correia-de-Sá M., Magalhães-Cardoso T., Pedro B., Lobo L., Correia-de-Sá P., Fontes-Sousa A.P. "Quantitative analysis of adenosine in the plasma by HPLC-DAD as a putative biomarker of heart failure in dogs." Apresentação de poster. III Congresso da Sociedade Portuguesa de Cardiologia Veterinária. Lisboa, 5 e 6 de Abril de 2014.

de Oliveira JT, Gomes C., Santos AL., Barros R., Ribeiro C., Mendes N., de Matos AJ., Oliveira MJ, Reis CA., Gärtner F. "Increased pharmacologically-induced sialylation worsens the progression of mammary tumours." GLYCO-T-9o International Symposium on Glycosyltransferases.

de Oliveira JT., Gartner F. "Sialylation dynamics in the microenvironment of mammary tumours – sialidase uncloning. Special Session on Hypoxia and Cancer cell protection in metastasis". 9th International Conference of Anticancer Research. Porto Carras, Sithonia, Greece, 2014.

de Oliveira JT., Ribeiro C., Rutteman G., Gartner F. "Hypoxia up-regulates galectin-3 in mammary tumour progression and metastasis. Special Session on Hypoxia and Cancer cell protection in metastasis". 9th International Conference of Anticancer Research. Porto Carras, Sithonia, Greece, 2014.

Fernandes D., Maia C., Furtado R., Correia CB., Pedroso L., Santos MI. "Meals served to children and elderly in care units in Portugal: have they quality and safety?" Aceite para a 24th International ICFMH conference, FOOD MICRO 2014, Nantes, França, 1-4 de Setembro de 2014.

Freitas I., Máximo R., Araújo M., Lobo L. "Ventrículo direito de dupla câmara em gatos. A propósito de 5 casos clínicos". Apresentação de poster. III Congresso da Sociedade Portuguesa de Cardiologia Veterinária. Lisboa, 5 e 6 de Abril de 2014.

Requicha JF. Má-oclusão dentária em animais de companhia. V Encontro de Formação da Ordem dos Médicos Veterinários. Lisbon, Portugal; 29-30 November 2014

Poster communication

Bordelo J, de Fornel P, Requicha J, Bardet J, Thibaud J, Viegas C. Prototipagem rápida como meio auxiliar no estudo pré-cirúrgico de um ameoblastoma num cão. XVIII Jornadas Internacionais de Medicina Veterinária. UTAD, Vila Real, Portugal; 18-19 October 2014

Bordelo J, de Fornel P, Requicha J, Bardet J, Thibaud J, Viegas C. Impressão 3D como meio auxiliar no diagnóstico e estudo pré-cirúrgico de lesões dentárias num coelho. XVIII Jornadas Internacionais de Medicina Veterinária. UTAD, Vila Real, Portugal; 18-19 October 2014

Bordelo J, de Fornel P, Requicha J, Thibaud J, Devauchelle P; Viegas C. Impressão 3D como meio auxiliar no estudo pré-cirúrgico de osteossarcoma das vértebras lombares de um gato. XVIII Jornadas Internacionais de Medicina Veterinária. UTAD, Vila Real, Portugal; 18-19 October 2014

Bordelo JP, Leite J, Requicha JF. Application of a 3D printed model from a DICOM file in the surgical resolution of spina bifida in a dog. European Veterinary Conference Voorjaarsdagen, Amsterdam, The Netherlands, 17-19 April 2014

Bordelo JP, Requicha JF, Bardet JF, Viegas CV. Aplicação da tecnologia de prototipagem rápida na produção de modelos físicos para medicina veterinária. V Encontro de Formação da Ordem dos Médicos Veterinários. Lisbon, Portugal; 29-30 November 2014

Bordelo JP, Viegas CA, Requicha JF. 2014. Aplicações da impressão 3D em medicina veterinária. VI Congresso da Sociedade Portuguesa de Ciências Veterinárias. Oeiras, Portugal; 3-5 April 2014

Requicha JF, Leonor IB, Muñoz F, Reis RL, Gomes ME, Viegas, CA. 2014. Nova matriz de engenharia de tecidos para a regeneração periodontal baseada num material biodegradável combinado com células estaminais derivadas de tecido adiposo canino. VI Congresso da Sociedade Portuguesa de Ciências Veterinárias. Oeiras, Portugal; 3-5 April 2014

Roque R., Bettencourt I., Lobo L. “Válvula Aorta Quadricúspide e Pseudoquadricúspide – Caracterização e Diferenciação”. Apresentação de poster. III Congresso da Sociedade Portuguesa de Cardiologia Veterinária. Lisboa, 5 e 6 de Abril de 2014.

Santos AA, Requicha JF, Santos ML, Lobo L. Dissociação atrioventricular em cães. III Congresso da Sociedade Portuguesa de Cardiologia Veterinária, Lisbon, Portugal; 5-6 April 2014

Simões AS., Clemente L., Ferreira AC., Alves M., Corrêa Sá, MI. “ Estudo da susceptibilidade de Brucella suis a antimicrobianos”. Congresso Ciências Veterinárias, Oeiras, Portugal, Abril de 2014.

Requicha JF. Research in veterinary dentistry. I Meeting of the Research Center for Biosciences & Health Technology, Lisbon, Portugal, 9-10 October 2014

Petrucci G., Freitas I., Lobo L. “Estenose pulmonar valvular e supra-avalvular numa família de gatos de raça Somali”. Apresentação de poster. III Congresso da Sociedade Portuguesa de Cardiologia Veterinária. Lisboa, 5 e 6 de Abril de 2014.

Palma R.; A. Godinho A.; Lobo L. “Histologia do sistema de condução cardíaco do cão.” V Encontro de Formação OMV. Lisboa, 29 e 30 de Novembro de 2014.

Petrucci G; Pedro B; Lobo L.” Caraterização eletrocardiográfica de distúrbios de condução cardíaca e morte súbita em cães da Serra da Estrela.” V Encontro de Formação OMV. Lisboa, 29 e 30 de Novembro de 2014.

Vilhena H, Martins A, Morais de Almeida P, Ferreira P, Lima T, Ribeiro A, et al. (2014). “Feline hyperthyroidism in Portugal”. 24th European College of Veterinary Internal Medicine – Companion Animals Annual Congress, 2014, Mainz.

Without information

Gomes-Costa M., Roupa I., Pequito M., Prazeres J., Abrantes J. “Horse’s fetlock angular behavior analysis through Intra Class Correlation (ICC)” 47th European Veterinary Conference. 17-19 April 2014. Amsterdam, Holland.

Guerreiro E., Cruz P., Lobo L., “Estenose Mitral em Cão e Gato. A Propósito de dois Casos Clínicos”. Apresentação de poster. III Congresso da Sociedade Portuguesa de Cardiologia Veterinária. Lisboa, 5 e 6 de Abril de 2014.

McLean AK, Wang W, Navas-Gonzalez FJ, Rodrigues JB. “Hematological and serum biochemical parameters in healthy working horses, donkeys, mules and hinnies in Portugal and Spain”; 7th International Colloquium on Working Equids - The World Horse Welfare. July 1st – July 3rd, 2014; London – United Kingdom.

Pequito M., Gomes-Costa M., Prazeres J., Bragança M., Roupa I., Fonseca R.G., Abrantes J. “Caracterização de Centros de Pressão do Puro Sangue Lusitano com recurso a duas placas de pressão”. In Livro de Resumos VI Congresso da Sociedade Portuguesa de Ciências Veterinárias

Pequito M., Roupa I., Gomes-Costa M., Prazeres J., Abrantes J. “Modelo biomecânico equino 3D de corpo inteiro: breve descrição e exemplo de aplicação”. In Livro de Resumos VI Congresso da Sociedade Portuguesa de Ciências Veterinárias

Raposo L., Henriques J., Faísca P., Alves M., Correia J., Fernandes A. “Molecular characterization of canine mammary tumours: the role of miRs and mRNAs as biomarkers in the metastatic transition”. European Society of Veterinary Oncology Annual Congress. Viena, Austria, Maio de 2014.

Ribeiro C., de Oliveira JT. Catarina Gomes, Rita Barros, Augusto J. de Matos, Celso A. Reis, Fátima Gärtner “Microenvironment-dependent regulation of galectin-3 in mammary tumours . GLYCO-T” 9th International Symposium on Glycosyltransferases. Porto, Portugal 2014.

Rodrigues C., Velhote-Correia M., Abrantes J., Nadal J., Rodrigues M. “Variabilidade intersujeitos da força de reacção do solo em diferentes saltos como medida de controlo postural”. 24th Congresso Brasileiro de Engenharia Biomédica, Uberlândia, MG, Brasil, 13-17 Oct 2014.

Rodrigues C., Velhote-Correia M., Abrantes J., Nadal J., Rodrigues M. “A sensibilidade dos testes paramétricos vs robustez dos não paramétricos e as diferenças na comparação de parâmetros discretos do movimento do CG em diferentes CAE'S”. In 24th Congresso Brasileiro de Engenharia Biomédica, Uberlândia, MG, Brasil

Rodrigues C., Velhote-Correia M., Abrantes J., Nadal J., Rodrigues M. “Diferenças entre a comparação intra e inter-sujeitos de parâmetros biomecânicos discretos”. In 24th Congresso Brasileiro de Engenharia Biomédica, Uberlândia, MG, Brasil, 13-17 Oct 2014.

Rodrigues C., Velhote-Correia M., Abrantes J., Nadal J., Rodrigues M. “O efeito da normalização e outros fatores de escala na comparação de parâmetros biomecânicos discretos”. In 24th Congresso Brasileiro de Engenharia Biomédica, Uberlândia, MG, Brasil, 13-17 Oct 2014.

Rodrigues Carlos MB., Correia MV., Abrantes J., Nadal J. “ Human optimization of lower limb muscle stretch shortening cycle”. EngOpt2014 - 4th International Conference on Engineering Optimization. 8 – 11 Setembro Lisboa, Portugal,

Rodrigues CMB., Correia MV., Nadal J., Carvalho CMP., Abrantes J. “Phase space analysis of whole body movement for different human lower limb SSC.” 7th World Congress of Biomechanics. July 6-11 2014, Boston, USA.

Santos MI. “Toxinfeções Alimentares: Novos cenários”, 2º Simpósio de Saúde Pública do Barroso, Boticas, 9 de Maio 2014. Livro de Resumos, pág 13-14.

Santos MI., Martins SR., Abreu M., Oliveira S., Almeida C., Lima AIG., Monteiro SAV., Ferreira RMSB., Pedroso L., Sousa I., Ferreira, MASS “The biological potential of fermented whey: improving the isolation of antibacterial polypeptides”. Abstracts (639262), P048, 7th International Whey Conference 2014, Rotterdam, The Netherlands 7-9 de Setembro de 2014.

2013

Oral communication

Fáisca, P.; Costa, M..J., Pontes, R., Aarújo, D., Gonçalves, K., Anágua, M., Carvalho, I. Feline intestinal B-cell lymphoma with Mott cell differentiation. XVIII Meeting of the Portuguese Society of Animal Pathology Evora 2013

Maia C., Cortes S., Cristóvão J., Afonso MO., Campino L. "Leishmaniasis in Portugal, the last decade. Fifth World Congress on Leishmaniasis". Fifth World Congress on Leishmaniasis, Porto de Galinhas, Brazil, Maio 2013

Maia C., Nunes M., Marques M., Henriques S., Rolão N., Campino L. "In vitro drug susceptibility of Leishmania strains isolated in Portugal from human and canine cases". Fifth World Congress on Leishmaniasis. Porto de Galinhas, Brazil, Maio 2013

Maia C., Cortes S., Cristóvão J., Afonso MO., Campino L. "Reservatórios e vectores de leishmanioses em Portugal". Santa Maria da Feira, Portugal, Fevereiro 2013

David Ferreira. "Targeting central compartment or effect compartment concentration? What we know from human anaesthetists". 15th International Meeting of Canine and Feline Medicine in collaboration with the 6th ISVRA Congress of the Faculty of Veterinary Medicine of the University of Studies of Turin. Riccione, Italy, Junho 2013.

David Ferreira. "Depth of anaesthesia monitoring and effect-site TCI in dogs: clinically meaningful or just new tools to play with?". 15th International Meeting of Canine and Feline Medicine in collaboration with the 6th ISVRA Congress of the Faculty of Veterinary Medicine of the University of Studies of Turin. Riccione, Italy, Junho 2013.

David Ferreira. "Small animal TIVA-TCI in clinical practice: the Portuguese experience". 15th International Meeting of Canine and Feline Medicine in collaboration with the 6th ISVRA Congress of the Faculty of Veterinary Medicine of the University of Studies of Turin. Riccione, Italy, Junho 2013.

Catarina S. Nunes, Aura Maia, Pedro Amorim, Paula Guedes de Pinho, David A. Ferreira. "Pharmacodynamics of Propofol in Pigs: Determination of ke0". Annual Meeting of the American Society of Anesthesiologists, San Francisco, USA, Outubro 2013

Silva, A., Palmeira, A., Sousa, E., Amorim, P. Guedes de Pinho, P., Ferreira, D.A. "Interaction between Hydroxyethyl Starch 130/0.4 (HES) and propofol: computational, spectral and pilot laboratorial studies". Euroanaesthesia 2013 Congress, Barcelona, Espanha, Junho 2013.

Branquinho J., Gregório H., Lobo L., Henriques J. "Contribuição para o estudo do linfoma no cão em Portugal: Análise de 50 casos". XXI Congresso Nacional APMVEAC. Lisboa, Portugal, Maio 2013

J. Henriques, B. Almeida, J. Ramos, V. Pereira, A.S. Santos, R. Sousa, J. Heeney, J. Dobson, M. Alves. "Molecular and serological evaluation of vector-borne diseases infection in dogs with non-Hodgkin lymphoma". European Society of Veterinary Oncology Annual Congress, Lisboa, Portugal Maio 2013.

Poster communication

Maia C., Ramos C., Martins M., Coimbra M., Sousa B., Cristóvão J., Cortes S., Campino L. "Leishmania infantum and Dirofilaria immitis infection in domestic and stray cats from southern Portugal". Fifth World Congress on Leishmaniasis, Porto de Galinhas, Brasil, Maio 2013

Ramos C., Maia C., Coimbra M., Sousa B., Martins M. "Rastreamento de Dirofilariose felina em gatos provenientes de uma região endémica para a dirofilariose canina, Olhão". IX Congresso Hospital Veterinário Montenegro-Medicina e Cirurgia Felina, Santa Maria da Feira, Portugal, Fevereiro 2013

Silva, A., Ortiz, A.L, Campos, S, Venâncio, C, Guedes de Pinho, P, Amorim, P, Ferreira, D.A. "Effect of type of fluid replacement solution in propofol and its free-metabolites concentrations in pigs: crystalloids versus colloids". XLIII Reunião Anual da Sociedade Portuguesa de Farmacologia, XXXI Reunião de Farmacologia Clínica, XII Reunião de Toxicologia, Porto, Portugal, Fevereiro 2013

João Cláudio, Miguel Ramos, Hugo Pereira, Rui Rodrigues, Martinho Capelão, Lisa Mestrinho, António Martinho, David Ferreira. "Caracterização Métrica da Articulação Temporomandibular em Gatos". IX Congresso Hospital Veterinário Montenegro, Santa Maria da Feira, Portugal, Fevereiro 2013

Ana Ortiz, Helena Vala, Carla Garcia, Rita Cruz, Carlos Venâncio, Aura Silva, David Ferreira. "Small Intestine Apoptosis after Haemorrhage Followed by Volume Replacement- A Preliminary Study". 31st Meeting of the European Society of Veterinary Pathology and the European College of Veterinary Pathologists, Londres, Reino Unido, Setembro 2013

Cruz R, Vala H, Machado A, Venâncio C, Mesquita JR, Silva A, Ortiz AL, Ferreira D. "Renal Apoptosis Signaling In A Pig Haemorrhagic Model, After Volume Replacement With HES 130/0.4 or Ringer Solution". 31st Meeting of the European Society of Veterinary Pathology and the European College of Veterinary Pathologists, Londres, Reino Unido, Setembro 2013

M. I. S. Santos, A. I. G. Lima, C.M.B.S. Pintado, S. A V. S. Monteiro, R. M. S. B. Ferreira, L. Pedroso, I. Sousa and M. A. S. S. Ferreira. "Antimicrobial peptides produced by whey fermentation". XVIII Internacional Symposium on Problems of Listeriosis, Goa, India, Setembro 2013

S.G. Spínola, M.M.R.E. Niza, H. Guerreiro, I. Coimbra, M.O. Ferreira, M.F.M. Lopes, R.L. Ferreira, L. Mestrinho. "Estudo observacional de alterações dentárias em cães da raça Chihuahua". 21º APMVEAC Congress, Lisboa, Portugal, Maio 2013

I Gordo, MM Minderico, NM Leal, AM Serrano, LA Mestrinho. "Renal descendus e Reimplantação do ureter proximal lacerado: relato de um caso clínico". 21º APMVEAC Congress, Lisboa, Portugal, Maio 2013

Mestrinho LA, Requicha P, Leal N, Sousa R, Niza MMRE. "Partial zygomatic and coronoid ostectomy for treatment of jaw locking in an 8 year Gold dog." 12nd World Veterinary Dental Congress and 22nd European Congress of Veterinary Dentistry, Maio 2013

Regada S., Ribeiro P., Antunes L., Lobo L. "Efeitos depressores cardiovasculares da sedação com medetomidina em gatos". IX Congresso Hospital Veterinário Montenegro, Santa Maria da Feira, Portugal, Fevereiro 2013

Sousa C., Oliveira J., Guimarães J., Lobo L. "Linfoma Renal Primário Bilateral num cachorro Bouvier Bernois". IX Congresso Hospital Veterinário Montenegro, Santa Maria da Feira, Portugal, Fevereiro 2013

Craveiro H., Marcelino T., Rego J., Carvalho P., Oliveira J., Lobo L. "Megaesófago secundário a divertículo esofágico congénito". IX Congresso Hospital Veterinário Montenegro, Santa Maria da Feira, Portugal, Fevereiro 2013

Sousa F., Lobo L., Gregório H., Queiroga F. "Qualidade de vida na quimioterapia". IX Congresso Hospital Veterinário Montenegro, Santa Maria da Feira, Portugal, Fevereiro 2013

Gregório H., Prada J., Pires I., Queiroga F.L., Lobo L. "Use of firocoxib alone or in combination with metronomic chlorambucil doses in macroscopic unresectable cancers in dog" ESVONC Congress, Lisboa, Portugal, Maio 2013

Calejo A.F., Lobo L., Guimarães J., Muller A.; Fontes-Sousa A.P. "Electrocardiographic reference values in the Castro Laboreiro Dog, a Portuguese breed". 23rd Annual ECVIM Congress, Liverpool, Reino Unido, Setembro 2013

J. Henriques, B. Almeida, J. Ramos, V. Pereira, A.S. Santos, R. Sousa, J. Heeney, J. Dobson, M. Alves. "Molecular and serological evaluation of vector-borne diseases infection in dogs with non-Hodgkin lymphoma". European Society of Veterinary Oncology Annual Congress, Lisboa, Portugal, Maio 2013

L. Raposo, S. Santos, J. Henriques, M. Alves, P. Faísca, A. Beselga, J. Correia, A. Fernandes. "Insights into the molecular basis of canine mammary cancer: the use of miRs in the characterization of canine mammary tumours". European Society of Veterinary Oncology Annual Congress, Lisboa, Portugal, Maio 2013

Faísca P, Costa MJ, Gonçalves M, Anágua M, Carvalho I. "Linfoma intestinal do tipo B com diferenciação em células de Mott num gato". XVIII Encontro da Sociedade Portuguesa de Patologia Animal. Encontro Internacional de Patologia de Leporídeos, Évora, Portugal, Maio 2013

Santos S., Patrício R. "Hérnia de Bexiga associada a Angioleiomiossarcoma Cutâneo em Coelho". XVIII Encontro da Sociedade Portuguesa de Patologia Animal. Encontro Internacional de Patologia de Leporídeos, Évora, Portugal, Maio 2013