



LISBOA

UNIVERSIDADE  
DE LISBOA



FACULDADE DE MEDICINA VETERINÁRIA  
UNIVERSIDADE DE LISBOA



**EAEVE**

**Lisbon, 2024**

**Appendices**

[www.fmv.ulisboa.pt](http://www.fmv.ulisboa.pt)





Romantic XVII<sup>th</sup> century fountain from former premises



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# Appendix 1

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Strategic Plan



**UNIVERSITY OF LISBON**  
**Faculty of Veterinary Medicine**

**Strategic and Action Plan**  
***2023-2026***

*Proposal from the President of FMV to the School Council*

***APPROVED BY THE SCHOOL COUNCIL ON 11/11/2022***



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## I. INTRODUCTION

FMV was **the first Portuguese-language Veterinary Education Establishment in the world** (1830) and is the only one in Portugal **evaluated and approved by the European Committee of Veterinary Education** (ECOVE), which gathers the European Association of Establishments for Veterinary Education (EAEVE) and the Federation of Veterinarians of Europe (FVE).

FMV's **mission** is *"to create, transmit and disseminate culture, science and technology in the area of Veterinary Sciences, through the development of educational activities, research and provision of excellent services, for the benefit of society"*.

FMV's **Vision** is *"to be one of the best Schools in Europe in Teaching and Research in the area of Veterinary Sciences, recognized for its high standards of quality and innovation, offering conditions that attract the best protagonists and providing a conducive and stimulating environment for the development of these activities, in a culture of intellectual and scientific freedom, cooperation, innovation and quality, in respect for the values of ethics, social responsibility and appreciation for merit"*.

The 2023-2026 strategic plan has as its framework and main goal the fulfillment of FMV's Mission and Vision as fundamental strategic guidelines, respecting and honoring the historical past and all those who worked and fought to make it today a reference institution in the country and in the World, which challenges us to maintain and, if possible, increase this already high level of quality that we have achieved.

FMV was evaluated and approved by ECOVE with total success in November 2017. This goal, considered FMV's first priority, was achieved and we will now have the difficult task of maintaining this accreditation, with everything it already requires and will require in the future, for the benefit of the students who choose us in the most important part of their training and for the prestige of Portuguese veterinary teaching and research.

In addition to **Teaching**, simultaneously and coherently, initiatives must be taken and every effort made so that:

- a) **Scientific Research** can continue its growth process and reach funding levels that allow it to reach other levels of development and impact;

- b) **University Extension**, namely the services provided to Society, constitute a high quality reference, winning the trust of those who seek us and strategically supporting other sectors of activity (Teaching and Research).

In all these fields of action, FMV must be guided by policies that aim at **quality, innovation, cooperation** and **sustainability**, based on the values of:

**Freedom**, a fundamental pillar of the University, guaranteeing and promoting a free space for debate and the generation of ideas;

**Ethics** of principles, of mutual respect between all, considering rights, but also civic and constitutional duties, and its special condition as a public institution;

**Justice** and **equity** of treatment and distribution of efforts;

**Rigor** in the exercise of powers and the discerning and fair management of resources, in strict compliance with laws and respect for hierarchies;

**Transparency**, promoting full visibility of decisions and their reasons;

**Appreciation of merit**, rewarding the best, not only in each person's specific activity but also in their contribution to the community and to the continuous improvement of FMV;

**Solidarity** with the most disadvantaged, by Nature or by Society.



## **II. INTERNAL AND EXTERNAL DIAGNOSIS**

The diagnosis of the institution's strengths and weaknesses and the analysis of its external environment, in the form of potential opportunities, constraints and threats that are likely to occur, certainly allow for a better definition of the strategic goals to be pursued and the respective lines of action to be developed.

### **Strengths:**

- International recognition - it is the only Veterinary Medicine study program approved by ECOVE in Portugal;
- Being part of the University of Lisbon (ULisboa), the largest Portuguese university, providing the establishment of new internal collaborations in terms of teaching and research, an increase in critical mass, a greater capacity for negotiation (economy of scale), access to greater support from the Rector's shared services in the faculty's administration and greater visibility of FMV;
- Teaching staff of high scientific and pedagogic quality, mostly with PhDs, working in full-time or exclusively;
- High quality students, composed of individuals with good or very good marks in secondary education and national exams, selected in a highly competitive process;
- Modern, spacious, well-equipped facilities, with large areas for practical teaching and research;
- Study Plan regularly revised and updated following international recommendations;
- A Teaching Hospital with local and outpatient care, which provides clinical services in all areas of Veterinary Medicine, from prevention to diagnosis and more complex medical and surgical treatments, 24 hours/day and 365 days/year, consisting of six units:
  - a) Companion Animals Clinics;
  - b) Horse Clinics;
  - c) Food Animals Clinics;
  - d) Diagnosis Centre;
  - e) Pharmaceutical Services;
  - f) Biological Isolation and Containment Unit.

- A well-equipped Minimally Invasive Imaging and Surgery Center with two computed tomography scans and one magnetic resonance imaging scan;
- Several Residency and Internship programs in the different specialities and areas of Veterinary Medicine;
- A research unit (Centre for Interdisciplinary Research in Animal Health - CIISA), which covers the four main areas of Research: Animal Health, Veterinary Medicine, Animal Production and Food Safety in close collaboration with more than 70 institutions at the national and international level, classified in 2019 as *Excellent* by FCT;
- An Associated Laboratory, Laboratory for Animal and Veterinary Sciences (AL4Animals), coordinated by CIISA and integrating two other units, the Centre for Animal Science Studies (CECA) and the Centre for Animal and Veterinary Sciences (CECAV);
- Two Collaborative Laboratories (CoLab) in which FMV participates: VectorB2B and FeedInov.

**Weaknesses:**

- Public financing is far below its European counterparts with which it is compared and evaluated at the same level of demand, requiring a high effort to create own revenues that guarantee the quality of the activities provided, but conditioning its potential development;
- Aging human resources and below the needs recommended by national and international bodies, especially technical and administrative workers;
- Facilities of poor construction quality involving expensive maintenance and improvement works that require external financial support;
- Limited areas for livestock species due to the lack of spaces;
- Delay in the full implementation of a quality assurance system in ULisboa and FMV.

**Opportunities:**

- Life and Health Sciences are undoubtedly the most dynamic areas of research at the global level and for which Society has higher expectations, prompting the allocation of significant financial resources to these areas.
- Dissemination and development, finally, of the concepts of One Health (One Health, Global Health) or Zoonotic, multisectoral and transdisciplinary approaches involving human medicine, veterinary medicine and the environment.

- Development of partnerships to promote teaching and research internationalization, particularly through European programs and with Portuguese-speaking countries;
- Ability to attract international students finally possible from the 2019-2020 academic year;
- Establish protocols with the neighbouring School of Agriculture (ISA) to create synergies and **optimize** results in terms of teaching, research and use of specific areas of Tapada da Ajuda for practical and research activities.

**Main constraints and threats:**

- The high cost of veterinary medicine training, generally acknowledged as the most expensive of all university education, and the country's financial situation suggests that public funding will never be sufficient to reach the levels of its counterparts in central-northern Europe;
- The current global situation due to the COVID-19 pandemic and, more recently, the armed conflict in Europe, has produced significant effects on financial markets, the availability of raw materials, the cost of energy and the transport of goods, resulting in a significant increase in inflation and difficulties and unpredictability in acquiring goods, thus leading to a significant increase in expenses and a decrease in workers' purchasing power;
- Heavy and rigid management and public procurement rules lead to limited autonomy and flexibility in human resources management and a huge waste of time and resources on bureaucratic activities.

### **III. MAIN ACHIEVEMENTS 2019-2022**

For a better sequential framing of the lines of action to be developed we recall the main achievements of the previous four years in the different areas of action.

#### **TEACHING**

During the 2018-2022 period, all existing study cycles remained in full operation and were created the **master's degree in Equine Sciences**, which will start in the 2023-2024 academic year, just like the Erasmus+ MorphoPHEN - Morphological Phenotyping of Animal Models of Human Diseases, recently approved. The **degree and master's degrees in Zootechnical Engineering**



were revised with the ISA, ensuring fairer financing for both Schools and a simpler and more efficient administration, with clear benefits for students. Significant investments were made in **audiovisual, IT and environmental equipment in auditoriums and classrooms**, improving teaching conditions.

The **pandemic** forced significant adaptations in teaching and assessment for five consecutive semesters in all study cycles, however, it was possible to guarantee essential training, assessment of learning and avoid the threat of repeating a semester. Distance teaching and assessment, along with the **pedagogical training** made mandatory for teachers by the Pedagogic Council (PC) from 2019 onwards, certainly contributed to a modernization in teaching methodologies.

The **self-evaluation reports for all study cycles** coordinated by FMV were prepared and delivered to **A3ES** within the deadlines set, but, due to the pandemic, the appointment of the respective evaluation panels and meetings were postponed by this Agency, having only been held in 2022, with **complete success**. The **Interim Report** on the MIMV was prepared and sent to EAEVE in April 2021, which was approved without any additional recommendations.

As planned, the Scientific Council began **reviewing the MIMV Study Plan**, following the guidelines and recommendations of the various bodies and the opinions of teachers, students, former students, the Advisory Board and co-opted members of the School Council, which, with regard to the list of curricular units, was approved by the Scientific Council on May 20, 2022, now moving to the discussion and approval phase of the respective program contents. The Scientific Council also reviewed the **MIMV Regulation** and the **Performance Assessment Regulation for FMV teachers** in 2016 and 2019, which led to the publication of the new Regulation in DR (Diário da República) on 24-12-2021. The **crediting system for previous training and equivalences** and the **teaching service distribution system** were also revised.

The Pedagogic Council created the **Student Support Office (GAPE)** and the **Mentor Group (GM)** which, in an organized way, began to provide valuable support to students. It is worth highlighting PC's decisive action in the rapid adaptations to distance learning and in the numerous reschedulings of teaching activities dictated by the evolution of the pandemic, always to guarantee the fulfillment of **academic programs** and **maximum safety for teachers and students**.

The **use of models in teaching** continued to increase with the acquisition of a life-size bovine model to train students in resolving dystocia and the Clinical Skills Training Center was reinforced with a second room in building G.

## **RESEARCH**

In the period 2018-2022, two very important goals, which have been pursued for a long time, were achieved:

1st - In 2019, based on its productivity records, its new strategic plan for 2020-2023 and a very competitive assessment carried out by an international panel, **CIISA was classified as Excellent**. This classification allowed access to a significantly higher level of funding, enabling the financing of more research projects, the acquisition of equipment and the direct opening of 12 doctoral scholarships.

2nd - In 2021, due to the CIISA classification of Excellent a competitive application was presented and approved, led by CIISA and integrating two other units, the Centre for Animal Science Studies (CECA) and the Centre for Animal and Veterinary Science (CECAV), giving rise to the Associated Laboratory for Animal and Veterinary Sciences (AL4Animals). Although it still has residual funding, this Associated Laboratory opens up perspectives of access to funding that were so far closed and the development of new important collaborations for the quantitative and qualitative progress of research in FMV.

In 2021, the installation of a **BSL-level 3 Laboratory** in the Infectious Diseases sector was completed, an old dream that will now allow the carrying out of work that was previously impossible to carry out due to the absence of these safety conditions.

Also in 2021, the Clinics Department approved the creation of the **Minimally Invasive Imaging and Surgery Center** and the **Comparative Surgery Center**, structures that aim, respectively, to develop and optimize the use of equipment in research, teaching and provision of services and the training of surgeons.

**CIISA** continued to develop its activity, essential for the development of knowledge and the foundation of Teaching, namely by annually opening lines of financing for research projects of different types (Innovation, Continuity and Master's), based on competitive applications evaluated by a panel and from missions to national and international scientific meetings to

present work or prepare projects or research networks, also rewarding the best publications. Within the scope of multi-annual financing and the Excellent rating, financing was finally obtained for the acquisition of major equipment, namely a Flow Cytometer, a Liquid Chromatograph coupled to mass spectrometry (LC-MS) and a Confocal Microscope.

### **UNIVERSITY EXTENSION**

FMV's university extension is mainly developed through the services that the Teaching Hospital provides to Society. During the period 2018-2022, attempts were made to improve and optimize these services, through several actions:

- a) Reorganization of the Teaching Hospital: individualization of the **Horse Clinics**, the **Food Animals Clinics** and the **Biological Isolation and Containment Unit**;
- b) Significant improvements in the **organization and administrative and financial management** of the various units of the Teaching Hospital;
- c) Reorganization of the **Diagnosis Centre**;
- d) Hiring **more senior and distinguished veterinarians**, more **veterinary nurses** and a **hospital manager**;
- e) Opening of **residences** and **internships**; there are currently 4 residencies and 9 internships in progress; one residency will begin by the end of 2022 and another residency is expected for 2023;
- f) Definition of **careers, salary scales** and a **performance evaluation system**;
- g) Acquisition of new **equipment**, including a second CT scan and a Magnetic Resonance Imaging, as part of an application submitted to the Lisbon Regional Operational Program (POR Lisbon 2020), approved on 24/01/2020, and which aims to create the Minimally Invasive Imaging and Surgery Center;
- h) Review of protocols with **Blood Bank** support institutions and its reactivation;
- i) Carrying out **surveys** of clients, veterinarians and veterinary nurses.



Alongside the services of the Teaching Hospital, FMV continued to develop its university extension in its various aspects of support and collaboration with Society, from participation in projects to various initiatives with public entities and associative organizations.

It should also be noted that during this period:

- a) Two **Collaborative Laboratories (CoLab)** were approved by FCT with the participation of FMV:
  - i. **VectorB2B** integrated by a group of companies (Technofage, Bevag, Medinfar Laboratory) and public scientific institutions (FMV, Faculty of Pharmacy and Faculty of Medicine of ULisboa and University of Coimbra) whose main goal is to enhance resources and skills of its associates in the field of biotechnology in the development of new drugs and diagnostic techniques to provide differentiated, high-quality services;
  - ii. and **FeedInov** in which it participates with the Portuguese Association of Compound Food Industries (IACA) and several companies in the Animal Feed sector and institutions of the national scientific network (INIAV, UTAD, ICBAS, INESC TEC and REQUIMTE) to promote research and innovation in animal nutrition and safety throughout the food chain, with an impact on the safety of animal products;
- b) The Education committees of the following European Specialty Colleges recognized FMV-ULisboa as a **Training Center** in their areas:
  - *Veterinary Internal Medicine - Companion Animals*
  - *Equine Internal Medicine*
  - *Veterinary Surgeons (Equines)*
  - *Veterinary Microbiology*
  - *Animal Welfare and Behavioural Medicine*
  - *Bovine Health Management;*
- c) FMV's first service provision laboratory, the Animal Reproduction laboratory, LabRepA, was **accredited by IPAC**, a decisive step towards recognizing the quality of the work carried out and attracting clients who enhance interaction with Society and contribute to the Teaching and applied research.

## TECHNICAL AND ADMINISTRATIVE SERVICES

In this area, the conclusion of the process of extraordinary regularization of precarious employment in the Public Administration (**PREVPAP**) made it possible to clarify the situation of 23 workers and **reorganize some Services**, of which the Financial Resources Division stands out.

However, the **scarcity of human resources in the area of Human Resources** has conditioned the opening and conclusion of competitions in various areas, from the Academic and Human Resources Division (DARH) itself to the level of support for Teaching and Research.

Also in this case, the pandemic was felt very negatively, reducing working hours and efficiency by confining workers or placing them on teleworking and moving them away from their usual work to other new but priority tasks, such as teaching adaptations and collection of information necessary to implement security rules.

Finally, in 2022, it was possible to **reinforce the human resources team**, thus expecting greater speed in all hiring, renewal and evaluation processes.

It is also important to mention the hiring of an **image and communication** technician for the first time, an important area for FMV's visibility and external affirmation.

## **FACILITIES**

The **degradation of the FMV buildings** is evident, resulting from a very low construction quality, deficiencies in the construction itself and the lack of maintenance due to the lack of financial resources. These problems have motivated several urgent interventions over the years, which have resolved some of the more glaring situations, but left many others unsolved. It is also important to highlight that FMV's scarce budget never included funds for these tasks, and important financial resources were consumed in this effort that could have been used to achieve important strategic goals for FMV, such as the construction of new facilities, adaptation and requalification of other existing equipment or acquisition of new equipment.

In general, FMV buildings present a **significant state of degradation, mainly concerning their exterior**, due to problems coming from water infiltration and normal wear and tear inherent to use.

In the period 2018-2022, a **very constructive dialogue was maintained with the Rectory**, in order to find the technical methodologies and financial resources that would allow the recovery of the FMV infrastructures to begin. In this sense, the elaboration of a **general**

**rehabilitation project** was considered decisive, whose competition, in the form of Prior Consultation, was launched on 08/21/2020, which, surprisingly, did not attract any candidates. Due to this result, on 10/28/2020 an International Public Competition of higher value was launched in which 24 companies competed. Awarded to the candidate ranked 1st, the respective contract was signed in February 2021, the Project was delivered in July 2021 and **the first works competition worth more than 2.1 million euros were launched in the last quarter of 2021**, relating to the resolution of the main problems in buildings A, B, C and D. This was only possible with the financial support resulting from the planned accumulation of balances from previous years and a financial contribution from the Rectory.

The rehabilitation works on building D took place between April and September 2022. In May 2022, the rehabilitation works on buildings A, B and C were awarded, awaiting approval from the Court of Auditors.

A competition was also launched in 2021 for the **Organic Recovery Unit (UVO) of Organic Waste** project, a solution that will allow for the long-term environmentally sustainable treatment of manure produced by livestock species in FMV.

In terms of **energy efficiency**, in 2019 the Faculty took part in the Public Competition for the “Contract for the rehabilitation of the lighting systems of a set of buildings of the Central Services of the University of Lisbon, its Schools and/or Organic Units” which took place at the end of 2020 and beginning of 2021 with the **replacement of existing old lamps with LED technology**, and competed, in 2022, within the scope of the Recovery and Resilience Program (PRR), for the installation of new equipment (photovoltaic panels, solar water heating panels, replacement of gas boilers, among other energy-related interventions, etc.) that can make a significant contribution to energy savings in the facilities.

Through the Recovery and Resilience Program (PRR), FMV competed in 2021 for **Impulso Adultos** as part of the ULisboa candidacy, where it assumed a very significant position in terms of the **courses offered** (9), having in return funding for hiring teachers and for carrying out works and purchasing equipment. Although ULisboa's application obtained the best classification, the allocation of funds did not allow it to reach the defined maximum level, and considerable funding is still expected.

Finally, an important note:



After a long process, the FMV facilities were finally **registered in the name of the Faculty** at the Lisbon Land Registry Office, in 2021.

#### IV. LINES OF ACTION

The intrinsic knowledge of the realities of FMV, based on the detailed analyzes and reflections carried out for the self-evaluation reports for national and international evaluations, the recommendations of the respective evaluation panels and the experience of the first term, give us a very clear vision of the strengths and weaknesses of the institution. From reading these documents and perceiving the internal and external reality of the institution, the following lines of action emerge in the various aspects of activity for the next four years, which the President of FMV proposes to the School Council, in line with the program presented in the time of application.

##### **FINANCING**

FMV's public funding has always been **scarce and clearly insufficient** to guarantee the quality we would like and be able to achieve. Only the enormous **increase in own revenue** achieved in the last decade, at the expense of internal efforts, allowed the Faculty to continue operating and reach current quality levels.

At the same time, the **recognition by the Rector** of the high cost of Medical-Veterinary training finally gave a positive response to an old demand from the FMV Presidency. As a result, the Rector began the gradual increase in FMV funding in 2016, which reached its full extent in 2022, at a level that finally allows us to hire the human resources we need, make investments in structures and equipment and reinforce operations creating better working conditions for the entire FMV community and allowing even better results to be achieved.

However, even with this significant increase, the State Budget continues to be **spent mostly on human resources** and efforts to raise own revenues to support the entire operation of the most expensive education in the world continue to be necessary. Therefore, as a preventive strategy against possible new financial constraints and to reduce dependence on the State Budget, all possible sources of financing must be explored, always impartially and transparently. In this sense, several paths should be followed:

- a) **Increase in services provided abroad**, always based on quality, rigor, independence and fair prices, from specialized courses, to technical services and space rental;

- b) Diversification of funding sources, such as **technology transfer**, space naming and **patronage**;
- c) **Offering new study cycles** leading to a degree;
- d) **Update of fees and fees charged** for administrative services.

### **EXPENSE**

Although in a restrained way, there will certainly still be opportunities to **rationalize operating costs**. In addition to the possible improvement in the management of the acquisition of consumables and services, it will be also necessary:

- a) Continue to introduce equipment/systems that increase the **energy efficiency** of buildings, taking advantage of all opportunities for financial support intended for these purposes;
- b) Rethink systems and contracts for the supply and use of **electricity, water and gases**;
- c) Continue to invest in **common use equipment** that avoids redundancies and optimizes resources;
- d) Optimize the use of **IT equipment**;
- e) Reinforce the **paper and printing saving policy**, finding alternative ways and improving the forecast of these needs;
- f) Analyze the working conditions of **FMV vehicles** and evaluate other ways of ensuring transport for students and teachers at lower costs.

### **ASSET MANAGEMENT**

After managing to carry out the rehabilitation project and finding financing for most of it, **the rehabilitation works finally began in April 2022**, as described above. The **rehabilitation of buildings A, B, C and D will take the next year and a half** and will require close monitoring to guarantee the quality of the planned work. Then there will be the remaining buildings, less priority, but with also pressing needs, especially in terms of metalwork and frames (doors, windows). There will also be small and medium-sized interventions to optimize and adapt spaces that are becoming scarce for needs and to ensure greater comfort for workers and students.



Better use of the currently open area on the 2nd floor of building C could provide more leisure areas, favoring everyone's well-being.

In order to attract financing, the already old projects of remodeling the Teaching Hospital, the construction of versatile and multipurpose classrooms, the museum, and the library at the Gomes Freire facilities, which remain in storage, but ready to be assembled, should be considered.

In terms of research and service provision equipment, in the last 4 years several large and expensive pieces of equipment, as already mentioned, have been acquired, with the hope that new programmatic funding from CIISA will allow us to acquire some more, as well as continue to equip the Teaching Hospital and Laboratories.

### **TEACHING**

**ECOVE accreditation** should not be seen as an end, but as a means and a permanent stimulus for FMV to achieve the level of quality it seeks in all its activities. This accreditation should not slow down the permanent process of improvement, leading to its stagnation and regression, especially because **EAEVE's criteria for the next evaluation in autumn 2024 will be higher than those of 2017.**

The **new MIMV Study Plan**, whose list of curricular units was recently approved, promises a paradigm shift in the way of teaching, learning and evaluating. The integration of subjects, the introduction of new themes, particularly soft skills, the significant increase in the number of hours of clinical teaching at the Hospital (rotations) and the reduction of exam periods promise new and more stimulating times for students and teachers. At the same time, it is essential to **innovate teaching, learning and assessment pedagogical methodologies**, making them more attractive, functional and ecological. Teaching aimed at today's young people and the needs of tomorrow's society. Digital tools and artificial intelligence are, for example, already a reality in veterinary teaching and practice.

On the other hand, the astonishing speed at which knowledge appears also requires new learning strategies and permanent updating. It is no longer possible to present it statically, with the expectation that it will last for a long period. Today, **it is not only necessary to guide the student to the “state of the art”, but, just as important as that, it is essential to make them**

**aware of how ephemeral this state of the art is** and that is crucial its permanente **updating**, or at least frequent, to ensure quality performance in a very competitive job market.

All these considerations do not and cannot under any circumstances lead to a lower level of demand, but rather to **making the work of teachers and students more efficient and attractive**, in favor of a **graduate who is better prepared and motivated** to respond to the demands of the modern and future times. Increasing student satisfaction, improving the scientific, pedagogical and organizational quality of teaching, will always be a good strategy to obtain the best results. Let us always remember that students are the main reason for FMV to exist!

However, of the countless aspects that could be improved, we emphasize those that seem most important and priority:

- a) Promote a **stimulating and profitable teaching-learning environment**, which takes into account **Day One Competencies** but also the evolution of paradigms for the transmission of knowledge and skills and the characteristics of current young university students:
  - i. **Modernizing the way of teaching/guiding** student learning, adapting master classes to establish a common thread for the program and maximizing active forms of learning that stimulate analytical and critical thinking (PBL, CBL, case discussion, seminars, study visits, etc.);
  - ii. Maximizing the use of modern information technologies.
- b) **Make knowledge and skills assessment processes more attractive**, efficient and ecological and less consuming of the most scarce commodity, time:
  - i. Not appealing to superficial memorization of facts, but to integrated reasoning;
  - ii. Using IT tools that make the process simpler, faster and cheaper (less paper and printing);
  - iii. Investing in continuous assessment and distributing assessment moments across different decisive phases of the learning process and at the end of subject cycles, and relieving it in the final period.
- c) Intensify **civic training** and the acquisition of **transversal and social skills** necessary for the multiple missions of Veterinarians in Society:
  - i. Intensify the values of citizenship (freedom, respect, solidarity; knowledge of rights and duties), know how to form, integrate and coordinate teams; in addition to being

- excellent technicians, FMV graduates must also be good citizens, actively participating in the construction of a fairer and more prosperous Society;
- ii. Master decision-making processes;
  - iii. Be aware of the scarcity of resources and the need for better management;
  - iv. Respect other people's space and time: optimize time, be punctual;
- d) Increase the success of the **training offer**, making it more attractive and giving greater visibility to study cycles that do not fill all the vacancies;
  - e) Increase **academic success**, bringing the graduation period closer to the expected training time;
  - f) Reduce **school dropout rates**, identifying and combating their causes;
  - g) Adapt the number of MIMV students and teachers to the **ratios recommended by international bodies and the physical and functional conditions of FMV**;
  - h) Create a Continuous **Pedagogical Training Plan** for teachers, promoting training and sharing of experiences within the scope of innovation in the teaching-learning of veterinary medicine, as well as for veterinarians and nurses at the Teaching Hospital;
  - i) Improve or create **new spaces suited to new pedagogical requirements**;
  - j) Use more **animal models**, gradually and increasingly, to reduce the use of live animals and apply the principle of *never the first time on a live animal*;
  - k) Improve **students' study and leisure spaces**, providing collaborative work and social spaces;
  - l) Pressure CARRIS to increase the number and frequency of **public transport** on the Ajuda Campus;
  - m) Increase the **employability** of FMV graduates by creating spaces and channels of communication that more easily and quickly promote knowledge of employment opportunities;
  - n) Monitor the **professional paths** of graduates to understand the current reality of the job market, better update and direct training and collect information on lifelong training needs, in line with the actions of the **Alumni Association**.

The FMV veterinary medicine teaching/learning process will soon once again have its high point of international evaluation. **A new evaluation of the EAEVE will take place in autumn 2024**, which, like the previous ones, requires careful prior preparation, embodied in a well-

constructed, written and presented Self-Evaluation Report (SER) and a well-planned visit by the evaluation team.

### **RESEARCH**

Research is the source of knowledge and engine of development, contributing decisively to the modernity and quality of the teaching practiced and to its correct approach, from a perspective of humility before the perception of what we do not yet know and the permanent need for innovation. In a University that aims to be a **research university**, research assumes a preponderant role, an indelible mark and a way of being that differentiates its teachers and graduates.

**CIISA is FMV's research centre**, coordinating and stimulating its research activities and thus constituting a central piece for the scientifically sustained development of FMV's Education and Services, in addition to the general contribution to knowledge and development of the Country. FMV must, therefore, ensure the physical and human conditions for the full functioning of CIISA, in a synergistic and supportive relationship that optimizes the available resources and provides the best results. Through CIISA, FMV must, therefore:

- a) Encourage the establishment of new **strategic partnerships and integration into national and international networks** and consortia, seeking to increase the critical mass of the team to achieve higher levels of quality and financing;
- b) Support the search for **external funding** by teachers and researchers in their own national and international bodies;
- c) Take advantage of opportunities to **hire researchers and renew equipment**;
- d) Encourage teachers and researchers to take advantage of the multiple personal and institutional advantages of **technology transfer**, whether through patent registration or commercial value;
- e) Increase the **training of high-quality young scientists**;
- f) Attract more **doctoral students**;
- g) **Initiate master's students early in research activities**;
- h) Increase the **visibility and applicability of the research carried out**.

The reinforced funding from CIISA due to its Excellent rating and its participation and coordination of the new Associated Laboratory for Animal and Veterinary Sciences (**AL4Animals**),

bring increased responsibilities and potential that we should be able to take advantage of and optimize.

### **UNIVERSITY EXTENSION**

University extension, in particular the Services provided by FMV, is fundamental for the production of the casuistry necessary for the training of students, to provide opportunities for Research, as a form of support to Society and as an indispensable source of income. Therefore, Services must fight for high quality and differentiation, irreproachable ethical conduct, a moderate but competitive pricing policy and general customer satisfaction. It must be clear and accepted by everyone who comes to us that FMV is a special service provider, in which students actively participate in these activities, under the supervision of competent and responsible professionals. Several actions should continue to deserve the best attention:

- a) Optimize the **capabilities and services offered by the Teaching Hospital**;
- b) Continue to encourage the provision of **residencies** and **internships** as a form of specialized training;
- c) Identify and coherently **organize opportunities and capabilities to provide other services by FMV**;
- d) Implement **systems for evaluating the quality** of services provided and user satisfaction;
- e) Develop the relationship with **ACIVET**, as the **managing entity of the Teaching Hospital**;
- f) Analyze and solve the reasons for justified **complaints** from users;
- g) Support and develop the two Collaborative Laboratories (CoLab) in which FMV participates, **VectorB2B** and **FeedInov**, taking advantage of their strengths to attract services, develop research and serve Society.

### **INTERNATIONALIZATION**

The globalization of Teaching and Research has clearly highlighted the benefits of greater contact between different cultures, training and experiences in creating richer and more productive teams and obtaining better results. Also for ULisboa, the focus on internationalization is one of its strategic lines, positioning teaching, research and innovation within a perspective of globalization and contribution to development. FMV's visibility and international recognition



also necessarily depend on this type of contact and its ability to attract foreign students. Aware of these realities and their advantages for scientific and social progress, FMV must also continue to fight towards this goal, prioritizing the following actions:

- a) Encourage **IN and OUT mobility of students**, both for studies and internships, of **teachers, researchers and technical and administrative workers**, promoting an enriching exchange of academic and social experiences in a stimulating multicultural environment;
- b) Improve the **international visibility of FMV**, namely through the English version of its website and in particular aspects that may increase its attractiveness to foreign students;
- c) Increase **partnerships with other foreign teaching and research institutions**;
- d) Intensify **relationships with Portuguese-speaking countries**.

### **FMV MANAGEMENT**

The management of an institution like FMV is very complex, requiring the management of a vast set of legislation, which is always changing, efficient management of human resources within its own legal framework, a close connection between its different sectors, an easy and fast connection to the University's central services (Rector's Office) and, always, efficient management of financial resources.

Decision-making processes must be properly organized and substantiated, considering all factors involved, providing the opportunity to hear all relevant opinions and considering the necessary time for reflection and the smooth functioning of management bodies. To do this, we must:

- a) Proceed with **timely planning of all ordinary or extraordinary execution actions** that can be placed in time, allowing the identification of the people best prepared for their execution, their most careful preparation, possible timely consultation of decision-making bodies and timely approval;
- b) **List and prioritize other tasks to be carried out without a defined deadline**, using criteria such as the safety and well-being of people and goods, financial availability, the quality of services provided and the image of FMV.

In this context, it will be important to improve **internal communication**, regularly listening to the members of the Coordination Board and the Advisory Board, and finding expeditious ways

of listening and communicating with the various bodies, involving them in the discussion and resolution of problems for a better perception and acceptance of decisions made. The **publicity of decisions** must also find forms of communication and permanent consultation so that everyone knows where to find the desired information.

A fundamental and mandatory part of management control is undoubtedly the **System of Quality Assurance**, which, after several vicissitudes beyond FMV, is now in a position to develop fully and in line with its ULisboa counterpart.

Concerning **human resources**, their management and motivation constitute decisive factors for the good functioning of the institution, ensuring a policy of encouraging quality and rewarding merit. Therefore, we must:

- a) Continue to improve **performance assessment systems** for teaching and non-teaching staff and carry out assessments within the planned timetables;
- b) Take advantage of all legal and financial means to create **career advancement opportunities**;
- c) **Identify needs** and initiate, as soon as there is financial capacity, the necessary procedures for hiring teachers and technical and administrative workers, from a perspective of medium-long term needs and reinforcement and rejuvenation;
- d) Encourage **cultural and sports activities** in the FMV community that promote intellectual enrichment, physical activity and social interaction.

The **relationship with Students** plays a preponderant role. On the one hand, they are our main client and reason for existing, on the other hand, their time at FMV is brief and they are obviously not on the same level of responsibility for the policies followed. However, their suggestions and criticisms during the interaction with the agents involved in their academic training, their high intellectual quality and their characteristic enthusiasm are essential to uniquely complement the contributions to the policies adopted. Therefore, in addition to what has already been mentioned in the Teaching section, it is very important to **optimize all forms of student participation** in the life of FMV and **promote their well-being**, instilling in them an indelible mark and enormous pride in belonging to the big FMV-ULisboa family for the rest of their lives and making them our best ambassadors around the world. The participation of students in management bodies and our total availability to listen to their opinions and

constructive criticism will continue to guide our actions. Close collaboration with the **Student Association** is naturally a decisive part of this relationship in all aspects, namely better management and quality of services and activities provided to students.

### **FMV TECHNICAL AND ADMINISTRATIVE SERVICES**

All of FMV's activities depend on and naturally pass through its technical and administrative services, from academic to financial aspects, including research and human resources management, safety and health at work, maintenance of structures, equipment and animals, etc. The ability to offer high quality Education, Research and Services can easily be penalized by possible slowness and inefficiency of these services. Being a small School, FMV must, however, offer the same services as a large School, without being able to count on similar financial and human resources. Therefore, it will be necessary to focus on optimizing our resources and the efficiency of our services, as suggested below:

- a) Complete the **regulation of administrative services**, a decisive element in their organization and optimization;
- b) Promote better **management of human resources**, identifying the most prepared and qualified elements for each function and any gaps to be filled;
- c) Ensure the **full availability of information** and regulations for easier access by users (FMV website, Fénix, other internal networks, etc.) and training actions on new regulations;
- d) Maximize the performance of various procedures through **computerized means** that save physical and financial resources and allow for better control, treatment and speed.

### **FMV'S CONNECTION TO ULISBOA**

ULisboa is now our home that we share with 17 other Schools, to whose origins we are proud to have contributed, in favor of a university that covers all areas of knowledge, better management of resources of the country and the image of this exceptional city that is Lisbon. In everyone's best interest, we are naturally very committed to:

- a) Continue to actively collaborate in the **consolidation of a reference university**, at national and international levels, that enhances the dynamics of its Schools and guarantees them working conditions and projection that they would not achieve alone;

- b) Provide **internal visibility to the qualities and specificities of FMV**, ensuring adequate conditions for its operation, at desirable qualitative levels;
- c) Promote all forms of **collaboration with other ULisboa Schools**, taking advantage of the complementarity of areas of knowledge and activity, structures and equipment, either directly or indirectly through initiatives such as ULisboa Networks or Colleges.

### **FMV'S CONNECTION TO SOCIETY**

FMV's status as a public institution not only provides enormous pride for everyone who works there but also gives it enormous responsibilities, as described in its Mission. Its connection to Society, from which it emerges and to whose development it intends to contribute, is therefore essential for the pursuit of that Mission. In this sense, several actions should continue to be developed, such as:

- a) Consolidate and **improve the image of Teaching, Research and Service Provision**;
- b) Increase **FMV's visibility abroad**, participating in forums in our areas of knowledge and intervention and finding new channels of communication;
- c) Consolidate FMV's position in the country and the world as an important **partner (player)** in the area of Veterinary Sciences;
- d) Present a current, coherent and diversified offer of **continuous training actions**, following the needs of Society, identified in particular with professional and scientific organizations but also with local civil structures;
- e) Develop **collaborations with institutions and companies in FMV's areas of activity**, to enhance resources and find synergies that improve efficiency, productivity and competitiveness;
- f) Consolidate a **range of services** that respond to the needs of Society and strengthen its connection to FMV.

This Strategic Plan will consist of annual Activity Plans with temporal execution measures, in synchronous and coherent connection with the FMV System of Quality Assurance.

FMV, 20<sup>th</sup> October 2022

The background of the page is a detailed, high-contrast black and white photograph of an ornate architectural relief. The relief features intricate carvings, including a large, stylized leaf or flame-like motif on the right side, and various scrollwork and geometric patterns. The lighting creates deep shadows and bright highlights, emphasizing the three-dimensional nature of the carvings.

# **Appendix 2a**

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## Quality Policy

## QUALITY POLICY


Faculty of Veterinary Medicine from University of Lisbon (FVM-ULisbon) aims to be the leading organization in the field of Veterinary Sciences in Portugal. This goal is based on continuous improvement of teaching and research, innovation, cooperation and sustainability, as well as on good clinical and laboratory practices and dissemination of knowledge through a variety of educational processes.

Quality policy is implemented through the following principles:

- Development and improvement of a quality system according to the European and National University Standards and Guidelines for quality assurance;
- Professional approach in full agreement with the Ethical Codes;
- Meeting students' expectations and needs to warrant their increasing satisfaction;
- Encouraging active stakeholders, including students, to participate in the quality assurance system;
- Increasing synergy of teaching and research activities, characterized by interdisciplinary scientific research and professional projects;
- Strengthening the active role of the Faculty in the development of economic processes and well-being of communities in which it operates;
- Permanent monitoring of quality indicators and continuous evaluation of Faculty's quality assurance and accomplishment of its strategies;
- Accountable and transparent operations and the fulfilment of entrusted tasks;
- Creating and maintaining a proactive, stable and motivating work environment;
- Providing all the necessary resources to ensure continuous improvement of all employees activities;
- Commitment to meet the requirements of the quality system, aiming to obtain a continuous improvement of quality at all levels.

All staff working at FVM-ULisbon is responsible for the implementation of this quality policy. The Faculty's quality policy is regularly monitored, reviewed and improved, as needed.

Lisbon, 20th December 2016.

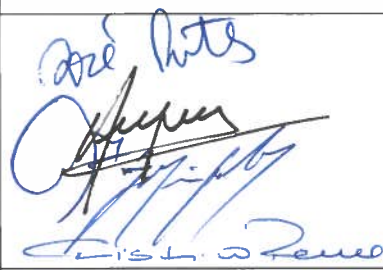

Dean   
Prof. Luís Manuel Morgado Tavares  
(Full Professor)



## PUBLICAÇÃO DO DOCUMENTO

A Política da Qualidade da FMV-ULisboa encontra-se afixada na Instituição e disponível no sítio institucional da internet.

## APROVAÇÃO DO DOCUMENTO

	Responsável	Data	Assinatura
Elaboração (CGQ)	José Prates Maria João Fraqueza Mafalda Lourenço João Mingachos Cristina Pereira	15-12-2016	
Verificação	n/a	n/a	n/a
Aprovação (Presidente FMV)	Luís Tavares	20-12-2016	

## HISTÓRICO DO DOCUMENTO

Data da revisão	Alteração	Elaborado por	Aprovado por
20-12-2016	Criação do documento	CGQ	Presidente da FMV



# **Appendix 2b**

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Quality Manual

# ***INTEGRATED SYSTEM OF QUALITY ASSURANCE***



## ***QUALITY MANUAL, VERSION 2.0 EN***

Code: QM-02

Date: 24/11/2021



## 1. OBJECTIVE

The Quality Manual of the Faculty of Veterinary Medicine of the University of Lisbon (FMV-ULisboa) aims to describe its Integrated System of Quality Assurance (ISQA). Thus, the document describes the organization, responsibilities, processes, as well as the guiding principles used in the implementation of the ISQA.

The Quality Manual is an operational document for the procedures of FMV-ULisboa in the area of Quality, being a fundamental reference for defining quality assurance policies, as well as for the characterization of processes, indicators and actors responsible for the execution of activities that drive continuous improvement at FMV-ULisboa.

## 2. SCOPE AND LEGAL FRAMEWORK

FMV-ULisboa has developed and applied a quality model adapted to the Institution's characteristics, in line with the guidelines of the University of Lisbon, the current legislation and with the European quality benchmarks, known as ISQA, towards continuous improvement and the deepening of its quality policy. The ISQA is based on the accumulated experience of implementing quality assessment practices present in all School processes.

The ISQA of FMV-ULisboa fits the main norms and recommendations for the quality assurance system in Higher Education, specifically:

- Standards and Guidelines for Quality Assurance in the European Higher Education Area, 2015 (European Association for Quality Assurance in Higher Education - ENQA);
- Manual of Standard Operating Procedures of European System of Evaluation of Veterinary Training (ESEVET), May 2016 (European Association of Establishments for Veterinarian Education - EAEVE / Federation of Veterinarians of Europe - FVE);
- Legal framework for the Assessment of Quality in Higher Education (Law No. 38/2007, of 16<sup>th</sup> August);
- Manual for the Audit Process of Internal Systems of Quality Assurance in Higher Education Institutions, October 2016 (Agency for Assessment and Accreditation of Higher Education);
- Regulation of the ULisboa Integrated System of Quality Assurance (Order No. 15622/2015, of 29<sup>th</sup> December).

FMV-ULisboa assumes its management documents (Strategic Plan of FMV-ULisboa, Quality Manual, Quality Plan, Activity Plan, Activity Report and Quality Report) as guidelines for its quality strategy.

### 3. RESPONSIBILITY

The Quality Manual is prepared and managed by the Council for the Quality Assurance of FMV-ULisboa (CQA), being approved by the President of FMV. The document must be reviewed by the CQA to remain permanently up to date.

### 4. FMV PRESENTATION

#### 4.1 Description

FMV-ULisboa foster the teaching of Veterinary Sciences in Portugal since 1830 and it is internationally evaluated and approved by the European Committee of Veterinary Education (ECOVE), which gathers the European Association of Establishments of Veterinary Education (EAEVE) and the Federation of Veterinarians of Europe (FVE). Its teaching staff, composed almost entirely by PhD degree holders, its researchers and support staff combine daily efforts to allow the achievement of the objectives of FMV-ULisboa, in terms of teaching, research and interface with the community.

In the scope of Research, FMV-ULisboa counts with the Centre for Interdisciplinary Research in Animal Health (CIISA), which covers the four main areas of research in Veterinary Sciences: Health and Prevention; Medicine and Pathology; Food Safety; and Biotechnology and Animal Production, stimulating and funding dozens of research lines in close collaboration with more than 100 national and international institutions. The research carried out at CIISA contributes to the development of new diagnostic and therapeutic strategies, innovative biotechnology products and to the improvement of the quality of life of animals and consumers.

In terms of Extension and Provision of Services to the community, FMV-ULisboa has a Veterinary Teaching Hospital (VTH), which provide qualified medical and surgical care to the animals, to which society in general and other Veterinarians turn to when it is necessary to solve more complex problems. The VTH provides and covers the areas of clinic and surgery for companion animals and production animals, pharmaceutical services and a Diagnosis Centre, which comprises a variety of Analysis Labs and even



a Blood Bank. FMV-ULisboa teachers and researchers also participate in numerous extra mural initiatives, supporting the community in several areas of veterinary intervention.

## 4.2 Mission

FMV-ULisboa's mission is to create, transmit and disseminate culture, science and technology in the area of Veterinary Sciences, through the development of educational activities, research and the provision excellent services, for the benefit of society.

## 4.3 Vision

FMV aims to be an internationally recognized institution of excellence in veterinary education and research, permanently adapted to the needs of society, contributing to the advancement of the frontiers of knowledge.

## 5. FMV ORGANIZATION

FMV is a legal collective person under public law, integrated in Ulisboa, with statutory, scientific, cultural, pedagogic, administrative, financial and patrimonial autonomy (Statutes of the Faculty of Veterinary Medicine, Order No. 14440-A/2013, of 7<sup>th</sup> November).

In order to fulfill its mission, FMV has the following school bodies: the President, the Management Council, the Scientific Council, the Pedagogic Council and the School Council, the last being the strategic decision-making body that oversees the compliance with the law, the Statutes and, in particular, the FMV's mission. The Advisory Board and the Coordination Board are FMV's statutory bodies, with advisory powers.

FMV also comprises four Departments and a Research Unit (CIISA). The Departments are teaching and research units corresponding to vocational areas of knowledge, endowed with the power to define purposes and internal structure, in accordance with the principles of identity, subsidiarity and complementarity. Currently, the FMV Departments are the following: 1. Morphology and Function; 2. Clinics; 3. Animal Health; and 4. Animal Production and Food Safety.

Research at FMV-ULisboa is coordinated by CIISA and is framed in large areas of competence associated with challenges with a strong impact on society. These areas are strongly interdisciplinary and transversal to several domains of Veterinary Sciences, namely:

1. Animal health and veterinary medicine, with two thematic lines (1a. Disease surveillance, prevention and control towards sustainable animal health; 1b. Clinical research towards novel diagnostic and therapeutic strategies); and 2. Animal science and food safety, also with two thematic lines (2a. A sustainable animal production for the 21st century; 2b. New challenges in advanced food processing, quality and safety).

The Veterinary Teaching Hospital (VTH) plays a very important role in university extension and connection to society at FMV-ULisboa. This Hospital works in the following areas: 1. Companion Animals Clinics; 2. Food Animals Clinics; 3. Horse Clinics; 4. Diagnostic Services; 5. Pharmaceutical Services and 6. Biological Isolation and Containment Unit..

There are also several Services that provide support to teaching and research activities, organized under the hierarchical dependence of the teaching staff proposed by the President for the Management Council and also an Executive Director, who shares responsibility for some services, such as those related to administrative and financial management, staff and management of facilities and equipment.

There are also, as non-statutory bodies of the FMV, the Coordinating Council for Teachers' Performance Assessment, the Coordinating Council for the Integrated System of Management and Performance Assessment in Public Administration (SIADAP) and the Council for the Quality Assurance (CQA) of FMV-ULisboa.

Figure 1 presents the general organizational chart of FMV-ULisboa, as described above.



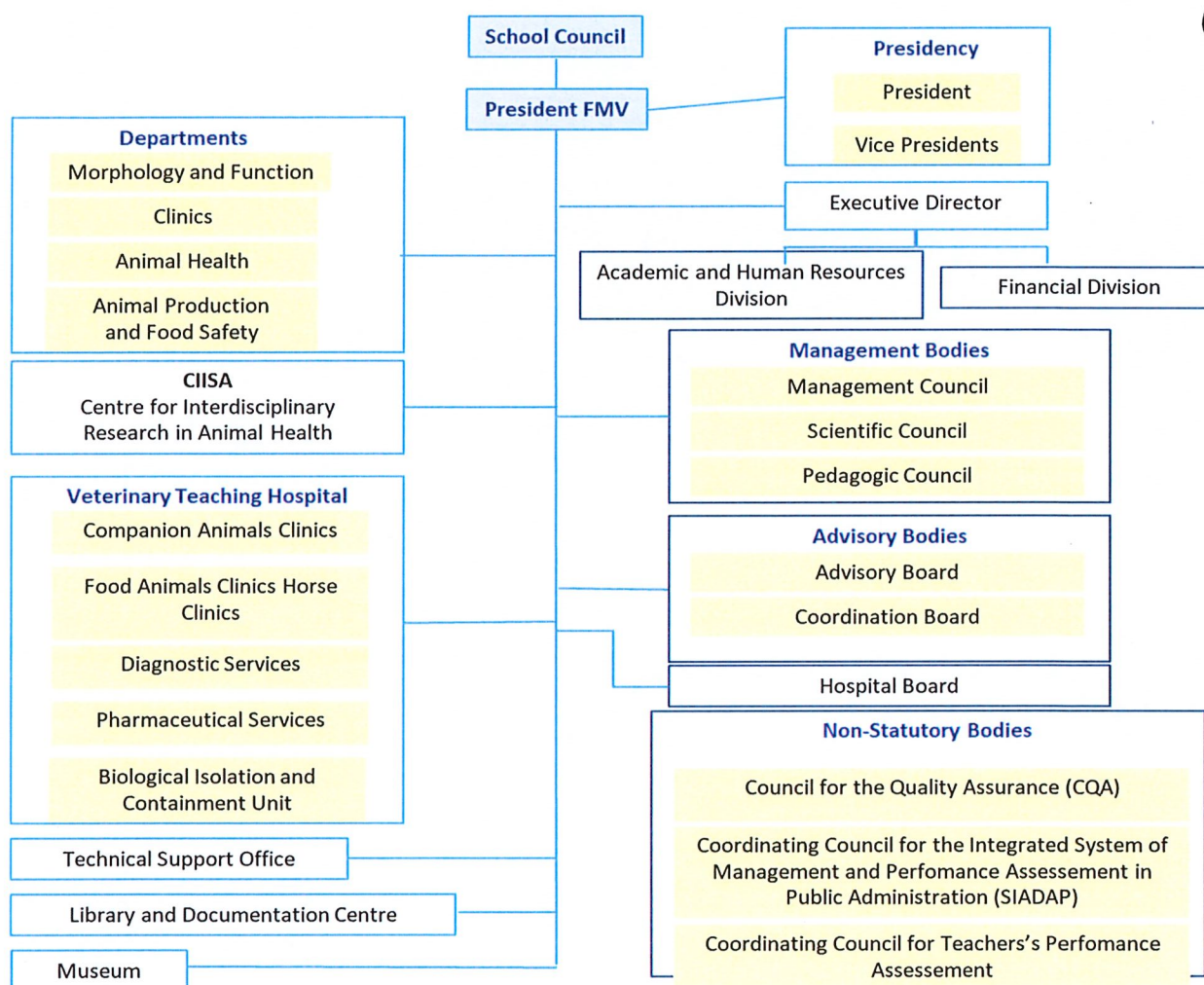


Figure 1. General organizational chart of FMV-ULisboa.

## 6. QUALITY POLICY

FMV-ULisboa is guided by a policy of quality, transparency and rigor, within the scope of the autonomy established in its Statutes. Other values inherent to institutional functioning include innovation, cooperation and sustainability.

FMV-ULisboa assumes, as a strategy for quality, the design of an institutional development program based on reference goals formally established in its strategic management documents (Strategic Objectives, Activity Plan, Quality Manual and Quality Plan), which specify the actions to be carried out, methodologies to be followed, goals, monitoring elements, scheduling and definition of responsibilities and competences of the different bodies, services and involved agents.

The quality assurance policy also seeks to promote a transversal stimulus to the active participation of all interested parts in the Institution's continuous improvement processes, in order to make the evaluation of services a common procedure in all spheres of activity in which the FMV is involved.

The quality assurance policy gives priority to cooperation with society and the participation of the most relevant internal and external partners in the strategic planning processes, highlighting the participation in the composition of the governing bodies and advisory bodies of FMV-ULisboa and its regular consultation through various mechanisms (**Table 1**).

**Table 1.** Cooperation with internal and external partners, as well as with society.

Partner	Participation in bodies involved in the Integrated System of Quality Assurance (QA)	Participation in the quality processes	Consultation Types
Teaching Staff	CQA-FMV, Management bodies	Nuclear processes, Management processes	External evaluation, Performance assessment, Pedagogical evaluation, Satisfaction rating
Students	CQA-FMV, School Council, Pedagogic Council	Teaching	Assessment of teaching processes,  Evaluation of spaces, Satisfaction rating
Non teaching staff	CQA-FMV, School Council, School Assembly	Support processes	External evaluation, Satisfaction rating
Service Customers	Keepers and owners of companion and production animals, Medical-Veterinary Care Centers (CAMV's), Veterinarians, Companies	Support processes, Society connection	Service evaluation, Satisfaction rating



	of the agro-industrial area, Large Food Retailers Companies		
Employers	National Authority for Animal Health and Feeding (DGAV), Medical-Veterinary Care Centers (CAMV's), Livestock Producer Organizations, Large Food Retailers Companies, Veterinary sanitary Inspection, Companies of the agro-industrial area	Teaching, Society connection	Quality assessment of graduates
External Entities	INIAV, EZN, DGAV, OMV, GNR, PSP, EPAE, CML, A3ES, EAEVE, ...	All processes	Assessment, Accreditation

## 7. INTEGRATED SYSTEM OF QUALITY ASSURANCE (QA)

The ISQA is based on two fundamental components of the institutional evaluation process: 1. internal assessment (self-assessment); 2. external assessment (by entities external to the FMV).

Based on quality management processes, the ISQA envisage a cyclical review of results, not only in terms of the teaching/learning process, but also in terms of the institution as a whole, in a global measurement of the fulfillment of its mission and objectives.

However, the Integrated System of Quality Assurance (QA) is particularly focused on strategy and mechanisms for evaluating and improving teaching.

### 7.1 Organizational structure

The ISQA of FMV aims to implement a policy for quality, as an integral part of ULisboa's Integrated System of Quality Assurance. Its organization and main instruments in order to the continuous quality improvement are defined in its own Regulations. The FMV Council for the Quality Assurance (CQA) mission is to promote quality assessment and coordinate and manage the FMV's Integrated System of Quality Assurance (QA).

The CQA-FMV is responsible for proposing procedures regarding to quality assessment to be carried out by the FMV, within the framework of the national accreditation and assessment system, under the terms of the law and in compliance with the guidelines issued by the FMV bodies. Therefore, it should direct its activity into the following areas:

1. Promote the quality of teaching, research and university extension activities;
2. Promote the development of an institutional integrated culture of quality assurance;
3. Coordinate the quality management and evaluation processes developed by the services;
4. Monitoring the implementation of the evaluation of research and teaching activities and the internal and external evaluation processes;
5. Provide information to the FMV bodies, namely the School Council on the activities carried out in terms of the ISQA;
6. Analyze the operation of the Quality Assurance System, prepare assessment reports and pronounce on proposals for corrective measures that it deems appropriate for the Institution's good performance and image;
7. Prepares the FMV Quality Plan and Manual and proposes its approval by the competent bodies;
8. Propose for the approval of the competent bodies the creation of institutional structures to support the implementation of the quality assurance policy, namely the structures needed to carry out the evaluation of research and teaching activities;
9. Issue recommendations;
10. Communicate internally and externally the actions and documents related to the ISQA;
11. Propose the revision of this Manual.

## 7.2 Documental structure

FMV-ULisboa's ISQA was designed in accordance with the document structure shown in **Figure 2**, through which all methodologies related to the development of identified processes are established and communicated.

At the top of the documental structure, in addition to all applicable current legislation, are all the documents considered strategic, namely the FMV-ULisboa Strategic Plan and the Quality Plan.

The information produced, received and accumulated by the bodies and services, in the exercise of their functions and activities, are recorded in various documents, essential instruments for decision-making, increased efficiency and to record the collective memory.

Document P-01 - Document Management describes in detail the procedures relating to the preparation, codification, approval, distribution, implementation, control and archiving of the documents of the Integrated Quality Assurance System of FMV-ULisboa.





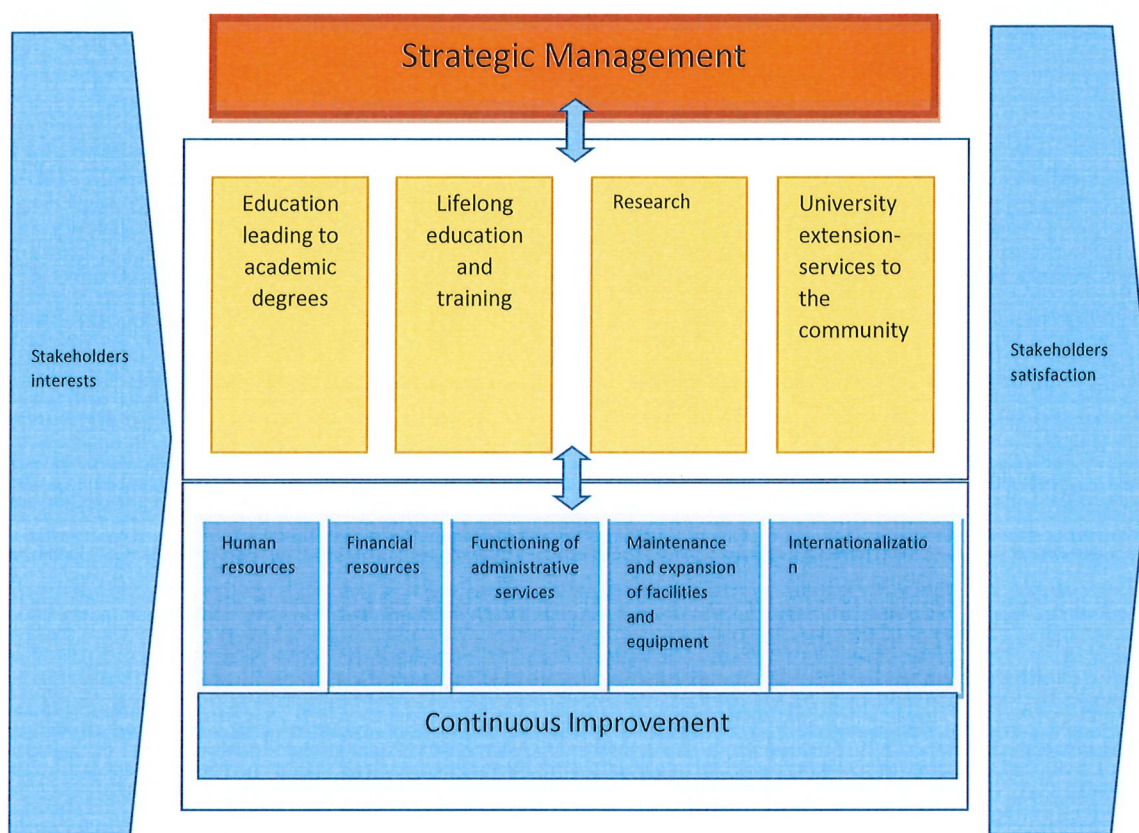
**Figure 2.** Scheme of the document structure of the Integrated System of Quality Assurance of FMV-ULisboa.

## 8. PROCESSES

FMV, like ULisboa, adopts the QA processes, identifying and managing them, as well as the sequence and interaction between them (**Figure 1**), thus promoting a greater transparency in the activities carried out, better communication and interaction between the different functional units, and unifying the objectives to achieve. The indicators and goals of these processes, which are established in FMV-ULisboa Quality Plan, should guarantee temporal stability for the characterization of the School's performance, measuring its accomplishments in defined processes and contributing to strategic decisions and evaluation of the achievement of objectives by FMV.

The CQA-FMV must prepare an annual evaluation report (Quality Report), analyzing the achievement of goals, identifying the causes of non-compliance and proposing the necessary actions to achieve the Quality objectives.

**Figure 1:** Processes of the Integrated Quality Assurance System and their relationship.



**Table 2.** List of processes in the Integrated System of Quality Assurance at FMV-ULisboa.

PROCESS	RESPONSIBLE
1. QP-01 – Education leading to academic degrees	President of the Scientific Council
2. QP-02 – Lifelong training	President of the Scientific Council
3. QP-03 – Research	CIISA Coordinator
4. QP-04 – University extension – Services to the Community	President of the Hospital Council
5. QP-05 – Internationalization	Mobility office Coordinator
6. QP-06 – Human Resources Management	Head of the Academic and Human Resources Division
7. QP-07 – Management of Financial Resources	Head of the Financial Resources Division
8. QP-08 – Maintenance and expansion of facilities and equipment	Coordinator of the Technical Safety and Maintenance Office



- |  |                    |
|--|--------------------|
| 9. QP-09 – Functioning of administrative services                                | Executive Director |
| 10. QP-10 - Continuous Improvement of the Integrated System of Quality Assurance | President          |
| 11. QP-11 – Strategic management of the Integrated System of Quality Assurance   | President          |

## 9. COMMUNICATION

The European guidelines for quality assurance in Higher Education place great emphasis on the regular communication of up-to-date quantitative and qualitative information, in an impartial and objective manner, about institutional functioning, namely with regard to teaching programs and degrees, as well as the level of student satisfaction.

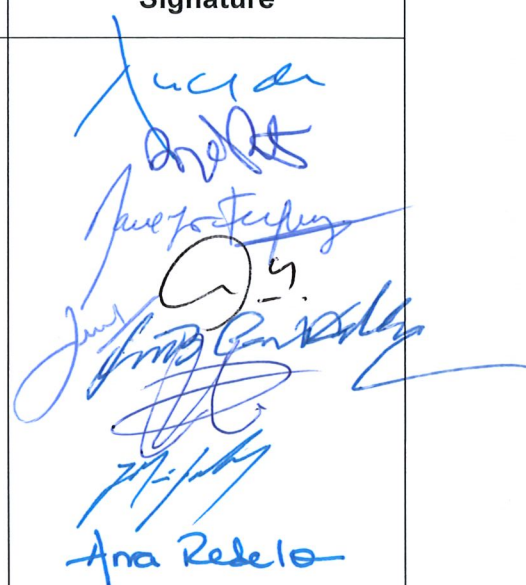
Aware of its pedagogical and facilitator role of the quality improvement process, FMV-ULisboa seeks to ensure an wide dissemination of the results of the evaluation and of its activities within the academic community.

FMV-ULisboa must keep the information up to date on the institutional website, including about the SIGQ, namely regarding its objectives, processes and procedures.

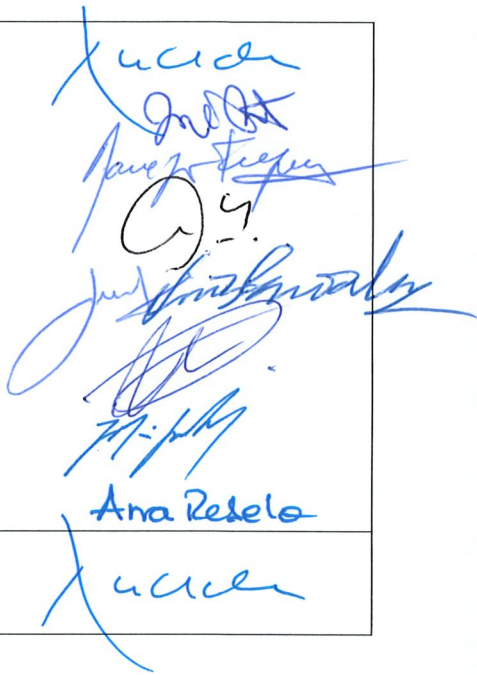

## 10. PUBLICATION OF THE DOCUMENT

The FMV-ULisboa Quality Manual is available on FMV's website.

## 11. DOCUMENT APPROVAL

	Responsible	Date	Signature
Elaboration (CQA)	Rui Caldeira José Prates Maria João Fraqueza Mafalda Lourenço Luís Costa Luís Carvalho Manuela Rodeia João MIngachos Ana Rebelo	17-03-2021	



Verification (CQA)	Rui Caldeira José Prates Maria João Fraqueza Mafalda Lourenço Luís Costa Luís Carvalho Manuela Rodeia João MIngachos Ana Rebelo	24-11-2021	
Approval (President FMV)	Rui Caldeira	24-11-2021	

## 12. DOCUMENT HISTORY

Revision date	Modification	Elaborated by	Approved by
20-12-2016	Document creation	CQA	President FMV
17-03-2021	Document update	CQA	President FMV
24-11-2021	Document update	CQA	President FMV



# **Appendix 2c**

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## Quality Plan

# ***INTEGRATED SYSTEM OF QUALITY ASSURANCE***



## ***QUALITY PLAN, VERSION 3.0 EN***

Code: QM-03

Date: 24/11/2021

## 1 OBJECTIVE

The Quality Plan of the Faculty of Veterinary Medicine of the University of Lisbon (FMV-ULisboa) aims to define the indicators and monitoring targets for action plans that implement the strategy for the development, quality assurance and continuous improvement of FMV - ULisboa.

## 2 SCOPE

FMV-ULisboa has developed and applied a quality model adapted to the Institution's characteristics, in line with the guidelines of the University of Lisbon, the current legislation and with the European quality benchmarks, known as ISQA, towards continuous improvement and the deepening of its quality policy. The ISQA is based on the accumulated experience of implementing quality assessment practices presente in all School processes.

In accordance with the Regulation of the Integrated System of Quality Assurance of ULisboa (Order no. 15622/2015, published in DR, 2nd series, of December 29), in article 7 of its annex, and as described in the Quality Manual, FMV-ULisboa assumes its management documents (Strategic Objectives of FMV-ULisboa, Quality Manual, Quality Plan, Activity Plan and Activity Report) as guidelines for its quality strategy.

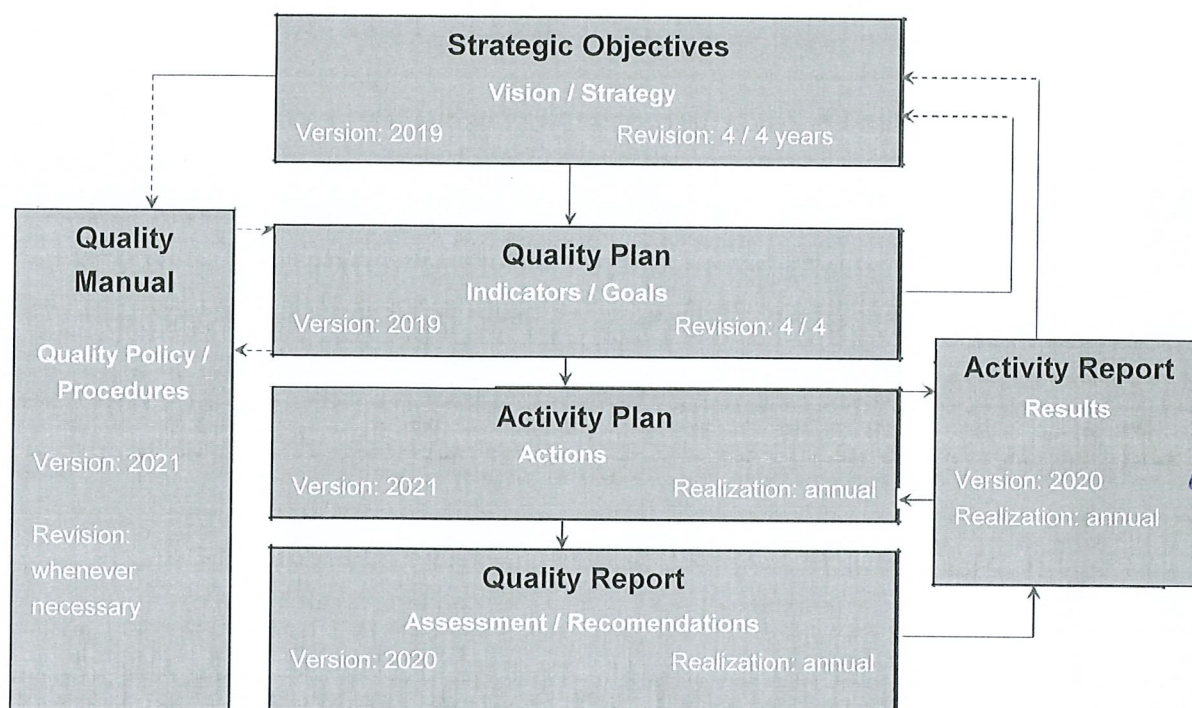
## 3 RESPONSIBILITY

This document is prepared and approved by the Council for the Quality Assurance of FMV-ULisboa (CQA), although it is developed in close collaboration with the Strategic Objectives of FMV-ULisboa, which are part of the ULisboa Action Plan for 2021-2025.

This Council is responsible for implementing and maintaining this procedure, for its continuous improvement, as well as for the annual progress report on the goals established in each process (Quality Report).

Figure 1 presents the structure and list of FMV-ULisboa's strategic management documents.





**Figure 1.** Diagram of FMV-ULisboa's strategic management documents.

## 4 METHODOLOGY

The main FMV-ULisboa strategic guidelines are aligned with the Strategic Objectives of the ULisboa Action Plan for the 2021-25 period, namely:

1. Promote ULisboa's cohesion and spirit of identity;
2. Attracting the best students;
3. Promote the University's interaction with the productive fabric and public authorities;
4. Promote the rejuvenation, qualification and mobility of human resources;
5. Strengthen ULisboa's capacity for intervention and influence in strategic international spaces;
6. Ensure the consolidation of a ISQA;
7. Create a cultural offer for the University and the City of Lisbon;
8. Promote social responsibility and sports, health and well-being activities at ULisboa;
9. Improve the infrastructures available to the academic community.

FMV-ULisboa's Strategic Objectives, duly framed within the Strategic Objectives of its University, are presented below:

1. Consolidate and improve teaching, research and service provision;
2. Expand and modernise teaching and research facilities;

3. Renewing teaching and non-teaching human resources;
4. Encourage applications for scientific projects, promoting synergies that increase their competitiveness;
5. Increasing continuous and postgraduate training activity with a view to lifelong learning;
6. Encouraging innovative and diverse partnerships that create new opportunities for work, research and development.

The above-mentioned priority strategic guidelines were therefore taken into account when drawing up the Quality Plan. Based on these 6 priority guidelines identified for the FMV-ULisboa, indicators and targets were defined in order to objectively measure whether the FMV is achieving its objectives and obtaining the expected results.

## 5 PERIOD

FMV-ULisboa's Quality Plan is closely linked to its Strategic Objectives, which are part of ULisboa's Action Plan for 2021-2025, establishing the quality standards to be pursued. This Plan therefore has a 4-year time horizon, accompanying the revision of the ULisboa Action Plan. This Plan also accompanies its monitoring, through annual control of the evolution of the targets of the established progress and quality indicators.

## 6 PROCESSES

The CQA must draw up an annual progress report on the targets set for each of the following processes (Quality Report):

	PROCESS	RESPONSIBLE
1.	QP-01 – Education leading to academic degrees	Virgílio Almeida
2.	OP-02 – Lifelong training	Maria João Fraqueza
3.	QP-03 - Research	Maria João Fraqueza
4.	QP-04 – University extension – Services to the Community	Ana Mafalda Lourenço
5.	QP-05 - Internationalization	Ana Mafalda Lourenço
6.	QP-06 – Human Resources Management	Cristina Pereira
7.	QP-07 – Management of Financial Resources	João Mingachos
8.	QP-08 – Maintenance and expansion of facilities and equipment	João Mingachos
9.	QP-09 – Functioning of administrative services	João Mingachos
10.	QP-10 – Continuous Improvement of the Quality Assurance System	Rui Caldeira



11.	<b>QP-11 – Strategic Management of the Quality Assurance System</b>	Rui Caldeira
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The members of the CQA responsible for managing the processes mentioned in the table above are also responsible for monitoring the respective indicators.

## 7 QUALITY INDICATORS


The performance indicators and targets for the quality processes, organised according to FMV-ULisboa's lines of action, are described in the map attached to this document and form an integral part of it.

## 8 PUBLICATION OF THE DOCUMENT

The FMV-ULisboa Quality Plan should be available on the institutional website.

## 9 DOCUMENT APPROVAL

	<b>Responsible</b>	<b>Date</b>	<b>Signature</b>
Elaboration (CQA)	Rui Caldeira Luis Costa Luis Carvalho Manuela Espada Niza José Prates Maria João Fraqueza Mafalda Lourenço João Mingachos	24-11-2021	
Verification (MC)	Rui Caldeira Esmeralda Delgado João Mingachos	24-11-2021	
Approval (CQA)	Rui Caldeira Luis Costa Luis Carvalho Manuela Espada Niza José Prates Maria João Fraqueza	24-11-2021	

	Mafalda Lourenço João Mingachos		

## 10 DOCUMENT HISTORY

Revision date	Modification	Elaborated by	Approved by
20-12-2016	Document creation	CGQ	CGQ
22-02-2019	Document review	CGQ	CGQ
24-11-2021	Document review	CGQ	CGQ





# **Appendix 2d**

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List of QA Indicators

**FACULDADE DE MEDICINA VETERINÁRIA**  
**Anexo ao Plano da Qualidade - Indicadores, Metas e Resultados**

Data: 15/07/2024  
Código: MQ-03B

	Objetivos estratégicos	Processo da qualidade	Indicador de desempenho	Fórmula de cálculo	Nº	Meta (2019-22)	Média	Média	Monitorização (anual)			
LINHAS DE ACÇÃO							Quadriénio 2014-2017	Quadriénio 2019-2022	2023	2024	2025	2026
<b>1. Formação conducente a graus académicos</b>			Oferta formativa	Nº de vagas / ano	1	MIMV ≤120	126	114.0	113			
					2	MSA - 30	30	30	30			
					3	MCE - 25			25			
					4	MEZ - 35	35	35	35			
					5	DCV - 25	25	25	25			
			Sucesso da oferta formativa	Nº estudantes matriculados (1º ano) / Nº vagas (%)	6	MIMV - > 100	100.0	100.0	100%			
					7	MSA - > 75	67.50	75.8	73%			
					8	MCE - > 75			88%			
					9	MEZ - > 75	37.14	71.4	57,1			
					10	DCV - > 35	17.00	36.0	96%			
			Estudantes inscritos	Nº total de estudantes inscritos	11	MIMV > 700 < 800	926.3	854.5	824			
					12	MSA > 45	33.25	45.3	44			
					13	MCE > 20			22			
					14	MEZ > 35	17.75	35.3	39.0			
					15	DCV > 50	46.25	43.3	57			
			Estudantes inscritos na componente letiva	Nº total de estudantes inscritos - estudantes inscritos no ano do Estágio	16	MIMV > 550 < 650	699	635.8	575			
					17	MSA > 25	SI	20.5	23			
					18	MCE > 15			22			
					19	MEZ > 20	SI	28.7	26			
			Taxa de sucesso / Estudantes aprovados	Nº de estudantes aprovados no fim das 3 épocas de exames	20	MIMV > 85%	SI	88.7	91.25			
					21	MSA > 85%	SI	89.4	96.69			
					22	MCE > 85%			NA			
					23	DCV > 90%	SI	97.0	100.0			
			Diplomados	Nº de estudantes diplomados / ano	24	MIMV > 95	97.75	114.3	109			
					25	MSA > 7	3.75	6.8	24			
					26	MCE > 7			NA			

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1. Promover uma formação de excelência

PQ-01

		27	MEZ > 5	4.75	NA	13			
		28	DCV > 8	10.75	6.3	7			
Eficiência formativa (%)	Estudantes que completam o ciclo de estudos no nº de anos previsto (%)	29	MIMV (x=6) - > 50%	SI	41.0	29.36			
		30	MSA (x=2) - > 50%	SI	61.1	95.8			
		31	MCE (x=2) - > 50%			NA			
		32	MEZ (x=2) - > 50%	SI	NA	46.2			
		33	DCV (x=4) - > 50%	SI	42.0	42.9			
Eficiência formativa (anos)	Tempo médio para a conclusão do curso (anos) / nº de anos curriculares	34	MIMV - < 1,2	1.2	1.15	1.15			
		35	MSA - ≤ 1,3	1.0	1.23	1.33			
		36	MCE - ≤ 1,3			NA			
		37	MEZ - ≤ 1,3	1.3	NA	1.20			
		38	DCV - ≤ 1,3	1.5	1.35	1.17			
Abandono	MIMV e DCV - Nº de estudantes que não renovam a inscrição anual / Nº total de estudantes; MSA e MCE - Nº de estudantes que não concluíram o 1º ano e não se inscreveram / Nº total de estudantes	39	MIMV - <5%	2.97	4.39	4.00			
		40	MSA - <5%	16.97	32.70	34.09			
		41	MCE - <5%			NA			
		42	DCV - <5%	2.53	4.24	0.00			
Empregabilidade	Recém-diplomados do curso que estão registrados no IEPF como desempregados / Nº diplomados em 3 anos (%)	43	MIMV - < 5	8.18	2.63	1.5%			
Rácio pessoal docente / estudantes inscritos	Docentes ETI + especialistas / nº estudantes inscritos no ciclo de estudos (exceto estágio / dissertação)	44	MIMV - > 0,14	0.134	0.17	0.218			
Rácio pessoal docente / estudantes diplomados	Docentes ETI + especialistas / nº estudantes diplomados	45	MIMV - > 0,85	0.75	0.95	1.168			
Rácio Veterinários docentes + especialistas / estudantes diplomados	Veterinários (Docentes + especialistas) ETI / nº estudantes diplomados	46	MIMV - > 0,80	0.98	0.93	1.113			
Rácio suporte staff / estudantes diplomados	Suporte staff / nº estudantes diplomados	47	MIMV - > 0,80	0.82	0.89	1.21			
Veterinários especialistas envolvidos no treino veterinário	Nº de veterinários especialistas envolvidos no treino veterinário / nº de estudantes diplomados	48	MIMV - > 0,08	0.055	0.08	0.083			

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Ratio estudantes de doutoramento diplomados / estudantes MIMV diplomados	Nº de estudantes de doutoramento diplomados / nº de estudantes MIMV diplomados	49	MIMV - > 0,07	0.11	0.05	0.06			
Treino prático não clínico	Nº de horas de treino prático não clínico durante o ciclo de estudos	50	MIMV - > 850	1113	1,078.00	1110			
Treino prático clínico	Nº de horas de treino prático clínico durante o ciclo de estudos	51	MIMV - > 750	673	590.27	674.0			
Treino em Segurança e Qualidade Alimentar e Saúde Pública Veterinária	Nº de horas de treino em Segurança e Qualidade Alimentar e Saúde Pública Veterinária durante o ciclo de estudos	52	MIMV - >250	348	322.00	309			
Treino prático extramuros em Segurança e Qualidade Alimentar e Saúde Pública Veterinária	Nº de horas de treino prático extramuros em Segurança e Qualidade Alimentar e Saúde Pública Veterinária durante o ciclo de estudos	53	MIMV - >35	45	42.67	18			
Casuística de animais de companhia no HE	Nº de animais de companhia vistos intramuros / nº de estudantes diplomados	54	MIMV - >70	107	106	131			
Casuística de ruminantes e suínos no HE	Nº de ruminantes e suínos vistos intramuros / nº de estudantes diplomados	55	MIMV - >0,1	0.03	0.38	0.13			
Casuística de equídeos no HE	Nº de equídeos vistos intramuros / nº de estudantes diplomados	56	MIMV - > 2,5	3.43	3.04	2.99			
Casuística de coelhos, roedores, aves e exóticos vistos no HE	Nº de coelhos, roedores, aves e exóticos vistos intra e extramuros / nº de estudantes diplomados	57	MIMV - > 1,3	1.98	1.26	1.50			
Casuística de animais de companhia extramuros	Nº de animais de companhia vistos extramuros / nº de estudantes diplomados	58	MIMV - ≥0	0.00	0.00	0.00			
Casuística de ruminantes e suínos vistos extramuros	Nº de ruminantes e suínos vistos extramuros / nº de estudantes diplomados	59	MIMV - >20	48.71	31.53	27.82			
Casuística de equídeos extramuros	Nº de equídeos vistos extramuros / nº de estudantes diplomados	60	MIMV - > 1,0	0.69	1.52	3.47			
Visitas a explorações de ruminantes e suínos	Nº de visitas a explorações de ruminantes e suínos / nº de estudantes diplomados	61	MIMV - > 1,00	0.77	1.44	1.33			
Visitas a unidades avícolas e cunícolas	Nº de visitas a unidades avícolas e cunícolas / nº de estudantes diplomados	62	MIMV - > 0,06	0.15	0.09	0.05			

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			Necropsias de animais de companhia	Nº de necropsias de animais de companhia / nº de estudantes diplomados	63	MIMV - >2,5	4.00	2.94	3.52			
			Necropsias de ruminantes e suínos	Nº de necropsias de ruminantes e suínos / nº de estudantes diplomados	64	MIMV - ≥ 0,9	1.21	0.90	0.39			
			Necropsias de equídeos	Nº de necropsias de equídeos / nº de estudantes diplomados	65	MIMV - >0,12	0.17	0.16	0.19			
			Necropsias de coelhos, roedores, pássaros, exóticos e peixes	Nº de necropsias de coelhos, roedores, pássaros e exóticos / nº de estudantes diplomados	66	MIMV - >1,5	2.22	1.36	2.08			
			Nº de locais para estágios externo	Nº de locais para estágios externo	67	MIMV - >80	SI	72	82			
			Visitantes nacionais do website da FMV	Nº de visitantes do website	68	Aumentar >5% / ano		62,169	75040			
			Visitantes nacionais novos do website da FMV	Nº de visitantes novos do website	69	Aumentar >5% / ano		2'06	71915			
<b>2. Formação ao Longo da Vida</b>	2.1 Oferecer um Plano de Formação ao Longo da Vida atual e coerente	PQ-02	Ações de formação	Nº ações de formação	70	Oferta de + de 10 ações / ano	9.50	2.75	14			
			Ações de formação novas / ano	Nº ações de formação novas	71	Oferta de 1 ação	2.25	1.00	4			
<b>3. Investigação</b>	3.1 Melhorar a informação sobre a oportunidade de financiamento e a qualidade das candidaturas	PQ-03	Candidaturas a projetos externos de financiamento competitivo	Nº candidaturas submetidas / ano	72	Aumentar ≥ 1% / ano (1º ano relativamente à média do quadriénio anterior)	30.50	48.33	4			
			Sucesso das candidaturas a projetos externos de financiamento competitivo	Nº candidaturas aprovadas / nº de candidaturas submetidas	73	> 10%	SI	11.70%	0%			
			Financiamento atraído	Financiamento externo / membro integrado (ETI)	74	Aumentar ≥ 1% / ano (1º ano relativamente à média do quadriénio anterior)		35742	13403			
		PQ-03	Classificação do Centro de Investigação		75	≥-Excelente	MB	Excelente	Excelente			
			Membros integrados no Centro	ETI	76	>50		52.88	43.7			
			Doutorandos no Centro	ETI	77	> 50		49.00	57			
			Rácio membros integrados no Centro	Nº membros integrados / Nº total membros (%)	78	>60%	65	64.00	56.70			

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	3.2. Aumentar a quantidade e a qualidade da produção científica	PQ-03	Projetos I&D	Nº projetos I&D externos de financiamento competitivo ativos	79	Aumentar 1% / ano (1º ano relativamente à média do quadriénio anterior)	54	79.75	44			
			Rácio Projetos externos / doutorados no Centro	Nº projetos externos de financiamento competitivo / doutorados	80	> 0,3		0.78	0.42			
		PQ-03	Publicações indexadas	Nº total de publicações indexadas internacionais	81	> 160	110	152.50	140			
			Qualidade das publicações	Artigos Q1 / total de artigos indexados (%)	82	> 60%			55.7			
			Qualidade das publicações	Artigos Q1 - Q2 / total de artigos indexados (%)	83	> 90 %		53.00	88.6			
			Rácio de Publicações	Nº de artigos indexados Q1-Q2 /membro integrado (ETI)	84	> 2 / ano		2.86	2.84			
	3.3. Aumentar a formação de jovens cientistas de elevada qualidade	PQ-03	Publicação de Teses PhD	Nº de teses PhD concluídas	85	> 8 / ano	10.75	6.25	7			
	3.5 Aumentar a visibilidade da investigação realizada	PQ-03	Divulgação à sociedade	Nº de ações de divulgação de ciência	86	2 divulgação / ano		0.3	2			
				Nº de participações em eventos	87	1 participação / ano	13	0.5	1			
			Visitantes do website CIISA	Nº visitantes	88	Aumentar > 3% / ano	52927	41425	5394			
			Visitantes novos do website CIISA	Nº visitantes novos	89	Aumentar > 3% / ano	2'35	1'02	5070			
4. Extensão Universitária - Serviços à Sociedade	4.1. Desenvolver e racionalizar os recursos humanos e físicos e aumentar a satisfação dos clientes - HE-Animais de Companhia	PQ-04	Consultas de especialidade	Nº total consultas de especialidade	90	Aumentar ≥ 1% / ano	862	1170.5	1884			
			Consultas de referência	Nº total consultas de referência	91	Aumentar ≥1% / ano	SI	SI	6464			
	4.2. Desenvolver e racionalizar os recursos humanos e físicos e aumentar a satisfação dos clientes - HE-Equinos	PQ-04	Consultas e serviços de referência	Nº total consultas de referência	92	Aumentar ≥1% / ano	SI	221.0	326			
	4.3. Desenvolver e racionalizar os recursos humanos e físicos e a satisfação dos clientes - Centro de Diagnóstico	PQ-04	Serviços prestados	Nº total de serviços prestados	93	Aumentar ≥1% / ano	SI	53,836.3	58869			
5. Internacionalização			Estudantes Mobilidade In	Nº estudantes Erasmus In / ano	94	>25	28.50	17.25	26			
			Estudantes Mobilidade Out	Nº estudantes Erasmus Out / ano	95	>25	33.25	19.00	43			

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	5.1 Incrementar a mobilidade de estudantes, docentes e outros trabalhadores	PQ-05	Reclamações no Gabinete de Mobilidade	Nº anual e percentagem de resolução	96	<5, >80%	0	0.00	0			
			Docentes Mobilidade In	Nº docentes In / ano	97	≥2	5	3.25	6			
			Docentes Mobilidade Out	Nº docentes Out / ano	98	≥1	0.75	0.50	0			
			Trabalhadores Mobilidade In	Nº trabalhadores In / ano	99	≥1	0	0.25	0			
			Trabalhadores Mobilidade Out	Nº trabalhadores Out / ano	100	≥1	0	0.25	1			
	5.2 Incrementar as parcerias com outras instituições de ensino e investigação estrangeiras	PQ-05	Projetos internacionais	Nº projetos internacionais ativos / ano	101	≥ 5	1.25	1.75	11			
	5.3 Aumentar o interesse de estrangeiros sobre a FMV	PQ-05	Visitantes estrangeiros do website da FMV	Aumento do nº de visitantes estrangeiros do website	102	>5% / ano	SI	18,783	21155			
			Visitantes estrangeiros novos do website da FMV	Aumento do nº de visitantes estrangeiros novos do website	103	>5% / ano	SI	2'17	20212			
<b>6. Gestão dos recursos humanos</b>	6.1 Promoção e renovação do universo de trabalhadores docentes e não docentes	PQ-06	Promoção de docentes	Nº docentes promovidos/Nº docentes em tempo integral	104	≥ 2,5%	2.04	2.89	4.49%			
			Renovação de docentes	Nº docentes contratados/Nº docentes desvinculados	105	≥ 1	SI	1.17	2.08			
			Progressão de trabalhadores não docentes	Nº de trabalhadores não docentes com alteração da posição remuneratória / Nº total de trabalhadores não docentes	106	≥ 5%	SI	13.66	22.22%			
			Renovação de trabalhadores não docentes	Nº trabalhadores contratados / Nº trabalhadores desvinculados	107	≥ 1	SI	2.16	1.75			
	6.2 Promover o recrutamento de pessoal técnico especializado para os Serviços da FMV	PQ-06	Técnicos contratados	Nº técnicos superior recrutados	108	≥ 1	SI	8.25	3			
	6.3. Aperfeiçoamento dos sistemas de avaliação e remuneração dos trabalhadores docentes e não docentes	PQ-06	Desempenho dos docentes	Excelentes / total (%)	109	>50%	79	78,6	NA			
			Desempenho de não docentes	% de Relevantes	110	25%	25%	25%	25%			
	6.4 Formação dos trabalhadores	PQ-06	Formação pedagógica dos docentes	Nº de horas formação pedagógica frequentada / nº docentes	111	> 3	SI	1.13	18.22			
			Formação dos outros trabalhadores	Nº de formações frequentadas / nº trabalhadores	112	> 0,3	SI	0.36	0.33			
<b>7. Gestão dos recursos financeiros</b>			Dotação do OE	Dotação do OE / ano anterior	113	≥ TI / ano			4.90			

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Indicadores	7.1 Indicadores Receita	PQ-07	Receitas ensino	Receitas ensino / ano anterior	114	≥ TI / + 2% ano			-5.34			
			Receita investigação	Receita investigação / ano anterior	115	≥ TI / + 2% ano			-3.15			
			Receita prestação de serviços	Receita prestação de serviços / ano anterior	116	≥ TI / + 2% ano			17.89			
	7.2 Indicadores Despesa	PQ-07	Despesa pessoal	Despesa pessoal / ano anterior	117	≥ TI / + 2% ano			14.59			
			Despesa funcionamento	Despesa funcionamento / ano anterior	118	≥ TI / < TI / + 2% ano			45.33			
			Despesa manutenção	Despesa manutenção / ano anterior	119	≥ TIP / < TIP / + 3% ano			-6.68			
			Despesa investimento	Despesa investimento / ano anterior	120	≥ TIP / + 15% ano			42.99			
	7.3 Alocação das receitas próprias à implementação do plano estratégico	PQ-07	Receitas próprias alocadas ao PE / Total de receitas próprias	Receitas próprias alocadas ao PE / Total de receitas próprias	121	>90%	123%		131.5%	139%		
8. Manutenção e expansão das instalações e equipamentos	8.1 Requalificação dos edifícios	PQ-08	Reabilitação dos edifícios	Área de construção de Edifícios requalificados / Área de construção da totalidade dos edifícios	122	≥ 17,5% / ano, 90% quadriénio	0		16%	40.00		
	8.2 Redução/Eficiência do consumo de energia	PQ-08	% de Redução e Eficiência Energética	Consumo energetico / Consumo energetico do ano anterior	123	≥ 0,25% / ano, 1% quadriénio				1.25%		
	8.3 Transição energética	PQ-08	Redução de consumo de energia primária	Energia primária anual/Energia primária 2022	124	≥ 8,75% / ano, 35% quadriénio				5%		
	8.4 Implementação e reorganização de áreas de estudo/lazer para estudantes e trabalhadores	PQ-08	Reabilitação de espaços e equipamentos de apoio	Aumento da área estudo e lazer/ Área existentes	125	≥ 4,5% / ano, 20% quadriénio				10.00		
	8.5 Climatização de espaços	PQ-08	Substituição / Reparação de equipamentos AVAC	Equipamentos AVAC substituídos ou reparados / totalidade de equipamentos AVAC	126	≥ 2,4% / ano, 10% quadriénio				2.50%		
9. Funcionamento dos serviços Administrativos	9.1 Serviços Académicos	PQ-9	Tempo médio de resposta na emissão de certificados	Dia de entrega - dia de requisição	127	≤5d	4		4.00	4		
			Tempo médio de resposta a dúvidas	Tempo médio de resposta a dúvidas	128	≤5d				4		



**FACULDADE DE MEDICINA VETERINÁRIA**  
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10. Melhoria Contínua do Sistema de Garantia da Qualidade	9.2 Serviços Financeiros	PQ-9	Tempo médio de resposta a pedidos de aquisição	Dia de emissão de guia para o fornecedor - dia de entrada da requisição	129	≤5d	5	5.00	5					
			Prazo médio de pagamento	Dia de receção da fatura - dia de pagamento	130	≤ 25 dias	SI	5.25	25					
	9.4 Comunicação interna	PQ-9	Tempo médio de comunicação de despachos e regulamentos	Após assinatura e/ou aprovação	131	≤2d	1	1	1					
	10.1 Melhoria contínua do sistema de qualidade	PQ-10	Auditorias	Nº de auditorias/ano	132	1		NA	2					
			Conformidades em auditorias internas	Nº de não conformidades / % de resolução	133	< 5 > 80%	SI	SI	2, 50%					
			Conformidades em auditorias externas	Nº de não conformidades / % de resolução	134	< 5 > 80%	SI	0.50	1, 100%					
		10.2 Reclamações	PQ-10	nº de reclamações clientes	nº de reclamações clientes / % de resolução	135	< 1% do universo >80%	SI	0.34	0				
				nº de reclamações trabalhadores docentes	nº de reclamações trabalhadores docentes / % de resolução	136	< 1% do universo >80%	SI	0.56	0				
				nº de reclamações trabalhadores tec e adm.	nº de reclamações trabalhadores tec. e adm. / % resolução	137	< 1% do universo >80%	SI	0.62	6,3%, 100%				
				nº de reclamações dos estudantes	Nº e percentagem de resolução / ano	138	MIMV - ≤5, >80%	0	6,75 100%	6, 96%				
						139	MSA - ≤3, >80%	0	0.00	0				
						140	MCE - ≤3, >80%			0				
						141	MEZ - ≤3, >80%	0	0.00	0				
						142	DCV - ≤3, >80%	0	0.00	1, 70%				
				Nº Reclamações no Gabinete de Mobilidade	Nº anual e percentagem de resolução	143	≤3, >80%			0				
				Nº Reclamações no Hospital Escolar - HAC	% no total de serviços e % de resolução / ano	144	≤0,5% >80%			0.1%, 97%				
				Nº Reclamações no Hospital Escolar - HE	% no total de serviços e % de resolução / ano	145	≤0,5% >80%			0				
						Índice de satisfação dos docentes	Satisfação dos docentes	146	≥3,5 (escala 1-5)	SI	SI	3.29		
Índice de satisfação dos docentes						Satisfação dos docentes com os Serviços Académicos	147	≥3,5 (escala 1-5)	SI	SI	3.57			

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10.3 Satisfação

PQ-10

Índice de satisfação dos trabalhadores tec e admi	Satisfação dos trabalhadores tec e admi	148	≥3,5 (escala 1-5)	SI	SI	3.24			
Índice de satisfação dos trabalhadores tec e admi	Satisfação dos trabalhadores tec e admi com os RH	149	≥3,5 (escala 1-5)	SI	SI	2.86			
Índice de satisfação dos estudantes	Satisfação dos estudantes com o processo formativo	150	≥3,5 (escala 1-5)			3.52			
Índice de satisfação dos estudantes	Satisfação dos estudantes com os Serviços Acadêmicos	151	≥3,5 (escala 1-5)	SI	SI	3.09			
Índice de satisfação dos estudantes com as UCs	Nota média da avaliação das UCs	152	MIMV - ≥3,75 (1-5)	3.88	3.97	4.00			
		153	MSA - ≥3,75 (1-5)	SI	4.16	3.88			
		154	MCE - ≥3,75 (1-5)			NA			
		155	MEZ - ≥3,75 (1-5)	SI	4.13	3.60			
		156	DCV - ≥3,75 (1-5)	SI	SI	4.23			
Índice de satisfação dos estudantes com os docentes	Nota média da avaliação dos docentes	157	MIMV - ≥4 (1-5)	4.13	4.09	4.20			
		158	MSA - ≥4 (1-5)	SI	4.46	4.41			
		159	MCE - ≥4 (1-5)			NA			
		160	MEZ - ≥4 (1-5)	SI	4.31	4.00			
		161	DCV - ≥4 (1-5)	SI	SI	SI			
Índice de satisfação dos estudantes com os espaços disponíveis	Nota média de avaliação dos espaços	162	≥3,5 (escala 1-5)			3.54			
Índice de Satisfação dos estudantes em mobilidade	Índice de Satisfação dos estudantes em mobilidade	163	≥3,5 (escala 1-5)			3.59			
Satisfação do cliente HAC: qualidade do serviço	Satisfação do cliente: qualidade do serviço	164	≥3,5 (escala 1-5)	SI	3.93	4.26			
Satisfação do cliente HAC: marcação de serviço	Satisfação do cliente: marcação de serviço	165	≥3,5(escala 1-5)	SI	3.77	3.56			
Satisfação do cliente HAC: tempo de espera	Satisfação do cliente: tempo de espera	166	≥3,5(escala 1-5)	SI	SI	3.51			

**FACULDADE DE MEDICINA VETERINÁRIA**  
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			Satisfação do cliente HE: qualidade do serviço	Satisfação do cliente: qualidade do serviço	167	≥3,5(escala 1-5)	SI	SI	SI			
			Satisfação do cliente HE: marcação de serviço	Satisfação do cliente: marcação de serviço	168	≥3,5(escala 1-5)	SI	SI	SI			
			Satisfação do cliente HE: tempo de espera	Satisfação do cliente: tempo de espera	169	≥3,5(escala 1-5)	SI	SI	SI			
			Satisfação geral dos clínicos do HE com o CD	Satisfação do cliente: qualidade do serviço	170	≥3,5(escala 1-5)	SI	SI	3.79			
			Satisfação geral dos clientes externos com o CD	Satisfação do cliente: qualidade do serviço	171	≥3,5(escala 1-5)	SI	SI	SI			
<b>11. Gestão Estratégica do Sistema de Garantia da Qualidade</b>	11.1. Cumprimento das metas do Plano da Qualidade para o quadriênio	PQ-11	Respostas válidas	Respostas válidas / total indicadores dos Processos 1 a 10	172	>90%			95.3			
			Cumprimento das metas do Plano da Qualidade para o quadriênio	% dos indicadores do Anexo ao Plano de Qualidade com respostas válidas que atingiram ou ultrapassaram a meta	173	> 75%			74.2			

Notas: TI - Taxa de Inflação calculada pelo INE (em 2023 foi de 4,3%)



# **Appendix 3**

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ULisboa Disciplinary Students Rules and Regulations, Code of Conduct and Good Practice, and Charter of Rights and Guarantees

TABLE No. 5

Table of Elective CUs \*\*

Course Units	Scientific Area	Education Component (1)	Type (2)	Hours of work		ECTS	Comments
				Total	Contact (3)		
Communication in a School Context . . . . .	CEd	AEG	S	156	45 TP; 3 OT	6	Elective
Education in Citizenship . . . . .	CEd	AEG	S	156	45 TP; 3 OT	6	Elective
Education in Health . . . . .	CEd	AEG	S	156	45 TP; 3 OT	6	Elective
Information and Communication Technology . . . . .	CEd	AEG	S	156	45 TP; 3 OT	6	Elective
Multiple Literacy . . . . .	CEd	AEG	S	156	45 TP; 3 OT	6	Elective
The History of Education in Portugal . . . . .	CEd	AEG	S	156	45 TP; 3 OT	6	Elective
School Libraries . . . . .	CEd	AEG	S	156	45 TP; 3 OT	6	Elective

\*\* Elective CUs that are common to other Masters taught at Universidade de Évora.

(1) (AEG) Área de General Education; (DE) Specific Didactics; (IPP) Initiation of Professional Practice/(PPI); (AD) Teaching Area.

(2) (A) Annual; (S) Semestral.

(3) (T) Theoretical Teaching; (TP) Theoretical-Practical Teaching; (E) Internship; (S) Seminar; (OT) Supervision Tutorial.

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## UNIVERSIDADE DE LISBOA

### The Rector's Office

#### Ruling No. 6441/2015

Considering that the General Board of Universidade de Lisboa approved at its meeting of April 2, 2015, the Disciplinary Rules and Regulations for Students of Universidade de Lisboa;

Considering that the General Board of Universidade de Lisboa adopted at its meeting on 19 May, 2015 the Charter of Rights and Guarantees and the Code of Conduct and Good Practice of Universidade de Lisboa; In accordance with the provision of Paragraph *g*) of No. 1 of Article 26 of the Statutes of Universidade de Lisboa, the following is determined:

1 — The publication in the *Diário da República* of the Disciplinary Rules and Regulations for Students, of the Charter of Rights and Guarantees and of the Code of Conduct and Good Practice of Universidade de Lisboa, in Appendices I, II and III of this ruling.

2 — The Disciplinary Rules and Regulations for Students, the Charter of Rights and Guarantees and of the Code of Conduct and Good Practice of Universidade enter into force after their publication in the *Diário da República*.

27 May, 2015. — The Rector, *António Cruz Serra*.

#### APPENDIX I

### The Disciplinary Rules and Regulations for Students of Universidade de Lisboa

#### Introduction

The University is a community of people who cooperate in the pursuit of research, teaching and other services for the community.

It is assumed that all members of the academic community of Universidade de Lisboa (faculty and researchers, non-faculty and non-research staff, research students, students and visitors) maintain the highest standards of ethics and professionalism in carrying out their duties.

Consequently, all members of the academic community must know and comply with the rules and regulations that govern their activities as members of the University. Each member of the University is responsible for their actions and has the duty to ensure that they comply with the Code of Conduct and Good Practice.

Although the Disciplinary Rules and Regulations for Students are not based on a legal philosophy, it is apparent that many of the violations of conduct may be technical violations that have no illegal intent. However, because these may be detrimental to third-party interests, such violations may be of a disciplinary nature, in particular when they constitute a violation of the Code of Conduct and Good Practice.

For this reason, this document favours the use of an investigation, whose prescriptive measures are not subject to deadlines.

If the investigation results in the strong likelihood of a disciplinary violation, then the process will continue, but now as a disciplinary procedure, which can take advantage of the probative steps taken during the investigation process. If the instructor concludes that it is convenient to just issue a warning without disciplinary effects, in spite of this, the perpetrator must nonetheless be heard.

Where breaches constitute criminal offenses, these must be reported to the competent authorities, in spite of the fact that they are classified as consubstantiating disciplinary offences that should be punished with disciplinary sanctions. Thus, in accordance with the proposal of the Rector and the terms of Paragraph *n*) of No. 2 of Article 18 of the Statutes of Universidade de Lisboa and Paragraph *j*) of No. 2 of Article 20 and of Article 75 of the Legal Regime of Higher Education Institutions, the General Board approves this Code of Conduct and Good Practice of Universidade de Lisboa, under the terms of the following Articles:

## CHAPTER I

### General provisions

#### Article 1

##### Scope of application

1 — These disciplinary rules and regulations apply to all students who are studying for any course at Universidade de Lisboa, whether or not it leads to a degree or diploma.

2 — These disciplinary rules and regulations apply to all Universidade de Lisboa organisational units for education, research and community service, irrespective of their legal constitution.

#### Article 2

##### Disciplinary infraction

1 — A disciplinary infraction is considered to be the behaviour of the student, whether by act or omission, even if merely guilty, that violates any duties stipulated in the Law, statutes, or any rules and regulations.

2 — In particular, the following are the general duties of students:

- The duty to treat correctly and with respect all members of the academic community, namely: members of the University's governing and management bodies; managers; faculty; researchers; non-faculty and non-research staff; research students and other members of the University;
- The duty to look after the University's assets, in particular the facilities and teaching material, using them properly;
- The duty to respect the legitimate orders and rulings made by members of governing and management bodies and managers, and also by faculty, researchers, non-faculty and non-research staff and research students, in carrying out their duties;
- The duty not to use any unauthorised means to obtain better academic results;
- The duty to be punctual and to attend lectures and other academic activities.



## Article 3

**The lapsing of a disciplinary proceeding**

1 — The right to instigate a disciplinary proceeding expires one year after the date on which the offence was committed.

2 — It also lapses when, upon receipt of a participation, no investigation or disciplinary proceeding is instigated within 30 days.

3 — The instigation of an investigative procedure suspends, until its conclusion, the statutory time limits for lapsing.

4 — In relation to infractions carried out by students who have meanwhile left the University before any of the abovementioned statutory time limits has lapsed, the period for becoming lapsed is considered to be interrupted, and is re-initiated when the student returns, or when a new valid enrolment is carried out.

## Article 4

**Applicable supplementary scheme**

1 — The legal regime regarding the Disciplinary Statute of Public Sector Workers, approved by Law No. 58/2008, of 9 September, is applicable for exercising disciplinary powers over students, with the necessary adaptations.

2 — Whenever this Regulation refers to the Disciplinary Statute, it refers to the Disciplinary Statute of Public Sector Workers, as approved by Law No. 58/2008, of 9 September, and its subsequent alterations.

## CHAPTER II

**Disciplinary Sanctions**

## Article 5

**Sanctions**

The sanctions applicable to students are the following:

- a) A warning;
- b) A fine;
- c) Temporary suspension from School activities;
- d) Suspension from School knowledge assessment for one year;
- e) Prohibition from studying at the University and its educative, research or service providing organisational units for up to 5 years.

## Article 6

**Characterisation of sanctions**

1 — The disciplinary sanction of a fine is always applied in writing.

2 — The disciplinary sanction of a fine is fixed at a set amount, which cannot be less than one tenth, and not more than fifty per cent of the annual tuition fees owed by the student.

3 — The disciplinary sanction of temporary suspension of studies consists of a total prohibition to frequent the University, or, if the circumstances of the infraction so permit, prohibition to attend lectures for one or more course units for which the student is enrolled for a period of time that varies from a minimum of one month to a maximum of one Academic Year.

4 — The disciplinary sanction of suspension from the School's knowledge assessment during a year implies that the student can only sit for an exam of a course unit for which they are enrolled at the time of the infraction during a period of one year after this date. If the student has been subject to knowledge assessments for a course units in which they were enrolled at the time of the infraction before the one year of suspension has elapsed and a disciplinary procedure is still in progress, then these knowledge assessments will be annulled and should be repeated during the Academic Year following that in which the sanction was applied.

5 — The disciplinary sanction of being prohibited to frequent the University implies the student's total ban from Universidade de Lisboa for a period varying from one to five Academic Years. Once this disciplinary sanction has been fulfilled, re-admission will be granted, should the student so wish.

## Article 7

**Suspension of disciplinary sanctions**

1 — With the exception of the sanction described in Paragraph a) of Article 5, all the other sanctions can be suspended.

2 — Suspension of a sanction can take place when, bearing in mind the student's personality and conduct before and after the offence and the circumstances of the offence, it is decided that mere censorship and threat of a sanction adequately and sufficiently fulfills the purposes of punishment.

3 — A suspension cannot be less than one Academic semester, neither more than two Academic Years.

## Article 8

**The lapsing of a disciplinary proceedings**

Disciplinary sanctions lapse after a period of six months from the date on which they become unenforceable.

## Article 9

**Mitigating circumstances**

Apart from those mentioned in the Disciplinary Statutes, the following are considered to be mitigating circumstances:

- a) The excusable ignorance of the infringed duty;
- b) The erroneous but excusable conviction that the behaviour carried out was lawful;
- c) The carrying out of an order, even if wrongly interpreted, provided that this error of interpretation is excusable.

## Article 10

**Attenuating circumstances**

Attenuating circumstances are considered to be the following:

- a) The spontaneous confession of the infraction;
- b) Genuine repentance;
- c) Previous good conduct;
- d) Academic merit;
- e) Provocation;
- f) The circumstances of the moment in which the infraction was committed which decrease the student's guilt;
- g) The pardon of the injured party.

## Article 11

**Extraordinary attenuation**

Extraordinary mitigation can lead to the application of any less-serious disciplinary sanction, which can be suspended, except if it is a written warning.

## Article 12

**Aggravating circumstances**

Apart from those stipulated in the Disciplinary Statutes, aggravating circumstances are considered to be the practice of unlawful acts under the influence of alcohol or drugs.

## CHAPTER III

**Facts leading to disciplinary sanctions**

## Article 13

**Warning**

1 — The disciplinary sanction of a warning is applicable:

- a) In the case of minor and unimportant infringements, in particular of the duties referred to respectively in Nos. 3 to 9 of Article 1, and of Nos. 1 to 5 of Article 5 of the Code of Conduct and Good Practice;
- b) The student has already been administratively penalised, namely for the annulment of their exam results;
- c) There was no personal or property injury or, if there was, but it was not serious, then the injured party was pardoned.

2 — The disciplinary sanction of a warning cannot, however, be applied, if:

- a) There is a recurrence of a previous offence;
- b) There is fraud;
- c) There is at least one aggravating circumstance.

## Article 14

**Fines**

Without prejudice to the provisions of Article 13, the sanction of a fine is applicable, especially if there is a violation of the duties referred to in Nos. 3 to 9 of Article and of Nos. 1 to 5 of Article 5 of the Code of Conduct and Good Practice.

## Article 15

**Temporary suspension of academic activities**

The sanction of temporary suspension of academic activities is applicable when:

- a) There is a recurrence of the violations referred to in Article 14;
- b) There is a violation of the duties referred to in Nos. 10 to 15 of Article 1 of the Code of Conduct and Good Practice.

## Article 16

**Suspension of knowledge assessment for one year**

The sanction of suspension of knowledge assessment for one year is applicable, especially when there is a recurrence of the violations referred to in the previous article.

## Article 17

**Ban on studying for up to 5 years**

The sanction of a ban on studying for up to 5 years is applicable, especially when, accumulatively:

- a) The disciplinary infraction constitutes a criminal offence, which is punishable by a prison sentence which cannot be substituted by a fine;
- b) The infraction is fraudulent;
- c) There is at least one aggravating circumstance;
- d) A personal or personal injury has occurred.

## CHAPTER IV

**Disciplinary jurisdiction**

## Article 18

**General principle**

The power to punish belongs to the Rector, without prejudice to the ability to delegate to the Deans of the Schools under the terms of No. 6 of Article 75 of Law No. 62/2007 of the 10 of September.

## Article 19

**Participation of the Prosecutor**

The application of the sanctions described in Paragraphs c) to e) of Article 5 must be preceded by an opinion of the Vice-Rector who is designated the Prosecutor.

## Article 20

**Communication**

1 — In the case of delegation of powers, all decisions regarding the start of the disciplinary proceeding, dismissal of a proceeding, and the application of a sanction must be communicated to the Rector within 5 days of their announcement.

2 — The respective grounds for making decisions regarding the dismissal of a proceeding, and the application of a sanction must also be communicated.

## CHAPTER V

**The proceeding**

## Article 21

**Instigation of a disciplinary proceeding**

1 — The Rector of the University has the powers to instigate or to order the instigation of a disciplinary proceeding.

2 — Similarly, the Dean or Director of a School has the powers to instigate or to order the instigation of a disciplinary proceeding, irrespective of the sanction to be applied.

3 — If it judges that a disciplinary offence has been sufficiently proven to be a minor infraction, the entity with disciplinary competence can opt to apply a written warning, after hearing the student in question.

## Article 22

**Instigation of the investigation process**

An investigation procedure must be enforced when serious doubts exist about the facts or the perpetrator of the acts committed.

## Article 23

**Investigation**

The Rector of the University and the Deans and Directors of the Schools have the powers to order investigations for the purpose of establishing facts or the identity of the perpetrators.

## Article 24

**Decision of the Investigation**

Once the investigation has been concluded and the disciplinary infractions have been verified, the entity that instituted the proceeding instigates the disciplinary proceeding, without prejudice to the provisions of No. 3 of Article 21.

## Article 25

**Preventive suspension**

Preventive suspension may only be applied when there is a strong probability that the disciplinary sanction provided for in Paragraph e) of Article 5 will be applied, which cannot go beyond the end of the Academic Semester.

## Article 26

**Instructor**

1 — The Instructor should preferably be nominated from among the faculty that teach the course units for the degree for which the perpetrator is enrolled.

2 — Failure to comply with Paragraph 1 above in no way affects the validity of the disciplinary proceeding in question.

## Article 27

**Hearing of the Students Association**

1 — Without prejudice to the possibility to hear other opinions provided for in the Disciplinary Statute, the application of the sanction described in Article 5 e) must be preceded by hearing the opinion of the respective Student.

2 — The competent authority is responsible for applying the disciplinary sanction, or in the case of Article 19, it is the Prosecutor who orders the hearing provided for in Paragraph 1 above, by sending a copy of the final report of the Instructor.

3 — The opinion referred to in Paragraph 1 above must be issued and delivered within 10 working days.

## Article 28

**Sending the process for decision**

1 — After the completion of the disciplinary proceeding and the writing of the final report, the process is sent by the Instructor to the Prosecutor, who must seek the opinions provided in the Disciplinary Statute or in these Rules and Regulations.

2 — If opinions are requested from several entities, then the deadlines for issuing them are successive, and it is up to the Prosecutor to determine the order of their emission.

3 — Once the opinions have been issued, or the deadlines have elapsed, the Prosecutor must refer the disciplinary proceeding to the decision-making entity within 10 working days, accompanied by his opinion.

## Article 29

**Decision**

1 — The final decision of the disciplinary proceeding must be made within 30 working days from the reception of the case.

2 — If the final decision-making entity decides to request an opinion, then the deadline for the decision counts from the reception of the case or of the deadline established for its emission.

## Article 30

**Appeal**

An appeal may be made to the Rector regarding the final decision of the disciplinary proceeding, subject to the general terms.

## CHAPTER VI

**Final dispositions**

## Article 31

**Counting of deadlines**

All deadlines for the disciplinary proceeding that are stipulated in these Rules and Regulations, or in the Disciplinary Statute, are based on working days - Saturdays, Sundays and Local and National Holidays do not count.

## Article 32

**Notifications**

All notifications regarding the proceeding can be made in person or by registered letter with acknowledgment of receipt, sent to the address of the student that is recorded in their enrolment.

## Article 33

**Entry into force**

These Rules and Regulations enter into force after their publication in the *Diário da República*, and are only applicable for proceedings that are instigated after that date when they come into force.

## APPENDIX II

**Charter of Rights and Guarantees****Introduction**

Universidade de Lisboa, herewith referred to as the University, promotes equal opportunities among members of its academic community (faculty and researchers, non-faculty and non-research staff, research students, students and visitors) in the pursuit of carrying out all its activities in the fields of scientific research, education, and, in a broader sense, service to the national and international community in which it is inserted.

In accordance with its statutory mission (see Article 2 of its Statutes), Universidade de Lisboa is an educational and scientific institution based on the creation, transmission and social and economic valorisation of knowledge and culture, which is committed to the progress of society. The underlying principle of the University is the principle of freedom to teach, learn, and carry out research. This presupposes its autonomy, as well as its ability to recognise and respect the fundamental rights that uphold this freedom, in particular those enshrined in this Charter of Rights and Guarantees, thus ensuring respect for the freedom of others.

The University, with the added responsibility of being a Public entity, is bound to respect and safeguard the rights, freedoms and guarantees enshrined in the Constitution of the Law of the Republic. The Charter of Rights and Guarantees, hereinafter referred to as the Charter, aims to apply these rights, freedoms and guarantees to the university context, within the limits of the regulatory autonomy conferred to the University.

This application requires, as a necessary condition, knowledge and respect for the set of duties set out in the Code of Conduct and Good Practices.

The University recognises, without prejudice to other rights protected by Law, that each and every member of the academic community, including visiting members, is protected by the set of rights contained in this Charter.

The University recognises the usefulness of mediation for resolving conflicts, and it falls upon the University Prosecutor to ensure full, equitable and impartial participation during the respective processes of mediation, under the terms of No. 2 of Article 27 of the Statutes, in accordance with the legal principles.

Thus, on the proposal of the Rector, the General Council approves this Charter of Rights and Guarantees of Universidade de Lisboa, under the terms of Paragraph *j*) of No. 2 of Article 20 and of Paragraph *i*) of No. 2 of Article 82 of the Legal Regime of Higher Education Institutions (Law No. 62/2007, of 10 September) and in the context of Paragraph *n*) of No. 2 of Article 19 of the Statutes of Universidade de Lisboa, with the following terms:

## Article 1

**Right to Equal Opportunities**

The University is governed by the principle of equality of opportunities, and may not prejudice, deprive of any legally-recognised right, or exempt from any duty any member of its academic community by reason of family background or descent, gender, ethnicity, language, country of origin, religion, political or ideological beliefs, economic situation, social condition, physical condition or any other factors of a discriminatory nature.

## Article 2

**Right to Petition**

The University recognises and protects the right of petition of all the members of its academic community, under the following terms:

1 — Petitions may relate to all University activities, including teaching, research, the provision of services to the community, the

the organisation of academic life and administrative matters.

2 — Petitions may take the following forms:

- a) The presentation of an application or a proposal;
- b) The expression of an opinion contrary to a decision already made, seeking to reverse it;
- c) The presentation of a denouncement or a complaint.

3 — The right to petition can be carried out individually or collectively, on the understanding that petitions that do not properly identify their petitioner or how to contact them will be rejected.

4 — Petitioners are addressed to the Deans or Directors of the Schools, the Financial and Administrative Director of the University, the Director of Social Services, or the Rector, whereby in the latter case, the petition concerns a general subject regarding the University.

5 — A copy of all petitions signed by students must be sent by the addressee to the Student Ombudsman within 72 hours of receipt.

6 — A reply must be given by the addressee within 15 working days after receipt of the petition, which may take one of the following forms:

a) The archiving of the petition, on account of its object being illegal or impossible, or because it has no adequate basis, or because a previous analogous petition has already been subject to a decision;

b) Total or partial acceptance of the request;

c) The instigation of a disciplinary proceeding against the petitioner or petitioners, for being considered to be deliberately defamatory or injurious;

d) The identification of a proceeding that was successful, with an indication of the forecast completion date.

7 — All those who are called upon to make a decision about a petition must do so within ten working days, and for disciplinary purposes, an unjustified failure to comply with this deadline, or that of its extension, is considered to be a case of a lack of zealous behaviour.

8 — Copies of all petitions and respective decisions must be kept on file in the organisational unit of the petitioner, or in the archive of the Rector's Central Services if the addressee is the Rector, all of which may be consulted within the terms of the Law.

## Article 3

**Right to information**

1 — Members of the academic community have the right to be informed, in a timely manner, by the administrative bodies of the University, whenever they so request, regarding the progress of the proceedings in which they are directly involved, and to know the definitive decisions that were made about them.

2 — The exercise of the right to information, without prejudice to the limits and legal impositions for protecting information, the following applies:

a) A candidate for a recruitment and selection contest may request to see the minutes and documents on which the decision was made, within a maximum period of ten working days;

b) A member of staff who contacts the competent authorities to question the result of their performance evaluation may request access to specific documentation that justifies their assessment;

c) A student, who knows their written exam grade may request to see the corrections, which must be shown to them within a period that does not compromise the usefulness of this request, but can never exceed ten working days.

3 — Members of the academic community have the right, under the terms of the Law, to ask to see the archives and administrative records of the University and of the organisational units, without prejudice to the legal deadlines and impositions for protecting information.

4 — The organisational units and the Rector's Office are responsible for making public, on their websites, the amounts charged for the emission of certificates and simple copies or authenticated copies of documents, as well as the opening hours of the respective Services.

## Article 4

**Right to participation**

1 — The members of the academic community have the right to participate in the decision-making processes directly related to them, under the terms of the applicable legislation, especially the Law and in accordance with the Statutes of the University and its organisational units and to participate in its governing bodies, through its representatives.

2 — Without prejudice to the special regime provided for in the Law or in Rules and Regulations, the right to participation is put in to effect by the prior hearing of those interested, under the terms regulated by the Code of Administrative Procedure.

3 — The approval of regulatory standards for administrative reorganisation should be preceded by a process of public consultation with those members of the academic community concerned, characterised by the disclosure, with a reasonable lead time and by appropriate means, of the draft regulation and its respective preparatory work, if any, and of the contributions received from authors who wish to see them published.

4 — Members of the academic community have the right to participate in entities or initiatives of an associative, sporting, artistic and cultural nature within the realm of Universidade de Lisboa, as contemplated in the Law.

#### Article 5

##### Right to professional development

1 — The University recognises, as one of the key factors for improving its performance and for motivating its staff, which is achieved, among other measures, by the development of consistent and continuous policies aimed at ensuring, within the limits of the Law, the professional development of its faculty, researchers, and non-faculty and non-research staff.

2 — Professional development policies must be based, in particular and within the limits of the Law, on continuous training, on ensuring material conditions that facilitate good professional performance, and on stimulating the recognition of merit, performance and dedication.

3 — The University will focus on the organisation of personnel charts and planning and the allocation of financial resources, within the limits of the Law, creating conditions that allow the implementation of procedures that enable the professional progression of its staff.

#### Article 6

##### Right to effective conditions to exercise a profession

1 — The University recognises that the pursuit of its mission depends primarily on the professional performance of its staff, and thus it is its duty to guarantee to each and everyone effective conditions, namely material and moral, in order that they can exercise their profession with efficiency, quality, and responsibility.

2 — The University recognises as a right of its staff, and also as a condition for a correct evaluation of performance and recognition of merit, the definition of professional profiles, which respect the normative orders that appear in the statutes regarding careers, and regulatory instruments of collective labour.

3 — The University recognises the right of its staff to participate effectively in the identification of their professional profiles, under the terms regulated by each of their organisational units.

4 — The University recognises that, given the dynamism that it attaches to its activities, that in duly justified and transient situations, its hierarchies can delegate to their subordinates, with their consent, the execution of tasks and activities or the assumption of responsibilities which are not covered by their respective professional profile.

5 — The University recognises the duty to inform its staff of the procedures and information flows which, according to the Law and the Rules and Regulations, they must observe during the development of their activities.

6 — The University recognises the existence of tasks and activities which should be developed with a high degree of autonomy, in particular for teaching, research and the provision of services to the community, and it should guarantee University faculty and researchers of the University the right to freedom of supervision and scientific opinion, without prejudice to the observance of general rules legitimately established by those who have responsibility for coordinating these activities.

7 — The University recognises that it must help each member of staff get to know the hierarchical chain in which they are inserted for carrying out their activities, and thus both it and its organisational units must also disclose, by means deemed appropriate, its organisation charts, organised by activities or by activity groups.

8 — The University recognises the usefulness for its organisational units of procedures manuals, to make more available the knowledge of procedures, flowcharts, degrees of autonomy, and organisational charts.

9 — The University and its organisational units must ensure suitable solutions for the enjoyment and use of workspaces and academic and research and development resources, in accordance with the legal requirements and the specific general regulations in force.

10 — As employers, the University and its organisational units own the intellectual property rights arising from the intellectual inventions carried out by its staff, safeguarding copyright and participating in the economic results obtained.

#### Article 7

##### Right to high quality teaching

1 — Students of the University have the right to a high quality education, with conditions of effective equal opportunity for their human, scientific, technical, cultural, moral and social education.

2 — Students of the University have the right of access to the facilities, material and human resources, and the services related to their education, and the right to evaluate them.

3 — Whenever intellectual creativity results from the exercise of the right of access referred to in the previous number and of the students' study activities, this is protected by intellectual property rights, and the University assumes ownership of these rights, without prejudice to conceding a fair share of the economic results obtained to the creators of this intellectual property, under the terms of the Rules and Regulations, guaranteeing the copyright of literary, artistic, or scientific works of which the students are authors, or co-authors.

4 — Without prejudice to other rights enshrined in the Law or Rules and Regulations, students of the University also have the right to:

a) See that the merit, dedication, and effort of their work and academic performance be recognised and given valued, and to be stimulated in this sense;

b) See that their academic performance be assessed in objective, fair, and transparent terms, and to have access to their duly-corrected exams and the respective grades table;

c) Impede the use of their academic work for any purpose other than their assessment;

d) Be promptly and adequately attended to in the event of an accident or the occurrence or manifestation of a sudden illness during the course of School activities;

e) Be guaranteed confidentiality regarding the elements and information of a personal or family nature contained in their individual files;

f) Organise and participate in initiatives that promote training and activities during their leisure time, and participate in the academic activities, under the terms of the Law and of the University's Statutes and Rules and Regulations;

g) Be supported in the field of employability and entrepreneurship.

5 — During the process of professional insertion, within the possibilities of the University and of the organisational units, new graduates must:

a) Be supported during their insertion into active life and for the development of their professional career;

b) Be technically supported in entrepreneurial initiatives that they intend to initiate;

c) Access the information and resources of the University, in accordance with its own Rules and Regulations.

6 — For the fulfilment of its mission, the University recognises the importance, of the existence and regular functioning of Student Associations, Alumni Associations, and student bodies, and will support them, within the limits of the Law and in accordance with the availability of existing material and budgetary resources.

7 — Students have the right to be integrated into the academic community through welcoming and familiarisation initiatives, and to know, in a timely manner, and at any moment, the rules and procedures that they must abide by while they study at the University.

#### APPENDIX III

##### Code of Conduct and Good Practice

##### Introduction

Members of the academic community of Universidade de Lisboa (faculty and researchers, non-faculty and non-research staff, research students, students, and visitors) are required to individually observe standards of ethics, justice and equal opportunities, integrating these values in academic life and in the professional work carried out at the University and in its organisational units, as well as in the University's relations with society.

The maintenance of these standards requires as a necessary condition the knowledge and observation of the set of rights and duties set down in the Charter of Rights and Guarantees and in this Code of Conduct and Good Practice.

In no case does the Code of Conduct and Best Practice of the University curb freedoms protected by the Law, namely freedom of expression and scientific freedom, but rather it constitutes guidelines for their defence, while additionally ensuring equality and non-discrimination.

Accordingly, the Code of Conduct and Good Practice of the University constitutes the set of rules and regulations whose violations give rise to the Disciplinary Rules and Regulations, in accordance with Article 27 of the Statutes of the University, whereby disciplinary power lies with the Rector and the Deans or Departmental Directors of the University, in accordance with Article 28 of these Statutes.

The members of the academic community of Universidade de Lisboa are responsible for carrying out their functions in the public interest, in accordance with the Law, the Statutes, and the Rules and Regulations, as well as adopting best practices in teaching, scientific research and the provision of services to the community in an environment of academic freedom and of institutional co-operation, based on the following principles:

- a) The valorisation of knowledge, through practices founded on intellectual curiosity, in the pursuit of truth and innovation, sustained by credible argumentation and information and on their transferability to society;
- b) The valorisation of merit, through the observation of the legislation in force and the specific statutes and rules and regulations of the University, as well as the respect of academic freedom in the acts of teaching, research and learning, emphasizing civility, individuality, individual integrity and difference of opinions;
- c) Respect for the Law and people, by observing the legislation in force and the specific statutes and regulations of the University, as well as the respect for academic freedom in the acts of teaching, research and learning, in the context of academic freedom, emphasizing civility, individual integrity and difference of opinions;
- d) Ethical responsibility, through the application of criteria of impartiality and just decisions, and the conscientious carrying out of tasks, together with responsible supervision and intellectual encouragement that all sustain the development of individuals through their careers;
- e) Cooperation and inter-disciplinarity through strengthening collaborative scientific research, particularly regarding frontier and convergence areas of knowledge, and through sharing experiences and good practice based on shared practice;
- f) Diligence, through the carrying out of tasks within standards and requirements of demanding professionalism.

Thus, in accordance with the proposal of the Rector and the terms of Paragraph j) of No. 2 of Article 20 and Paragraph i) of No. 2 of Article 82 of the Legal Regime of Higher Education Institutions (Law No. 62/2007, of 10 September), and Paragraph n) of No. 2 of Art. 19 of the Statutes of Universidade de Lisboa, the General Board approves this Code of Conduct and Good Practice of Universidade de Lisboa, under the terms of the following:

## CHAPTER I

### Duties

#### Article 1

#### General duties

In addition to the duties imposed by Law and by the Statutes and Rules and Regulations of the University and its organizational units, in accordance with the rulings of No.2 of Article 75 of the Legal Regime of Higher Education Institutions approved by Law No. 62/2007, of 10 September, faculty, researchers, non-faculty and non-research staff, students and other members of the academic community must:

- 1 — Not commit breaches of a civic and academic nature;
- 2 — Provide, when possible, shelter and assistance to members of the academic community, according to the degree of danger to their physical and moral integrity;
- 3 — Respect moral integrity and treat members of the academic community with civility and loyalty;
- 4 — Not make slanderous declarations;
- 5 — Wear appropriate clothing when technical and working conditions so require;
- 6 — Know and comply with the norms that regulate their activities as members of the academic community;
- 7 — Respect the property of the University and its organisational units and guarantee their good conservation and use;
- 8 — Respect the property of all members of the academic community;
- 9 — Grant access to essential information for the development of University activities, within the limits defined by the competent bodies and in accordance with the Rules and Regulations in force;
- 10 — Respect the confidentiality of data and information to which they

have access, when required to do so;

11 — Not commit acts of violence or exert physical and psychological pressure on members of the academic community;

12 — Not make false declarations, falsify or adulterate any document of an administrative and academic nature;

13 — Not consume alcohol or psychotropic substances in such a way that disturbs or otherwise harms others;

14 — Not possess and use illicit substances, or carry out any form of trafficking, facilitation and consumption of the same;

15 — Not carry or use any weapon and other instruments of personal defence, or any materials, instruments or devices designed for the same purpose.

#### Article 2

#### General Duties of Faculty, Researchers, Non-Faculty and Non-Research Staff and Research Students

Faculty and Non-Faculty and Non-Research Staff and Research Students are required to:

1 — Carry out their functions in the service of the public interest, in accordance with the Law, Statutes, Rules and Regulations and other legitimate orders and instructions from their hierarchical superiors delivered as part of their service, and contribute to the common objectives of their respective organizational unit and those of the University;

2 — Recognise and value merit;

3 — Act within the scope of their roles, with responsibility, competence, integrity and exemption;

4 — Act with dedication, reserve and discretion, as well as value knowledge and cooperation;

5 — Be assiduous and punctual in carrying out their professional activities and in their participation in meetings and other moments of teamwork, and respect the dates and deadlines in the fulfilment of their administrative duties;

6 — Adjust the methods of communication to the context of globalisation in which the University finds itself, using other languages whenever justified.

#### Article 3

#### Duties of Faculty, Researchers and Research Students

The following are also duties of Faculty, Researchers and Research Students:

1 — Participate in the design and execution of research programs and in the development of projects and related scientific and technical activities;

2 — Teach and supervise their assigned course units in a scientific and pedagogic manner, and permanently strive to improve pedagogical methods and monitor and assess the academic performance of their students, according to previously established objectives.

#### Article 4

#### Duties of Non-Faculty and Non-Research Staff

The following are also duties of Non-Faculty and Non-Research Staff:

1 — Encourage the carrying out of tasks shared with all members of the academic community, focusing on the orientation of their activities to integrate the objectives of the University in the planning of their services and in the quality of the services provided and the results obtained;

2 — Promote the establishment of networks and best practice communities with colleagues and with related activities;

3 — Respect the duty of confidentiality of documents and decision-making within the scope of their activities.

#### Article 5

#### Duties of Students

Apart from the duties obliged by Law, and by the Statutes and Rules and Regulations of the University and its organisational units, in accordance with Paragraph a) of No. 4 of Art. 75 of the Legal Regime for Higher Education Institutions approved by Law No. 62/2007, of 10 September, students must:

1 — Contribute to the harmony of the school communal life and to the full integration into the academic community of all students;

2 — Be committed and disciplined in carrying out academic activities, contributing to their efficient performance, while respecting the supervision of those responsible;

3 — Respect the norms of knowledge assessment, avoiding any conduct that could unjustly harm or benefit themselves, or another student;



4 — Respect instructions or supervision given by faculty, researchers, and non-faculty and non-research staff;

5 — Not use the teaching resources of the University or its organisational units inappropriately for diverse purposes.

#### Article 6

##### Duty to notify

Without prejudice to the special regime provided for in the Law or in one of the Rules and Regulations, personal communications may also be made by electronic means, while respecting the content and deadlines provided for in the Law. For this purpose, members of the academic community of the University should maintain the respective Services up-to-date with the e-mail address to which notifications can be sent to them.

#### Article 7

##### Duty to substantiate

1 — Whenever the Law requires the substantiation of acts, this must be expressed in a clear and accessible manner.

2 — In exams, whenever the Law or the Rules and Regulations do not rule to the contrary, the correction of written exams is considered to be an express and accessible substantiation.

## CHAPTER II

### The Principles of Conduct and Good Practice

#### Article 8

##### The Principles of Conduct

1 — The following conduct is considered to be a violation of this Code:

a) The act of plagiarism, which is understood to be the presentation of other people's work as being one's own work, especially in situations where paraphrases are made of other texts, by merely substituting or changing words, without referencing the original authors, or when significant parts of other authors' work are added to one's own work, without identifying them, even in cases where these works are in the public domain, but prior authorisation was not requested when necessary;

b) Carrying out acts of self-plagiarism, consisting of the repeated presentation of the same work, or of important portions of previous works, without adding significantly new subject matter, with the purpose of pretending it is new and original work;

c) The incorrect use of intellectual property, which is understood to be:

i) The use of third-party intellectual property, without prior authorisation of the respective author when required by Law or by convention;

ii) The unlawful appropriation of data, software or any other work protected by intellectual property, even if those appropriating this information do not extract, or intend to extract any economic advantage from this appropriation, either for themselves, or for a third party;

iii) Any attempt, even if not pre-meditated, to intentionally circumvent legitimate measures of intellectual property protection;

d) The selective presentation of results, for publication or not, which voluntarily omits undesirable results;

e) Obtaining positions or financing through the use of misleading information regarding skills and competencies, or the incorrect or purposeful misrepresented use of interpretations of previously-obtained results, or the conscious creation of false expectations for third parties;

f) The negligent or deliberately false interpretation of research results;

g) The intentional distortion of methods, in particular statistics, to support conclusions that differ from those supported by the data;

h) The presentation as a co-author of papers or of any other intellectual work for which no significant contribution has been made;

i) The omission to publish co-authors' names, or the insertion as co-authors the names of those who did not contribute to the publication in question;

j) The acceptance to be a supervisor for dissertation theses, or failing to request to be excused from participating in examination boards in cases of a subject that is well-removed from one's area of specialization, or about which one has no relevant knowledge, or when direct family members or up to third degree relatives are being examined.

2 — The following conduct is also considered to be a violation of this Code:

a) That which, within and outside the University, constitutes a threat or infringes on the physical, moral and patrimonial integrity of members of the academic community, or on the integrity of the University, in particular:

i) Any form of harassment;

ii) Discrimination on the basis of family background or descent, gender, ethnicity, language, country of origin, religion, political or ideological beliefs, economic situation, social condition, physical condition or any other or any other factors of a discriminatory nature;

iii) Initiation, admission or affiliation rites, involving any activity, group or organisation that may endanger the physical and mental integrity of a person which constitutes humiliation, intimidation and degrading treatment, or which involves the consumption of drugs or other toxic substances, especially the excessive consumption of alcohol;

iv) The intentional violation, by any means, of personal rights, especially of privacy and of image;

v) Infringement of the rules for the use of computer networks, in particular damage or unlawful access and interference to computers, computer networks, data and files;

vi) The illegitimate appropriation of assets and funds of the University or its organisational units, including, in particular, those that are, or could come to be protected by intellectual property;

b) The deceitful possession of any official University documents, including identification documents, passes or similar cards, as well as access passwords;

c) The intentional violation of the security procedures of the University or its organisational units, provided that these have been made public and the perpetrator acted with a view to committing unlawful acts, even if only attempted;

d) The unauthorised invasion or un-authorised use of areas, services or facilities of the University or its organisational units, which are not public or open to the public, or commonly accepted use, with intention to carry out unlawful acts, even if only attempted;

e) The instigation of third parties to violate this Code.

#### Article 9

##### The Principles of Good Practice

1 — The University recognises that the exercise of its role in society presupposes the adoption by its members of best practices in scientific research, in the provision of services to the community and in education, in a free academic environment, in accordance with the principles enshrined in the Charter of Rights and Guarantees.

2 — The general guiding principles of good practice are:

a) The principle of diligence;

b) The principle of credibility;

c) The principle of verifiability;

d) The principle of impartiality;

e) The principle of transparency;

f) The principle of the usability of information and content.

3 — Good practice for safeguarding diligence in scientific work and teaching is based on the following principles:

a) Respect for the rights of others and for the rights of animals, in the case of their use in scientific research;

b) The strict and exhaustive citation of the sources used in carrying out scientific work;

c) The mention of copyright regarding sources used and discussions, debates, etc. which contributed to the final work;

d) The separation between personal sphere and work sphere, in order to avoid doubts about the objectivity of judgment, especially in cases involving subordinates or hierarchical dependents, as well as close relatives;

e) The explanation and publication of the grading criteria before the act of grading;

f) The permanent updating of faculty and researchers, with the aim of maintaining a high level of knowledge.

4 — Good practice for safeguarding that the credibility of scientific work and teaching is based on the following:

a) Consistency between the results presented and the data obtained, the statistical methods used and the calculations made, as well as the explanation and justification of the selective omission of results, if applicable;

b) The autonomous exposition of speculations or hypotheses for the continuation of the work carried out that can legitimately be interpreted from the results, so as not to be confused with the presentation of conclusions;

c) The completeness and rigor of curricula;

d) Distinction, in the context of lectures, between personal opinion, speculation and facts.

5 — Good practice for safeguarding the verifiability of scientific work and teaching is based on the following:

a) The replicability of research, whereby scientific texts must be written in such a way that the research carried out can be replicated by other authors and at other sites;

b) The archiving, for at least five years, of data, as well as manuscripts, programs, calculations, publications, reports, etc., in order that they can be supplied to those requesting them, with the exception of those works covered by specific rules and regulations themselves and those that are subject to confidentiality clauses;

c) The accurate writing up of lecture summaries, in such a way that they can be used to extract the necessary information about the subject matter;

d) The archiving, for five years, of the results of the examination grades of the various course units.

6 — Good practice for safeguarding the impartiality of scientific work and teaching is based on the following principles:

a) The guarantee of freedom and space for the intellectual achievement of students and those supervised within the scope of the hierarchical relations between faculty and student, and between supervisor and those supervised;

b) The impartiality of all acts of judgment and assessment, including corrections or peer-review, even during situations of competition with those people or groups who are subject to judgment or assessment;

c) The inexistence of close family or professional relations between examiners and those being assessed.

#### Article 10

#### Violation of the Code of Conduct and Good Practice

The disciplinary implications of violating this Code of Conduct are those stipulated in the General Law for Working in the Public Sector, Law No. 35/2014, of 20 June and the Disciplinary Rules and Regulations governing students of Universidade de Lisboa.

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#### Order No. 6442/2015

Under the terms of No. 1 of Article 28 of the Statutes of Universidade de Lisboa (ULisboa), approved by Regulatory Order No. 5-A / 2013, published in the *Diário da República*, supplement, 2nd Series, No. 77, of 19 April, and No. 2 of Article 6 of the General Regulation of Contests for The Recruitment of Full, Associate, and Assistant Professors of Universidade de Lisboa, published by Order No. 2307/2015, of 5 March, I delegate the competencies to Professor José Artur de Sousa Martinho Simões, PhD, Director of the Faculty of Sciences of Universidade de Lisboa, with the right to sub-contract, to preside over the selection boards for the recruitment with Public Sector employment contracts the following:

A Full Professor, in the discipline of Energy Engineering for the Faculty of Sciences, opened by Public Notice No. 419/2015, published in the *DR*, 2nd Series, No. 94, of 15 May;

A Full Professor, in the discipline of Philosophy of Science and Technology, or History of Science and Technology for the Faculty of Sciences, opened by Public Notice No. 429/2015, published in the *DR*, 2nd Series, No. 94, of 15 May 15;

An Associate Professor, in the discipline of Probability and Statistics for the Faculty of Sciences, opened by Public Notice No. 418/2015, published in the *DR*, 2nd Series, No. 94, of 15 May;

An Assistant Professor, in the discipline of Astronomy and Astrophysics or of Atomic and Molecular Physics, or of Nuclear Physics, or of, Condensed Matter Physics, or of Optics for the Faculty of Sciences, opened by Public Notice No. 422/2015, published in the *DR*, 2nd Series, No. 94, of 15 May;

An Assistant Professor, in the discipline of Cellular and Molecular Biology for the Faculty of Sciences, opened by Public Notice No. 430/2015, published in the *DR*, 2nd Series, No. 94, of 15 May;

An Assistant Professor, in the the discipline of Ecology for the Faculty of Sciences, opened by Public Notice No. 423/2015, published in the *DR*, 2nd Series, No. 94, of 15 May;

Two Assistant Professors, in the discipline of Biomedical Engineering for the Faculty of Sciences, opened by Public Notice No. 428/2015, published in the *DR*, 2nd Series, No. 94, of 15 May 15;

An Assistant Professor, in the discipline of Energy Engineering for the Faculty of Sciences, opened by Public Notice No. 424/2015, published in the *DR*, 2nd Series, No. 94, of 15 May 15;

An Assistant Professor, in the discipline of Genetics or of Microbiology for the Faculty of Sciences, opened by Public Notice No. 420/2015, published in the *DR*, 2nd Series, No. 94, of 15 May 15;

An Assistant Professor, in the discipline of Geology or Geochemistry for the Faculty of Sciences, opened by Public Notice No. 425/2015, published in the *DR*, 2nd Series, No. 94, of 15 May;

An Assistant Professor, in the discipline of Probabilities and Statistics, or Operational, Banking, Finance and Investment Research, for the Faculty of Sciences, opened by Public Notice No. 427/2015, published in the *DR*, 2nd Series, No. 94, of 15 May.

28 of May, 2015. — The Rector, António Cruz Serra.

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#### Faculdade de Direito

#### Aviso n.º 6383/2015

**Procedimento concursal comum para preenchimento de 2 (dois) postos de trabalho, na carreira e categoria de assistente técnico, do mapa de pessoal não docente da Faculdade de Direito da Universidade de Lisboa, área de apoio à gestão e de apoio às relações internacionais.**

Nos termos do disposto nos artigos 30.º e 33.º da Lei n.º 35/2014, de 20 de junho, que aprovou a Lei Geral do Trabalho em Funções Públicas, abreviadamente designada por LTFP, conjugado com o artigo 19.º da Portaria n.º 83-A/2009, de 22 de janeiro, com as alterações que lhe foram introduzidas pela Portaria n.º 145-A/2011, de 6 de abril, torna-se público que por despacho de 16 de abril do Diretor da Faculdade de Direito da Universidade de Lisboa, Professor Doutor Jorge Alberto Caras Altas Duarte Pinheiro, se encontra aberto, pelo prazo de 10 (dez) dias úteis contados a partir da data de publicação do presente aviso no *Diário da República*, procedimento concursal comum, na modalidade de relação jurídica de emprego público por tempo indeterminado, tendo em vista o preenchimento de 2 (dois) postos de trabalho, da carreira e categoria de assistente técnico, previsto e não ocupado no mapa de pessoal não docente da Faculdade de Direito da Universidade de Lisboa, para o exercício de funções nos Gabinetes de Apoio à Gestão e de Relações Internacionais.

1 — Tipo de concurso — O presente aviso reveste a forma de procedimento concursal comum, por inexistir reserva de recrutamento constituída, quer no próprio serviço, quer na ECCRC — Entidade Centralizada de Constituição de Reservas de Recrutamento, porquanto não foram ainda publicitados quaisquer procedimentos nos termos dos artigos 41.º e seguintes da Portaria n.º 83-A/2009, de 22 de janeiro, alterada pela Portaria n.º 145-A/2011, de 6 de abril, tendo sido ainda emitida declaração de inexistência de trabalhadores em situação de requalificação, após procedimento prévio promovido junto da Direção-Geral da Qualificação dos Trabalhadores em Funções Públicas, como determina a Portaria n.º 48/2014, de 26 de fevereiro, e o artigo 265.º da LTFP;

2 — Modalidade de contrato: o procedimento concursal destina-se à ocupação de 2 (dois) postos de trabalho, na modalidade de contrato de trabalho em funções públicas por tempo indeterminado, previsto no mapa de pessoal não docente da Faculdade de Direito da Universidade de Lisboa, de acordo com o disposto no n.º 1 do artigo 30.º da LTFP.

3 — Enquadramento legal: Lei n.º 35/2014, de 20 de junho, LTFP; Decreto Regulamentar n.º 14/2008, de 31 de julho; Portaria n.º 83-A/2009, de 22 de janeiro, alterada pela Portaria n.º 145-A/2011, de 6 de abril; Lei n.º 62/2007, de 10 de setembro; Lei n.º 82-B/2014, de 31 de dezembro.

4 — Local de trabalho: os postos de trabalho situam-se nas instalações da Faculdade de Direito da Universidade de Lisboa.

5 — Caracterização geral do posto de trabalho: Exercício de funções inerentes à carreira e categoria de assistente técnico, com grau de complexidade 2, de acordo, com o anexo da LTFP, nomeadamente:

Realização de tarefas administrativas, no âmbito da sua área de atuação.

6 — Posição remuneratória: Nos termos do preceituado no artigo 38.º da LTFP, a determinação do posicionamento remuneratório do traba-



# Appendix 4

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Units of study of the core veterinary programme: title, reference number, ECTS value, position in curriculum, whether it is compulsory or elective, hours and modes of instruction, learning outcomes and their alignment with the ESEVT and FMV Day One Competences

## Units of study of the core veterinary programme

Units of study	Reference	ECTS	Y	S	C / E	Hours and modes of instruction									ESEVT Day One Competences	FMV Day One Competences
						A	B	C	D	E	F	G	Total			
<b>Deontology and Bioethics</b>	9847001	2	1	1	C	12	1						13	knowledge and skills in critical ethical issues related to Veterinary Surgeons; Provide knowledge in the areas of professional civic conduct in the different functional valences of veterinary profession; understand the social, moral and legal responsibilities that are inherent to the profession.	1.1, 1.3, 1.12	1.1.1; 1.1.2; 1.2.3
<b>Histology I</b>	9847002	4.5	1	1	C	28			28				56	Knowledge and skills in the techniques for preparation of biological material for the microscopic study of cells and tissues and on the use of the light microscope. Knowledge of microscopic structure of animal tissues and its relationship with function with particular emphasis on the four basic tissues and lymphoid system.	1.2	1.1.3
<b>Biochemistry I</b>	9847003	4	1	1	C	28			28				56	Knowledge of the general concepts and fundaments of structural biochemistry and catalysis necessary to the understanding at molecular level of biological phenomena occurring in Veterinary Sciences.	1.2	1.1.3
<b>Embryology and Developmental Biology</b>	9847004	4.5	1	1	C	28			28				56	Knowledge of morphological and molecular aspects concerning fertilization, cleavage, gastrulation, neurulation and organogenesis. Knowledge of cellular and molecular mechanisms of embryonic and fetal development. Introductory notions to the mechanism of some congenital malformations.	1.2	1.1.3
<b>Biophysics</b>	9847005	4.5	1	1	C	28		28					56	knowledge on the physical principles of biological functions; develop critical thinking necessary for its analysis and interpretation and explain the physical basis of ancillary diagnostic clinical support, most relevant to the practice of veterinary medicine.	1.4, 1.24	1.1.7, 1.1.8, 1.1.10, 3.1.4, 3.2.2, 3.2.3, 3.1.12
<b>Anatomy I</b>	9847006	4.5	1	1	C	28				28			56	Recognize that body possess a construction pattern that varies according to morphological adaptations of different animals to different and specific functions. Osteology, muscles and joints are understood as part of the locomotion dynamics. Knowledge of fish and birds anatomy and of the lymphatic system.	1.2	1.1.3
<b>Biomathematics, Computing and Documentation</b>	9847007	5	1	1	C	28			28				56	Be able to use statistics for summarizing data and perform exploratory data analysis; be aware of the applicability of theoretical models used for statistical analysis; analyse and interpret statistical results; know the difference between cause-effect relationships and statistical associations; demonstrate basic skills to search and critically read technical and scientific papers; use the computer to perform: (a) word-processing, build tables and graphs; (b) data storage, retrieval, processing and analysis using spreadsheets and a statistical package; (c) search the internet and online library databases for scientific and technical documents.	1.2, 1.7, 1.9, 1.11, 1.24	1.1.3, 1.1.4, 1.1.5, 1.1.7, 1.1.10, 1.2.3
<b>Complementary Activities I</b>	9847008	1	1	1	C	6				6		16	28	Promote students' contact with animals housed at FMV stables and kennels and integrate them in the daily handling activities. Knowledge how to correctly approach the main pet and farm animal species. Contribute to the communication and team working skills development as well the organizing and responsibility capacities.	1.1, 1.17, 1.5, 1.8	1.1.1, 2.1, 2.2, 2.4, 3.2.1
<b>Histology II</b>	9847009	4.5	1	2	C	28			28				56	Knowledge of the microscopic structure of organs and systems of domestic animals' body and the relationship with their functions.	1.2	1.1.3



<b>Cell Molecular Biology</b>	9847010	5	1	2	C	28			28				56	Knowledge of the general concepts and fundaments of molecular and cellular biology to the understanding at molecular level of biological phenomena occurring in Veterinary Sciences.	1.2	1.1.3
<b>Biochemistry II</b>	9847011	5	1	2	C	28			28				56	Knowledge the general concepts and fundaments of bioenergetics and metabolic biochemistry necessary to the understanding at molecular level of biological phenomena occurring in Veterinary Sciences.	1.2, 1.22	1.1.3, 3.2.4
<b>Anatomy II</b>	9847012	4.5	1	2	C	28				28			56	Identification and morphological characterization of the organs of the digestive, respiratory, urinary, genitals, udder and the cardiovascular systems; anatomical organization of the thoracic, abdominal and pelvic cavities, ligaments and mesos; Identification of hormone producer organs; Knowledge of muscles responsible for locomotion and movement; understand the functional reason of anatomical structures and clinical application of that knowledge.	1.2	1.1.3
<b>Zootechnics</b>	9847013	5	1	2	C	28	8		4	12		4	56	Knowledge of the external characteristics of the main animal species and its products and uses; be acquainted with their identification methods and housing systems and the biological or the production cycles; understanding of the importance of animals' living conditions to health and profitability of production systems.	1.16, 1.21, 1.22, 1.36	3.1.1, 3.1.2, 3.1.3, 3.2.4, 3.3.4, 3.3.5, 3.3.7
<b>Plant Biology, Agriculture and Environment</b>	9847014	5	1	2	C	24	4		22			6	56	Knowledge of basic concepts of plant biology which allow the understanding of the methodologies used in Agriculture for the production and preservation of animal feedstuffs, with the perspective of developing sustainable production systems that protect the environment and the ecosystems.	1.16, 1.21, 1.22, 1.36	3.1.3, 3.2.4, 3.3.4, 3.3.5, 3.4.6
<b>Complementary Activities II</b>	9847015	1	1	2	C	12	5			8			25	Knowledge and skills in farm animals (cattle, sheep, goats and horses) husbandry: cleaning stalls, handling, materials used for food and animal bedding, basic health care. Knowledge and skills in dog husbandry: walking, hygiene of kennels, care and feeding.	1.1, 1.5, 1.8, 1.17	1.1.1, 2.1, 2.2, 2.4, 3.2.1
<b>TOTAL Year 1</b>						362	18	28	222	82	0	26	738			
<b>Physiology I</b>	9847016	4.5	2	3	C	28			24	4			56	Knowledge of the different concepts and physiologic mechanisms for homeostasis maintenance in domestic animals; understand veterinary physiology and integrate it with animal production and health. Knowledge of neurophysiology; endocrinology, gastrointestinal physiology and respiratory function.	1.2, 1.10	1.1.3
<b>Anatomy III</b>	9847017	4.5	2	3	C	28				28			56	Knowledge of the nervous system, senses organs, skin and placenta and placental annexes.	1.2	1.1.3
<b>Animal Behaviour and Welfare</b>	9847018	5	2	3	C	28			6	22			56	Identify the abnormal behaviours in pets and farm animals, understanding the source and the development of those behaviours in order to prevent and treat them. Recognize and interpret the signs of welfare, discomfort and pain, knowing its physiological basis and its effects in the social and productive animal behaviour. Know how to handle, restrain and transport animals	1.1, 1.17, 1.21	1.1.1, 1.1.9, 3.1.1, 3.1.2, 3.2.1, 3.3.2, 3.3.4, 3.3.7
<b>General Pathology</b>	9847019	5	2	3	C	28				28			56	To describe, quantify and classify general and basic lesions at the cell, tissue and organ levels. To relate both macroscopic and microscopic changes with the etiologic agents. To understand and to interpret the dynamic evolution of the lesions. To value the anatomopathological diagnosis as an important tool for general diagnosis. To collect, preserve and send biological material for laboratory exam.	1.10, 1.22, 1.23	1.1.2, 1.1.3, 2.3, 3.1.4, 3.2.4



<b>Parasitology I</b>	9847020	5	2	3	C	28			28				56	To develop a dynamic perspective of the concepts of parasitism to prepare students for the scientific areas of Clinics, Animal Health, Animal Production, Food Safety and Veterinary Public Health, through the study of parasites from domestic, wild and aquatic animals. Prepare the student to be able to execute lab techniques for parasitological diagnosis and to interpret results.	1.22	3.1.4, 3.1.13, 3.2.4
<b>Microbiology I</b>	9847021	5	2	3	C	28			28				56	Recognize the different types of microorganisms, understand and discriminate aspects of bacterial and fungal biology, evaluate the relevance of indigenous microbiota and recognize the importance of bacteria and fungi in pathological and technological processes. Develop competencies of manipulating laboratory instruments and substrates or samples bearing bacteria and fungi, be able to plan and perform bacteriological and mycological analysis.	1.22, 1.25, 1.38	3.1.4, 3.1.13, 3.1.14, 3.2.4, 3.3.5, 3.4.1, 3.4.2, 3.4.5
<b>Complementary Activities III</b>	9847022	1	2	3	C	4			6				10	To promote student's involvement with research and routine laboratory procedures performed at the Vet School, aiming the establishment of a practical attitude towards the course. To introduce students to the health and safety requirements within the laboratory spaces. To develop student's awareness of safe work practices in laboratory activities.	1.1, 1.2, 1.10, 1.24	1.1.3, 1.1.7, 3.1.4, 3.2.3
<b>Genetics</b>	9847023	5	2	4	C	28	2		26				56	Knowledge of the basic principles and methodologies of molecular, cyto, mendelian and population genetics: the mechanisms that determine the transmission of hereditary traits; the molecular mechanisms of genetic diseases; Knowledge of the genetics of disease: principles of population genetics and of a broad range of inherited disorders in animals and the fundamental breed genetic diseases. Develop competences in obtaining, recording, and interpreting patient history and pedigree information.	1.2, 1.16	1.1.3, 3.1.3
<b>Physiology II</b>	9847024	4.5	2	4	C	28			28				56	Knowledge of the different concepts and physiologic mechanisms for homeostasis maintenance in domestic animals. Understand veterinary physiology, and integrate it with animal production and health. Knowledge of reproduction, lactation, renal, thermoregulation, and cardiovascular physiology.	1.2	1.1.3
<b>Economics and Management</b>	9847025	4	2	4	C	28		28					56	Understand the microeconomics of markets, particularly those of agriculture and food; of consumer demand; and of the theory of the firm. Be aware of government intervention in the agricultural sector making them familiar with the Common Agricultural Policy. knowledge of the framework of procedures and concepts to support the decision-making process in optimizing animal health and production management.	1.1, 1.3, 1.8, 1.11, 1.21	1.1.1, 1.1.8, 1.1.9, 1.2.1, 1.2.3, 2.2, 2.4, 2.5, 3.1.13, 3.3.2, 3.3.7
<b>Parasitology II</b>	9847026	4.5	2	4	C	28			28				56	Recognize the morpho biology, eco-epidemiology and pathophysiology of Trematode, Cestoda, Nematode and Acanthocephalan more relevant helminthic in Veterinary Medicine and Public Health. Perform helminthic identification, helminthological laboratory diagnostic techniques and result interpretation.	1.10, 1.22	3.1.4, 3.1.13, 3.2.4
<b>Microbiology II</b>	9847027	3	2	4	C	14			14				28	Understand and discriminate aspects of viral biology and pathogenicity in order to establish adequate control strategies; recognize the importance of virus in the different morbid processes; develop competencies of manipulating laboratory instruments and substrates or samples bearing viruses; be able to plan and perform virology analysis.	1.22, 1.25, 1.38	3.1.4, 3.1.13, 3.1.14, 3.2.4, 3.3.5, 3.4.1, 3.4.2, 3.4.5
<b>Epidemiology</b>	9847028	3	2	4	C	14			14				28	Use the key principles and methods of epidemiological investigations such as descriptive and analytic techniques, and to understand their relevance for the prevention, control, eradication and surveillance of transmissible diseases, and to improve animal welfare, production efficiency and animal product quality.	1.1,1.2, 1.3, 1.7, 1.9, 1.10, 1.11, 1.12, 1.24, 1.38	1.1.1, 1.1.2, 1.1.3, 1.1.6, 1.2.3, 3.1.13, 3.4.2

<b>Anatomical Pathology I</b>	9847029	5	2	4	C	28					42		70	Define the response to injury of different tissues and organs; describe the macroscopic lesions observed, establishing the relation cause-effect and the degree of dysfunction; perform a necropsy of various domestic animals; provide an accurate and complete report and collect material for complementary exams; perform a fine needle aspiration biopsy and a punch biopsy.	1.10, 1.21, 1.22, 1.23, 1.34	1.1.2, 1.1.3, 2.3, 3.1.1, 3.1.4, 3.2.4, 3.2.8
<b>Complementary activities IV</b>	9847030	1	2	4	C		28						28	Familiarize with laboratory research activities and provision of services developed in the FMV, in terms of awareness of the different strands of professional Veterinary Medical Act.	1.1, 1.2, 1.10, 1.24	1.1.3, 1.1.7, 3.1.4, 3.2.3
<b>TOTAL Year 2</b>						340	30	28	216	68	42	0	724			
<b>Medical Propaedeutics I</b>	9847031	4.5	3	5	C	26					26		52	Perform a thorough and systematic physical examination in bovine, equine and canine; recognize the health status; select, from the signs collected from the physical examination, those that are indicative of disease; critically evaluate clinical signs and propose adequate diagnostic plans; select the additional diagnostic endeavours rationally most adequate to confirm the diagnosis; decide upon probable diagnosis and prognosis of medical conditions.	1.16, 1.17, 1.18, 1.21, 1.22, 1.24	1.1.7, 1.1.10, 3.1.1, 3.1.2, 3.1.3, 3.1.4, 3.1.5, 3.2.1, 3.2.2, 3.2.3, 3.2.4.
<b>Anaesthesia and Analgesia</b>	9847032	4	3	5	C	26	2		0	0	24		52	Develop fundamental knowledge and applied techniques of anaesthesia: pre-anaesthetic care; intra-anaesthetic care; post-anaesthetic care; general anaesthesia; local anaesthesia; anaesthesia in caesarean; euthanasia.	1.31, 1.32	3.2.6
<b>Pharmacology and Therapeutics I</b>	9847033	4.5	3	5	C	26			11	14	14		65	Basic and specific knowledge of drugs used in animals, to prevent, cure or undermine pathological conditions; general pharmacology (pharmacokinetic and pharmacodynamics); pharmacology of etiotropic drugs; be able to choose, explain, discuss, evaluate and use the best strategies on pharmacotherapy with application and execution of different techniques of drug administration.	1.1, 1.17, 1.26, 1.27, 1.28	1.1.1, 1.1.4, 3.1.10, 3.2.1
<b>Nutrition</b>	9847034	4.5	3	5	C	26	8	0	18	0	0	0	52	Know and understand the mechanisms of transformation of energy and nutrients into animal products; evaluate the nutritional needs of animals; assess the nutritional quality of foods and know how to diagnose situations of nutritional deficiencies.	1.21, 1.22	3.1.1, 3.1.2, 3.1.4, 3.1.13, 3.2.4, 3.3.4, 3.3.5
<b>Immunology</b>	9847035	4	3	5	C	26			26				52	Comprehend the importance of the various functions of the immune system as fundamental component of balance and maintenance of health; recognize the relevance changes to such balance in the etiology of several immunopathological processes; understand the strategies of immunomodulation, as in vaccination; develop competencies of manipulating laboratory instruments and immunological techniques applied to veterinary diagnosis.	1.1, 1.10, 1.38	1.1.1, 1.1.2, 1.1.3, 3.1.13
<b>Anatomical Pathology II</b>	9847036	5	3	5	C	26					42		68	Define the response to injury of different tissues and organs; describe the macroscopic lesions observed, establishing the relation cause-effect and the degree of dysfunction; perform a necropsy of various domestic animals; provide an accurate and complete report and collect material for complementary exams; perform a fine needle aspiration biopsy and a punch biopsy.	1.10, 1.21, 1.22, 1.23, 1.34	1.1.2, 1.1.3, 2.3, 3.1.1, 3.1.4, 3.2.4, 3.2.8
<b>Clinical Rotations I</b>	9847037	1	3	5	C		6				8		14	To develop a set of attitudes adjusted to work in a hospital environment; to improve their veterinary communication skills and teamwork; to promote organizational abilities as well as to incur liabilities.	1.1, 1.3, 1.5, 1.7, 1.8, 1.10, 1.11, 1.12, 1.13, 1.14, 1.16, 1.17, 1.18, 1.21, 1.22, 1.23, 1.26, 1.30	1.1.1, 1.1.2, 1.1.5, 1.2.3, 2.1, 2.2, 2.3, 2.4, 2.5, 3.1.1, 3.1.3, 3.1.4, 3.1.5, 3.2.1, 3.2.4

<b>Hygiene and Food Safety</b>	9847051	4.5	3	6	C	26			26				52	Knowledge of the basic concepts of production hygiene, aiming the fulfil of animal welfare. Be able to cooperate in the elaboration of proactive systems for quality assurance.	1,1, 1.3, 1.8, 1.10, 1.29, 1.35, 1.36, 1.37, 1.38	1.1.1, 1.1.2, 2,2, 2.4, 3.1.13, 3.4.2, 3.4.9, 3.4.10, 3.4.11
<b>Medical Propaedeutics II</b>	9847052	4.5	3	6	C	26			10	16			52	Define, describe and analyse biological signs and syndromes, collected from the examination of organs and systems, in the perspective of the appropriate ancillary tests necessary to orientate the diagnostic plan towards a given organ or system; decide which laboratory ancillary tests to choose in order to explore body systems or organs; correctly perform simple laboratory tests; interpret the results of laboratory tests critically, in the scope of information collected from history and clinical signs.	1.16, 1.17, 1.18, 1.21, 1.22, 1.24	1.1.7, 1.1.10, 3.1.1, 3.1.2, 3.1.3, 3.1.4, 3.1.5, 3.2.1, 3.2.2, 3.2.3, 3.2.4.
<b>Surgical Propaedeutics</b>	9847053	4.5	3	6	C	26	4	2	0	0	24		56	Realise the fundamental concepts, objectives and basic principles of surgery; perform the main sutures and key pads; applied basic surgical techniques.	1.7, 1.8, 1.10, 1.16, 1.24, 1.30, 1.31, 1.32	1.1.2, 1.1.5, 2.2, 3.1.3, 3.1.12, 3.2.6, 3.2.7
<b>Imagiology</b>	9847054	4	3	6	C	26					13		39	Comprehend imaging as a set of resources that serve to clarify some aspects of each case; analyse images to extract all the information they can provide.	1.4, 1.17, 1.23, 1.24, 1.29	1.1.7, 1.1.8, 1.1.10, 2.3, 3.1.14, 3.2.1, 3.2.3
<b>Pharmacology and Therapeutics II</b>	9847055	5	3	6	C	26			39				65	Use of basic and specific knowledge's of organotropic drugs to apply in a therapeutic context; knowledge's on organotropic drugs pharmacokinetic and pharmacodynamics to understand therapeutic potentialities and limitations; be able to choose, explain, discuss, evaluate and use the best strategies on functions pharmacotherapy; application of the rules and the evaluation of conditionality on drugs prescription.	1.1, 1.26, 1.27, 1.28, 1.31, 1.32	1.1.1, 1.1.4, 3.1.10, 3.1.13, 3.2.6
<b>Animal Feeding</b>	9847056	4	3	6	C	26	4	0	22	0	0	0	52	Knowledge and skills in determine the nutritional requirements of animal species according to the type and level of production; choose adequate feeds as well as the ways of processing them. Optimise animal production as well as to prevent the development of metabolic pathologies, ensuring animal health and well-being and the quality of the final products.	1.21, 1.22	3.1.1, 3.1.2, 3.1.4, 3.3.1, 3.3.2, 3.3.4, 3.3.5
<b>Clinical Rotations II</b>	9847057	1	3	6	C		6				8		14	Expanding exposure to “real” clinical cases at the VTH; develop a set of attitudes adjusted to work in a hospital environment; to improve their veterinary communication skills and teamwork; to promote organizational abilities as well as to incur liabilities.	1.1, 1.3, 1.5, 1.7, 1.8, 1.10, 1.11, 1.12, 1.13, 1.14, 1.16, 1.17, 1.18, 1.21, 1.22, 1.23, 1.26, 1.30	1.1.1, 1.1.2, 1.1.5, 1.2.3, 2.1, 2.2, 2.3, 2.4, 2.5, 3.1.1, 3.1.3, 3.1.4, 3.1.5, 3.2.1, 3.2.4
<b>TOTAL Year 3</b>						312	30	2	152	30	159	0	685			
<b>Reproduction and Obstetrics I</b>	9847074	5	4	7	C	26			8		30		64	Be familiar with the basic knowledge and skills concerning the reproductive processes; collection and assessment of semen; methods of diagnosis of the stage of the oestrous cycle and of pregnancy; diagnostics and therapy of reproductive diseases of companion and equine animals.	1,1, 1.3, 1.10, 1.16, 1.18, 1.21, 1.22, 1.23, 1.24, 1.25, 1.26, 1.27, 1.31, 1.32	1.1.1, 1.1.2, 3.1.1, 3.1.2, 3.1.3, 3.1.4, 3.1.5, 3.1.7, 3.1.8, 3.1.9, 3.1.10, 3.1.11, 3.1.12, 3.1.13, 3.2.2, 3.2.3, 3.2.4, 3.2.5, 3.2.6, 3.3.2
<b>Surgery I</b>	9847075	4	4	7	C	22	2				28		52	Recognize the main surgical diseases, their pathophysiological mechanisms and understand the way surgery can be helpful and determine a real solution to the	1.7, 1.8, 1.10, 1.16, 1.18, 1.19,	1.1.3, 1.1.5, 2.2, 2.5, 3.1.1, 3.1.2,

														patient; surgical techniques, materials and options; surgical skills and main surgical procedures like incision, tissues manipulation, haemostasis and sutures; applied anaesthesiology	1.20, 1.21, 1.24, 1.27, 1.29, 1.30, 1.31, 1.32	3.1.3, 3.1.4, 3.1.5, 3.1.7, 3.1.8, 3.1.9, 3.1.10, 3.1.12, 3.2.1, 3.2.2, 3.2.3, 3.2.4, 3.2.5, 3.2.6, 3.2.7,
<b>Medicine I</b>	9847076	4.5	4	7	C	26					62		88	Approach clinical cases in the areas of haematology, urology and cardiology in a systematic and global way, in the different animal species; understand the evolution of the pathological medical processes, including aetiology, pathogenesis, lesions and clinical signs; correctly interpret environmental data, anamnesis, clinical and laboratory analysis, aiming at diagnosis, prognosis and therapeutic decision; apply the technique of problem-based learning to the study of real clinical cases.	1.10, 1.16, 1.18, 1.19, 1.21, 1.22, 1.23, 1.24, 1.27, 1.32	1.1.2, 1.1.3, 1.1.5, 2.3, 3.1.1, 3.1.2, 3.1.3, 3.1.4, 3.1.5, 3.1.7, 3.1.8, 3.1.9, 3.1.10, 3.2.2, 3.2.3, 3.2.4,
<b>Animal Production I</b>	9847077	4	4	7	C	26	10		8	4		6	54	Know the structure, organisation, legal framework, and strategies of animal production and manage the biological bases of production. Be able in the ruminant's and equine sectors to differentiate the productive aptitudes of the populations bred in Portugal, to be acquainted with the techniques of animal husbandry and production and to design, manage and evaluate production systems.	1.1, 1.3, 1.8, 1.21	1.1.1, 2.2, 2.5, 3.1.3, 3.3.1, 3.3.2, 3.3.4, 3.3.7
<b>Pathology and Clinics of Parasitic Diseases</b>	9847078	4.5	4	7	C	26			18		10		54	knowledge of the concepts and general methodologies used for the characterizations and control of parasitic diseases affecting dogs, cats, horses, cattle, sheep, goats, pigs, poultry, rabbits, exotics pets and bees, with relevance for Public Health, livestock production and animal welfare.	1.10, 1.22, 1.23, 1.34, 1.38 1.21, 1.20, 1.19, 1.18, 1.27	1.1.2, 1.1.3, 2.3, 3.1.4, 3.1.5, 3.1.6, 3.1.7, 3.1.8, 3.1.10, 3.2.4, 3.2.8, 3.4.2, 3.4.4, 3.1.1, 3.1.2, 3.1.3,
<b>Pathology and Clinics of Infectious Diseases I</b>	9847079	4.5	4	7	C	26			23		8		57	knowledge of the concepts and general methodologies used for the characterisation and control of infectious diseases, relevant for Public Health, animal health and productivity, as well as animal welfare, affecting a broad range of hosts namely zoonosis, dogs and cats.	1.1, 1.3, 1.4, 1.5, 1.6, 1.7, 1.8, 1.10, 1.11, 1.12, 1.16, 1.18, 1.19, 1.22, 1.23, 1.25, 1.33, 1.34, 1.38 1.21,1.27, 1.29, 1.20, 1.26	1.1.1, 1.1.5, 1.1.7, 1.1.9, 2.1, 2.2, 2.5, 2.6, 3.1.1, 3.1.2, 3.1.3, 3.1.4, 3.1.5, 3.1.7, 3.1.8, 3.1.9, 3.1.10, 3.1.12, 3.1.13, 3.1.14, 3.2.2, 3.2.4, 3.2.5, 3.3.2, 3.4.1, 3.4.2, 3.4.3, 3.4.4, 3.4.5
<b>Clinical Rotations III</b>	9847080	1	4	7	C		8				40		48	Contact with real clinical cases of companion animals, exotic pets and equine, under general medical consultation, surgery, hospitalized and intensive care; main complementary diagnostic techniques, understanding their advantages and purpose in the definitive diagnostic process; specific training in intensive care with learning of Basic Life Support and Advance Life Support algorithms in small animals.	1.1, 1.3, 1.5, 1.7, 1.8, 1.10, 1.11, 1.12, 1.13, 1.14, 1.16, 1.17, 1.18, 1.19, 1.20, 1.22, 1.23, 1.24, 1.25, 1.26, 1.27, 1.30, 1.31, 1.32, 1.33, 1.34, 1.38	1.1.3, 1.1.5, 2.2, 2.5, 3.1.1, 3.1.2, 3.1.3, 3.1.4, 3.1.5, 3.1.7, 3.1.8, 3.1.9, 3.1.10, 3.1.12, 3.2.1, 3.2.2, 3.2.3, 3.2.4, 3.2.5, 3.2.6, 3.2.7,
<b>Reproduction and Obstetrics II</b>	9847082	4.5	4	8	C	26				8	40		74	Perform the andrological, gynaecological and obstetrical examinations; know how to evaluate the reproductive performance of a herd and to design a reproductive management plan; identify the critical points of the production system that impacts on fertility and, to design a prophylactic plan; diagnose	1.5, 1.15, 1.16, 1.17, 1.19, 1.21, 1.23, 1.25, 1.26, 1.30, 2.1, 2.4,	1.1.1, 1.1.2, 3.1.1, 3.1.2, 3.1.3, 3.1.4, 3.1.5, 3.1.7, 3.1.8, 3.1.9, 3.1.10,

														pregnancy, assist parturition and treat the most frequent andrological, gynaecological and obstetrical disorders of ruminants and swine.	2.5, 2.6, 2.11, 2.12.	3.1.11, 3.1.12, 3.1.13, 3.2.2, 3.2.3, 3.2.4, 3.2.5, 3.2.6, 3.3.2
<b>Medicine II</b>	9847083	4.5	4	8	C	26					50		76	Approach to clinical cases in the areas of gastroenterology, endocrinology and respiratory medicine in a systematic and global way, in the different animal species; understand the evolution of the pathological processes, including aetiology, pathogenesis, lesions and clinical signs; interpret environmental data, anamnesis, clinical and laboratory analysis, aiming at diagnosis, prognosis and therapeutic decision; apply the technique of problem-based learning to the study of real clinical cases.	1.10, 1.16, 1.18, 1.19, 1.21, 1.22, 1.23, 1.24, 1.27, 1.32	1.1.2, 1.1.3, 1.1.5, 2.3, 3.1.1, 3.1.2, 3.1.3, 3.1.4, 3.1.5, 3.1.7, 3.1.8, 3.1.9, 3.1.10, 3.2.2, 3.2.3, 3.2.4,
<b>Surgery II</b>	9847084	4	4	8	C	26					26		52	Recognize the main surgical diseases, their pathophysiological mechanisms and understand the way surgery can be helpful and determine a real solution to the patient; surgical techniques, materials and options; surgical skills and main surgical procedures like incision, tissues manipulation, haemostasis and sutures are to be got as well as applied anaesthesiology.	1.7, 1.8, 1.10, 1.16, 1.18, 1.19, 1.20, 1.21, 1.24, 1.27, 1.29, 1.30, 1.31, 1.32	1.1.3, 1.1.5, 2.2, 2.5, 3.1.1, 3.1.2, 3.1.3, 3.1.4, 3.1.5, 3.1.7, 3.1.8, 3.1.9, 3.1.10, 3.1.12, 3.2.1, 3.2.2, 3.2.3, 3.2.4, 3.2.5, 3.2.6, 3.2.7,
<b>Animal Production II</b>	9847085	4.5	4	8	C	26	10					16	52	knowledge of the proficient utilization of animal husbandry and production techniques and to design, manage and evaluate the production systems in the area of small ruminant, pigs, poultry, rabbits and aquatic species production, always strengthening the importance of the economic and environmental sustainability, the legal framework, the welfare and the productive efficiency of animals and the quality of products.	1.1, 1.3, 1.8, 1.21	1.1.1, 2.2, 2.5, 3.1.3, 3.3.1, 3.3.2, 3.3.4, 3.3.7
<b>Pathology and Clinics of Infectious Diseases II</b>	9847086	4.5	4	8	C	26				23		8	57	knowledge of the concepts and general methodologies used for the characterisation and control of infectious diseases, relevant for Public Health, animal health and productivity, as well as animal welfare, affecting cattle and small ruminants, horses, swine, poultry and rabbits.	1.1, 1.3, 1.4, 1.5, 1.6, 1.7, 1.8, 1.10, 1.11, 1.12, 1.16, 1.18, 1.19, 1.21, 1.22, 1.23, 1.25, 1.26, 1.27, 1.29, 1.33, 1.34, 1.38	1.1.1, 1.1.5, 1.1.9, 1.1.7, 2.1, 2.2, 2.5, 2.6, 3.1.1, 3.1.2, 3.1.3, 3.1.4, 3.1.5, 3.1.7, 3.1.8, 3.1.9, 3.1.10, 3.1.12, 3.1.13, 3.1.14, 3.2.2, 3.2.4, 3.3.2, 3.4.1, 3.4.2, 3.4.3, 3.4.4, 3.4.5
<b>Animal Breeding</b>	9847087	4.5	4	8	C	26				26			52	knowledge and skills in the applications of population, quantitative and molecular genetics in the improvement and conservation of animal genetic resources; evaluation of the impact of different mating systems (inbreeding and crossbreeding) in animal production; develop methods of genetic evaluation and prediction of expected responses to selection; Plan of organized genetic improvement systems in different livestock species.	1.2, 1.21	1.1.3, 3.3.1, 3.3.3
<b>Clinical Rotations IV</b>	9847088	1	4	8	C		4				40		44	Contact with real clinical cases of companion animals and equine, under general medical consultation, surgery, hospitalized and intensive care; main complementary diagnostic techniques, understanding their advantages and purpose in the definitive diagnostic process; reaching a definitive diagnosis; design a therapeutic plan, along with a follow up schedule.	1.1, 1.3, 1.5, 1.7, 1.8, 1.10, 1.11, 1.12, 1.13, 1.14, 1.16, 1.17, 1.18, 1.19, 1.20, 1.21, 1.22, 1.23, 1.24, 1.25, 1.26, 1.27, 1.30, 1.31,	1.1.1, 1.1.2, 1.2.2, 1.2.3, 2.1, 2.3, 2.4, 2.6, 3.1.1, 3.1.2, 3.1.3, 3.2.1, 3.1.4, 3.1.5, 3.1.6, 3.1.7, 3.1.8, 3.1.9, 3.1.10, 3.1.13, 3.2.1, 3.2.2, 3.2.3,



																1.32, 1.33, 1.34, 1.38	3.2.4, 3.2.5, 3.2.6, 3.2.7, 3.4.3, 3.4.4, 3.4.5
TOTAL Year 4						308	34	0	106	12	342	22	824				
Toxicology	9847090	4.5	5	9	C	26	12		14				52	Specific knowledge of general and special Toxicology; approach and problem solving in the context of Applied Toxicology, namely in the areas of Clinical and Forensic Toxicology; ability to act multidisciplinary and interdisciplinary, combining information from different backgrounds, in solving problems of the toxicological scope.	1.1, 1.3, 1.12, 1.22, 1.23, 1.25, 1.29, 1.37, 1.38	1.1.1, 1.1.2, 1.1.6, 1.2.3, 2.3, 3.2.4.	
Diagnostic Imaging	9847091	3.5	5	9	C	26					24		50	Ability of recognising the main radiographic, ultrasonographic signs and its aetiology; develop logic and rapid faculty of reasoning on possible diagnostic differentials, according to the presented clinical signs; comprehend multiple imaging modalities, their signs and related aetiologies; be able to interconnect the imaging knowledge with that of pathology, medicine and surgery.	1.10, 1.22, 1.23, 1.24	1.1.2, 1.1.3, 1.1.7, 1.1.10, 3.1.4, 2.3, 3.2.2, 3.2.3, 3.2.4	
Food Animal Clinics I	9847092	3.5	5	9	C	13	13				18		44	Resolution of clinical cases of food animals through clinical exams (physiopathologic mechanisms of disease, interpretation of the results of clinical, laboratory and other clinical exams) and therapeutic actions; resolution of heard health problems (mastitis, metabolic diseases, etc.); resolution of dystocias; surgery work; dehorning calves; trimming hooves, etc.	1.1, 1.3, 1.8, 1.10, 1.12, 1.16, 1.18, 1.19, 1.20, 1.21, 1.22, 1.23, 1.25, 1.27, 1.28, 1.29, 1.31, 1.32, 1.33, 1.34, 1.38	1.1.1, 1.1.2, 1.1.3, 1.1.6, 1.1.7, 1.1.9, 1.2.1, 1.2.3, 2.2, 2.3, 3.1.1, 3.1.2, 3.1.3, 3.1.4, 3.1.4, 3.1.5, 3.1.6, 3.1.7, 3.1.8, 3.1.9, 3.1.10, 3.1.12, 3.1.13, 3.1.14, 3.2.6, 3.2.8, 3.3.1, 3.3.2, 3.3.4, 3.3.7, 3.4.6	
Equine Clinics I	9847093	2	5	9	C	13					8		21	Develop skills in equine clinics in a systematic way through anamnesis, patient history, symptom evaluation and history registration; be able to select complementary information and exams in order to perform definitive diagnose; foster communication skills with clients and medical staff.	1.1, 1.3, 1.5, 1.7, 1.8, 1.10, 1.11, 1.12, 1.13, 1.14, 1.16, 1.17, 1.18, 1.19, 1.20, 1.21, 1.22, 1.23, 1.24, 1.25, 1.26, 1.27, 1.28, 1.30, 1.31, 1.32, 1.33	1.1.1, 1.1.2, 1.1.3, 1.1.4, 1.1.5, 1.1.6, 1.1.7, 1.1.10, 1.2.1, 1.2.2, 1.2.3, 1.2.4, 2.1, 2.2, 2.3, 2.4, 2.5, 2.6, 3.1.1, 3.1.2, 3.1.3, 3.1.4, 3.1.5, 3.1.6, 3.1.7, 3.1.8, 3.1.9, 3.1.10, 3.1.12, 3.1.14, 3.2.1, 3.2.2, 3.2.3, 3.2.4, 3.2.5, 3.2.6, 3.2.7, 3.4.3, 3.4.5	
Companion Animal Clinics I	9847094	4	5	9	C	26	16				36		78	Be able to integrate clinical history and the clinical signs observed in order to perform the differential diagnostic; select the appropriate complementary exams and to interpret the results; achieve the definitive diagnosis; prescribe the appropriate therapy; explain the owner the prognostic and expenses foreseen.	1.1, 1.3, 1.5, 1.7, 1.8, 1.10, 1.11, 1.12, 1.13, 1.14, 1.16, 1.17, 1.18, 1.19, 1.20, 1.22, 1.23, 1.24, 1.25, 1.26, 1.27,	1.1.1, 1.1.2, 1.1.3, 1.1.4, 1.1.5, 1.1.6, 1.1.7, 1.1.8, 1.1.9, 1.1.10, 1.2.1, 1.2.2, 1.2.3, 1.2.4, 2.1, 2.2, 2.3, 2.4, 2.5, 2.6, 3.1.3, 3.1.4, 3.1.5, 3.1.6,	

																1.28, 1.30, 1.31, 1.32, 1.33	3.1.7, 3.1.8, 3.1.9, 3.1.10, 3.1.12, 3.1.14, 3.2.1, 3.2.2, 3.2.3, 3.2.4, 3.2.5, 3.2.6, 3.2.7, 3.4.3, 3.4.5
General Technology	9847095	4.5	5	9	C	26			24				50	knowledge of food microbiology and factors influencing the development of agents rresponsible by food spoilage. Knowledge of unit operations and technological food processes with special reference to equipment used in the production of different foods of animal origin.		1.1, 1.8, 1.29, 1.36, 1.37	1.1.1, 1.1.2, 1.1.7, 1.1.8, 1.1.9, 2.2, 2.4, 2.5, 3.1.12, 3.4.7, 3.4.8, 3.4.9, 3.4.10, 3.4.11, 3.4.12
Veterinary Inspection I	9847096	4.5	5	9	C	26	4			8			38	knowledge and skills in the methods for official veterinary inspection of products and by-products originated from ungulates slaughtered for consumption (animal protection at slaughter, ante and post mortem examinations); knowledge of hygiene of establishments and procedures (materials, locals and persons). Development of skills, capacity for critical analysis and decision-making, concerning specifically the safeguard of food of animal origin.		1.1, 1.3, 1.8, 1.10, 1.12, 1.25, 1.29, 1.35, 1.36, 1.37, 1.38	1.1.1, 1.1.2, 1.1.3, 1.1.6, 1.1.7, 1.1.8, 1.1.9, 1.2.1, 1.2.3, 1.2.4, 2.2, 2.4, 2.5, 3.1.12, 3.1.13, 3.4.2, 3.4.7, 3.4.8, 3.4.9, 3.4.10, 3.4.11,
Clinical Rotations V	9847097	1	5	9	C		6				26		32	Improve skills to correctly diagnose, choose/use and interpret different diagnostic tests/exams, delineate a therapeutic plan, as well as to perform the basic clinical/therapeutic procedures.		1.1, 1.3, 1.5, 1.7, 1.8, 1.10, 1.11, 1.12, 1.13, 1.14, 1.16, 1.17, 1.18, 1.19, 1.20, 1.22, 1.23, 1.24, 1.25, 1.26, 1.27, 1.30, 1.31, 1.32, 1.33, 1.34, 1.38	1.1.1, 1.1.2, 1.2.2, 1.2.3, 2.1, 2.3, 2.4, 2.6, 3.1.1, 3.1.2, 3.1.3, 3.2.1, 3.1.4, 3.1.5, 3.1.6, 3.1.7, 3.1.8, 3.1.9, 3.1.10, 3.1.13, 3.2.1, 3.2.2, 3.2.3, 3.2.4, 3.2.5, 3.2.6, 3.2.7, 3.4.3, 3.4.4, 3.4.5
Food Animal Clinics II	9847099	3	5	10	C	13	13				18		44	Resolution of clinical cases of food animals through clinical exams (physiopathologic mechanisms of disease, interpretation of the results of clinical, laboratory and other clinical exams) and therapeutic actions; resolution of heard health problems (mastitis, metabolic diseases, etc.); resolution of dystocias; surgery work; dehorning calves; trimming hooves, etc.		1.1, 1.3, 1.8, 1.10, 1.12, 1.16, 1.18, 1.19, 1.20, 1.21, 1.22, 1.23, 1.25, 1.27, 1.28, 1.29, 1.31, 1.32, 1.33, 1.34, 1.38	1.1.1, 1.1.2, 1.1.3, 1.1.6, 1.1.7, 1.1.9, 1.2.1, 1.2.3, 2.2, 2.3, 3.1.1, 3.1.2, 3.1.3, 3.1.4, 3.1.4, 3.1.5, 3.1.6, 3.1.7, 3.1.8, 3.1.9, 3.1.10, 3.1.12, 3.1.13, 3.1.14, 3.2.6, 3.2.8, 3.3.1, 3.3.2, 3.3.4, 3.3.7, 3.4.6
Equine Clinics II	9847100	2	5	10	C	13					8		21	Clinical examination, Wound treatment, metabolic diseases of the athletic horse, rabdmiolisis, horse lameness, and donkey pathology.		1.1, 1.3, 1.5, 1.7, 1.8, 1.10, 1.11, 1.12, 1.13, 1.14, 1.16, 1.17, 1.18, 1.19, 1.20, 1.21, 1.22, 1.23,	1.1.1, 1.1.2, 1.1.3, 1.1.4, 1.1.5, 1.1.6, 1.1.7, 1.1.10, 1.2.1, 1.2.2, 1.2.3, 1.2.4, 2.1, 2.2, 2.3, 2.4, 2.5, 2.6, 3.1.1,

																1.24, 1.25, 1.26, 1.27, 1.28, 1.30, 1.31, 1.32, 1.33, 1.34	3.1.2, 3.1.3, 3.1.4, 3.1.5, 3.1.6, 3.1.7, 3.1.8, 3.1.9, 3.1.10, 3.1.12, 3.1.14, 3.2.1, 3.2.2, 3.2.3, 3.2.4, 3.2.5, 3.2.6, 3.2.7, 3.4.3, 3.4.5
Companion Animal Clinics II	9847101	3.5	5	10	C	26	16					36	78	Able to integrate clinical history and the clinical signs observed in order to perform the differential diagnostic; to select the appropriate complementary exams and to interpret the results; achieve the definitive diagnosis; to prescribe the appropriate therapy; to explain the owner the prognostic and expenses foreseen.	1.1, 1.3, 1.5, 1.7, 1.8, 1.10, 1.11, 1.12, 1.13, 1.14, 1.16, 1.17, 1.18, 1.19, 1.20, 1.22, 1.23, 1.24, 1.25, 1.26, 1.27, 1.28, 1.30, 1.31, 1.32, 1.33	1.1.1, 1.1.2, 1.1.3, 1.1.4, 1.1.5, 1.1.6, 1.1.7, 1.1.8, 1.1.9, 1.1.10, 1.2.1, 1.2.2, 1.2.3, 1.2.4, 2.1, 2.2, 2.3, 2.4, 2.5, 2.6, 3.1.3, 3.1.4, 3.1.5, 3.1.6, 3.1.7, 3.1.8, 3.1.9, 3.1.10, 3.1.12, 3.1.14, 3.2.1, 3.2.2, 3.2.3, 3.2.4, 3.2.5, 3.2.6, 3.2.7, 3.4.3, 3.4.5	
Technology of Animal Products	9847102	4.5	5	10	C	26	4					20	50	Knowledge of the operations and processes of food engineering. The study of the technological processes of transformation of animal origin products aims the preparation of students for future areas of work such as the Public Health or the collaboration with other professional areas of the food technology.	1.1, 1.8, 1.10, 1.12, 1.29, 1.36, 1.37, 1.38	1.1.1, 1.1.2, 1.1.3, 1.1.7, 1.1.8, 1.1.9, 2.2, 2.4, 2.5, 3.1.12, 3.4.7, 3.4.8, 3.4.9, 3.4.10, 3.4.11, 3.4.12	
Veterinary Public Health	9847103	4.5	5	10	C	22	22					2	46	Recognize the need of protection and promotion of human health and environmental protection; develop a global vision on the evaluation of animal health and welfare, food-chain risks and environmental pollution; Promote ethical and law-based professional attitudes and a good capacity for communication with economical agents and stakeholders; promote preventive behaviors with respect to professional risks; develop observational and critical abilities with respect to public health problems; stress the importance of the multidisciplinary approach to VPH and promote group work capacities.	1.1, 1.3, 1.8, 1.10, 1.12, 1.25, 1.29, 1.36, 1.37, 1.38	1.1.1, 1.1.2, 1.1.3, 1.1.6, 1.1.7, 1.1.8, 1.1.9, 1.2.1, 1.2.3, 2.1, 2.2, 2.4, 2.5, 3.1.12, 3.1.13, 3.1.14, 3.4.2, 3.4.7, 3.4.9, 3.4.10, 3.4.11, 3.4.12	
Veterinary Inspection II	9847104	4.5	5	10	C	26						16	42	Knowledge and skills in the methods for official veterinary inspection of poultry, eggs, rabbits, fish, shellfish, frogs and snails. Perception of risk management system put in place to ensure safety of food obtained from animals used for consumption and as goods in the global market. Development of skills, capacity for critical analysis and decision-making, concerning specifically the safeguard of food of animal origin.	1.1, 1.3, 1.8, 1.10, 1.12, 1.25, 1.29, 1.35, 1.36, 1.37, 1.38	1.1.1, 1.1.2, 1.1.3, 1.1.6, 1.1.7, 1.1.8, 1.1.9, 1.2.1, 1.2.3, 1.2.4, 2.2, 2.4, 2.5, 3.1.12, 3.1.13, 3.4.2, 3.4.7, 3.4.8, 3.4.9, 3.4.10, 3.4.11,	
Herd Health	9847105	4.5	5	10	C	26						24	8	58	To design and implement strategies of preventive veterinary medicine and to apply official sanitary policy strategies for the prevention, control and eradication of notifiable diseases; to identify and amend the critical points affecting the	1.1, 1.3, 1.8, 1.10, 1.12, 1.16,	1.1.1, 1.1.2, 1.1.3, 1.1.6, 1.1.7, 1.1.9, 1.2.1, 1.2.3, 2.2,

														biosecurity of a livestock unit, in order to contribute for the productivity, profitability, animal welfare and mitigation of zoonotic risks.	1.21, 1.25, 1.26, 1.29, 1.34, 1.38	2.4, 2.5, 3.1.1, 3.1.2, 3.1.3, 3.1.12, 3.1.13, 3.1.14, 3.2.8, 3.3.7, 3.4.1, 3.4.2, 3.4.3, 3.4.4, 3.4.5, 3.4.6.
<b>Clinical Rotations VI</b>	9847106	1	5	10	C		6					26	32	Develop skills to correctly diagnose, choose/use and interpret different diagnostic tests/exams, delineate a therapeutic plan, as well as to perform the basic clinical/therapeutic procedures.	1.1, 1.3, 1.5, 1.7, 1.8, 1.10, 1.11, 1.12, 1.13, 1.14, 1.16, 1.17, 1.18, 1.19, 1.20, 1.22, 1.23, 1.24, 1.25, 1.26, 1.27, 1.30, 1.31, 1.32, 1.33, 1.34, 1.38	1.1.1, 1.1.2, 1.2.2, 1.2.3, 2.1, 2.3, 2.4, 2.6, 3.1.1, 3.1.2, 3.1.3, 3.2.1, 3.1.4, 3.1.5, 3.1.6, 3.1.7, 3.1.8, 3.1.9, 3.1.10, 3.1.13, 3.2.1, 3.2.2, 3.2.3, 3.2.4, 3.2.5, 3.2.6, 3.2.7, 3.4.3, 3.4.4, 3.4.5
<b>Veterinary Medical Profession and Science Communication</b>	9847362	1	6	11	C	14							14	Deepen the knowledge of written and oral communication methodologies in science, from the design of scientific works to the organization and writing of scientific documents (articles, book chapters, books, dissertations, theses) and their presentation. Provide a detailed view of the areas of operation of veterinarians, the legal framework of the profession and its representative bodies, in Portugal and in Europe.	1.1, 1.3, 1.4, 1.5, 1.6, 1.7, 1.8, 1.10, 1.11, 1.13, 1.14, 1.15, 1.23	1.1.1, 1.1.2, 1.1.3, 1.1.5, 1.1.7, 1.1.8, 1.1.9, 1.2.1, 1.2.2, 1.2.3, 1.2.4, 2.1, 2.2, 2.4, 2.5, 2.6,
<b>Curricular Traineeship (EPT + graduation thesis)</b>	9847363	29	6	11	C									Give students, in the conclusion phase of the integrated master's degree in Veterinary Medicine, a detailed view of the areas of operation of veterinarians, the legal framework of the profession and its representative bodies, in Portugal and in Europe.	1.1, 1.3, 1.5, 1.6, 1.8, 1.10, 1.11, 1.14	1.1.1, 1.1.2, 1.1.8, 1.2.4, 2.1, 2.2, 2.4, 2.5

Y - Year; S - Semester



# **Appendix 5a**

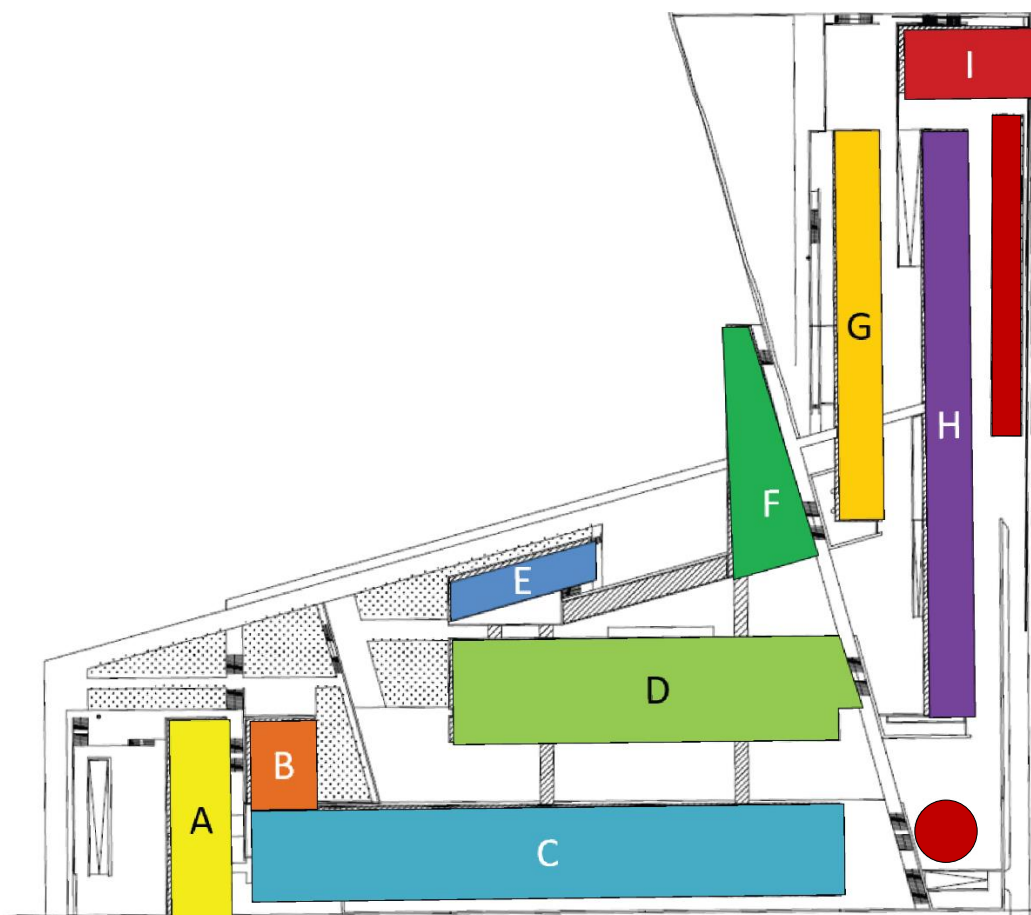
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Maps of FMV and the intra-mural facilities  
used in the core veterinary programme

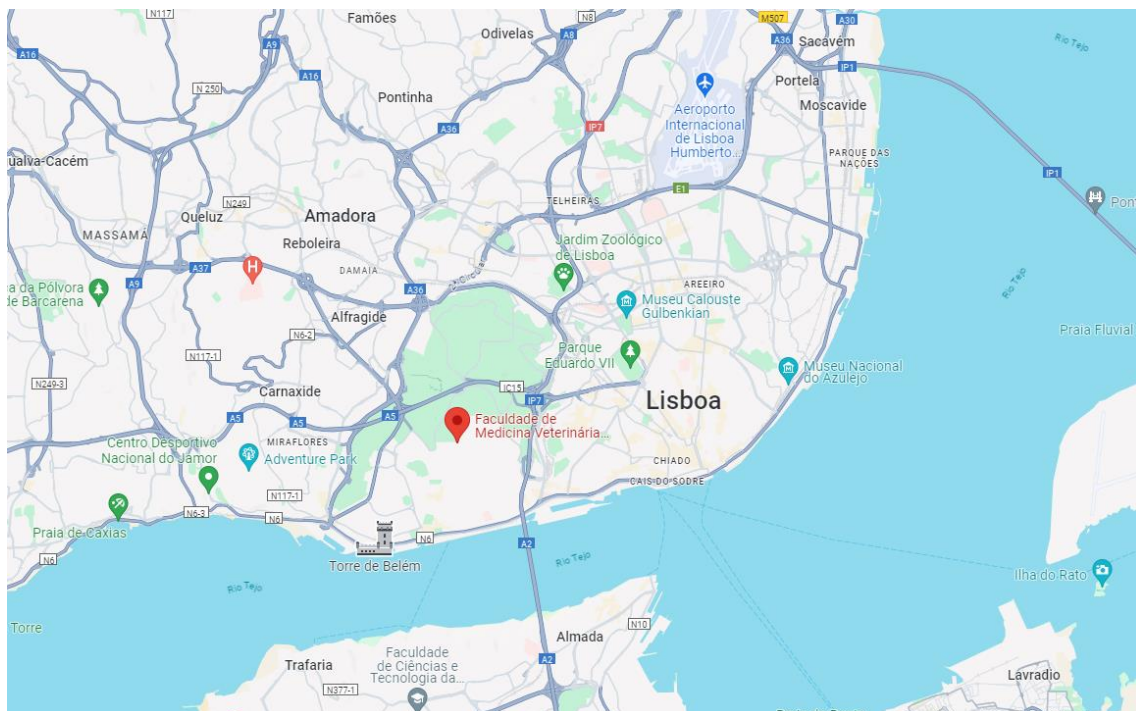
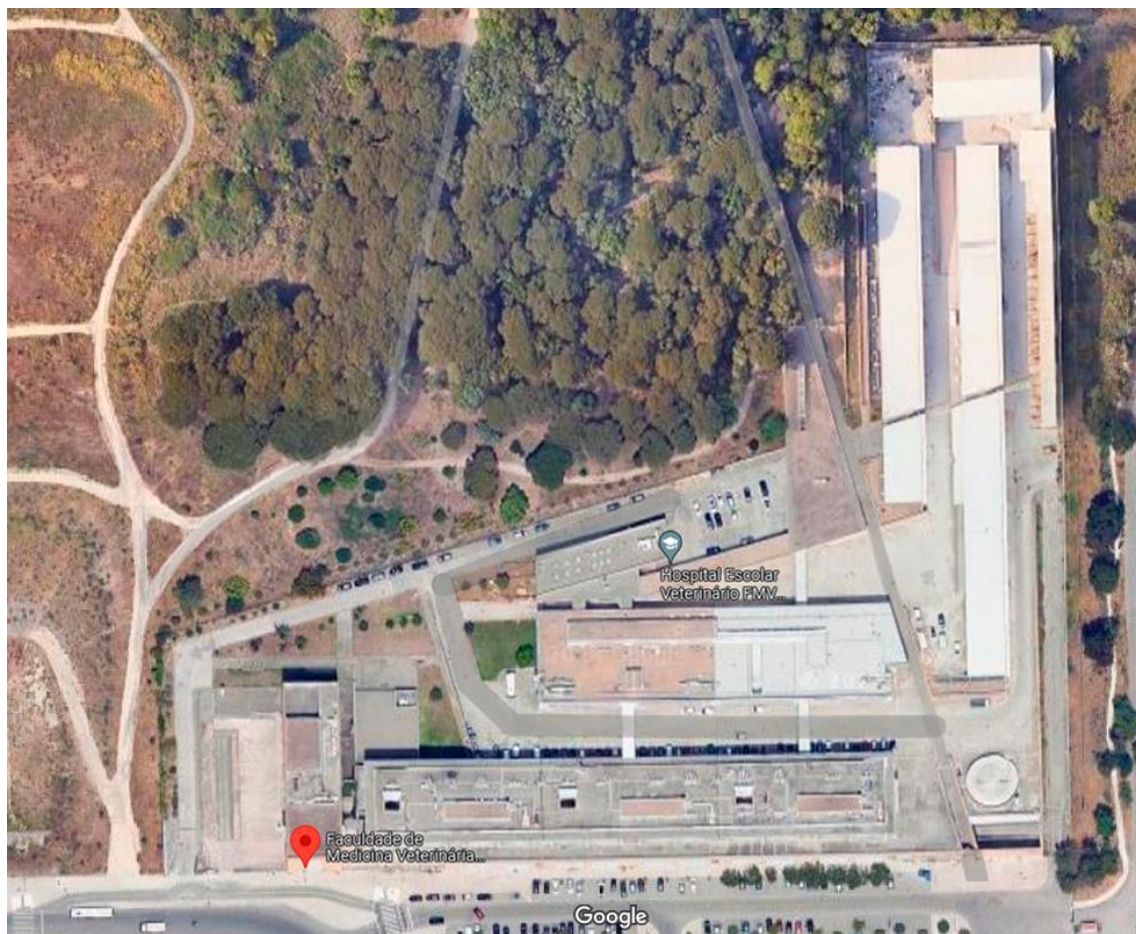


# Maps of Establishment and the intra-mural facilities used in the core veterinary programme

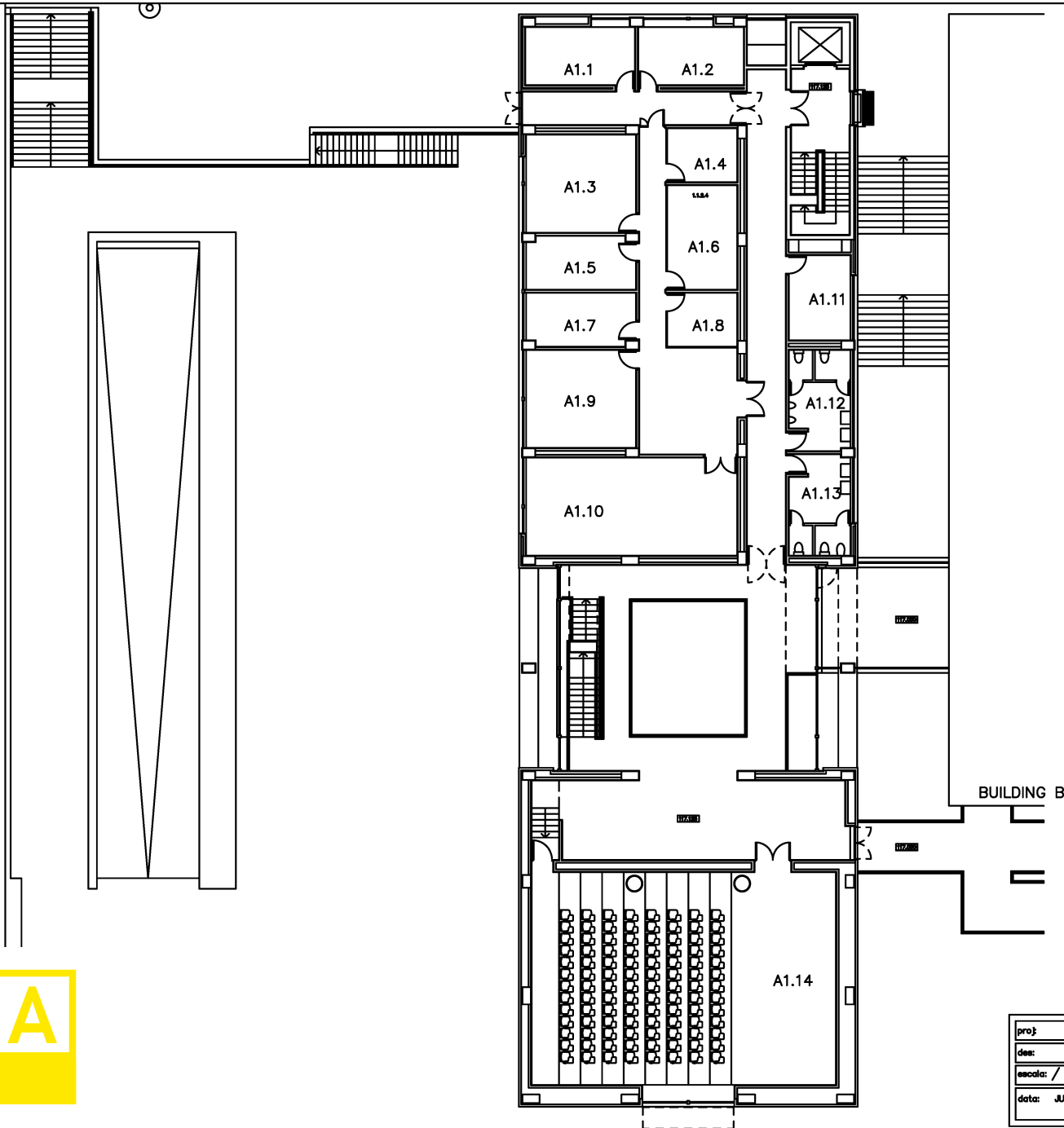
General Plant of FMV-ULisboa



Buildings	Facilities
<b>A</b>	Manage Bodies, Administrative Services, Academic Office, Lecture Halls, Library
<b>B</b>	Auditorium
<b>C</b>	Laboratories of practical classes, Lecture Halls, Research Labs, Food Technology Unit, Teachers' offices
<b>D</b>	Veterinary Teaching Hospital, Animal Lab Facilities, Reproduction and Obstetrics, Teachers' Offices
<b>E</b>	Veterinary Teaching Hospital
<b>F</b>	Livestock Auditorium
<b>G</b>	Anatomy and Anatomical pathology rooms for practical classes, Infectious Diseases Isolation Unit
<b>H</b>	Sheep, Goat, Bovine and Equine Premises
<b>I</b>	Horse riding arenas and stalls







## BUILDING A

### GENERAL SERVICES

#### ADMINISTRATION

- A1.3 - SECRETARIAL OFFICE
- A1.4 - LIFE LONG LEARNING OFFICE
- A1.5 - IMAGE AND COMMUNICATIONS OFFICE
- A1.6 - MULTIPROPOSE ROOM
- A1.7 - HEALTH AND SAFETY OFFICE
- A1.8 - STORAGE ROOM
- A1.9 - DEANS OFFICE
- A1.10 - MEETING ROOM

#### MAINTENANCE SERVICES

- A1.1 - MAINTENANCE OFFICE
- A1.2 - MAINTENANCE OFFICE

#### COMMON AREAS

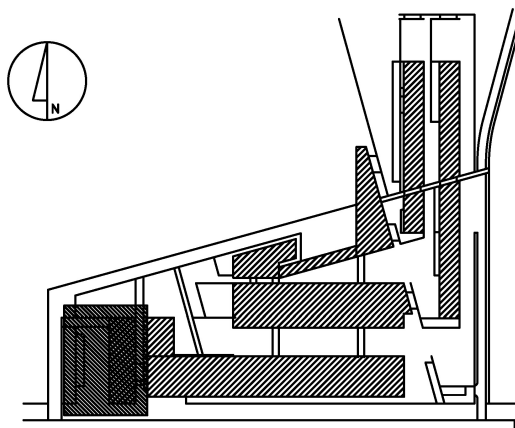
- A1.11 - MEAL ROOM

#### LECTURE HALLS

- A1.14 - LECTURE HALL FOR 120 STUDENTS

#### TOILETS

- A1.12 - WC MALE
- A1.13 - WC FEMALE

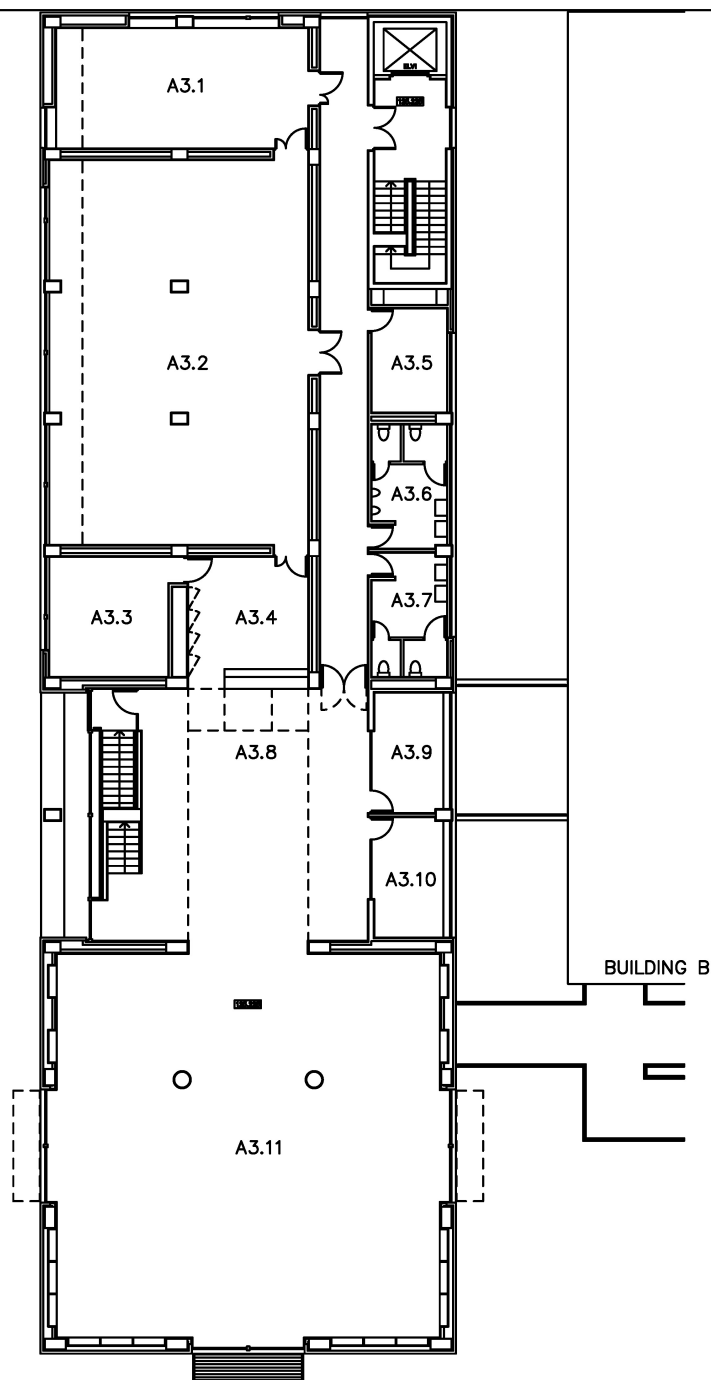


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escala:	/				
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				subtítulo:	









## BUILDING A

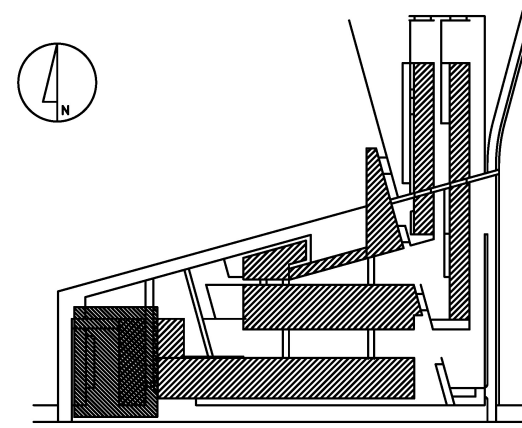
### GENERAL SERVICES

### MAIN LYBRARY

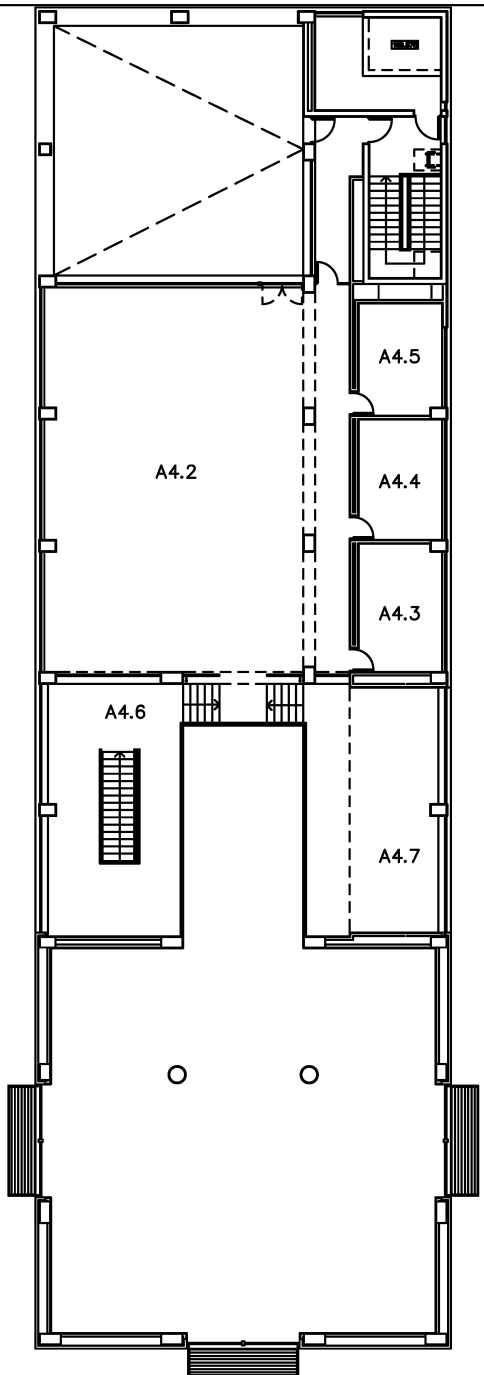
- A3.3 - RESERVED ROOM
- A3.4 - SECRETARY OFFICE
- A3.1 - FUMIGATION ROOM
- A3.2 - DEPOSIT
- A3.5 - ARCHIVE
- A3.8 - READING ROOM I
- A3.11 - READING ROOM II
- A3.9 - MULTIPROPOSE ROOM
- A3.10 - LIBRARY OFFICE

### TOILETS

- A3.6 - WC MALE
- A3.7 - WC FEMALE



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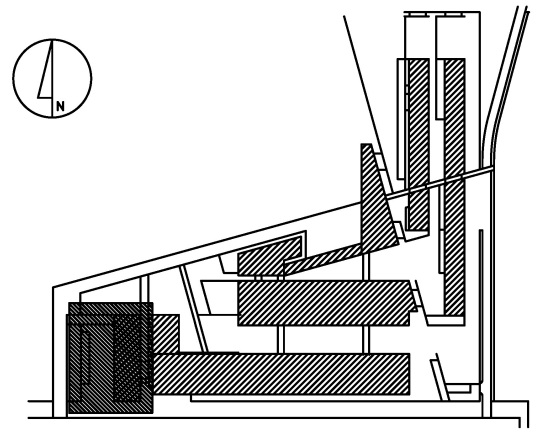


BUILDING A

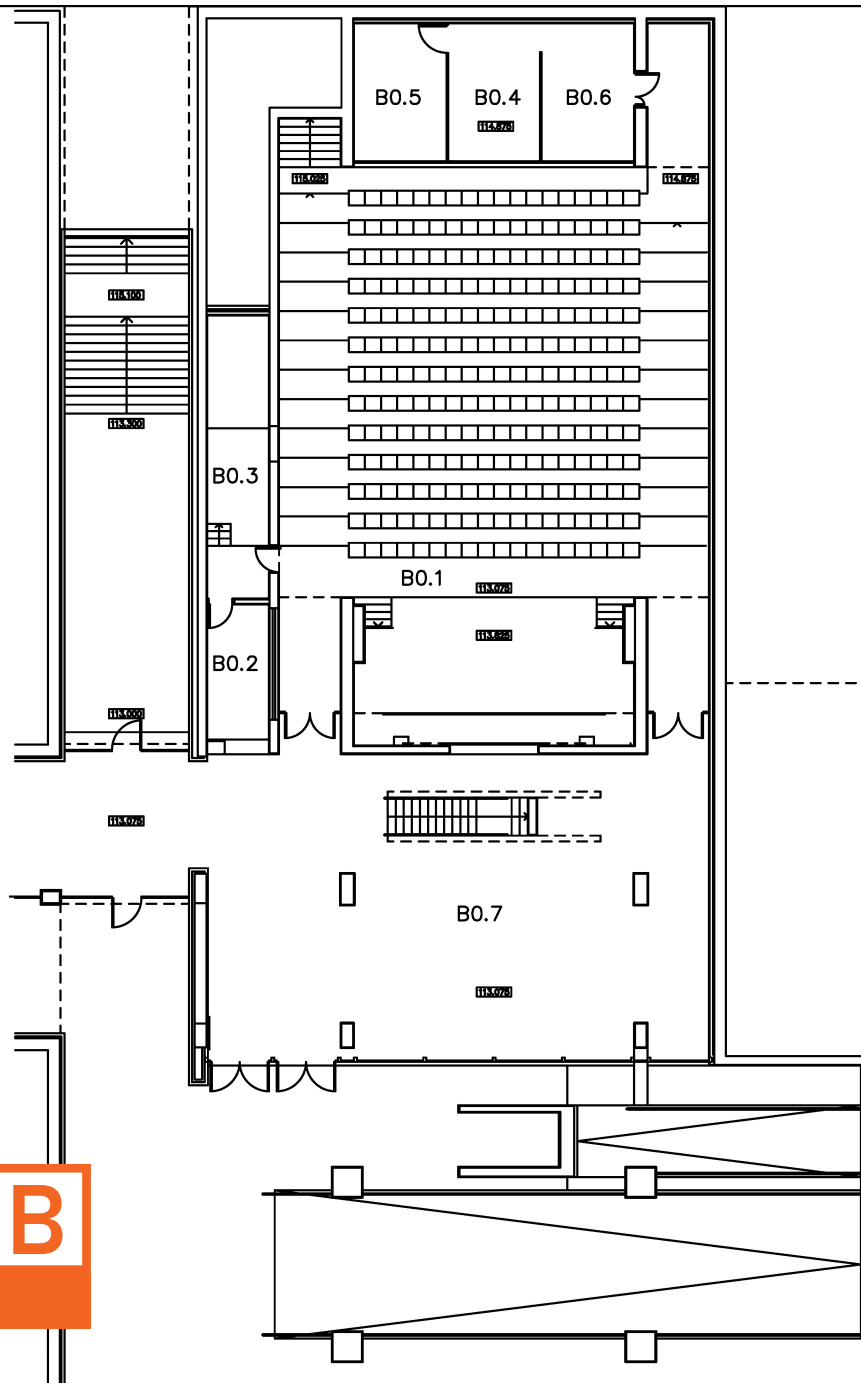
GENERAL SERVICES

MAIN LYBRARY

- A4.2 - READING ROOM
- A4.3 - GROUP STUDY ROOM I
- A4.4 - GROUP STUDY ROOM II
- A4.5 - GROUP STUDY ROOM III
- A4.6 - JOURNAL ROOM
- A4.7 - MULTIMEDIA ROOM



proj:	UNIVERSIDADE DE LISBOA	ARQUITECTURA	A4	0	5
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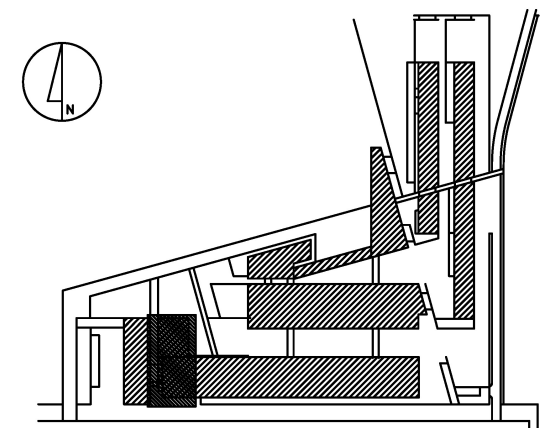


## BUILDING B

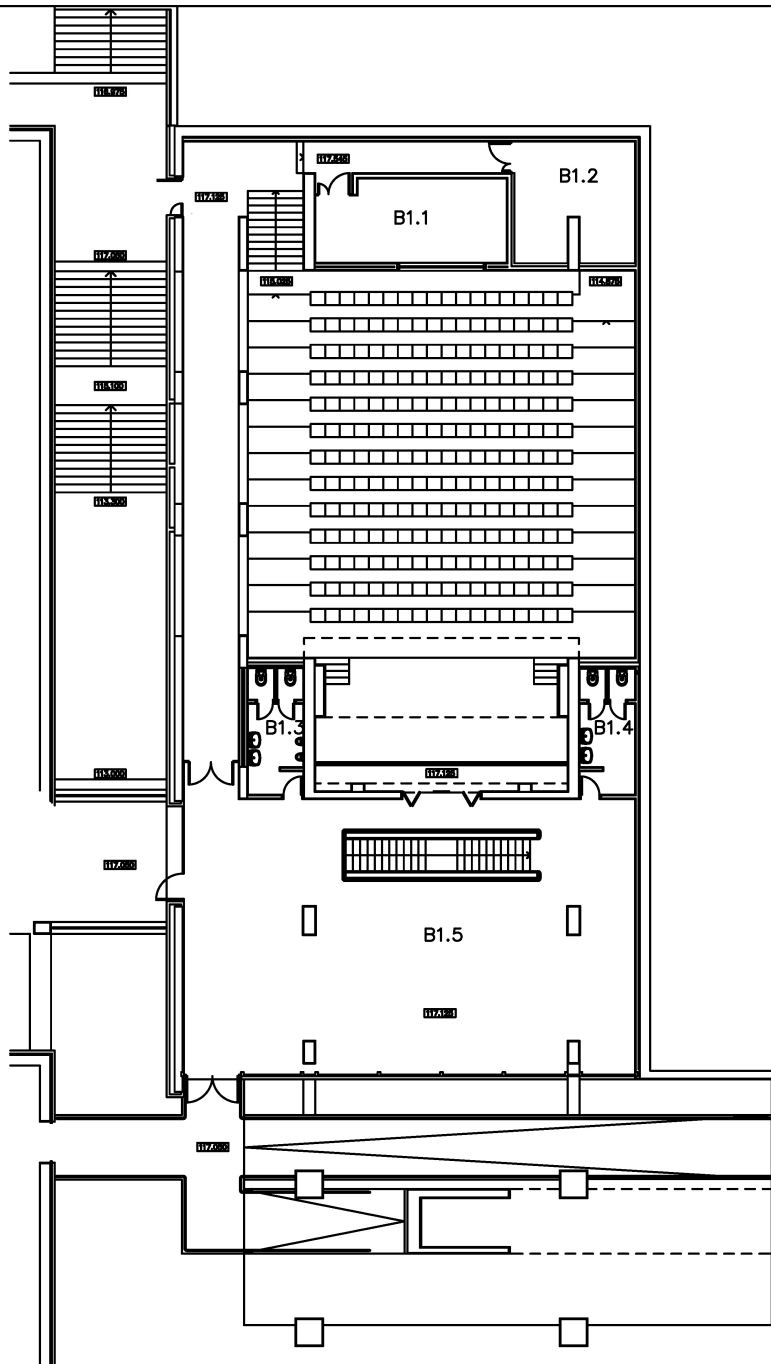
### GENERAL SERVICES

### LECTURES

- B0.1 - AUDITORIUM
- B0.7 - FOYER
- B0.2 - COAT ROOM
- B0.6 - CONFERENCE ROOM
- B0.3 - STORE
- B0.4 - SIMULTANEOUS TRANSLATION ROOM
- B0.5 - SIMULTANEOUS TRANSLATION ROOM
- B0.6 - SIMULTANEOUS TRANSLATION ROOM



proj:	UNIVERSIDADE DE LISBOA	ARQUITECTURA	B0	0	6
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## BUILDING B

### GENERAL SERVICES

### LECTURE HALLS

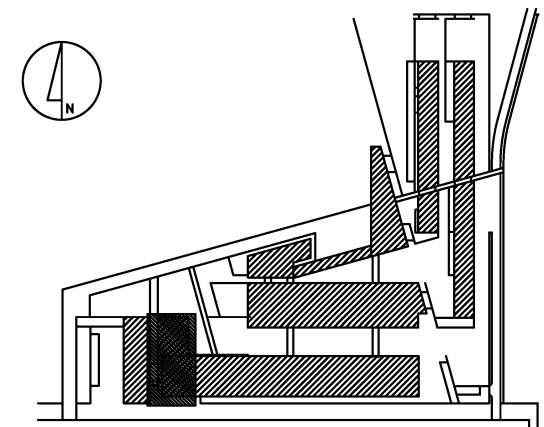
- B1.1 - REGIE
- B1.2 - TECHNICAL OFFICE

### TOILETS

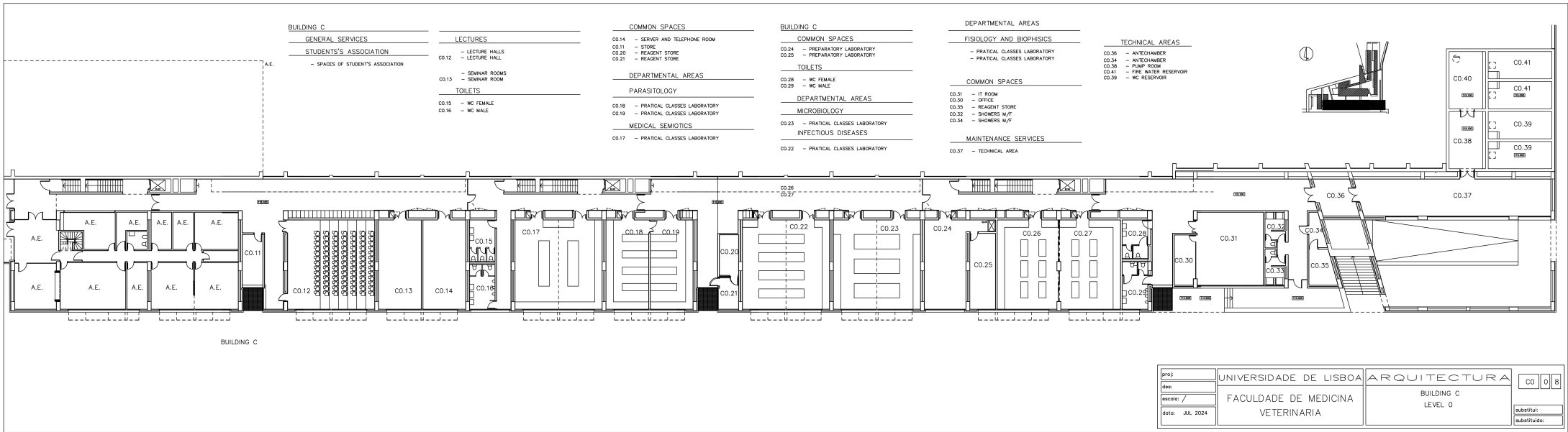
- B1.3 - WC MALE
- B1.4 - WC FEMALE

### PUBLIC SPACES

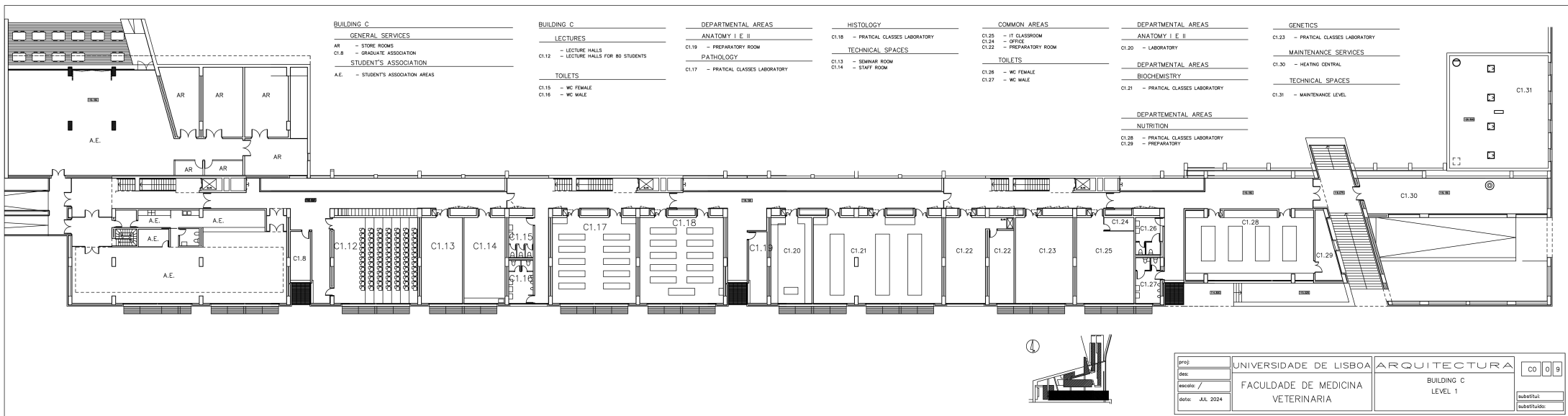
- B1.5 - FOYER

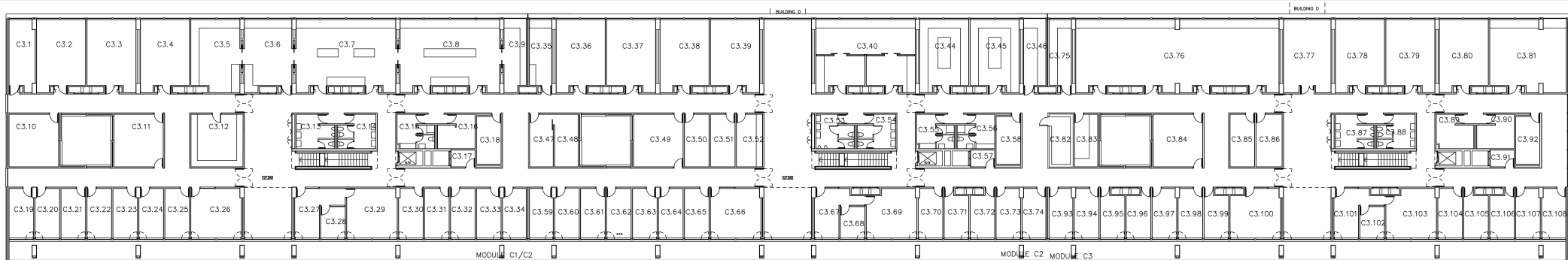


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data:	JUL 2024	FACULDADE DE MEDICINA VETERINARIA	BUILDING B FLOOR 1	substitui:	
				substituido:	









#### BUILDING C

##### GENERAL SERVICES

##### LECTURES

- C3.2 - SEMINAR ROOMS
- C3.2 - SEMINAR ROOM

##### TOILETS

- C3.13 - WC MALE
- C3.14 - WC FEMALE

##### COMMON AREAS

- C3.15/16 - SHOWER M/F
- C3.16 - STORE
- C3.18 - STORE
- C3.17 - STORE

##### DEPARTMENTAL AREAS

##### DEPARTMENTAL CENTER

- C3.29 - DIRECTOR OFFICE
- C3.27 - SECRETARY OFFICE
- C3.28 - WAITING ROOM
- C3.26 - BOARD ROOM

##### FARMACOLOGY AND TOXICOLOGY

- C3.9 - CLEANING ROOM
- C3.8 - PREPARATORY LABORATORY
- C3.7 - ANALYTICAL LABORATORY
- C3.6 - BIO-ANALYTICAL LABORATORY
- C3.5 - BIOLOGICAL LABORATORY
- C3.1 - INSTRUMENTAL ROOM

##### DEPART. COMMON AREAS

- C3.4 - LIBRARY
- C3.3 - AUDIO-VISUAL ROOM
- C3.10 - POSTGRADUATE ROOM
- C3.11 - SUPPORT STAFF ROOM
- C3.12 - DARK ROOM
- C3.10 A C3.25 - STAFF ROOMS
- C3.30 A C3.34 - STAFF ROOMS

#### BUILDING C

##### GENERAL SERVICES

##### LECTURES

- C3.38 - SEMINAR ROOMS
- C3.38 - SEMINAR ROOM

##### TOILETS

- C3.53 - WC MALE
- C3.54 - WC FEMALE

##### COMMON AREAS

- C3.40 - PREPARATORY ROOM
- C3.55/56 - SHOWER M/F
- C3.50 - BALANCE ROOM
- C3.51 - CENTRIFUGE ROOM
- C3.57 - STORE

##### DEPARTMENTAL AREAS

##### FARMACOLOGY AND TOXICOLOGY

- C3.47 - LABORATORY ANIMALS ROOM
- C3.48 - LABORATORY ANIMALS ROOM
- C3.35 - LABORATORY ANIMALS ROOM

##### DEPART. COMMON AREAS

- C3.59 A C3.61 - STAFF ROOMS

##### DEPARTMENTAL AREAS

##### DEPARTMENT DIRECTION

- C3.69 - DIRECTOR'S OFFICE
- C3.67 - SECRETARY ROOM
- C3.68 - WAITING ROOM
- C3.66 - BOARD ROOM

##### SANITARY INSPECTION

- C3.45 - FOOD CHEMISTRY LABORATORY
- C3.44 - FOOD MICROBIOLOGY LABORATORY
- C3.46 - FOOD MICROBIOLOGY LABORATORY
- C3.58 - BALANCE ROOM
- C3.52 - TISSUE CULTURE ROOM

##### COMMON DEPART. AREAS

- C3.39 - LIBRARY
- C3.37 - AUDIO-VISUAL ROOM
- C3.36 - POSTGRADUATE ROOM
- C3.49 - SUPPORT STAFF ROOM
- C3.62 A C3.65 - STAFF OFFICES
- C3.70 A C3.74 - STAFF OFFICES

#### BUILDING C

##### GENERAL SERVICES

##### LECTURES

- CE.79 - SEMINAR ROOMS
- CE.79 - SEMINAR ROOM

##### TOILETS

- C3.87 - WC MALE
- C3.88 - WC FEMALE

##### COMMON AREAS

- C3.89/90 - STORE
- C3.85 - STORE
- CE.86 - ARCHIVE
- C3.91/92 - STORE
- C3.82 - COLD ROOM

##### SANITARY INSPECTION

- C3.75 - TISSUE CULTURE ROOM
- C3.83 - LAB ANIMAL ROOM

##### DEPART. COMMON AREAS

- C3.93 - STAFF ROOM

##### DEPARTMENTAL AREAS

##### DEPARTMENT DIRECTION

- C3.103 - DIRECTOR'S OFFICE
- C3.101 - SECRETARY ROOM
- C3.102 - WAITING ROOM
- C3.100 - BOARD ROOM

##### GENETICS

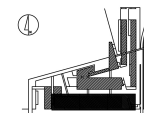
- C3.81 - RESEARCH LABORATORY

##### ANIMAL PRODUCTION

- C3.76 - RESEARCH LABORATORY

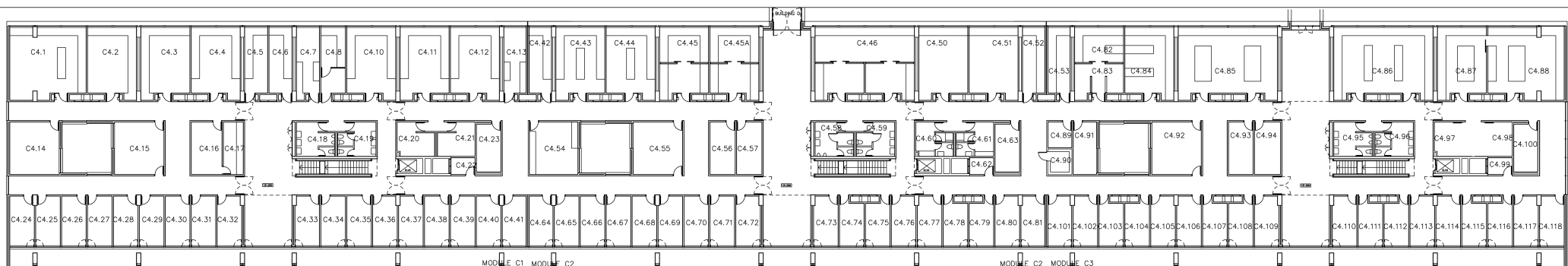
#### DEPART. COMMON AREAS

- C3.80 - LIBRARY
- C3.78 - AUDIO-VISUAL ROOM
- C3.77 - POSTGRADUATE ROOM
- C3.84 - SUPPORT STAFF ROOM
- C3.94 A C3.99 - STAFF OFFICES
- C3.104 A C3.108 - STAFF OFFICES



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data:	JUL 2024	VETERINARIA		
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		FLOOR 3		
			substitui:	
			substituido:	





BUILDING C	
GENERAL SERVICES	
TOILETS	
C4.18 - WC MALE	
C4.19 - WC FEMALE	
COMMON AREAS	
C4.20/21 - STORE	
C4.23 - STORE	
C4.22 - STORE	
DEPARTMENTAL AREAS	
PATHOLOGY	
C4.3/6 - RESEARCH LABORATORY	
C4.4 - DIAGNOSTIC LABORATORY	
HISTOLOGY	
C4.7 - RESEARCH LABORATORY	
C4.10 - DIAGNOSTIC LABORATORY	
C4.16 - ELECTRONIC MICROSCOPE	
C4.17 - DARK ROOM	
2.4.6 - SALA DE ULTRAMICROTOPIA	
C4.8 - METAL SHADING ROOM	

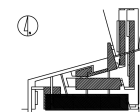
BUILDING C	
GENERAL SERVICES	
TOILETS	
C4.12 - WATER TANKS	
C4.11 - WATER TANKS	
C4.13 - TOILET ROOM	
COMMON AREAS	
C4.1 - DIAGNOSTIC LABORATORY	
C4.2 - STORE	
DEPARTMENTAL AREAS	
PATHOLOGY	
C4.3/6 - RESEARCH LABORATORY	
C4.4 - DIAGNOSTIC LABORATORY	
HISTOLOGY	
C4.7 - RESEARCH LABORATORY	
C4.10 - DIAGNOSTIC LABORATORY	
C4.16 - ELECTRONIC MICROSCOPE	
C4.17 - DARK ROOM	
2.4.6 - SALA DE ULTRAMICROTOPIA	
C4.8 - METAL SHADING ROOM	

BUILDING C	
GENERAL SERVICES	
TOILETS	
C4.58 - WC MALE	
C4.59 - WC FEMALE	
COMMON AREAS	
C4.48 - PREPARATORY ROOM	
C4.60/61 - SHOWER W/F	
C4.57/63 - STORE	
C4.56 - ARCHIVE	
C4.52 - STORE	
C4.44 - RADIO-ISOTOPE COUNTER ROOM	
DEPARTMENTAL AREAS	
PATHOLOGY	
C4.15 - SUPPORT STAFF ROOM	
C4.24 A C4.41 - STAFF OFFICES	
C4.14 - DRAWING ROOM	

BUILDING C	
GENERAL SERVICES	
TOILETS	
C4.58 - WC MALE	
C4.59 - WC FEMALE	
COMMON AREAS	
C4.48 - PREPARATORY ROOM	
C4.60/61 - SHOWER W/F	
C4.57/63 - STORE	
C4.56 - ARCHIVE	
C4.52 - STORE	
C4.44 - RADIO-ISOTOPE COUNTER ROOM	
DEPARTMENTAL AREAS	
PATHOLOGY	
C4.15 - SUPPORT STAFF ROOM	
C4.24 A C4.41 - STAFF OFFICES	
C4.14 - DRAWING ROOM	

BUILDING C	
GENERAL SERVICES	
TOILETS	
C4.95 - WC MALE	
C4.96 - WC FEMALE	
COMMON AREAS	
C4.97/98 - STORE	
C4.93 - BALANCE ROOM	
C4.94 - CENTRIFUGE ROOM	
C4.100 - STORE	
C4.99 - COLD STORE	
C4.89 - DARK ROOM	
DEPARTMENTAL AREAS	
BIOCHEMISTRY	
C4.85 - RESEARCH LABORATORY	
INFECTIOUS DISEASES	
C4.84 - RESEARCH LABORATORY	
C4.83 - VIROLOGY LABORATORY	
C4.53 - RESEARCH LABORATORY	
C4.91 - ANIMAL ROOM	

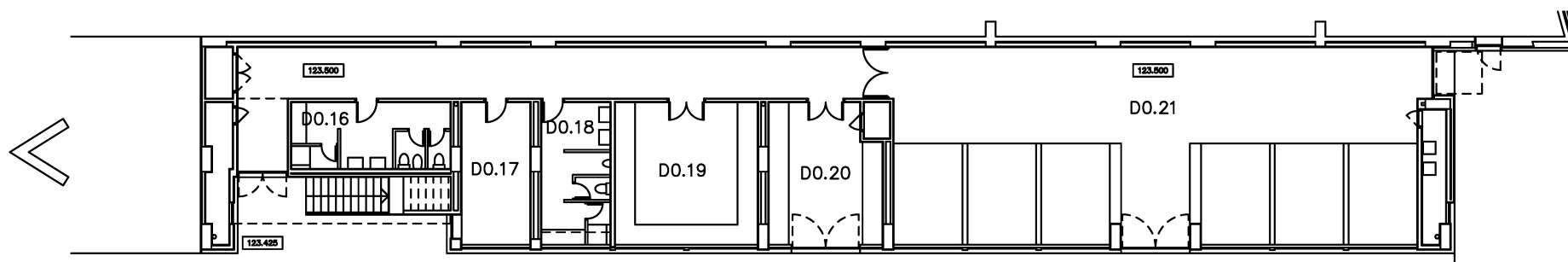
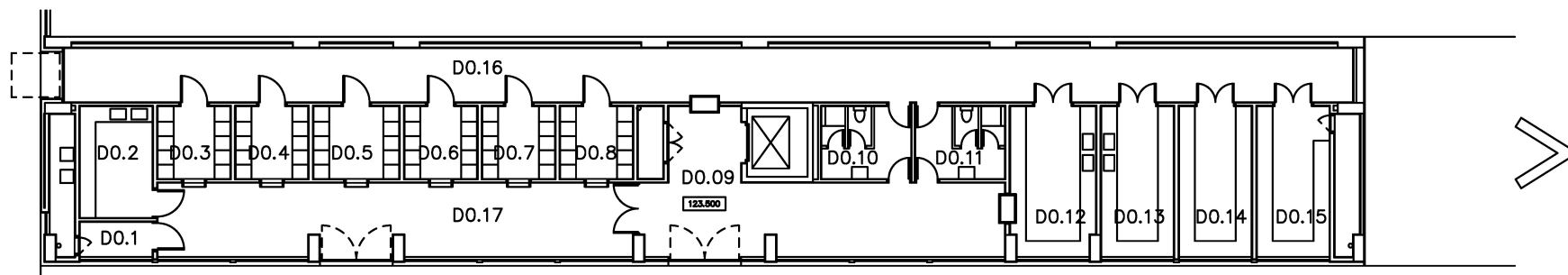
BUILDING C	
GENERAL SERVICES	
TOILETS	
C4.95 - WC MALE	
C4.96 - WC FEMALE	
COMMON AREAS	
C4.97/98 - STORE	
C4.93 - BALANCE ROOM	
C4.94 - CENTRIFUGE ROOM	
C4.100 - STORE	
C4.99 - COLD STORE	
C4.89 - DARK ROOM	
DEPARTMENTAL AREAS	
BIOCHEMISTRY	
C4.85 - RESEARCH LABORATORY	
INFECTIOUS DISEASES	
C4.84 - RESEARCH LABORATORY	
C4.83 - VIROLOGY LABORATORY	
C4.53 - RESEARCH LABORATORY	
C4.91 - ANIMAL ROOM	



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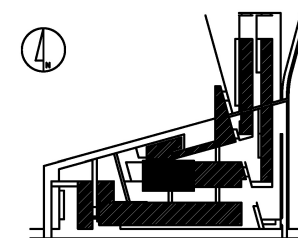


## BUILDING D

### LABORATORY ANIMAL UNIT

- D0.9 - RECEPTION
- D0.17 - DIRTY CIRCUIT
- D0.2 - PRE-WASH ROOM
- D0.1 - WASTE ROOM
- D0.12 - STERILIZATION ROOM
- D0.16 - CLEAN CIRCUIT
- D0.3 A D0.8 - ANIMAL ROOMS
- D0.14 - FEED STORE
- D0.13 - KITCHEN
- D0.15 - CAGE STORS
- D0.10/11 - CHANGING ROOM

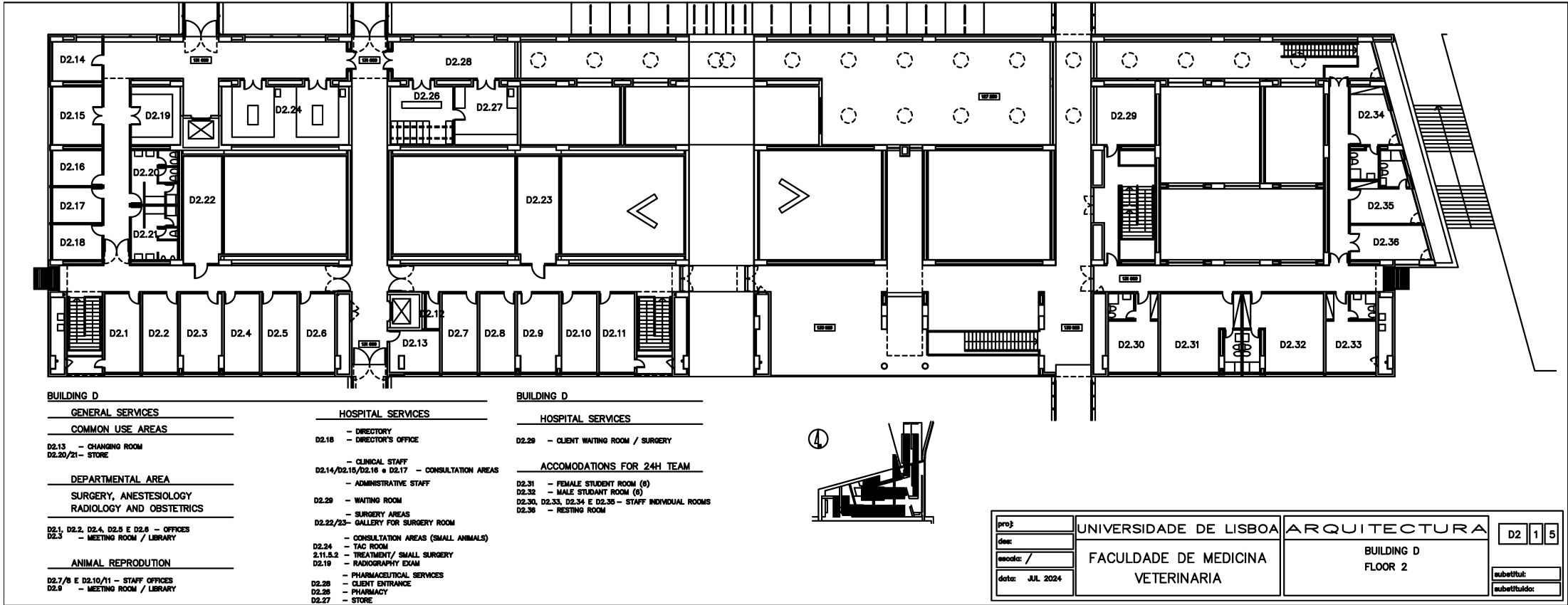
D.16/D.17/D.18/D.19/D.20 e D.21 - STAFF CHANGING ROOMS

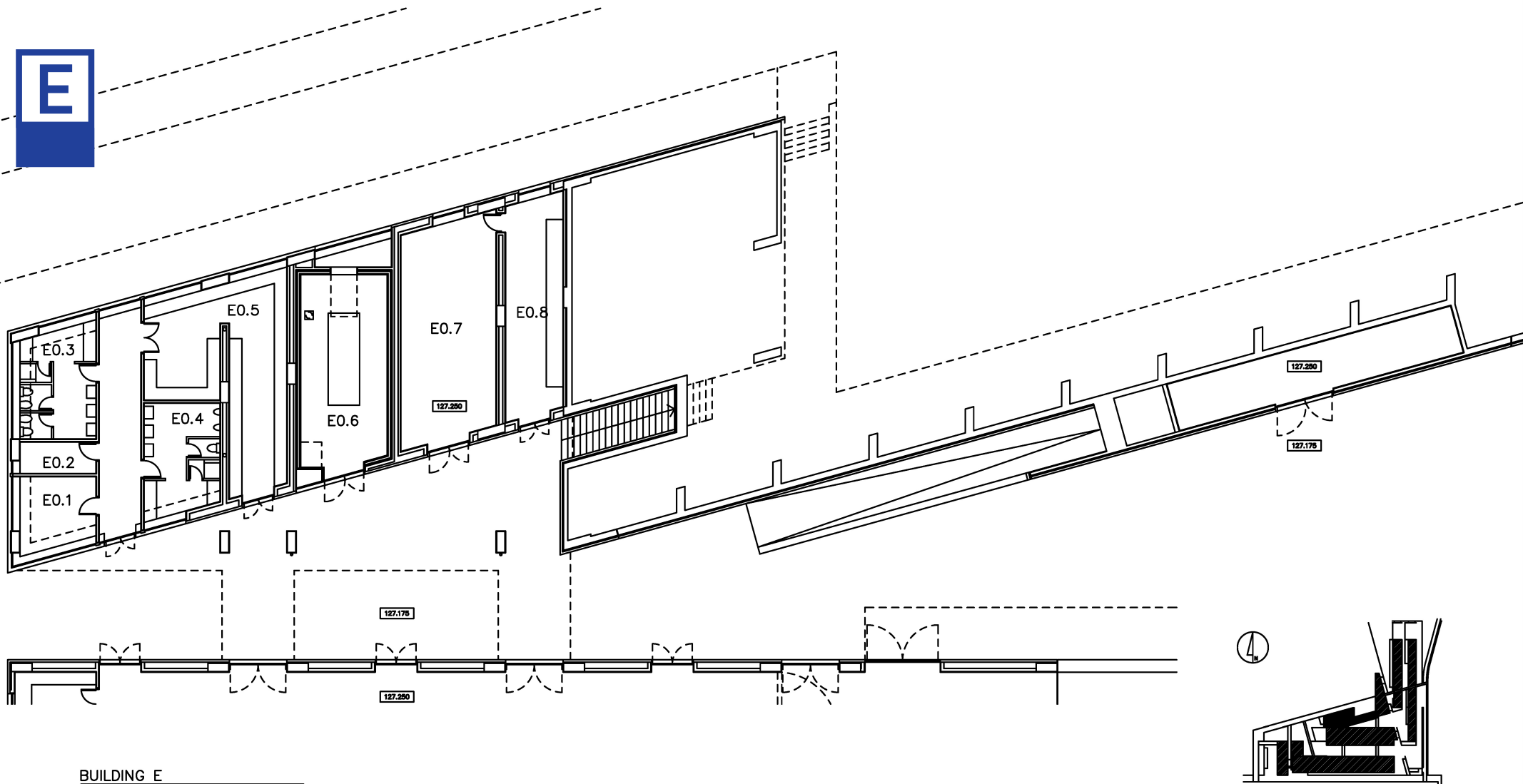


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escala: /	VETERINARIA	FLOOR 0			
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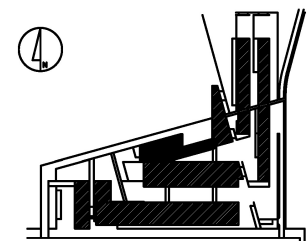




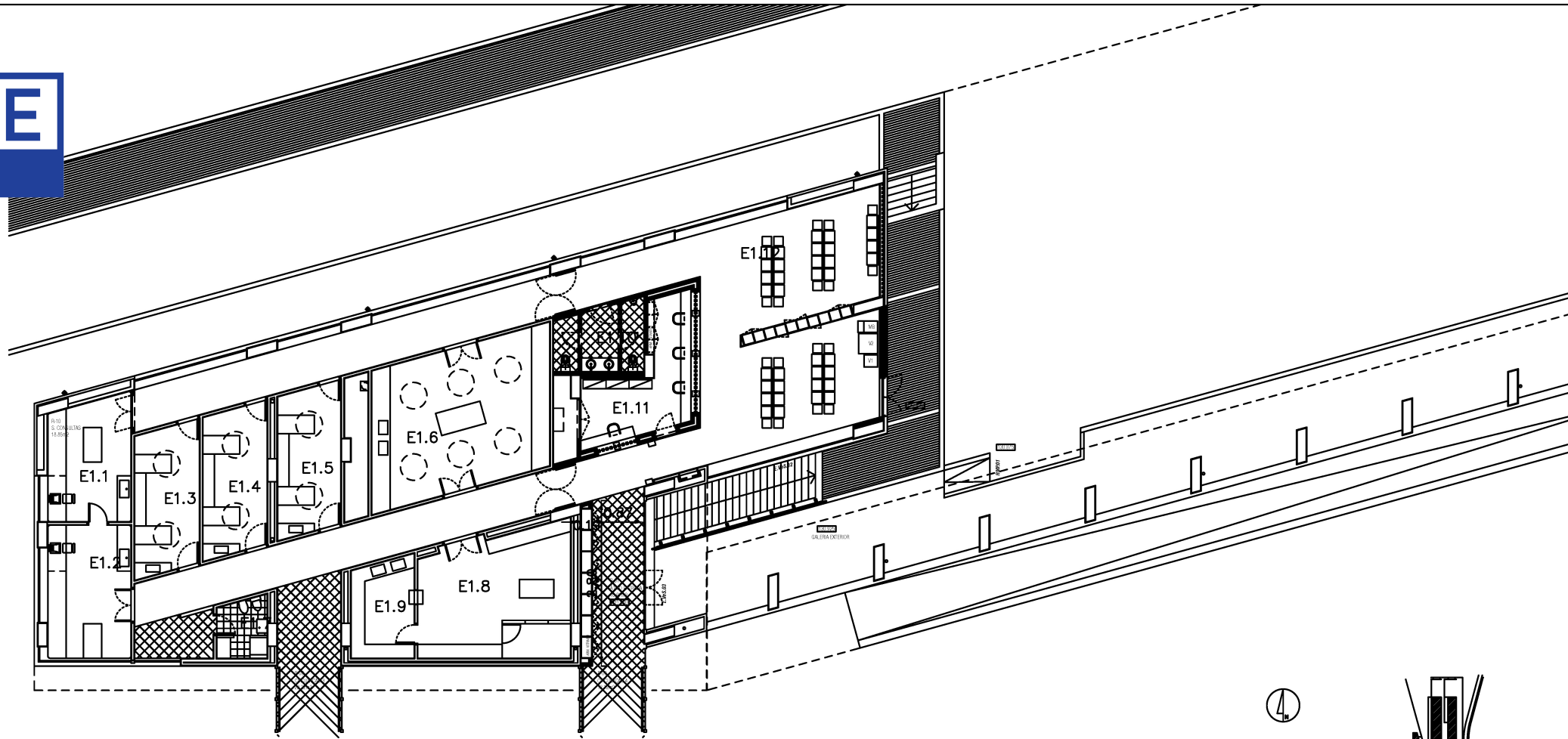


GENERAL SERVICES  
MAINTENANCE GROUP

EO.8 - ELECTRICAL CONTROL ROOM  
EO.6 - EMERGENCY GENERATOR  
EO.7 - TRANSFORMER  
EO.5 - CENTRAL LAUNDRY UNIT  
EO.3/4 - CHANGING ROOM  
EO.1 E EO.2 - STORE

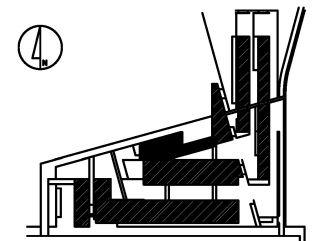


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des:						subtitulido:
escola: /	FACULDADE DE MEDICINA	BUILDING E				
data: JUL 2024	VETERINARIA	FLOOR 0				



HOSPITAL SERVICES

- ADMINISTRATION STAFF
- E1.11 - RECEPTION
- E1.10 - TOILETS
- E1.11 - CONSULTATION AREAS
- E1.12 - CLIENT WAITING ROOM
- E1.3 - CATS HOSPITALIZATION
- E1.4 A E1.6 - CONSULTATION ROOMS
- E1.1/2 - DOGS HOSPITALIZATION
- E1.8 - X-RAY-ROOM
- E1.9 - X-RAY-ROOM
- E1.7 - TOILET



proj:	UNIVERSIDADE DE LISBOA	ARQUITECTURA	E1	3	0
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escala: /					
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			subtítulo:		
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F0.1

127.250

F0.4

F0.5

127.176

# BUILDING F

GENERAL SERVICES

LECTURE THEATERS

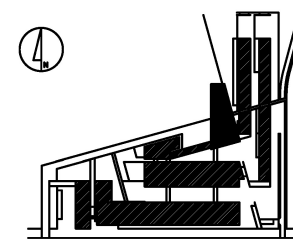
F0.1 - LECTURE THEATRE  
(CLASSES WITH ANIMALS)  
F0.4 - STORE

TOILETS

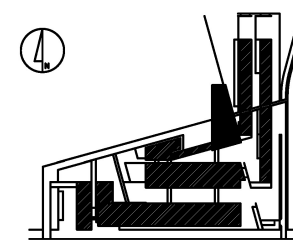
F02/F03 - TOILETS

TECHNICAL AREAS

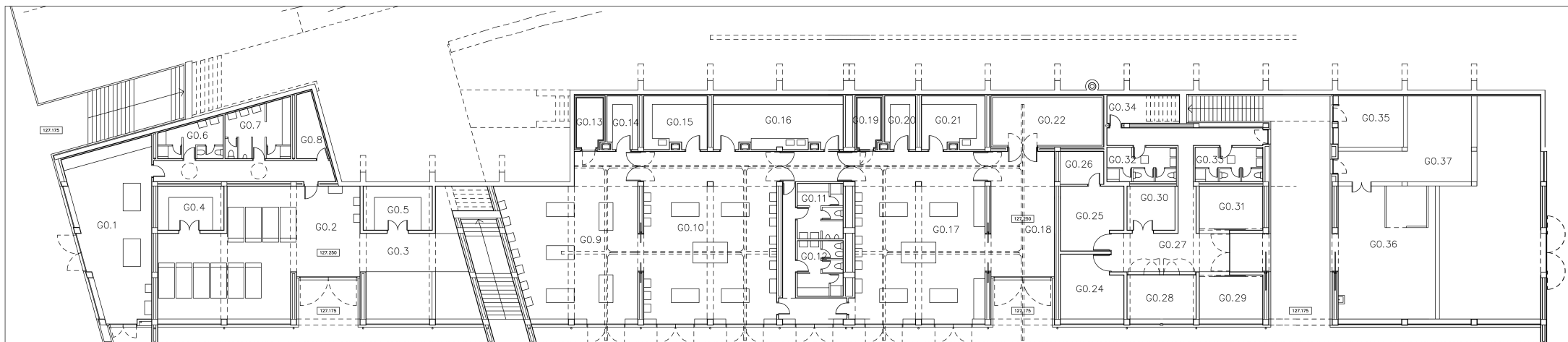
F0.5 - AIR-CONDITIONED UNIT



proj:	UNIVERSIDADE DE LISBOA	ARQUITECTURA	F0	1	8
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proj:	UNIVERSIDADE DE LISBOA	ARQUITECTURA	F1	1	S	subtítulo:
des:						subtítulo:
escola: /	FACULDADE DE MEDICINA VETERINARIA	BUILDING F FLOOR 1				
data: JUL 2024						



#### BUILDING G

##### GENERAL SERVICES

##### COMMON USE AREAS

G0.1 - CLINICAL SKILLS TRAINING CENTRE (Reproduction and Obstetrics)  
G0.6 E G0.7 - CHANGING ROOM  
G0.8 - STORE  
G011/12 - CHANGING ROOM

##### DEPARTMENTAL AREAS

##### ANATOMY

G0.9/10 - DISSECTION ROOM

##### EQUINE HOSPITAL

G0.2 - HORSE INTENSIVE CARE  
G0.3 - HORSE INTENSIVE CARE  
G0.5 - HORSE INTENSIVE CARE

##### POST-MORTEM AREAS

G0.16 - ANATOMIC MODEL STORE  
G0.14 - COLD ROOM  
G0.15 - STORE

##### TECHNICAL AREAS

G0.4 - STORE

#### BUILDING G

##### POST-MORTEM AREAS

G0.17 - POST-MORTEM THEATER  
G0.19 - COLD ROOM  
G0.20 - STORE  
G0.21 - BONE WORKSHOP  
G0.22 - COLD STORE

##### DEPARTMENTAL AREAS

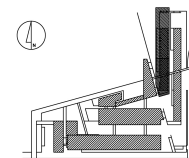
##### BIOLOGICAL ISOLATION AND CONTAINMENT (BICU)

- ISOLATION UNIT  
G0.32/33- CHANGING ROOM  
G0.25 - PREPARATORY  
G0.24 - LABORATORY  
G0.28/29/31 - ISOLATION BOXES  
G0.30 - ISOLATION ROOM  
G0.35 - DOGS AND CATS

#### TECHNICAL AREAS

G0.27 - CORRIDOR  
G0.28/34- STORE

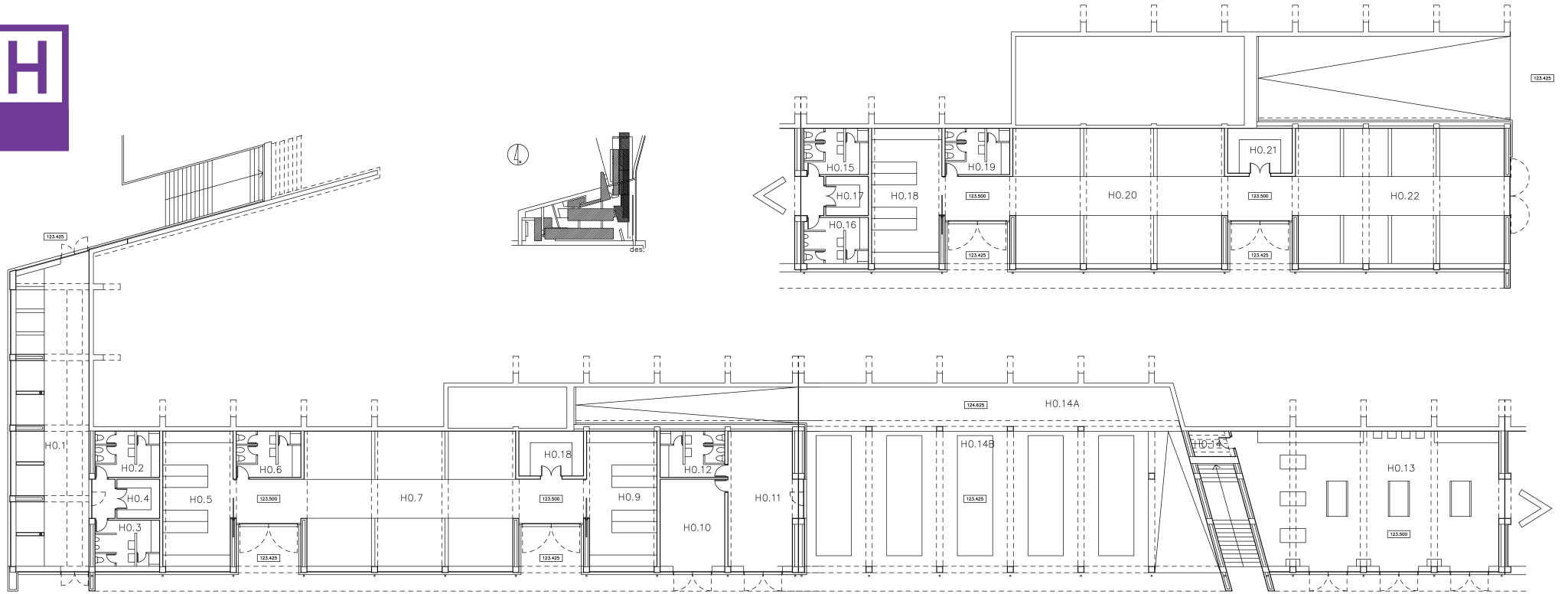
G0.36 - ISOLATION BOXES (Horses)  
G0.37 - ISOLATION BOXES (Horses)



proj:	UNIVERSIDADE DE LISBOA	ARQUITECTURA
des:	FACULDADE DE MEDICINA VETERINARIA	BUILDING G
escala: /		LEVEL 0
data: JUL 2024		
		G0 2 0
		substitui:
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#### BUILDING H

GENERAL SERVICES  
MAINTENANCE GROUP

H0.11 - MAINTENANCE AND EQUIPMENT WORKSHOP  
H0.10 - CHANGING ROOM  
H0.12 - CHANGING ROOM

#### GENERAL STORE

H0.5 - FEEDING STORE  
H0.9 - STRAW STORE

#### DEPARTMENT AREAS

#### HOSPITAL SERVICES

H0.7 - SMALL RUMINANT/PIG BOXES  
H0.8 - STORE  
H0.6 - CHANGING ROOM  
H0.1 - CAT AND DOGS BOXES  
H0.4 - STORE  
H0.2/3 - CHANGING ROOM

#### BUILDING H

#### GENERAL SERVICES

#### GARAGE AND CENTRAL STORE

H0.14B - COW FREE STALL

#### COMMON USE AREAS

H0.13 - CLINICAL SKILLS TRAINING CENTRE  
H0.14 - STORE

#### DEPARTMENTAL AREAS

#### HOSPITAL SERVICES

H0.14A - LARGE ANIMAL RAMP

#### BUILDING H

#### GENERAL SERVICES

#### GARAGE AND CENTRAL STORE

H0.18 - CENTRAL FEEDING STORE

#### COMMON USE AREAS

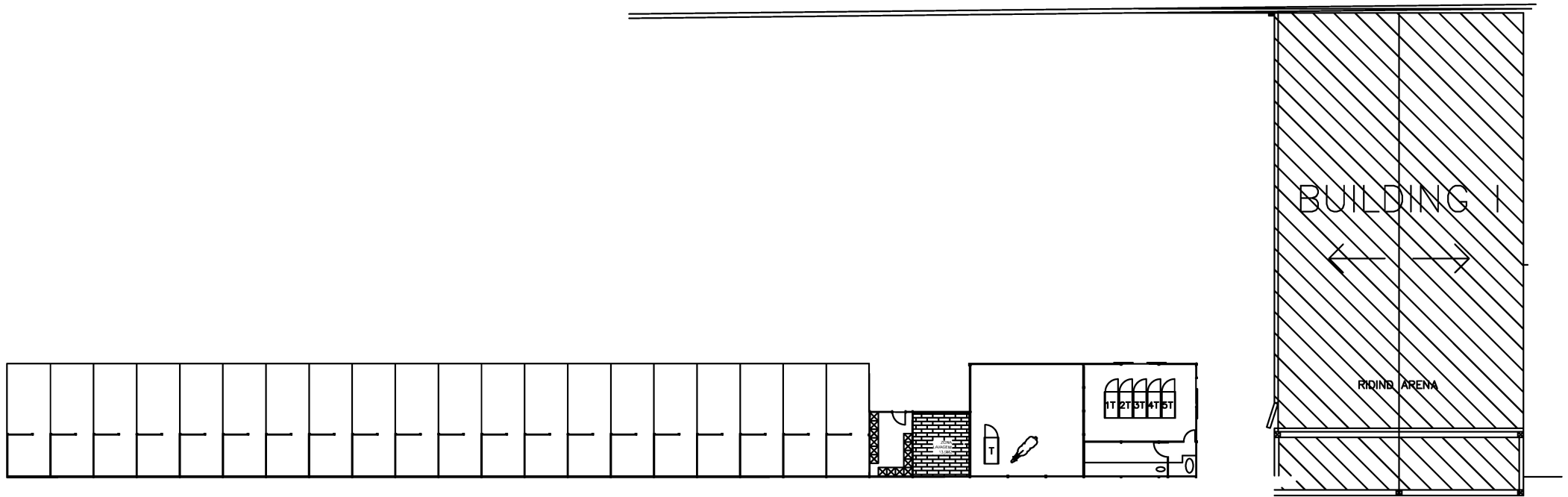
H0.17 - STORE  
H0.15/16 - CHANGING ROOMS

#### DEPARTMENTAL AREAS

#### HOSPITAL SERVICES

H0.22 - EQUINE BOXES  
H0.20 - EQUINE BOXES  
H0.21 - STORE  
H0.19 - CHANGING ROOM

proj:	UNIVERSIDADE DE LISBOA	ARQUITECTURA	H0	2	1
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data: JUL 2024	VETERINARIA	FLOOR 0			
		substituído:			
		substituído:			



HORSES BOXES

proj	UNIVERSIDADE DE LISBOA	ARQUITECTURA	HO	2	2
aviso	FACULDADE DE MEDICINA VETERINARIA	BUILDING I FLOOR 0	autor		
data	JUL 2024		autor		





# **Appendix 5b**

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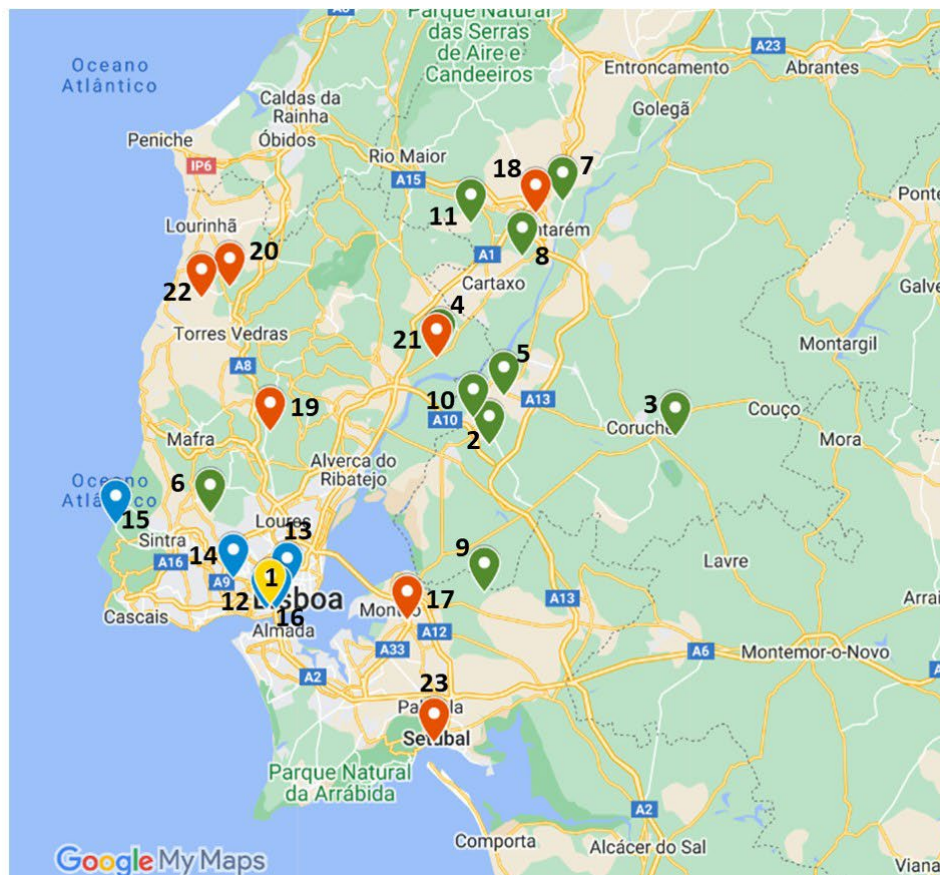
Maps of extra-mural facilities used  
in the core veterinary programme



## Maps of extra-mural facilities used in the core veterinary programme

- 📍 **Slaughterhouses**
- 📍 **Stud-farms (Equine Clinics - Ambulatory)**
- 📍 **Farms (Food Animals Clinics – Ambulatory)**

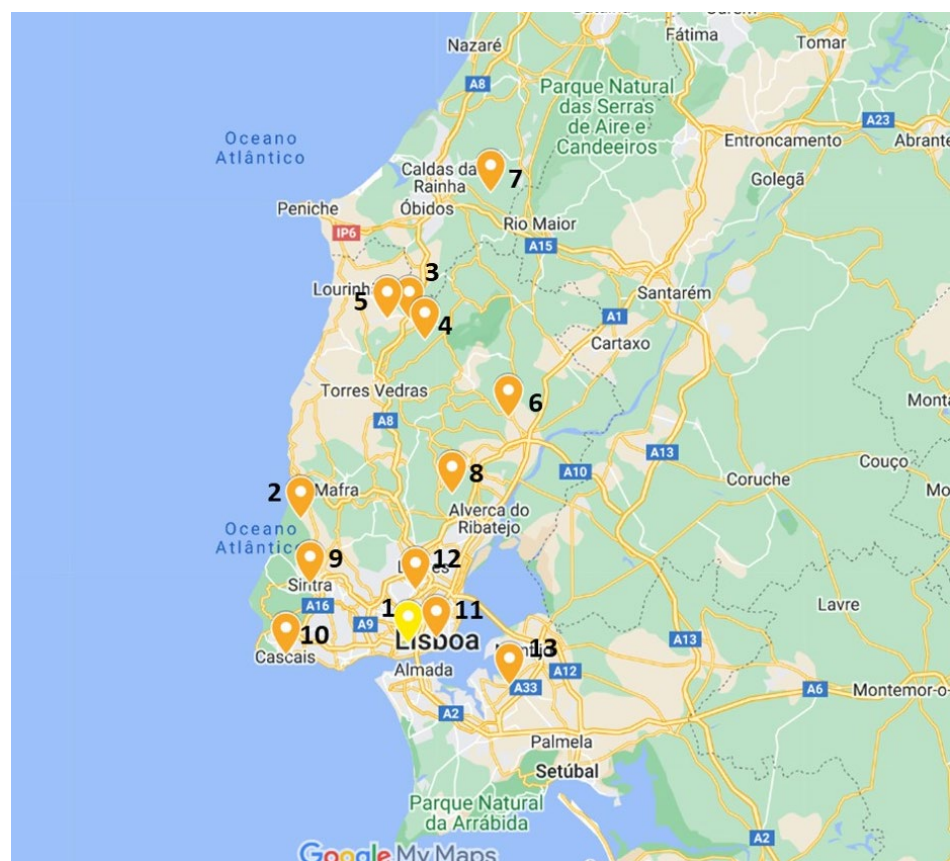
- 1 Faculty of Veterinary Medicine
- 2 Barão e Barão - Coutada Velha
- 3 Barão e Barão - Azervadinh
- 4 Fonte Leite – Azambuja
- 5 Agro-Pecuária Afonso Paisana - Várzea Fresca
- 6 Casal de Quintanelas - Sabugo
- 7 Terra de Chantas - Ulme, Chamusca
- 8 Estação Zootécnica Nacional – Santarém
- 9 João Manuel Piedade Correia – Pegões
- 10 KICANDO - Benavente
- 11 Manuel Querido - Alforgemel
- 12 National Cavalry Police – GNR (Ajuda)
- 13 Forest Police – Monsanto
- 14 Palácio Nacional de Queluz
- 15 Parque Nacional de Sintra
- 16 Tapada da Ajuda (ISA)
- 17 STEC- Raporal – Montijo
- 18 Santacarnes – Santarém
- 19 CASO – Mafra
- 20 Avibom – Torres Vedras
- 21 Avipronto – Azambuja
- 22 Intercoelho - A Dos Cunhados
- 23 Docapesca - Setúbal



### 📍 **Veterinary Preventive Medicine**

- 1 Faculty of Veterinary Medicine
- 2 Agro-ovo - S João das Lampas
- 3 Avigril - Outeiro da Cabeça
- 4 Paulo Frangos - Casais da Valentina
- 5 Paulo Perus - Outeiro da Cabeça
- 6 Vale Paredes – Alenquer
- 7 Agropal Quintão - Quintão
- 8 Agropecuária do Mogo - Santiago dos Velhos
- 9 Sintra (n=21)
- 10 Cascais (n=10)
- 11 Lisboa (n=2)
- 12 Odivelas (n=2)
- 13 Moita (n=1)

n = number of farms visited





# **Appendix 6**

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Manual for biosecurity, health and safety



**MANUAL OF GENERAL PROCEDURES FOR BIOSAFETY,  
HEALTH, AND SECURITY**

**(English extended summary)**





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## INTRODUCTORY NOTE

FMV has a two-volume **Manual of Procedures for Biosafety, Health, and Security**. Volume 1 considers General Procedures (72 pages) while Volume 2 discusses Specific Procedures (255 pages).

This Manual is written and regularly updated by the **FMV Hygiene and Biosafety Committee**. This Committee is appointed by order of the President, with the mission of overseeing compliance with Biosafety, Health, and Security at the study and workplace place.

The FMV Hygiene and Biosafety Committee acts in close coordination with the **Technical Services and Maintenance Office**.

Presently the FMV Hygiene and Biosafety Committee has the following **composition**:

- Professor Virgílio Almeida - Vice-President of the FMV, and Coordinator of the Committee.
- Professor Luísa Mateus - Coordinator of the Diagnostic Centre.
- Professor Luís Lamas - Director of the Equine Hospital.
- Professor Manuela Oliveira - Microbiology and Mycology Laboratories.
- Professor Marília Ferreira - Food Safety Laboratory.
- Professor Catarina Torres – Resident Animal Facilities.
- Dr<sup>a</sup> Mafalda Pires Gonçalves - Manager of the Companion Animal Hospital.
- Eng. José Silvestre - Coordinator of the Technical Services and Maintenance Office.
- Eng. Carla Simão – Responsible for the Occupational Health and Safety Unit.

This team of nine people supervises on a daily basis good biosafety, health, and security practices, and monitors critical points in the main areas of activity of FMV, namely teaching, research and service provision attended by students, teachers, researchers, science technicians, veterinarians, veterinary nurses, animal health care assistants and administrative staff.

**This document is an extended English summary of the Manual of General Procedures for Biosafety, Health, and Security.** It was produced by the FMV Hygiene and Biosafety Committee as a request of Standard 4.9 of the European System of Evaluation of Veterinary Training (ESEVT), Standard Operating Procedure 2023.

## **CHAPTER 1 - BIOSAFETY, HEALTH, AND SECURITY AT FMV**

Biosafety, health, and security in the teaching and workplace in institutions such as the Faculty of Veterinary Medicine (FMV), which includes many teaching, diagnostic and research laboratories, animal facilities, a Veterinary Teaching Hospital (VTH), as well as other workspaces, spread across several buildings, in which hazards are identified and chemical, physical, biological, and psycho-social risks assessed, is a collective responsibility that requires the daily cooperation of all users.

It is known that more than 90% of laboratory accidents are due to deficiencies in information about the sources of danger, as well as negligence in respecting safety standards. Therefore, a detailed Manual of Procedures for Biosafety, Health, and Security integrates the rules to be followed to maximize risk management among all participants, teachers, students, teaching support staff, and administrative staff involved in the learning environment, including the VTH (veterinarians, veterinary nurses, and animal health care assistants), and the network of laboratories supporting the VTH and research laboratories of the Centre for Interdisciplinary Research in Animal Health (CIISA) (researchers, and science technicians).

The best way to avoid the dangers associated with working with chemical, physical or biological agents is to be well aware of them, and properly trained to mitigate the risks associated with their exposure.

The measures gathered in this Manual include those relating to Biosafety, understood as procedures that lead to the prevention of the breakdown of biological integrity in the environment, human and animal health, preventing the spread of agents and their products. According to the WHO classification, basic level 1 and level 2 safety conditions are ensured in FMV teaching and research laboratories, duly equipped with primary and secondary barriers. Regarding general biosafety procedures in laboratories, and at the VTH, FMV follows the guidelines of the WHO Laboratory Biosafety Manual (2020), and WHO Occupational Health - A Manual for primary health care workers (2002). Over the years, FMV adopted and implemented the mandatory preventive measures resulting from the application of National Legislation, and European Union Directives considering the specificity of the Institution.

## CHAPTER 2 - TECHNICAL SERVICES AND MAINTENANCE OFFICE

The FMV Statutes published in the Official Gazette, 2<sup>nd</sup> series – Nº. 216 - 7 November 2013, in Article 54, paragraph 3, state the following: *The FMV includes a Technical Services and Maintenance Office, coordinated by a senior technician, with the powers assigned to it by the President, namely in matters of management of facilities and equipment, management of hospital and urban waste, and safety, hygiene and health at work.*

The Technical Services and Maintenance Office (GSTM) is responsible for drafting documents relevant to risk prevention and process management, implementing safety and hygiene rules and monitoring compliance with good practices.

The GSTM produced several Plans and Manuals that are the basis for updating the Manual of Procedures for Biosafety, Health, and Security.

These documents include:

1. Internal Emergency Plan (2003/2004, updated in 2005)
2. Standards for the Classification of Waste in Veterinary Medicine (2003/2004)
3. Manual for Integrated Management of Hospital Waste, Special Hazardous Waste and Non-Hazardous Waste (2010 and 2017)
4. Manual of Technical Procedures for Laboratories – Chemical Agents (2007)
5. Manual of Technical Procedures for Laboratories – Biological Agents (2005)
6. Safety Procedures in Anatomy and Necropsy Rooms
7. Safety Procedures for the preparation of cytostatics, their administration and the disposal of their waste.

The GSTM also collaborated in the development of Safety Procedures in the Isolation and Biological Containment Unit (BICU) (2013) of the VTH.

TSMO is also involved in training actions aimed at teachers, students and non-teaching staff on biosafety, health, and security in the study and the workplace.

## CHAPTER 3 - FACILITIES

At FMV, there are several types of facilities to consider to fulfil the three main purposes:

1. Teaching

2. Research
3. Animal Health Care.

In order to accomplish these tasks, the FMV has the following types of facilities:

1. Theoretical classrooms
2. Teaching laboratories
3. Dissection and necropsy rooms
4. Clinical Skills Training Centre
5. Veterinary Teaching Hospital for Companion Animals:
  - a. Consultation rooms
  - b. General hospitalization
  - c. Surgery rooms
  - d. Applied Surgery Centre
  - e. Imaging:
    - o X-ray
    - o CT scan
    - o Ultrasound
6. Veterinary Teaching Hospital for Equines
  - a. Surgery room
  - b. Recovery room
  - c. Minimally Invasive Surgery centre
  - d. Imaging:
    - o X-ray
    - o CT scan
    - o Ultrasound
    - o Magnetic resonance imaging
  - e. Admission
7. Isolation and Biological Containment Unit
8. Reproduction Service:
  - a. Semen collection rooms
  - b. Embryo manipulation rooms
9. VTH Support Laboratories:



- a. Clinical Analysis
  - b. Pathological Anatomy
  - c. Bacteriology
  - d. Endocrinology
  - e. Pharmacology and Toxicology
  - f. Mycology
  - g. Parasitology and Parasitic Diseases
  - h. Animal Reproduction
  - i. Virology and Immunology
10. CIISA Research Laboratories:
- a. Infectious Diseases (Biological Safety - BSL3)
  - b. Glycobiology and Structural Enzymology
  - c. Microbiology and Immunology
  - d. Animal Nutrition and Production
  - e. Parasitology and Parasitic Diseases
  - f. Pathology
  - g. Tropical Animal Production and Health
  - h. Quality of Food Products
  - i. Reproduction and Development
  - j. Antibiotic Resistance
  - l. Food Technology and Safety
11. Blood Bank
12. Metabolic Pavilion
13. Bioterium Facility
14. Animal stables
15. Equestrian centre

### **Laboratories at FMV**

The FMV has 37 teaching, VTH support, and research laboratories. These laboratories are frequented by approximately 500 people daily, including teachers, undergraduate and postgraduate students, trainees, interns, residents and non-teaching staff.

In the risk assessment and analysis carried out to prepare the Internal Emergency Plan, several

critical points and risks were identified. They are presented in Table 1:

Table 1  
Location of critical points and associated risks

CRITICAL POINTS	RISKS	BUILDING	LOCATION
Underground car parking	Release of gases	A and C	Floor -1 and -2
	Fire		
Thermal Power Plants and Air Conditioning	Fire and Explosion	A, C and D	Floor 0
Warehouse documents	Fire	A	Floor 0
Reprography	Fire	A and C	Floor 1 and 2
Library and Archives	Fire	A	Floor 3 and 4
Laboratories and Preparatory Labs	Chemical spills	C, D and E	Floor 0, 1, 2 , 3 and 4
	Biological contamination		
	Release of gases and vapours		
	Fire		
	Explosion		
Canteen and cafeteria	Release of gases	C	Floor 1
	Fire		
	Explosion		
Computer rooms	Fire	C	Floor 0
Dissection and necropsy rooms	Release of vapours	G	Floor 1
	Biological contamination		

Chemical waste warehouse	Release of vapours	G	Floor 1
	Chemical spills		
	Fire		
	Explosion		
Biowaste refrigeration chamber	Biological contamination	Next to G	Floor 1
Hay and straw warehouse	Fire	H	Floor 1
Medical Gas Plant	Fire Explosion	D	Floor 1
X-ray rooms	Release of ionizing radiation	D and E	Floor 1
Dormitories	Fire	D	Floor 2
Pharmaceutical services	Fire Explosion	D	Floor 2
Laundry	Fire	E	Floor 0

## CHAPTER 4 – TYPE OF RISKS

“Risk is defined as the probability of encountering a hazard”. In Health, Hygiene and Safety at work (SHST), the definitions of Hazard, Risk and Prevention are:

**Hazard** – The intrinsic property or capacity of a work component (equipment, materials, tools, installation, physical, chemical and biological agents, work organization) to cause damage to health, property, the environment in general or a combination of these.

**Risk** – The probability that the potential damage of the work component will materialize under the conditions of use and/or exposure, as well as the possible extent of the damage.

**Prevention** – Action to avoid or reduce occupational risks through a set of provisions and measures to be adopted in all working conditions of the institution.

In the working conditions at FMV there are risks of a diverse nature that are identified.

**Chemical risks** are compounds or products that can be absorbed by the body through the respiratory tract (fumes, gases, vapours), through the skin or by ingestion. The degree of aggression they cause varies greatly, and the measures to be applied depend on this.

**Physical risks** are associated with the presence of forms of energy that can cause vibrations, excessive temperatures, radiation, excessive noise, etc., and that can interfere physically or psychologically with the well-being of a student or professional, causing discomfort or even illness.

**Ergonomic risks** are factors generally associated with the environment or equipment that can interfere physically or psychologically with the well-being of a professional or student, causing discomfort or even illness and compromising their productivity. Therefore, the following are considered ergonomic risk factors:

- Inadequate manual handling of loads
- Inadequate (static) postures and movements
- Repetitive movements
- Stressful situations
- Night work
- Long working hours
- Monotony
- Direct mechanical pressure on body tissues
- Vibrations
- Discomfort from the thermal environment.

Ergonomics ensures the best adaptation of a work situation (equipment, machines) to the worker and the task they perform, in accordance with health and safety criteria.

**Biological risks** are bacteria, fungi, parasites, viruses or other microorganisms capable of causing adverse effects on humans, animals or the environment. Biological agents can be

divided into four risk classes, from 1 to 4 in ascending order, with the classification being based on:

- Pathogenicity for humans
- Virulence
- Routes of contagion
- Existence of preventive measures
- Therapeutic efficacy.

**Class 1 Biological Risk:** the risk arising from contact for each individual and for the community is low. It applies to well-known agents with no or low probability of causing infections in healthy humans or animals. The potential risk for students and professionals in handling them is very low.

**Class 2 Biological Risk:** the risk arising from contact for each individual and for the community is moderate. It applies to biological agents that cause infections in humans and animals, with a limited risk of spreading to the community or the environment, and do not pose a serious risk to students and professionals as long as basic care is taken when handling them. They are also agents for which effective prophylactic and therapeutic measures are known (e.g.: *Microsporum canis*).

**Class 3 Biological Risk:** the risk arising from contact is high for each individual, but limited for the community. It applies to biological agents capable of causing serious or even fatal infections in humans and animals, and therefore their handling represents a serious threat. There is also a risk of spreading to the community and the environment, and contamination may occur from person to person or between infected animals. There are usually effective treatments or preventive measures (e.g. Leptospirosis).

**Class 4 Biological Risk:** the risk arising from contact is high both for the individual and for the community. This applies to biological agents that are highly pathogenic for humans and animals, as well as for the environment, and can spread easily. These agents pose a high risk to those who handle them, and can spread by aerosol or by unknown transmission routes. There are no known prophylactic or therapeutic measures (e.g. Ebola virus).

The biological risk is determined by the handling of pathogenic microorganisms, contact with laboratory animals used in experiments, contact with biological fluids, tissues and cadavers. In order to contract an infection, a series of circumstances must coincide with three elements: the microorganism, the transmission route, and the individual.

Contagion can be direct, from person to person, from animal to person (zoonoses), or indirectly through contaminated fomites. Knowing the main transmission mechanisms of different microorganisms is a very important tool for the prevention and protection of all those who must handle them. Students are trained by the teams of teachers from the various curricular units since their first day at FMV to these risks and the best practices they should always take to mitigate these risks.

**Accident risks** are generally unpredictable factors of a diverse nature that can put the safety of professionals or students at risk, often associated with the handling of animals and equipment.

### **Psycho-social risks**

According to the World Health Organization, “a healthy educational establishment/workplace is one in which all members of the organization cooperate with a view to continually improving the processes of protecting and promoting health, safety and well-being”.

One of the fundamental concepts in the characterization of psycho-social risks is the concept of **stress**. The factors identified in the literature as being most associated with stress in university and work context are the following:

1. Dissatisfaction with the course/work being undertaken
2. High workload
3. Too much responsibility
4. Studying/working too many hours
5. Unclear expectations regarding desired performance
6. Missing the opportunity to participate in decision-making
7. Studying/working in dangerous conditions
8. Discussing or presenting ideas in front of colleagues
9. Facing situations of discrimination



10. Facing situations of harassment.

### **Management of psycho-social risks**

Management of psycho-social risks at FMV contributes to create a healthier and more productive learning and professional environment, which in turn contributes to better academic performance of students and of the organization. The benefits of good management of psycho-social risks are:

1. Improved well-being and satisfaction of the student/worker concerning the course/job and the organization.
2. Motivated and productive students and workers.
3. Overall improvement in academic and worker performance and productivity.
4. Reduction in student/worker absenteeism, staff turnover rates and costs associated with loss of quality.
5. Reduction in costs and burdens for society in general.

To assess, manage and prevent psycho-social risks, FMV created in 2018 the **Student Support Group** (GAPE) within the Pedagogical Council, composed of teachers from the Pedagogical Council and other co-opted teachers and staff, all volunteers. GAPE's mission is to meet the physical, emotional and well-being needs of students, early detection of students with signs of mental health disorders and refer them to specialized medical support.

In 2018, FMV also created the **Mentor Group** (MG), composed of volunteer students from the 2<sup>nd</sup> to 5<sup>th</sup> year of the MIVM and PhD students. The MG is the first support structure for first-year students and for identifying freshmen having difficulty adapting to FMV and/or to Lisbon. The MG works under the supervision of GAPE teachers who act as Tutors. The MG currently involves 100 student volunteers.

Psychological support for FMV students and workers is provided by ULisboa at the **Ajuda Campus Sports and Medical Complex**, located a 5-minute walk from the FMV, and at the University Stadium Medical Services located in the city center.

This psychological support is currently being expanded with the collaboration of the **Students' Association** (AEFMV) and financial support from the FMV.

The GAPE, MG, AEFMV and the psychological support for students and workers provided by

the *Ajuda Campus* Sports and Medical Complex and the University Stadium Medical Services play a fundamental role in assessing psycho-social risks, promoting health and improving well-being while studying/working at the FMV.

To assess, manage and prevent psychosocial risks, FMV uses the following tools and strategic partnerships:

1. Online surveys to assess the level of satisfaction of students, teachers and non-teaching staff with the faculty.
2. Telephone surveys to identify causes of student dropout.
3. Identify students with Special Educational Needs, monitor them through GAPE, and report annually to the Directorate-General for Education and Science.
4. Promote seminars on time management and anxiety control for students with the collaboration of clinical psychologists from the Faculty of Psychology of ULisboa.
5. Promote seminars for students on alcohol and drug abuse with the collaboration of the Public Security Police - Safe University.
6. Consult and involve students, teachers and non-teaching staff in the implementation of indoor and outdoor spaces for socializing and leisure to promote collective well-being.
7. A pilot project is underway testing two weekly teleworking (e-working) days by non-teaching staff.
8. Promote team building sessions on mindfulness, stress management and reduction, compassion fatigue and burnout syndrome for veterinarians, veterinary nurses and animal health care assistants.
9. Collaborates with AEFMV to encourage the practice of physical and cultural activities.
10. Participates in studies on the health and well-being of ULisboa, namely stress, mental health, dating violence and abuse, and sexual or moral harassment.
11. Promotes and encourages its teachers to attend ULisboa's training course on "Psychological Crisis in a University Context: support and guidance".

When the COVID-19 pandemic crisis emerged, FMV already had this organization and tools in place to detect and manage possible increases in psycho-social risks. Even so, the challenge of restoring student mental health post-pandemic is high it requires investment and

concerted efforts, as it was disclosed by a study carried out in 2022 in the eighteen ULisboa schools on “Health and well-being”, whose main conclusions among the 264 participating FMV students were the following:

- 17.0% of FMV students reported a risk of **burnout** *versus* 15.3% of ULisboa students.
- 28.8% of FMV students reported **academic engagement**<sup>1</sup> *versus* 38.0% of ULisboa students.
- 22.7% of FMV students had severe or very severe levels of **stress**, 26.9% of **anxiety** and 18.6% of **depression** *versus* 20.5% (stress), 26.4% (anxiety) and 25.2% (depression) of ULisboa students;
- 74.2% of FMV students evaluated their **flourishing**<sup>2</sup> positively *versus* 73.7% of ULisboa students.

## CHAPTER 5 - BIOSAFETY LEVELS

The biosafety levels of each laboratory or space dedicated to teaching and handling animals (VTH or stables) are stipulated to ensure that the handling of equipment, utensils, materials and chemical or biological products is safe for humans and animals, combining good handling practices and their use in appropriate facilities.

In the course of their activity, FMV students, teachers, and non-teaching professionals may be exposed to biological risk agents from Groups 1 and 2. **Intentional handling or contact with agents from Groups 3 or 4 is not permitted.** Some Laboratories and Services stipulate Special Safety Rules. These are included in the **Manual of Specific Procedures for Biosafety, Health, and Security.**

---

<sup>1</sup> Psychological state of positive cognitive-affective well-being, characterized by high vigor, enthusiasm, dedication and persistence in academic activity.

<sup>2</sup> High purpose in life, self-esteem, optimism, feeling of competence and ability to establish relationships.

## CHAPTER 6 - BASIC BIOSAFETY, HEALTH AND SECURIT RULES

All users of FMV facilities, students and professionals must comply with the following rules and procedures at the beginning, during and at the end of each activity, in the laboratories, VTH or in the stables.

### **Personal goods**

1. Keep their personal belongings (coats, wallets, mobile phones, etc.) in lockers (students) or in their offices (professionals).
2. Only take what is necessary for indoor work to be carried out in dissection and necropsy rooms, teaching laboratories, Clinical Skills Training Centre, VTH, or outdoors in the food animal ambulatory practice, veterinary inspection classes in abattoirs and fishing docks, and veterinary public health classes in foodstuff processing units.
4. Always use personal protective equipment (PPE) required for each specific activity. For example: in the laboratory, a white coat that reaches the knees, with long sleeves that can be rolled up, in the VTH appropriate tunic and trousers set, generally referred to as pyjamas, in the dissection and necropsy room white coat or overalls, thick apron down to the ankles, rubber boots with non-slip soles, gloves and mask.
6. Wear protective goggles/masks when there is a risk of emission of particles, aerosols or droplets of potential chemical or biological agents.
7. Wear protective gloves when there is a risk of skin contact with potential chemical or biological agents.

### **Student supervision**

8. Students cannot work in practical classes without the supervision of teachers, research fellows, veterinarians or veterinary nurses.
9. It is not allowed the consumption of food or drinks during any classes.
10. It is not allowed to smoke during any classes, in any close space of the FMV, or on the outer perimeters of the FMV.

### **Personal hygiene**

11. Wear hair tied up securely.

12. Do not wear a watch or bracelets whenever there is a risk of these objects becoming dirty or coming into contact with potential chemical or biological agents.
13. Avoid wearing contact lenses, especially when working in the laboratory, as they can lead to the concentration of chemical or biological agents in a very sensitive area such as the eyes.
14. Do not handle solid reagents directly with your hands.
15. Use tweezers to handle hot materials.
16. Remove any splashes or aerosols of reagents from your skin using soap and water.
17. Be aware of the risks involved in handling biological samples, organic liquids, cadavers or live animals.
18. Be aware of the risks of handling potentially toxic chemical agents and drugs before using them in any task.
19. Never pipette by mouth. Always use automatic or manual pipetting systems.
20. When diluting acids, add the acid to the water while stirring carefully and never the opposite.
21. Never touch your mouth or eyes when performing bench work, dissection or with live animals.
22. Never leave reagent bottles or bottles containing biological material open after use.
23. Keep flammable reagents away from flames.
24. Wash your hands with soap and water after finishing work.

#### **Use of equipment**

25. Know the risks of handling equipment and materials that can cause damage if misused (including scalpels and knives).

#### **Organization of the workplace**

26. Always leave the classroom/ workplace as clean as possible, collaborating with **FMV's Cleaning Services**.

**There are also basic safety rules, to be applied especially by teachers, teaching support staff, veterinarians, veterinary nurses, animal health care assistants, researchers, science technicians, and administrative staff.**

27. Know the location of emergency exits.

28. Know the location and operation of fire extinguishers, first aid kits, and emergency equipment against fires (shower, eyewash, etc.).
29. Know and locate all Collective Protection Equipment (CPE): ventilation points, hoods, and others.
30. Be aware of waste classification, containerization and containers location, in accordance with FMV's Mandatory Waste Management Standards.
31. Be familiar with Occupational Health and Safety Standards and Technical Protocols.
32. Use equipment and devices only after having read and understood the respective handling and safety instructions.
33. Before performing laboratory, clinical and surgical work, read protocols carefully.
34. Read the Safety Data Sheets, which are filed and easily accessible.
35. Always keep benches clean and tidy, the floor clean and dry, and passages unobstructed.
36. Perform laboratory work standing up or on a laboratory bench in an ergonomic manner.
37. All bottles and containers containing products must be properly labelled.
38. Reagents and equipment must be properly stored in cabinets after they have been used.
39. Gas burners should only be lit when necessary and their operation should be monitored.
40. Always close containers after use.
41. Place broken or cracked glassware in the appropriate container.
42. Always carry out work involving the release of smoke, gases or vapours in the hotte.
43. After completing laboratory work, check that the water and gas taps are closed and that electrical appliances have been switched off.
44. If appropriate, dispose of the personal protective equipment (PPE) in the waste container according to the corresponding hazard classification.
45. Store the PPE properly sanitised, such as goggles or masks for gases or chemical vapours, and remove the gown.
46. Send the gown for washing regularly or as soon as it is dirty.
47. If the gown becomes soiled with a product that may pose a chemical or biological risk, notify the Service Manager so that she/he proceeds accordingly, without putting the health of potential handlers at risk.
48. Do not walk outside the workplace wearing PPE or a lab coat.
49. Avoid working alone and at unusual times when the FMV is empty or has few users.
50. Children and unauthorized persons are not allowed to enter the technical areas and



laboratories.

## **CHAPTER 7 - HANDLING AND DISPOSAL OF SHARP AND PIERCING OBJECTS**

Instruments and materials contaminated with blood, body fluids, secretions and excretions must be handled properly to avoid contamination of the skin and mucous membranes (eyes, nose and mouth) and clothing of users and to prevent the transmission of microorganisms to people, animals and the environment.

All reusable instruments must follow a reuse protocol and must be checked to ensure that they have been properly cleaned and disinfected or sterilized.

Users are responsible for ensuring that disposable instruments and materials are effectively disposed of in appropriate containers.

### **How to dispose of needles and other types of sharp or piercing material**

Care must be particularly rigorous when handling, cleaning, transporting and disposing of potentially contaminated or non-contaminated sharp or piercing material. These materials include needles, hypodermic syringes, scalpel blades, glass slides and coverslips, scissors, Pasteur pipettes, haematocrit tubes and broken glass.

### **The following biosafety rules must be respected:**

1. Sharp and piercing objects must be placed in special containers with lids, resistant to puncture, which must be filled only  $\frac{3}{4}$  full and which will be treated as biological waste.
2. The use of needles and syringes or other piercing objects must be restricted and only when there is no alternative.
3. Sharp objects must always be visible during use and must not be abandoned.
4. Used syringes, with or without a needle incorporated, must not be broken or bent after use, and must be discarded immediately without further handling after use.
5. Broken glass must not be handled by hand, but must be swept up using a dustpan and broom, or collected with tweezers.

## CHAPTER 8 - PERSONAL PROTECTIVE EQUIPMENT (PPE)

PPE refers to items for individual use intended to prevent dirt, contamination of clothing and exposure of the skin and mucous membranes to chemical or biological agents, minimizing risks and maximizing biosafety. Regarding biosafety, PPE is the last barrier between the dangerous agent and the individual.

PPE includes work clothing (gowns, overalls, pyjamas, gloves, rubber boots, aprons, masks of various types, etc.). Each Responsible for laboratory, VTH Unit or extramural practical activities defines which PPE is necessary for students and professionals.

When choosing PPE, the parts of the body to be protected are:

1. Head protection
2. Eye and face protection
3. Hearing protection
4. Respiratory protection
5. Trunk protection
6. Upper limb protection
7. Lower limb protection
8. Full body protection.

### **Types of PPE and general rules for the use of gowns**

The use of gowns is mandatory whenever there is a risk of dirt, biological contamination or chemical spillage. The gown must meet the following requirements:

1. It must be the appropriate size for the user and in perfect condition.
2. It must be washed regularly.
3. It must be stored in lockers and not shared with other clothing.
4. In the case of teaching and non-teaching staff gowns, after use they must be placed in appropriate containers and delivered to and collected from the laundry.
5. Students will be responsible for washing their gowns and will receive training to avoid contamination of other clothing.

### **Disposable gowns**

It is mandatory to use disposable gowns whenever there is a risk of biological or chemical contamination.

The use of disposable gowns must meet the following requirements:

1. They must be the right size for the user and must be in perfect condition.
2. Their use is compulsive at the Isolation and Biological Containment Unit (BICU) of the VTH.
3. After use, they must be deposited in an appropriate container (Group III Waste).

### **Coveralls**

The coveralls are used in the same way as the gown, that is, whenever there is a risk of dirt, biological contamination or chemical spillage. The requirements are the same as for the gown.

### **Hospital or surgical pyjamas**

Hospital tasks, including in operating rooms, require the use of pyjamas (tunic and trousers set) to prevent the risk of dirt, biological contamination or chemical spillage, but also to protect sick animals. The requirements are the same as for the gown.

The washing of gowns, coveralls and pyjamas, as well as other clothing of the uniform of FMV teaching and non-teaching staff, is done on the premises in industrial machines at high temperatures. The laundry staff received training from the FMV Technical Services and Maintenance Office and the Occupational Health and Safety Unit.

### **Gloves**

The use of disposable nitrile or surgical gloves is mandatory whenever there is a risk of biological or chemical contamination. Their use must comply with the following requirements:

1. They must be the right size for the user and in perfect condition.
2. In the event of perforation or other damage, they must be removed and deposited in a suitable container (Group III Waste).
3. Hands must be washed and dried, and new gloves put on.
4. In the event of any irritant and/or allergic skin reaction being observed, the gloves must be removed and the Responsible of the Service must be informed.

5. After use, they must be deposited in a suitable container (Group III Waste).

### **Footwear**

The use of rubber boots is mandatory whenever there is a risk of intense dirt, including biological contamination or chemical spillage on the footwear (e.g. dissection classes in Anatomy or extramural practical classes in abattoirs).

The use of boots with steel toes is reserved for employees working in the necropsy room (rubber boots with steel toes) and with food animals (leather boots with steel toes).

Their use must comply with the following requirements:

1. They must be the right size for the user and in perfect condition.
2. They must be washed regularly using the appropriate equipment.
3. They must be stored in lockers, in plastic bags, avoiding contact with other clothing.

Teachers, veterinarians, veterinary nurses, and animal health care assistants of the VTH must wear footwear easy to wash and disinfect, for example crocs.

### **Aprons**

The use of an apron over the coat, overalls or pyjamas is mandatory whenever there is a risk of intense soiling with organic liquids, risk of dispersion of particles, droplets or aerosols, in addition to the existence of a risk of biological contamination, such as in the necropsy room.

Their use must comply with the following requirements:

1. They must be the right size for the user, with a length that must exceed that of the coat it covers.
2. They must be correctly placed, and must be in perfect condition.
3. The use of disposable aprons may be recommended in particular situations, when the risk of soiling is medium, and should be replaced as soon as their integrity is compromised.

### **Masks**

#### **Disposable masks**

The use of disposable masks is mandatory whenever there is a risk of biological or chemical contamination. Their use must comply with the following requirements:

1. They must be correctly fitted and in perfect condition.

2. The mask appropriate to the hazard/risk of the situation in question must be used.
3. They must be replaced if any damage is observed and may be reused depending on the situation.
4. After they are no longer usable, they must be deposited in an appropriate container.

### **Reusable masks**

For multiple tasks, the use of reusable masks with replaceable filters is recommended, both full face masks and half masks.

### **Caps**

When there is a risk of food contamination, for instance practical classes of Technology of Animal Products, or a risk of contamination of the individual, including hair, disposable caps should be used.

### **Glasses and/or masks with visor**

The use of glasses or a mask with a visor is mandatory whenever there is a risk of dispersion of particles of irritating chemicals or infectious material to the ocular mucosa.

## **CHAPTER 9 - COLLECTIVE PROTECTION EQUIPMENT (CPE)**

CPE is any equipment designed to protect all its users from one or more risks that may threaten their health or safety at work. It may be used for a space (e.g. ventilation systems) or a user (e.g. eyewash station). Emergency showers are also part of the CPE.

At FMV there are several pieces of collective protection equipment, such as:

1. Forced ventilation systems in several laboratories.
2. Air conditioning equipment: heating, cooling.
3. Hottes with forced ventilation in all laboratories where chemical agents are handled.
4. Biological Safety Cabinets.
5. Emergency showers in all laboratories where chemicals or biological agents are handled.
6. Eyewash stations in all laboratories where chemicals or biological agents are handled.
7. Hazardous waste containers.

8. Fire extinguishers and other first-response fire extinguishing equipment.
9. Gas and water shut-off systems.

## **CHAPTER 10 - HAND WASHING**

Whenever possible, suitable gloves should be worn when handling materials that present a biological or chemical risk. However, this does not eliminate the need for laboratory users to wash their hands regularly and correctly.

Hands should always be washed after working with animals, with materials that present a biological or chemical risk, and before leaving the laboratory, whether for a meal, or another activity.

In most cases, washing hands thoroughly with soap and water is sufficient to decontaminate them, but in high-risk situations the use of germicidal soaps is recommended. Hands should be completely covered in soap suds and scrubbed for at least 10 seconds, rinsed with clean water and dried using clean paper towels. If available, hot-air hand dryers should be used. The duration of the hand-washing procedure should take between 40 and 60 seconds.

In laboratories or workrooms where hands are frequently contaminated, even when wearing gloves, it is recommended that taps be operated with the foot or elbow. If this is not possible, a paper towel should be used to turn off the tap to avoid re-contaminating washed hands. Appropriate signs indicating how to wash hands are available in bathrooms, changing rooms and in all laboratories and rooms where it is considered particularly important to wash hands thoroughly.

## **CHAPTER 11 - WASTE MANAGEMENT AND DISPOSAL**

The regular activities of FMV generate biological waste on a daily basis, which are disposed of in such a way as to ensure that there is no contamination of the environment and that the handlers of this waste do not risk of contamination.

Waste produced in laboratory activities, in animal dissection and necropsy rooms, and at the



VTH that may constitute biological risks is considered equivalent to what is defined as hospital waste.

Current legislation assigns the responsibility for its disposal to the waste producer.

FMV has a **Hazardous Waste Management Plan**, which details and clarifies points that will be mentioned here in a summarized manner. The Manual is based on the classification of waste resulting from human medical care as a guiding principle.

FMV runs a system for the classification, sorting, collection, transportation, storage, treatment, recovery and disposal of solid and liquid hazardous hospital waste to comply with current legislation. Detailed information on the management of solid and liquid waste is available in the Manual for Laboratory Technical Procedures - Chemical and Biological Agents, the Standards for the Classification of Waste in Veterinary Medicine, and the Manual for the Integrated Management of Hospital Waste, Special Hazardous Waste and Non-Hazardous Waste.

The Waste Management Plan was made known to all those involved in the teaching process, including students, as well as in research and service provision activities. The information considered most relevant for quick consultation by all interested parties has been extracted from the documents referred to in this summary. The Waste Management Plan aims to:

1. Reduce waste production at source.
2. Ensure safe handling of waste by employees responsible for its removal, e.g. prevent and minimize hazards and risks.
3. Use the best waste disposal process available (sort and package properly).
4. Comply with the regulations.

The types of waste available, according to the Legal Dispatch nº 242/1996 of the Ministry of Health, are as follows:

**Group I** – waste equivalent to urban waste not requiring any specific treatment (paper, cardboard, plastic, stationery, etc.).

**Group II** – non-hazardous hospital waste that can be compared to urban waste not subject to specific treatments (paper towels not soiled with organic fluids).

**Group III** – hospital waste with biological risk (materials contaminated with blood and other organic fluids, unidentifiable body parts).

**Group IV** – specific hospital waste that requires mandatory incineration (needles, catheters, invasive materials, chemicals, identifiable body parts, placentas, cadavers of experimental animals, cadavers used in dissection and necropsy classes, cytostatics and all materials used in the handling and administration of drugs).

The FMV Integrated Management Plan for Hospital and Special Hazardous Waste was adapted from the legislation, and tables with the classifications of hazardous waste produced at the Faculty are available in all services.

At FMV, the waste that requires special treatment is the following:

1. Hazardous Hospital Waste of Groups III and IV.
2. Special Hospital Waste - cytostatic medications.
3. Hospital Waste Equivalent to Urban Waste.
4. By-products of animal carcasses not included in the food chain.
5. Liquid Chemical Hospital Waste.
6. Ferrous metal waste.
7. Electrical, electronic and wood material.
8. Light bulbs, and batteries.
9. Printer and photocopier ink cartridges.
10. Glass, packaging, paper and cardboard.

The Hazardous Waste Management Plan considers, with the necessary adaptations, the management rules foreseen for all stages of the process: sorting, packaging, transport, storage, treatment, recovery and disposal (final destination). Sorting is the key to minimize the impact of waste, contributing for the protection of public and environment health. The sorting/packaging of the different types of waste is done at the source of production, so they can be easily identified.

### **Containers**

There are two types of containers in use at FMV: single-use containers and reusable, multiple-use containers.

Multiple-use containers are lined with plastic bags that comply with the specifications of current legislation:

1. Black plastic bags, for Group I and II waste, to be treated as urban waste.
2. White plastic bags for Group III waste (this group includes cattery litter).
3. Red plastic bags for Group IV waste.

The containers also follow colour codes:

4. Black containers for Group I and II waste.
5. Yellow containers with a red lid for Group III waste.
6. Red or black containers with a red lid, with 30 and 60 litres for Group IV waste.
7. 240 litre containers for collecting corpses.

There are also:

8. Yellow containers for sharp objects (single use);
9. Containers (jerrycans) for liquid waste.

### **Waste collection and storage**

Employees responsible for collecting Group III and IV waste received specific training for this purpose, provided by the Technical Services and Maintenance Office, and the Occupational Health and Safety Unit. The use of PPE is mandatory when carrying out their duties.

To comply with legislation, FMV has a temporary waste warehouse, with limited and controlled access, in building G, in a location away from the circulation of students, professionals, and resident animals, with an area of 224 m<sup>2</sup>. Inside the warehouse there is a refrigeration chamber at 4°C in which the waste containers of Groups III and IV are stored until collection. The chamber was sized according to the production and frequency of waste collection/disposal, with a maximum storage period of seven days. External collection is carried out by a company certified by the competent authorities for this purpose.

### **Groups I and II**

The employees responsible for cleaning FMV collect this waste daily and placed it in rows in containers of the Lisbon City Council (CML) for collection.

Animal waste from the stables is collected by the support staff and placed in the CML

containers for collection.

### **Group III**

This waste is collected by the same employees that collect Group IV waste. Group III waste is stored in yellow containers in the space reserved for this purpose (warehouse of Building G).

### **Group IV**

Waste removal of laboratories and VTH. Waste is collected from laboratories daily or twice a day depending on production, and the containers are replaced by others of the same colour, containing a red bag. In the temporary waste storage room, the containers previously identified at the place of origin (sealed bags with the code of the production site and date) are weighed and stored in the cold room, by date, until external collection by the contracted company.

The collection of perforating containers from the laboratories is carried out by FMV employees whenever they are full to  $\frac{3}{4}$  of their capacity. The same employees ensure that they are replaced immediately. These containers are stored in the same room as the other waste until they are collected.

### **Removal of waste in the dissection and necropsy rooms**

Waste is collected at the end of dissection and necropsy practical classes in 240-litre containers, which are stored at 4° in one of the refrigerators attached to the necropsy room, until collection. This disposal complies with the flowchart of the Animal Products Disposal Plan - Products that do not enter the food chain, approved by the General Directorate for Food and Veterinary (DGAV).

### **Handling, storage and disposal of cytostatics**

The storage of cytostatic drugs requires compliance with the following rules:

1. All drugs used in chemotherapy are stored in the Pharmaceutical Services in a specific box in a refrigerator with a key. If a refrigerator is not required, the drugs are stored in a properly identified cabinet in the Pharmaceutical Services.
2. Access to these substances is restricted and is only authorized by the Responsible for Pharmaceutical Services and the veterinarian and nurses assigned to the Oncology Service.
3. Every week, the veterinarian Responsible for the Oncology Service requests the Pharmaceutical Services for the cytostatics she/he needs to administer to patients with

treatment scheduled for that week.

4. The substances that are not fully used after each treatment are stored by the veterinarian Responsible for the Oncology Service in a refrigerator specially reserved for this purpose, in the room where the cytostatics are applied, the key to which is kept by the veterinarian Responsible for the Oncology Service.

5. The Pharmaceutical Services have a list of the medicines and respective quantities that are stored, available by QVET, the veterinary hospital management software.

6. The use of Personal Protective Equipment is mandatory, namely:

- a. Nitrile gloves or, if these are not available, two pairs of latex gloves.
- b. Mask with visor.
- c. Disposable surgical cap
- d. Disposable surgical gown, or low-permeability fabric, with fitted sleeves and cuffs.

### **Mandatory procedures for the preparation of cytostatics**

The preparation of cytostatic drugs is carried out inside a class II, type B vertical laminar airflow chamber, with the aim of:

1. Ensuring effective protection of the operator concerning contact with the drug.
2. Avoiding all microbial contamination of the solution, which constitutes a great danger to sick animals, which are often immunosuppressed.

The procedures are as follows:

1. Wash hands before and after contact with the drug with soap and water, and dry thoroughly.
2. Wash hands with alcohol-based disinfectant (70%).
3. Restrict access to the drug preparation area.
4. Keep the drug marking kit labelled, and close to the preparation area.
5. Use aseptic techniques when preparing cytostatics.
6. Do not eat, drink, smoke, chew gum, apply cosmetics or store food in or near the drug preparation area.
7. Use the refrigerator where cytostatics are stored only for this purpose.
8. Place absorbent pads on the work surface.
9. Use “Luer-lok” equipment.

10. Pay attention to the pressure balance of the vials and ampoules, avoiding the release of aerosols.
11. Always open the vials and ampoules of the substances inside the laminar flow chamber.
12. Carefully aspirate the medication from the original vials with a needle and syringe, respecting the pressures, to avoid the release of aerosols and droplets on the work surface. It is used a device with a Mini-Spike® filter (Braun) for this purpose, which allows air to enter and prevents aerosols from escaping.
13. Open the vials with a needle with a hydrophobic filter to prevent the vaporization of the drug. When opening an ampoule, wrap it with gauze to prevent the release of aerosols, skin contamination and accidental cuts.
14. If it is necessary to add diluent, inject it slowly into the wall of the ampoule.
15. Discard the unused amount of drug into the vial itself.
16. Change gloves every 30 minutes of preparation.
17. Label all chemotherapy agents.
18. Clean up any liquid spills immediately.
19. Place the residues from the drug preparation inside the red single-use container for Group IV waste (mandatory incineration), which should be inside and next to the laminar flow chamber.
20. Close the waste container and place it for disposal with the appropriate label (red colour code).
21. Transport the medications to the patient application area in a leak-proof container.

The procedures during and after the administration of cytostatics must be as follows:

1. All cytostatic treatments are applied exclusively in room D1.15.
2. Access to the room is restricted, with the key being in the exclusive possession of Responsible for the Oncology Service.
3. Once the treatment is finished, the animals are kept under observation in individual cages until the absence of adverse reactions is confirmed. They are handed over directly to their owners.
4. The owners are informed by the Responsible of the Oncology Service about the precautions to be taken when handling the treated animals and their waste, including restrictions on contact with children, pregnant women, etc.



5. After administration, do not recap the needle or separate it from the syringe or infusion system.
6. Place the following in the red single-use container for Group IV waste (mandatory incineration):
  - a. All material involved in the administration of cytostatics, user by user, is placed in a sealed red plastic bag.
7. Material containing secretions, vomit and excretions from animals undergoing chemotherapy, up to 48 hours after the chemotherapy, taking care to avoid the risk of contamination through aerosols.
8. Systems containing drugs, gauze and contaminated cotton, gloves, ampoules and vials are placed in a closed and properly identified single-use container (toxic and hazardous waste) and sent for incineration (Group IV).
9. Once the containers are filled to  $\frac{3}{4}$  of their capacity, they must be placed for disposal with the appropriate label (red colour code).

### **Hazardous liquid chemical waste**

Hazardous liquid waste produced at FMV is packaged in high-density polyethylene jerrycans, with the identification of the products contained therein, the Service/Production site and dated. The jerrycans are packaged separately according to the characteristics of the waste. Once removed from the laboratories, the jerrycans are stored in the same place as solid waste.

The following are the groups of liquid chemicals used by FMV:

1. Solvents and organic solutions without halogens (e.g. acetone, methanol, ethyl alcohol, xylol, formaldehyde, etc.).
2. Solvents and organic solutions with halogens (e.g. ether, chloroform, etc.).
3. Inorganic salts and solutions with metals (e.g. iron sulphate, silver nitrate, zinc sulphate, etc.).
4. Basic solutions, acidic solutions.
5. Solutions with cyanide.
6. Solutions with chromium.
7. Solutions with dyes.

8. Solutions with ethidium bromide.

9. Solutions with mercury.

FMV has contracts with the following entities for waste removal (Table 2):

Table 2  
**Contracted entities for waste removal**

Type of waste	Entity that collects	Collection frequency
Groups I and II	Lisbon City Council	Twice a week
Group II and IV (sharps, hospital waste and animal experimentation waste)	AMBIMED	Weekly
By-products (cadavers)	ITSMarques	Weekly
Liquids (solvents, dyes, etc.)	AMBIMED	Weekly
Batteries	AMBIMED	On request
Electrical and electronic material; non-inventoried waste	AMBIMED	Fortnightly
Printer and photocopier ink cartridges	ECOPARTNER	On request, usually 1 to 2 times/year

The control of annual waste production for the purposes of registration on the platform (accountability to official entities) of the Portuguese Environment Agency (APA) is the responsibility of the FMV Technical Services and Maintenance Office.

## CHAPTER 12 – USE AND MANAGEMENT OF CADAVERS

This chapter describes the procedures for receiving, forwarding and disposing of cadavers, whether they are sent for immediate incineration or first used in practical classes in the

curricular units of Anatomy I, II and III, Pathological Anatomy I and II, Anaesthesia and Analgesia, Surgical Semiology and Operative Techniques, Pathology and Clinical of Parasitic Diseases, Pathology and Clinical of Infectious Diseases II and Reproduction and Obstetrics I and II, and only then incinerated.

The objectives of planning the cadaver circuit are:

1. Maximizing the use of cadavers available for teaching.
2. Mitigating the risks of handling potentially hazardous waste, in compliance with the legislation in force.

All cadavers of animals who died at FMV are sent for incineration<sup>3</sup>, which may or may not be immediate. The only cases in which the cadavers are not immediately sent for incineration is when they are used in practical classes (the animal owners have declared that they do not object to such use) or if a necropsy has been requested.

Requests for incineration or necropsy of cadavers of animals that died outside the FMV must be submitted by the owners or their representatives (chief veterinarians of Veterinary Medical Care Centres - CAMV) at the Reception of the VTH. Registration of cadavers at FMV are intended for incineration without a necropsy requires the completion of a specific form by the attending veterinarian of the VTH, indicating the cause of death, which allows to separate the following situations:

1. Cadaver of an animal that underwent chemotherapy less than six months ago.
2. Other cause of death, with a summary of the process that caused the death.

The cadavers of the animals indicated in 2 may be used for teaching purposes, except those whose owners have objected to this in a written statement.

The cadavers of animal victims of infectious diseases are managed by BICU and are never used for practical classes.

When the boxes indicating that chemotherapy occurred less than six months ago or that death was due to an infectious disease are marked, or if a teaching necropsy is not authorized,

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<sup>3</sup> The exception is the case of cadavers whose owners requested the services of companies authorized by DGAV to carry out individual incineration. In these cases, the cadavers are collected exclusively by the contracted companies.

the cadavers are immediately placed in 240-liter red containers and sent for incineration.

The necropsy of cadavers of animals that underwent chemotherapy less than six months ago or that death was due to an infectious disease must always be performed outside of practical classes, by the pathologists on duty, ensuring the appropriate protection to each case of pathologists and support staff.

## **CHAPTER 13 - INTERNAL EMERGENCY PLAN**

The FMV Internal Emergency Plan (PEI) is a document prepared by the FMV Technical Services and Maintenance Office that identifies situations requiring immediate and organized action by a group of people specifically trained to act in critical situations. The PEI establishes procedures for managing emergency situations, ensuring the safeguarding of human lives, the operation of the FMV, assets and the environment.

The PEI and its Annexes assemble the following aspects:

1. Identification of hazards and risks in FMV facilities.
2. Organization of Internal Security Structure – Organization Chart of the Structure.
3. Organization of Internal Security Structure – Stakeholders in the PEI (identification of employees).
4. Security Instructions (Annex I1 – General Instructions (GI), Annex I2 – Specific Instructions (PI), Annex I3 – Special Instructions (IE).
5. Meeting Points.

The measures to be taken in cases of emergency are shared with students and all professionals working in FMV.

## **CHAPTER 14 - SIGNAGE**

Signage is crucial to alert students, workers, visitors and customers to the presence of these risks in the various teaching, research and VTH facilities. The signage at FMV is abundant, placed in strategic locations, complies with regulations, uses international hazard signs, is

translated into English and plays a fundamental role in the safety of occupants in the event of an accident or natural disaster.

The FMV Technical Services and Maintenance Office, in collaboration with the responsible for all laboratories, the VTH and other learning and working areas, define the necessary signage for each space so that it is appropriate, complete, and clearly visible.

The designs to be used in safety signs are standardized in Legal Order nº 1456-A/95 of December 11 and Legal Order nº 178/2015 of June 15.

The Responsible for each Service is responsible for ensuring compliance with the established rules.

**Safety Signage** is understood as the signage related to a specific object, activity or situation, providing an indication or instruction regarding safety and health at learning/work, or both, using a sign, a colour, a light or acoustic signal, a verbal communication or a signal.

### **Safety colours**



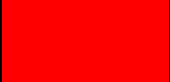









A safety colour is a colour to which a specific meaning is attributed. The safety colours are: red, blue, yellow or orange-yellow and green. Table 3 shows the meaning and applications of each of the safety colours.

Table 3  
**Meaning and applications of each of the safety colours**

Colour	Meaning and Form	Indications and specs
Red	Prohibition sign	Dangerous attitudes.
	Danger - Alarm	Stop, pause, emergency cut-off devices. Evacuation.
	Fire-fighting equipment and materials	Identification and location.
Yellow or orange-yellow	Warning sign	Attention, precaution. Verification.
Blue	Mandatory sign	Specific behaviour or actions. Obligation to use personal protective equipment.
Green	Rescue or distress sign	Doors, exits, routes, material, posts, specific locations.
	Security situation	Return to normality.

Legal Order nº 1456-A/95 of December 11 requires the use of the following colour coding (Table 4):

Table 4  
Colour coding

COLOURS	FORMS	MEANING	COLOUR PICTOGRAM
		Fire alarm and firefighting equipment	BRANCO
		Prohibition	PRETO
		Danger (Sign)	PRETO
		Information	BRANCO
		Obligation	BRANCO
		Evacuation routes and emergency equipment	BRANCO

## CHAPTER 16 - TRAINING IN BIOSAFETY, HEALTH, AND SECURITY

Every year, with the arrival of new students, the FMV Technical Services and Maintenance Office provides 5 hours of lecturing on the guidelines, standards and regulations for promoting the biosafety, health, and security of students against the risks of exposure to physical, chemical and biological agents within the scope of the curricular units

### Complementary Activities III and IV:

1. Prevention of exposure to biological agents (2 hours);
2. Prevention of exposure to chemicals and basic safety rules in laboratories and other FMV services (3 hours);
3. Training actions are also provided on:
  - a. Fire safety instructions (Emergency PEI);
  - b. Management of waste production at FMV for employees in general, with variable workload according to needs;



c. Basic rules for promoting health and well-being in the place of learning.

The FMV Technical Services and Maintenance Office annually supports students of the **Veterinary Public Health** curricular unit in the development of written essays about Waste Management in veterinary hospitals and clinics, a subject covered in the programme of this curricular unit.

The **Student Guide** also provides guidelines on the subjects of biosafety, health, and security rules to be followed by the students. Freshmen are given a brief document with the basic rules included in the Manual of Procedures for Biosafety, Health, and Security.

The Heads of each Laboratory are responsible for providing training to new postgraduate students, trainees, researchers, residents, etc., on the rules for using the spaces, equipment and materials, as well as how to deal with waste in order to ensure its proper removal.

The FMV Technical Services and Maintenance Office periodically organizes training activities for teachers and non-teaching staff, on general and specific topics, whenever it deems it necessary to refresh knowledge, adopt new rules due to legislative changes, or to better adapt behaviours to the spaces and specific needs of the FMV.

## CHAPTER 17 - USEFUL CONTACTS

Table 5 shows the numbers of the Emergency Agencies, authorities responsible for search, rescue, assistance, protection and safety of people and property, members of the Technical Services and Maintenance Office team, and the Occupational Health and Safety Unit.

Table 5  
**Emergency Contacts**

DESIGNATION		Telephone Nº
	SOS – NATIONAL HELPLINE	112
	FIRE DEPARTMENT (AJUDA)	21 093 9949
	POISON INFORMATION CENTER	800 250 250
	CIVIL PROTECTION	21 817 3100
	FORESTRY POLICE	808 202 036
	26 <sup>th</sup> POLICE SQUAD OF BELÉM	21 361 9626
	SAFE UNIVERSITY - 4 <sup>th</sup> Police Division	21 361 9600
	NATIONAL GUARD (AJUDA)	21 361 2000
	HOSPITAL SÃO FRANCISCO XAVIER	21 043 1000
	VTH PHARMACEUTICAL SERVICES	21 365 2892 (extension 431536)
SECURITY OFFICER		21 365 2808 (extension 431009)
TECHNICAL SERVICES AND MAINTENANCE OFFICE: Eng.º José Silvestre		TM: 965577932
Maintenance Technician (Electricity)		
Maintenance Technician (Water)		
Maintenance Technician (Waste)		TM: 969 195 722
OCCUPATIONAL HEALTH AND SAFETY UNIT: Dra. Carla Simão		TM: 968 200 524
In case of interference risks:		
	WATER (ruptures in public roads)	800 201 600
	ELECTRICITY (failures)	800 506 506
	GAS (failures)	800 200 343



## APPENDIX I

**Responsible for the units of the Veterinary Teaching Hospital, Services, Laboratories and Animal Facilities for the purposes of promoting biosafety, health and security in the learning and work place**

<b>1. VETERINARY TEACHING HOSPITAL AND OTHER CLINICAL SERVICES</b>	<b>Responsible</b>
1.1 Companion Animal Hospital	António Ferreira
1.2 Equine Hospital	Luís Lamas
1.3 Food- Animals Hospital	George Stilwell
1.4 Diagnostic Centre	Luísa Mateus
1.5 Pharmaceutical Services	Berta Braz
1.6 Blood Bank	Teresa V. Brito
1.7 Biological Isolation and Containment Unit	Solange Gil
1.8 Reproduction Centre	Luís Costa
1.9 Centre for Applied Surgery	Lisa Mestrinho
1.10 Centre for Imaging and Minimally Invasive Surgery	Luís Lamas
<b>2. SUPPORT LABORATORIES FOR THE VETERINARY TEACHING HOSPITAL</b>	
2.1 Clinical analysis	José H.D. Correia
2.2 Pathological Anatomy	Jorge Correia
2.3 Pharmacology and Toxicology	Berta Braz
2.4 Bacteriology	Manuela Oliveira
2.5 Mycology	Manuela Oliveira
2.6 Parasitology and Parasitic Diseases	Isabel Fonseca
2.7 Virology and Immunology	Solange Gil
2.8 Endocrinology	Luísa Mateus
2.9 Animal Reproduction (LabRepA)	Luís Costa

<b>3. TEACHING LABORATORIES</b>	
3.1 Biochemistry	José Prates
3.2 Histology	Mário Pinho
3.3 Plant Biology, Agriculture and Environment	Maria João Fradinho
3.4 Physiology	Graça Dias
3.5 Microbiology and Immunology	Luís Tavares
3.6 Parasitology and Parasitic Diseases	Luís Carvalho
3.7 Pathology and Pathological Anatomy	Jorge Correia
3.8 Nutrition and Animal Feed	Rui Bessa
3.9 Medical Propaedeutic	Teresa V. Brito
3.10 Pharmacology	Berta Braz
3.11 Infectious Diseases	Virgílio Almeida
3.12 Obstetrics and Animal Reproduction	Luís Costa
3.13 Toxicology	Anabela Moreira
3.14 General Technology and Technology of Animal Products	Maria J. Fraqueza
<b>4. SALAS DE DISSEÇÃO E DE NECRÓPSIA</b>	
4.1 Necropsy rooms	Jorge Correia
4.2 Dissection rooms	Graça Pires
<b>5. RESEARCH LABORATORIES (CIISA)</b>	
5.1 Animal Genetic Resources	Catarina Ginja
5.2 Animal Production and Nutrition	Rui Bessa
5.3 Antibiotic Resistance	Constança Pomba
5.4 Food Technology and Safety	Maria João Fraqueza
5.5 Glycobiology and Structural Enzimology	Victor Alves
5.6 Infectious Diseases	Fernando Boinas
5.7 Microbiology and Immunology	Luís Tavares
5.8 Parasitology and Parasitic Diseases	Isabel Fonseca
5.9 Pathology	Jorge Correia
5.10 Quality of Animal Products	José Prates

5.11 Reproduction and Development	Luís Costa
5.12 Tropical Animal Health and Production	Alexandre Leitão
<b>6. EXTRAMURAL CLASSES</b>	
6.1 Food Animal farms	George Stilwell
6.2 Slaughterhouses, Cutting Plants, Food Industries, Fishing Docks, Catering Units, Butchers, Markets and Supermarkets	Miguel Cardo
<b>7. ANIMAL PREMISES</b>	
7.1 Cattle	Catarina Torres
7.2 Equine	Maria João Fradinho
7.3 Bioterium	Berta Braz
7.4 Metabolic Pavilion	Rui Bessa
7.3 Animal Health	Fernando Boinas
<b>8. TECHNICAL SERVICES AND MAINTENANCE OFFICE</b>	
8.1 Technical Services and Maintenance	José Silvestre
8.2 Occupational Health and Safety Unit	Carla Simão

## APPENDIX II

### **General instructions for action in the event of accidents that endanger the physical integrity of the building's occupants and the building itself**

In the event of a serious emergency that endangers the physical integrity of its occupants and/or the building, such as a fire, explosion or release of dangerous gas, the building must be evacuated. In this case, you must:

1. Activate the alarm using the push buttons if the alarm has not been activated automatically.
2. Call the Fire Department and/or the emergency national helpline (112).
3. Alert the FMV Technical Services and Maintenance Office. They will act following the Internal Emergency Plan.
4. Evacuate the premises or building if applicable.
5. Follow the Internal Emergency Plan evacuation procedures.



## APPENDIX III

### **General instructions for action in the event of an accident involving chemical agents**

Concerning accidents involving chemical products, rapid intervention at the scene of the accident is often essential, even before specialist support arrives.

#### **In the event of spills involving hazardous substances:**

1. Respond using appropriate Personal Protective Equipment.
2. Remove sources of ignition and avoid contact.
3. Contain the spread of the spill using absorbents and barriers.
4. Try to neutralise the spilled substance.
5. In the case of a corrosive product, immediately wash the affected areas with water.
6. Prevent the liquid from going down the drain or, if this is not possible, inform the Technical Services and Maintenance Office Manager.
7. Place waste and used absorbents in separate and identified containers.
8. Check the Safety Instructions of the Internal Emergency Plan.

#### **In the event of a gas or vapor release:**

1. Eliminate the leak by closing the source valves.
2. Extinguish any flames that are burning.
3. Do not turn switches or circuit breakers on or off.
4. Ventilate the area by opening windows.
5. Evacuate the area to a ventilated area.
6. Immediately notify the Responsible for the Laboratory or Service.
7. Also notify the Technical Services and Maintenance Office Manager.

#### **In the event of a cytostatic spill on the worker(s) or animal being treated:**

1. Restrict the area of the spill with compresses and, after the spill has been absorbed, with a towel for cleaning.
2. Immediately remove protective clothing if it is contaminated by placing it in the laundry bag, together with the towel.

3. Wash the affected area of skin thoroughly with soap and water or saline solution.
4. If eye exposure has occurred, immediately rinse the affected eye thoroughly with running water or saline solution for approximately 15 minutes and consult an ophthalmologist as soon as possible.
5. Place all materials used to absorb the spill in the red bags for Group IV waste and place them in the red single-use container for Group IV waste (mandatory incineration).

You must also:

1. Record all procedures carried out to control the drug spill, including identification of the location of the spill;
2. Notify the animal's owner and the Hospital Director of the accident.

### General instructions for action in the event of a fire

All users of the Laboratory must be fully aware of the procedures recommended by the Internal Emergency Plan (PEI), the location and operation of fire-fighting equipment and how to use them in an emergency.

All laboratories are equipped with:

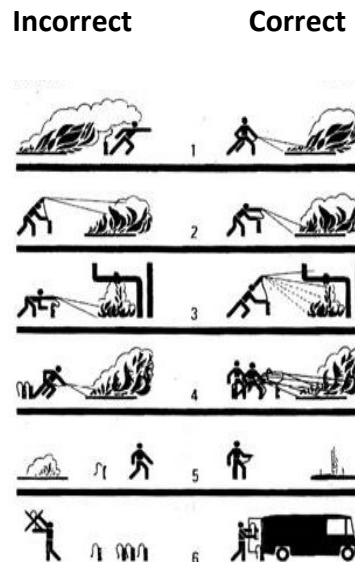
1. Suitable fire extinguishers.
2. Buckets of sand.
3. Fire blankets.

### What to do in the event of a fire?

1. Stay calm.
2. Give the alert by pressing the nearest alarm button, asking for help and providing quick and efficient assistance, first helping people and then extinguishing the fire.
3. All people not involved in fighting the fire must be removed from the area.
4. Never put yourself in danger.
5. Close the main gas taps.
6. Keep flammable materials and combustible solvents away.
7. Turn off the electrical panel.
8. In all fires, fight against the natural tendency of the fire: apply extinguishing agents from the bottom up (Figure 2).
9. Use appropriate extinguishing agents:
  - a. If the fire involves oils, flammable liquids or electricity, do not use water.
  - b. Fire extinguishers have a label attached indicating the class of fire for which they are intended (Table 5).
  - c. If possible, use an extinguishing blanket to cover the burning object and remove other combustible materials that are nearby.
  - d. In most laboratory fires, carbon dioxide extinguishers are sufficient. They do not leave residue and do not cause material damage to instruments.

- e. Metal fires should only be extinguished with fire-fighting sand.
- f. Fires on clothing should be extinguished in the shower or with fire blankets.

Figure 2



- 10. If toxic gases are likely to form, wear suitable masks.
- 11. If flames catch on your clothes, stop immediately, throw yourself on the ground and roll around (this will put out the flames).
- 12. People with burning clothes tend to act uncontrollably. If necessary, take them down and extinguish the flames with fire blankets or towels.
- 13. If you are unable to put out the fire, or if you notice that there is a lot of smoke, leave the area, crouching down as you walk to avoid breathing the smoke.
- 14. If you are trapped in a room full of smoke:
  - a. Stay close to the ground where the air is more breathable.
  - b. If possible, open a door or window.
  - c. Try to signal your presence.
  - d. When leaving the area, close all windows and doors without locking them.
  - e. Notify the Technical Services and Maintenance Office Manager or the Fire Department.
  - f. Follow the procedures recommended by the Internal Emergency Plan for fire and evacuation situations
- 15. Once the fire is out, thoroughly ventilating the area.

Different types of fire extinguishers are used for different types of fires. Depending on the fuel of the fire, there are specific extinguishers that are indicated to put out the flames. For this reason, it is important to know the different fire classes (Table 6):

Table 6  
Fire classes

Fire Classes	Extinguishing method	Extinguishing agent
A - Result of the combustion of solid materials, generally of an organic nature, paper, wood, straw, textiles, coal, etc.	Inhibition Asphyxiation Cooling	Water, foam, ABC chemical powder, suitable blanket
B - Result of the combustion of hydrocarbons and flammable liquids - ethers, alcohols, acetone, varnishes, oils, waxes, resins, paraffin.	Inhibition Asphyxiation Cooling	Water spray, foam, BC and ABC chemical powder, CO2
C - Result of the combustion of gases or liquefied gases under pressure - methane, propane, butane, acetylene (ethyne), electrical and electronic material.	Inhibition Asphyxiation	BC and ABC chemical powder, CO2
D - Result of pulverized metals and their alloys - sodium, potassium, magnesium, uranium, plutonium	Asphyxiation Cooling	Suitable chemical powder

## APPENDIX V

### **General instructions for action in the event of an elevator stopping**

If the elevator you are using suddenly stops:

1. Do not panic.
2. Activate the alarm in the cabin.
3. Try to signal your presence by knocking on the walls and calling loudly.
4. Help to reassure people who have more difficulty maintaining emotional control.
5. Wait for help.

## APPENDIX VI

### General instructions for action in the event of earthquakes/seaquakes

#### During an earthquake:

1. Stay calm.
2. Do not rush to the exits. Stairs and doors are places that can easily become filled with debris and become blocked.
3. Stay where you are, if possible sheltered next to a pillar or under a doorway, to avoid objects falling on you.
4. Stay away from glass, especially if it is large.
5. Help people who have difficulty moving.
6. Help reassure people who may be close to you who have difficulty staying calm.

#### After the earthquake has stopped:

1. Follow the instructions of the Internal Emergency Plan Coordinator.
2. If you receive instructions to evacuate the area where you are and you do not have any assigned duties, follow the instructions of the evacuation team.
3. Do not run.
4. Do not use elevators.
5. Provide any assistance you can if you find someone in difficulty.
6. When outdoors, stay away from buildings and tall structures and go to the local assembly area indicated to you, and wait, as long as it is safe, for instructions from the Internal Emergency Plan Coordinator.



## APPENDIX VII

### First aid procedures

The general principles to follow in the event of serious or potentially serious accidents are as follows:

1. Call for help immediately.
2. If you have to start first aid procedures, some instructions are given below for the most common accident cases.
3. In the case of **poisoning**, get instructions from the Poison Information Centre so that immediate measures can be applied.
4. **Large cuts** should be treated by a doctor. In the meantime, apply an emergency bandage (do not use cotton).
5. Cool **small burns** with ice water. Do not apply oils, ointments, fats or powders.
6. **Large burns**: Seek immediate medical emergency at the national helpline (112).
7. Body areas affected by **caustics**: wash immediately with plenty of water, for at least 10-15 minutes. In the case of alkaline agents, wash with 1% acetic acid. In the case of acidic agents, wash with 1% sodium bicarbonate. Consult a doctor.
8. **Eyes**: protect the unaffected eye. Wash thoroughly in the eyewash station. Consult a doctor urgently.
9. **Dangerous inhalation**: Immediately move the injured person to fresh air, ensuring complete rest and, if necessary, keeping them warm, until the doctor arrives.
10. In the event of **chemical products spilling** on clothing, remove clothing immediately to avoid skin absorption. Consult a doctor.
11. In the event of **swallowing poisonous substances**, force the injured person to drink very salty water and induce vomiting by touching the epiglottis area (putting your fingers in the mouth). This measure should only be used if the injured person is conscious.
12. **Do not induce vomiting in the case of solvents, acids or bases**. Call the medical emergency at the national helpline (112).

## APPENDIX VIII

### Reporting accidents

All accidents that occur on FMV premises or during trips made for teaching or faculty purposes by teachers, students and non-teaching staff and that require hospital admission must be immediately reported to the President of FMV or to whoever she/he delegates for this purpose.

**In the case of students**, accidents are regulated by the insurance contract/policy signed following a public tender with national companies, following the following:

1. The contract is intended to provide school insurance services, intended to cover accidents suffered by students during academic activities.
2. In the event of an accident, the student, or whoever represents her/him, must complete a claim form, which is validated by FMV, in this case represented by its President.
3. The student may go to any hospital to receive healthcare, subject to the coverage table provided for in the contract.

**In the event of an accident involving state employees** (teaching and non-teaching staff), the following procedures must be followed:

1. The employee, either personally or through a third party, must report the accident in writing or verbally within two working days to her/his superior, unless the latter witnessed the accident.
2. The superior must report the accident on a specific form to the President of the FMV, within one working day from the date on which he/she became aware of the accident.
3. The President of the FMV will classify the accident within a maximum period of thirty consecutive days from the date on which he/she became aware of it.
4. When going to the hospital, the injured party must be accompanied by the “Medical Follow-up Report” provided by the FMV.
5. The health service (in the case of the FMV, it is the Hospital São Francisco Xavier) that aided the injured party must report the incident to the FMV within one day in the most expeditious manner.

The FMV must report the accident:

1. To the Instituto para a *Higiene e Segurança no Trabalho* (Institute for Health and Safety at Work) within twenty-four hours if the accident is fatal or if a particularly serious situation is evident.
2. To the Public Health Delegate of the Area.
3. To the Statistics Department of the *Ministério do Emprego e da Segurança* (Social Ministry of Employment and Social Security).
4. To the *Instituto de Proteção e Assistência na Doença* (ADSE) (Institute for Disease Protection and Assistance) within six working days of becoming aware of the incident.
5. To the *Caixa Geral de Aposentações* (General Pensions Fund) after the injured party has been discharged and if it is recognised that he or she has acquired a permanent disability or if the temporary disability has lasted more than 36 months.
6. The President of the FMV must report the accident to the FMV's Occupational Health and Safety Unit, to ensure that it is recorded and that corrective measures are taken, when necessary, and in the case of an accident resulting in disability lasting more than three days, that the respective report is drawn up.

These procedures are following Decree-Law nº. 503/99, which establishes the legal framework for accidents at work and occupational diseases occurring in Public Administration.

**In the event of an accident involving ACIVET employees with a private employment relationship**, coverage in the event of an accident is guaranteed by the mandatory Personal Accident Insurance. The procedure is as follows:

1. In the event of an accident, the employee or services must complete a claim form, validated by the employer.
2. They may then go to any hospital to receive healthcare, or to medical clinics with a contract with the insurer (according to the terms of the policy).
3. If they are considered temporarily incapable of working, they must go on sick leave, with the payment of remuneration in this situation being due to Social Security.
4. This situation can only be changed through the medical discharge prescribed by the

attending physician, and the worker must report to work on the date of discharge and resume her/his activity.

## **APPENDIX IX**

**Signage to be displayed in laboratories and general emergency signs**



## PROCEDIMENTOS DE SEGURANÇA EM LABORATÓRIO *SAFETY RULES IN THE LABORATORY*

**A NOSSA SEGURANÇA DEPENDE DA COLABORAÇÃO DE TODOS!**

*OUR SAFETY DEPENDS ON EVERYONE'S COOPERATION*

**CONTAMOS CONSIGO PARA:**

*WE COUNT ON YOU TO:*



USAR A BATA EXCLUSIVAMENTE NO LABORATÓRIO. NUNCA EM INSTALAÇÕES SANITÁRIAS, REFEITÓRIOS, ESCRITÓRIOS, BIBLIOTECAS, ETC.

Wear your laboratory coat exclusively in the lab. Never use it in public toilets, cafeteria, offices or libraries.



NUNCA ABRIR PORTAS, NEM ATENDER O TELEFONE USANDO LUVAS.

Never open doors or answer the phone if wearing safety gloves.



PLANEAR SEMPRE AS SUAS ACTIVIDADES ANTES DE AS REALIZAR.

Plan your activities before start working.



NÃO FUMAR, APLICAR COSMÉTICOS OU PENTEAR OS CABELOS.

Do not smoke, never apply makeup, or comb your hair.



TENHA SEMPRE NO LABORATÓRIO UM LUGAR APROPRIADO PARA A BATA. NUNCA A DEIXE JUNTO DOS OBJETOS PESSOAIS

Always have a suitable place in the lab for the laboratory coat. Never keep it next to your belongings.



NÃO COMER, BEBER OU MASTIGAR PASTILHA ELÁSTICA.

No eating, drinking or chewing gum in the lab.



USAR LUVAS E ÓCULOS DE PROTEÇÃO SEMPRE QUE NECESSÁRIO.

Wear your Personal Protective Equipment (PPE) (mask, eye and hand protection), whenever necessary.



MANTER AS UNHAS CORTADAS. OS CABELOS COMPRIDOS DEVEM ESTAR DEVIDAMENTE AMARRADOS.

Keep your fingernails cut. Long hair has to be tied up.



USAR SEMPRE CALÇADO FECHADO.

Always wear suitable footwear in the lab. Never use sandals or slippers.



NÃO USAR ANÉIS, PULSEIRAS, RELÓGIOS E FIOS OU COLARES LONGOS DURANTE AS ACTIVIDADES DE LABORATÓRIO.

Do not wear rings, bracelets or long necklaces during laboratory activities.



LAVAR AS MÃOS, ANTES E APÓS A ANÁLISE. É UMA MEDIDA EXTREMAMENTE IMPORTANTE PARA EVITAR ACIDENTES E A DISSEMINAÇÃO DE CONTAMINAÇÕES.

Wash hands before and after your analysis. It is an important measure to prevent accidents and dissemination of contaminants.



NÃO COLOCAR OBJECTOS NA BOCA.

Never lick labels or put any objects in your mouth.



ZELAR SEMPRE PARA QUE NO AMBIENTE DE TRABALHO HAJA ORGANIZAÇÃO, HIGIENE E LIMPEZA.

Make sure that your workplace is organized and clean.



NÃO UTILIZAR FRIGORÍFICOS, CONGELADORES OU ESTUFAS PARA GUARDAR ALIMENTOS.

Do not use laboratory fridges, freezers or ovens to store food.

PEÇA ORIENTAÇÃO SEMPRE QUE TIVER DÚVIDAS  
PODEM EVITAR-SE ACIDENTES SE VOCÊ:  
**PERGUNTAR, OUVIR E PENSAR!**



*Always ask for guidance whenever you have doubts.*

*Accidentes may be avoided if you:*

***Ask, listen and think!***



NÃO COÇAR O NARIZ, NEM COBRIR A BOCA PARA ESPIRRAR, SE USAR LUVAS.

Do not touch your nose or cover your mouth before sneezing, if wearing safety gloves.



NÃO USAR LUVAS FORA DA ÁREA DE TRABALHO.

Never use the same safety gloves outside your workplace.



## USO OBRIGATÓRIO DE:

Mandatory use of:



**Bata de proteção**  
Laboratory coat



**Luvas de proteção**  
Safety Gloves\*



**Máscara de proteção**  
Safety mask\*



**Proteção ocular**  
Eye Protection\*

\* Depende da tarefa a realizar/Depends on the task to be performed



# INSTRUÇÕES GERAIS DE SEGURANÇA

## GENERAL SAFETY INSTRUCTIONS

Em caso de <b>EVACUAÇÃO</b> (IG1 – PEI)	In case of <b>EVACUATION</b>
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Logo que soe o alarme, deve iniciar a evacuação do edifício.	As soon as the alarm sounds, you must begin evacuating the building.
Após verificar que não está mais ninguém no interior, feche as portas do local em que se encontra.	After checking that there is no one else inside, close the doors of the place you are in.
Siga as instruções de evacuação e oriente-se pelos sinais de emergência afixados ao longo dos caminhos de fuga.	Follow evacuation instructions and be guided by emergency signs posted along escape routes.
Nunca utilize os elevadores e nunca volte para trás.	Never use lifts/elevators and never go back.
Permaneça no ponto de encontro até outras indicações.	Stay at the meeting point until further notice.



# INSTRUÇÕES GERAIS DE SEGURANÇA

## GENERAL SAFETY INSTRUCTIONS

Em caso de <b>INCÊNDIO</b> (IG2 – PEI)	In case of <b>FIRE</b>
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Acione uma botoneira de alarme.	Activate the fire alarm button.
Tente extinguir o incêndio com os extintores portáteis, mas sempre acompanhado por alguém e sem correr riscos.	Try to extinguish the fire, with the portable fire extinguishers, but always be accompanied by someone and do not take risks.
Caso não seja possível extinguir o fogo, abandone o local, baixando-se enquanto caminha.	If it is not possible to extinguish the fire, leave the area, crouching down as you walk.



# INSTRUÇÕES GERAIS DE SEGURANÇA

## GENERAL SAFETY INSTRUCTIONS

Em caso de <b>SISMO</b> (IG3 – PEI)	In case of <b>EARTHQUAKE</b>
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Durante o <b>SISMO</b>	During the <b>EARTHQUAKE</b>
Afastar-se de janelas, estantes, armários e objetos pesados que possam cair.	Step away from windows, shelves, cabinets and heavy objects that could fall.
Coloque-se debaixo de uma mesa, ombreira da porta ou no canto da sala.	Place yourself under a table, doorframe, or the corner of the room.
Permaneça no edifício até terminar o sismo.	Stay in the building until the earthquake is over.
Após o <b>SISMO</b>	After the <b>EARTHQUAKE</b>
Não fume, não acenda fósforos ou isqueiros.	Do not smoke, light matches or lighters.
Em caso de réplicas, proteja-se da mesma forma que durante o sismo.	In case of replicas, protect yourself in the same way as during the earthquake.
Verifique se existem vítimas próximo de si, preste auxílio se puder e souber.	Check if there are victims near you, and aid if you can and know how.



# INSTRUÇÕES GERAIS DE SEGURANÇA

## GENERAL SAFETY INSTRUCTIONS

<b>Em caso de DERRAME</b> <b>(IG5 – PEI)</b>	<b>In case of CHEMICAL SPILLING</b>
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Se possível, limite a fuga utilizando os meios de contenção disponíveis na zona.	If possible, stop the leak using containment measures available in the area.
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# INSTRUÇÕES GERAIS DE SEGURANÇA

## GENERAL SAFETY INSTRUCTIONS

Em caso de <b>INUNDAÇÃO</b> (IG5 – PEI)	In case of <b>FLOODING</b>
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Se possível, efetue o corte geral da água.	If possible, cut off the water supply.
Se possível, efetue o corte geral de energia na zona.	If possible, cut off the power to the area.



# INSTRUÇÕES GERAIS DE SEGURANÇA

## GENERAL SAFETY INSTRUCTIONS

Em caso de FUGA DE GÁS (IG5 – PEI)	In case of GAS LEAKAGE
---------------------------------------	------------------------



Se possível feche a válvula de corte de gás.	If possible, close the gas shut-off valve.
Se possível, areje o local, abrindo portas e janelas.	If possible, air the place by opening doors and windows.
Não fume, não acenda fósforos ou isqueiros.	Do not smoke, light matches or lighters.
Não ligue nem desligue interruptores.	Do not turn switches on or off.





# INSTRUÇÕES GERAIS DE SEGURANÇA

## GENERAL SAFETY INSTRUCTIONS

<b>Em caso de EMERGÊNCIA MÉDICA (IG5 – PEI)</b>	<b>In case of MEDICAL EMERGENCY</b>
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Primeiro telefone para a Portaria (extensão nº <b>431009</b> ).	First telephone to the Security Officer (phone extension nº <b>431009</b> ).
Diga que se trata de uma emergência médica, se a vítima está ou não consciente e informe o local exato da ocorrência.	State that it is a medical emergency, whether or not the victim is conscious, and provide the exact location of the incident.
Se necessário, telefone diretamente para o <b>112</b> e responda a todas as questões.	If necessary, call <b>112</b> directly and answer all questions.



# Appendix 7

Competencies of the masters in  
Veterinary Medicine

## **DAY ONE COMPETENCIES COMPETENCES FOR THE INTEGRATED MASTER IN VETERINARY MEDICINE (IMVM) AND ITS' EQUIVALENCE TO THOSE OF EAEVE**

Competences of the graduated students of Veterinary Medicine from the Faculty of Veterinary Medicine – Lisbon University (FMV-ULisboa)

FMV, through its Integrated Master in Veterinary Medicine (IMVM), has the goal to provide high quality education in veterinary medicine, according with international standards, based on scientific, ethical and sustainability principles, and to give its graduates the necessary skills to perform, in the best way possible, the veterinary profession in its different subjects, in order to address the needs and challenges of society. This education embraces all the fields in Veterinary Sciences mentioned in Directive 2005/36/EC and the Day One Skills of the European System of Evaluation of Veterinary Training (ESEVT), approved June 8<sup>th</sup>, 2023, and is based in scientific and evidence-based knowledge, providing students with learning opportunities and creating study habits that prevail throughout their lives.

The IMVM of FMV-ULisboa has the following general and specific goals:

### **1. General goals:**

- a) To apply knowledge, understanding and problem-solving abilities, even in face of new situations, in broad and multidisciplinary contexts, in the field of the Veterinary Sciences.
- b) To integrate knowledge, to deal with complex questions, propose solutions, make judgement in case of limited or incomplete information, including reflections over the implications and ethical and social responsibilities secondary to those solutions or judgements.
- c) To be able to communicate their conclusions and findings in a clear and objective way.
- d) To develop skills that allow a lifelong autonomous learning.

### **2. Specific goals:**

- a) To ensure animals' health, welfare and wellbeing;
- b) To protect Humans against zoonotic diseases;
- c) To contribute to a sustainable, efficient and competitive livestock production, environmentally friendly;
- d) To ensure the quality and safety of products from animal origin;
- e) To join multidisciplinary approaches in public policies and global challenges involving the Human, Animal and Environmental views, within the concept of "One Health".

In order to guarantee that these goals are fulfilled, the Scientific Council of FMV, first approved on May 10<sup>th</sup> 2000, the list of competences that Veterinary Medicine Graduates should have by the time of their graduation. This list of competences was revised on July 30<sup>th</sup> 2014 and again on June 18<sup>th</sup> 2024, and stand as follows.

<b>1. PROFESSIONAL AND PERSONAL SKILLS</b> Professional skills include knowledge of the veterinary surgeon code of conduct and professional responsibilities, as well as the legal, business and social framework of the veterinary medicine profession. They also include the knowledge of the personal abilities and limitations, as well as the modes of action in different scenarios.	<b>ESEVT Day One Competences</b>
<b>1.1 PROFESSIONAL SKILLS</b>	
<b>1.1.1</b> Know the relevant Law and official regulations for the veterinarian activities, to act according to the ethical, deontological and legal rules demanded by the professional activity, including those related to animal welfare, clients, public health and notifiable and reportable diseases, and the use of medicines, including responsible use of antimicrobials and those regarding the environmental and social impact.	1.1 1.3 1.25 1.26
<b>1.1.2</b> Understand and apply principles of “One Health” to ensure veterinary Good Clinical Practice, in order to promote the health, safety and welfare of animals, people and the environment, in agreement with the United Nations Sustainable Development Goals.	1.10 1.12 1.29
<b>1.1.3</b> Understand and apply principals of research-based and evidence-based veterinary medicine; understand scientific research methods the contribution of basic and applied research to science and to promote the implementation of the 3Rs principle (Replacement, Reduction, Refinement).	1.2 1.9 1.10
<b>1.1.4</b> Understand where to find and evaluate scientific and technical information, including to analyse scientific papers, to use computerized databases and artificial intelligence.	1.9 1.26
<b>1.1.5</b> Prepare accurate clinical and client records, and case reports when necessary, in a form satisfactory to the relevant audiences.	1.7
<b>1.1.6</b> Use of professional capabilities to contribute to the advancement of knowledge in Veterinary Sciences.	1.12
<b>1.1.7</b> Promote, monitor and contribute to maintaining the health and safety of oneself, patients, clients, colleagues as well as the environment, in veterinary practice; demonstrate knowledge about the principles of quality assurance and apply principles of risk management in practice.	1.4 1.24 1.29
<b>1.1.8</b> Demonstrate a basic knowledge of the organization, management and legislation related to a veterinary business/practice, including safety regulations and tax laws.	1.3 1.4 1.29
<b>1.1.9</b> To perform certification procedures in the different fields of Veterinary Medicine.	1.1
<b>1.10</b> Understand the importance of digital tools and artificial intelligence in Veterinary medicine.	1.24

<b>1.2 PERSONAL SKILLS</b>		
<b>1.2.1</b>	Recognize and act adequately according to the economic and emotional context in which the veterinarian operates.	1.3
<b>1.2.2</b>	Demonstrate the ability to recognize personal and professional limits and know when and where to look for assistance and support, namely for a second opinion or professional help.	1.13 1.15
<b>1.2.3</b>	Know how to deal with uncertainty, cope with incomplete information, deal with contingencies, and adapt knowledge and skills to a varied scenarios and contexts, being able to extrapolate existing information in case of new scenarios.	1.3 1.11
<b>1.2.4</b>	Demonstrate a commitment to lifelong learning and to professional development; engage in self-audit and peer-group review process on a regular basis in order to improve performance	1.14 1.15
<b>2.</b>	<b>COMMUNICATION SKILLS</b> Communication skills reflect the professional relationship between colleagues, clients, professionals from other fields and the public.	
<b>2.1</b>	Communicate effectively with clients, colleagues, authorities and the public, using language appropriate to the audience concerned and in full respect of confidentiality and privacy.	1.5 1.6
<b>2.2</b>	Work as a member of a multidisciplinary team, and recognise the contribution of all team members.	1.6 1.8
<b>2.3</b>	Communicate and collaborate with referral and diagnostic or other professional services, providing a suitable description of each case.	1.23
<b>2.4</b>	Demonstrate inclusivity and cultural competence, and encourage diverse contributions within the workplace	1.5 1.6 1.8
<b>2.5</b>	Be able to identify the clients' and team's objectives, expectations, perspectives and constraints, in full respect of confidentiality and privacy and be able to manage conflicts.	1.5 1.6 1.8
<b>2.6</b>	Be able to manage difficult situations, such as financial constraints, palliative care and euthanasia.	1.5
<b>3.</b>	<b>TECHNICAL SKILLS</b> Technical skills intend to ensure that the education provided involves the different fields of the veterinary activity, namely regarding clinics, public health, animal production, inspection and technology of animal origin products.	

<b>3.1 CLINICAL THINKING</b>		
<b>3.1.1</b>	Be able to recognise the health status of livestock and pet species.	1.21
<b>3.1.2</b>	Be able to recognise normal and abnormal animal behaviour and welfare indicators.	1.21
<b>3.1.3</b>	Obtain an accurate and relevant history of the individual animal or animal group, and its/their husbandry and environment.	1.16
<b>3.1.4</b>	Know the methods for semiotics exploration, both physical and laboratorial, used in Veterinary Medicine select appropriate diagnostic test, interpret the results and understand the limitations of the test results.	1.18 1.22 1.24
<b>3.1.5</b>	Know the aetiopathogenesis and clinical signs of the most common diseases from domestic animals, select the most adequate differential diagnostics plan, and triage and prioritize situational urgency and allocate resources accordingly.	1.20 1.18
<b>3.1.6</b>	Be aware and know how to establish prophylaxis principles towards the most common diseases.	1.19
<b>3.1.7</b>	Be able to develop an adequate treatment plan administer treatment in the interest of the animal with regard to the available resources and to appropriate public health and environmental considerations.	1.18 1.19
<b>3.1.8</b>	Be able to formulate a prognosis, considering the likelihood of success and the evolution of clinical cases, and, in case of clinical failure, to be able to reevaluate the situation.	1.18 1.19
<b>3.1.9</b>	Be able to recognise when there is the need to perform euthanasia, using a legally accepted and safe method, that does not bring suffering to the animals and respects the owners' sensitivity; be able to advise on disposable of the carcase.	1.18 1.33
<b>3.1.10</b>	Know the licenced and available drugs, to acknowledge their formulations and how to prescribe them, to be aware of interactions, public health implications and the correct ways of storing and disposal; to be able to identify and report adverse medical reactions through the legally adequate means.	1.27 1.28
<b>3.1.11</b>	Know reproductive technologies, knowing how to select the most adequate ones, and advice on their use.	1.21
<b>3.1.12</b>	To know how to minimize the risks of contamination, cross infection and buildup of pathogens in the premisses of both the veterinary practice and farming facilities.	1.24 1.29
<b>3.1.13</b>	Advise and establish programs regarding husbandry, feeding, breeding, welfare and parasite and microbial control intended to livestock and companion animals.	1.21 1.38
<b>3.1.14</b>	Know how to diagnose notifiable diseases in the country and the European Union, and those listed in the WOAHA - World Organization of Animal Health List.	1.25

<b>3.2 INDIVIDUAL ANIMAL</b>		
<b>3.2.1</b>	Know how to use animal identification, manipulation, restraint and transport techniques, respecting animal's welfare and safety, as well as that of the personal involved, and instruct others in helping the veterinarian surgeon to perform these techniques.	1.17
<b>3.2.2</b>	Perform a complete clinical examination, using the most adequate methods of semiotics exploration and physical and laboratorial methods.	1.18 1.24
<b>3.2.3</b>	Know how to use, safely and according to good practice standards, basic imaging equipment, namely radiographic and ultrasonographic equipment.	1.24
<b>3.2.4</b>	Collect, preserve and transport biological samples for diagnosis.	1.22
<b>3.2.5</b>	Know how to act in emergency situations, providing first aid and basic life supporting measures.	1.20
<b>3.2.6</b>	Know how to perform sedation and general and regional anaesthesia; implement chemical methods of restrain; prevent assess and manage pain.	1.31 1.32
<b>3.2.7</b>	Know how to perform basic surgical procedures in an aseptic fashion	1.30
<b>3.2.8</b>	Know how to perform a necropsy in all common animal species, including sampling, dispatching and reporting.	1.34
<b>3.3 ANIMAL HERD</b>		
<b>3.3.1</b>	Know the production performance abilities and morphologic characteristics of the different species, and the most common national and foreign breeds in the country.	1.21
<b>3.3.2</b>	Collect, evaluate and record the main production, breeding, health and welfare indicators, and know how to define and assess animal production systems.	1.21
<b>3.3.3</b>	Know the techniques for conservation and improvement of the genetic heritage of animal populations.	1.21
<b>3.3.4</b>	Know how to assess animals' nutritional status, and know the principles and techniques of supply, formulation and preparation of feed.	1.21
<b>3.3.5</b>	Know how to collect samples, order laboratory analysis and interpret the results for the evaluation of the nutritional and hygiene of each animal food type.	1.36
<b>3.3.6</b>	Know the quality parameters and economic value of animal origin products.	1.36
<b>3.3.7</b>	Be aware of the basic principles to follow for the design of the facilities intended for housing animals.	1.21



<b>3.4 ONE HEALTH /PUBLIC HEALTH/ FOOD SAFETY</b>		
<b>3.4.1</b>	Apply the basic principles of epidemiology descriptive, analytical and operational.	1.25 1.26
<b>3.4.2</b>	Collect and interpret epidemiologic data regarding follow-up and epidemiological surveillance strategies, for the prevention, control and eradication of transmissible diseases, and especially zoonotic diseases.	1.25 1.26 1.37 1.38
<b>3.4.3</b>	Assess and prevent risks associated with the movement of animal species.	1.26
<b>3.4.4</b>	Advice and design health programs.	1.26 1.38
<b>3.4.5</b>	Follow correct procedures for diagnosing and reporting mandatory notifiable diseases in Portugal and know the legislation on health in force in Portugal and in the European Union.	1.25
<b>3.4.6</b>	Know the domains for the application of methods and techniques of environmental hygiene and toxicology, regarding animal remains, as well as effluents of animal and animal industry origin.	1.21 1.37
<b>3.4.7</b>	Analyse and execute legal considerations regarding food safety.	1.35 1.36 1.37
<b>3.4.8</b>	Perform ante- and post-mortem sanitary inspection of food-producing animals including paying attention to welfare aspects, and identify conditions affecting the quality and safety of animal origin products, including the adoption and application of criteria and legal health decisions regarding sanitary inspection activity.	1.35 1.37
<b>3.4.9</b>	Verify the health status of the premises, equipment and personnel in the slaughter line and know the protocol procedures in need of intervention due to disruption of the hygienic condition.	1.29 1.35 1.36 1.37
<b>3.4.10</b>	Know and apply the main and the most commonly used methods for the production, conservation and distribution fresh and processed animal origin products	1.36 1.37
<b>3.4.11</b>	Know and apply the basic principles of food safety proactive systems.	1.36 1.37
<b>3.4.12</b>	Be familiar with the analytical techniques intended to assess the quality and to determine the nutritional and dietary value of animal origin products.	1.36 1.37



# **Appendix 8**

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Integrated Master in Veterinary Medicine  
Regulation

## Integrated Master in Veterinary Medicine – Regulation

### Preamble

It is the President's responsibility to approve the regulations necessary for the regular functioning of the Faculty, under the terms of article 20(1)(c) of the Statutes of the Faculty of Veterinary Medicine of the University of Lisbon, approved by Order no. 6819/2022, published in *Diário da República*, 2nd series, no. 104, of May 30.

Considering the need to adapt some of the rules of the Integrated Master in Veterinary Medicine, in accordance with new legislation in force, and promoting their adaptation for the best functioning of the study cycle, following the favourable opinion of the Scientific Council at the meeting of June 2, 2023, and after public consultation under the terms of articles 99 to 101 of the Code of Administrative Procedure, I hereby determine the amendment of the Regulations of the Integrated Master's Degree in Veterinary Medicine, which will be republished in full as an annex to this order.

This Regulation revokes the previous Regulation of the Integrated Master's Degree in Veterinary Medicine, approved by Order no. 7368/2019, of August 20, 2019, published in *Diário da República* no. 158, 2nd series, of August 20.

This order shall enter into force on the day following its publication in *Diário da República*.

### Article 1 Objectives

It is the aim of the Integrated Master in Veterinary Medicine, hereinafter IMVM, to guarantee a high level of general education, grounded on scientific research and hands-on practical training, giving its graduates a set of competencies described in "Competences of the graduates of the Integrated Master Degree in Veterinary Medicine of FMV-ULisboa", which are summarized in the following general and specific objectives:

**a) General objectives:**

- i) To apply knowledge, reasoning and skills to understand and solve problems in new situations, in wide multidisciplinary contexts, in the field of veterinary sciences.
- ii) To integrate knowledge, handle complex issues, propose solutions and make judgments in situations of limited or incomplete information, including reflections on the implications and ethical and social responsibilities that result from those solutions and judgments.
- iii) To be able to communicate findings and conclusions, and the knowledge and rational underlying them, in a clear and objective manner.
- iv) To develop skills that enables them to pursue an autonomous lifelong learning career.

**b) Specific objectives:**

- i) To ensure health and welfare of animals;
- ii) To contribute to a sustainable and competitive animal production, preserving the environment;

- iii) To protect Man from zoonosis;
- iv) To ensure quality and safety of animal products;
- v) To contribute to the multidisciplinary approach to public policies and global challenges involving Human, Animal and Environmental aspects, within the “One Health” concept.

## **Article 2**

### **Coordination**

- 1 - The programme is coordinated by the President of the Scientific Council, assisted by a Scientific Committee chaired by him and that also includes the President of the Pedagogical Council, the Studies Coordinators of the Scientific Areas and one student elected by and from the students’ members of the Pedagogical Council.
- 2 - The Scientific Committee of the programme has the following specific competences:
  - a) Ongoing evaluation of the IMVM performance, ensuring that the above defined objectives are met, including the quality of teaching, the acquisition of skills by students and their academic success;
  - b) General coordination and harmonization of the IMVM programme;
  - c) Proposition of any changes to the IMVM programme or the rules for its functioning;
  - d) Proposal of amendments to the IMVM Regulation.
- 3 - The Scientific Committee meets at least once a year, at the end of the academic year, to evaluate the ending year and preparing the following year.

## **Article 3**

### **Monitoring and Evaluation**

- 1 - The Scientific Committee of IMVM ensures permanent monitoring and evaluation of the functioning of IMVM, assessing the fulfilment of the objectives listed above, and promoting constant updating and improvement through opportune introduction of the necessary changes.
- 2 - In compliance with the preceding item, processes and procedures that enable the collection of information necessary for a proper monitoring and periodic evaluation of IMVM are instituted, namely by conducting regular surveys of the operation of courses, the pedagogic and scientific performances of teachers and the correspondence between credits (ECTS) and the amount of work required in the *curriculum*, which are organized and approved by the Pedagogical Council, in accordance with the Scientific Council.

## **Article 4**

### **Curriculum Structure and Organization**

- 1 - The IMVM lasts 11 semesters (5.5 years), comprising a total of 330 ECTS and consists of an organized set of curricular units corresponding to 301 ECTS, and a curricular training period, including a master dissertation, totalling 29 ECTS.
- 2 - Under the terms of the Legal Regime for Higher Education Degrees and Diplomas, the degree of *licenciado* in Basic Studies in Animal Health Sciences is awarded to the students who have completed the 180 ECTS corresponding to the first six semesters.
- 3 - The programme consists of compulsory (286 ECTS) and optional (15 ECTS) curricular units, according to the study cycle's *curriculum*.
- 4 - The curricular files of the compulsory and optional curricular units, including, in particular, the teaching staff, the learning outcomes, the syllabus, the bibliography and the pedagogical and evaluation methodologies, are approved by the Scientific Council, under proposal of the department that include the scientific area to which these contents predominantly comprise, when these curricular units are created or whenever substantial changes occur.
- 5 - The optional curricular units:
  - a) Are defined by the Scientific Council for each semester of the 3<sup>rd</sup>, 4<sup>th</sup> and 5<sup>th</sup> year of the *curriculum*, following a proposal from the departments;
  - b) Handle with subjects that focus on issues not covered, or insufficiently addressed, by compulsory curricular units;
  - c) Operate in accordance with rules established by the Scientific Council, in particular with regard to the application, selection and enrolment of candidates and functioning rules, which are announced before each semester in conjunction with the list of optional curricular units offered in that semester.
- 6 - The curricular units will be taught in Portuguese language or, with the prior agreement of the Scientific Council, may be taught in other European languages.
- 7 - The IMVM *curriculum* should be reassessed every five years and extraordinarily whenever the Scientific Council determines.
- 8 - The procedures that integrate the process of evaluation of knowledge and skills are outlined in a separate regulation, the "Regulation of Knowledge and Competences Assessment and Final Examination Admission for the 1<sup>st</sup>, 2<sup>nd</sup> and 3<sup>rd</sup> cycles at FMV-ULisboa" which is approved by the Dean of FMV, after consulting with the Scientific and Pedagogical Councils.
- 9 - The accreditation of academic training and professional experience in FMV study cycles is carried out in accordance with current legislation and regulations, in particular the ULisboa Accreditation and Curricular Integration of Professional Experience and Academic Training Regulation.



## Article 5

### Access and enrolment

- 1 - Access and enrolment in the 1<sup>st</sup> cycle of IMVM are governed by general rules applied to all 1<sup>st</sup> cycle's studies in Portugal.
- 2 - Access and enrolment in the 2<sup>nd</sup> cycle of IMVM are governed by the following rules:
  - a) All students enrolled in the 1<sup>st</sup> cycle of the IMVM have direct access to the 2<sup>nd</sup> cycle of the programme, in compliance with the rules of the transition defined below in this Regulation.
  - b) May also apply the holders:
    - i. of a 1<sup>st</sup> cycle of a master programme in Veterinary Medicine awarded in Portugal or in another country of the European Union which follow the system of organization defined by the Bologna Process;
    - ii. of an academic, scientific or professional *curriculum vitae* that is recognized by the Scientific Council as attesting the capacity to carry out this cycle of studies;
    - iii. of a degree in Veterinary Medicine (pre-Bologna).
  - c) Holders of a 1<sup>st</sup> cycle of a master programme in Veterinary Medicine and holders of an academic, scientific or professional *curriculum vitae* that is recognized by the Scientific Council, have the same access requirements that candidates for admission in the 1<sup>st</sup> cycle of IMVM (minimum classifications on national exams and on the application to the university) and, if they exceed the vacancies, will be ranked according to the following non-cumulative criteria:
    - i. Greater value resulting from the algorithm  $(CCES \times 70 + (CCEO \times P) \times 30) / 100$ , where:
      - CCES corresponds to the classification of the application to higher education through general contingent, calculated by applying the actual access rules for the IMVM at FMV; in the case of students from foreign higher education institutions that have not conducted tests equivalent to those required for the IMVM, grades obtained in the curricular units of secondary education that includes biology and chemistry, will be used;
      - CCEO is the average, on a scale of 0-20 and weighted by ECTS, of the classifications obtained in the origin cycle or in the cycle of studies which accounts for the academic, scientific or professional *curriculum* recognized by the Scientific Council of FMV, as attesting the ability to carry out the MIMV;
      - P is a value related to the European Scale of Comparability of Classifications (ESCC), assuming for this purpose the following values of P: A rate in ESCC - P = 1; B rate in ESCC - P = 0.9; C rate in ESCC - P = 0.8; D rate in ESCC - P = 0.7; E rate in ESCC - P = 0.6; in the absence of objective information, the value of P corresponding to E rate (0.6) will be assigned;
    - ii. Fewer years between the degree and this application,
    - iii. Best academic, scientific and professional *curriculum vitae*.

- d) The number of vacancies for external candidates referred to in b) is annually proposed by the Scientific Council in view of FMV availabilities, distinguishing two contingents:
  - i. Holders of the 1<sup>st</sup> cycle of integrated masters in Veterinary Medicine and holders of an academic, scientific or professional *curriculum vitae* that is recognized by the Scientific Council attesting the capacity to carry out this cycle of studies;
  - ii. Holders of a degree in Veterinary Medicine (pre-Bologna).
- e) These vacancies, as well as the deadline for applications and documents to be submitted by candidates, are published in FMV's webpage.
- f) Candidates that hold a degree in Veterinary Medicine under the degree system previous to the Bologna Process must proceed in accordance with the provisions of article 18.

## **Article 6**

### **Transition of curricular year and enrolment in the curricular traineeship**

- 1 - At the time of annual registration, students with overdue curricular units must enrol first in those curricular units and then in the subsequent curricular units of the curriculum, not exceeding a total of 80 ECTS, with the exception of 1<sup>st</sup> year students who can only enrol in the corresponding 60 ECTS.
- 2 - In addition to this general enrolment rule, there may be specific precedence rules for each curricular unit or group of curricular units that take precedence over the general rule.
- 3 - The rules of precedence referred to in the previous paragraph must be approved by the Scientific Council, following a proposal from the scientific area(s) in question and after consulting the Pedagogical Council.
- 4 - Failure to enrol in any curricular unit results in the expiry of student' enrolment, which can be resumed through the Readmission regimes in the study cycle, and cannot occur in the academic year following the last academic year in which the student was enrolled.
- 5 - In the case of students who enrol in the IMVM through the Readmission, Transfer and Programme Changes regimes, the direct access to the 2<sup>nd</sup> cycle, and through the exams aimed to assess the capacity for the frequency of Higher Education for over 23 years, the accreditation of prior training will be performed.
- 6 - The access to the curricular traineeship is restricted to students who have passed all the curricular units of the first 10 semesters of IMVM curriculum (300 ECTS).
- 7 - Exceptionally, students who have not obtained approval in curricular units that correspond to a maximum of 10 ECTS can start their curricular traineeship if those curricular units do not belong to the scientific area of the curricular traineeship.
- 8 - Students retained in the 5<sup>th</sup> year who meet the requirements stipulated in the two previous numbers at the end of the first semester will be able to enrol in the curricular traineeship until the end of February.



## **Article 7**

### **Logbook**

- 1 - In order to improve the mentoring of IMVM students' clinical practice throughout the programme, a document in paper or digital format, designated hereafter as logbook, was created for the registration of such activities.
- 2 - The logbook is a book of records, where the essential practical skills that students must acquire are listed and whose performance is confirmed by academic or authorized technical staff.
- 3 - The logbook is personal and not transferable and is distributed to each student in the 2nd year.
- 4 - The logbook must be totally filled to get the final approval on IMVM, except in particular situations sanctioned by the Scientific and Pedagogical Councils, and should be delivered to the Academic Office before the enrolment in the curricular traineeship.
- 5 - The specific rules for the use of the logbook are defined by a joint order of the Presidents of the Scientific and Pedagogical Councils.

## **Article 8**

### **Characteristics and objectives of the curricular traineeship**

- 1 - The curricular traineeship aims to provide learning, training and development of knowledge in a specific area of veterinary sciences.
- 2 - The curricular traineeship represents a workload equivalent to 29 ECTS, including the preparation of the dissertation and its presentation and discussion in a public viva.
- 3 - The practical component of the curricular traineeship must include a period of not less than 500 hours, which must be confirmed in the final statement of the supervisor.
- 4 - The curricular traineeship culminates in the presentation of a dissertation, in which the practical component may take one of the following forms:
- 5 - A professional training.
- 6 - The development of research activities.
- 7 - A project work.
- 8 - When applying for the traineeship students must indicate the provisional theme of the dissertation and the area of veterinary sciences in which they intend to accomplish their traineeship. During the traineeship period, students should define with their supervisors the specific and definite theme to be the subject of the dissertation, according to the case studies or the opportunity to follow-up or develop adequate activities.
- 9 - The dissertation is analysed and discussed in public by a jury appointed for this purpose.
- 10 - The curricular traineeship can be carried out intra or extramural, in no more than two locations, except in the case of a project work for which, although centred on a major site, it is desirable that the student visit various locations for the preparation of the dissertation.

## **Article 9**

### **Institutional coordination and monitoring of the curricular traineeship**

- 1 - The Scientific Council is responsible for the curricular traineeship, coordinating all the procedures related to it through the IMVM curricular traineeships Committee (IMVM-CTC). This Committee includes at least one teacher from each of FMV's scientific areas.
- 2 - The student is free to choose the supervisor(s), the scientific area and the location where the curricular traineeship is carried out.
- 3 - In the case of intramural curricular traineeships, the student must apply to available traineeship locations and their respective supervisors.
- 4 - For intramural curricular traineeships, the respective locations and supervisors must be communicated to the IMVM-CTC until the 30th October of the academic year prior to the curricular traineeship.
- 5 - Prior to the 30th November of each academic year, the IMVM-CTC establish and announces the curricular traineeship schedule, as well as the list of traineeship locations available at FMV and their respective supervisors for the following academic year.
- 6 - The map of curricular traineeships is prepared by the Academic Office and present to the IMVM-CTC.
- 7 - Students must submit their applications on FMV's academic management portal until the 1st March of the academic year prior to the curricular traineeship.
- 8 - Students who are not able to find a location for the curricular traineeship should formally ask IMVM-CTC to provide placement and supervision until 30 days before the established deadline.

## **Article 10**

### **Application and enrolment in the curricular traineeship**

- 1 - Applications and enrolments must be made in accordance with the schedule referred to article 9, and in obedience to the following:
  - a) For extramural curricular traineeships, based on its own initiative or on elements advertised by FMV, the student should contact the supervisor and co-supervisor and present at the Academic Office the application, in the proper form, containing the elements presented in the paragraph d) of this article;
  - b) For intramural curricular traineeships, the student must apply to the curricular traineeship locations and supervisors published by the IMVM-CTC, and present at the Academic Office the application, in the proper form, as per paragraph d);
  - c) In particular cases, duly justified, for intramural curricular traineeships, there may be a direct agreement between the student and the supervisor, and the student should present at the Academic Office the application, in the proper form, containing the elements presented in paragraph d);

d) The application must contain the following elements:

d.1.) Application Form, containing:

- i) Name, address, telephone number and email address;
- ii) Scientific area and provisional theme of the curricular traineeship;
- iii) Name of the supervisor and any co-supervisor, if any, and their respective address(s), telephone number(s) and email address(s);
- iv) The location where the curricular traineeship will take place, including address and telephone number;
- v) Expected start date of the curricular traineeship;

d.2.) Attachments:

- i) Traineeship agreement, signed by the Coordinator of the IMVM-CTC, the student and the supervisor and co-supervisor (if any);
- ii) The student must attach to this form a summarized and updated *curriculum vitae* of the external supervisor or co-supervisor if they do not already exist in the Academic Office.

- 2 - After checking that the application includes all the documents referred to in the previous paragraphs of this article, the Academic Office sends it to the IMVM-CTC and registers it on the curricular traineeships map of the corresponding academic year.
- 3 - The IMVM-CTC checks that the information contained in the application form are in accordance with the terms of this Regulation and, if necessary, asks the candidate, through the Academic Office, for any missing information or clarification.
- 4 - For intramural curricular traineeships, the ranking and selection of candidates for traineeship locations and supervisors is based on criteria established by the Scientific Council and must be completed until the 1st April of the academic year prior to the curricular traineeship period.
- 5 - For students who are unable to obtain a placement at the traineeship location and/or with the supervisor to which they applied, the IMVM-CTC, in collaboration with the students and other traineeship locations and supervisors, will provide alternative traineeship location(s) and supervisor(s) until the 1st May of the academic year prior to the curricular traineeship period.
- 6 - The Academic Office notifies by email the applicant and supervisors of the approval of the application until the 30th July of the academic year prior to the curricular traineeship period.

## **Article 11**

### **Procedures during the curricular traineeship**

- 1 - Within 15 days after starting the student should report by email ([divacademica@fmv.ulisboa.pt](mailto:divacademica@fmv.ulisboa.pt)) to the Academic Office the beginning of the curricular traineeship and within two months the specific and definite theme, always with the acknowledgement and agreement of the supervisors.

- 2 - If the student wishes to change the theme and/or the location of the curricular traineeship, permission should be asked to the IMVM-CPC, through a new application form duly completed.
- 3 - If the student wishes to change the supervision of the curricular traineeship, the IMVM-CTC should be informed and a new application must be accompanied by an acceptance letter from the new supervisor(s) and a letter from the outgoing supervisor(s) confirming their understanding and agreement to this change.
- 4 - Changes in the curricular traineeship do not justify any postponing of the date of delivery of the provisional dissertation.

## **Article 12**

### **Supervision of the curricular traineeship and dissertation**

- 1 - The supervision of the curricular traineeship and the master's dissertation is the responsibility of a supervisor and a possible co-supervisor.
- 2 - The responsibility for supervision (supervisor and possible co-supervisor) is attributed to holders of a doctoral degree.
- 3 - The responsibility for supervision (supervisor and possible co-supervisor) may also be assigned to holders of an academic degree whose merit in the scientific area of the curricular traineeship is recognized by SC, with a minimum of 10 years of experience in the area, effective exercise of 5 years in the last 10 years and not holding an permanent contract with a higher education institution.
- 4 - If the supervisor does not work at FMV, the student should indicate a co-supervisor chosen from the FMV staff holding a PhD.
- 5 - If the student prefers, the IMVM-CTC will appoint a co-supervisor, requesting its appointment from the Department of the scientific area of the curricular traineeship.
- 6 - The supervisor has the following competencies and duties:
  - a) Establish, with the co-supervisor, if any, and the student, the curricular traineeship plan;
  - b) Advise the student, regarding the technical, scientific, ethical and deontological components;
  - c) Send information about the curricular traineeship at the request of FMV;
  - d) Critically advise the student in structuring, writing and revision of the dissertation;
  - e) Prevent any plagiarism or violation of copyright and intellectual property;
  - f) Issue a written opinion on the admissibility of the dissertation;
  - g) Integrate the jury that evaluates the dissertation and its discussion in the public viva or request its' replacement on the jury by the co-supervisor;
  - h) Provide information to the jury about the student's performance during the curricular traineeship period; if, by any major reason, the supervisor cannot attend the meetings of the jury, the Annex I to this Regulation should be filled and sent to the jury President;

- i) Advise the student in any revision of the dissertation requested by the jury.
- 7 - As a symbolic form of recognition for the services rendered, FMV provides to the external supervisors:
- a) Preference in enrolment in training activities not leading to academic degrees;
  - b) Priority on services provided by FMV;
  - c) Preferential access to library and computer resources of scientific literature.
- 8 - The co-supervisor has the following competencies and duties:
- a) Ensure the link between the student, FMV and the supervisor when the latter does not work in FMV;
  - b) Establish, in conjunction with the supervisor and the student, the curricular traineeship plan, cooperating in planning activities;
  - c) Communicate to the student any relevant academic or pedagogic indications;
  - d) Cooperate in structuring, writing and reviewing the dissertation;
  - e) Prevent any plagiarism or violation of copyright and intellectual property;
  - f) Issue a written opinion on the admissibility of the dissertation;
  - g) Provide information to the jury about the student's performance during the period which he was supervised as part of his duties as a co-supervisor, and fill and sent to the President of the Jury the Annex I to this Regulation;
  - h) Integrate the jury that evaluates the dissertation and its discussion on the public viva when the supervisor declares that cannot be part of it;
  - i) Advise the student in any revision of the dissertation requested by the jury.
- 9 - In addition to a Supervisor (and if there is no Co-supervisor), an internal Tutor may exist, whose merit in the scientific area of the curricular traineeship is recognized by SC and with a minimum of 5 years of experience in the area, who assists the Supervisor in monitoring activities.

## **Article 13**

### **Characteristics of the dissertation**

- 1 - The dissertation should be written in Portuguese or English or, in justified cases, by request of the student and with the agreement of the supervisor, the IMVM-CTC can accept dissertations written in another foreign European language.
- 2 - When the dissertation is written in a foreign language, it must include, in addition to the abstract in Portuguese, a more developed summary in Portuguese, with between 1200 and 1500 words.
- 3 - The writing, formatting and presentation of the dissertation, including bibliographic citation rules, must respect the current FMV regulations.

- 4 - The official graphic layout model of the dissertation is published on FMV's website and includes the cover and other regulatory reference elements.
- 5 - In the case the dissertation is the result of a curricular traineeship in which the practical component took the form of a professional training, it should include:
  - a) A brief description (3-6 pages) of the activities developed during the curricular traineeship in which the student's degree of involvement should be clearly shown;
  - b) A state of art on the specific theme, based on a bibliographic research within the main scientific and technical publications in the area in recent years;
  - c) A scientific discussion of a series of clinical cases or experimental results that support the approved theme;
  - d) One or more conclusions of the discussion and also some references to relevant aspects of learning, expectations versus performance or any other subjects deemed pertinent;
  - e) A list of cited literature.
- 6 - In the case the dissertation is the result of a curricular traineeship during which the practical component took the form of a research work, in addition to the aspects mentioned in the preceding number it should also include a description of materials and methods utilized.
- 7 - In the case the dissertation takes the format of a project work, it should:
  - a) reflect the critical analysis of the information gathered and lived experience in the curricular traineeship in a business context;
  - b) include a market analysis of the sector/area in which it operates and a detailed description of the objectives, required resources and organizational structure of the production unit scheme which proposes to outline;
  - c) contain a brief economic study that demonstrates the viability of this unit.
- 8 - Master's dissertations are subject to the mandatory deposit of a digital copy in a repository that is part of the Portuguese Open Access Scientific Repository network, managed by the Fundação para a Ciência e a Tecnologia (FCT), I.P, as well as for digital consultation through the Digital Repository from the University of Lisbon.

## **Article 14**

### **Delivery of the dissertation**

- 1 - The dissertation resulting from the curricular traineeship can only be accepted by the Academic Office after:
  - a) the student has been approved in all the curricular units of the first 10 semesters of the IMVM syllabus and when all procedures stipulated in articles 10 and 11 are completed;
  - b) the prior approval by the IMVM-CTC of the definite theme and title (at least 20 working days before delivery of the dissertation);

- c) the supervisor and the co-supervisor have been approved, at least, at the time of approval of the definite theme and title, 20 working days before delivery of the dissertation.
- 2 - After getting the supervisor and the co-supervisor approval, the student must submit the dissertation in the Academic Office and request its public discussion in an application addressed to the President of the Scientific Council of FMV, accompanied by:
  - a) a copy of the dissertation in electronic format, with the expressed indication that it is a provisional document on the cover and on the first page (below the title), and in the pre-defined format, the abstract in Portuguese and English, with a maximum of 300 words each and up to 5 keywords;
  - b) Declarations of the supervisor and co-supervisor (if any), stating that the dissertation meets the conditions required for its analysis and discussion and that the practical component of the curricular traineeship accomplished a minimum of 500 hours.

## **Article 15**

### **Evaluation of the dissertation and curricular traineeship - Jury and procedure**

- 1 - In the 10 subsequent working days to the submission of the dissertation, the President of the Scientific Council of FMV, at the proposal of the IMVM-CTC, appoints the jury for its analysis and discussion in a public *viva*.
- 2 - The jury will consist of 3 members and will include:
  - a) The supervisor;
  - b) Two holders of a PhD degree who work in FMV;
  - c) Exceptionally, one of the members indicated in paragraph b) may be a specialist of recognized merit by FMV's Scientific Council.
- 3 - When the supervisor anticipates not being able to attend the public discussion, or considers that this function should be performed by the co-supervisor, a declaration to that effect should be sent to the President of the Scientific Council before the submission of the provisional dissertation, so that the co-supervisor can be appointed to the jury.
- 4 - The jury is chaired by the member, belonging to FMV's staff, that is the oldest teacher of the highest category, excluding the supervisor and the co-supervisor.
- 5 - Within 20 working days after the appointment of the jury, the president must issue an order in which:
  - a) Declares the acceptance of the dissertation presented, even if minor inaccuracies could still be corrected in the final version, and set the day, place and agenda of the public discussion;
  - b) Justifiably recommends that the dissertation should be reviewed, pointing out clearly the major faults and weaknesses and attaching any existing written reports authored by jury members.
- 6 - The president of the jury will also be responsible for:
  - a) Participate in the public discussion as one of the main examiners;



- b) Conducting the public discussion, ensuring the compliance with the stipulated rules and the quality and dignity of all the procedure;
  - c) Review the minutes and have them signed by all members of the jury.
- 7 - The jury's deliberations are taken by a majority of its members, through justified nominal voting, with no abstentions allowed.
  - 8 - If the public discussion takes place by teleconference, the jury meeting must also be held in this format, and the president of the jury must certify the explanations of vote corresponding to the members taking part by teleconference.
  - 9 - Minutes shall be drawn up of the meetings of the jury, which shall include the votes of each of its members and the respective reasons, which may be common to all or some members of the jury.
  - 10 - In case the provisional dissertation is accepted without significant changes, the student must submit one printed copy and one copy in electronic format (non-editable) of the final dissertation and one abstract in Portuguese and English in electronic format (editable format - Word) within 30 working days after the public discussion, with all amendments proposed by the jury which must be validated by the president of the jury prior to submission.
  - 11 - The final dissertation should include in the cover and first page the name of the University and of FMV, the title of the dissertation, the name of the supervisor and, if any, of the co-supervisor and the names of all members of the jury.
  - 12 - When the revision of dissertation is recommended by the jury, the student has a period of 60 working days to review the dissertation or declare that he wants to keep as it was first presented.
  - 13 - After reviewing the dissertation, the student submits a new provisional copy in electronic format.
  - 14 - If, despite the recommendation of the jury to review the dissertation, the candidate declares the intention to maintain the original version, the president of the jury should set the day for the public discussion.
  - 15 - Plagiarism of other technical or scientific work, or other conduct that violates the principles defined in the Code of Conduct and Good Practices of the University of Lisbon will result in the application of disciplinary sanctions provided for in the Disciplinary Students Rules and Regulations of the ULisboa.

## **Article 16**

### **Evaluation of the dissertation and curricular traineeship - Public discussion and classification**

- 1 - The public discussion must occur within 20 working days from the date of the order of the president of the jury accepting the dissertation, or of the communication of the student declaring his intention to maintain the first version of the dissertation.
- 2 - The public discussion of the dissertation will be publicized on FMV's website.

- 3 - The public discussion consists of the discussion of the dissertation, preceded by a presentation of the work by the student, with a maximum duration of 15 minutes, summarizing the contents of the dissertation, highlighting the goals, the materials and methods used and the main results and conclusions.
- 4 - All jury members must participate in the discussion and the candidate has the same time as that used by the jury members.
- 5 - The public discussion has a maximum duration of 1 hour and 30 minutes, including the oral presentation by the student.
- 6 - The final classification of the curricular traineeship is expressed on a numerical scale from 0 to 20. For its attribution should be taken into consideration the performance of the candidate in practical activities during the curricular traineeship period and the quality of the dissertation, oral presentation and discussion.
- 7 - To support the classification, process the jury must complete the "Curricular Traineeship Assessment Record" (Annex II to this Regulation). This report is part of the minutes of the public discussion, and to fill it the president of the jury should ask each member to grade each criterion, beginning this inquiry by the members without responsibilities in supervision and finishing with the supervisor(s)' opinion.
- 8 - The president of the jury may authorize the participation by teleconference of a number of members not exceeding 50%, if technical conditions exist for full participation in the work of all members of the jury, guaranteeing their audio and video access to all stages of the public discussion.

## **Article 17**

### **Assignment of final classification**

- 1 - To the academic degree of master is assigned a final classification, expressed in the range 10-20 on a numerical scale of 0 to 20, as well as in its equivalent in the European Scale of Comparability of Classifications, calculated according to the appropriate standards.
- 2 - The final classification of the master is the arithmetic average weighted by the ECTS credit units, calculated to the nearest hundredth and rounded to the nearest unit (a fraction of not less than 50 hundredths being considered a unit), of the classifications of all curricular units, including the curricular traineeship classification.
- 3 - The award of the master's degree is attested by the Certificate of Registration, generally known as diploma, and also by the Course Diploma, an optional request, and accompanied by the corresponding diploma supplement.
- 4 - The documents referred to in the previous point are requested at FMV and issued by the services of the Rectory of the University of Lisbon, within a maximum period of 90 working days after its request.

## Article 18

### The attainment of a master degree by pre-Bologna graduates in Veterinary Medicine

- 1 - Holders of a degree in Veterinary Medicine obtained in the system previous to the Bologna Process may obtain a master's degree in Veterinary Medicine by enrolling in the IMVM 2<sup>nd</sup> cycle, getting approval on the curricular units not accredited and publicly defending a dissertation in accordance with article 13 of this Regulation.
- 2 - In case of having more than five years of relevant professional experience in the field of Veterinary Sciences, the holders of a degree in Veterinary Medicine, obtained in the system previous to the Bologna Process in FMV or any other institution of higher education whose training system in Veterinary Medicine is approved by the European Association of Establishments for Veterinary Education, may obtain a master's degree in Veterinary Medicine fulfilling the stipulated in the preceding paragraph but presenting as alternative to the dissertation, a detailed report on their professional activity, which is submitted to public discussion that includes the discussion of experiences and skills acquired.
- 3 - The relevant professional experience in the field of Veterinary Sciences, referred on the previous number, must be proven by the *curriculum vitae* of the graduate, in which will be valued aspects such as:
  - a) Frequency and/or approval in post-graduate programmes or training activities;
  - b) Teaching post-graduate programmes or training activities;
  - c) Participation in research, experimentation or development projects;
  - d) Publication of scientific and technical articles, books, or book chapters;
  - e) Communications at technical or scientific meetings;
  - f) Supervision of curricular traineeship of veterinary medicine students;
  - g) Senior positions in institutions, scientific societies or companies.
- 4 - For the purposes of numbers 2 and 3, applicants must:
  - a) Enrol in the 2<sup>nd</sup> cycle at the Academic Office;
  - b) Request the accreditation of prior learning and, simultaneously, the evaluation of their *curriculum vitae* to assess if the dissertation could be replaced by the report referred to in number 2 of this Article and for this purpose submit a copy of the *curriculum vitae* in electronic format.
- 5 - In the 10 working days subsequent to the delivery of the application requesting the evaluation of the *curriculum vitae*, the President of the Scientific Council, at the proposal of the IMVM-CTC, appoints the jury responsible for that evaluation, which comprises:
  - a) Three holders of a PhD degree who work in FMV in the area of Veterinary Sciences in which the applicant predominantly exerts its' activity;
  - b) Exceptionally, a specialist of recognized merit by the Scientific Council of FMV in the area of Veterinary Sciences in which the applicant predominantly exerts its' activity.

- 6 - The jury referred above is chaired by the member, belonging to FMV that is the oldest teacher of the highest category.
- 7 - In case the replacement of the dissertation by the report is accepted, the selected jury, referred in the preceding numbers, also is maintained and should appreciate the applicant's professional activity report.
- 8 - The public discussion of the report follows an operating model similar to that described in articles 15 to 17 of this Regulation.
- 9 - Within 20 working days after the appointment of the jury, its president should issue an order in which:
  - a) States that the professional experience of the candidate is considered relevant and, consequently, the dissertation may be replaced by a detailed report on its' professional activity which is to be subject to public discussion where the experiences and skills will be evaluated;
  - b) Declares that the professional experience of the candidate is not relevant and, therefore, the candidate must enrol on the curricular traineeship which includes the preparation of a dissertation.
- 10 - If the replacement of the dissertation is accepted, the candidate must submit within 60 working days, a copy in electronic format (non-editable) of the report.
- 11 - The report must include on the cover the name of the University and of FMV, the candidate name, the constitution of the jury and the words "Report for the purpose of awarding a master's degree in Veterinary Medicine."
- 12 - The final classification of the report is given on a numerical scale of 0 to 20. For its attribution the quantity and quality of the activities described, the quality of writing of the report, the oral presentation and its public discussion, should be taken into account.
- 13 - The classification of the report will have a weight of ECTS equivalent to the curricular traineeship on the final IMVM classification.

## **Article 19**

### **Confidentiality**

- 1 - Some of dissertation work, by its nature or because it was developed in collaboration with business companies, may involve the need to ensure the confidentiality of certain components of the dissertation. These situations should be reported to the IMVM-CTC before the submission of the dissertation, clearly identifying the institution or company and the part of the dissertation that requires confidentiality.
- 2 - If the IMVM-CTC considers relevant the reasons given for the need to ensure the character of confidentiality, the following procedures should be followed:
  - a) The title, abstract and keywords (both in Portuguese and in English) cannot be confidential;
  - b) The coordinator of the IMVM-CTC and all the members of the jury must accept and sign a confidentiality statement;

- c) The text of the dissertation that will become public should be reviewed and authorized by the institution that requires confidentiality, together with the jury;
- d) The confidential parts of the text will be included in an annex, in a separate volume, which is distributed only to the members of the jury and should be returned to the institution seeking confidentiality at the end of the public discussion.

## **Article 20**

### **Academic Calendar**

The academic calendar is set annually by the Pedagogical Council of FMV.

## **Article 21**

### **Tuition fees**

IMVM' tuition fees and the respective payment schedule is fixed pursuant with the terms legally stipulated for the study cycle leading to a degree of licenciado.

## **Article 22**

### **Limit of enrolments**

The maximum number of annual enrolments that a student is allowed in the IMVM follows the Law No. 37/2003, of the 22<sup>nd</sup> August.

## **Article 23**

### **Omissions**

Any cases not covered by this Regulation, without prejudice to the application of the Code of Administrative Procedure and the Postgraduate Studies Regulation of the University of Lisbon, will be resolved by the appropriate governing bodies of FMV.

## Annex I to the Regulation of the Integrated Master in Veterinary Medicine

### Supervisor Evaluation Form

Student's Name:

Supervisor's Name:

Training: Begin  End  Hours of practical training:

Scientific Area:

Subject:

The answers to the questions below are confidential information. The numerical scale used to answer is between ONE and FIVE (1 – poor, 2 – fair, 3 – good, 4 – very good, 5- excellent).

	1	2	3	4	5
01. ASSIDUITY	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
02. ANITIATIVE, MOTIVATION & INNOVATION ABILITY	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
03. RELATIONSHIP WITH COLLEAGUES & CLIENTS	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
04. WORK QUANTITY & QUALITY	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
05. LEARNING OF NEW INFORMATION / CONCEPTS	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
06. ACCOMPLISHMENT OF TRAINING PROGAM	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
07. COMMENTS (optional):	<input type="text"/>				

Proposal for practical training evaluation (0-20)

Date

Supervisor



## Annex II to the Regulation of the Integrated Master in Veterinary Medicine

### Assessment Record of the curricular traineeship of IMVM

Attached to the minutes of the dissertation public discussion

Student's name: \_\_\_\_\_ No.: \_\_\_\_\_

Qualitative classification: place an X on the qualitative level that the jury assigns to each of the criteria:

	Insufficient (<10)	Sufficient (10-13)	Good (14-16)	Very Good (17-18)	Excellent (19-20)
<b>A - Performance during the traineeship</b>					
Assiduity	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Initiative, motivation & innovation ability	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Relationship with colleagues & clients	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Work quantity & quality	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Learning of new information/concepts	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Accomplishment of training program	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>B - Exposure</b>					
Clarity	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Exposure quality	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>C - Discussion</b>					
Answers' clarity	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Answers' adequacy	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Communication skills	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>D - Dissertation</b>					
Organization and graphic quality	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Language adequacy	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Cited bibliography novelty	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Methodologies adequacy	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Discussion quality	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Conclusions quality	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Predominant classification range	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Classification B+C+D (0-20)

Final Classification A+B+C+D (0-20)

Date

\_\_\_\_\_  
President

\_\_\_\_\_  
1st Jury Member

\_\_\_\_\_  
2nd Jury Member





# **Appendix 9**

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## Traineeship agreement

## CURRICULAR TRAINEESHIP AGREEMENT

Between the Faculty of Veterinary Medicine (Faculdade de Medicina Veterinária) da Universidade de Lisboa, (address: Avenida da Universidade Técnica de Lisboa, Pólo Universitário do Alto da Ajuda, 1300-477 Lisbon), represented by the Coordinator of the curricular traineeships Committee (MIMV-CTC), and:

Supervisor, (name, professional category, ORCID n.º (if applicable), professional license n.º (if applicable), company, address);

Co-supervisor (name, professional category, ORCID n.º (if applicable), professional license n.º (if applicable), company, address);

Tutor, (name, professional category, ORCID n.º (if applicable), professional license n.º (if applicable), company, address

Student (name and student's n.º)

an agreement is signed in order to establish the rules for the accomplishment of the final curricular traineeship of the integrated Master in Veterinary Medicine (MIVV) in the Scientific Area of (identify scientific area) in (institution) from (date of beginning – dd/mm/aaaa) to (date of end – dd/mm/aaaa), under the preliminary theme (identify theme).

Principles governing traineeship and the rights and duties of all parts:

- 1 – The curricular traineeship aims to provide learning, training and development of knowledge in a specific area of veterinary sciences.
- 2 – The curricular traineeship represents a workload equivalent to 29 ECTS, including the preparation of the dissertation and its discussion in a public examination. The practical component of the curricular traineeship must include a period of not less than 500 hours, which must be confirmed in the final statement of the supervisor.
- 3 - The Scientific Council is responsible for the curricular traineeship, coordinating all the procedures related to it through the MIMV curricular traineeships Committee (MIMV-CTC).
- 4 - The student is free to choose the tutor, supervisor(s), the scientific area and the location where to accomplish his curricular traineeship.
- 5 - Within 15 days after starting the student should report by email (secretaria@fmv.ulisboa.pt) to the Academic Office the beginning the curricular traineeship and within two months the specific and definite theme, always with the acknowledgement and agreement of supervisor.
- 6 - If the student wishes to change the theme and / or the location of the curricular traineeship, permission should be asked to the MIMV-CPC, through a new application form duly completed.

7 - If the student wishes to change the tutor or supervision of the curricular traineeship, the MIMV-CTC should be informed and a new application must be accompanied by an acceptance letter from the new supervisor(s) and a letter from the outgoing tutor and supervisor(s) confirming their understanding and agreement to this change.

8 - The supervisor has the following competencies and duties:

- a) Ensure the link between the student, FMV and the Tutor when the latter does not work in FMV;
- b) Establish, in conjunction with the Tutor and the student, the curricular traineeship program;
- c) Advise the student, regarding the technical, scientific, ethical and deontological components;
- d) Communicate to the student any relevant academic or pedagogic indications;
- e) Provide the best conditions for the purposes of the traineeship, together with the Tutor, in the case there is one;
- f) Critically advise the student in structuring, writing and revision of the dissertation;
- g) Prevent any plagiarism or violation of copyright and intellectual property;
- h) Issue a written opinion on the admissibility of the dissertation;
- i) Integrate the jury that evaluates the dissertation and its discussion on the public examination. The supervisor may request his replacement by the co-supervisor on the jury;
- j) Provide information to the jury about the student's performance during the curricular traineeship period; if, by any major reason, the supervisor cannot attend the meetings of the jury, the Annex I to this Regulation should be filled and sent to the jury's President;
- k) Advise the student in any revision of the dissertation requested by the jury.
- l) In case of external supervisor the tasks stipulated in points f), g) and k) should be executed, mainly, by the internal co-supervisor.

9 - The co-supervisor has the following competencies and duties:

- a) Ensure the link between the student, FMV and the supervisor when the latter does not work in FMV;
- b) Establish, in conjunction with the supervisor and the student, the curricular traineeship program, cooperating in planning activities;
- c) Communicate to the student any relevant academic or pedagogic indications;
- d) Cooperate in structuring, writing and reviewing of the dissertation;
- e) Prevent any plagiarism or violation of copyright and intellectual property;
- f) Issue a written opinion on the admissibility of the dissertation;
- g) Integrate the jury that evaluates the dissertation and its discussion on the public examination when the supervisor declare that he cannot integrate it;
- h) Advise the student in any revision of the dissertation requested by the jury.

10 – In applicable cases, the Tutor, a professional with acknowledged merit in the scientific area of the traineeship by the FMV-ULisboa Scientific Council, with at least 5 years of professional experience in the area, helps the Supervisor in the accompaniment of the activities of the traineeship.

11 - In addition to Student Disciplinary Regulations and University of Lisbon Code of Conduct and Best Practices, the student has also the following duties:

- a) Observe the conditions of operation of the host institution, including schedules, rules and discipline and demonstrate punctuality, courtesy and cooperative attitude to acquire knowledge mentioned in the traineeship plan;
- b) Treat with courtesy and respect everyone involved in the traineeship;
- c) Make careful use of resources;
- d) Use or divulge information collected without consent of the host institution, not only during the traineeship but also after its expiry.
- e) Comply with all rules of the Integrated Master in Veterinary Medicine Regulation.
- f) Assist the external supervisor in all aspects related to FMV and internal co-supervisor;

12 – The Faculty of Veterinary Medicine certifies that during the traineeship the student benefits from an insurance policy guaranteeing personal damages caused to his trainee status.

13 – The Integrated Master in Veterinary Medicine Regulation provides all information about curricular traineeship, and is provided at the following Internet address: [www.fmv.ulisboa.pt](http://www.fmv.ulisboa.pt).

On behalf of the  
Faculty of Veterinary Medicine

Supervisor

\_\_\_\_\_  
(Coordinator on the curricular traineeships Committee)

\_\_\_\_\_

Co-supervisor

Tutor

\_\_\_\_\_

\_\_\_\_\_

Student

\_\_\_\_\_

Faculty of Veterinary Medicine, [day, month, year]



A close-up, black and white photograph of a large, curved metal component, possibly a part of a machine or a large container. The surface is metallic and shows signs of wear and texture. Two circular fasteners or bolts are visible, securing the component. The lighting creates strong highlights and shadows, emphasizing the curvature and the texture of the metal.

# **Appendix 10**

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Proposal for a new veterinary medicine  
programme curriculum

## **Integrated Master in Veterinary Medicine Study Programme**

### **Foreword and introduction to the new *Curriculum***

The current Study Programme of the Integrated Master in Veterinary Medicine (IMVM) of the Faculty of Veterinary Medicine of the University of Lisbon (FMV-ULisboa) is largely the result of the plan approved in 2005 and implemented in the academic year 2007-08, based on the Bologna process. Since this revision, taking in consideration the recommendations of the processes of national (A3ES - in 1999, 2004, 2011, 2015 and 2022) and international (EAEVE, in 1989, 2000, 2007 and 2017) assessments, FMV-ULisboa has continuously monitored its *Curriculum* and introduced minor changes and adjustments.

However, Veterinary Medical curricula need regular updating to meet the changing needs of the society and stakeholders that future veterinarians will serve, and to encompass the advancements of science, ethics and technology. Among others, it was recognized the need to integrate emerging medical and technological competences, to adapt the education methods to the new paradigms of knowledge, teaching and learning, namely the best evidence based science, and to adjust the standards to new guidelines on veterinarian education. It was also understood that the new *Curriculum* should also reflect the evolving concepts about the roles of the future veterinarians.

Therefore, since 2020 FMV-ULisboa has been discussing a new Study Programme, which was formally approved by the Scientific Council on May 13, 2022 and March 1, 2024, and is scheduled to start in the academic year of 2025-26. This new Study Programme (as shown in annexed documents) incorporated the recommendations of A3ES and EAEVE, the suggestions from FMV-ULisboa Advisory Board, Scientific Committee of IMVM and 74 *Alumni* (graduated within 5 years) who answered a questionnaire issued by FMV-ULisboa, and was designed to address the challenges of the veterinarian profession and veterinarian sciences of the next decade. The new Study Programme was founded in the following concepts, rational and objectives:

1. To increase the number of clinical contact hours per student to above mean values of European Schools (EAEVE means); the new Curriculum now entails 1000 clinical contact hours per student (as opposite to actual 672 hours);
2. To introduce a semester based structure in the first cycle (1<sup>st</sup> to 3<sup>rd</sup> years) and annual in the second cycle (4<sup>th</sup> and 5<sup>th</sup> years), where rotations in clinical and veterinary public health Units of Study (US) take place;

3. To introduce clinical subjects and professional valences more early in the Study Programme, in order to link the student as soon as possible to current and future expected realities of the profession;
4. To introduce a strong integration of subjects, to avoid the fragmentation and dispersion of knowledge;
5. To decrease the number of US per semester, allowing students to concentrate in integrated subjects, increasing teaching time, and significantly decreasing time required to exams and final assessments;
6. To introduce a more rational knowledge flow progress structure, by a better articulation of US of different semesters/years;
7. To introduce new subjects and turn mandatory subjects so far elective, as well as to exclude otherwise no longer necessary subjects;
8. To introduce new US concerning soft skills and professional skills;
9. To decrease the time of presence-teaching, allowing students to have more time for self-study and other university or personal activities;
10. To introduce the possibility to implement precedence approval for certain US, to allow a better knowledge acquisition sequence.

This new Study Programme will be accompanied by new pedagogical components, both in the teaching-learning processes and student assessment, to be set by the Pedagogical Council of FMV-ULisboa.



**New Curriculum (Study Programme) of the Integrated Master in Veterinary Medicine of FMV-ULisbboa (Approved by the Scientific Council in January 26, 2024)**

<b>Unit of Study</b>	<b>Year</b>	<b>Semester</b>	<b>ECTS</b>
Descriptive Anatomy	1	1	10
Biochemistry, Cell and Molecular Biology	1	1	10
Histology and Embriology	1	1	9
Bioethics, History and Careers of the Veterinary Profession	1	1	1
Topographic and Imaging Anatomy	1	2	5
Physiology	1	2	10
Animal Behavior, Welfare and Wellbeing and Husbandry	1	2	5
Biostatistics and Principles of Scientific Research	1	2	4
Zootechnics, Agriculture and Environment	1	2	6
Physiopathology	2	3	7
Microbiology	2	3	8
Parasitology	2	3	8
Genetics and Animal Breeding	2	3	7
Pathologic Anatomy I	2	4	6
Pharmacology, Pharmacy and Pharmacotherapy	2	4	9
Economics, Management and Entrepreneurship	2	4	5
Nutrition and Feeding	2	4	10
Pathologic Anatomy II	3	5	6
Medical and Clinical Propaedeutics	3	5	12
Toxicology and Forensic Veterinary Medicine	3	5	5
Animal Production	3	5	5
Elective	3	5	2
Surgery Propaedeutics and Anesthesia	3	6	11
Medical Immunology	3	6	4
Food Safety and Security, and Technology of Animal Products	3	6	11
Soft Skills	3	6	2
Elective	3	6	2
Epidemiology, Infectiology and Preventive Medicine	4	7/8	15
Surgery	4	7/8	10
Medicine	4	7/8	15
Reproduction and Obstetrics	4	7/8	10
Medicina de Espécies Exóticas, da Conservação e de Biotério	4	7/8	6
Elective	4	7/8	2
Elective	4	7/8	2
Sanitary Inspection and Veterinary Public Health	5	9/10	12
Food-Producing Animal Clinics and Herd Health	5	9/10	12
Equine Clinics	5	9/10	10
Companion Animal Clinics	5	9/10	18
Deontology, Ethics and Professional Communication	5	9/10	2
Clinical-Hospital Management	5	9/10	2
Elective	5	9/10	2
Elective	5	9/10	2
Project and Scientific Communication	6	11	1
External Practical Training	6	11	29

**New Curriculum (Study Programme) of Integrated Master in Veterinary Medicine and their alignment with ESEVT subjects and ESEVT and FMV Day One Competences**

<b>INPUT (EAEVE SUBJECTS)</b>	<b>Units of Study (New Curriculum)</b>	<b>OUTPUT (DAY 1 ESEVT Competences)</b>	<b>OUTPUT (DAY 1 FMV Competences)</b>
<b>Basic subjects</b>			
Medical physics	Topographic and Imaging Anatomy Histology and Embryology Biochemistry, Cell and Molecular Biology	1.4    1.24	1.1.7   1.1.10   3.2.3 1.1.8   3.1.4   3.1.12 1.1.7   3.2.2
Chemistry (inorganic and organic sections)	Biochemistry, Cell and Molecular Biology	1.24	1.1.7   1.1.10   3.1.4
Animal biology, zoology and cell biology	Descriptive Anatomy Histology and Embryology Physiology Biochemistry, Cell and Molecular Biology	1.2	1.1.3
Feed plant biology and toxic plants	Zootechnics, Agriculture and Environment	1.16   1.22 1.21   1.36	3.1.3   3.3.4   3.4.6 3.2.4   3.3.5
Biomedical statistics	Biostatistics and Principles of Scientific Research	1.2    1.24	1.1.3   3.1.4   3.2.3 1.1.7   3.2.2   3.1.12 1.1.10
<b>Specific veterinary subjects</b>			
<b>Basic Sciences</b>			
Anatomy, histology and embryology	Descriptive Anatomy Histology and Embryology Topographic and Imaging Anatomy	1.2	1.1.3
Physiology	Physiology	1.2	1.1.3
Biochemistry	Biochemistry, Cell and Molecular Biology Physiopathology	1.2    1.22	1.1.3   3.2.4   3.3.5
General and molecular genetics	Biochemistry, Cell and Molecular Biology Genetics and Animal Breeding	1.2	1.1.3
Pharmacology, pharmacy and pharmacotherapy	Pharmacology, Pharmacy and Pharmacotherapy	1.1    1.27 1.26   1.28	1.1.1   1.1.9   3.4.1 1.1.4   3.1.10   3.4.2
Pathology	Physiopathology Pathologic Anatomy I and II	1.10   1.23 1.22   1.34	1.1.2   3.1.4   3.2.8 1.1.3   3.2.4   3.3.5 2.3
Toxicology	Toxicology and Forensic Veterinary Medicine	1.1    1.23 1.22   1.25	1.1.1   2.3    3.2.4 1.1.9   3.1.4   3.3.5

Parasitology	Parasitology	1.22 1.25	1.38		3.1.4 3.1.13 3.1.14	3.2.4 3.3.5 3.4.1	3.4.2 3.4.5
Microbiology	Microbiology	1.22 1.25	1.38		3.1.4 3.1.13 3.1.14	3.2.4 3.3.5	3.4.1 3.4.2 3.4.5
Immunology	Physiopathology Medical Immunology	1.10	1.38		1.1.2	1.1.3	3.1.13
Epidemiology	Epidemiology, Infectiology and Preventive Medicine Biostatistics and Principles of Scientific Research	1.1 1.3 1.10	1.12 1.38		1.1.1 1.1.9 1.1.1 1.2.3	1.1.2 1.1.3 1.1.2 1.1.6	3.1.13 3.4.2
Information literacy and data management	Biostatistics and Principles of Scientific Research Epidemiology, Infectiology and Preventive Medicine Project and Scientific Communication	1.1 1.2	1.7 1.9	1.11 1.24	1.1.1 1.1.3 1.1.4 1.1.5	1.1.7 1.1.9 1.1.10 1.2.3	3.1.4 3.1.12 3.2.2 3.2.3
Professional ethics and communication	Bioethics, History and Careers of the Veterinary Profession Soft Skills Deontology, Ethics and Professional Communication	1.1 1.3 1.4 1.5 1.6	1.7 1.8 1.10 1.11 1.13	1.14 1.15 1.23 1.33	1.1.1 1.1.2 1.1.3 1.1.5 1.1.7 1.1.8	1.1.9 1.2.1 1.2.2 1.2.3 1.2.4 2.1	2.2 2.3 2.4 2.5 2.6 3.1.9
Animal health economics and practice management	Economics, Management and Entrepreneurship Clinical-Hospital Management Food Animal Clinics and Herd Health Epidemiology, Infectiology and Preventive Medicine	1.1 1.3 1.4 1.6	1.7 1.8 1.11	1.13 1.15 1.33	1.1.1 1.1.5 1.1.7 1.1.8 1.1.9	1.2.1 1.2.2 1.2.3 1.2.4 2.1	2.2 2.4 2.5 3.1.9
Animal ethology	Animal Behavior, Welfare and Wellbeing and Husbandry	1.17			3.2.1		
Animal welfare	Animal Behavior, Welfare and Wellbeing and Husbandry Zootechnics, Agriculture and Environment Animal Production Food Animal Clinics and Herd Health	1.1 1.12	1.21	1.33	1.1.1 1.1.2 1.1.6 1.1.9	3.1.1 3.1.2 3.1.9 3.1.13	3.3.2 3.3.4 3.3.7
Animal nutrition	Nutrition and Feeding	1.21	1.22		3.1.4 3.1.13 3.2.4	3.3.1 3.3.2 3.3.4	3.3.5 3.3.7 3.4.6
<b>Clinical Sciences in companion animals (including equine and exotic species)</b>							
Obstetrics, reproduction and	Reproduction and Obstetrics	1.1 1.3 1.10	1.21 1.22	1.26 1.27 1.31	1.1.1 1.1.2 1.1.3	3.1.4 3.1.5 3.1.7	3.2.3 3.2.4 3.2.6

reproductive disorders		1.16 1.23 1.32 1.18 1.24 1.25	1.1.4 3.1.8 3.3.1 1.1.7 3.1.9 3.3.2 1.1.10 3.1.10 3.3.3 1.2.3 3.1.11 3.4.2 2.3 3.1.12 3.4.3 3.1.1 3.1.13 3.4.4 3.1.2 3.1.14 3.4.5 3.1.3 3.2.2
Diagnostic pathology	Physiopathology Medical and Clinical Propaedeutics Pathologic Anatomy I and II	1.10 1.23 1.22 1.34	1.1.2 3.1.4 3.2.8 1.1.3 3.2.4 3.3.5 2.3
Medicine	Medical and Clinical Propaedeutics Medicine Medicine of Conservation and of Exotic and Bioterium Species	1.10 1.19 1.24 1.16 1.22 1.27 1.18 1.23 1.32	1.1.2 3.1.5 3.1.12 1.1.3 3.1.6 3.2.2 1.1.7 3.1.7 3.2.3 1.1.10 3.1.8 3.2.4 2.3 3.1.9 3.2.6 3.1.3 3.1.10 3.3.5 3.1.4
Surgery	Surgery Surgery Propaedeutics and Anesthesia Medicine of Conservation and of Exotic and Bioterium Species	1.7 1.16 1.30 1.8 1.20 1.31 1.10 1.24 1.32	1.1.2 2.4 3.2.2 1.1.3 2.5 3.2.3 1.1.5 3.1.3 3.2.5 1.1.7 3.1.4 3.2.6 1.1.10 3.1.5 3.2.7 2.2 3.1.12
Anesthesiology and analgesia	Surgery Propaedeutics and Anesthesia	1.31 1.32	3.2.6
Clinical practical training in common animal species*	Food-Producing Animal Clinics and Herd Health Equine Clinics Companion Animal Clinics Epidemiology, Infectiology and Preventive Medicine	1.1 1.14 1.25 1.3 1.16 1.26 1.5 1.17 1.27 1.7 1.18 1.30 1.8 1.19 1.31 1.10 1.20 1.32 1.11 1.22 1.33 1.12 1.23 1.34 1.13 1.24	1.1.1 2.1 3.1.12 1.1.2 2.2 3.1.14 1.1.3 2.3 3.2.1 1.1.4 2.4 3.2.2 1.1.5 2.5 3.2.3 1.1.6 2.6 3.2.4 1.1.7 3.1.3 3.2.5 1.1.8 3.1.4 3.2.6 1.1.9 3.1.5 3.2.7 1.1.10 3.1.6 3.2.8 1.2.1 3.1.7 3.3.5 1.2.2 3.1.8 3.4.3 1.2.3 3.1.9 3.4.5 1.2.4 3.1.10
Infectious diseases	Epidemiology, Infectiology and Preventive Medicine	1.10 1.22 1.38 1.12 1.23 1.19 1.34	1.1.2 3.1.6 3.2.4 1.1.3 3.1.7 3.2.8 1.1.6 3.1.8 3.3.5 2.3 3.1.13 3.4.2 3.1.4
Preventive medicine	Epidemiology, Infectiology and Preventive Medicine Medical Immunology	1.1 1.10 1.38 1.3 1.12	1.1.1 1.1.8 1.2.3 1.1.2 1.1.9 3.1.13 1.1.3 1.2.1 3.4.2 1.1.6

Diagnostic imaging	Medical and Clinical Propaedeutics Medicine Reproduction and Obstetrics Medicine of Conservation and of Exotic and Bioterium Species Food Animal Clinics and Herd Health Equine Clinics Companion Animal Clinics	1.10 1.24			1.1.2 1.1.10 3.2.2 1.1.3 3.1.4 3.2.3 1.1.7 3.1.12
Therapy in common animal species	Pharmacology, Pharmacy and Pharmacotherapy Medical Immunology Medicine Epidemiology, Infectiology and Preventive Medicine Reproduction and Obstetrics Medicine of Conservation and of Exotic and Bioterium Species Food Animal Clinics and Herd Health Equine Clinics Companion Animal Clinics	1.1 1.12 1.28 1.3 1.19 1.31 1.10 1.27 1.32			1.1.1 1.1.9 3.1.8 1.1.2 1.2.1 3.1.10 1.1.3 1.2.3 3.2.6 1.1.6 3.1.6 1.1.8 3.1.7
<b>Clinical Sciences in food-producing animals (including Animal Production and Herd Health Management)</b>					
Animal Production, including breeding, husbandry and economics	Animal Behavior, Welfare and Wellbeing and Husbandry Zootechnics, Agriculture and Environment Animal Production Genetics and Animal Breeding Animal Production Reproduction and Obstetrics Food Animal Clinics and Herd Health	1.1 1.8 1.3 1.21			1.1.1 2.4 3.3.1 1.1.8 2.5 3.3.2 1.1.9 3.1.1 3.3.3 1.2.1 3.1.11 3.3.4 1.2.3 3.1.13 3.3.7 2.2 3.1.2 3.4.6
Herd health management	Epidemiology, Infectiology and Preventive Medicine Reproduction and Obstetrics Food Animal Clinics and Herd Health	1.1 1.12 1.29 1.3 1.16 1.34 1.8 1.21 1.38 1.10 1.25			1.1.1 2.4 3.3.1 1.1.2 2.5 3.3.2 1.1.3 3.1.1 3.3.3 1.1.6 3.1.11 3.3.4 1.1.7 3.1.12 3.3.7 1.1.8 3.1.13 3.4.1 1.1.9 3.1.14 3.4.2 1.2.1 3.1.2 3.4.5 1.2.3 3.1.3 3.4.6 2.2 3.2.8 3.4.9
<b>Veterinary Public Health (including Food Safety and Quality)</b>					
Veterinary legislation including official controls and regulatory veterinary services, forensic veterinary medicine and certification	Zootechnics, Agriculture and Environment Animal Production Epidemiology, Infectiology and Preventive Medicine Sanitary Inspection and Veterinary Public Health	1.1 1.25 1.37 1.3 1.29 1.38 1.12			1.1.1 1.2.1 3.4.7 1.1.2 1.2.3 3.4.8 1.1.6 3.1.12 3.4.9 1.1.7 3.1.13 3.4.10 1.1.8 3.1.14 3.4.11 1.1.9 3.4.2 3.4.12

	Toxicology and Forensic Veterinary Medicine Food Safety and Security, and Technology of Animal Products				
Control of food, feed and animal by-products	Nutrition and Feeding Sanitary Inspection and Veterinary Public Health Food Safety and Security, and Technology of Animal Products	1.1 1.8 1.10	1.29 1.35	1.36 1.37	1.1.1 2.2 3.4.9 1.1.2 2.4 3.4.10 1.1.3 2.5 3.4.11 1.1.7 3.1.12 3.4.12 1.1.8 3.4.7 1.1.9 3.4.8
Zoonoses	Pathologic Anatomy I and II Sanitary Inspection and Veterinary Public Health Epidemiology, Infectiology and Preventive Medicine Parasitology Microbiology Food Safety and Security, and Technology of Animal Products	1.1 1.10 1.12	1.25 1.29 1.36	1.37 1.38	1.1.1 1.1.9 3.4.7 1.1.2 3.1.12 3.4.8 1.1.3 3.1.14 3.4.9 1.1.6 3.4.1 3.4.10 1.1.7 3.4.2 3.4.11 1.1.8 3.4.5 3.4.12
Food hygiene and environmental health	Food Safety and Security, and Technology of Animal Products Toxicology and Forensic Veterinary Medicine Sanitary Inspection and Veterinary Public Health	1.1 1.29	1.35 1.36	1.37	1.1.1 1.1.9 3.4.9 1.1.2 3.1.12 3.4.10 1.1.7 3.4.7 3.4.11 1.1.8 3.4.8 3.4.12
Basic Food technology	Food Safety and Security, and Technology of Animal Products	1.1 1.29	1.36 1.37	1.8	1.1.1 2.2 3.4.8 1.1.2 2.4 3.4.9 1.1.7 2.5 3.4.10 1.1.8 3.1.12 3.4.11 1.1.9 3.4.7 3.4.12



# Appendix 11

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Clinical Skills Training Center - Regulations,  
Stations and Equipment



## CLINICAL SKILLS TRAINING CENTER (CSTC) REGULATIONS

### 1. Scope and objectives of the Clinical Skills Training Center

The Clinical Skills Training Center (CSTC) was inaugurated in the 2016-2017 academic year to support the practical teaching of the integrated master's in veterinary medicine (IMVM/MIMV) and has been expanding and increasing the clinical skills training offered to students, under repeatable conditions, supervision and in complete safety.

Its objectives are the following:

- a) To support teaching in the pre-clinical and clinical areas, by providing spaces and equipment that encourage better learning and training for students, either in a classroom context or autonomously by students under technical supervision.
- b) Ensuring that the first phases of clinical training are not carried out on live animals, following the principle of “never the first time on a live animal”.
- c) Reducing the number of live animals used in teaching according to the 3Rs principles - Reduction, Refinement, Replacement - using cadavers, mannequins, and models.

### 2. Spaces and equipment at the Clinical Skills Training Center

The CSTC is composed of three Areas:

- a) Area 1A - Pharmacology - room H0.13A, on Building H, in a space of 90 m<sup>2</sup>.
- b) Area 1B - Medical Propaedeutics, Anesthesiology, and Surgical Semiology - room H0.13B, on Building H, in a space of 100 m<sup>2</sup>.
- c) Area 2 - Reproduction and Obstetrics, in room G0.1, on Building G, in a space of 73 m<sup>2</sup>.
- d) Area 3 - Experimental Surgery - room D1.17, on floor 1 of Building D, in a space of around 70 m<sup>2</sup>

The equipment available at each area is described in Annex I.

### 3. Stations

The learning stations available for autonomous training by students will be defined at each Area. Each one must have an identification (number) and a manual, either printed or in digital format (accessed by a QR code), with a detailed description of all the procedures that can be trained, so that the student can train autonomously, under the supervision of a volunteer teaching student (VTS) and/or a technician.

The list of available stations at each Area is listed in Annex II.

#### 4. Access to the Clinical Skills Training Center

The access to the CSTC is restricted to the following groups:

- a) Teachers, VTH veterinarians and nurses, and researchers from the Center for Interdisciplinary Research in Animal Health (CIISA), with teaching service distribution approved by the Scientific Council in the units of study (US) that request the use of the CSTC,
- b) IMVM students, in teaching activities of US that use the CSTC or in autonomous training sessions,
- c) Surgeons and other members of Experimental Surgery Center,
- d) Trainers and trainees involved in training actions, under supervision of teaching or research staff
- e) FMV workers of the areas of hygiene, waste, and animal care.

#### 5. Rules for the use of the Clinical Skills Training Center - teachers and researchers

- a) The use of the CSTC and its equipment, whether for practical classes or practical assessments, must be preceded by a request (Annex III) no later than 2 weeks before the start of the semester, which must be sent to the CSTC Coordination in order to ensure proper planning and availability.
- b) The CSTC Coordination must answer to the above requests no later than 1 week before the start of the semester.
- c) For experimental surgery procedures and/or training courses, an identical request must also be sent to the CSTC Coordination at least 1 month before the scheduled date. This use is subject to the availability of the room, with teaching activities (classes and assessments) taking priority over any other type of use.
- d) The CSTC Coordination must respond to the requests referred to in the previous paragraph no later than one week after the date on which the request was made or 3 weeks before the date on which the event is scheduled to take place, considering the deadline provided for in the previous paragraph.
- e) The requests referred to in a) and c) must indicate which equipment/materials are required, in order to guarantee their availability.
- f) There must be a logbook in each Area where all use of the space and the respective equipment/materials must be recorded, as well as the name of the user, the day and the time of entry and exit.

#### 6. Rules for the use of the Clinical Skills Training Center - students

Until 2023-2024, the CSTC was used exclusively in the context of classes or assessments. In the 2024-2025 a model will be implemented for using the CSTC for autonomous student training,

based on prior booking and under the supervision of a volunteer teaching student (VTS) and/or a technician. A weekly schedule will be defined for each Area, planning students' access and training.

Students must contact the Head of each Area / US no later than 4 working days before the date they wish to use the Area, who must reply no later than 2 working days before the requested date.

#### 7. Rules for the use of the Clinical Skills Training Center - responsibilities

All users, duly authorized by the CSTC, are responsible for any damage that may occur to the spaces or equipment, which must be reported by email to the person in charge on the first working day following, with the knowledge of the technician or the volunteer teaching student who was present at the training session.

#### 8. Cleaning and sanitizing the Clinical Skills Training Centre

The CSTC facilities must be cleaned and disinfected after any action that includes the use of live animals or cadavers. Cleaning and disinfection must comply with the rules and regulations communicated by the CSTC Coordinator and the FMV Occupational Health and Safety Officer.

## **Annex I**

### **List and characteristics of the equipment in each Area**

#### **ROOM H0.13A**

- 1 critical care, full-sized, realistic canine manikin, featuring jugular and vascular access (®Rescue Critters);
- 1 critical care, full-sized, realistic feline manikin, for CPR, and also the practice of cat restraint, bandaging, and venipuncture (®Rescue Critters);
- 8 Intravenous (IV) Injection leg (forelimb) canine for the correct course of an intravenous injection training;
- 1 equine neck for jugular venipuncture and intramuscular injection training (®Veterinary Simulator Industries, Canada);
- 2 homemade sponge and cloth dog models for training intramuscular and subcutaneous administration.
- 5 stainless steel tables
- 1 LCD 42inch

#### **ROOM H0.13B**

- 1 critical care, full-sized, realistic canine manikins, with breath/heart sound simulator, (®Rescue Critters);
- 1 bandaging full-sized dog manikin mainly for practicing advanced bandaging techniques (®Rescue Critters);
- 2 canine heads for bandage training (®Rescue Critters);
- 5 canine tracheal intubation trainers (EZVET4600);
- 10 artisanal models of dog hind limbs for bandage training
- Variable artisanal models for ovariohysterectomy and orchiectomy training
- 40 surgical training kits for sutures.
- 10 canine tibia bone replicas for osteosynthesis techniques training
- 20 periodontal disease models for curettage training
- 10 stainless steel tables
- 10 surgical lights (50000Lux, 17 Watt)
- 10 stainless steel Mayo tables
- 2 LCD 55inch
- 1 video camera connected to a streaming system.
- 30 round seats

### **ROOM G0.1**

- 1 compact and realistic Hereford cow model (®Veterinary Simulator Industries), life-size, for simulating and solving dystocia.
- 2 realistic Hereford calf models for use in the dystocia model (®Veterinary Simulator Industries)
- 2 life-size cow obstetric canal simulators
- 1 female dog model (Gyndog "Gynnie" - Vetiqo) for training in realistic conditions for gynaecological examination, childbirth, and insemination.
- 1 dog model (Androdog "Andre" - Vetiqo) for realistic training in andrological examination and semen collection.

### **ROOM D1.17**

- 4 stainless steel tables
- 4 surgical lights
- 4 mayo tables
- 2 LCD
- 1 camera connected to streaming system
- 2 multiparametric monitors
- 1 anesthesia machine
- 1 dummy for operator field prep

## ANNEX II

List of learning stations at each Area.

Area	Station no	Procedure
1A	1	Intravenous administration in a canine forelimb simulator
1A	2	Intramuscular administration in a canine animal model
1A	3	Subcutaneous administration in a canine animal model
1A	4	Intravenous administration in an animal model - feline
1A	5	Intramuscular administration in animal model - equine
1A	6	Intravenous administration in animal models – horses
1A	7	Preparation and administration of cytostatic drugs
1B	1	Clinical examination of the respiratory system in a realistic canine mannequin
1B	2	Clinical examination of the cardiovascular system on a realistic canine mannequin
1B	3	Orotracheal intubation in dogs
1B	4	Peripheral catheter placement
1B	5	Training manual knots
1B	6	Training in interrupted sutures: simple, X-shaped, horizontal and vertical U-shaped, near-far, far-far and Halsted sutures,
1B	7	Vessel ligature training: simple ligatures and Halsted and modified transfix ligatures
1B	8	Training in continuous sutures: simple continuous, chained, quilting, Cushing's, Lambert's and Schmieden's sutures
1B	9	Preparing the operating field
1B	10	Basic osteosynthesis training
1B	11	Surgeon preparation training - putting on gloves
1B	12	Robert Jones and tie-over bandage
1B	13	Drainage application
1B	14	Ovariohysterectomy training in cats
1B	15	Dog orchiectomy training
1B	16	Dental Scaling
2		<i>Food-Producing Animals - Ruminants</i>
2	1	Simulation of presentation dystocia
2	2	Simulation of position dystocia
2	3	Attitude dystocia simulation
2	4	Mandibular loop training, use of obstetric chains and cords, foetal extractor, and obstetric instruments

2	5	Training in neonatal care
2		<i>Dogs and Cats</i>
2	6	Vaginoscopy
2	7	Collection of vaginal swabs for cytology or microbiological examination
2	8	Trans-abdominal palpation of the uterus
2	9	Simulation of childbirth in the bitch; training in obstetric manoeuvres
2	10	Vaginal insemination
2	11	Testicular palpation in the dog (5 pairs of testicles simulating the physiological state, testicular asymmetry; testicular tumour; scrotal hernia and cryptorchidism)
2	12	Rectal examination (4 prostates simulating different problems)
2	13	Simulation of manual semen collection in the dog
3	1	Surgeon preparation training – hand wash and complete surgeon prep
3	2	Surgical operatory field training - draping
3	3	Anesthesia machine set up
3	4	Multiparametric monitor set up
3	5	Dental radiography





# Appendix 12

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Regulation for the Assessment of Knowledge and Competencies and Admission to the Final Exam of the 1<sup>st</sup>, 2<sup>nd</sup>, and 3<sup>rd</sup> Study Cycle at FMV-Lisboa

**Order no. 3522/2024****Amendment and republication of the Regulation for the assessment of knowledge and skills and admission to the final exam of the 1<sup>st</sup>, 2<sup>nd</sup>, and 3<sup>rd</sup> study cycles at FMV-ULisboa.**

It is the President's responsibility to approve the regulations necessary for the regular functioning of the Faculty, under the terms of Article 20(1)(c) of the Statutes of the Faculty of Veterinary Medicine of the University of Lisbon, approved by Order no. 6819/2022, published in *Diário da República*, 2nd series, no. 104, of May 30.

Considering the need to adapt some of the rules of the Regulation for the assessment of knowledge and skills and admission to the final exam of the 1<sup>st</sup>, 2<sup>nd</sup> and 3<sup>rd</sup> study cycles at FMV-ULisboa, following the legislation in force, and promoting its adaptation for the best functioning of the study cycles, following the favourable opinions of the Scientific Council, at the meeting of June 2, 2023, and of the Pedagogical Council at the meeting of September 22, 2023, and after public consultation under the terms of articles 99 to 101 of the Code of Administrative Procedure, I hereby determine the publication of the Regulation for the assessment of knowledge and skills and admission to the final exam of the 1<sup>st</sup>, 2<sup>nd</sup> and 3<sup>rd</sup> study cycles at FMV-ULisboa, which will be republished in full as an annex to this order.

This Regulation revokes the previous one approved by decision of the Scientific Council on 30/07/2014 and the Pedagogical Council on 19/09/2014.

This order shall enter into force on the day following its publication in the *Diário da República*.

January 22 - The President of FMV-ULisboa, Rui Manuel de Vasconcelos e Horta Caldeira.

# **REGULATION FOR THE ASSESSMENT OF KNOWLEDGE AND COMPETENCIES AND ADMISSION TO THE FINAL EXAM OF THE 1<sup>st</sup>, 2<sup>nd</sup> AND 3<sup>rd</sup> STUDY CYCLES AT FMV-ULISBOA**

## **CHAPTER I GENERAL PROVISIONS**

### **Article 1**

#### **Object**

The purpose of this Regulation is to define the operating rules for the process of assessing knowledge and skills of students in the 1<sup>st</sup>, 2<sup>nd</sup> and 3<sup>rd</sup> study cycles at the Faculty of Veterinary Medicine, hereinafter referred to as FMV, of the University of Lisbon, hereinafter referred to as ULisboa, except study cycles in collaboration with other organic units of ULisboa or other higher education institutions whose administration and rules are established differently.

### **Article 2**

#### **Objectives, values, and principles**

1. The aim of the assessment is for students to demonstrate they have achieved the learning objectives set for the curricular unit or study unit (SU).
2. In order to fulfil the provisions of the previous paragraph, the adopted teaching-learning and assessment methods must be in line with these objectives, allowing students to demonstrate, and teachers to assess, the knowledge, skills and abilities defined in the objectives of these SUs.
3. The Scientific and Pedagogical Coordinator (SPC) is responsible for defining the assessment methodologies for each Unit of Study, after consulting the respective Teacher.
4. The diversity of FMV study cycles and respective compulsory and optional SUs, allows and advises the adoption of different teaching and assessment solutions, including online or distance teaching and assessment, but always with prior approval from the Pedagogical Council and following the registration of the study cycles with the Directorate-General for Higher Education (DGES).
5. Having clear assessment rules and being aware of them at the beginning of the academic period is essential for the proper functioning of the SUs and for the correct relationship between teaching teams and students.
6. Whenever possible, the Pedagogical Council (PC) encourages the option of continuous assessment methods, particularly in the practical programs of SUs, whenever the number of students per group or class allows it, a strategy that permits students to be exempt from part of the content to be examined or even of the final practical exam.
7. The results of the continuous assessment must be made available to students up to 7 days before the start of the Normal Exam Season.

8. Any change to the assessment rules defined at the beginning of the academic period should only occur exceptionally, when agreed between the parties, with the knowledge of the Study Coordinator of the Scientific Area and authorization from the Pedagogical Council.
9. Students must be on an equal footing when it comes to assessment, and it is not acceptable for some students to be assessed by one method and others by another, or by different levels of demand or assessment times.
10. Exceptions are made for student workers, high-performance student-athletes, higher education student-athletes, student association leaders, and students with other special statuses, for whom assessment methods adjusted to their activity or legal prerogatives may be used, a situation that extends to the deadlines for completing work that may be adapted to students in these conditions and statuses.

### **Article 3**

#### **Study Unit Files**

1. The functioning of each SU, including the assessment methodologies, must be summarized in the respective file.
2. The study unit files are approved by the Scientific and Pedagogical Councils of FMV-ULisboa and their summarized version is available on the FMV website at <http://www.fmv.ulisboa.pt> in Portuguese and English.

## **CHAPTER II**

### **LEARNING ASSESSMENT**

### **Article 4**

#### **Scope and Definition**

Learning assessment is the deliberate and systematic process of collecting information in order to prove that students have acquired knowledge and skills, in accordance with previously approved objectives.

### **Article 5**

#### **General Rules for Assessment and Evaluation**

1. The theoretical program is assessed through a final written or oral exam, either face-to-face or at distance (to be used only in exceptional situations), and may include complementary elements such as individual or group work, reports, and oral presentations, or performing activities planned for in the Logbook, in study cycles where this is provided for.
2. Intermediate and summative theoretical assessments may also be considered, with exemption from the content assessed in the final exam.
3. The practical program can be assessed in person or, exceptionally, at distance, through an oral or written exam, or by carrying out a final or phased practical activity, in which case, if successful, students are exempt from assessment of part or all the content in the final exam.

4. In SUs where learning requires a strong integration of theoretical and practical knowledge, final assessments may only be considered based on the complementary elements referred to in paragraph 1.

## **Article 6**

### **Communication of Assessment Methodology to Students**

1. The assessment methods and the formula for calculating the final classification are proposed by the SPC, after consulting the Teacher, and approved by the Study Coordinator of the respective Scientific Area and by the Pedagogical Council, and may not be changed during the period of operation of the SU without their authorization.
2. The assessment methods and the formula for calculating the final classification are communicated to students by the Teacher in the first theoretical class of the SU or, in case of change, during the period of operation of the SU, in the first theoretical class after authorization from the Pedagogical Council.

## **Article 7**

### **Assessment Organization**

1. The organization of final exams is subject to the provisions of the legislation, currently, Ordinance 886/83 of September 22, which establishes three exam seasons: Normal, Appeal, and Special.
2. The periods for each exam season are defined by the Pedagogical Council, respecting the rules established by legislation, and are included in the Academic Calendar, which must be published by the end of July of the previous academic year.
3. The Exam Map for the Normal Season, Appeal Season, and Special Season is prepared by the Pedagogical Council and published by the end of October for all SUs.
4. The periods defined in the two previous paragraphs may be extended and the deadlines changed in exceptional, duly justified situations.
5. The exam juries for the SUs of all FMV study cycles are approved by the Scientific Council, upon proposal from the respective Department or, in the case of inter-school cycles, by the respective Scientific Committees, and published on the Moodle platform.
6. The exam juries are composed of a minimum of three teachers and chaired by the Teacher or by the SPC of the SU who, in the event of a tie, has the casting vote.
7. At least two members of the jury must be present in oral tests.
8. Up to 48 hours before the exam, counting in working days, students must pre-register for the exams on the Moodle platform, enabling better management of the necessary spaces and resources.
9. The jury will call the students admitted to the exam under the terms of Article 9(1).
10. Students must bring their student ID card or citizen card with them, which must be handed to the president of the jury, or whoever replaces him/her, whenever requested.
11. In the absence of a document proving identity, students must identify themselves to the President of the jury within 48 hours of taking the test.



12. After the deadline referred to in the previous paragraph, failure to present proof of identity will result in the cancellation of the exam.
13. If final assessments are carried out remotely, students must be registered with their full name and official email address on the Moodle and Fénix platforms (or other pedagogical interfaces, to be adopted in the future), to take the exam.
14. The assessment system adopted and communicated to students at the beginning of the academic year may stipulate that prior approval in the final theoretical exam is mandatory as a condition of access to the final practical exam or vice versa.
15. In both intermediate summative assessments and final assessments, theoretical and practical, written and oral, in person or remotely, the minimum rating for approval is 9.5 on a scale of 0 to 20.
16. In SUs that have mid-term, face-to-face, or distance assessments, students who do not pass these assessments must be assessed regarding their knowledge and skills in the entire subject at the time of the final assessment.
17. The assessment system adopted and communicated at the beginning of the academic year may stipulate that students, who pass only one of the final exams, theoretical or practical, may only take the final exam that is missing in the Appeal or Special Seasons, if they have access to the latter.
18. In SUs where, in addition to the final exams, additional assessment elements are requested, such as reports, assignments or presentations, these must contribute a minimum weight of 20% in the final classification.
19. The final classification is the weighted average of the results obtained in all elements required for assessment, following the assessment system adopted and communicated to students at the beginning of the academic year.
20. The classifications obtained in the exams must be published on the Moodle platform within a maximum period of 8 working days from the date of the exam. In the case of the Appeal Season, classifications obtained must be published on the Moodle platform by the last working day of July, except in exceptional situations.
21. In exceptional situations, decided by the Pedagogical Council, the last days of July may be used to carry out extraordinary or urgent exams to mitigate unforeseen situations that affect a considerable number of students.
22. In the case of oral practical exams, the SU teacher must inform the students, at the end of each session, whether or not they have passed, and may or may not disclose the classification obtained.
23. Students have the right to consult the written exams within 3 working days following the publication of the results on the Moodle platform, at a time to be defined and announced by the SU teacher.
24. Confirmation of the final classification may be planned for some SUs, and the SU teacher must set a value for defending this classification and inform students of this value at the beginning of the semester or academic year.
25. In the situation referred to in the previous paragraph, students who obtain a classification higher than the value set for defending the SU classification, may defend this classification in an oral exam.
26. In the defense referred to in the previous paragraph, the final exam classification can be maintained or changed to any value on a scale of 0 to 20.
27. If the student does not attend the defense referred to in the previous paragraphs, a final classification will be awarded equal to the defense limit of the SU classification, defined in paragraph 24.

28. Within 72 hours of the end of the period for consulting exams and/or defending their classification, the Teacher must enter the final classifications on the computer platform, currently Fénix, print the agenda, have it signed on all pages by all the members of the jury and deliver it to the Academic Office.

29. If students do not agree with the classification of the written exam, they can request a review by filling in the relevant form and delivering it to the Academic Office, within a maximum period of 48 hours after the end of the exam consultation period.

30. The jury must communicate the result of the review, referred to in the previous paragraph, within a maximum period of 3 working days, except in the case of the Appeal Season of the 2<sup>nd</sup> semester when, due to the summer holidays in August, the deadline for communicating the review is extended until September 7.

31. If students continue to disagree with the classification obtained, they can complain to the President of the Pedagogical Council who, together with the Study Coordinator of the respective Scientific Area and the President of the Scientific Council, analyses the complaint and communicates their decision to the applicant within a maximum period of 10 calendar days, not counting the month of August for this purpose.

## **Article 8**

### **Maximum number of exams**

1. During the Appeal Season, students will be able to take exams in the SUs in which they did not pass in the Normal Season, with no limit on the number of ECTS.
2. In the Special Season, students can only take exams in SUs in which they did not pass in the Normal and Appeal Seasons, totalling a maximum of 20 ECTS, a value that increases to 30 ECTS in the case of final year students in the 1<sup>st</sup> or 2<sup>nd</sup> cycle of non-integrated studies.
3. The maximum number of ECTS for Special Season exams may be increased under exceptional conditions or in the case of Study Plans transition.
4. Following the legislation in force, student workers do not have a limit on the number of SUs or ECTS they can take and can enroll for the exams they want in all exam seasons.

## **Article 9**

### **Admission to the final exam**

1. Given the specificity and relevance of the practical teaching component in the study cycles taught at the FMV, particularly in the Integrated Master's Degree in Veterinary Medicine (IMVM), only students who have attended at least 80 percent of the practical and theoretical-practical classes of the SU, rounded up to the nearest whole number, will be admitted to the final exam.
2. In certain SUs, some specific practical classes may be considered so relevant to the learning that the absence of students may require a final exam to complement the content taught, a rule that must be communicated at the beginning of the academic year.
3. For the purposes set out in the previous paragraphs, attendance is compulsory in practical and theoretical-practical classes.



4. Attendance at theoretical classes cannot be a condition of admission to the final exam.
5. It should be clarified that, under the terms of legislation, only medical certificates prove the impossibility of attending classes, but do not eliminate absences.
6. If a student, for serious reasons, has more absences than permitted, he or she may submit a request to the President of the Pedagogical Council, explaining the reasons for this situation and requesting admission to the final exam.
7. The content taught in the class the student missed can be assessed in a final practical exam.
8. Within 72 hours of the end of the teaching period, the SU teacher must notify the Academic Office of the list of students who will not be admitted to the exam due to excessive absences.
9. Student workers and other students covered by special statuses/quotas enjoy the rights provided for in specific legislation, respecting the specific characteristics of practical teaching, particularly in Veterinary Medicine.
10. Students who have been admitted to a final exam in the two previous academic years are exempt from attending practical classes, unless there has been a significant change to the practical program of the SU.

#### **Article 10**

##### **Special exams in cases of successive failures**

- 1 - Students who do not obtain approval after 3 enrolments in a SU, once they have been admitted to the exam in each of those enrolments, may request the constitution of a special jury to repeat the exam, through a request addressed to the President of the Pedagogical Council.
2. The President of the Pedagogical Council analyses each request, with the Study Coordinator of the respective Scientific Area and the President of the Scientific Council, and the decision is communicated to the applicant within a maximum period of 10 calendar days.
3. In addition to the previously appointed exam jury, this special exam jury includes the Study Coordinator in the respective Scientific Area and a teacher, member of the Pedagogical Council, appointed by the respective President.
4. The jury is approved by the President of the Scientific Council and the exam takes place on a date to be agreed between the parties or at the times set out in this Regulation.

#### **Article 11**

##### **Classification improvement**

1. The exam to improve the classification of a SU can be taken in the Appeal Season of the same semester/year, or in the respective Appeal Season of the following two academic years.
2. Only one improvement exam can be taken for each SU, and the student must register for the exam up to 2 working days before it takes place and pay the corresponding fee following the FMV table of fees.
3. Paragraph 1 also applies to optional SUs even if they do not take place in the following two academic years.
4. In case of classification improvement, the highest value prevails.

5. Students enrolled in SUs whose approval resulted from the accreditation of previous training are not entitled to an exam to improve their classification.

## **Article 12**

### **Special Exam Season**

1. The Special Exam Season runs for two weeks, as announced by the Pedagogical Council in the Academic Calendar of each academic year.
2. Final year students, student workers, and ERASMUS students can take exams in the Special Season for SUs whose exams they missed, withdrew, or failed in the Normal or Appeal Seasons, up to the maximum number of ECTS set out in Article 8.
3. Student association leaders may also take exams in the Special Season, up to the limit established in Article 8, following the Legal Regime of Young Associations (Law 23/2006, of 23 June), as well as student members of the School Council and the Pedagogical Council and students who have been on maternity or paternity leave during the academic year.
4. To increase sports practice and cultural activities, as well as encourage support for FMV resident animals and mentoring activities for students, the following groups are given the possibility of taking exams in the Special Season, up to the limit established in article 8:
  - a) High-performance student-athletes;
  - b) Student-athletes in higher education;
  - c) Members of Choirs, Academic Orchestra and Academic Theatre of ULisboa;
  - d) AEFMV Nuclei;
  - e) Mentor Group (GM) of the Student Support Office (GAPE);
  - f) Volunteer Support Group for FMV Dogs (GAVC);
  - g) Volunteer Support Group for FMV Equines (GAVE);
  - h) Volunteer Teaching Assistants (AVE).
5. Following Article 7(d) of Decree-Law no. 55/2019 of 24 April, student-athletes in higher education may take at least two annual exams or equivalent, during a Special Exam Season.
6. Following Decree Law no. 125/95 of 31 May, article 13, paragraphs 1 and 2, high-performance student-athletes may request additional special exam periods.
7. Students may have access to the Special Exam Season in exceptional situations due to health problems or others that prevent their presence in exams in the Normal and Appeal Seasons, under request accompanied by proof, for analysis by the President of the Pedagogical Council.
8. The Special Exam Season cannot be used to improve classifications.

## **CHAPTER III DISCIPLINE**

### **Article 13 Fraudulent Practices**

1. The following constitutes a disciplinary infraction:

- a) Multiple submission: submit the same written work, even with minor changes, for consideration in different SUs;
- b) Plagiarism: presenting someone else's work or parts of someone else's work as your own, including the use of artificial intelligence platforms;
- c) Tampering: providing, using, or attempting to use unauthorized materials, information, notes, study aids, or other objects, equipment, and software in face-to-face or distance academic assessment exercises;
- d) Help or attempt to help a colleague in the exercise of individual assessment or the committing of a disciplinary infraction;
- e) Using personal electronic devices such as cell phones, smart watches, tablets, and other electronic equipment for illegal purposes during the exam.
- f) In the context of distance assessment: taking exams by sharing an Internet address (also known as IP); using computerised means to obtain information and intruding into the Moodle pages of the SU so that the name appears on the exam lists, without appearing on the Fénix platform.

2. A disciplinary infraction committed when carrying out any element of assessment implies its cancellation and must be reported to the Pedagogical Council, which determines the procedure provided for in the ULisboa Disciplinary Students Regulations and in the ULisboa Code of Conduct and Good Practices.

3. Disciplinary sanctions arising from fraudulent practices of a pedagogical nature, within the legal framework of the ULisboa Disciplinary Students Regulations and the ULisboa Code of Conduct and Good Practices, are applied by the President of FMV, upon proposal from the President of Pedagogical Council.

## **CHAPTER IV FINAL PROVISIONS**

### **Article 14 Interpretation and omissions**

Special cases not covered by the rules of this Regulation are analysed through an appeal addressed to the President of the Pedagogical Council and subject to deliberation by the Pedagogical Council.

### Article 15

#### Approval and entry into force

1. The Regulation is approved by the President of FMV, following a proposal from the Pedagogical Council and after consulting the Scientific Council, and comes into force on the day following its publication in the *Diário da República*, for application from the 2<sup>nd</sup> semester of the 2023-2024 academic year (inclusive).
2. This Regulation will be revised whenever deemed necessary, and changes must be communicated to teachers and students.

Published in *Diário da República* on the 1<sup>st</sup> April 2024

The background of the page is a grayscale image of marbled paper. The marbling pattern consists of organic, flowing, and wavy lines in various shades of gray, creating a textured and aged appearance. The lines are more pronounced on the left side and fade slightly towards the right.

# **Appendix 13**

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Logbook

## Logbook - English version (2023-2024)

### 1. ASSESSMENT OF THE ANIMAL

#### PRACTICAL SKILLS

#### A. Handling and Restraint

1.a) Handling and restraint of companion animals/exotics	Species	N	Date/Sign.	Date/Sign.	Date/Sign.	Date/Sign.	Date/Sign.
Appropriate approach to the animal and recognition of the rejection reaction	D/C	4					
	Exo	2					
Placement and removal of animals from the cage/transport box	D/C	3					
	Exo	3					
Placement of containment loop/muzzle	D	3					
Placement of the E-Collar	D/C	3					
Animal restraint (for clinical exam, blood and urine collection)	D	3					
	C	3					
	Exo	2					

#### 1.b) Handling and restraint of large animals

Appropriate approach to the animal and recognition of the rejection reaction	H	3					
	R	3					
Collocation of the bridle and hand walk (walk and trot)	H	3					
Animal restraint (nose lead/bridle/ear twitch/etc) for clinical exam, blood and urine collection, drug administration, treatments and dressings	H/R	3					

#### B. Data collection

##### 1.c) Gathering the medical history/anamnesis and characteristics of the surrounding environment

Individual animal	D/C/Exo	3					
Individual animal	H	3					
Group of animals	R/H/P/B	3					

#### C. General Exam

##### 1.d) Measurement and evaluation of the vital signs

General condition examination (must include all parameters below)							
Rectal temperature, cardiac and respiratory rate, arterial pulse rate*, mucous membrane	D	3					
color and capillary refill time, dehydration status, pain, body condition/state of nutrition,	C	3					
animal welfare/pain evaluation	Exo**	3					
*Except for Ruminants	H	3					
**Reptile, Bird and Mammal	R	3					



## 2. CLINICAL DECISIONS

Make a list of problems in different cases	AK	3					
Make a list of differential diagnostics in different cases	AK	3					
Choose the appropriate diagnostic tests in different cases	AK	3					
Participate in the administration of therapy in clinical cases	AK	3					
Supervised communication with clients and in a clinical context	AK	3					
Discuss clinical discharge instructions in different cases with the clinician	AK	3					
Participate in primary care cases (vaccination, deworming, etc.)	AK	3					
Participate in clinical cases from different specialties	AK	6					

### 2.a) Collection and manipulation of samples for diagnostic purposes

Blood	AK	3					
Urine	AK	3					
Skin	AK	3					
Tissues/Body fluids	AK	3					
Citology/Biopsy (FNAB, Punch, Excisional)	AK	3					
Obtaining a sawb for microbiological analysis	AK	3					
Obtaining a faecal sample	AK	3					
Obtaining a milk sample for mastitis diagnostic purposes	R	2					
Appropriate selection of collection tubes and packaging of different samples	AK	3					

### 2.b) Using the equipment for imaging diagnostic and interpretation of the signs

Radiological protection (knowledge and correct use of gloves, apron and thyroid collar)	AK	3					
Positioning the animal for the X-ray and use the restraint accessories	AK	3					
Selection of the radiographic constants and appropriate cassette	AK	3					
Preparating animals for an ecography and witness the exam	AK	3					
Prepare animals for examination and participate in echography examination	AK	3					
Monitor advanced imaging (Computed Tomography, Magnetic Resonance Imaging or Fluoroscopy)	AK	3					

### 2.c) Performing a post-mortem exam

Performing a necropsy	1B/1R/3nR	5					
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## 3. TREATMENT

### 3.a) Medical emergencies

#### Recognising life-threatening situations and initiating appropriate treatment, for example:

Loss of consciousness, Shock, Bleeding, Dyspnoea, Acute trauma, Urinary obstruction, Intoxication	SA	3					
Gastric dilatation in the dog, Foreign body, Heat stroke, Downer cow syndrome, Bloat in ruminants, Dystocia, Horse colic	LA	2					



<b>3.b) Drug administration and fluidotherapy</b>							
<b>Drug administration: per os</b>							
Pills/Oral paste	D/C	3					
Oral paste/Bolus	R/H	3					
<b>Drug administration: parenteral route</b>							
Subcutaneous	D/C	3					
	R/H	3					
Intramuscular	D/C	3					
	R/H	3					
Intravenous	D/C/Exo	3					
	R/H	3					
Catheter placement	AK	2					
Discussion and implementation of a fluid therapy plan	AK	3					
<b>3.c) Anesthesia</b>							
Participation in sedation and/or premedication/anesthetic induction	SA	3					
Participation in sedation and/or premedication/anesthetic induction	LA	3					
Endotracheal intubation	SA	3					
Preparing the patient for anesthesia monitoring	3 SA/H/Exo	3					
Participation in the maintenance and monitoring of anesthesia	3 SA/1 LA	4					
Recognition, scoring, and management of pain in the peri-surgical period	AK	3					
<b>3.d) Best practices for surgical preparation</b>							
Participation in surgery	AK(1R/E,3D/C,1Exo)	5					
Participation in the preparation of the animal and the surgical field (trichotomy/asepsis)	AK	3					
Proper positioning of the patient on the operating table	AK	3					
Opening of the surgical packages and layout of the surgical kit	AK	3					
<b>3.e) Participate in surgical procedures</b>							
Ovariohysterectomy	D/C/Exo	3					
Orchiectomy	D/C/Exo	3					
Participate in a horse surgery	H	1					
Participate in orthopedic surgery	D/C	1					
Participate in soft tissue surgeries	AK	3					
Participation in a field surgical procedure	R/H	1					
Dental care	AK	2					
Post-surgery monitoring of the animal	AK	3					
Preparation of the post-surgery plan with the surgeon	AK	3					

<b>3.f) Euthanasia</b>							
Participate in euthanasia and justify the option and methods used	AK	2					
Ensure proper packaging for a patient undergoing euthanasia	AK	2					
<b>3.g) Nursing care</b>							
Participating in applying or removing a basic bandage	D/C	3					
	H/R	3					



# Appendix 14

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Current academic staff, qualifications,  
their FTE, teaching responsibilities,  
and departmental affiliations

### Current teaching staff, qualifications, their FTE, teaching responsibilities and departmental affiliations

Name	Category	Qualifications	FTE	Main teaching responsibilities	Department
António José de Almeida Ferreira	Full Professor	DVM, PhD Veterinary Sciences	100	Imagiology (SPC, R), Diagnostic Imaging (SPC, R), Clinical Rotations V and VI (SPC); Clinical Director of CAH.	DC
Graça Maria Alexandre Pires Lopes de Melo		DVM, PhD Veterinary Sciences		Anatomy I (SPC, R), II (SPC, R) and III (SPC, R), Complementary Activities IV (SPC, R)	DMF
Graça Maria Leitão Ferreira Dias		DVM, MSc Animal Science, PhD Physiology		Physiology I (SPC, R) and II (SPC, R)	DMF
José António Mestre Prates		Pharmaceutical Sciences, PhD Veterinary Sciences		Biochemistry I (SPC, R) and II (SPC, R), Cell Molecular Biology (SPC, R); SC of the scientific area of Morphology and Function	DMF
José Paulo Pacheco de Sales Luís		DVM, PhD Veterinary Sciences		Surgery I (SPC, R) and II (SPC, R), Equine Clinics I (SPC) and II (SPC), Clinical Rotations III (SPC) and IV (SPC)	DC
Luis Filipe Lopes da Costa		DVM, PhD Veterinary Sciences		Reproduction and Obstetrics I (SPC) and II (SPC, R)	DC
Luis Manuel dos Anjos Ferreira		DVM, PhD Veterinary Sciences		Nutrition (L), Animal Feeding (L)	DPASA
Luis Manuel Madeira de Carvalho		DVM, PhD Veterinary Sciences		Parasitology I (L) and II (SPC; R), Pathology and Clinics of Parasitic Diseases (SPC)	DSA
Luis Manuel Morgado Tavares		DVM, MSc Veterinary Medicine, PhD Veterinary Sciences		Microbiology I (SPC) and II (SPC), Immunology (SPC)	DSA
Maria Manuela Grave Rodeia Espada Niza		DVM, PhD Veterinary Sciences		Companion Animal Clinics I (SPC, R) and II (SPC, R), Pharmacology and Therapeutics I (SPC) and II (SPC)	DC
Rui Manuel de Vasconcelos Horta Caldeira	Associate Professor	DVM, MSc Animal Science, PhD Veterinary Sciences		Animal Production I (SPC, R) and II (SPC, R), Zootechnics (SPC)	DPASA
António José de Freitas Duarte		DVM, MCs Biotechnology, PhD Molecular Biology		Physiology I (L) and II (L), Genetics (SPC)	DC
Berta Maria Fernandes Ferreira São Braz		DVM, PhD Veterinary Sciences		Pharmacology and Therapeutics I (R) and II (R), Toxicology (L)	DC

Esmeralda Sofia da Costa Delgado	Associate Professor	DVM, MSc Veterinary Medicine and Tropical Zootechnics, PhD Veterinary Sciences	100	Surgery I (R) and II (L), Clinical Rotations IV (R)	DC
Fernando António da Costa Ferreira		DVM, PhD Veterinary Sciences		Anatomy I (L) and II (L), Cell Molecular Biology (L)	DMF
Fernando Jorge Silvano Boinas		DVM, MSc Animal Science, PhD Veterinary Sciences		Pathology and Clinics of Infectious Diseases I (L) and II (SPC, R), Herd Health (SPC, R)	DSA
George Thomas Stilwell		DVM, PhD Veterinary Sciences, Diplom ECBHM		Food Animal Clinics I (SPC, R) and II (SPC, R), Deontology and Bioethics (SPC, R)	DC
Isabel Maria Soares Pereira da Fonseca Sampaio		DVM, PhD Veterinary Sciences		Parasitology I (SPC, R) and II (L), Pathology and Clinics of Parasitic Diseases (SPC)	DSA
José Henrique Duarte Correia		DVM, PhD Veterinary Sciences		Medical Propaedeutics I (SPC) and II (SPC), Medicine I (SPC) and II (SPC, R)	DC
Luisa Maria Freire Leal Mateus		DVM, PhD Veterinary Sciences		Reproduction and Obstetrics I (R) and II (L), SC of the scientific area of Clinics	DC
Maria Constança Matias Ferreira Pomba		DVM, PhD Veterinary Sciences		Medicine I (R) and II (L)	DC
Maria João dos Ramos Fraqueza		DVM, MSc Food Science, PhD Veterinary Sciences		General Technology (SPC), Technology of Animal Products (SPC, R)	DPASA
Maria Manuela Castilho Monteiro de Oliveira		Microbial and Genetic Biology, DVM, MSc Food Science, PhD Veterinary Sciences		Microbiology I (L), Complementary Activities IV (L)	DSA
Mário António Pereira Silva Soares de Pinho		DVM, PhD Veterinary Sciences		Histology I (R) and II (L), Complementary Activities III (SPC, R)	DMF
Rui José Branquinho de Bessa		DVM, MSc Animal Science, PhD Veterinary Sciences		Zootechnics (R), Animal Production I (L) and II (L)	DPASA
Solange Judite Roque Coelho Alves Gil		DVM, PhD Veterinary Sciences		Microbiology I (L) and II (L), Immunology (L), Clinical Rotations II (L) and IV (L), Pathology and Clinics of Infectious Diseases I (L) and II (L)	DSA
Virgílio da Silva Almeida	Auxiliary Professor	DVM, MSc Animal Science, PhD Veterinary Sciences		Pathology and Clinics of Infectious Diseases I (SPC, R) and II (L), Epidemiology (SPC); SC of the scientific area of Animal Health.	DSA
Yolanda Maria Vaz		DVM, MSc Veterinary Public Health, PhD Veterinary Sciences		Veterinary Public Health (L)	DPASA
Ana Mafalda G. Xavier Félix Lourenço Martins		DVM, PhD Veterinary Sciences		Pharmacology and Therapeutics I and II, Medical Propaedeutics I, Medicine I and II, Clinical Rotations I and II (L)	DC

Ana Sofia Pires Amaral	Auxiliary Professor	DVM, PhD Veterinary Sciences	100	Embryology and Developmental Biology (L), Histology I (L) and II (L),	DMF
Anabela de Sousa Santos Silva Moreira		DVM, PhD Veterinary Sciences		Pharmacology and Therapeutics I (L) and II (L), Toxicology (R)	DC
Catarina Jorge Ginja		MSc and PhD in Zootechnical Engineering		Animal Breeding (SPC, R)	DPASA
Cristina Maria Riscado Pereira Mateus Alfaia		Pharmaceutical Sciences, PhD Veterinary Sciences		General Technology (L), Technology of Animal Products (L)	DPASA
Fernando Ribeiro Alves Afonso		DVM, PhD Veterinary Sciences		General Pathology (R), Zootechnics, Animal Production II (L)	DSA
Frederico Nuno Castanheira Aires da Silva		BSc in Biotechnology Engineering, MSc in Advanced Biomolecular Methods, PhD in Pharmaceutical		Pharmacology and Therapeutics I (L) and II (L), Microbiology I (L) and II (L), Immunology (L),	DC
Gonalo da Silva Pereira		DVM, PhD Veterinary Sciences		Food Animal Clinics I (L) and II (L)	DC
Ilda Maria Neto Gomes Rosa		DVM, MSc Animal Science, PhD Veterinary Sciences		Animal Behaviour and Welfare (SPC, R), Complementary Activities I (SPC, R)	DPASA
Joo Bettencourt Barcelos Cota		DVM, PhD Veterinary Sciences		Veterinary Inspection I (L) and II (L)	DPASA
Joo Jose Martins Afonso		DVM, MSc Animal Science, PhD Veterinary Sciences		Anatomy I (L) and II (L)	DMF
Jorge Manuel Jesus Correia		DVM, PhD Veterinary Sciences		Anatomical Pathology I (SPC, R) and II (SPC, R)	DMF
Jose Augusto Farraia e Silva Meireles		DVM, PhD Veterinary Sciences		Parasitology I (L) and II (L), Pathology and Clinics of Parasitic Diseases (R)	DSA
Jose Manuel Antunes Ferreira da Silva		DVM, PhD Veterinary Sciences		Embryology and Developmental Biology (L)	DMF
Jose Ricardo Dias Bexiga		DVM, PhD Veterinary Sciences, Diplom ECBHM		Food Animal Clinics I (L) and II (L), Reproduction and Obstetrics II (L)	DC
Lisa Alexandra Pereira Mestrinho		DVM, PhD Veterinary Sciences, Fellow do American Academy veterinary dentistry		Anaesthesia and Analgesia (L), Surgical Propaedeutics (L), Surgery I (L) and II (L)	DC
Luis Miguel Alves Carreira		DVM, MSc Veterinary Medicine and Tropical Zootechnics, PhD Veterinary Sciences		Surgery I (L) and II (R), Clinical Rotations III (R)	DC
Luis Ressano Garcia Pardon Lamas		DVM, PhD Veterinary Sciences, Diploma ECVS (Large animal surgery)		Medical Propaedeutics I (L) and II (L), Surgery I (L) and II (L), Horse Clinics I (L) and II (L)	DC

Magda Alexandra N. M. A. de Andrade Fontes	Auxiliary Professor	Agronomist Engineer, PhD Agricultural Economics and Food Marketing	100	Economics and Management (SPC, R)	DPASA
Maria de São José Sousa Deyrieux Centeno		DVM, MSc Animal Science, PhD Veterinary Sciences		Biophysics (L), Physiology II (L)	DMF
Maria Gabriela Lopes Veloso		DVM, PhD Veterinary Sciences		Veterinary Inspection I (SPC, R) and II (SPC, R)	DPASA
Maria Isabel Neto Cunha Fonseca		DVM, MSc Animal Science, PhD Veterinary Sciences		Biomathematics, Computing and Documentation (SPC)	DSA
Maria João de Sousa Ferreira Martelo Fradinho		Agronomist Engineer, MSc Animal Production, PhD Veterinary Sciences		Plant Biology, Agriculture and Environment (R), Zootechnics (L), Animal Production I (L)	DPASA
Maria Luisa Mendes Jorge		DVM, PhD Veterinary Sciences		Anatomy I (L), II (L) and III (L)	DMF
Maria Teresa C. Mendes Victor Villa de Brito		DVM, PhD Veterinary Sciences		Medical Propaedeutics I (R) and II (R)	DC
Marília Catarina Leal Fazeres Ferreira		DVM, PhD Veterinary Sciences		General Technology (R), Technology of Animal Products (L)	DPASA
Mário Alexandre Gonçalves Quaresma		DVM, PhD Veterinary Sciences		Biochemistry I (L) and II (L), Cell Molecular Biology (L), Complementary Activities II (SPC, R)	DMF
Miguel José Sardinha de Oliveira Cardo		DVM, MSc Veterinary Public Health, PhD Veterinary Sciences		Veterinary Inspection I (L) and II (L)	DPASA
Paula Alexandra Botelho Pimenta Tilley		DVM, MSc Food Science, PhD Veterinary Sciences		Horse Clinics I (R) and II (R), Clinical Rotations III (L) and IV (L)	DC
Pedro Miguel Bule Gomes		DVM, PhD Veterinary Sciences		Biochemistry I (L) and II (L)	DMF
Rute Marina Garcia Noiva		DVM, PhD Veterinary Sciences, Diploma Veterinary Pathologists (ECVP)		Anatomical Pathology I (L) and II (L)	DSA
Teresa Maria Leitão Semedo Lemsaddek	Auxiliary Professor (guest)	DVM, PhD Biology, Microbiology	99 95 30 50	General Technology (L), Technology of Animal Products (L)	DPASA
Victor Manuel Diogo Oliveira Alves		DVM, PhD Veterinary Sciences		Genetics (L), Cell Molecular Biology (L)	DMF
Ana Catarina Torres		DVM, PhD Veterinary Sciences		Reproduction and Obstetrics I (L) and II (L)	DC
Eva Sofia Gonçalves Cunha		DVM, PhD Veterinary Sciences		Microbiology I (L) and II (L), Immunology (L),	DSA
Fátima Alexandra Januário Lopes		DVM		Veterinary Inspection I (L) and II (L)	DPASA
Gonçalo Cansado Ortega		DVM		Food Animal Clinics I (L) and II (L)	DC



Hugo Abel Sampaio Monteiro Martins Pissarra	Auxiliary Professor (guest)	DVM, DM	50	Anatomical Pathology I (L) and II (L)	DSA
Manuel Ferreira Joaquim		DVM	30	Pathology and Clinics of Infectious Diseases II (L), Herd Health (L)	DSA
Marta Antas Fernandes Videira		DVM	40	Veterinary Public Health (L)	DPASA
Telmo Renato Landeiro Pina Nunes		DVM, MSc Veterinary Public Health	60	Veterinary Public Health (L)	DPASA
Tiago Manuel Grosso		DVM	30	Pathology and Clinics of Infectious Diseases II (L), Herd Health (L)	DSA
José Alexandre C. Perdigão e Cameira Leitão	Principal Researcher	DVM, MSc Veterinary Medicine and Tropical Zootechnics, PhD Veterinary Sciences	100	Parasitology I (L)	DPASA
Maria Elisabete Tomé Sousa Silva	Auxiliary Researcher	DMV PHD, Biotechnology		Reproduction and Obstetrics I (L) and II (L)	DMF
Susana Paula Almeida Alves		DVM, PhD Veterinary Sciences		Nutrition (L), Animal Feeding (L)	DPASA
Ana Teresa Severino Reisinho	Veterinarian, Auxiliary Professor (guest)	DVM, MSc Medicine, Medical Parasitology	100, 30	Anaesthesia and Analgesia (L), Companion Animal Clinics I (L) and II (L)	VTH, DC
Gonçalo Eduardo Vitor Vicente	Veterinarian, Auxiliary Professor (guest)	DVM	100, 30	Clinical Rotations (L) I, II, III, IV, V and VI, Companion Animal Clinics (L) I and II, Medicine (L) I and II	VTH, DC
Hugo Miguel de Brito Ramos Pereira		DVM		Surgery I (L), Clinical Rotations (L) I, II, III, IV, V and VI, Companion Animal Clinics (L) I and II, Medicine (L) I and II	VTH, DC
Hugo Miguel de Brito Ramos Pereira		DVM	100	Clinical Rotations (L) I, II, III, IV, V and VI, Companion Animal Clinics (L) I and II, Medicine (L) I and II	VTH
Leonor Vital Iglésias		DVM	100, 30	Anaesthesia and Analgesia (L), Surgery I (L) and II (L)	VTH, DC
Mariana de Carvalho Torres Magalhães		DVM		Horse Clinics I (L) and II (L) and Clinical Rotations IV (L)	VTH, DC
Rodolfo Assis Oliveira Leal		DVM, PhD Veterinary Sciences, Diploma Internal Medicine - Companion Animals (ECVIM)		Companion Animal Clinics I (L) and II (L) Clinical Rotations (L) I, II, III, IV, V and VI, Companion Animal Clinics (L) I and II, Medicine (L) I and II	VTH, DC
Rui Domingos da Mata Lemos Ferreira		DVM		Imagiology (L), Diagnostic Imaging (L)	VTH, DC
Rui Miguel Oliveira Gomes Máximo		DVM	50, 30	Companion Animal Clinics I (L) and II (L), Medicine I (L)	VTH, DC
Teresa Rita Velez de Carvalho Rosa		DVM	100, 30	Horse Clinics I (L) and II (L) and Clinical Rotations IV (L)	VTH, DC

Nestor Chagas e Silva	Veterinarian	DVM, PhD Veterinary Sciences	100	Pathology and Clinics of Infectious Diseases II (L)	DC
Alejandra Elisa Rodrigues Olim		DVM		Clinical Rotations I (L) and II (L)	VTH
Ana Carina Branco Carvalho		DVM		Clinical Rotations (L) I, II, III, IV, V and VI, Companion Animal Clinics (L) I and II, Medicine (L) I and II	VTH
Ana Carolina Santos de Castro e Amaral de Freitas		DVM		Clinical Rotations (L) I, II, III, IV, V and VI, Companion Animal Clinics (L) I and II, Medicine (L) I and II	VTH
Ana Catarina Pinto Castro		DVM		Clinical Rotations (L) I, II, III, IV, V and VI, Companion Animal Clinics (L) I and II, Medicine (L) I and II	VTH
Ana Cláudia Amaral Coelho		DVM		Clinical Rotations (L) I, II, III, IV, V and VI, Companion Animal Clinics (L) I and II, Medicine (L) I and II	VTH
Ana Isabel Pinto Filipe		DVM		Clinical Rotations (L) I, II, III, IV, V and VI, Companion Animal Clinics (L) I and II, Medicine (L) I and II	VTH
Ana Margarida Paiva Lourenço		DVM		Clinical Rotations (L) I, II, III, IV, V and VI, Companion Animal Clinics (L) I and II, Medicine (L) I and II	VTH
Ana Marta Margalha Cerqueira Amorim		DVM		Clinical Rotations (L) I, II, III, IV, V and VI, Companion Animal Clinics (L) I and II, Medicine (L) I and II	VTH
Ana Sofia Coelho Ramos		DVM		Clinical Rotations (L) III and IV	VTH
António Luís Videira Pinheiro de Almeida		DVM		Clinical Rotations (L) I, II, III, IV, V and VI, Companion Animal Clinics (L) I and II, Medicine (L) I and II	VTH
Beatriz Rosa Fernandes Duarte da Silva		DVM		Clinical Rotations (L) I, II, III, IV, V and VI, Companion Animal Clinics (L) I and II, Medicine (L) I and II	VTH
Beatriz Costa Gago Mendoza		DVM		Clinical Rotations (L) I, II, III, IV, V and VI, Companion Animal Clinics (L) I and II, Medicine (L) I and II	VTH
Carla Alexandra Almeida Monteiro		DVM		Clinical Rotations (L) I, II, III, IV, V and VI, Companion Animal Clinics (L) I and II, Medicine (L) I and II	VTH
Diana Osório Lopes		DVM		Clinical Rotations (L) I, II, III, IV, V and VI, Companion Animal Clinics (L) I and II, Medicine (L) I and II	VTH
Érica Melissa Jardim Gomes		DVM		Clinical Rotations (L) I, II, III, IV, V and VI, Companion Animal Clinics (L) I and II, Medicine (L) I and II	VTH
Filipa Lima Inácio		DVM		Surgery I and II, Clinical Rotations (L) I, II, III, IV, V and VI	VTH

Gonalo Manuel Teixeira de Almeida e Silva	Veterinarian	DVM, Diploma Equine Internal Medicine (ECEIM)	100	Clinical Rotations (L) III and IV	VTH
Hugo Miguel Lino Pereira		DVM		Clinical Rotations (L) I, II, III, IV, V and VI, Companion Animal Clinics (L) I and II, Medicine (L) I and II	VTH
Ines Azevedo Prata		DVM		Food Animal Clinics I (L) and II (L)	VTH
Ines Costa Santos		DVM		Clinical Rotations (L) III and IV	VTH
Ines Duarte Lobo		DVM		Clinical Rotations (L) I, II, III, IV, V and VI, Companion Animal Clinics (L) I and II, Medicine (L) I and II	VTH
Ines Fernandes Machado		DVM		Anaesthesia and Analgesia (L), Surgical Propaedeutics, Clinical Rotations V (L) and VI (L), Reproduction and Obstetrics I (L).	VTH
Ines Quintao Saraiva		DVM		Clinical Rotations (L) I, II, III, IV, V and VI, Companion Animal Clinics (L) I and II, Medicine (L) I and II	VTH
Isabel Maria Lampreia Grou		DVM		Clinical Rotations (L) I, II, III, IV, V and VI, Companion Animal Clinics (L) I and II, Medicine (L) I and II	VTH
Joana Antunes Chambel Coelho		DVM		Clinical Rotations (L) V and VI, Companion Animal Clinics (L) I and II (L)	VTH
Joana Assuno de S Bento		DVM		Clinical Rotations (L) I, II, III, IV, V and VI, Companion Animal Clinics (L) I and II, Medicine (L) I and II	VTH
Joana Brilhante Martins		DVM		Surgery I (L) and II (L), Clinical Rotations V (L)	VTH
Joana Filipa Paiva de Ferreira Gomes Carneiro		DVM		Clinical Rotations (L) I, II, III, IV, V and VI, Companion Animal Clinics (L) I and II, Medicine (L) I and II	VTH
Joana Isabel Mariano Palminha		DVM		Clinical Rotations (L) I, II, III, IV, V and VI, Companion Animal Clinics (L) I and II, Medicine (L) I and II	VTH
Joo Nestor das Chagas e Silva		DVM, PhD Veterinary Sciences		Pathology and Clinics of Infectious Diseases I (L) and II (L)	DC
Mafalda Portugal Ribeiro Pires Gonalves Fernandes Bello		DVM		Clinical Rotations (L) I, II, III, IV, V and VI, Nutrition (L), Animal Feeding (L), Economics and Management (L)	VTH
Margarida Vicente Gouveia Vieira da Rocha		DVM		Clinical Rotations (L) I, II, III, IV, V and VI, Companion Animal Clinics (L) I and II, Medicine (L) I and II	VTH
Maria Ana de Campos Rodrigues de Serra Fidalgo		DVM		Clinical Rotations V (L), Medical Propaedeutics I (L) and II (L), Medicine I (L) e II (L)	VTH

Maria Francisca Moura Rodrigues Reis	Veterinarian	DVM	100	Clinical Rotations (L) I, II, III, IV, V and VI, Companion Animal Clinics (L) I and II, Medicine (L) I and II	VTH
Maria Inês Lopes Moura Marques		DVM		Clinical Rotations (L) I, II, III, IV, V and VI, Companion Animal Clinics (L) I and II, Medicine (L) I and II	VTH
Maria Joana Gomes Dias		DVM		Clinical Rotations (L) I, II, III, IV, V and VI, Companion Animal Clinics (L) I and II, Medicine (L) I and II	VTH
Maria Teresa Carneiro Prego Marques Alexandre		DVM		Clinical Rotations (L) I, II, III, IV, V and VI, Companion Animal Clinics (L) I and II, Medicine (L) I and II	VTH
Marta Luísa Peguinho Pereira		DVM		Clinical Rotations (L) I, II, III, IV, V and VI, Companion Animal Clinics (L) I and II, Medicine (L) I and II	VTH
Marta Uva cansado Gonçalves da Silva		DVM		Clinical Rotations (L) III and IV	VTH
Olga Maria Cameira Henriques		DVM		Clinical Rotations (L) I, II, III, IV, V and VI, Companion Animal Clinics (L) I and II, Medicine (L) I and II	VTH
Óscar Manuel Gonçalves Gamboa		DVM		Clinical Rotations (L) I, II, III, IV, V and VI, Companion Animal Clinics (L) I and II, Medicine (L) I and II	VTH
Sara Azevedo Prata		DVM		Clinical Rotations (L) I, II, III, IV, V and VI, Companion Animal Clinics (L) I and II, Medicine (L) I and II	VTH
Sofia Maltez Ribeiro Baptista Mouro		DVM		Clinical Rotations (L) I, II, III, IV, V and VI, Medicine II (L)	VTH
Telmo Filipe Ferreira Casimiro		DVM		Clinical Rotations (L) I, II, III, IV, V and VI, Companion Animal Clinics (L) I and II, Medical Propaedeutics I (L) and II (L)	VTH
Vanessa Alexandra da Fonseca Fernandes		DVM		Surgery I (L) and II (L), Clinical Rotations (L) I, II, III, IV, V and VI	VTH



# **Appendix 15**

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Programme for the appraisal of teaching  
and support staff

### **Programme for the appraisal of teaching and support staff**

The performance evaluation of academic staff is founded on a multi-criteria model for additive aggregation of values obtained in the various components, built according to the principles of Decision Analysis and the Theory of Multi-criteria Value. This model produces a global optimizing weighting that maximizes the intermediate classification (IC). The model includes numerous indicators, namely:

In the pedagogical component - study units taught and coordinated, teaching materials, student supervision, evaluation by students, pedagogical training attended.

In the research component - publications and coordination and participation in scientific projects.

In the university extension component - industrial property, provision of services (e.g. VTH), scientific and technological dissemination publications, services to the scientific community and society.

In the university management component - participation in management bodies, temporary positions and tasks.

The final teacher's classification (FC) is obtained based on this IC as showed below:

- i) FC = 'Excellent' if  $IC > 80$
- ii) FC = 'Very Good' if  $40 \leq IC < 80$
- iii) FC = 'Good' if  $20 \leq IC < 40$
- iv) FC = 'Inadequate' if  $IC < 20$

For the triennium 2013 to 2015 this scale was improved, and basically the standards were raised, being the final classification obtained as follows:

- i) FC = 'Excellent' if  $IC \geq 100$
- ii) FC = 'Very Good' if  $60 \leq IC < 100$
- iii) FC = 'Good' if  $40 \leq IC < 60$
- iv) FC = 'inadequate' if  $IC < 40$

For the triennium 2016 to 2018, this scale standards were raised again, being the final classification obtained as follows:

- i) FC = 'Excellent' if  $IC \geq 110$
- ii) FC = 'Very Good' if  $70 \leq IC < 110$
- iii) FC = 'Good' if  $50 \leq IC < 70$
- iv) FC = 'inadequate' if  $IC < 50$

For the trienniums 2019 to 2021 and 2022 to 2024 this scale standards were raised again, being the final classification obtained as follows:

- i) FC = 'Excellent' if  $IC \geq 120$
- ii) FC = 'Very Good' if  $80 \leq IC < 120$
- iii) FC = 'Good' if  $60 \leq IC < 80$
- iv) FC = 'inadequate' if  $IC < 60$

The classification on the top grade (excellent) in two successive 3-year periods should imply the increase of the salary in one step within the category to which the teacher belongs (Full, Associate or Auxiliary Professors; each category has 3 steps).

### **The performance evaluation of FMV' support staff**

The evaluation of senior and middle managers is performed on termination of service commissions, in accordance with the respective regulations, or at the end of the period for which managers were appointed.

The evaluation of employees, focus on the results obtained in individual goals, established in articulation with the objectives of the respective service, and on several competences, including knowledge, technical capacity and behaviour patterns in the performance of duties. The first parameter is allocated a minimum weighting of 60% and the second a maximum weighting of 40%.

The process begins with the definition of the objectives and competences for the period (2 years), preferentially by agreement between the evaluator and the worker. At the end, the fulfilment of these goals and competences is evaluated and a classification attributed within a scale of Relevant (final evaluation of 4 to 5), Appropriate (final evaluation of 2 to 4) or Inadequate (below 2). SIADAP establishes a performance differentiation system, for system equity purposes, which allocates maximum percentages (quotas) within defined populations of workers:

- Relevant performance  $\leq 25\%$  of all evaluated.
- Recognition of professional merit (Excellent performance)  $\leq 5\%$  of those classified as Relevant

### **The performance evaluation of ACIVET 'support staff**

The evaluation of employees of ACIVET performance, including the veterinarians, nurses and auxiliaries of VTH, focuses on the following parameters, with their respective weights:

- a) Attendance – 5%;
- b) Punctuality – 5%
- c) Relationship with colleagues, assessed through the evaluators' perception of the evaluated person's relationship with colleagues – 10%;
- d) Relationship with hierarchical superiors, assessed through the perception that evaluators have of the relationship of the person being evaluated with hierarchical superiors – 10%;
- e) Relationship with customers, assessed through the perception that evaluators have of the evaluated person's relationship with customers, students and suppliers – 15%;
- f) Technical competence, assessed through the perception that evaluators have of the technical competence with which the person being evaluated bases their decisions, carries out procedures and the final results of their actions – 15%;



- g) Productivity, assessed through indicators such as the number of procedures carried out, compliance with deadlines for carrying out tasks, or the invoicing resulting from its activity, compared with the results of these indicators in the same period of the previous year, without compromising quality with who carries them out; for each person evaluated, depending on their functions, the indicators that will be used in the evaluation of this parameter will be defined – 10%;
- h) Adaptation and continuous improvement, assessed through the evaluators' perception of the person being evaluated ability to adapt successfully to new situations and their proactive attitude towards continuous improvement of the service – 10%;
- i) Responsibility and commitment to the service, assessed through the evaluators' perception of the responsibility with which the person being evaluated performs their duties and their commitment to the service – 15%;
- j) Absence of complaints and existence of praise – 5%

Each parameter is given a qualitative rating from the following options: Very Insufficient, Insufficient, Sufficient, Good and Excellent, with the following correspondence on a scale of 1 to 5 points:

- a) A Very Insufficient performance is awarded 1 point;
- b) An Insufficient performance is awarded 2 points;
- c) A Sufficient performance is awarded 3 points
- d) A Good performance is awarded 4 points;
- f) An excellent performance is awarded 5 points.

The final annual classification results from the weighted average of the scores attributed to the parameters and is expressed in qualitative terms, in the following terms:

- a) Excellent when the average is in the range between 4.5 and 5.0 points;
- b) Good when the average is in the range between 3.8 and 4.4 points;
- c) Sufficient when the average is in the range between 3.0 and 3.7 points;
- d) Insufficient when the average is in the range between 2.0 and 2.9 points.
- f) Very Insufficient when the average is below the value of 2.0 points.

Cumulatively to the provisions of the previous paragraph, the classification of Very Insufficient in one of the parameters prevents the attribution of the annual mention of Good or Excellent and the classification of Insufficient in one of the parameters prevents the attribution of the annual mention of Excellent.



# Appendix 16

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Research projects with competitive funding  
on-going in the last three years

## Research projects with competitive funding on-going in the last three years

Scientific topics	grant/year (€)	Duration (Yrs)	Funding origin
UIDB/00276/2020 - Centre for Interdisciplinary Research in Animal Health (CIISA)	415,870	5.00	Portuguese
LISBOA-01-0247-FEDER-068048 - CleanSmoke - Industrial smoking products and processes	170,696	2.00	Portuguese
GA N° 862874 - VACDIVA - A safe DIVA vaccine for African Swine Fever control and eradication	166,660	4.75	International
UIDP/00276/2020 - Centre for Interdisciplinary Research in Animal Health (CIISA)	162,000	5.00	Portuguese
LISBOA-01-0246-FEDER-000026 - Infrastructures and Technological Equipment	158,099	3.00	Portuguese
LISBOA-01-0247-FEDER-070114 - Algadigest - Development of a new enzyme supplementation solution for the sustainability of poultry production based on the efficient use of microalgae	140,512	2.04	Portuguese
LISBOA-01-0247-FEDER-047033 - GlycoMed - A new generation of enzymes for biofilm degradation and modulation of the immune response in cancer	128,008	2.00	Portuguese
LISBOA-01-0247-FEDER-047201 - E2PT - Equine ElectroPeloTherapy : Development of electronic equipment for the physical rehabilitation of horses in the transdermal application of therapeutic peloids	115,203	1.67	Portuguese
Post-doctoral research project - EnzyTarget	96,878	3.00	International
2022.09161.PTDC - MarEpiEnd - Epigenetic Modifications in the Mare's Endometrium: Implications in the Pathogenesis of Fibrosis in Endometrosis	76,440	3.00	Portuguese
PTDC/CVT-CVT/4599/2021 - TLR2Vac - Targeting TLR2 for improved veterinary vaccines	75,353	3.00	Portuguese
LA/P/0059/2020 - AL4AnimalS - Associate Laboratory for Animal and Veterinary Sciences	75,000	5.00	Portuguese
LISBOA-01-0247-FEDER-047050 - GreenBeef - Towards carbon neutral Angus beef production in Portugal	74,289	3.00	Portuguese

GA N° 101000236 - GEroNIMO - Genome and Epigenome eNabled breeding in Monogastrics	73,585	5.00	International
PTDC/CVT-CVT/6932/2020 - RE(SOLVE)INFLAM - Exploring resolving mechanisms in cow persistent uterine and mammary inflammation.	71,318	3.50	Portuguese
JPIAMR/0002/2016 - PetRisk - Risk of companion animal to human transmission of antimicrobial resistance during different types of animal infection	68,571	3.50	Portuguese
PTDC/CVT-CVT/31840/2017 - TLR2 - Programming the type and localization of adaptive immunity by targeting TLR2: a strategy for the development of novel veterinary vaccines	61,333	3.75	Portuguese
PTDC/SAU-INF/28466/2017 - AMPIFOOT - Polyphasic validation of antimicrobial peptides as alternative treatment for diabetic foot infections	61,015	3.83	Portuguese
PTDC/CVT-CVT/30145/2017 - BISCAMP - Biotechnological Innovative Solutions for the Control of Bovine Genital Campylobacteriosis.	58,481	4.00	Portuguese
PTDC/BTM-SAL/32085/2017 - ADC1.1 - Development of a novel class of antibody-drug conjugates molecules for cancer treatment	57,427	3.54	Portuguese
PTDC/CAL-ZOO/29654/2017 - Multi-omic approach to study the lipid metabolism in the rumen for improving the quality of ruminant-derived foods.	51,163	4.00	Portuguese
PTDC/CAL-ZOO/4515/2021 - Gene2Rumen - New insights into the variability of ruminal lipid metabolism in lambs	49,307	4.00	Portuguese
PTDC/CAL-ZOO/30238/2017 - Unlocking the potential of marine macroalgae for feeding pigs and poultry	48,967	3.76	Portuguese
PTDC/CVT-CVT/0149/2021 - Development of potent and broadly neutralizing antibodies fragments for COVID-19 derived from domestic cats naturally infected with SARS-CoV-2	48,582	4.00	Portuguese
PTDC/CED-EDG/0187/2020 - EVIEDVET - Promoting education and training for evidence-based veterinary medicine	47,212	3.25	Portuguese
PDR2020-101-031461 - Natómega3 - Development of a range of dairy products, naturally enriched in Omega 3 polyunsaturated fatty acids through nutrition, promoting human health, animal well-being and economic and environmental sustainability of dairy farms	40,993	5.00	Portuguese

PTDC/OCE-ETA/1785/2020 - EMOTION - Authentic cheesomics: from big data, through laboratory, towards the future of protected designation of origin	39,498	4.00	Portuguese
MAR-02.05.01-FEAMP-0010 - MONITABI - Health monitoring of bivalves	37,275	5.33	Portuguese
PDR2020-101-031789 - Vitindemne - Development of an INDEMNE health status on ADS sheep farms in Estremoz and its impact on meat production and its commercialization/exploitation	37,268	5.50	Portuguese
SAICTPAC/0019/2015 - POINT4PAC - Precision oncology: Innovative therapies and technologies	33,333	4.50	Portuguese
2022.04769.PTDC - ASFV&CYTOKINES - Characterization of a new cytokine response modulator encoded by the African swine fever virus (ASPV)	33,333	1.50	Portuguese
2022.08669.PTDC - VetCare - Dynamics of Transmission of Multi-Resistant Bacteria in Companion Animal Health Care Systems	33,333	1.50	Portuguese
2022.10733.PTDC - ResisTrypSheep - Genetic diversity of local sheep breeds in Angola and identification of selection signatures for resistance to trypanosomia	33,317	1.50	Portuguese
2022.08133.PTDC - DHA4AD - Pilot study on structured and tailored lipids: new sustainable strategies on docosahexaenoic acid (DHA) for the prevention of Alzheimer's disease	33,300	1.50	Portuguese
2022.07903.PTDC - GlycoEdit - Designing a new generation of antibody-enzyme conjugates for cancer immunotherapy through glycolyx editing in feline mammary carcinoma	32,917	1.50	Portuguese
KA220-VET-2E71D45B - WELFARUMINANT - Dissemination of animal welfare practices in farmed ruminants	28,502	2.00	International
PRR-C05-i03-I-000066 (LA 6.2 & 6.5) - SUMO	27,818	2.75	Portuguese
GA N° 815668 - BovReg - Identification of functionally active genomic features relevant to phenotypic diversity and plasticity in cattle	26,855	4.50	International
EXPL/CVT-CVT/1458/2021 - HORIZON - A novel tolerogenic liposome-based allergen immunotherapy for dogs in the horizon	25,050	1.99	Portuguese
EXPL/CVT-CVT/1285/2021 - TRIFECTA - Development of a novel trispesific antibody for the anticancer immune targeting of non-Hodgkin Lymphoma	24,998	2.00	Portuguese

2022.07400.PTDC - FibroEndoInhib - Role of TGFβ in the pro-fibrotic action of NET enzymes as a potential target for a therapeutic strategy in equine endometriosis	24,962	2.00	Portuguese
EXPL/CVT-CVT/1173/2021 - EMBRYOFETALSIG - Role of Notch and Wnt signaling during pre-implantation development on subsequent fetal growth	24,875	2.00	Portuguese
PDR2020-101-031359 - SAFEMEATPRO - Safety & Quality of Processed Meat Products.	23,988	5.00	Portuguese
GA N° 862590 - BovINE - Beef Innovation Network Europe	23,917	3.00	International
PDR2020-101-031254 - Campyfree - Control strategies of Campylobacter in poultry meat and meat products derived	23,860	5.13	Portuguese
PRR-C05-i03-I-000199 (LA2.2 & LA2.3 & LA2.4 & LA2.5) - HUBRAM	22,941	2.75	Portuguese
PGG/050/2019 - LYMPHOTARGET - Development of imunoliposomes as a drug delivery system for the treatment of non-Hodgkin Lymphoma	19,850	2.00	International
PGG/13823/2021 - Development of high-potency and neutralizing recombinant antibodies for the treatment and prevention of SARS-CoV-2 infection	19,000	2.00	International
GA N° 101060979 - BROILERNET - Practice and Science Broiler Production Innovation Network	17,306	4.00	International
PATHBIO - PATHBIO-600803-EPP-1-2018-ES-EPPKA2-KA	15,671	3.00	International
PTDC/CVT-CVT/28798/2017 - Merinoparasite - Identification of genetic markers underlying genetic resistance to internal parasites in the merina branca sheep breed using the ovinesnp50 beadchip array.	13,996	4.00	Portuguese
PTDC/CVT-CVT/29510/2017 - FARM2FORK - Identification of the missing links in antibiotic resistance dissemination in the food production chain: from farm-to-fork.	12,860	4.00	Portuguese
PTDC/CVT-CVT/28908/2017 - EXOTRYPANO - Achieving new frontiers through trypanosomatid exosomes (TEx).	10,879	3.44	Portuguese
PTDC/CVT-CVT/0228/2020 - Immune precision medicine as a new opportunity to control canine trypanosomatid diseases – DogIPM	10,442	3.83	Portuguese
PDR2020-101-031182 - LegForBov - Alternative foods in beef production	10,063	4.69	Portuguese

PRR-C05-i03-I-000027 - GEEBovMit1 - Mitigation of GHG emissions in the production of beef cattle – pastures, forages and natural additives - Animal Feed	9,685	3.50	Portuguese
PTDC/CAL-EST/30713/2017 - BIOSAFE - Preventing antimicrobial resistance in the community - the safe use of biocides.	9,375	4.00	Portuguese
PTDC/CVT-CVT/29062/2017 - FiGHT-TWO - Edible bait vaccine for rabbit haemorrhagic disease virus 2 (RHDV2) control in wild rabbits.	8,998	4.00	Portuguese
European Society of Veterinary Dermatology (ESVD) Training Grant – Bolsa 2	7,133	2.10	International
PTDC/QUI-OUT/3989/2021 - SmartBox - SmartBox: Engineering the first generation of ROS responsive ADCs	6,250	3.00	Portuguese
PTDC/CVT-CVT/28876/2017 - GreenVet - Unravelling the potential of marine halophyte plants as sources of innovative products with veterinary uses.	6,223	3.92	Portuguese
PTDC/SAU-NUT/30455/2017 - NEWFOOD4THOUGHT - Exploring the potential of bioactive nutrients for the prevention of Alzheimer disease and cognitive aging through in vitro assays, in vivo verification, and in silico quantification of health benefits.	4,957	4.00	Portuguese
European Society of Veterinary Dermatology (ESVD) Training Grant – Bolsa 1	2,378	2.10	International
BACFOOD - Scientific and Technological Cooperation Portugal/Slovakia 2019/2020	1,127	4.08	Portuguese
PTDC/SAU-PUB/29254/2017 - TORJANRATS - Travellers in Transit: seaports as gateways for the arrival and spread of rodent-borne pathogens.	906	4.00	Portuguese





# Appendix 17

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Scientific publications from the FMV's academic staff in peer-reviewed journals in the last three years

## Scientific publications from the FMV's teaching staff in peer reviewed journals in the last 3 years

### 2021

- Abade dos Santos FA, Carvalho CL, Peleteiro MC, Parra F, Duarte MD. 2021. A versatile qpcr for diagnosis of leporid gammaherpesvirus 5 using evagreen® or taqman® technologies. *Viruses*. 13(4). doi:10.3390/v13040715.
- Abade dos Santos FA, Portela SJ, Nogueira T, Carvalho CL, de Sousa R, Duarte MD. 2021. Harmless or Threatening? Interpreting the Results of Molecular Diagnosis in the Context of Virus-Host Relationships. *Front Microbiol*. 12. doi:10.3389/fmicb.2021.647730.
- Adamowski M, Wołodko K, Oliveira J, Castillo-Fernandez J, Murta D, Kelsey G, Galvão AM. 2021. Leptin Signaling in the Ovary of Diet-Induced Obese Mice Regulates Activation of NOD-Like Receptor Protein 3 Inflammasome. *Front Cell Dev Biol*. 9. doi:10.3389/fcell.2021.738731.
- Aguiar SI, Dias JNR, André AS, Silva ML, Martins D, Carrapiço B, Castanho M, Carriço J, Cavaco M, Gaspar MM, et al. 2021. Highly specific blood-brain barrier transmigration single-domain antibodies selected by an in vivo phage display screening. *Pharmaceutics*. 13(10). doi:10.3390/pharmaceutics13101598.
- Aires A, Barreto AS, Semedo-Lemsaddek T. 2021. Antimicrobial effects of essential oils on oral microbiota biofilms: The toothbrush in vitro model. *Antibiotics*. 10(1):1–16. doi:10.3390/antibiotics10010021.
- Alfaia CM, Pestana JM, Rodrigues M, Coelho D, Aires MJ, Ribeiro DM, Major VT, Martins CF, Santos H, Lopes PA, et al. 2021. Influence of dietary *Chlorella vulgaris* and carbohydrate-active enzymes on growth performance, meat quality and lipid composition of broiler chickens. *Poult Sci*. 100(2):926–937. doi:10.1016/j.psj.2020.11.034.
- Almeida F, Gameiro A, Correia J, Ferreira F. 2021. Histone deacetylase inhibitors and microtubule inhibitors induce apoptosis in feline luminal mammary carcinoma cells. *Animals*. 11(2):1–14. doi:10.3390/ani11020502.
- Alves JC, dos Santos AMMP, Jorge P, Lavrador CFTVB, Carreira LM. 2021. Effect of a single intra-articular high molecular weight hyaluronan in a naturally occurring canine osteoarthritis model: a randomized controlled trial. *J Orthop Surg Res*. 16(1). doi:10.1186/s13018-021-02423-4.
- Alves JC, Santos A, Jorge P, Lavrador C, Carreira LM. 2021. Evaluation of digital thermography imaging to assess and monitor treatment of police working dogs with naturally occurring hip osteoarthritis. *BMC Vet Res*. 17(1). doi:10.1186/s12917-021-02876-z.
- Alves JC, Santos A, Jorge P, Lavrador C, Carreira LM. 2021. Intraarticular triamcinolone hexacetonide, stanozolol, Hylan G-F 20 and platelet concentrate in a naturally occurring canine osteoarthritis model. *Sci Rep*. 11(1). doi:10.1038/s41598-021-82795-z.
- Alves JC, Santos A, Jorge P, Lavrador C, Carreira LM. 2021. RETRACTED: Intra-articular Injections With Either Triamcinolone Hexacetonide, Stanozolol, Hylan G-F 20, or a Platelet Concentrate Improve Clinical Signs in Police Working Dogs With Bilateral Hip Osteoarthritis (Retracted article. See vol. 9, 2023). *Front Vet Sci*. 7. doi:10.3389/fvets.2020.609889.
- Alves JC, Santos A, Jorge P, Lavrador C, Miguel Carreira L. 2021. Comparison of clinical and radiographic signs of hip osteoarthritis in contralateral hip joints of fifty working dogs. *PLoS One*. 16(3 March). doi:10.1371/journal.pone.0248767.
- Alves JC, Santos A, Jorge P, Lavrador C, Miguel Carreira L. 2021. The intra-articular administration of triamcinolone hexacetonide in the treatment of osteoarthritis. Its effects in a naturally occurring canine osteoarthritis model. *PLoS One*. 16(1 January). doi:10.1371/journal.pone.0245553.
- Alves SP, Vahmani P, Mapiye C, McAllister TA, Bessa RJB, Dugan MER. 2021. *Trans*-10 18:1 in ruminant meats: A review. *Lipids*. 56(6):539–562. doi:10.1002/lipd.12324.

- Alves-Barroco C, Caço J, Roma-Rodrigues C, Fernandes AR, Bexiga R, Oliveira M, Chambel L, Tenreiro R, Mato R, Santos-Sanches I. 2021. New Insights on *Streptococcus dysgalactiae* subsp. *dysgalactiae* Isolates. *Front Microbiol.* 12. doi:10.3389/fmicb.2021.686413.
- Amairia S, Rouatbi M, Rjeibi MR, Gomes J, Rekik M, Darghouth MA, Gharbi M. 2021. Molecular detection of *Toxoplasma gondii* and *Sarcocystis* spp. co-infection in Tunisian Merguez, a traditional processed sausage beef meat. *Food Control.* 121. doi:10.1016/j.foodcont.2020.107618.
- Amaral A, Fernandes C, Rebordão MR, Szóstek-Mioduchowska A, Lukasik K, Pinto-Bravo P, Gama LTD, Skarzynski DJ, Ferreira-Dias G. 2021. Myeloperoxidase inhibition decreases the expression of collagen and metalloproteinase in mare endometria under in vitro conditions. *Animals.* 11(1):1–13. doi:10.3390/ani11010208.
- Amaral A, Fernandes C, Szóstek-Mioduchowska A, Lukasik K, Rebordão MR, Pinto-Bravo P, Skarzynski DJ, Ferreira-Dias G. 2021. The inhibitory effect of nescapine on the in vitro cathepsin g-induced collagen expression in equine endometrium. *Life.* 11(10). doi:10.3390/life11101107.
- Amaral A, Fernandes C, Szóstek-Mioduchowska A, Rebordão MR, Skarzynski DJ, Ferreira-Dias G. 2021. Nescapine acts as a protease inhibitor of in vitro elastase-induced collagen deposition in equine endometrium. *Int J Mol Sci.* 22(10). doi:10.3390/ijms22105333.
- Amorim A, Reisinho A, Vicente G, Delgado E. 2021. Retrobulbar haematoma secondary to haemophilia A in a dog. *Vet Rec Case Reports.* 9(3). doi:10.1002/vrc2.130.
- António JPM, Carvalho JJ, André AS, Dias JNR, Aguiar SI, Faustino H, Lopes RMRM, Veiros LF, Bernardes GJL, da Silva FA, et al. 2021. Diazaborines Are a Versatile Platform to Develop ROS-Responsive Antibody Drug Conjugates\*\*. *Angew Chemie - Int Ed.* 60(49):25914–25921. doi:10.1002/anie.202109835.
- Arabyan E, Hakobyan A, Hakobyan T, Grigoryan R, Izmailyan R, Avetisyan A, Karalyan Z, Jackman JA, Ferreira F, Elrod CC, et al. 2021. Flavonoid Library Screening Reveals Kaempferol as a Potential Antiviral Agent Against African Swine Fever Virus. *Front Microbiol.* 12. doi:10.3389/fmicb.2021.736780.
- Azevedo A, Guimarães L, Ferraz J, Whiting M, Magalhães-sant’ana M. 2021. Pet reptiles—Are we meeting their needs? *Animals.* 11(10). doi:10.3390/ani11102964.
- Baptista CJ, Sós E, de Carvalho LM. 2021. Gastrointestinal Parasitism in Przewalski Horses (*Equus ferus przewalskii*). *ACTA Parasitol.* 66(4):1095–1101. doi:10.1007/s11686-021-00391-7.
- Baptista R, Englar R, São Braz B, Leal RO. 2021. Survey-based analysis of current trends for prescribing gastrointestinal protectants among small-animal general practitioners in Portugal. *Vet Sci.* 8(5). doi:10.3390/vetsci8050070.
- Barbosa JSR, Souza JG, Herbster CJL, Silva LP, Carvalho JDG, Medeiros AN, Marcondes MI, Bezerra LR, Oliveira RL, Alves SP, et al. 2021. Basal diets with different starch contents do not modify the metabolism of ricinoleic acid in dairy goats. *Anim Feed Sci Technol.* 276. doi:10.1016/j.anifeedsci.2021.114900.
- Batista MR, Diniz P, Murta D, Torres A, Lopes-Da-Costa L, Silva E. 2021. Balanced notch-wnt signaling interplay is required for mouse embryo and fetal development. *Reproduction.* 161(4):385–398. doi:10.1530/REP-20-0435.
- Bernardo R, Duarte A, Tavares L, Barreto AS, Henriques AR. 2021. *Listeria monocytogenes* assessment in a ready-to-eat salad shelf-life study using conventional culture-based methods, genetic profiling, and propidium monoazide quantitative PCR. *Foods.* 10(2). doi:10.3390/foods10020235.
- Bernardo P, Patarata L, Lorenzo JM, Fraqueza MJ. 2021. Nitrate Is Nitrate: The Status Quo of Using Nitrate through Vegetable Extracts in Meat Products. *FOODS.* 10(12). doi:10.3390/foods10123019.
- Bonet A, Valença A, Mendes-Jorge L, Casellas A, Rodríguez-Baeza A, Nacher V, Ramos D, Pampalona J, Simó R, Ruberte J. 2021. Decreased endostatin in db/db retinas is associated with optic disc intravitreal vascularization. *Exp Eye Res.* 212. doi:10.1016/j.exer.2021.108801.
- Bule P, Aguiar SI, Aires-Da-Silva F, Dias JNR. 2021. Chemokine-Directed Tumor Microenvironment Modulation in Cancer Immunotherapy. *Int J Mol Sci.* 22(18). doi:10.3390/ijms22189804.

- Cardoso B, Pessoa B, Figueiredo P, Rinaldi L, Cringoli G, Díaz A, Gomes L, Santos N, de Carvalho LM. 2021. Comparative survey of gastrointestinal parasites in sympatric Iberian ibex (*Capra pyrenaica*) and domestic goats using molecular host specific identification. *Parasitol Res.* 120(6):2291–2296. doi:10.1007/s00436-021-07174-z.
- Cardoso C, Matos J, Gomes-Bispo A, Afonso C, Motta C, Castanheira I, Prates JAM, Bandarra NM. 2021. Antioxidant and anti-inflammatory activities of ethyl acetate extracts of chub mackerel (*Scomber colias*): a thorough seasonal evaluation. *Int J Food Sci Technol.* 56(9):4576–4584. doi:10.1111/ijfs.15185.
- Cavaco B, Madeira De Carvalho LM, Werneck MR. 2021. Some digenetic trematodes found in a loggerhead sea turtle (*Caretta caretta*) from Brazil. *Helminthol.* 58(2):217–224. doi:10.2478/helm-2021-0023.
- Cavalcanti NSH, Pimentel TC, Magnani M, Pacheco MTB, Alves SP, Branquinho Bessa RJ, Marília da Silva Sant’ana A, de Cássia Ramos do Egypto Queiroga R. 2021. Donkey milk and fermented donkey milk: are there differences in the nutritional value and physicochemical characteristics? *LWT.* 144. doi:10.1016/j.lwt.2021.111239.
- Clemente L, Leão C, Moura L, Albuquerque T, Amaro A. 2021. Prevalence and characterization of ESBL/AmpC producing *Escherichia coli* from fresh meat in Portugal. *Antibiotics.* 10(11). doi:10.3390/antibiotics10111333.
- Coelho DFM, Alfaia CMRPM, Assunção JMP, Costa M, Pinto RMA, de Andrade Fontes CMG, Lordelo MM, Prates JAM. 2021. Impact of dietary *Chlorella vulgaris* and carbohydrate-active enzymes incorporation on plasma metabolites and liver lipid composition of broilers. *BMC Vet Res.* 17(1). doi:10.1186/s12917-021-02932-8.
- Cordeiro S, Silva B, Martins AM, Ribeiro HM, Gonçalves L, Marto J. 2021. Antioxidant-loaded mucoadhesive nanoparticles for eye drug delivery: A new strategy to reduce oxidative stress. *Processes.* 9(2):1–19. doi:10.3390/pr9020379.
- Correia VG, Trovão F, Pinheiro BA, Brás JLA, Silva LM, Nunes C, Coimbra MA, Liu Y, Feizi T, Fontes CMGA, et al. 2021. Mapping Molecular Recognition of  $\beta$ 1,3-1,4-Glucans by a Surface Glycan-Binding Protein from the Human Gut Symbiont *Bacteroides ovatus*. *Microbiol Spectr.* 9(3). doi:10.1128/Spectrum.01826-21.
- Costa H, Klein J, Breines EM, Nollens HH, Matassa K, Garron M, Duignan PJ, Schmitt T, Goldstein T, Tryland M. 2021. A Comparison of Parapoxviruses in North American Pinnipeds. *Front Vet Sci.* 8. doi:10.3389/fvets.2021.653094.
- Costa J, Steinmetz A, Delgado E. 2021. Clinical signs of brachycephalic ocular syndrome in 93 dogs. *Ir Vet J.* 74(1). doi:10.1186/s13620-021-00183-5.
- Costa M, Cardoso C, Afonso C, Bandarra NM, Prates JAM. 2021. Current knowledge and future perspectives of the use of seaweeds for livestock production and meat quality: a systematic review. *J Anim Physiol Anim Nutr (Berl).* 105(6):1075–1102. doi:10.1111/jpn.13509.
- Costa M, Pio L, Bule P, Cardoso V, Alfaia CM, Coelho D, Brás J, Fontes CMGA, Prates JAM. 2021. An individual alginate lyase is effective in the disruption of *Laminaria digitata* recalcitrant cell wall. *Sci Rep.* 11(1). doi:10.1038/s41598-021-89278-1.
- Costa SS, Ferreira C, Ribeiro R, Feßler AT, Schink A-K, Kadlec K, Kaspar H, Amaro A, Albuquerque T, Abrantes P, et al. 2021. Proposal of Epidemiological Cutoff Values for Apramycin 15  $\mu$ g and Florfenicol 30  $\mu$ g Disks Applicable to *Staphylococcus aureus*. *Microb Drug Resist.* 27(11):1555–1559. doi:10.1089/mdr.2020.0402.
- Costa SS, Oliveira V, Serrano M, Pomba C, Couto I. 2021. Phenotypic and molecular traits of *Staphylococcus coagulans* associated with canine skin infections in Portugal. *Antibiotics.* 10(5). doi:10.3390/antibiotics10050518.
- Cota JB, Carvalho AC, Dias I, Reinho A, Bernardo F, Oliveira M. 2021. *Salmonella* spp. In pet reptiles in Portugal: Prevalence and chlorhexidine gluconate antimicrobial efficacy. *Antibiotics.* 10(3). doi:10.3390/antibiotics10030324.

- Cunha E, Valente S, Nascimento M, Pereira M, Tavares L, Dias R, Oliveira M. 2021. Influence of the dental topical application of a nisin-biogel in the oral microbiome of dogs: A pilot study. *PeerJ*. 9. doi:10.7717/peerj.11626.
- Daltro DDS, Padilha AH, da Gama LT, da Silva MVGB, Cobuci JA. 2021. Breed, heterosis, and recombination effects for lactation curves in Brazilian cattle. *Rev Bras Zootec*. 50:1–18. doi:10.37496/RBZ5020200085.
- de Brito Medeiros L, Alves SPA, de Bessa RJB, Soares JKB, Costa CNM, de Souza Aquino J, Guerra GCB, de Souza Araújo DF, Toscano LT, Silva AS, et al. 2021. Ruminant fat intake improves gut microbiota, serum inflammatory parameter and fatty acid profile in tissues of Wistar rats. *Sci Rep*. 11(1). doi:10.1038/s41598-021-98248-6.
- Del Alamo MMR, Reilas T, Lukasik K, Galvão AM, Yeste M, Katila T. 2021. Inflammatory markers in uterine lavage fluids of pregnant, non-pregnant, and intrauterine device implanted mares on days 10 and 15 post ovulation. *Animals*. 11(12). doi:10.3390/ani11123493.
- Delesalle Q, Lopes AM, Gawor JP, Zani D, Pereira HM, Mestrinho LA. 2021. Comparative morphometry of the temporomandibular joint in brachycephalic and mesocephalic cats using multislice CT and cone beam CT. *J Feline Med Surg*. 23(6):507–512. doi:10.1177/1098612X20960657.
- Delgado ILS, Tavares A, Francisco S, Santos D, Coelho J, Basto AP, Zúquete S, Müller J, Hemphill A, Meissner M, et al. 2021. Characterization of a *mob1* homolog in the apicomplexan parasite *Toxoplasma gondii*. *Biology (Basel)*. 10(12). doi:10.3390/biology10121233.
- Dias I, Laranjo M, Potes ME, Agulheiro-Santos AC, Ricardo-Rodrigues S, Fialho AR, Véstia J, Fraqueza MJ, Oliveira M, Elias M. 2021. Co-inoculation with *Staphylococcus equorum* and *Lactobacillus sakei* reduces vasoactive biogenic amines in traditional dry-cured sausages. *Int J Environ Res Public Health*. 18(13). doi:10.3390/ijerph18137100.
- Dias JNR, André AS, Aguiar SI, Gil S, Tavares L, Aires-da-Silva F. 2021. Immunotherapeutic Strategies for Canine Lymphoma: Changing the Odds Against Non-Hodgkin Lymphoma. *Front Vet Sci*. 8. doi:10.3389/fvets.2021.621758.
- Dias R, Lourenço AM, São Braz B, Cavaco A. 2021. Reaching for veterinary pharmacy services: An overlooked routine by community pharmacists? *J Pharm Heal Serv Res*. 12(3):390–396. doi:10.1093/jphsr/rmab041.
- Dias-Guerreiro T, Palma-Marques J, Mourata-Gonçalves P, Alexandre-Pires G, Valério-Bolas A, Gabriel Á, Nunes T, Antunes W, Fonseca IPD, Sousa-Silva M, et al. 2021. African trypanosomiasis: Extracellular vesicles shed by *Trypanosoma brucei brucei* manipulate host mononuclear cells. *Biomedicine*. 9(8). doi:10.3390/biomedicine9081056.
- Domingues VF, Quaresma M, Sousa S, Rosas M, Ventoso B, Nunes ML, Delerue-Matos C. 2021. Evaluating the lipid quality of yellowfin tuna (*Thunnus albacares*) harvested from different oceans by their fatty acid signatures. *Foods*. 10(11). doi:10.3390/foods10112816.
- Dordio AM, Beck R, Nunes T, Pereira da Fonseca I, Gomes J. 2021. Molecular survey of vector-borne diseases in two groups of domestic dogs from Lisbon, Portugal. *Parasites and Vectors*. 14(1). doi:10.1186/s13071-021-04650-4.
- Dos Santos FAA, Carvalho CL, Almeida I, Fagulha T, Rammos F, Barros SC, Henriques M, Luís T, Duarte MD. 2021. Simple method for establishing primary leporidae skin fibroblast cultures. *Cells*. 10(8). doi:10.3390/cells10082100.
- Dos Santos FAA, Carvalho CL, Parra F, Dalton KP, Peleteiro MC, Duarte MD. 2021. A quadruplex qPCR for detection and differentiation of classic and natural recombinant myxoma virus strains of leporids. *Int J Mol Sci*. 22(21). doi:10.3390/ijms222112052.
- Dos Santos FAA, Magro C, Carvalho CL, Ruivo P, Duarte MD, Peleteiro MC. 2021. A potential atypical case of rabbit haemorrhagic disease in a dwarf rabbit. *Animals*. 11(1):1–12. doi:10.3390/ani11010040.
- dos Santos FAA, Portela SJ, Nogueira T, Carvalho CL, de Sousa R, Duarte MD. 2021. Harmless or Threatening? Interpreting the Results of Molecular Diagnosis in the Context of Virus-Host Relationships. *Front Microbiol*. 12. doi:10.3389/fmicb.2021.647730.



- dos Santos Madeira MSM, Lopes PAAB, Martins CF, Assunção JMP, Alfaia CMRPM, Pinto RMA, Prates JAM. 2021. Dietary *Arthrospira platensis* improves systemic antioxidant potential and changes plasma lipids without affecting related hepatic metabolic pathways in post-weaned piglets. *BMC Vet Res.* 17(1). doi:10.1186/s12917-021-02869-y.
- Duarte M, Viegas A, Alves VD, Prates JAM, Ferreira LMA, Najmudin S, Cabrita EJ, Carvalho AL, Fontes CMGA, Bule P. 2021. A dual cohesin-dockerin complex binding mode in *Bacteroides cellulosolvens* contributes to the size and complexity of its cellulosome. *J Biol Chem.* 296. doi:10.1016/j.jbc.2021.100552.
- Eibl C, Bexiga R, Viora L, Guyot H, Félix J, Wilms J, Tichy A, Hund A. 2021. The antibiotic treatment of calf diarrhea in four european countries: A survey. *Antibiotics.* 10(8). doi:10.3390/antibiotics10080910.
- Faria RAS, Vicente APA, Ospina AMT, Silva JAIV. 2021. Pedigree analysis of the racing line Quarter Horse: Genetic diversity and most influential ancestors. *Livest Sci.* 247. doi:10.1016/j.livsci.2021.104484.
- Fernandes M, Grilo ML, Carneiro C, Cunha E, Tavares L, Patino-Martinez J, Oliveira M. 2021. Antibiotic resistance and virulence profiles of gram-negative bacteria isolated from loggerhead sea turtles (*Caretta caretta*) of the island of maio, cape verde. *Antibiotics.* 10(7). doi:10.3390/antibiotics10070771.
- Fernandes T, Garrine C, Ferrao J, Bell V, Varzakas T. 2021. Mushroom Nutrition as Preventative Healthcare in Sub-Saharan Africa. *Appl Sci.* 11(9). doi:10.3390/app11094221.
- Ferreira C, Costa SS, Serrano M, Oliveira K, Trigueiro G, Pomba C, Couto I. 2021. Clonal lineages, antimicrobial resistance, and pvl carriage of staphylococcus aureus associated to skin and soft-tissue infections from ambulatory patients in Portugal. *Antibiotics.* 10(4). doi:10.3390/antibiotics10040345.
- Ferreira M, Ogren M, Dias JNR, Silva M, Gil S, Tavares L, Aires-Da-silva F, Gaspar MM, Aguiar SI. 2021. Liposomes as antibiotic delivery systems: A promising nanotechnological strategy against antimicrobial resistance. *Molecules.* 26(7). doi:10.3390/molecules26072047.
- Ferreira M, Ogren M, Dias JNR, Silva M, Gil S, Tavares L, Aires-Da-silva F, Gaspar MM, Aguiar SI. 2021. Liposomes as antibiotic delivery systems: A promising nanotechnological strategy against antimicrobial resistance. *Molecules.* 26(7). doi:10.3390/molecules26072047.
- Ferreira M, Pinto SN, Aires-da-silva F, Bettencourt A, Aguiar SI, Gaspar MM. 2021. Liposomes as a nanoplatform to improve the delivery of antibiotics into staphylococcus aureus biofilms. *Pharmaceutics.* 13(3):1–25. doi:10.3390/pharmaceutics13030321.
- Figueiredo AM, de Carvalho LM, González MJP, Torres RT, Pla S, Núñez-Arjona JC, Rueda C, Vallverdú-Coll N, Silvestre F, Peña J, et al. 2021. Parasites of the reintroduced iberian lynx (*Lynx pardinus*) and sympatric mesocarnivores in extremadura, Spain. *Pathogens.* 10(3):1–12. doi:10.3390/pathogens10030274.
- Fonseca É, Marques CC, Pimenta J, Jorge J, Baptista MC, Gonçalves AC, Pereira RMLN. 2021. Anti-aging effect of urolithin a on bovine oocytes in vitro. *Animals.* 11(7). doi:10.3390/ani11072048.
- Fraqueza MJ, Laranjo M, Elias M, Patarata L. 2021. Microbiological hazards associated with salt and nitrite reduction in cured meat products: control strategies based on antimicrobial effect of natural ingredients and protective microbiota. *Curr Opin FOOD Sci.* 38:32–39. doi:10.1016/j.cofs.2020.10.027.
- Gameiro A, Almeida F, Nascimento C, Correia J, Ferreira F. 2021. Tyrosine kinase inhibitors are promising therapeutic tools for cats with HER2-positive mammary carcinoma. *Pharmaceutics.* 13(3):1–17. doi:10.3390/pharmaceutics13030346.
- Gameiro A, Nascimento C, Correia J, Ferreira F. 2021. Her2-targeted immunotherapy and combined protocols showed promising antiproliferative effects in feline mammary carcinoma cell-based models. *Cancers (Basel).* 13(9). doi:10.3390/cancers13092007.
- Gameiro A, Nascimento C, Correia J, Ferreira F. 2021. Vista is a diagnostic biomarker and immunotherapy target of aggressive feline mammary carcinoma subtypes. *Cancers (Basel).* 13(21). doi:10.3390/cancers13215559.
- Gameiro A, Nascimento C, Urbano AC, Correia J, Ferreira F. 2021. Serum and Tissue Expression Levels of Leptin and Leptin Receptor Are Putative Markers of Specific Feline Mammary Carcinoma Subtypes. *Front Vet Sci.* 8. doi:10.3389/fvets.2021.625147.

- Gameiro A, Urbano AC, Ferreira F. 2021. Emerging biomarkers and targeted therapies in feline mammary carcinoma. *Vet Sci.* 8(8). doi:10.3390/vetsci8080164.
- Gameiro A, Urbano AC, Ferreira F. 2021. Emerging biomarkers and targeted therapies in feline mammary carcinoma. *Vet Sci.* 8(8). doi:10.3390/vetsci8080164.
- Geraldes C, Verdial C, Cunha E, Almeida V, Tavares L, Oliveira M, Gil S. 2021. Evaluation of a biocide used in the biological isolation and containment unit of a veterinary teaching hospital. *Antibiotics.* 10(6). doi:10.3390/antibiotics10060639.
- Golinelli S, de Marco V, Leal RO, Barbarossa A, Anibaldi C, Maietti E, Tardo AM, Galac S, Fracassi F. 2021. Comparison of methods to monitor dogs with hypercortisolism treated with trilostane. *J Vet Intern Med.* 35(6):2616–2627. doi:10.1111/jvim.16269.
- Gouveia D, Bimbarra S, Carvalho C, Cardoso A, Gamboa Ó, Teixeira R, Ferreira A, Martins Â. 2021. Effects of hyperbaric oxygen therapy on wound healing in veterinary medicine: A pilot study. *Open Vet J.* 11(4):544–554. doi:10.5455/OVJ.2021.v11.i4.4.
- Grilo A, Moreira A, Carrapiço B, Belas A, Braz BS. 2021. Epidemiological study of pesticide poisoning in domestic animals and wildlife in Portugal: 2014–2020. *Front Vet Sci.* 7. doi:10.3389/fvets.2020.616293.
- Grilo ML, Chambel L, Marques TA, Sousa-Santos C, Robalo JI, Oliveira M. 2021. Sympatric threatened Iberian leuciscids exhibit differences in *Aeromonas* diversity and skin lesions' prevalence. *PLoS One.* 16(8 August). doi:10.1371/journal.pone.0255850.
- Grilo ML, Isidoro S, Chambel L, Marques CS, Marques TA, Sousa-Santos C, Robalo JI, Oliveira M. 2021. Molecular epidemiology, virulence traits and antimicrobial resistance signatures of *aeromonas* spp. In the critically endangered *iberochondrostoma lusitanicum* follow geographical and seasonal patterns. *Antibiotics.* 10(7). doi:10.3390/antibiotics10070759.
- Grilo ML, Pereira A, Sousa-Santos C, Robalo JI, Oliveira M. 2021. Climatic alterations influence bacterial growth, biofilm production and antimicrobial resistance profiles in *aeromonas* spp. *Antibiotics.* 10(8). doi:10.3390/antibiotics10081008.
- Guerreiro O, Alves SP, Costa M, Duarte MF, Jerónimo E, Bessa RJB. 2021. Effects of increasing doses of condensed tannins extract from *cistus ladanifer* l. On in vitro ruminal fermentation and biohydrogenation. *Animals.* 11(3):1–13. doi:10.3390/ani11030761.
- Hagbom M, Hellysaz A, Istrate C, Nordgren J, Sharma S, de-Faria FM, Magnusson K-E, Svensson L. 2021. The 5-HT3 receptor affects rotavirus-induced motility. *J Virol.* 95(15). doi:10.1128/JVI.00751-21.
- Inácio AC, Vågsholm I, Jansson A, Vaga M, Boqvist S, Fraqueza MJ. 2021. Impact of starvation on fat content and microbial load in edible crickets (*Acheta domesticus*). *J Insects as Food Feed.* 7(7):1143–1147. doi:10.3920/JIFF2020.0157.
- Jasiński T, Zdrojkowski Ł, Kautz E, Juszczuk-Kubiak E, Ferreira-Dias G, Domino M. 2021. Equine endometrosis pathological features: Are they dependent on NF-κB signaling pathway? *Animals.* 11(11). doi:10.3390/ani11113151.
- Jesus C, Soares R, Cunha E, Grilo M, Tavares L, Oliveira M. 2021. Influence of nisin-biogel at subinhibitory concentrations on virulence expression in *staphylococcus aureus* isolates from diabetic foot infections. *Antibiotics.* 10(12). doi:10.3390/antibiotics10121501.
- Jota Baptista C, Sós E, Szabados T, Kerekes V, Madeira de Carvalho L. 2021. Intestinal parasites in Przewalski's horses (*Equus ferus przewalskii*): a field survey at the Hortobágy National Park, Hungary. *J Helminthol.* 95. doi:10.1017/S0022149X21000274.
- Khemiri S, Nunes MC, Bessa RJB, Alves SP, Smaali I, Raymundo A. 2021. Technological feasibility of couscous-algae-supplemented formulae: Process description, nutritional properties and in vitro digestibility. *Foods.* 10(12). doi:10.3390/foods10123159.
- Krücken J, Czirják GÁ, Ramünke S, Serocki M, Heinrich SK, Melzheimer J, Costa MC, Hofer H, Aschenborn OHK, Barker NA, et al. 2021. Genetic diversity of vector-borne pathogens in spotted and brown hyenas from Namibia and Tanzania relates to ecological conditions rather than host taxonomy. *Parasites and Vectors.* 14(1). doi:10.1186/s13071-021-04835-x.



- Lawal OU, Barata M, Fraqueza MJ, Worning P, Bartels MD, Goncalves L, Paixão P, Goncalves E, Toscano C, Empel J, et al. 2021. *Staphylococcus saprophyticus* From Clinical and Environmental Origins Have Distinct Biofilm Composition. *Front Microbiol.* 12. doi:10.3389/fmicb.2021.663768.
- Lawal OU, Fraqueza MJ, Bouchami O, Worning P, Bartels MD, Gonçalves ML, Paixao P, Gonçalves E, Toscano C, Empel J, et al. 2021. Foodborne origin and local and global spread of *staphylococcus saprophyticus* causing human urinary tract infections. *Emerg Infect Dis.* 27(3):880–893. doi:10.3201/eid2703.200852.
- Lawal OU, Fraqueza MJ, Worning P, Bouchami O, Bartels MD, Goncalves L, Paixão P, Goncalves E, Toscano C, Empel J, et al. 2021. *Staphylococcus saprophyticus* causing infections in humans is associated with high resistance to heavy metals. *Antimicrob Agents Chemother.* 65(7). doi:10.1128/AAC.02685-20.
- Lazado CC, Stiller KT, Reiten B-KM, Osório J, Kolarevic J, Johansen L-H. 2021. Consequences of continuous ozonation on the health and welfare of Atlantic salmon post-smolts in a brackish water recirculating aquaculture system. *Aquat Toxicol.* 238. doi:10.1016/j.aquatox.2021.105935.
- Lederman Z, Magalhães-Sant’Ana M, Voo TC. 2021. Stamping Out Animal Culling: From Anthropocentrism to One Health Ethics. *J Agric Environ Ethics.* 34(5). doi:10.1007/s10806-021-09868-x.
- Linari G, Dondi F, Segatore S, Vasylyeva K, Linta N, Pietra M, Leal RO, Fracassi F. 2021. Evaluation of 1,2-O-dilauryl-rac-glycero glutaric acid-(6'-methylresorufin) ester (DGGR) and 1,2-diglyceride lipase assays in dogs with naturally occurring hypercortisolism. *J Vet Diagnostic Investig.* 33(5):817–824. doi:10.1177/10406387211021345.
- Liptak JM, Thatcher GP, Mestrinho LA, Séguin B, Vernier T, Martano M, Husbands BD, Veytsman S, van Nimwegen SA, De Mello Souza CH, et al. 2021. Outcomes of cats treated with maxillectomy: 60 cases. A Veterinary Society of Surgical Oncology retrospective study. *Vet Comp Oncol.* 19(4):641–650. doi:10.1111/vco.12634. <https://www.scopus.com/inward/record.uri?eid=2-s2.0-85089461247&doi=10.1111%2Fvco.12634&partnerID=40&md5=31c35fa07476e805a57690af48b1760a>.
- Gameiro A, Nascimento C, Correia J, Ferreira F. 2021. Her2-targeted immunotherapy and combined protocols showed promising antiproliferative effects in feline mammary carcinoma cell-based models. *Cancers (Basel).* 13(9). doi:10.3390/cancers13092007.
- Louro M, Kuzmina TA, Bredtmann CM, Diekmann I, de Carvalho LMM, von Samson-Himmelstjerna G, Krücken J. 2021. Genetic variability, cryptic species and phylogenetic relationship of six cyathostomin species based on mitochondrial and nuclear sequences. *Sci Rep.* 11(1). doi:10.1038/s41598-021-87500-8.
- Lozano J, Almeida C, Victório AC, Melo P, Rodrigues JP, Rinaldi L, Cringoli G, Gomes L, Oliveira M, Paz-Silva A, et al. 2021. Implementation of mini-flotac in routine diagnosis of coccidia and helminth infections in domestic and exotic birds. *Vet Sci.* 8(8). doi:10.3390/vetsci8080160.
- Madeira S, Duarte A, Boinas F, Costa Osório H. 2021. A DNA barcode reference library of Portuguese mosquitos. *Zoonoses Public Health.* 68(8):926–936. doi:10.1111/zph.12885.
- Martins Â, Gouveia D, Cardoso A, Gamboa Ó, Millis D, Ferreira A. 2021. Nervous system modulation through electrical stimulation in companion animals. *Acta Vet Scand.* 63(1). doi:10.1186/s13028-021-00585-z..
- Martins Â, Gouveia D, Cardoso A, Carvalho C, Coelho T, Silva C, Viegas I, Gamboa Ó, Ferreira A. 2021. A controlled clinical study of intensive neurorehabilitation in post-surgical dogs with severe acute intervertebral disc extrusion. *Animals.* 11(11). doi:10.3390/ani11113034.
- Martins Â, Gouveia D, Cardoso A, Carvalho C, Silva C, Coelho T, Gamboa Ó, Ferreira A. 2021. Functional neurorehabilitation in dogs with an incomplete recovery 3 months following intervertebral disc surgery: A case series. *Animals.* 11(8). doi:10.3390/ani11082442.
- Martins Â, Gouveia D, Cardoso A, Viegas I, Gamboa Ó, Ferreira A. 2021. A Comparison Between Body Weight-Supported Treadmill Training and Conventional Over-Ground Training in Dogs With Incomplete Spinal Cord Injury. *Front Vet Sci.* 8. doi:10.3389/fvets.2021.597949.

- Martins Â, Silva CM, Gouveia D, Cardoso A, Coelho T, Gamboa Ó, Marcelino E, Ferreira A. 2021. Spinal locomotion in cats following spinal cord injury: A prospective study. *Animals*. 11(7). doi:10.3390/ani11071994.
- Martins CF, Pestana Assunção J, Ribeiro Santos DM, Madeira MSMDs, Alfaia CMRPM, Lopes PAAB, Coelho DFM, Cardoso Lemos JP, de Almeida AM, Mestre Prates JA, et al. 2021. Effect of dietary inclusion of *Spirulina* on production performance, nutrient digestibility and meat quality traits in post-weaning piglets. *J Anim Physiol Anim Nutr (Berl)*. 105(2):247–259. doi:10.1111/jpn.13470.
- Martins CF, Pestana JM, Alfaia CM, Costa M, Ribeiro DM, Coelho D, Lopes PA, Almeida AM, Freire JPB, Prates JAM. 2021. Effects of *Chlorella vulgaris* as a feed ingredient on the quality and nutritional value of weaned piglets' meat. *Foods*. 10(6). doi:10.3390/foods10061155.
- Menino R, Felizes F, Castelo-Branco MA, Fareleira P, Moreira O, Nunes R, Murta D. 2021. Agricultural value of Black Soldier Fly larvae frass as organic fertilizer on ryegrass. *Heliyon*. 7(1). doi:10.1016/j.heliyon.2020.e05855.
- Messias TBON, Alves SP, Bessa RJB, Madruga MS, Pacheco MTB, Queiroga RDCRDE. 2021. Fatty acid profile of milk from Nordeste donkey breed raised on Caatinga pasture. *J Dairy Res*. 88(2):205–209. doi:10.1017/S0022029921000388.
- Mestrinho LA, Santos RR. 2021. Translational oncotargets for immunotherapy: From pet dogs to humans. *Adv Drug Deliv Rev*. 172:296–313. doi:10.1016/j.addr.2021.02.020.
- Mondal S, Thakur A, Fontes CMGA, Goyal A. 2021. A trimodular family 16 glycoside hydrolase from the cellulosome of *Ruminococcus flavefaciens* displays highly specific licheninase (EC 3.2.1.73) activity. *Microbiol (United Kingdom)*. 167(7). doi:10.1099/mic.0.001055.
- Monteiro J, Duarte M, Amadou K, Barbosa C, El Bar N, Madeira FM, Regalla A, Duarte A, Tavares L, Patrício AR. 2021. Fibropapillomatosis and the Chelonid Alphaherpesvirus 5 in Green Turtles from West Africa. *Ecohealth*. 18(2):229–240. doi:10.1007/s10393-021-01526-y.
- Monteiro M, Prata S, Cardoso L, Pereira da Fonseca I, Leal RO. 2021. Diagnosis and clinical management of canine leishmaniosis by general veterinary practitioners: a questionnaire-based survey in Portugal. *Parasites and Vectors*. 14(1). doi:10.1186/s13071-021-04799-y.
- Motta C, Rego A, Cardoso C, Coelho I, Gomes-Bispo A, Afonso C, Prates JAM, Castanheira I, Bandarra NM. 2021. Seasonality as experienced in the market and the resulting variation in the amino acid and elemental composition of chub mackerel (*Scomber colias*). *J Food Compos Anal*. 104. doi:10.1016/j.jfca.2021.104151.
- Murru E, Lopes PA, Carta G, Manca C, Abolghasemi A, Guil-Guerrero JL, Prates JAM, Banni S. 2021. Different dietary n-3 polyunsaturated fatty acid formulations distinctively modify tissue fatty acid and n-acyl ethanolamine profiles. *Nutrients*. 13(2):1–16. doi:10.3390/nu13020625.
- Nascimento C, Ferreira F. 2021. Tumor microenvironment of human breast cancer, and feline mammary carcinoma as a potential study model. *Biochim Biophys ACTA-REVIEWS CANCER*. 1876(1). doi:10.1016/j.bbcan.2021.188587.
- Nascimento C, Gameiro A, Ferreira J, Correia J, Ferreira F. 2021. Diagnostic value of VEGF-A, VEGFR-1 and VEGFR-2 in feline mammary carcinoma. *Cancers (Basel)*. 13(1):1–13. doi:10.3390/CANCERS13010117.
- Nolasco S, Bellido J, Serna M, Carmona B, Soares H, Zabala JC. 2021. Colchicine Blocks Tubulin Heterodimer Recycling by Tubulin Cofactors TBCA, TBCB, and TBCE. *Front Cell Dev Biol*. 9. doi:10.3389/fcell.2021.656273.
- Olarte-Castillo XA, dos Remédios JF, Heeger F, Hofer H, Karl S, Greenwood AD, East ML. 2021. The virus–host interface: Molecular interactions of Alphacoronavirus-1 variants from wild and domestic hosts with mammalian aminopeptidase N. *Mol Ecol*. 30(11):2607–2625. doi:10.1111/mec.15910.
- Oliveira M, Rodrigues MJ, Neng NR, Nogueira JMF, Bessa RJB, Custódio L. 2021. Seasonal variations of the nutritive value and phytotherapeutic potential of *Cladium mariscus* L. (pohl.) targeting ruminant's production. *Plants*. 10(3):1–17. doi:10.3390/plants10030556.
- Oliveira MS, Ramilo DW, Mello ER, Cardozo S V, Caetano I, Brazio E, Fonseca IP, Oliveira ÁA, Lima VM, Berto BP. 2021. Supplementary morphological data and molecular analyses of *Eimeria labbeana*

- (Labbé, 1896) Pinto, 1928 (Chromista: Miozoa: Eimeriidae) from columbiform birds in Portugal. *Parasitol Res.* 120(10):3569–3580. doi:10.1007/s00436-021-07300-x.
- Oliveira RS, Rodrigues MJ, Henriques AR. 2021. Specific hygiene procedures and practices assessment: A cross-sectional study in fresh fishery product retailers of Lisbon's traditional food markets. *Foods*. 10(8). doi:10.3390/foods10081805.
- Paiva RS, Ramos C V, Azenha SR, Alves C, Basto AP, Graca L, Martins VC. 2021. Peptidylprolyl isomerase C (Ppic) regulates invariant Natural Killer T cell (iNKT) differentiation in mice. *Eur J Immunol*. 51(8):1968–1979. doi:10.1002/eji.202048924.
- Paulo C, Machado I, Carvalho H, Gomes J, Mota AD, Tavares L, Almeida V, Gil S. 2021. A 5-year retrospective study of canine and feline patients referred to an isolation unit for infectious diseases. *Vet Rec Open*. 8(1). doi:10.1002/vro2.5.
- Pereira A, Teixeira J, Sousa S, Parreira R, Campino L, Meireles J, Maia C. 2021. *Giardia duodenalis* infection in dogs from the metropolitan area of Lisbon, Portugal: prevalence, genotyping and associated risk factors. *J Parasit Dis*. 45(2):372–379. doi:10.1007/s12639-020-01307-4.
- Petrucchi G, Henriques J, Gregório H, Vicente G, Prada J, Pires I, Lobo L, Medeiros R, Queiroga F. 2021. Metastatic feline mammary cancer: prognostic factors, outcome and comparison of different treatment modalities – a retrospective multicentre study. *J Feline Med Surg*. 23(6):549–556. doi:10.1177/1098612X20964416.
- Pinto-Bravo P, Rebordão MR, Amaral A, Fernandes C, Galvão A, Silva E, Pessa-Santos P, Alexandre-Pires G, da Costa RPR, Skarzynski DJ, et al. 2021. Microvascularization and expression of fibroblast growth factor and vascular endothelial growth factor and their receptors in the mare oviduct. *Animals*. 11(4). doi:10.3390/ani11041099.
- Prates JAM, Freire JPB, de Almeida AM, Martins C, Ribeiro DM, Osório H, Pinho MAS, Lopes PA, Correia MJM, Pinto RMA, et al. 2021. Influence of dietary supplementation with an amino acid mixture on inflammatory markers, immune status and serum proteome in lps-challenged weaned piglets. *Animals*. 11(4). doi:10.3390/ani11041143.
- Ramilo DW, Caetano I, Brazio E, Mira M, Antunes L, da Fonseca IP, Cardoso L. 2021. Presence of one ecto- and two endoparasite species of the black stork (*Ciconia nigra*) in Portugal. *BMC Vet Res*. 17(1). doi:10.1186/s12917-020-02724-6.
- Ramilo DW, Costa P, Stekolnikov AA, Cláudio JM, Lourenço AM, Pereira da Fonseca I, Cardoso L. 2021. First report of *Ericotrombidium ibericense* in domestic dogs. *Acta Parasitol*. 66(1):253–258. doi:10.1007/s11686-020-00247-6.
- Ramilo DW, Filipe AM, Lucientes J, Rebelo MT, Cardoso L, da Fonseca IP. 2021. Morphological anomalies found in female *Culicoides* midges (Diptera: Ceratopogonidae). *Biologia (Bratisl)*. 76(11):3405–3410. doi:10.1007/s11756-021-00822-w.
- Rebocho R, Domínguez-Ruiz M, Englar RE, Arenas C, Pérez-Alenza MD, Corsini A, Fracassi F, Bennaim M, Leal RO. 2021. Use of deoxycorticosterone pivalate by veterinarians: A western European survey. *Vet Sci*. 8(11). doi:10.3390/vetsci8110271.
- Rebordão MR, Amaral A, Fernandes C, Silva E, Lukasik K, Szóstek-Mioduchowska A, Pinto-Bravo P, Galvão A, Skarzynski DJ, Ferreira-dias G. 2021. Enzymes present in neutrophil extracellular traps may stimulate the fibrogenic PGF2 $\alpha$  pathway in the mare endometrium. *Animals*. 11(9). doi:10.3390/ani11092615.
- Revidatti MA, Gama LT, Burriel IM, Gardyn OC, Cappello Villada JS, Carolino MI, Cañón FJ, Ginja C, Sponenberg P, Vicente AP, et al. 2021. On the origins of American Criollo pigs: A common genetic background with a lasting Iberian signature. *PLoS One*. 16(5). doi:10.1371/journal.pone.0251879.
- Ribeiro DM, Martins CF, Kuleš J, Horvatić A, Guillemin N, Freire JPB, Eckersall PD, Almeida AM, Prates JAM. 2021. Influence of dietary *Spirulina* inclusion and lysozyme supplementation on the longissimus lumborum muscle proteome of newly weaned piglets. *J Proteomics*. 244. doi:10.1016/j.jprot.2021.104274.

- Ribeiro DM, Martins CF, Costa M, Coelho D, Pestana J, Alfaia C, Lordelo M, de Almeida AM, Freire JPB, Prates JAM. 2021. Quality Traits and Nutritional Value of Pork and Poultry Meat from Animals Fed with Seaweeds. *FOODS*. 10(12). doi:10.3390/foods10122961.
- Rousseau J, Nakamura M, Rio-Maior H, Álvares F, Choquet R, de Carvalho LM, Godinho R, Santos N. 2021. Non-invasive molecular survey of sarcoptic mange in wildlife: Diagnostic performance in wolf faecal samples evaluated by multi-event capture–recapture models. *Pathogens*. 10(2):1–15. doi:10.3390/pathogens10020243.
- Salgueiro V, Reis L, Ferreira E, Botelho MJ, Manageiro V, Caniça M. 2021. Assessing the bacterial community composition of bivalve mollusks collected in aquaculture farms and respective susceptibility to antibiotics. *Antibiotics*. 10(9). doi:10.3390/antibiotics10091135.
- Santo CE, Caseiro C, Martins MJ, Monteiro R, Brandao I. 2021. Gut Microbiota, in the Halfway between Nutrition and Lung Function. *Nutrients*. 13(5). doi:10.3390/nu13051716.
- Schneider CR, Castagnara DD, Fernandes T, Neres MA. 2021. Aerobic stability of tifton 85 silage with and without pre-drying in the sun. *Biosci J*. 37. doi:10.14393/BJ-v37n0a2021-54036.
- Semedo-Lemsaddek T, Bettencourt Cota J, Ribeiro T, Pimentel A, Tavares L, Bernardo F, Oliveira M. 2021. Resistance and virulence distribution in enterococci isolated from broilers reared in two farming systems. *Ir Vet J*. 74(1). doi:10.1186/s13620-021-00201-6.
- Sharma K, Fontes CMGA, Najmudin S, Goyal A. 2021. Small angle X-ray scattering based structure, modeling and molecular dynamics analyses of family 43 glycoside hydrolase  $\alpha$ -L-arabinofuranosidase from *Clostridium thermocellum*. *J Biomol Struct Dyn*. 39(1):209–218. doi:10.1080/07391102.2019.1707119.
- Silva B, Braz BS, Delgado E, Gonçalves L. 2021. Colloidal nanosystems with mucoadhesive properties designed for ocular topical delivery. *Int J Pharm*. 606. doi:10.1016/j.ijpharm.2021.120873.
- Silva IVD, Soares BP, Pimpão C, Pinto RMA, Costa T, Freire JPB, Corrent E, Chalvon-Demersay T, Prates JAM, Lopes PA, et al. 2021. Glutamine and cystine-enriched diets modulate aquaporins gene expression in the small intestine of piglets. *PLoS One*. 16(1 January). doi:10.1371/journal.pone.0245739.
- Silva M, Fernandes M, Fialho M, Mestrinho L. 2021. A case series analysis of dental extractions' outcome in cats with chronic gingivostomatitis carrying retroviral disease. *Animals*. 11(11). doi:10.3390/ani11113306.
- Silva MF, Pereira AL, Fraqueza MJ, Pereira G, Mateus L, Lopes-Da-costa L, Silva E. 2021. Genomic and phenotypic characterization of campylobacter fetus subsp. Venerealis strains. *Microorganisms*. 9(2):1–14. doi:10.3390/microorganisms9020340.
- Singh S, Thompson JA, Yilmaz B, Li H, Weis S, Sobral D, Truglio M, Aires da Silva F, Aguiar S, Carlos AR, et al. 2021. Loss of  $\alpha$ -gal during primate evolution enhanced antibody-effector function and resistance to bacterial sepsis. *Cell Host Microbe*. 29(3):347–361.e12. doi:10.1016/j.chom.2020.12.017.
- Sirakanyan S, Arabyan E, Hakobyan A, Hakobyan T, Chilingaryan G, Sahakyan H, Sargsyan A, Arakelov G, Nazaryan K, Izmailyan R, et al. 2021. A new microtubule-stabilizing agent shows potent antiviral effects against African swine fever virus with no cytotoxicity. *Emerg Microbes Infect*. 10(1):783–796. doi:10.1080/22221751.2021.1902751.
- Soares M, Correia J, Nascimento C, Ferreira F. 2021. Anaplastic mammary carcinoma in cat. *Vet Sci*. 8(5). doi:10.3390/vetsci8050077.
- Soldado D, Bessa RJB, Jeronimo E. 2021. Condensed Tannins as Antioxidants in Ruminants-Effectiveness and Action Mechanisms to Improve Animal Antioxidant Status and Oxidative Stability of Products. *ANIMALS*. 11(11). doi:10.3390/ani11113243.
- Sousa SR, Anastácio S, Nóvoa M, Paz-Silva A, de Carvalho LMM. 2021. Gastrointestinal parasitism in miranda donkeys: Epidemiology and selective control of strongyles infection in the northeast of Portugal. *Animals*. 11(1):1–18. doi:10.3390/ani11010155.
- Tavares IT, Barreno RR, Sales-Luís JP, Vaudano CG, Jaber JR. 2021. Laparoscopic castration using bipolar forceps vs. Orchiectomy in dogs: A comparison of two techniques. *Animals*. 11(11). doi:10.3390/ani11113041.

- Timofte D, Broens EM, Guardabassi L, Pomba C, Allerton F, Ikonomopoulos J, Overesch G, Damborg P, Vet ENO, ESG ESGVM, et al. 2021. Driving Laboratory Standardization of Bacterial Culture and Antimicrobial Susceptibility Testing in Veterinary Clinical Microbiology in Europe and Beyond. *J Clin Microbiol.* 59(6). doi:10.1128/JCM.02572-20.
- Tomás A, Pereira da Fonseca I, Valkenburg T, Rebelo MT. 2021. Louse flies in Azorean and mainland populations of four Passeriformes species: A new perspective to parasite Island syndromes. *Int J Parasitol Parasites Wildl.* 14:33–40. doi:10.1016/j.ijppaw.2020.12.004.
- Valença A, Mendes-Jorge L, Bonet A, Catita J, Ramos D, Jose-Cunilleras E, Garcia M, Carretero A, Nacher V, Navarro M, et al. 2021. TIM2 modulates retinal iron levels and is involved in blood-retinal barrier breakdown. *Exp Eye Res.* 202. doi:10.1016/j.exer.2020.108292.
- van Neer A, Gross S, Kesselring T, Grilo ML, Ludes-Wehrmeister E, Roncon G, Siebert U. 2021. Assessing seal carcasses potentially subjected to grey seal predation. *Sci Rep.* 11(1). doi:10.1038/s41598-020-80737-9.
- Vasconcelos AM, Carmo MB, Ferreira B, Viegas I, Gama-Carvalho M, Ferreira A, Amaral AJ. 2021. IsomiR\_Window: a system for analyzing small-RNA-seq data in an integrative and user-friendly manner. *BMC Bioinformatics.* 22(1). doi:10.1186/s12859-021-03955-6.
- Verdial C, Carneiro C, Machado I, Tavares L, Almeida V, Oliveira M, Gil S. 2021. Controlling bacteriological contamination of environmental surfaces at the biological isolation and containment unit of a veterinary teaching hospital. *Ir Vet J.* 74(1). doi:10.1186/s13620-021-00197-z.
- Viana MVC, Profeta R, da Silva AL, Hurtado R, Cerqueira JC, Ribeiro BFS, Almeida MO, Morais-Rodrigues F, de Castro Soares S, Oliveira M, et al. 2021. Taxonomic classification of strain PO100/5 shows a broader geographic distribution and genetic markers of the recently described *Corynebacterium silvaticum*. *PLoS One.* 15(12 December). doi:10.1371/journal.pone.0244210..
- Vítor ACM, Francisco AE, Silva J, Pinho M, Huws SA, Santos-Silva J, Bessa RJB, Alves SP. 2021. Freeze-dried *Nannochloropsis oceanica* biomass protects eicosapentaenoic acid (EPA) from metabolism in the rumen of lambs. *Sci Rep.* 11(1). doi:10.1038/s41598-021-01255-w.
- Voinot M, Bonilla R, Sousa S, Sanchís J, Canhão-Dias M, Delgado JR, Lozano J, Sánchez-Andrade R, Arias MS, de Carvalho LM. 2021. Control of strongyles in first-season grazing ewe lambs by integrating deworming and thrice-weekly administration of parasitocidal fungal spores. *Pathogens.* 10(10). doi:10.3390/pathogens10101338.
- Waindok P, Raue K, Grilo ML, Siebert U, Strube C. 2021. Predators in northern Germany are reservoirs for parasites of One Health concern. *Parasitol Res.* 120(12):4229–4239. doi:10.1007/s00436-021-07073-3.
- Warembourg C, Wera E, Odoch T, Bulu PM, Berger-González M, Alvarez D, Abakar MF, Maximiano Sousa F, Cunha Silva L, Alobo G, et al. 2021. Comparative Study of Free-Roaming Domestic Dog Management and Roaming Behavior Across Four Countries: Chad, Guatemala, Indonesia, and Uganda. *Front Vet Sci.* 8. doi:10.3389/fvets.2021.617900.
- Weigert A, Bergman M-L, Gonçalves LA, Godinho I, Duarte N, Abrantes R, Borges P, Brennan A, Malheiro V, Matoso P, et al. 2021. Longitudinal Analysis of Antibody Responses to the mRNA BNT162b2 Vaccine in Patients Undergoing Maintenance Hemodialysis: A 6-Month Follow-Up. *Front Med.* 8. doi:10.3389/fmed.2021.796676.

## 2022

- Abade dos Santos FA, Carvalho CL, Valente PCLG, Armés H, Reemers SS, Peleteiro MC, Sanz IC, Dalton KP, Parra F, Duarte MD. 2022. Evaluation of Commercial Myxomatosis Vaccines against Recombinant Myxoma Virus (ha-MYXV) in Iberian Hare and Wild Rabbit. *Vaccines.* 10(3). doi:10.3390/vaccines10030356.
- Abade dos Santos FA, Dalton KP, Carvalho CL, Casero M, Álvarez ÁL, Parra F, Duarte MD. 2022. Co-infection by classic MYXV and ha-MYXV in Iberian hare (*Lepus granatensis*) and European wild rabbit (*Oryctolagus cuniculus algeris*). *Transbound Emerg Dis.* 69(4):1684–1690. doi:10.1111/tbed.14540.
- Abade dos Santos FA, Pinto A, Burgoyne T, Dalton KP, Carvalho CL, Ramilo DW, Carneiro C, Carvalho T, Peleteiro MC, Parra F, et al. 2022. Spillover events of rabbit haemorrhagic disease virus 2

- (recombinant GI.4P-GI.2) from Lagomorpha to Eurasian badger. *Transbound Emerg Dis.* 69(3):1030–1045. doi:10.1111/tbed.14059.
- Abade dos Santos FA, Santos N, Carvalho CL, Martinez-Haro M, Gortázar C, García-Bocanegra I, Capucci L, Duarte M, Alves PC. 2022. Retrospective serological and molecular survey of myxoma or antigenically related virus in the Iberian hare, *Lepus granatensis*. *Transbound Emerg Dis.* 69(6):3637–3650. doi:10.1111/tbed.14734.
- Ahmed J, Kumar K, Sharma K, Fontes CMGA, Goyal A. 2022. Computational and SAXS-based structure insights of pectin acetyl esterase (CtPae12B) of family 12 carbohydrate esterase from *Clostridium thermocellum* ATCC 27405. *J Biomol Struct Dyn.* 40(18):8437–8454. doi:10.1080/07391102.2021.1911858.
- Alfaia CM, Costa MM, Lopes PA, Pestana JM, Prates JAM. 2022. Use of Grape By-Products to Enhance Meat Quality and Nutritional Value in Monogastrics. *FOODS.* 11(18). doi:10.3390/foods11182754.
- Alfaia CM, Costa MM, Pinto RMA, Pestana JM, Mourato M, Carvalho P, Martins CF, Lopes PA, Lordelo MM, Prates JAM. 2022. Plasma Metabolites and Liver Composition of Broilers in Response to Dietary *Ulva lactuca* with Ulvan Lyase or a Commercial Enzyme Mixture. *Molecules.* 27(21). doi:10.3390/molecules27217425.
- Alpoim-Moreira J, Fernandes C, Rebordão MR, Costa AL, Bliebernicht M, Nunes T, Szóstek-Mioduchowska A, Skarzynski DJ, Ferreira-Dias G. 2022. Collagen Type III as a Possible Blood Biomarker of Fibrosis in Equine Endometrium. *Animals.* 12(14). doi:10.3390/ani12141854.
- Alves JC, Santos A, Jorge P, Carreira LM. 2022. A Comparison of Intra-Articular Blood Cell Secretome and Blood Cell Secretome with Triamcinolone Acetonide in Dogs with Osteoarthritis: A Crossover Study. *Animals.* 12(23). doi:10.3390/ani12233558.
- Alves JC, Santos A, Jorge P, Carreira LM. 2022. A first report on the efficacy of a single intra-articular administration of blood cell secretome, triamcinolone acetonide, and the combination of both in dogs with osteoarthritis. *BMC Vet Res.* 18(1). doi:10.1186/s12917-022-03413-2.
- Alves JC, Santos A, Jorge P, Lavrador C, Carreira LM. 2022. Characterization of Weight-bearing Compensation in Dogs With Bilateral Hip Osteoarthritis. *Top Companion Anim Med.* 49. doi:10.1016/j.tcam.2022.100655.
- Alves JC, Santos A, Jorge P, Lavrador C, Carreira LM. 2022. Effect of a single intra-articular administration of stanozolol in a naturally occurring canine osteoarthritis model: a randomised trial. *Sci Rep.* 12(1). doi:10.1038/s41598-022-09934-y.
- Alves JC, Santos A, Jorge P, Lavrador C, Carreira LM. 2022. Evaluation of Four Clinical Metrology Instruments for the Assessment of Osteoarthritis in Dogs. *Animals.* 12(20). doi:10.3390/ani12202808.
- Alves JC, Santos A, Jorge P, Lavrador C, Carreira LM. 2022. The influence of IL-1 and C-reactive protein levels in synovial fluid of companion dogs with bilateral hip osteoarthritis on various clinical disease parameters. *Am J Vet Res.* 83(11). doi:10.2460/ajvr.22.05.0079.
- Alves JC, Santos A, Jorge P, Miguel Carreira L. 2022. A randomized double-blinded controlled trial on the effects of photobiomodulation therapy in dogs with osteoarthritis. *Am J Vet Res.* 83(8). doi:10.2460/ajvr.22.03.0036.
- Anastácio C, Bexiga R, Nolasco S, Zúquete S, Delgado ILS, Nunes T, Leitão A. 2022. Impact of Endemic Besnoitiosis on the Performance of a Dairy Cattle Herd. *Animals.* 12(10). doi:10.3390/ani12101291.
- Andrade M, Oliveira K, Morais C, Abrantes P, Pomba C, Rosato AE, Couto I, Costa SS. 2022. Virulence Potential of Biofilm-Producing *Staphylococcus pseudintermedius*, *Staphylococcus aureus* and *Staphylococcus coagulans* Causing Skin Infections in Companion Animals. *Antibiotics.* 11(10). doi:10.3390/antibiotics11101339.
- André AS, Moutinho I, Dias JNR, Aires-da-Silva F. 2022. In vivo Phage Display: A promising selection strategy for the improvement of antibody targeting and drug delivery properties. *Front Microbiol.* 13. doi:10.3389/fmicb.2022.962124.
- Antunes MI, Lima MS, Stilwell G, Romeiras MI, Fragoso L, de Carvalho LM. 2022. Anthelmintic Efficacy in Sheep and Goats under Different Management and Deworming Systems in the Region of Lisbon and Tagus Valley, Portugal. *Pathogens.* 11(12). doi:10.3390/pathogens11121457.

- Araújo PM, Batista E, Fernandes MH, Fernandes MJ, Gama LT, Fraqueza MJ. 2022. Assessment of biofilm formation by *Campylobacter* spp. isolates mimicking poultry slaughterhouse conditions. *Poult Sci.* 101(2). doi:10.1016/j.psj.2021.101586.
- Argel NS, Lorenzo G, Domínguez R, Fraqueza MJ, Fernández-López J, Sosa ME, Campagnol PCB, Lorenzo JM, Andrés SC. 2022. Hybrid Meat Products: Incorporation of White Bean Flour in Lean Pork Burgers. *Appl Sci.* 12(15). doi:10.3390/app12157571.
- Azevedo A, Guimarães L, Ferraz J, Whiting M, Magalhães-Sant'Ana M. 2022. Understanding the Human–Reptile Bond: An Exploratory Mixed-Methods Study. *Anthrozoos.* 35(6):755–772. doi:10.1080/08927936.2022.2051934.
- Azevedo AR, Pais AS, Almeida-Santos T, Pires VMR, Pessa P, Marques CC, Nolasco S, Castelo-Branco P, Prates JAM, Lopes-da-Costa L, et al. 2022. Medical Grade Honey as a Promising Treatment to Improve Ovarian Tissue Transplantation. *Bioengineering.* 9(8). doi:10.3390/bioengineering9080357.
- Badri M, Olfatfar M, KarimiPourSaryazdi A, Zaki L, de Carvalho LMM, Harandi MF, Barikbin F, Madani P, Eslahi A V. 2022. The global prevalence of *Spirometra* parasites in snakes, frogs, dogs, and cats: A systematic review and meta-analysis. *Vet Med Sci.* 8(6):2785–2805. doi:10.1002/vms3.932.
- Barros C, Barateiro A, Neto A, Soromenho B, Basto AP, Mateus JM, Xapelli S, Sebastião AM, Brites D, Graça L, et al. 2022. S100B inhibition protects from chronic experimental autoimmune encephalomyelitis. *Brain Commun.* 4(3). doi:10.1093/braincomms/fcac076.
- Barroso MC, Grilo A, Aguiar S, da Silva F, São Braz B. 2022. Occurrence of MDR1 1-delta mutation in herding dog breeds in Portugal. *Front Vet Sci.* 9. doi:10.3389/fvets.2022.990884.
- Bastião Rocha PA, Monteiro Marques JM, Barreto AS, Semedo-Lemsaddek T. 2022. Enterococcus spp. from Azeitão and Nisa PDO-cheeses: Surveillance for antimicrobial drug resistance. *LWT.* 154. doi:10.1016/j.lwt.2021.112622.
- Belas A, Marques C, Menezes J, Gama LTD, Cavaco-Silva P, Pomba C. 2022. ESBL/pAmpC-Producing *Escherichia coli* Causing Urinary Tract Infections in Non-Related Companion Animals and Humans. *Antibiotics.* 11(5). doi:10.3390/antibiotics11050559.
- Bell V, Silva C, Guina J, Fernandes TH. 2022. Mushrooms as future generation healthy foods. *Front Nutr.* 9. doi:10.3389/fnut.2022.1050099.
- Biénès T, Leal RO, Domínguez-Ruiz M, De Carvalho RE, Rodrigues NF, Dally C, Husson J-C, Le Boedec K, Hernandez J. 2022. Association of gastric lymphofollicular hyperplasia with *Helicobacter*-like organisms in dogs. *J Vet Intern Med.* 36(2):515–524. doi:10.1111/jvim.16387.
- Bizarro AF, Martins AS, Pinto M, Fernandes B, Pereira H, Braz BS, Lourenço AM. 2022. Alternative protocol with oclacitinib for canine atopic dermatitis: Can cost be reduced? . *Rev Port Imunoalergologia.* 30(1):31–41. doi:10.32932/rpia.2022.03.076.
- Borba KKS, Gadelha TS, Sant'Ana AMS, Pacheco MTB, Pinto LS, Madruga MS, Medeiros AN, Bessa RJB, Alves SPA, Magnani M, et al. 2022. Fatty acids, essential amino acids, minerals and proteins profile in whey from goat cheese: Impacts of raising system. *Small Rumin Res.* 217. doi:10.1016/j.smallrumres.2022.106842.
- Boskovic Cabrol M, Martins JC, Malhão LP, Alves SP, Bessa RJB, Almeida AM, Raymundo A, Lordelo M. 2022. Partial replacement of soybean meal with *Chlorella vulgaris* in broiler diets influences performance and improves breast meat quality and fatty acid composition. *Poult Sci.* 101(8). doi:10.1016/j.psj.2022.101955.
- Bressan MC, Belo AT, Amaral A, Cordeiro D, Boari CA, Bettencourt C, van Harten S, Moreira O, da Gama LT, Almeida JM. 2022. The impact of genetic groups (Alentejano and F1 Landrace x Large White pigs) and body weight (90, 120 and 160kg) on blood metabolites. *Livest Sci.* 255. doi:10.1016/j.livsci.2021.104810.
- Cabrol MB, Martins JC, Malhão LP, Alfaia CM, Prates JAM, Almeida AM, Lordelo M, Raymundo A. 2022. Digestibility of Meat Mineral and Proteins from Broilers Fed with Graded Levels of *Chlorella vulgaris*. *Foods.* 11(9). doi:10.3390/foods11091345.



- Canhão-Dias M, Pires TM, Henriques R, Lopes DG, De Carvalho LMM. 2022. Zoonoses as Important Causes of Hospital Admissions: A 15-Year Study in Portugal. *Port J Public Heal.* 40(2):101–111. doi:10.1159/000525301.
- Capela L, Leites I, Romao R, Lopes-da-Costa L, Pereira R. 2022. Impact of Heat Stress on Bovine Sperm Quality and Competence. *ANIMALS.* 12(8). doi:10.3390/ani12080975.
- Cardoso M, Prata I, Rebelo I, Nunes T, Pires A, Carneiro C, Bexiga R. 2022. Antimicrobial (ESBL) resistance genes in faecal *E. coli* of calves fed waste milk with antimicrobial residues. *J Dairy Res.* 89(3):259–264. doi:10.1017/S0022029922000486.
- Cardoso V, Brás JLA, Costa IF, Ferreira LMA, Gama LT, Vincentelli R, Henrissat B, Fontes CMGA. 2022. Generation of a Library of Carbohydrate-Active Enzymes for Plant Biomass Deconstruction. *Int J Mol Sci.* 23(7). doi:10.3390/ijms23074024.
- Carletto D, Furtado F, Zhang J, Asimakopoulou AG, Eggen M, Verstege GC, Faggio C, Mota VC, Lazado CC. 2022. Mode of Application of Peracetic Acid-Based Disinfectants has a Minimal Influence on the Antioxidant Defences and Mucosal Structures of Atlantic Salmon (*Salmo salar*) Parr. *Front Physiol.* 13. doi:10.3389/fphys.2022.900593.
- Caseiro C, Dias JNR, Fontes C, Bule P. 2022. From Cancer Therapy to Winemaking: The Molecular Structure and Applications of  $\beta$ -Glucans and  $\beta$ -1, 3-Glucanases. *Int J Mol Sci.* 23(6). doi:10.3390/ijms23063156.
- Castro-Forero SP, Bulla-Castañeda DM, López Buitrago HA, Díaz Anaya AM, Madeira De Carvalho LM, Pulido-Medellín MO. 2022. SARCOCYSTIS SPP., A PARASITE WITH ZOONOTIC POTENTIAL. *Bulg J Vet Med.* 25(2):175–186. doi:10.15547/bjvm.2019-0129.
- Chaves AAM, Martins CF, Vasconcelos M, Almeida AM, Freire JPB. 2022. In vitro digestibility of four high moisture grains used in liquid pig feeding. *Trop Anim Health Prod.* 54(2). doi:10.1007/s11250-022-03134-6.
- Coelho CS, Silva ASBA, Santos CMR, Santos AMR, Vintem CMBL, Leite AG, Fonseca JMC, Prazeres JMCS, Souza VRC, Siqueira RF, et al. 2022. Training Effects on the Stress Predictors for Young Lusitano Horses Used in Dressage. *Animals.* 12(23). doi:10.3390/ani12233436.
- Coelho D, Alfaia CM, Lopes PA, Pestana JM, Costa MM, Pinto RMA, Almeida JM, Moreira O, Fontes CMGA, Prates JAM. 2022. Impact of *Chlorella vulgaris* as feed ingredient and carbohydrases on the health status and hepatic lipid metabolism of finishing pigs. *Res Vet Sci.* 144:44–53. doi:10.1016/j.rvsc.2022.01.008.
- Coelho D, Ribeiro D, Osório H, de Almeida AM, Prates JAM. 2022. Integrated Omics analysis of pig muscle metabolism under the effects of dietary *Chlorella vulgaris* and exogenous enzymes. *Sci Rep.* 12(1). doi:10.1038/s41598-022-21466-z.
- Corsini A, Niessen SJM, Miceli DD, Caney S, Zeugswetter FK, Sieber-Ruckstuhl NS, Arenas C, Fleeman LM, Leal RO, Battellino M, et al. 2022. Quality of life and response to treatment in cats with hypersomatotropism: the owners' point of view. *J Feline Med Surg.* 24(8):e175–e182. doi:10.1177/1098612X221098718.
- Cortez Nunes F, Letra Mateus T, Taillieu E, Teixeira S, Carolino N, Rema A, De Bruyckere S, Gärtner F, Haesebrouck F, Amorim I. 2022. Molecular detection of *Helicobacter* spp. and *Fusobacterium gastrosuis* in pigs and wild boars and its association with gastric histopathological alterations. *Vet Res.* 53(1):78. doi:10.1186/s13567-022-01101-5.
- Costa H, Hartasánchez R, Santos AR, Camarão A, Cruz L, Nascimento M, Gomes L, de Carvalho LM. 2022. Preliminary findings on the gastrointestinal parasites of the brown bear (*Ursus arctos*) in the Cantabrian mountains, Spain. *Vet Parasitol Reg Stud Reports.* 28. doi:10.1016/j.vprsr.2021.100681.
- Costa M, Cardo M, Cara d'Anjo M, Leite A. 2022. Assessing antimicrobial resistance occurrence in the Portuguese food system: Poultry, pigs and derived food, 2014–2018. *Zoonoses Public Health.* 69(4):312–324. doi:10.1111/zph.12920.
- Costa M, Madeira M, Coelho D, Falcão C, Mourato M, Mestre Prates JA. 2022. Dietary *Chlorella vulgaris* with a specific enzyme mixture enriches pork in potassium and improves its sodium to potassium ratio. *Br Food J.* 124(12):4644–4652. doi:10.1108/BJFJ-12-2021-1285.

- Costa M, Meirinhos C, Cunha E, Gomes D, Pereira M, Dias R, Tavares L, Oliveira M. 2022. Nisin Mutant Prevention Concentration and the Role of Subinhibitory Concentrations on Resistance Development by Diabetic Foot Staphylococci. *Antibiotics*. 11(7). doi:10.3390/antibiotics11070972.
- Costa MM, Alfaia CM, Lopes PA, Pestana JM, Prates JAM. 2022. Grape By-Products as Feedstuff for Pig and Poultry Production. *ANIMALS*. 12(17). doi:10.3390/ani12172239.
- Costa MM, Cardo M, Soares P, D'anjo MC, Leite A. 2022. Multi-Drug and  $\beta$ -Lactam Resistance in *Escherichia coli* and Food-Borne Pathogens from Animals and Food in Portugal, 2014–2019. *Antibiotics*. 11(1). doi:10.3390/antibiotics11010090.
- Costa MM, Lopes PA, Assunção JMP, Alfaia CMRPM, Coelho DFM, Mourato MP, Pinto RMA, Lordelo MM, Prates JAM. 2022. Combined effects of dietary *Laminaria digitata* with alginate lyase on plasma metabolites and hepatic lipid, pigment and mineral composition of broilers. *BMC Vet Res*. 18(1). doi:10.1186/s12917-022-03250-3.
- Costa MM, Pestana JM, Carvalho P, Alfaia CM, Martins CF, Carvalho D, Mourato M, Gueifão S, Delgado I, Coelho I, et al. 2022. Effect on Broiler Production Performance and Meat Quality of Feeding *Ulva lactuca* Supplemented with Carbohydrases. *Animals*. 12(13). doi:10.3390/ani12131720.
- Costa MM, Pestana JM, Osório D, Alfaia CM, Martins CF, Mourato M, Gueifão S, Rego AM, Coelho I, Coelho D, et al. 2022. Effect of Dietary *Laminaria digitata* with Carbohydrases on Broiler Production Performance and Meat Quality, Lipid Profile, and Mineral Composition. *Animals*. 12(8). doi:10.3390/ani12081007.
- Costa MM, Pio LB, Bule P, Cardoso VA, Duarte M, Alfaia CM, Coelho DF, Brás JA, Fontes CMGA, Prates JAM. 2022. Recalcitrant cell wall of *Ulva lactuca* seaweed is degraded by a single ulvan lyase from family 25 of polysaccharide lyases. *Anim Nutr*. 9:184–192. doi:10.1016/j.aninu.2022.01.004.
- Costa SS, Ribeiro R, Serrano M, Oliveira K, Ferreira C, Leal M, Pomba C, Couto I. 2022. *Staphylococcus aureus* Causing Skin and Soft Tissue Infections in Companion Animals: Antimicrobial Resistance Profiles and Clonal Lineages. *Antibiotics*. 11(5). doi:10.3390/antibiotics11050599.
- Cunha E, Carreira LM, Nunes T, Videira M, Tavares L, Veiga AS, Oliveira M. 2022. In Vivo Evaluation of the Efficacy of a Nisin–Biogel as a New Approach for Canine Periodontal Disease Control. *Pharmaceutics*. 14(12). doi:10.3390/pharmaceutics14122716.
- Cunha E, Tavares L, Oliveira M. 2022. Revisiting Periodontal Disease in Dogs: How to Manage This New Old Problem? *ANTIBIOTICS-BASEL*. 11(12). doi:10.3390/antibiotics11121729.
- da Silva JAR, Rodrigues LS, Lourenço-Júnior JB, Alfaia CM, Costa MM, de Castro VCG, Bezerra AS, de Almeida AM, Prates JM. 2022. Total Lipids, Fatty Acid Composition, Total Cholesterol and Lipid-Soluble Antioxidant Vitamins in the longissimus lumborum Muscle of Water Buffalo (*Bubalus bubalis*) from Different Production Systems of the Brazilian Eastern Amazon. *Animals*. 12(5). doi:10.3390/ani12050595.
- da Silva JM, Menezes J, Marques C, Pomba CF. 2022. Companion Animals-An Overlooked and Misdiagnosed Reservoir of Carbapenem Resistance. *ANTIBIOTICS-BASEL*. 11(4). doi:10.3390/antibiotics11040533.
- de Araújo PD, Araújo WMC, Patarata L, Fraqueza MJ. 2022. Understanding the main factors that influence consumer quality perception and attitude towards meat and processed meat products. *MEAT Sci*. 193. doi:10.1016/j.meatsci.2022.108952.
- de Boer C, Armstrong Z, Lit VAJ, Barash U, Ruijgrok G, Boyango I, Weitzenberg MM, Schroder SP, Sarris AJC, Meeuwenoord NJ, et al. 2022. Mechanism-based heparanase inhibitors reduce cancer metastasis in vivo. *Proc Natl Acad Sci U S A*. 119(31). doi:10.1073/pnas.2203167119.
- Dias I, Laranjo M, Potes ME, Agulheiro-Santos AC, Ricardo-Rodrigues S, Fraqueza MJ, Oliveira M, Elias M. 2022. *Staphylococcus* spp. and *Lactobacillus sakei* Starters with High Level of Inoculation and an Extended Fermentation Step Improve Safety of Fermented Sausages. *Fermentation*. 8(2). doi:10.3390/fermentation8020049.
- Dias JNR, Almeida A, André AS, Aguiar SI, Bule P, Nogueira S, Oliveira SS, Carrapiço B, Gil S, Tavares L, et al. 2022. Characterization of the canine CD20 as a therapeutic target for comparative passive immunotherapy. *Sci Rep*. 12(1). doi:10.1038/s41598-022-06549-1.

- Dias LR, Vilhena H, Carolino N, Freire A, Moura M, Aleixo R, Silvestre-Ferreira AC, Duarte SC. 2022. Blood transfusions in dogs and cats from Portugal: a retrospective study. *J Hell Vet Med Soc.* 73(3):4289–4294. doi:10.12681/jhvms.25814.
- Dias TP, Pinto SN, Carvalho S, Fernandes TG, Fernandes F, Diogo MM, Peleteiro MC, Prieto M, Cabral JMS. 2022. Cost-Effective Mechanical Aggregation of Cardiac Progenitors and Encapsulation in Matrigel Support Self-Organization in a Dynamic Culture Environment. *Int J Mol Sci.* 23(24). doi:10.3390/ijms232415785.
- Domingues K, Franco NH, Rodrigues I, Stilwell G, Magalhães-Sant’Ana M. 2022. Bibliometric trend analysis of non-conventional (alternative) therapies in veterinary research. *Vet Q.* 42(1):192–198. doi:10.1080/01652176.2022.2142318.
- dos Santos FAA, Duarte MD, Carvalho CL, Monteiro M, Carvalho P, Mendonça P, Valente PCLG, Sheikhejad H, Waap H, Gomes J. 2022. Genetic and morphological identification of filarial worm from Iberian hare in Portugal. *Sci Rep.* 12(1). doi:10.1038/s41598-022-13354-3.
- Encarnação S, De Mello-Sampayo C, Carrapiço B, São Braz B, Jordão AP, Peleteiro C, Catarino L, Silva IBMD, Gouveia LF, Lima BS, et al. 2022. *Anacardium occidentale* Bark as an Antidiabetic Agent. *Plants.* 11(19). doi:10.3390/plants11192637.
- Eslahi A V, KarimiPourSaryazdi A, Olfatifar M, de Carvalho LMM, Foroutan M, Karim MR, Badri M, Ketzi JK. 2022. Global prevalence of *Trichinella* in pigs: A systematic review and meta-analysis. *Vet Med Sci.* 8(6):2466–2481. doi:10.1002/vms3.951.
- Faro-Viana J, Bergman M-L, Gonçalves LA, Duarte N, Coutinho TP, Borges PC, Diwo C, Castro R, Matoso P, Malheiro V, et al. 2022. Population homogeneity for the antibody response to COVID-19 BNT162b2/Comirnaty vaccine is only reached after the second dose across all adult age ranges. *Nat Commun.* 13(1). doi:10.1038/s41467-021-27761-z.
- Fernandes C, Pimenta J, Bliebernicht M, Rebordão MR, Castelo-Branco P, Szóstek-Mioduchowska A, Skarzynski DJ, Ferreira-Dias G. 2022. Metallopeptidases 2 and 9 genes epigenetically modulate equine endometrial fibrosis. *Front Vet Sci.* 9. doi:10.3389/fvets.2022.970003.
- Fernandes M, Carneiro CN, Rosales AM V, Grilo M, Ramiro Y, Cunha E, Nunes T, Tavares L, Sandi J, Oliveira M. 2022. Antimicrobial resistance and virulence profiles of Enterobacterales isolated from two-finger and three-finger sloths (*Choloepus hoffmanni* and *Bradypus variegatus*) of Costa Rica. *PeerJ.* 10. doi:10.7717/peerj.12911.
- Fernandes V, Cunha E, Nunes T, Silva E, Tavares L, Mateus L, Oliveira M. 2022. Antimicrobial Resistance of Clinical and Commensal *Escherichia coli* Canine Isolates: Profile Characterization and Comparison of Antimicrobial Susceptibility Results According to Different Guidelines. *Vet Sci.* 9(6). doi:10.3390/vetsci9060284.
- Ferreira D, Soares M, Correia J, Adegas F, Ferreira F, Chaves R. 2022. Satellite Noncoding RNAs (ncRNA) as Cancer Biomarkers? New Insights from FA-SAT ncRNA Molecular and Clinical Profiles in Feline Mammary Tumors. *Omi A J Integr Biol.* 26(11):622–632. doi:10.1089/omi.2022.0114.
- Ferreira M, Leão C, Clemente L, Albuquerque T, Amaro A. 2022. Antibiotic Susceptibility Profiles and Resistance Mechanisms to  $\beta$ -Lactams and Polymyxins of *Escherichia coli* from Broilers Raised under Intensive and Extensive Production Systems. *Microorganisms.* 10(10). doi:10.3390/microorganisms10102044.
- Fidalgo MA, Leal RO, Duarte-Correia JH. 2022. Urinary Protein/Creatinine Ratio in Feline Medicine: Reasons to Perform It and Its Role in Clinical Practice—A Retrospective Study. *Animals.* 12(12). doi:10.3390/ani12121575.
- Foggiaro D, Domínguez R, Pateiro M, Cittadini A, Munekata PES, Campagnol PCB, Fraqueza MJ, De Palo P, Lorenzo JM. 2022. Use of Healthy Emulsion Hydrogels to Improve the Quality of Pork Burgers. *Foods.* 11(4). doi:10.3390/foods11040596.
- Fonte PJR, Martinho A, Pereira A, Gomes A, Neves Â, Abrunhosa A, Bugalho A, Gabriel-Santos A, Grilo A, Carmo C, et al. 2022. Robust, maintainable, emergency invasive mechanical ventilator. *Rev Bras Ter Intensiva.* 34(3):351–359. doi:10.5935/0103-507X.20220383-en.

- Furtado F, Breiland MW, Strand D, Timmerhaus G, Carletto D, Pedersen L-F, Afonso F, Lazado CC. 2022. Regulation of the molecular repertoires of oxidative stress response in the gills and olfactory organ of Atlantic salmon following infection and treatment of the parasite *Neoparamoeba perurans*. *Fish Shellfish Immunol.* 130:612–623. doi:10.1016/j.fsi.2022.09.040.
- Gavande P V, Nath P, Kumar K, Ahmed N, Fontes CMGA, Goyal A. 2022. Highly efficient, processive and multifunctional recombinant endoglucanase RfGH5\_4 from *Ruminococcus flavefaciens* FD-1 v3 for recycling lignocellulosic plant biomasses. *Int J Biol Macromol.* 209:801–813. doi:10.1016/j.ijbiomac.2022.04.059.
- Geraldes C, Tavares L, Gil S, Oliveira M. 2022. Enterococcus Virulence and Resistant Traits Associated with Its Permanence in the Hospital Environment. *ANTIBIOTICS-BASEL.* 11(7). doi:10.3390/antibiotics11070857.
- Gião J, Leão C, Albuquerque T, Clemente L, Amaro A. 2022. Antimicrobial Susceptibility of Enterococcus Isolates from Cattle and Pigs in Portugal: Linezolid Resistance Genes *optrA* and *poxTA*. *Antibiotics.* 11(5). doi:10.3390/antibiotics11050615.
- Gonçalves S, Cardoso MF, Vieira-Pinto M, Gomes-Neves E. 2022. Bovine Tuberculosis - Analysis of 10-year cases and impact of visual inspection in the surveillance at the slaughterhouse in Portugal. *One Heal.* 15. doi:10.1016/j.onehlt.2022.100451.
- Gouveia D, Cardoso A, Carvalho C, Almeida A, Gamboa O, Ferreira A, Martins A. 2022. Approach to Small Animal Neurorehabilitation by Locomotor Training: An Update. *ANIMALS.* 12(24). doi:10.3390/ani12243582.
- Gouveia D, Cardoso A, Carvalho C, Gonçalves AR, Gamboa Ó, Canejo-Teixeira R, Ferreira A, Martins Â. 2022. Influence of Spinal Shock on the Neurorehabilitation of ANNPE Dogs. *Animals.* 12(12). doi:10.3390/ani12121557.
- Gouveia D, Carvalho C, Cardoso A, Gamboa O, Almeida A, Ferreira A, Martins A. 2022. Early Locomotor Training in Tetraplegic Post-Surgical Dogs with Cervical Intervertebral Disc Disease. *Animals.* 12(18). doi:10.3390/ani12182369.
- Gouveia D, Chichorro M, Cardoso A, Carvalho C, Silva C, Coelho T, Dias I, Ferreira A, Martins Â. 2022. Hyperbaric Oxygen Therapy in Systemic Inflammatory Response Syndrome. *Vet Sci.* 9(2). doi:10.3390/vetsci9020033.
- Granados-Soler JL, Taher L, Beck J, Bornemann-Kolatzki K, Brenig B, Nerschbach V, Ferreira F, Junginger J, Hewicker-Trautwein M, Murua Escobar H, et al. 2022. Transcription profiling of feline mammary carcinomas and derived cell lines reveals biomarkers and drug targets associated with metabolic and cell cycle pathways. *Sci Rep.* 12(1). doi:10.1038/s41598-022-20874-5.
- Grigoryan R, Arabyan E, Izmailyan R, Karalyan Z, Jordão N, Ferreira F, Zakaryan H. 2022. Antiviral activity of brequinar against African swine fever virus infection in vitro. *Virus Res.* 317. doi:10.1016/j.virusres.2022.198826.
- Grilo ML, Amaro G, Chambel L, Marques CS, Marques TA, Gil F, Sousa-Santos C, Robalo JI, Oliveira M. 2022. *Aeromonas* spp. Prevalence, Virulence, and Antimicrobial Resistance in an Ex Situ Program for Threatened Freshwater Fish—A Pilot Study with Protective Measures. *Animals.* 12(4). doi:10.3390/ani12040436.
- Gross S, Müller A, Seinige D, Oliveira M, Steinhagen D, Siebert U, Kehrenberg C. 2022. High Rates of Multidrug-Resistant *Escherichia coli* in Great Cormorants (*Phalacrocorax carbo*) of the German Baltic and North Sea Coasts: Indication of Environmental Contamination and a Potential Public Health Risk. *Pathogens.* 11(8). doi:10.3390/pathogens11080836.
- Gross S, Müller A, Seinige D, Wohlsein P, Oliveira M, Steinhagen D, Kehrenberg C, Siebert U. 2022. Occurrence of Antimicrobial-Resistant *Escherichia coli* in Marine Mammals of the North and Baltic Seas: Sentinels for Human Health. *Antibiotics.* 11(9). doi:10.3390/antibiotics11091248.
- Grujović M, Žugić Petrović TD, Mladenović KG, Tomović VM, Kocić-Tanackov SD, Semedo-Lemsaddek T. 2022. Duvan chvarci: Product characterization and comparison between traditional and industrial production. *LWT.* 154. doi:10.1016/j.lwt.2021.112895.

- Grujović MŽ, Mladenović KG, Semedo-Lemsaddek T, Laranjo M, Stefanović OD, Kocić-Tanackov SD. 2022. Advantages and disadvantages of non-starter lactic acid bacteria from traditional fermented foods: Potential use as starters or probiotics. *Compr Rev Food Sci Food Saf.* 21(2):1537–1567. doi:10.1111/1541-4337.12897.
- Guerreiro O, Francisco AE, Alves SP, Soldado D, Cachucho L, Chimenos AU, Duarte F, Santos-Silva J, Bessa RJB, Jerónimo E. 2022. Inclusion of the aerial part and condensed tannin extract from *Cistus ladanifer* L. in lamb diets – Effects on rumen microbial community and fatty acid profile. *Anim Feed Sci Technol.* 291. doi:10.1016/j.anifeedsci.2022.115398.
- Hagley SP, Kruppert A, Leal RO, del Valle JC, Iannucci C, Hennink I, Boiron L, Hoehne SN. 2022. Self-Reported Clinical Practice of Small Animal Cardiopulmonary Resuscitation and Compliance With RECOVER Guidelines Among Veterinarians in Eight Western European Regions. *Front Vet Sci.* 9. doi:10.3389/fvets.2022.919206.
- Huynh-Phuoc V, Ly TQ, Purbiantoro W, Ngo HVT, Afonso F, Vu NU, Cheng T-C. 2022. *Bacillus safensis* isolated from white-leg shrimp, *Penaeus vannamei* in Taiwan with antagonistic activity against common *Vibrio* pathogens. *Biocatal Agric Biotechnol.* 44. doi:10.1016/j.bcab.2022.102477.
- Istrate C, Marques J, Bule P, Correia S, Aires-da-Silva F, Duarte M, Reis AL, Machuqueiro M, Leitão A, Victor BL. 2022. In Silico Characterization of African Swine Fever Virus Nucleoprotein p10 Interaction with DNA. *Viruses.* 14(11). doi:10.3390/v14112348.
- Jasiński T, Zdrojkowski Ł, Ferreira-Dias G, Kautz E, Juszczuk-Kubiak E, Domino M. 2022. Molecular Mechanism of Equine Endometrosis: The NF-κB-Dependent Pathway Underlies the Ovarian Steroid Receptors' Dysfunction. *Int J Mol Sci.* 23(13). doi:10.3390/ijms23137360.
- Jasiński T, Zdrojkowski Ł, Kautz E, Juszczuk-Kubiak E, Ferreira-Dias G, Domino M. 2022. The NF-κB-signalling pathway in mare's endometrium infiltrated with the inflammatory cells. *Reprod Domest Anim.* 57(6):598–610. doi:10.1111/rda.14099.
- Jesus L, Arenas C, Domínguez-Ruiz M, Silvestrini P, Englar RE, Roura X, Leal RO. 2022. Xanthinuria secondary to allopurinol treatment in dogs with leishmaniosis: Current perspectives of the Iberian veterinary community. *Comp Immunol Microbiol Infect Dis.* 83. doi:10.1016/j.cimid.2022.101783.
- Katila T, Ferreira-Dias G. 2022. Evolution of the Concepts of Endometrosis, Post Breeding Endometritis, and Susceptibility of Mares. *Animals.* 12(6). doi:10.3390/ani12060779.
- Klim EB, Mestrinho LA, Gawor JP. 2023. A Retrospective Study of Ectopic Eruption in 35 Dogs. *J Vet Dent.* 40(2):174–180. doi:10.1177/08987564221141989.
- Lauková A, Tomáška M, Fraqueza MJ, Szabóová R, Bino E, Ščerbová J, Simonová MP, Dvorožňáková E. 2022. Bacteriocin-Producing Strain *Lactiplantibacillus plantarum* LP17L/1 Isolated from Traditional Stored Ewe's Milk Cheese and Its Beneficial Potential. *Foods.* 11(7). doi:10.3390/foods11070959.
- Lazado CC, Breiland MW, Furtado F, Burgerhout E, Strand D. 2022. The circulating plasma metabolome of *Neoparamoeba perurans*-infected Atlantic salmon (*Salmo salar*). *Microb Pathog.* 166. doi:10.1016/j.micpath.2022.105553.
- Lazado CC, Strand DA, Breiland MW, Furtado F, Timmerhaus G, Gjessing MC, Hytterød S, Merkin G V, Pedersen L-F, Pittman KA, et al. 2022. Mucosal immune and stress responses of *Neoparamoeba perurans*-infected Atlantic salmon (*Salmo salar*) treated with peracetic acid shed light on the host-parasite-oxidant interactions. *Front Immunol.* 13. doi:10.3389/fimmu.2022.948897.
- Leão C, Clemente L, Cara d'Anjo M, Albuquerque T, Amaro A. 2022. Emergence of Cfr-Mediated Linezolid Resistance among Livestock-Associated Methicillin-Resistant *Staphylococcus aureus* (LA-MRSA) from Healthy Pigs in Portugal. *Antibiotics.* 11(10). doi:10.3390/antibiotics11101439.
- Lima T, Fernandes L, Matias M, Mateus A, Silveira E, Domingues S, Pomba C, Da Silva GJ. 2022. Longitudinal Study Detects the Co-Carriage of ESBL and *mcr-1* and *-4* Genes in *Escherichia coli* Strains in a Portuguese Farrow-to-Finish Swine Herd. *Animals.* 12(17). doi:10.3390/ani12172209.
- Lima T, Loureiro D, Henriques A, Ramos F, Pomba C, Domingues S, da Silva GJ. 2022. Occurrence and Biological Cost of *mcr-1*-Carrying Plasmids Co-harboring Beta-Lactamase Resistance Genes in Zoonotic Pathogens from Intensive Animal Production. *Antibiotics.* 11(10). doi:10.3390/antibiotics11101356.

- Lopes CS, Antunes RCC, Paiva VH, Gonçalves AMM, Correia JJ, Ramos JA. 2022. Fatty acids composition in yellow-legged (*Larus michahellis*) and lesser black-backed (*Larus fuscus*) gulls from natural and urban habitats in relation to the ingestion of anthropogenic materials. *Sci Total Environ.* 809. doi:10.1016/j.scitotenv.2021.151093.
- Lopes PA, Coelho D, Prates JAM. 2022. Testimony on a successful lab protocol to disrupt *Chlorella vulgaris* microalga cell wall. *PLoS One.* 17(5 May). doi:10.1371/journal.pone.0268565.
- Machado N, Parente M, Bessa R, Parente H, Gomes R, Pinho R, Ferreira D, Zanine A, Costa J, Alves S. 2022. Effects of Dietary Babassu Oil or Buriti Oil on Nutrient Intake and Total Tract Digestibility, and Abomasal Digesta Fatty Acid Profile of Lambs. *Animals.* 12(9). doi:10.3390/ani12091176.
- Manageiro V, Salgueiro V, Rosado T, Bandarra NM, Ferreira E, Smith T, Dias E, Caniça M. 2022. Genomic Analysis of a mcr-9.1-Harboring IncHI2-ST1 Plasmid from *Enterobacter ludwigii* Isolated in Fish Farming. *Antibiotics.* 11(9). doi:10.3390/antibiotics11091232.
- Marković KG, Grujović MŽ, Koraćević MG, Nikodijević DD, Milutinović MG, Semedo-Lemsaddek T, Djilas MD. 2022. Colicins and Microcins Produced by Enterobacteriaceae: Characterization, Mode of Action, and Putative Applications. *Int J Environ Res Public Health.* 19(18). doi:10.3390/ijerph191811825.
- Marques C, Belas A, Menezes J, da Silva JM, Cavaco-Silva P, Trigueiro G, Gama LT, Pomba C. 2022. Human and Companion Animal *Proteus mirabilis* Sharing. *Microbiol Res (Pavia).* 13(1):38–48. doi:10.3390/microbiolres13010003.
- Marques GN, Cota JB, Leal MO, Silva NU, Flanagan CA, Crosta L, Tavares L, Oliveira M. 2022. First Documentation of *Exophiala* spp. Isolation in Psittaciformes. *Animals.* 12(13). doi:10.3390/ani12131699.
- Martins CF, Lopes PA, Palma M, Pinto RMA, Costa M, Alfaia CM, Pestana JM, Coelho D, Ribeiro DM, Viegas I, et al. 2022. Impact of dietary *Chlorella vulgaris* and feed enzymes on health status, immune response and liver metabolites in weaned piglets. *Sci Rep.* 12(1). doi:10.1038/s41598-022-21238-9.
- Martins CF, Ribeiro DM, Matzapetakis M, Pinho MA, Kuleš J, Horvatić A, Guillemin N, Eckersall PD, Freire JPB, de Almeida AM, et al. 2022. Effect of dietary *Spirulina* (*Arthrospira platensis*) on the intestinal function of post-weaned piglet: An approach combining proteomics, metabolomics and histological studies. *J Proteomics.* 269. doi:10.1016/j.jprot.2022.104726.
- Martins CF, Trevisi P, Coelho DF, Correa F, Ribeiro DM, Alfaia CM, Pinho M, Pestana JM, Mourato MP, Almeida AM, et al. 2022. Influence of *Chlorella vulgaris* on growth, digestibility and gut morphology and microbiota of weaned piglet. *Sci Rep.* 12(1). doi:10.1038/s41598-022-10059-5.
- Martins JB, Rosa R, Iglésias L V, Reisinho A, Mestrinho LA. 2022. Case report: Post-surgical complication in a case of urethral duplication in a dog. *Front Vet Sci.* 9. doi:10.3389/fvets.2022.1013270.
- Martins MC, Valadares SA, Gawor JP, Mestrinho LA. 2022. Skeletal-dental features in 33 bull terrier dogs. *BMC Vet Res.* 18(1). doi:10.1186/s12917-022-03164-0.
- Menezes J, da Silva JM, Frosini S-M, Loeffler A, Weese S, Perreten V, Schwarz S, da Gama LT, Amaral AJ, Pomba C. 2022. mcr-1 colistin resistance gene sharing between *Escherichia coli* from cohabiting dogs and humans, Lisbon, Portugal, 2018 to 2020. *Eurosurveillance.* 27(44). doi:10.2807/1560-7917.ES.2022.27.44.2101144.
- Merca C, Lindell IC, Ernholm L, Selling LE, Nunes TP, Sjölund M, Dórea FC. 2022. Veterinary syndromic surveillance using swine production data for farm health management and early disease detection. *Prev Vet Med.* 205. doi:10.1016/j.prevetmed.2022.105659.
- Mestrinho LA, Monteiro C, Sobral C, Travancinha J, Niza MM. 2022. A case of a congenital umbilicobiliary fistula associated with gallbladder agenesis in a dog. *Rev Bras Med Vet.* 44. doi:10.29374/2527-2179.bjvm002821.
- Mestrinho LA, Sebastião SSF, Zwierucho MA, Lutchman A, Gaschen L, Goldschmidt S, Thatcher G, Izumisawa Y, Meeson RL. 2022. CT characterisation and classification of feline temporomandibular joint trauma: a case series of 79 cats. *J Feline Med Surg.* 24(12):1181–1186. doi:10.1177/1098612X211066654.

- Mestrinho LA, Travancinha J, Sobral C. 2022. A case report of leishmaniosis with primary oral manifestation in a cat. *Front Vet Sci.* 9. doi:10.3389/fvets.2022.1059803.
- Mladenović KG, Grujović MŽ, Kocić-Tanackov SD, Bulut S, Ilić M, Degenek J, Semedo-Lemsaddek T. 2022. Serbian traditional goat cheese: Physico-chemical, sensory, hygienic and safety characteristics. *Microorganisms.* 10(1). doi:10.3390/microorganisms10010090.
- Monteiro M, Prata S, Cardoso L, da Fonseca I, Leal RO. 2022. Dogs with leishmaniosis: how are we managing proteinuria in daily practice? A Portuguese questionnaire-based study. *Parasites and Vectors.* 15(1). doi:10.1186/s13071-022-05222-w.
- Moraes C, Pereira HM, Requicha JF, Alves L, Alexandre-Pires G, de Jesus S, Guimarães S, Ginja C, Detry C, Ramalho M, et al. 2022. The Facial Reconstruction of a Mesolithic Dog, Muge, Portugal. *Appl Sci.* 12(10). doi:10.3390/app12104867.
- Nascimento C, Gameiro A, Correia J, Ferreira J, Ferreira F. 2022. The Landscape of Tumor-Infiltrating Immune Cells in Feline Mammary Carcinoma: Pathological and Clinical Implications. *Cells.* 11(16). doi:10.3390/cells11162578.
- Neto da Silva AC, Costa AL, Teixeira A, Alpoim-Moreira J, Fernandes C, Fradinho MJ, Rebordão MR, Silva E, Ferreira da Silva J, Bliebernicht M, et al. 2022. Collagen and Microvascularization in Placentas From Young and Older Mares. *Front Vet Sci.* 8. doi:10.3389/fvets.2021.772658.
- Netto AJ, Gama MAS, Guido SI, Bessa RJB, Inácio JG, Monteiro CCF, Melo GCS, Ribeiro EF, Ferreira MA. 2022. Replacing corn with full-fat corn germ in a basal diet containing cactus (*Opuntia stricta*) cladodes and sugarcane as forage sources induces milk fat depression associated with the trans-10 shift in dairy cows. *Anim Feed Sci Technol.* 288. doi:10.1016/j.anifeedsci.2022.115289.
- Neves SF, Silva MCF, Miranda JM, Stilwell G, Cortez PP. 2022. Predictive Models of Dairy Cow Thermal State: A Review from a Technological Perspective. *Vet Sci.* 9(8). doi:10.3390/vetsci9080416.
- Niessen SJM, Bjornvad C, Church DB, Davison L, Esteban-Saltiveri D, Fleeman LM, Forcada Y, Fracassi F, Gilor C, Hanson J, et al. 2022. Agreeing Language in Veterinary Endocrinology (ALIVE): Diabetes mellitus - a modified Delphi-method-based system to create consensus disease definitions. *Vet J.* 289. doi:10.1016/j.tvjl.2022.105910.
- Oliveira J, Dias MJ, Fontes AP, Englar RE, Vicente G, Ferreira RL, Galac S, Leal RO. 2022. Ultrasonographic Detected Adrenomegaly in Clinically Ill Cats: A Retrospective Study. *Vet Sci.* 9(8). doi:10.3390/vetsci9080420.
- Osório J, Stiller KT, Reiten B-K, Kolarevic J, Johansen L-H, Afonso F, Lazado CC. 2022. Intermittent administration of peracetic acid is a mild environmental stressor that elicits mucosal and systemic adaptive responses from Atlantic salmon post-smolts. *BMC Zool.* 7(1). doi:10.1186/s40850-021-00100-x.
- Pace A, Vicari N, Rigamonti S, Magnino S, Borrelli L, Dipineto L, Fioretti A, Hochscheid S, Tavares L, Duarte A. 2022. Detection of Chlamydial DNA from Mediterranean Loggerhead Sea Turtles in Southern Italy. *Animals.* 12(6). doi:10.3390/ani12060715.
- Pacheco H, Lopes AM, Bárcena J, Blanco E, Abrantes J, Esteves P, Choquet R, Alves PC, Santos N. 2022. Multi-event capture–recapture models estimate the diagnostic performance of serological tests for myxoma and rabbit haemorrhagic disease viruses in the absence of reference samples. *Transbound Emerg Dis.* 69(5):e3024–e3035. doi:10.1111/tbed.14657.
- Pađen L, Alves SP, Bessa RJB, Almeida AM, Bujanić M, Konjević D. 2022. Fatty Acid Composition of M. Biceps Femoris of Edible Dormouse (*Glis glis* L.). *Animals.* 12(23). doi:10.3390/ani12233284.
- Pais TF, Ali H, da Silva JM, Duarte N, Neres R, Chhatbar C, Acurcio RC, Guedes RC, Moraes MCS, Costa-Silva B, et al. 2022. Brain endothelial STING1 activation by Plasmodium-sequestered heme promotes cerebral malaria via type I IFN response. *Proc Natl Acad Sci U S A.* 119(36). doi:10.1073/pnas.2206327119.
- Patarata L, Carvalho F, Fraqueza MJ. 2022. Nitrite-Free Implications on Consumer Acceptance and the Behavior of Pathogens in Cured Pork Loins. *Foods.* 11(6). doi:10.3390/foods11060796.



- Patarata L, Fernandes L, Silva JA, Fraqueza MJ. 2022. The Risk of Salt Reduction in Dry-Cured Sausage Assessed by the Influence on Water Activity and the Survival of Salmonella. *Foods*. 11(3). doi:10.3390/foods11030444.
- Paz MLQM, Casimiro T, Correia JHD, Leal RO. 2022. The Relevance of Screening for Vector-Borne Diseases in Dogs with Proteinuria Living in an Endemic Region: A Retrospective Study. *Vet Sci*. 9(6). doi:10.3390/vetsci9060266.
- Pedro J, Cardoso C, Afonso F, Bandarra NM. 2022. Season affects three insufficiently studied seaweed species (*Bifurcaria bifurcata*, *Codium* sp., *Ericaria selaginoides*): bioactivity alterations. *Appl Phycol*. 3(1):98–108. doi:10.1080/26388081.2022.2084454.
- Pereira G, Guo Y, Silva E, Bevilacqua C, Charpigny G, Lopes-da-Costa L, Humblot P. 2022. Progesterone differentially affects the transcriptomic profiles of cow endometrial cell types. *BMC Genomics*. 23(1). doi:10.1186/s12864-022-08323-z.
- Pereira G, Guo Y, Silva E, Silva MF, Bevilacqua C, Charpigny G, Lopes-da-Costa L, Humblot P. 2022. Subclinical endometritis differentially affects the transcriptomic profiles of endometrial glandular, luminal, and stromal cells of postpartum dairy cows. *J Dairy Sci*. 105(7):6125–6143. doi:10.3168/jds.2022-21811.
- Pereira G, Simões P, Bexiga R, Silva E, Mateus L, Fernandes T, Alves SP, Bessa RJB, Lopes-da-Costa L. 2022. Effects of feeding rumen-protected linseed fat to postpartum dairy cows on plasma n-3 polyunsaturated fatty acid concentrations and metabolic and reproductive parameters. *J Dairy Sci*. 105(1):361–374. doi:10.3168/jds.2021-20674.
- Pereira HM, Requicha JF, Alves L, Gonçalves D, Correia JB, Alexandre-Pires G, de Jesus S, Viegas C, Ramalho M, Ginja C, et al. 2022. The potential of computed tomography in odontometry: application to a Mesolithic dog. *J Archaeol Sci Reports*. 45. doi:10.1016/j.jasrep.2022.103552.
- Pessoa J, Montoro JC, Nunes TP, Norton T, McAloon C, Manzanilla EG, Boyle L. 2022. Environmental Risk Factors Influence the Frequency of Coughing and Sneezing Episodes in Finisher Pigs on a Farm Free of Respiratory Disease. *Animals*. 12(8). doi:10.3390/ani12080982.
- Pimenta JMBGA, Pires VMR, Nolasco S, Castelo-Branco P, Marques CC, Apolónio J, Azevedo R, Fernandes MT, Lopes-da-Costa L, Prates J, et al. 2022. Post-transcriptional silencing of *Bos taurus* prion family genes and its impact on granulosa cell steroidogenesis. *Biochem Biophys Res Commun*. 598:95–99. doi:10.1016/j.bbrc.2022.02.012.
- Pinto M, Silva MA, Fernandes B, Bizarro AF, Pereira H, Lourenço AM. 2022. Efficacy and safety of lokivetmab (Cytopoint®) for the control of pruritus and skin lesions in dogs with atopic dermatitis. *Rev Port Imunoalergologia*. 30(1):21–30. doi:10.32932/rpia.2022.03.075.
- Piotrowska-Tomala KK, Jonczyk AW, Szóstek-Mioduchowska AZ, Żebrowska E, Ferreira-Dias G, Skarzynski DJ. 2022. The Effects of Prostaglandin E2 Treatment on the Secretory Function of Mare Corpus Luteum Depends on the Site of Application: An in vivo Study. *Front Vet Sci*. 8. doi:10.3389/fvets.2021.753796.
- Pires D, Grade A, Ruano F, Afonso F. 2022. Histopathologic Lesions in Bivalve Mollusks Found in Portugal: Etiology and Risk Factors. *J Mar Sci Eng*. 10(2). doi:10.3390/jmse10020133.
- Quaresma MAG, Antunes IC, Ferreira BG, Parada A, Elias A, Barros M, Santos C, Partidário A, Mourato M, Roseiro LC. 2022. The composition of the lipid, protein and mineral fractions of quail breast meat obtained from wild and farmed specimens of Common quail (*Coturnix coturnix*) and farmed Japanese quail (*Coturnix japonica domestica*). *Poult Sci*. 101(1). doi:10.1016/j.psj.2021.101505.
- Ramakrishnan C, Krishnan A, Francisco S, Schmid MW, Russo G, Leitão A, Hemphill A, Soldati-Favre D, Hehl AB. 2022. Dissection of *Besnoitia besnoiti* intermediate host life cycle stages: From morphology to gene expression. *PLoS Pathog*. 18(11). doi:10.1371/journal.ppat.1010955.
- Ramos P, Varandas R, Conceição IL, Grade A, Oliveira MM, Alexandre-Pires G, Rosa F. 2022. *Diclidophora luscae* (Monogenea: Diclidophoridae) in pouting, *Trisopterus luscus* (Linnaeus, 1758) from the northeast Atlantic; epidemiology, morphology, molecular and phylogenetic analysis. *Parasitol Res*. 121(9):2517–2535. doi:10.1007/s00436-022-07591-8.

- Ramos S, Pinto A, Crespo J, Marques JP, Bettencourt E, Gama LT, Monteiro S. 2022. Osteochondrosis (Osteochondritis Dissecans) in Lusitano Horses: Prevalence and Characteristics. *J Equine Vet Sci.* 117. doi:10.1016/j.jevs.2022.104063.
- Rebelo D, Machado I, Nunes T, Tavares L, Gil S, Almeida V. 2022. Characterization of Acute Infections by *Leptospira* Spp. in 53 Dogs Admitted to a Biological Isolation and Containment Unit. *Rev Electron Vet.* 23(2):55–67.
- Rego A, Coelho I, Motta C, Cardoso C, Gomes-Bispo A, Afonso C, Prates JAM, Bandarra NM, Silva JAL, Castanheira I. 2022. Seasonal variation of chub mackerel (*Scomber colias*) selenium and vitamin B12 content and its potential role in human health. *J Food Compos Anal.* 109. doi:10.1016/j.jfca.2022.104502.
- Ribeiro DM, Alfaia CM, Pestana JM, Carvalho DFP, Costa M, Martins CF, Lemos JPC, Mourato M, Gueifão S, Delgado I, et al. 2022. Influence of Feeding Weaned Piglets with *Laminaria digitata* on the Quality and Nutritional Value of Meat. *Foods.* 11(7). doi:10.3390/foods11071024.
- Ribeiro DM, Coelho D, Osório H, Martins C, Bengala Freire JP, Almeida J, Moreira O, Almeida AM, Prates JAM. 2022. Effect of dietary incorporation of *Chlorella vulgaris* and CAZyme supplementation on the hepatic proteome of finishing pigs. *J Proteomics.* 256. doi:10.1016/j.jprot.2022.104504.
- Rodrigues A V, Valério-Bolas A, Alexandre-Pires G, Pereira MA, Nunes T, Ligeiro D, da Fonseca IP, Santos-Gomes G. 2022. Zoonotic Visceral Leishmaniasis: New Insights on Innate Immune Response by Blood Macrophages and Liver Kupffer Cells to *Leishmania infantum* Parasites. *Biology (Basel).* 11(1). doi:10.3390/biology11010100.
- Rodrigues-Filho SJM, e Castro C, Lopes LF, da Fonseca IP, Rebelo MT. 2022. Size does matter: intraspecific geometric morphometric analysis of wings of the blowfly *Chrysomya albiceps* (Diptera: Calliphoridae). *Acta Trop.* 235. doi:10.1016/j.actatropica.2022.106662.
- Rybicka I, Silva M, Gonçalves A, Oliveira H, Marques A, Fernandes MJ, Fernandes MH, Alfaia CM, Fraqueza MJ, Nunes ML. 2022. The Development of Smoked Mackerel with Reduced Sodium Content. *Foods.* 11(3). doi:10.3390/foods11030349.
- Sá P, Santos D, Chiaia H, Leitão A, Cordeiro JM, Gama LT, Amaral AJ. 2022. Lost pigs of Angola: Whole genome sequencing reveals unique regions of selection with emphasis on metabolism and feed efficiency. *Front Genet.* 13. doi:10.3389/fgene.2022.1003069.
- Santos JC, Marques CC, Baptista MC, Pimenta J, Teixeira J, Montezinho L, Cagide F, Borges F, Oliveira PJ, Pereira RMLN. 2022. Effect of a Novel Hydroxybenzoic Acid Based Mitochondria Directed Antioxidant Molecule on Bovine Sperm Function and Embryo Production. *Animals.* 12(7). doi:10.3390/ani12070804.
- Santos MIS, Marques C, Mota J, Pedroso L, Lima A. 2022. Applications of Essential Oils as Antibacterial Agents in Minimally Processed Fruits and Vegetables-A Review. *MICROORGANISMS.* 10(4). doi:10.3390/microorganisms10040760.
- Santos N, Colino EF, Arnal MC, de Luco DF, Sevilla I, Garrido JM, Fonseca E, Valente AM, Balseiro A, Queirós J, et al. 2022. Complementary roles of wild boar and red deer to animal tuberculosis maintenance in multi-host communities. *Epidemics.* 41. doi:10.1016/j.epidem.2022.100633.
- Santos-Silva J, Francisco A, Portugal AP, Paulos K, Dentinho MT, Almeida JM, Regedor L, Fialho L, Cachucho L, Jerónimo E, et al. 2022. Effects of partial substitution of grain by agroindustrial byproducts and sunflower seed supplementation in beef haylage-based finisher diets on growth, *in vitro* methane production and carcass and meat quality. *MEAT Sci.* 188. doi:10.1016/j.meatsci.2022.108782.
- Silva B, Gonçalves LM, Braz BS, Delgado E. 2022. Chitosan and Hyaluronic Acid Nanoparticles as Vehicles of Epoetin Beta for Subconjunctival Ocular Delivery. *Mar Drugs.* 20(2). doi:10.3390/md20020151.
- Silva MF, Kienesberger S, Pereira G, Mateus L, Lopes-da-Costa L, Silva E. 2022. Molecular diagnosis of bovine genital campylobacteriosis using high-resolution melting analysis. *Front Microbiol.* 13. doi:10.3389/fmicb.2022.969825.

- Silva SR, Sacarrao-Birrento L, Almeida M, Ribeiro DM, Guedes C, Montaña JRG, Pereira AF, Zaralis K, Geraldo A, Tzamaloukas O, et al. 2022. Extensive Sheep and Goat Production: The Role of Novel Technologies towards Sustainability and Animal Welfare. *ANIMALS*. 12(7). doi:10.3390/ani12070885.
- Silva V, Correia S, Rocha J, Manaia CM, Silva A, García-Díez J, Pereira JE, Semedo-Lemsaddek T, Igrejas G, Poeta P. 2022. Antimicrobial Resistance and Clonal Lineages of *Staphylococcus aureus* from Cattle, Their Handlers, and Their Surroundings: A Cross-Sectional Study from the One Health Perspective. *Microorganisms*. 10(5). doi:10.3390/microorganisms10050941.
- Simões J, Batista M, Tilley P. 2022. The Immune Mechanisms of Severe Equine Asthma—Current Understanding and What Is Missing. *Animals*. 12(6). doi:10.3390/ani12060744.
- Soares D, Rolim J, Fradinho MJ, Do Paço TA. 2022. Production of Preserved Forage for Horses under Water Scarcity Conditions: A Case Study. *Water (Switzerland)*. 14(3). doi:10.3390/w14030388.
- Soares M, Correia AN, Batista MR, Correia J, Ferreira F. 2022. f HER2, PR, ER, Ki-67 and Cytokeratin 5/6 Expression in Benign Feline Mammary Lesions. *Animals*. 12(13). doi:10.3390/ani12131599.
- Soares PR, Lopes MAR, Conceição MA, Santos DVS, Oliveira MA. 2022. Sustainable integration of laying hens with crops in organic farming. A review. *Agroecol Sustain FOOD Syst*. 46(7):969–1001. doi:10.1080/21683565.2022.2073509.
- Soares RL, de Cássia Ramos do Egypto Queiroga R, Bessa RJB, de Sousa FA, Fernandes BDO, Souza AP, de Medeiros AN. 2022. Performance and carcass characteristics of lambs fed diets containing different types of carbohydrates associated with polyunsaturated fatty acids. *Acta Sci - Anim Sci*. 44. doi:10.4025/actascianimsci.v44i1.56131.
- Sousa AC, Biscaia S, Alvites R, Branquinho M, Lopes B, Sousa P, Valente J, Franco M, Santos JD, Mendonça C, et al. 2022. Assessment of 3D-Printed Polycaprolactone, Hydroxyapatite Nanoparticles and Diacrylate Poly(ethylene glycol) Scaffolds for Bone Regeneration. *Pharmaceutics*. 14(12). doi:10.3390/pharmaceutics14122643.
- Spadar A, Phelan J, Elias R, Modesto A, Caneiras C, Marques C, Lito L, Pinto M, Cavaco-Silva P, Ferreira H, et al. 2022. Genomic epidemiological analysis of *Klebsiella pneumoniae* from Portuguese hospitals reveals insights into circulating antimicrobial resistance. *Sci Rep*. 12(1). doi:10.1038/s41598-022-17996-1.
- Spínola MP, Costa MM, Prates JAM. 2022. Digestive Constraints of *Arthrospira platensis* in Poultry and Swine Feeding. *FOODS*. 11(19). doi:10.3390/foods11192984.
- Stathopoulou T, Light J, Lamas LP, Pierce SE, Pelligand L. 2022. A Protocol for Prolonged Surgical Anaesthesia with Recovery in Fire Salamanders Using Tricaine Mesylate (MS-222): A Case Series. *Lab Anim*. 56(6):540–549. doi:10.1177/00236772221103706.
- T, Alves SP, Gama LTD, Fernandes H, Fernandes MJ, Fraqueza MJ. 2022. Pulsed Light Application for *Campylobacter* Control on Poultry Meat and Its Effect on Colour and Volatile Profile. *Foods*. 11(18). doi:10.3390/foods11182848.
- Teixeira MFB, Silva SPM, Domingos-Lopes MFP, Bessa RJB, Prates JAM, Rosa HJD, Silva CCG. 2022. Production of low-cholesterol butter with *Lactocaseibacillus paracasei* immobilized in calcium-alginate beads. *Food Chem*. 393. doi:10.1016/j.foodchem.2022.133419.
- Tomás A, da Fonseca I, Valkenburg T, Rebelo MT. 2022. Parasite island syndromes in the context of nidicolous ectoparasites: Fleas (Insecta: Siphonaptera) in wild passerine birds from Azores Archipelago. *Parasitol Int*. 89. doi:10.1016/j.parint.2022.102564.
- Urbano AC, Ferreira F. 2022. African swine fever control and prevention: an update on vaccine development. *Emerg Microbes Infect*. 11(1):2021–2033. doi:10.1080/22221751.2022.2108342.
- Valente D, Gomes J, Coelho AC, Carolino I. 2022. Genetic Resistance of Bovines to Theileriosis. *ANIMALS*. 12(21). doi:10.3390/ani12212903.
- Valente D, Stilwell G. 2022. Applying a New Proposed Welfare Assessment Protocol to Suckler Herds from Three Different Autochthonous Breeds. *Animals*. 12(19). doi:10.3390/ani12192689.
- Valente PCLG, Peleteiro MC, Carvalho S, Leal RO, Pomba C, Duarte A, Correia J. 2022. Co-Expression of T- and B-Cell Markers in a Canine Intestinal Lymphoma: A Case Report. *Animals*. 12(24). doi:10.3390/ani12243531.

- Voinot M, Arroyo F, Hernández JÁ, Paz-Silva A, Sánchez-Andrade R, Bermúdez R, Guillot J, de Carvalho LM, Arias MS, Cazapal-Monteiro CF. 2022. Safety of daily administration of pellets containing parasitocidal fungal spores over a long period of time in heifers. *Biocontrol Sci Technol*. 32(11):1249–1259. doi:10.1080/09583157.2021.2008317.
- Wap H, Bärwald A, Nunes T, Schares G. 2022. Seroprevalence and Risk Factors for *Toxoplasma gondii* and *Neospora caninum* in Cattle in Portugal. *Animals*. 12(16). doi:10.3390/ani12162080.
- Zarzecka U, Chajęcka-Wierzchowska W, Zakrzewski A, Zadernowska A, Fraqueza MJ. 2022. High pressure processing, acidic and osmotic stress increased resistance to aminoglycosides and tetracyclines and the frequency of gene transfer among strains from commercial starter and protective cultures. *Food Microbiol*. 107. doi:10.1016/j.fm.2022.104090.

## 2023

- Abrantes AC, Ferreira MP, Ruano Z, Vinhas B, Vaz Y, Vieira-Pinto M. 2023. Hygiene and biosecurity conditions of initial examination on-spot in Portugal: One step toward game meat safety. *Vet WORLD*. 16(4):882–887. doi:10.14202/vetworld.2023.882-887.
- Abreu R, Martinho A, Noiva R, Pissarra H, Cota J, Cunha E, Tavares L, Oliveira M. 2023. Osteomyelitis caused by *Aspergillus terreus* complex in a dog: a case report. *BMC Vet Res*. 19(1). doi:10.1186/s12917-023-03628-x.
- Afonso C, Cardoso C, Gomes-Bispo A, Ferreira I, Rego A, Coelho I, Motta C, Prates JAM, Castanheira I, Bandarra NM. 2023. Fatty acids, selenium, and vitamin B12 in chub mackerel (*Scomber colias*) as nourishment considering seasonality and bioaccessibility as factors. *FOOD Chem*. 403. doi:10.1016/j.foodchem.2022.134455.
- Alho AM, Dias MC, Cardo M, Aguiar P, de Carvalho LM. 2023. The Evolution of Cystic Echinococcosis in Humans and Ruminants in Portugal-A One Health Approach. *Vet Sci*. 10(9). doi:10.3390/vetsci10090584.
- Alpoim-Moreira J, Szostek-Mioduchowska A, Slyszevska M, Rebordao MR, Skarzynski DJ, Ferreira-Dias G. 2023. 5-Aza-2'-Deoxycytidine (5-Aza-dC, Decitabine) Inhibits Collagen Type I and III Expression in TGF-beta 1-Treated Equine Endometrial Fibroblasts. *ANIMALS*. 13(7). doi:10.3390/ani13071212.
- Alves F, Castro R, Pinto M, Nunes A, Pomba C, Oliveira M, Silveira L, Gomes JP, Oleastro M. 2023. Molecular epidemiology of *Clostridioides difficile* in companion animals: Genetic overlap with human strains and public health concerns. *Front PUBLIC Heal*. 10. doi:10.3389/fpubh.2022.1070258.
- Alves JC, Santos A, Carreira LM. 2023. A Preliminary Report on the Combined Effect of Intra-Articular Platelet-Rich Plasma Injections and Photobiomodulation in Canine Osteoarthritis. *Animals*. 13(20). doi:10.3390/ani13203247.
- Amaral A, Cebola N, Szostek-Mioduchowska A, Rebordao MR, Kordowitzki P, Skarzynski D, Ferreira-Dias G. 2023. Inhibition of Myeloperoxidase Pro-Fibrotic Effect by Noscapine in Equine Endometrium. *Int J Mol Sci*. 24(4). doi:10.3390/ijms24043593.
- André AS, Dias JNR, Aguiar S, Nogueira S, Bule P, Carvalho JI, António JPM, Cavaco M, Neves V, Oliveira S, et al. 2023. Rabbit derived VL single-domains as promising scaffolds to generate antibody–drug conjugates. *Sci Rep*. 13(1). doi:10.1038/s41598-023-31568-x.
- André AS, Dias JNR, Aguiar SI, Leonardo A, Nogueira S, Amaral JD, Fernandes C, Gano L, Correia JDG, Cavaco M, et al. 2023. Panobinostat-loaded folate targeted liposomes as a promising drug delivery system for treatment of canine B-cell lymphoma. *Front Vet Sci*. 10. doi:10.3389/fvets.2023.1236136.
- Antunes L, Joao AL, Nunes T, Henriques AR. 2023. Burden of disease estimation based on *Escherichia coli* quantification in ready-to-eat meals served in Portuguese institutional canteens. *LWT-FOOD Sci Technol*. 174. doi:10.1016/j.lwt.2023.114450.
- Araújo TPM, de Lima Júnior DM, da Silva ÉCL, Neves MLMW, dos Santos KC, de Andrade Ferreira M, Monnerat JPI, Alves SPA, de Bessa RJB, de Carvalho FFR. 2023. Effect of cactus species in the diets of dairy goats on feed efficiency, milk yield, and milk and cheese composition. *Anim Feed Sci Technol*. 304. doi:10.1016/j.anifeedsci.2023.115755.

- Baila C, Joy M, Bertolin JR, Alves S, Bessa R, Blanco M, Lobon S. 2023. Inclusion of Sainfoin in the Concentrate of Finishing Lambs: Fatty Acid Profiles of Rumen, Plasma, and Muscle. *J Agric Food Chem.* 71(46):17947–17958. doi:10.1021/acs.jafc.3c05902.
- Barbas JP, Pimenta J, Baptista MC, Marques CC, Pereira R, Carolino N, Simoes J. 2023. Ram Semen Cryopreservation for Portuguese Native Breeds: Season and Breed Effects on Semen Quality Variation. *ANIMALS.* 13(4). doi:10.3390/ani13040579.
- Borges A, Baptista E, Aymerich T, Alves SP, Gama LT, Fraqueza MJ. 2023. Inactivation of *Listeria monocytogenes* by pulsed light in packaged and sliced *salpicão*, a ready-to-eat traditional cured smoked meat sausage. *LWT-FOOD Sci Technol.* 179. doi:10.1016/j.lwt.2023.114641.
- Carapeto S, Cunha E, Serrano I, Pascoal P, Pereira M, Abreu R, Neto S, Antunes B, Dias R, Tavares L, et al. 2023. Effect of the Administration of a Lyophilised Faecal Capsules on the Intestinal Microbiome of Dogs: A Pilot Study. *Genes (Basel).* 14(9). doi:10.3390/genes14091676.
- Carrico C, Barbas JP, Pimenta J, Simoes J. 2023. Effect of In Vitro Addition of Melatonin and Glutathione on Seminal Parameters of Rams in Diluted Semen and after Thawing. *Vet Sci.* 10(7). doi:10.3390/vetsci10070446.
- Cavaco B, de Carvalho LMM, Shimoda E, Santoro M, Werneck MR. 2023. Helminth Fauna of Juvenile Green Sea Turtles (*Chelonia mydas*) from Rio de Janeiro State, Brazil. *HELMINTHOLOGIA.* 60(2):196–200. doi:10.2478/helm-2023-0021.
- Coelho J, Domingues J, Waap H, Stilwell G. 2023. Epidemiological characteristics of bovine besnoitiosis (*Besnoitia besnoiti*) in a beef cattle farm: a cross-sectional serological assessment. *Front Vet Sci.* 10. doi:10.3389/fvets.2023.1158235.
- Coelho J, Pacheco H, Rafael M, Jimenez-Ruiz S, Alves PC, Santos N. 2023. Dynamics of Humoral Immunity to Myxoma and Rabbit Hemorrhagic Disease Viruses in Wild European Rabbits Assessed by Longitudinal Semiquantitative Serology. *Microbiol Spectr.* 11(4). doi:10.1128/spectrum.00050-23.
- Coelho JC, Duarte N, da Silva AB, Bronze M do R, Mestrinho LA. 2023. Placebo-Controlled Trial of Daily Oral Cannabidiol as Adjunctive Treatment for Cats with Chronic Gingivostomatitis. *ANIMALS.* 13(17). doi:10.3390/ani13172716.
- Correia S, Moura PL, Ventura S, Leitao A, Parkhouse RME. 2023. I329L: A Dual Action Viral Antagonist of TLR Activation Encoded by the African Swine Fever Virus (ASFV). *VIRUSES-BASEL.* 15(2). doi:10.3390/v15020445.
- Costa MM, Spinola MP, Prates JAM. 2023. Combination of Mechanical/Physical Pretreatments with Trypsin or Pancreatin on *Arthrospira platensis* Protein Degradation. *AGRICULTURE-BASEL.* 13(1). doi:10.3390/agriculture13010198.
- Cunha E, Ferreira AF, Valente S, Matos A, Carreira LM, Videira M, Chambel L, Tavares L, Oliveira M. 2023. In Vivo Effect of a Nisin-Biogel on the Antimicrobial and Virulence Signatures of Canine Oral Enterococci. *ANTIBIOTICS-BASEL.* 12(3). doi:10.3390/antibiotics12030468.
- da Silva I V, Coelho D, Prates JAM, Soveral G, Lopes PA. 2023. Tissue-Specific Variation in Aquaporins and Cytokines Transcriptional Profiles in Piglets being LPS Challenged. *Front Biosci.* 28(6). doi:10.31083/j.fbl2806126.
- de Castro VCG, Budel JC de C, Rodrigues TCG de C, Silva BA, Joset WCL, de Lima ACS, Souza SM, Bessa RJB, Alves SPA, da Silva JAR, et al. 2023. Lambs supplemented with Amazonian oilseed co-products: Meat quality and fatty acid profile. *PLoS One.* 18(12). doi:10.1371/journal.pone.0293897.
- Delgado E, Gomes E, Gil S, Lourenco AM. 2023. Diagnostic approach and grading scheme for canine allergic conjunctivitis. *BMC Vet Res.* 19(1). doi:10.1186/s12917-022-03561-5.
- Dias SA, Pinto SN, Silva-Herdade AS, Cavaco M, Neves V, Tavares L, Oliveira M, Andreu D, Coutinho A, Castanho MARB, et al. 2023. Quantitative Imaging of the Action of vCPP2319, an Antimicrobial Peptide from a Viral Scaffold, against *Staphylococcus aureus* Biofilms of a Clinical Isolate. *ACS Infect Dis.* 9(10):1889–1900. doi:10.1021/acsinfecdis.3c00195.
- dos Anjos LF, de Bessa RJB, Parente HN, Alves SP, Landim AV, Zanine A de M, Pereira AL, de Oliveira GS, Ferreira D de J, Perazzo AF, et al. 2023. Effects of diets differing in the concentrate-to-roughage

- ratio on meat quality and fatty acids composition in abomasal digesta and meat from thin-tail and fat-tail Brazilian ovine breeds. *SMALL Rumin Res.* 229. doi:10.1016/j.smallrumres.2023.107120.
- Duarte M, Alves VD, Correia M, Caseiro C, Ferreira LMA, Romao MJ, Carvalho AL, Najmudin S, Bayer EA, Fontes C, et al. 2023. Structure-function studies can improve binding affinity of cohesin-dockerin interactions for multi-protein assemblies. *Int J Biol Macromol.* 224:55–67. doi:10.1016/j.ijbiomac.2022.10.102.
- Falcao M, Barros M, Duarte MD, dos Santos FA, Fagulha T, Henriques M, Ramos F, Duarte A, Luis T, Parreira R, et al. 2023. Genome Characterization and Spaciotemporal Dispersal Analysis of Bagaza Virus Detected in Portugal, 2021. *Pathogens.* 12(2). doi:10.3390/pathogens12020150.
- Faria R, Vicente A, Silva J. 2023. Racing Performance of the Quarter Horse: Genetic Parameters, Trends and Correlation for Earnings, Best Time and Time Class. *ANIMALS.* 13(12). doi:10.3390/ani13122019.
- Fernandes JD, De Carvalho LM, Borges JCG, Parente JE V, Werneck MR. 2023. First report of *Rhytidodes gelatinosus* (Rudolphi, 1819) Looss, 1901 (Digenea: Rhytidodidae) in an olive-ridley Turtle *Lepidochelys olivacea* (Eschscholtz, 1829) from Brazil. *HELMINTHOLOGIA.* 60(3):257–262. doi:10.2478/helm-2023-0030.
- Fernandes S, Pereira G, Bexiga R. 2023. Bimodal milk flow and overmilking in dairy cattle: risk factors and consequences. *ANIMAL.* 17(4). doi:10.1016/j.animal.2023.100716.
- Fontoura-Gonçalves C, Portocarrero É, Oliveira A, Lozano J, Rinaldi L, Cringoli G, de Carvalho LM, Santos N. 2023. Challenges of copro-parasitological surveys in wild Iberian ibex (*Capra pyrenaica*) populations addressed through a combination of molecular and statistical tools. *Ecol Evol.* 13(6). doi:10.1002/ece3.10172.
- Frosini SM, Gallow G, Gibson A, Menezes J, Pomba C, Loeffler A. 2023. Detecting *mecA* in Faecal Samples: A Tool for Assessing Carriage of Meticillin-Resistant Staphylococci in Pets and Owners in the Microbiological “Fast Age”? *Microbiol Res (Pavia).* 14(1):60–66. doi:10.3390/microbiolres14010005.
- Garcia I, Valente D, Carolino N, Dinis H, Sousa R, Duarte SC, Silva LJG, Pereira A, Pena A. 2023. Occurrence of zearalenone in dairy farms - A study on the determinants of exposure and risk assessment. *TOXICON.* 225. doi:10.1016/j.toxicon.2023.107051.
- Gbylik-Sikorska M, Gajda A, Felipe-Sotelo M, Canica M, Cabal-Rosel A, Tenson T, Korinkova M, Arbo K, Kisand V, Rab G, et al. 2023. Investigation of 29 Antimicrobial Compounds in Soil Using Newly Developed UHPLC-MS/MS Method. *MOLECULES.* 28(18). doi:10.3390/molecules28186496.
- Geraldes C, Tavares L, Gil S, Oliveira M. 2023. Biocides in the Hospital Environment: Application and Tolerance Development. *Microb DRUG Resist.* 29(10):456–476. doi:10.1089/mdr.2023.0074.
- Gomes FR, Hipolito D, Aliacar SC, Fonseca C, Torres RT, de Carvalho LM, Figueiredo AM. 2023. Endoparasites of the Iberian wolf (*Canis lupus signatus*) and mesocarnivores in Central Portugal. *Parasitol Res.* 122(2):435–440. doi:10.1007/s00436-022-07738-7.
- Gonçalves AR, Telo da Gama L, Antunes L, Guimarães H, Bliebernicht M, Duarte JC, Cosinha C, Duarte Rego B, Ferro da Costa P, Guimarães T, et al. 2023. Impact of inbreeding and genetic parameter estimates for seminal traits in Lusitano horses. *Theriogenology.* 208:43–51. doi:10.1016/j.theriogenology.2023.05.011.
- Gouveia D, Carvalho C, Vong N, Pereira A, Cardoso A, Moises M, Rijo I, Martins A, Almeida A, Gamboa O, et al. 2023. Spinal shock in severe SCI dogs and early implementation of intensive neurorehabilitation programs{\*}. *Res Vet Sci.* 164. doi:10.1016/j.rvsc.2023.105018.
- Gouveia D, Correia J, Cardoso A, Carvalho C, Oliveira AC, Almeida A, Gamboa O, Ribeiro L, Branquinho M, Sousa A, et al. 2023. Intensive neurorehabilitation and allogeneic stem cells transplantation in canine degenerative myelopathy. *Front Vet Sci.* 10. doi:10.3389/fvets.2023.1192744.
- Henriques AM, Neto A, Fagulha T, Almeida V, Fevereiro M. 2023. Molecular characterization and phylogenetic analysis of Newcastle disease viruses isolated in southern Angola, 2016-2018. *Infect Genet Evol.* 113. doi:10.1016/j.meegid.2023.105481.
- Huynh-Phuoc V, Purbiantoro W, Ly TQ, Afonso F, Vu NU, Cheng TC. 2023. The inhibitory ability and adhesion properties of a novel probiotic *Bacillus safensis* strain VQV8 against *Vibrio* spp. *Aquac Int.* doi:10.1007/s10499-023-01088-6.

- Jerónimo E, Guerreiro O, Soldado D, Fialho L, Cachucho L, Garrido AL, Conceição C, Alves SP, Bessa RJB, Santos-Silva J. 2023. Rockrose and quebracho condensed tannins have a minor impact on the fatty acid profile of goat milk and cheese without altering animal performance and composition of products. *Anim Feed Sci Technol.* 300. doi:10.1016/j.anifeedsci.2023.115654.
- Jiménez-Ruiz S, Rafael M, Coelho J, Pacheco H, Fernandes M, Alves PC, Santos N. 2023. High Mortality of Wild European Rabbits during a Natural Outbreak of Rabbit Haemorrhagic Disease GI.2 Revealed by a Capture-Mark-Recapture Study. *Transbound Emerg Dis.* 2023. doi:10.1155/2023/3451338.
- Klim EB, Mestrinho LA, Gawor JP. 2023. A Retrospective Study of Ectopic Eruption in 35 Dogs. *J Vet Dent.* 40(2):174–180. doi:10.1177/08987564221141989.
- Leal M, Morais C, Ramos B, Pomba C, Abrantes P, Costa SS, Couto I. 2023. Exploring Efflux as a Mechanism of Reduced Susceptibility towards Biocides and Fluoroquinolones in *Staphylococcus pseudintermedius*. *ANIMALS.* 13(7). doi:10.3390/ani13071270.
- Li J, Zhao W, Zhu J, Wang S, Ju H, Chen S, Basioura A, Ferreira-Dias G, Liu Z. 2023. Temperature Elevation during Semen Delivery Deteriorates Boar Sperm Quality by Promoting Apoptosis. *ANIMALS.* 13(20). doi:10.3390/ani13203203.
- Li JW, Zhao WM, Zhu JQ, Ju HM, Liang M, Wang SB, Chen SF, Ferreira-Dias G, Liu ZP. 2023. Antioxidants and Oxidants in Boar Spermatozoa and Their Surrounding Environment Are Associated with AMPK Activation during Liquid Storage. *Vet Sci.* 10(3). doi:10.3390/vetsci10030214.
- Lopes AM, Almeida T, Diz S, Corte-Real J V, Osorio HC, Ramilo DW, Rebelo MT, da Fonseca IP, Esteves PJ, Alves PC, et al. 2023. The potential role of scavenging flies as mechanical vectors of Lagovirus europaeus/GI.2. *Virol J.* 20(1). doi:10.1186/s12985-023-02065-4.
- Lopes PA, Fonseca E, da Silva I V, Vigia E, Paulino J, Soveral G. 2023. Aquaporins Transcripts with Potential Prognostic Value in Pancreatic Cancer. *Genes (Basel).* 14(9). doi:10.3390/genes14091694.
- Lozano J, Louro M, Almeida C, Victorio AC, Melo P, Rodrigues JP, Oliveira M, Paz-Silva A, de Carvalho LM. 2023. Isolation of saprophytic filamentous fungi from avian fecal samples and assessment of its predatory activity on coccidian oocysts. *Sci Rep.* 13(1). doi:10.1038/s41598-023-36120-5.
- Machado IC, Nunes T, Maximino M, Malato J, Tavares L, Almeida V, Sepulveda N, Gil S. 2023. Epidemiologic Factors Supporting Triage of Infected Dog Patients Admitted to a Veterinary Hospital Biological Isolation and Containment Unit. *Vet Sci.* 10(3). doi:10.3390/vetsci10030186.
- Machado M, Catarino J, Almeida J, Lopes I, Alvarado A, Matos R, Ribeiro T, Faisca P, Moreira O, Murta D. 2023. Effects of soybean meal replacement by *Hermetia illucens* larvae meal on growth performance, meat quality and gastrointestinal health in broilers. *J INSECTS AS FOOD Feed.* 9(5):569–581. doi:10.3920/JIFF2022.0118.
- Magalhaes MT, Palmers K, De Cock H, Ribonnet C. 2023. Lymphocytic myenteric ganglionitis associated with equine herpesvirus infection: A cause of chronic intestinal pseudo-obstruction and recurrent colic in an adult horse. *EQUINE Vet Educ.* doi:10.1111/eve.13930.
- Magalhaes-St Ana M, Rodrigues I, Costa D, Stilwell G, Franco NH. 2023. Teaching Evidence-Based Medicine and Non-conventional (Alternative) Therapies in Portuguese Veterinary Schools-A Curricular Assessment. *J Vet Med Educ.* doi:10.3138/jvme-2023-0055.
- Malmir M, Lima K, Camoes SP, Manageiro V, Duarte MP, Miranda JP, Serrano R, da Silva IM, Lima BS, Canica M, et al. 2023. Bioguided Identification of Active Antimicrobial Compounds from *Asphodelus bento-rainhae* and *Asphodelus macrocarpus* Root Tubers. *PHARMACEUTICALS.* 16(6). doi:10.3390/ph16060830.
- Marcos R, Moreira R, Macedo S, Mateus L, Martins-Bessa A, Lopes G. 2023. An immersive simulation strategy to teach canine vaginal cytology: A multi-centre study. *Reprod Domest Anim.* 58(9):1279–1288. doi:10.1111/rda.14431.
- Marinho PF, Vieira SL, Carvalho TG, Peleteiro MC, Hanscheid T. 2023. A novel and simple heat-based method eliminates the highly detrimental effect of xylene deparaffinization on acid-fast stains. *Am J Clin Pathol.* 160(1):81–88. doi:10.1093/ajcp/aqad016.
- Marques GN, Cruz JT, Pinto M, Leal M, Flanagan C, Urbani N, de Carvalho LM. 2023. Respiratory Infection by *Cyathostoma (Hovorkonema) americana* in a Population of Burrowing Owls (*Athene*



- cunicularia*)-A Potential Case of Zoo-Wildlife Cross-Transmission. J Zool Bot Gard. 4(4):788–799. doi:10.3390/jzbg4040056.
- Marques JM, Serrano S, Selmi H, Cotovio PG, Semedo-Lemsaddek T. 2023. Antimicrobial and Antibiofilm Potential of *Thymus vulgaris* and *Cymbopogon flexuosus* Essential Oils against Pure and Mixed Cultures of Foodborne Bacteria. ANTIBIOTICS-BASEL. 12(3). doi:10.3390/antibiotics12030565.
- Matos A, Cunha E, Baptista L, Tavares L, Oliveira M. 2023. ESBL-Positive Enterobacteriaceae from Dogs of Santiago and Boa Vista Islands, Cape Verde: A Public Health Concern. ANTIBIOTICS-BASEL. 12(3). doi:10.3390/antibiotics12030447.
- Menezes J, Frosini S-M, Amaral AJ, Loeffler A, Pomba C. 2023. Dissemination of bla<sub>NDM-5</sub>-carrying IncX3-type plasmid among non-clonal *Escherichia coli* strains colonising a dog with a skin infection caused by a carbapenem-resistant *Klebsiella pneumoniae*, United Kingdom. J Infect Public Health. 16(1):190–193. doi:10.1016/j.jiph.2023.10.048.
- Menezes J, Frosini S-M, Belas A, Marques C, da Silva JM, Amaral AJJ, Loeffler A, Pomba C. 2023. Longitudinal study of ESBL/AmpC-producing Enterobacterales strains sharing between cohabiting healthy companion animals and humans in Portugal and in the United Kingdom. Eur J Clin Microbiol & Infect Dis. doi:10.1007/s10096-023-04629-2.
- Méric T, Issard J, Maufras T, Hugonnard M, Senecat O, Lecoindre A, Leal RO, Bertolani C, Toulza O, Lecoindre P, et al. 2023. Recurrence and survival in dogs with excised colorectal polyps: A retrospective study of 58 cases. J Vet Intern Med. 37(6):2375–2384. doi:10.1111/jvim.16876.
- Molina CC, Dias MJ, Domingues TD, Englar RE, Leal RO. 2023. Clinical findings and prognostic factors for mortality in hospitalized dogs with leishmaniosis: aretrospective study. Comp Immunol Microbiol Infect Dis. 101. doi:10.1016/j.cimid.2023.102041.
- Morais C, Costa SS, Leal M, Ramos B, Andrade M, Ferreira C, Abrantes P, Pomba C, Couto I. 2023. Genetic diversity and antimicrobial resistance profiles of *Staphylococcus pseudintermedius* associated with skin and soft-tissue infections in companion animals in Lisbon, Portugal. Front Microbiol. 14. doi:10.3389/fmicb.2023.1167834.
- Noll M, Wall R, Makepeace BL, Newbury H, Adaszek L, Bodker R, Estrada-Pena A, Guillot J, da Fonseca IP, Probst J, et al. 2023. Predicting the distribution of *Ixodes ricinus* and *Dermacentor reticulatus* in Europe: a comparison of climate niche modelling approaches. PARASITES & VECTORS. 16(1). doi:10.1186/s13071-023-05959-y.
- Pereira G, Charpigny G, Guo Y, Silva E, Silva MF, Ye T, Lopes-da-Costa L, Humblot P. 2023. Characterization of circulating microRNA profiles of postpartum dairy cows with persistent subclinical endometritis. J Dairy Sci. 106(12):9704–9717. doi:10.3168/jds.2023-23616.
- Pessoa VC, Branco-Ferreira M, Jonsdottir S, Marti E, Tilley P. 2023. Comparison of Skin Prick Tests (SPT), Intradermal Tests (IDT) and *In Vitro* Tests in the Characterization of Insect Bite Hypersensitivity (IBH) in a Population of Lusitano Horses: Contribution for Future Implementation of SPT in IBH Diagnosis. ANIMALS. 13(17). doi:10.3390/ani13172733.
- Pestana JM, Alfaia CM, Ribeiro DM, Costa MM, Carvalho DFP, Martins CF, Alves VMD, Lemos JPC, Mourato M, Delgado I, et al. 2023. Enhancing meat quality of weaned piglets with the dietary incorporation of *Ulva lactuca* and carbohydrases supplementation. MEAT Sci. 205. doi:10.1016/j.meatsci.2023.109306.
- Prego MT, Dias MJ, Ferreira RL, Goncalves S, Domingues TD, Junius G, Van den Steen E, Galac S, Leal RO. 2023. Plasma and urinary metanephrine and normetanephrine concentrations using liquid chromatography with tandem mass spectrometry in healthy cats and in a cat with pheochromocytoma. J Vet Intern Med. doi:10.1111/jvim.16648.
- Prego MT, Dias MJ, Mestrinho L, Englar R, Grinwis G, Galac S, Leal RO. 2023. Diagnosis, treatment and outcome of pheochromocytoma in a cat. J Small Anim Pract. doi:10.1111/jsap.13601.
- Quaresma M, Pereira G, Nunes ML, Jardim A, Santos C, Bandarra N, Roseiro C. 2023. The Effect of the Species and Harvesting Location on Dried Salted Cod Fatty Acid Signatures and Nutritional Quality. FOODS. 12(3). doi:10.3390/foods12030654.

- Quaresma M, Roseiro LC, Ferreira T, Nunes ML, Pereira G. 2023. Effect of Diet Supplementation with Oat Hay and Whole Carrot on Rabbit Growth and Productive Efficiency. *ANIMALS*. 13(19). doi:10.3390/ani13193138.
- Coelho C, Silva A, Santos A, Vintem C, Santos C, Fonseca J, Prazeres J, Souza V, Gola A, Manso Filho HC, et al. 2023. Is a 6-week training protocol effective in preparing young Lusitano horses in early athletic life? *Comp Exerc Physiol*. 19(5):429–437. doi:10.1163/17552559-20220063.
- Quaresma MAG, Pereira G, Nunes ML, Sponda C, Jardim A, Goncalves H, Santos C, Roseiro LC. 2023. Evaluating dried salted cod amino acid signature for nutritional quality assessment and discriminant analysis. *Front Nutr*. 10. doi:10.3389/fnut.2023.1144713.
- Ramilo DW, Cruz JT, Amin O, Fragoso C, Brazio E, Correia J, Cardoso L, da Fonseca IP. 2023. A new definitive host for *Moniliformis cestodiformis* (Acanthocephala: Moniliformidae): first report of a naturally infected European hedgehog (*Erinaceus europaeus*). *Rev Bras Parasitol Vet*. 32(1). doi:10.1590/S1984-29612023014.
- Raposo C, Serrano I, Cunha E, Couto MP, Lopes F, Casero M, Tavares L, Oliveira M. 2023. Phenotypic Characterization of Oral *Mucor* Species from Eurasian Vultures: Pathogenic Potential and Antimicrobial Ability. *LIFE-BASEL*. 13(8). doi:10.3390/life13081638.
- Rentería-Solís Z, Ramilo DW, Schmäsche R, Gawlowska S, Correia J, Lopes F, Madeira de Carvalho L, Cardoso L, Pereira da Fonseca I. 2023. Morphological and Molecular Identification of *Physaloptera alata* (Nematoda: Spirurida) in a Booted Eagle (*Aquila pennata*) from Portugal. *Animals*. 13(10). doi:10.3390/ani13101669.
- Ribeiro DM, Leclercq CC, Charton SAB, Costa MM, Carvalho DFP, Cocco E, Sergeant K, Renaut J, Freire JPB, Prates JAM, et al. 2023. Enhanced ileum function in weaned piglets via *Laminaria digitata* and alginate lyase dietary inclusion: A combined proteomics and metabolomics analysis. *J Proteomics*. 289. doi:10.1016/j.jprot.2023.105013.
- Ribeiro DM, Lopes PA, Pinto RMA, Pestana JM, Costa MM, Alfaia CM, Mourato MP, de Almeida AM, Freire JPB, Prates JAM. 2023. Dietary *Ulva lactuca* and CAZyme supplementation improve serum biochemical profile and hepatic composition of weaned piglets. *Sci Rep*. 13(1). doi:10.1038/s41598-023-36008-4.
- Ribeiro DM, Pinto RMA, Lopes PA, Pestana JM, Alfaia CM, Costa MM, Carvalho DFP, Mourato MP, de Almeida AM, Freire JPB, et al. 2023. Effect of *Laminaria digitata* dietary inclusion and CAZyme supplementation on blood cells, serum metabolites and hepatic lipids and minerals of weaned piglets. *Sci Rep*. 13(1). doi:10.1038/s41598-023-33835-3.
- Gomes J, Leitao M, Louro MC, Branda R, Mateus TL. 2023. Avian Malaria in wild birds from a wildlife rehabilitation center in Central Portugal. *Vet Parasitol Reg Stud REPORTS*. 43. doi:10.1016/j.vprsr.2023.100904.
- Rodrigues IL, Nunes TP, Cortez CS, Lourenço AM. 2023. E-Learning Impact on Veterinary Medical Student's Mental Health during the COVID-19 Pandemic. *J Vet Med Educ*. 50(3):343–353. doi:10.3138/jvme-2021-0052.
- Rodrigues LS, da Silva JAR, Lourenco JDB, Silva A, de Almeida AM, Mourato MP, de Castro VCG, da Silva WC, Prates JAM. 2023. Mineral Content of Liver of Buffaloes (*Bubalus bubalis*) Reared in Different Ecosystems in the Eastern Amazon. *ANIMALS*. 13(7). doi:10.3390/ani13071157.
- Rodrigues LS, da Silva JAR, Lourenco-Junior J de B, e Silva AG, Rodrigues TCG de C, da Silva WC, da Silva TC, de Castro VCG, Alfaia CM, de Almeida AM, et al. 2023. Evaluation of the Composition of the Cholesterol, Tocopherols,  $\beta$ -Carotene and Fatty Acids Profile of the Liver Tissue of Male Water Buffaloes (*Bubalus bubalis*) Managed in Different Ecosystems of the Eastern Amazon. *ANIMALS*. 13(24). doi:10.3390/ani13243785.
- Rodrigues LS, da Silva JAR, Lourenco JD, Silva A, de Almeida AM, Mourato MP, de Castro VCG, Bezerra AS, da Silva WC, Prates JAM. 2023. Muscle mineral profile of water buffaloes (*Bubalus bubalis*) reared in different production systems of the Brazilian Eastern Amazon. *Front Vet Sci*. 10. doi:10.3389/fvets.2023.1057658.
- Rybicka I, Silva M, Gonçalves A, Oliveira H, Lourenço H, Marques A, Fraqueza MJ, Serrano C, Nunes ML. 2023. Development and quality assessment of smoked rainbow trout with reduced sodium content. *Int J Food Sci Technol*. 58(7):3658–3668. doi:10.1111/ijfs.16468.

- Salas-Fajardo MY, Benavides J, Azevedo A, Figueiras P, Monteiro M, Orge L, Mendonca P, Carvalho P, Waap H, Ortega-Mora LM, et al. 2023. Fatal toxoplasmosis in a captive squirrel monkey (*Saimiri boliviensis*) in Portugal. *Vet Res Commun*. doi:10.1007/s11259-023-10179-x.
- Salgueiro V, Manageiro V, Bandarra NM, Ferreira E, Clemente L, Canica M. 2023. First comparative genomic characterization of the MSSA ST398 lineage detected in aquaculture and other reservoirs. *Front Microbiol*. 14. doi:10.3389/fmicb.2023.1035547.
- Salgueiro V, Manageiro V, Rosado T, Bandarra NM, Botelho MJ, Dias E, Canica M. 2023. Snapshot of resistome, virulome and mobilome in aquaculture. *Sci Total Environ*. 905. doi:10.1016/j.scitotenv.2023.166351.
- Santos D, Fagulha T, Duarte MD, Duarte A, Ramos F, Barros SC, Luis T, Henriques AM. 2023. Snapshot of the Phylogenetic Relationships among Avian Poxviruses Circulating in Portugal between 2017 and 2023. *Vet Sci*. 10(12). doi:10.3390/vetsci10120693.
- Santos-Silva J, Alves SP, Francisco A, Portugal AP, Dentinho MT, Almeida J, da Silva JLR, Fialho L, Cachucho L, Jeronimo E, et al. 2023. Forage based diet as an alternative to a high concentrate diet for finishing young bulls-Effects on growth performance, greenhouse gas emissions and meat quality. *MEAT Sci*. 198. doi:10.1016/j.meatsci.2023.109098.
- Selmi H, Rocchetti MT, Capozzi V, Semedo-Lemsaddek T, Fiocco D, Spano G, Abidi F. 2023. *Lactiplantibacillus plantarum* from Unexplored Tunisian Ecological Niches: Antimicrobial Potential, Probiotic and Food Applications. *MICROORGANISMS*. 11(11). doi:10.3390/microorganisms11112679.
- Serrano I, Alhinho B, Cunha E, Tavares L, Trindade A, Oliveira M. 2023. Bacteriostatic and Antibiofilm Efficacy of a Nisin Z Solution against Co-Cultures of *Staphylococcus aureus* and *Pseudomonas aeruginosa* from Diabetic Foot Infections. *LIFE-BASEL*. 13(2). doi:10.3390/life13020504.
- Silva B, Goncalves LM, Braz BS, Delgado E. 2023. Topical Administration of a Nanoformulation of Chitosan-Hyaluronic Acid-Epoetin Beta in a Rat Model of Glaucoma. *PHARMACEUTICALS*. 16(2). doi:10.3390/ph16020164.
- Silva B, Goncalves LM, Braz BS, Delgado E. 2023. Topical ocular delivery of nanoparticles with epoetin beta in Wistar Hannover rats. *Sci Rep*. 13(1). doi:10.1038/s41598-023-28845-0.
- Silva V, Araujo S, Monteiro A, Eira J, Pereira JE, Maltez L, Igrejas G, Lemsaddek TS, Poeta P. 2023. *Staphylococcus aureus* and MRSA in Livestock: Antimicrobial Resistance and Genetic Lineages. *MICROORGANISMS*. 11(1). doi:10.3390/microorganisms11010124.
- Simoes J, Luis JPS, de Carvalho LM, Tilley P. 2023. Severely Asthmatic Horses Residing in a Mediterranean Climate Shed a Significantly Lower Number of Parasite Eggs Compared to Healthy Farm Mates. *ANIMALS*. 13(18). doi:10.3390/ani13182928.
- Singh S, Ahmed J, Gavande P V, Fontes C, Goyal A. 2023. Structural and functional insights into the glycoside hydrolase family 30 xylanase of the rumen bacterium *Ruminococcus flavefaciens*. *J Mol Struct*. 1272. doi:10.1016/j.molstruc.2022.134155.
- Spinola MP, Costa MM, Prates JAM. 2023. Effect of Selected Mechanical/Physical Pre-Treatments on *Chlorella vulgaris* Protein Solubility. *AGRICULTURE-BASEL*. 13(7). doi:10.3390/agriculture13071309.
- Spinola MP, Costa MM, Prates JAM. 2023. Studies on the Impact of Selected Pretreatments on Protein Solubility of *Arthrospira platensis* Microalga. *Agric*. 13(1). doi:10.3390/agriculture13010221.
- Tavares IT, Rivero R, Sales-Luis JP, Vaudano CG, Correia SD, Corbera JA, Jaber JR. 2023. Premedication with acetazolamide: Is its use for postoperative pain and stress control after laparoscopic ovariectomy in dogs ruled out? *Vet Med Sci*. 9(3):1114–1123. doi:10.1002/vms3.1115.
- Tilley P, Simoes J, Luis JPS. 2023. Effects of a 15(?) Variation in Poll Flexion during Riding on the Respiratory Systems and Behaviour of High-Level Dressage and Show-Jumping Horses. *ANIMALS*. 13(10). doi:10.3390/ani13101714.
- Valente D, Dutra AP, Carolino N, Gomes J, Coelho AC, Espadinha P, Pais J, Carolino I. 2023. Prevalence and Risk Factors Associated with *Theileria annulata* Infection in Two Bovine Portuguese Autochthonous Breeds. *Pathogens*. 12(5). doi:10.3390/pathogens12050669.

- Valente M dos A, Ferreira P, Lima K, da Silva IMB, Nobre P, Neto I, Pires M, Braz BS, Serrano R, Belo S, et al. 2023. *Vernonia britteniana* Root Phytochemical Studies, In Vitro Cercaricidal Activity on the Larval Stage of *Schistosoma mansoni* and Antioxidant Activities. PLANTS-BASEL. 12(9). doi:10.3390/plants12091788.
- Valente S, Nascimento C, Gameiro A, Ferreira J, Correia J, Ferreira F. 2023. TIM-3 Is a Potential Immune Checkpoint Target in Cats with Mammary Carcinoma. Cancers (Basel). 15(2). doi:10.3390/cancers15020384.
- Vítor ACM, Correia JJ, Alves SP, Bessa RJB. 2023. Enrichment of Brain n-3 Docosapentaenoic Acid (DPA) and Retinal n-3 Eicosapentaenoic Acid (EPA) in Lambs Fed *Nannochloropsis oceanica* Microalga. Animals. 13(5). doi:10.3390/ani13050828.
- Vítor ACM, Godinho M, Francisco AE, Silva J, Almeida J, Fialho L, Soldado D, Jerónimo E, Scollan ND, Huws SA, et al. 2023. *Nannochloropsis oceanica* microalga feeding increases long-chain omega-3 polyunsaturated fatty acids in lamb meat. Meat Sci. 197. doi:10.1016/j.meatsci.2022.109053.
- Vitorino A, Stilwell G, Pais J, Carolino N. 2023. Evaluation of Chute Exit, Novelty and Human Approach Tests in Mertolenga Beef Cattle. ANIMALS. 13(6). doi:10.3390/ani13061087.
- Weber JI, Rodrigues A V, Valrio-Bolas A, Nunes T, Carvalheiro M, Antunes W, Alexandre-Pires G, da Fonseca IP, Santos-Gomes G. 2023. Insights on Host-Parasite Immunomodulation Mediated by Extracellular Vesicles of Cutaneous *Leishmania shawi* and *Leishmania guyanensis*. CELLS. 12(8). doi:10.3390/cells12081101.
- Wójtowicz A, Molcan T, Lukasik K, Żebrowska E, Pawlina-Tyszko K, Gurgul A, Szmatoła T, Bugno-Poniewierska M, Ferreira-Dias G, Skarzynski DJ, et al. 2023. The potential role of miRNAs and regulation of their expression in the development of mare endometrial fibrosis. Sci Rep. 13(1). doi:10.1038/s41598-023-42149-3.
- Wong K, Abascal F, Ludwig L, Aupperle-Lellbach H, Grassinger J, Wright CW, Allison SJ, Pinder E, Phillips RM, Romero LP, et al. 2023. Cross-species oncogenomics offers insight into human muscle-invasive bladder cancer. GENOME Biol. 24(1). doi:10.1186/s13059-023-03026-4.
- Wong YS, Mancanares AC, Navarrete FI, Poblete PM, Mendez-Perez L, Ferreira-Dias GML, Rodriguez-Alvarez L, Castro FO. 2023. Mare stromal endometrial cells differentially modulate inflammation depending on oestrus cycle status: an *in vitro* study. Front Vet Sci. 10. doi:10.3389/fvets.2023.1271240.
- Zakrzewski AJ, Kurpas M, Zadernowska A, Chajęcka-Wierzchowska W, Fraqueza MJ. 2023. A Comprehensive Virulence and Resistance Characteristics of *Listeria monocytogenes* Isolated from Fish and the Fish Industry Environment. Int J Mol Sci. 24(4). doi:10.3390/ijms24043581.
- Ziemann D, Mestrinho LA, Gawor J. 2023. Malocclusion in cats associated with mandibular soft tissue trauma: a retrospective case-control study. J Feline Med Surg. 25(10). doi:10.1177/1098612X231202322.
- Zina R, Cunha E, Serrano I, Silva E, Tavares L, Oliveira M. 2023. Nisin Z Potential for the Control of Diabetic Foot Infections Promoted by *Pseudomonas aeruginosa* Persists. ANTIBIOTICS-BASEL. 12(5). doi:10.3390/antibiotics12050794.
- Carmona B, Marinho HS, Matos CL, Nolasco S, Soares H. 2023. Tubulin Post-Translational Modifications: The Elusive Roles of Acetylation. BIOLOGY-BASEL. 12(4). doi:10.3390/biology12040561.
- Silva V, Araujo S, Monteiro A, Eira J, Pereira JE, Maltez L, Igrejas G, Lemsaddek TS, Poeta P. 2023. *Staphylococcus aureus* and MRSA in Livestock: Antimicrobial Resistance and Genetic Lineages. MICROORGANISMS. 11(1). doi:10.3390/microorganisms11010124.
- Rosalino LM, Matias G, Carvalho J, Alvares F, Azevedo A, Bandeira V, Fernandes C, Ferreras P, Gortazar C, Lozano J, et al. 2023. Three decades of research on Iberian wild Carnivora: trends, highlights, and future directions. Mamm Rev. 53(4):254–270. doi:10.1111/mam.12322.
- Jori F, Bastos A, Boinas F, Van Heerden J, Heath L, Jourdan-Pineau H, Martinez-Lopez B, de Oliveira RP, Pollet T, Quembo C, et al. 2023. An Updated Review of *Ornithodoros* Ticks as Reservoirs of African Swine Fever in Sub-Saharan Africa and Madagascar. Pathogens. 12(3). doi:10.3390/pathogens12030469.

- Oliveira M, Cunha E, Tavares L, Serrano I. 2023. *P. aeruginosa* interactions with other microbes in biofilms during co-infection. AIMS Microbiol. 9(4):612–646. doi:10.3934/microbiol.2023032.
- Bell V, Fernandes TH. 2023. Mushrooms as Functional Foods for Ménière’s Disease. Appl Sci. 13(22). doi:10.3390/app132212348.
- Abreu R, Semedo-Lemsaddek T, Cunha E, Tavares L, Oliveira M. 2023. Antimicrobial Drug Resistance in Poultry Production: Current Status and Innovative Strategies for Bacterial Control. MICROORGANISMS. 11(4). doi:10.3390/microorganisms11040953.
- Serrano I, Verdial C, Tavares L, Oliveira M. 2023. The Virtuous *Galleria mellonella* Model for Scientific Experimentation. ANTIBIOTICS-BASEL. 12(3). doi:10.3390/antibiotics12030505.
- Verdial C, Serrano I, Tavares L, Gil S, Oliveira M. 2023. Mechanisms of Antibiotic and Biocide Resistance That Contribute to *Pseudomonas aeruginosa* Persistence in the Hospital Environment. BIOMEDICINES. 11(4). doi:10.3390/biomedicines11041221.
- Lopes PA, Alfaia CM, Pestana JM, Prates JAM. 2023. Structured Lipids Engineering for Health: Novel Formulations Enriched in n-3 Long-Chain Polyunsaturated Fatty Acids with Potential Nutritional Benefits. Metabolites. 13(10). doi:10.3390/metabo13101060.
- Monteiro Marques J, Coelho M, Santana AR, Pinto D, Semedo-Lemsaddek T. 2023. Dissemination of Enterococcal Genetic Lineages: A One Health Perspective. Antibiotics. 12(7). doi:10.3390/antibiotics12071140.
- Gonçalves M, Santos JI, Coutinho MF, Matos L, Alves S. 2023. Development of Engineered-U1 snRNA Therapies: Current Status. Int J Mol Sci. 24(19). doi:10.3390/ijms241914617.
- Fernandes B, Alves S, Schmidt V, Bizarro AF, Pinto M, Pereira H, Marto J, Lourenço AM. 2023. Primary Prevention of Canine Atopic Dermatitis: Breaking the Cycle—A Narrative Review. Vet Sci. 10(11). doi:10.3390/vetsci10110659.
- Antunes IC, Bexiga R, Pinto C, Roseiro LC, Quaresma MAG. 2023. Cow’s Milk in Human Nutrition and the Emergence of Plant-Based Milk Alternatives. FOODS. 12(1). doi:10.3390/foods12010099.
- Simões J, Tilley P. 2023. Decision Making in Severe Equine Asthma—Diagnosis and Monitoring. Animals. 13(24). doi:10.3390/ani13243872.
- Bell V, Rodrigues AR, Antoniadou M, Peponis M, Varzakas T, Fernandes T. 2023. An Update on Drug–Nutrient Interactions and Dental Decay in Older Adults. Nutrients. 15(23). doi:10.3390/nu15234900.
- Spínola MP, Costa MM, Prates JAM. 2023. Enhancing Digestibility of *Chlorella vulgaris* Biomass in Monogastric Diets: Strategies and Insights. Animals. 13(6). doi:10.3390/ani13061017.
- Zdrojkowski L, Jasinski T, Ferreira-Dias G, Pawlinski B, Domino M. 2023. The Role of NF-κB in Endometrial Diseases in Humans and Animals: A Review. Int J Mol Sci. 24(3). doi:10.3390/ijms24032901.
- Costa MM, Cardo M, Ruano Z, Alho AM, Dinis-Teixeira J, Aguiar P, Leite A. 2023. Effectiveness of antimicrobial interventions directed at tackling antimicrobial resistance in animal production: A systematic review and meta-analysis. Prev Vet Med. 218. doi:10.1016/j.prevetmed.2023.106002.
- Pereira AL, Mateus TL, Llana L, Vieira-Pinto MM, Madeira de Carvalho LM. 2023. Gastrointestinal Parasites in Iberian Wolf (*Canis lupus signatus*) from the Iberian Peninsula. Parasitologia. 3(1):15–32. doi:10.3390/parasitologia3010003.





# Appendix 18

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PhD and master thesis in the last academic three years.

## PhD and master thesis in the last academic three academic years

### PhD Dissertations. Academic Year 2020-2021

- Amaral ASP. 2021. New insights on the inhibition of neutrophil extracellular traps enzymes in equine endometrium [dissertation]. Lisboa: FMV-Universidade de Lisboa.
- Batista MR. 2020. Notch and Wnt signaling interplay on regulation of early embryo development [dissertation]. Lisboa: FMV-Universidade de Lisboa.
- Belas AJI. 2021. Extended-spectrum-beta-lactamases, cephalosporinases and carbapenemase-producing *Escherichia coli* in the human-dog interface [dissertation]. Lisboa: FMV-Universidade de Lisboa.
- Santos MAF. 2020. Cytokine gene expression and cellular immune response in dogs with leishmaniosis before and under the two first-line treatment protocols: new insights into the animal disease [dissertation]. Lisboa: FMV-Universidade de Lisboa.
- Silva MFS. 2021. Bovine genital campylobacteriosis: new insights into the molecular diagnosis and pathogenesis [dissertation]. Lisboa: FMV-Universidade de Lisboa.
- Silva RPF. 2021. Óleo de soja e vitamina E: efeitos nos parâmetros produtivos e na qualidade da carne de vitelos de raça Holstein-Frísia [Tese de Doutoramento]. Lisboa: FMV-Universidade de Lisboa.

### PhD Dissertations. Academic Year 2021-2022

- Coelho DFM. 2022. Improving the nutritional value of microalgae for feeding pigs through the use of novel enzymes [dissertation]. Lisboa: FMV-Universidade de Lisboa.
- Cunha ESG. 2021. Periodontal disease in dogs: an experimental approach towards prevention using antimicrobial peptides [dissertation]. Lisboa: FMV-Universidade de Lisboa.
- Delgado ILS. 2022. Unraveling the replication process of *Toxoplasma gondii* through the MOB1 protein [dissertation]. Lisboa: FMV-Universidade de Lisboa.
- Gameiro AP. 2022. Improving feline mammary carcinoma treatment through HER2-related immunochemotherapy agents and biomarkers [dissertation]. Lisboa: FMV-Universidade de Lisboa.
- Grilo MLA. 2022. Mesophilic *Aeromonas* in threatened Iberian leuciscids : conservation and public health implications [dissertation]. Lisboa: FMV-Universidade de Lisboa.
- Nascimento ACG. 2022. Characterization of immune responses in feline mammary carcinoma towards the development of improved diagnostic tools and molecular therapies [dissertation]. Lisboa: FMV-Universidade de Lisboa.
- Pereira GS. 2022. Cytological endometritis in dairy cattle: new insights into pathogenesis, diagnosis and treatment [dissertation]. Lisboa: FMV-Universidade de Lisboa.

### PhD Dissertations. Academic Year 2022-2023

- Bento MCRM. 2023. Evaluation of morbillivirus and herpesvirus infection in cetaceans stranded along the portuguese coastline [dissertation]. Lisboa: FMV-Universidade de Lisboa.
- Martins APNR. 2023. New approaches to the study of neurorehabilitation protocols in dogs and cats with acute or chronic spinal cord injury with or without deep pain sensation and possible spinal shock signs [Dissertation]. Lisboa: FMV-Universidade de Lisboa.
- Moreira JCGA. 2023. Mare endometrium fibrosis: epigenetics and novel fibrosis markers [dissertation]. Lisboa: FMV-Universidade de Lisboa.
- Santos FAA. 2022. Impact of leporid viral diseases in Iberian ecosystems: emergence, pathophysiology, prophylaxis and diagnosis [dissertation]. Lisboa: FMV-Universidade de Lisboa.
- Silva BRFD. 2023. Retinal erythropoietin distribution and neuroprotective effect in a nanoparticulate drug delivery system after subconjunctival and topical administration in an animal glaucoma model [dissertation]. Lisboa: FMV-Universidade de Lisboa.



### **Master's theses in English. Academic Year 2020-2021**

- Antunes MIC. 2021. Prevalence of gastrointestinal parasites and anthelmintic efficacy in sheep and goats under different management and deworming systems in the region of Lisbon and Tagus Valley, Portugal [master's thesis]. Lisboa: FMV-Universidade de Lisboa.
- Aragão MFMFO. 2020. Assessment of interaction between antibiotics and local anaesthetics in equine bacterial pathogens [master's thesis]. Lisboa: FMV-Universidade de Lisboa.
- Capela MF. 2021. Risk factors and prognostic indicators following removal of oesophageal and gastric foreign bodies in dogs and cats [master's thesis]. Lisboa: FMV-Universidade de Lisboa.
- Carreira MAA. 2021. Short-term complications following a TPLO surgery: retrospective study of 38 cases [master's thesis]. Lisboa: FMV-Universidade de Lisboa.
- Carriço JIA. 2021. Genetic diversity of the California sea lion assessed by pedigree analysis [master's thesis]. Lisboa: FMV-Universidade de Lisboa.
- Carvalho MAF. 2021. Diagnosis and management of naturally occurring hypercortisolism by primary care veterinarians in western europe : current trends [master's thesis]. Lisboa: FMV-Universidade de Lisboa.
- Costa ACA. 2021. Serological surveillance of West Nile virus and molecular diagnostic of West Nile virus, Usutu virus, avian influenza and Newcastle disease virus in wild birds of Portugal [master's thesis]. Lisboa: FMV-Universidade de Lisboa.
- Dias ABM. 2021. Recurrent nephrosplenic entrapment: a review of cases, shortterm and longterm outcome after laparoscopic nephrosplenic space closure with barbed knotless suture in horses [master's thesis]. Lisboa: FMV-Universidade de Lisboa.
- Fernandes BAP. 2021. The use of an animated video as a therapeutic owner education tool on canine atopic dermatitis: a randomised pilot study [master's thesis]. Lisboa: FMV-Universidade de Lisboa.
- Fernandes MC. 2021. Antibiotic resistance and virulence profiles of gram-negative bacteria isolated from loggerhead sea turtles (*Caretta caretta*) of the Island of Maio, Cape Verde [master's thesis]. Lisboa: FMV-Universidade de Lisboa.
- Ferreira ARI. 2021. The effects of environmental factors on mortality and complex gill disease in Scottish farmed Atlantic salmon (*Salmo salar* L.) using a time series analysis [master's thesis]. Lisboa: FMV-Universidade de Lisboa.
- Gaspar MIC. 2021. A survey of the attitudes, beliefs and knowledge about medical cannabis among vegetarians, veterinary students and atopic dog owners [master's thesis]. Lisboa: FMV-Universidade de Lisboa.
- Geraldes CS. 2021. Evaluation of a biocide used in the Biological Isolation and Containment Unit of the Veterinary Teaching Hospital of the FMV-ULisboa [master's thesis]. Lisboa: FMV-Universidade de Lisboa.
- Goulão JPP. 2021. Influence of metabolic stress in bovine fetal development: an allometric study [master's thesis]. Lisboa: FMV-Universidade de Lisboa.
- Inácio ACMRA. 2020. Impact of starvation on fat and microbial load in the house cricket (*Acheta domestica*) used for food [master's thesis]. Lisboa: FMV-Universidade de Lisboa.
- Jesus LCF. 2021. Xanthinuria secondary to allopurinol therapy in dogs with canine leishmaniosis: current perspectives of the Iberian Veterinary Community [master's thesis]. Lisboa: FMV-Universidade de Lisboa.
- Leandro MG. 2021. Biosecurity and risk of disease introduction and spread in Mediterranean seabass and seabream farms [master's thesis]. Lisboa: FMV-Universidade de Lisboa.

- Lima CAM. 2020. Post-surgical outcome of the ventral slot procedure for cervical intervertebral disc disease in dogs [master's thesis]. Lisboa: FMV-Universidade de Lisboa.
- Maximino MM. 2021. Risk factors for infectious diseases recorded in cats attending a Veterinary Teaching Hospital Isolation Unit in Portugal [master's thesis]. Lisboa: FMV-Universidade de Lisboa.
- Mendes BDP. 2020. Etiology of neonatal diarrhea in calves in Lower Bavaria, Germany [master's thesis]. Lisboa: FMV-Universidade de Lisboa
- Mendoza BCG. 2020. The effect of prednisolone therapy on canine serum levels of 1,2-o-dilauryl-rac-glycero glutaric acid-(6'-methylresorufin) ester (DGGR) lipase [master's thesis]. Lisboa: FMV-Universidade de Lisboa
- Mil-Homens MP. 2020. Biosecurity in dairy cattle farms in the North and Centre of Portugal [master's thesis]. Lisboa: FMV-Universidade de Lisboa.
- Monterio MNEM. 2021. Clinical management of canine leishmaniosis in Portugal : the veterinary community perspective [master's thesis]. Lisboa: FMV-Universidade de Lisboa
- Nascimento MDL. 2020. Characterization of the intestinal microbiome of the recovering eurasian griffon vulture (*Gyps fulvus*) in mainland Portugal [master's thesis]. Lisboa: FMV-Universidade de Lisboa.
- Nazaré ASR. 2021. Complications and surgical outcome in dogs with otitis media undergoing total ear canal ablation and lateral bulla osteotomy : a retrospective study of 37 cases [master's thesis]. Lisboa: FMV-Universidade de Lisboa.
- Ornelas MAS. 2021. Electronic sow feeding : making sense of feeding data to support sow management [master's thesis]. Lisboa: FMV-Universidade de Lisboa
- Osório JVC. 2020. Mucosal and physiological responses of Atlantic salmon (*Salmo salar*) in brackish water RAS following peracetic acid-based disinfection [master's thesis]. Lisboa: FMV-Universidade de Lisboa
- Santos FMB. 2021. Canine lymphoma immunophenotype prevalence and predisposition and evaluation of SN38 to be used in an antibody-drug conjugate for B-cell lymphoma treatment [master's thesis]. Lisboa: FMV-Universidade de Lisboa
- Silva IC. 2021. Urinary tract infection in companion animals : does the treatment influences transmission and colonization by Esbl, AmpC and Carbapenemase producing Enterobacterales to human? [master's thesis]. Lisboa: FMV-Universidade de Lisboa.
- Silva LCAF. 2021. Habitat selection by free-roaming domestic dogs in Indonesia : rural versus urban setting [master's thesis]. Lisboa: FMV-Universidade de Lisboa.
- Silva PGBP. 2021. Dynamics of companion animal to human transmission of antimicrobial resistance, during skin and soft tissue companion animal infection [master's thesis]. Lisboa: FMV-Universidades de Lisboa.

### **Master's theses in Portuguese. Academic Year 2020-2021**

- Afonso JC. 2021. A clusterina urinária como biomarcador para o diagnóstico precoce de doença renal crónica em felídeos [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Alcaçarenho ACR. 2021. Avaliação quantitativa do desperdício alimentar na Santa Casa da Misericórdia da Golegã [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Anastácio CM. 2021. Besnoitiose bovina num efetivo leiteiro infetado endemicamente [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Antunes IOBM. 2021. Avaliação da evolução genética de um efetivo de bovinos Aberdeen-angus [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Armés CGSS. 2021. Pes varus em Dachshund [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.

- Banheiro AIE. 2021. Condição corporal em cães: relação com o estilo de vida e características do animal e do titular [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Baptista ARN. 2020. Protetores gastrointestinais em clínica de animais companhia: da farmácia galénica às atuais recomendações [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Bento MCS. 2020. Relação entre o padrão de vascularização testicular e a qualidade do ejaculado em canídeos da raça Retriever do Labrador [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Bettencourt AHP. 2021. A atuação do médico veterinário na maximização reprodutiva de uma vacada de carne intervalo entre partos da raça Mertolenga como caso de estudo [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Branco BB. 2020. Determinação do volume prostático em cães orquiectomizados e fatores que o influenciam [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Branco SV. 2020. Avaliação de lesões de reabsorção dentária em felinos: estudo retrospectivo de 152 casos clínicos [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Camões AFB. 2021. Protocolo terapêutico alternativo com oclacitinib para dermatite atópica canina: uma solução capaz de reduzir custos? [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Campos MMRF. 2021. Pesquisa de parasitas gastrointestinais em *Mustela putorius furo* (furão-doméstico) [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Carmo EMCD. 2020. Impacto do encolostramento na morbilidade, mortalidade e crescimento de vitelos leiteiros [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Carreira MLP. 2021. Infecção por retrovírus e linfoma em felídeos: avaliação do prognóstico e taxas de sobrevivência [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Carvalho AJS. 2020. Calicivirose felina : um estudo retrospectivo [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Carvalho ARM. 2021. Identificação morfológica e molecular de ixodídeos e o seu potencial zoonótico no âmbito da saúde pública [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Carvalho FMCSS. 2021. Hospitais de campanha em medicina veterinária: proposta de adaptação da medicina humana [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Carvalho IPSF. 2021. Estudo preliminar da utilização da placa de análise de posição como meio complementar do estudo da displasia de anca em *Cannis familiaris* [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Carvalho ML. 2021. Parasitismo gastrointestinal e respiratório em cães de trabalho, de companhia e de alojamentos sem fins lucrativos no distrito de Portalegre [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Carvalho NTMV. 2020. Análise do benefício clínico e económico da cultura bacteriana em vacaria no apoio ao tratamento da mastite clínica [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Castro SOP. 2021. Estudo epidemiológico e clínico sobre *Thelazia callipaeda* em animais de companhia em Portugal [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Catana MFS. 2020. Hipertensão arterial sistémica em canídeos e felídeos [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Chaves JPV. 2021. Atualização de um sistema de gestão de segurança dos alimentos e sua migração do referencial ISO 22000 para FSSC 22000 numa unidade de processamento de carne [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Coelho FMLS. 2021. Análise do tempo de sobrevida após o diagnóstico de meningioma intracraniano canino e sua relação com os sinais neurológicos, localização tumoral e tratamento instituído [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.

- Coimbra DV. 2020. Relação entre a 1,2-o-dilauril-rac-glicero-3-ácido glutárico-(6'-metilresorufina) éster (DGGR) Lipase e ecografia pancreática em felinos [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Cordeiro TDM. 2020. Resolução não invasiva de fraturas mandibulares traumáticas em gatos : estudo retrospectivo [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Cosme ARM. 2021. Alterações ecográficas da árvore biliar associadas à realização de cultura de bÍlis : estudo retrospectivo de 22 casos [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Costa GFSS. 2021. Rastreamento de agentes patogénicos em *Apis mellifera* nas regiões Norte e Centro de Portugal [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Costa JS. 2021. Nefrite intersticial crónica em bovinos : exame post mortem [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Costa LLM. 2021. Insulinoma em canídeos: estudo retrospectivo (2013-2020) [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Costa MRPL. 2021. Efeito da suplementação da dieta com extratos de algas e argilas na ocorrência de diarreia neonatal e nos parâmetros produtivos em leitões [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Costa PMM. 2020. Identificação de trombiculídeos (Acarina: trombiculidae) em cães e gatos e utilização terapêutica da selamectina e sarolaner [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Coutinho JACS. 2021. Estudo retrospectivo de 420 anestésias gerais em equídeos num hospital de referência em Portugal [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Cruz LP. 2021. Pesquisa de *Trypanosoma cruzi* e relato de ocorrência de helmintos gastrointestinais em gambá-de-orelha-branca (*Didelphis albiventris*) e gambá-de-orelha-preta (*Didelphis aurita*) num CRAS do município de Jundiá, estado de São Paulo, Brasil [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Curtinhal IT. 2021. Malformações congénitas associadas a hérnia peritoneopericárdica : estudo retrospectivo [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Dias AMG. 2020. Avaliação de um protocolo de quarentena para um parque oceanográfico de entretenimento educativo [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Dinis MC. 2021. Utilidade do doseamento de cortisol basal no rastreio de hipoadrenocorticismo no cão : estudo retrospectivo [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Diogo RAC. 2021. Atividade antimicrobiana in vitro da ceftriaxona encapsulada em lipossomas contra estirpes clínicas isoladas de animais de companhia com diagnóstico de infeção do trato urinário [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Eloy GNCMB. 2021. Construção de um manual de receção de matéria-prima para um processo de embalagem e comercialização de carcaças e miudezas de aves de capoeira [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Fagundes VMT. 2020. Avaliação do impacto da implementação de um programa de qualidade de leite na Ilha Terceira [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Félix MIP. 2021. Vantagens da adição de antioxidantes ao diluidor para conservação de sémen de suíno [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Fernandes CEM. 2020. Avaliação de risco químico em centros de atendimento médico veterinário: aplicação a alguns anestésicos voláteis [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Fernandes SGC. 2021. Avaliação de eficiência de ordenha e do seu impacto na exploração leiteira em efetivos da região Sul de Portugal [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Ferreira CCA. 2021. Influência do ambiente nos valores de pressão arterial em gatos [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.

- Ferreira CJDRR. 2021. Abordagem clínica em casos de ingestão de corpos estranhos em cães [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Figueiredo FCBM. 2021. Variação nos parâmetros de locomoção usados para avaliação do grau de claudicação em cavalos em linha reta e em círculo, em piso duro e piso mole [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Florindo TAR. 2021. Avaliação de pneumonias de bovinos abatidos num matadouro da região Oeste do Continente Português [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Fonseca CAM. 2021. O papel da neuroreabilitação em cães com mielomálica [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Forte MFRMP. 2021. Classificação de anemias em cães através de diferentes métodos analíticos [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Freitas MITGP. 2020. Prevalência de parasitas gastrointestinais e cardiorrespiratórios em gatos domésticos na Área Metropolitana de Lisboa [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Gameiro AP. 2021. Análise de imagens de tomografia computadorizada para determinação da área de superfície corporal em cães (*Canis lupus familiaris*) [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Gameiro SS. 2021. Condições hígio-sanitárias de alguns estabelecimentos de restauração e qualidade microbiológica de alimentos neles produzidos [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Gomes AG. 2021. Rastreio parasitológico em mamíferos exóticos atendidos no Hospital Escolar Veterinário da FMV-ULisboa [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Gomes EMJ. 2020. Proposta de score clínico para a conjuntivite alérgica canina [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Gomes JCF. 2021. A medicina veterinária e a resistência aos antimicrobianos em contexto "one health" : a proposta de uma ferramenta de apoio à prescrição de antimicrobianos de uso veterinário [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Guimarães ASP. 2021. Sazonalidade do ciclo éstrico nas cadelas das raças cão de fila de São Miguel e barbado da Terceira [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Gusmão RRVA. 2021. Resolução de hérnias discais por mínima invasão [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Hipólito MVS. 2021. Comparação entre o uso de colostro de substituição ou de colostro materno nos níveis de imunoglobulinas sanguíneas e de morbilidade em vitelos [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Jacinto SC. 2021. Doenças histiocíticas em cães: estudo de casos [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Leites IJC. 2021. Variabilidade individual do sêmen criopreservado em bodes de raça serpentina [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Lira APA. 2021. Cirurgia de mínima invasão : ovariectomia laparoscópica em cadelas [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Lopes ID. 2021. Comparação de características histológicas e fenotípicas de linfoma entre gatos com e sem infeção retroviral (FIV e/ou FeLV) [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Martins JB. 2021. Modelação de imagens 2D para impressão de guias tridimensionais em casos de osteotomia de nivelamento do plateau tibial [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.

- Martins MC. 2021. Impacto dos períodos de calor extremo na saúde dos animais de companhia: um estudo exploratório em cães residentes na área metropolitana de Lisboa [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Melo RM. 2021. Estudo retrospectivo dos traumatismos ortopédicos em animais de companhia num hospital de referência em Lisboa [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Monteiro ITRA. 2021. Parâmetros reprodutivos de uma vacada de raça alentejana infetada com leptospirose e análise dos custos diretos da doença [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Oliveira MF. 2021. Utilização de gentamicina por nebulização associada a cinesioterapia respiratória no tratamento da doença do trato respiratório inferior em cães [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Oliveira RS. 2021. Avaliação de procedimentos e práticas de higiene das mãos e de superfícies que contactam com alimentos: estudo transversal observacional em estabelecimentos de venda a retalho de produtos da pesca frescos nos Mercados Municipais de Lisboa [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Pacheco HMC. 2021. Utilização de modelos multi-evento captura-marcação-recaptura para determinar parâmetros epidemiológicos e o desempenho de testes de diagnóstico serológicos: exemplo da mixomatose e doença hemorrágica viral do coelho [dissertação de mestrado]. Lisboa: Universidade de Lisboa.
- Pais VP. 2020. Critérios de seleção de lentes intraoculares na cirurgia de cataratas por facoemulsificação em cães [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Paizinho AFDR. 2021. Efeitos secundários da quimioterapia antineoplásica e o seu impacto na qualidade de vida dos animais de companhia [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Pardal RR. 2021. Seroprevalência de *Encephalitozoon cuniculi* num grupo de 32 coelhos de estimação sintomáticos [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Picanço AFS. 2020. Influência dos fatores predisponentes de distocia na sobrevivência do vitelo e vaca [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Pina MPP. 2020. Tratamento cirúrgico de shunts portossistémicos congénitos em cães: estudo retrospectivo de 13 casos clínicos [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Pinhão APB. 2021. Investigação retrospectiva dos casos de infeções multirresistentes em cães e gatos internados na Unidade de Isolamento e Contenção Biológica do Hospital Escolar [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Pinto CA. 2021. Rastreio de *L. infantum* no cão de gado transmontano, nos concelhos de Bragança, Vinhais, Macedo de Cavaleiros, Chaves e Montalegre [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Pires ACJ. 2020. Avaliação quantitativa de alguns parâmetros ecocardiográficos no cão e gato: estudo transversal de 114 caso [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Pires MIG. 2020. Redução do teor de sal em fiambre de peru [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Plácido MR. 2020. Gestão da qualidade em instituições zoológicas: requisitos de bem-estar animal e avaliação no serviço prestado [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Rebello DFB. 2021. Caracterização das infeções por *Leptospira* spp. em cães internados na Unidade de Isolamento e Contenção Biológica do Hospital Escolar da FMV-ULisboa no período de 2013-2019 [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Rebocho RC. 2021. A utilização do pivalato de desoxicorticosterona pela comunidade médica veterinária : a perspetiva da Europa Ocidental [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Rocha PAB. 2020. Estudo retrospectivo sobre gastrotomias no tratamento de sobrecarga gástrica em coelhos [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.

- Rocha PCC. 2021. Estudo de ocorrência de glioblastoma em pequenos animais e desenvolvimento de um sistema de entrega de fármacos por lipossomas encapsulados com panobinostat [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Rodrigues IML. 2021. Saúde mental em estudantes de Medicina Veterinária: burnout e ansiedade durante a pandemia COVID-19 [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Rodrigues MCT. 2021. Estudo retrospectivo da litíase urinária em cães e gatos [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Rodrigues PT. 2020. Apresentação clínica do hipoadrenocorticismo canino: estudo retrospectivo [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Rodrigues RL. 2021. Efeito da gabapentina no comportamento de felinos submetidos a ovariectomia/orquiectomia em contexto de reavaliação pós-cirúrgica [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Roque HMCMA. 2021. *Pseudomonas* spp. em répteis de companhia : um estudo retrospectivo [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Rousseau JF. 2020. Novas metodologias aplicadas ao estudo da epidemiologia da sarna sarcóptica em carnívoros silvestres [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Santos AMAR. 2021. Leptospirose canina: estudo retrospectivo sobre a relação entre as alterações hematológicas, achados ecográficos e desfecho clínico [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Santos CCC. 2021. Carcinoma de células escamosas da cabeça em gato: caracterização com recurso a tomografia [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Santos SIH. 2020. Parasitas respiratórios, gastrointestinais e auriculares em gatos de colónia, na Casa dos Animais de Lisboa [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Santos VS. 2021. Infecções concomitantes em felídeos infetados com o vírus da imunodeficiência felina [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Sequeira CIL. 2021. Infecção por *Leishmania* spp./Leishmaniose em gatos na Península de Setúbal [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Sequeira JB. 2020. Estudo epidemiológico de espécies de *Culicoides* capturados perto de equinos no noroeste da Alemanha [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Silva ACHSN. 2020. Deposição de colagénio na placenta equina: possível relação com a idade da égua e peso do poldro [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Silva AMBB. 2021. Descrição e desfecho clínico de 440 casos de equídeos admitidos em urgência hospitalar [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Silva DAD. 2021. Estudo sanitário de um apiário da região centro Portugal : identificação, monitorização e controlo dos principais agentes etiológicos [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Silva DSD. 2020. Piómetra na cadela e na gata: caracterização dos perfis de virulência de isolados de *Escherichia coli* e sua relação com o tipo de piómetra [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Silva ELC. 2021. Validação de sistemas HACCP aplicados a matadouros de suínos [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Silva MAL. 2021. Avaliação retrospectiva da resposta ao tratamento cirúrgico da gengivostomatite crónica em gatos infetados com o vírus da leucemia felina [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Silva SHC. 2020. Uso de métodos radiográficos quantitativos para deteção de doença cardíaca em gatos : um estudo retrospectivo [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.



- Soares JIA. 2021. Imobilização química de ungulados selvagens com cetamina, medetomidina e butorfanol : comparação de dois protocolos de reversão anestésica [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Soares MA. 2021. Hemangiossarcoma na base do coração em cão: revisão retrospectiva a propósito de um caso clínico [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Teixeira MP. 2021. Contribuição para o estudo da parvovirose canina no centro de Portugal [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Teixeira RPC. 2020. Rastreio de parasitas gastrointestinais e pulmonares em canídeos e felídeos da Região Autónoma dos Açores, ilhas de São Miguel e Terceira [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Valente ACMO. 2021. Hipertiroidismo felino: estudo retrospectivo de 5 casos clínicos [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Vaz AMB. 2021. Avaliação da importância do local de origem de shunts portossistémicos congénitos extrahepáticos caninos: relações putativas com idade de diagnóstico, sinais clínicos, alterações laboratoriais e rácio veia porta/aorta [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Veloso RAS. 2021. Panleucopenia viral felina: perceção do conhecimento dos titulares de gatos [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Ventura JAF. 2021. Estudo retrospectivo sobre a prevalência dos agentes etiológicos de mastites e sua sensibilidade aos antibióticos na Ilha de São Miguel [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Verdial CSS. 2020. Prevenção de infeções nosocomiais: controlo bacteriológico de superfícies hospitalares da Unidade de Isolamento e Contenção Biológica do Hospital Escolar da FMV-ULisboa [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Vicente JS. 2020. Avaliação dos impactos de fatores climáticos nos padrões de mortalidade em explorações de bovinos [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Vieira CS. 2021. Monitorização de vitelos nos primeiros 2 meses de vida em explorações leiteiras da Ilha Terceira [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Vieira JM. 2020. Parvovírus canino: capacidade preditiva do exame físico no desfecho clínico dos pacientes [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.

### **Master's theses in English. Academic Year 2021-2022**

- Alexandre MTCPM. 2022. Plasma and urinary metanephrine and normetanephrine in healthy cats : a pilot study [master's thesis]. Lisboa: FMV-Universidade de Lisboa.
- Andrade ASS. 2022. Prevalence of the causes of anemia in dogs [master's thesis]. Lisboa: FMV-Universidade de Lisboa.
- Antunes LF. 2022. Burden of disease estimation using dose-response models based on E.coli quantification in ready-to-eat meals of institutional canteens [master's thesis]. Lisboa: FMV-Universidade de Lisboa.
- Costa RIR. 2022. The use of cytologic samples as a method of evaluation of the health status of bottlenose dolphins (*Tursiops truncatus*) under human care [master's thesis]. Lisboa: FMV-Universidade de Lisboa.
- Costa RLO. 2021. Comparison of quantitative microbial risk assessment approaches using *Listeria monocytogenes* in Serra da Estrela cheese as a case study [master's thesis]. Lisboa: FMV-Universidade de Lisboa.
- Ferreira GA. 2022. Prevalence and characterization of *Aeromonas* spp. in an ex situ program for threatened freshwater fish : consequences for conservation and public health [master's thesis]. Lisboa: FMV-Universidade de Lisboa.

- Furtado FMF. 2022. Alterations in mucosal structures and key regulatory molecules of oxidative stress in Atlantic salmon (*Salmo salar* L.) induced by amoebic gill disease and oxidant-based chemotherapeutic interventions [master's thesis]. Lisboa: FMV-Universidade de Lisboa.
- Gonçalves AMNCG. 2022. Molecular diagnosis of *Mycoplasma bovis* [master's thesis]. Lisboa: FMV-Universidade de Lisboa.
- Henriques MAP. 2022. Characterization of the humoral response of domestic cats naturally infected with SARS-CoV-2 [master's thesis]. Lisboa: FMV-Universidade de Lisboa.
- Jorge DV. 2022. Virologic survey in stranded cetaceans from northern Portugal: insights on Cetacean poxvirus and Cetacean coronavirus [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Leal MM. 2022. Effect of alternative fish feed and electricity independent oxygenation in decoupled aquaponic systems [master's thesis]. Lisboa: FMV-Universidade de Lisboa.
- Martins ACP. 2022. Ultrasonographic evaluation of Fat-free mass and its relationship with physical activity in horses [master's thesis]. Lisboa: FMV-Universidade de Lisboa.
- Martins GD. 2022. Comparative study of the healing process of disbudding wounds using Bepanthene® or Cyclo Spray® [master's thesis]. Lisboa: FMV-Universidade de Lisboa.
- Melo MT. 2022. A pilot welfare assessment study in three captive african elephants (*Loxodonta africana*) at Barcelona zoo [master's thesis]. Lisboa: FMV-Universidade de Lisboa.
- Merca CMG. 2021. Application of syndromic surveillance to routinely collected swine production data for farm health management and early disease detection [master's thesis]. Lisboa: FMV-Universidade de Lisboa.
- Pinto MSN. 2021. Epicutaneous immunotherapy as a novel route of allergen administration in dogs with atopic dermatitis: a proof-of-concept study [master's thesis]. Lisboa: FMV-Universidade de Lisboa.
- Reis ARB. 2021. Topical treatment with a serotonergic drug for canine atopic dermatitis [master's thesis]. Lisboa: FMV-Universidade de Lisboa.
- Santos AAS. 2022. Retrospective analysis of 191 dogs with mitral valve disease based on tomazzo et AL.'s mitral insufficiency echocardiographic score [master's thesis]. Lisboa: FMV-Universidade de Lisboa.
- Sequeira SAC. 2022. Analysis of poultry trade networks to improve risk-based surveillance: a survey study in Gujarat Índia [master's thesis]. Lisboa: FMV-Universidade de Lisboa.
- Vieira PFGE. 2021. Studies on a yet unassigned function of an african swine fever virus protein potentially involved in the host cell response to infection [master's thesis]. Lisboa: FMV-Universidade de Lisboa.

#### **Master's theses in Portuguese. Academic Year 2021-2022**

- Agostinho AFB. 2022. Estudo retrospectivo de 12 casos de estenose nasofaríngea em gatos [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Almeida CITSR. 2022. Caracterização do parasitismo gastrointestinal em coleções de pavão comum (*Pavo cristatus*) inseridos no património cultural na região de Lisboa [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Alves APG. 2022. Picacismo na espécie *Agapornis* spp.: percepção dos detentores e influência das condições de manejo no seu desenvolvimento [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Antunes JG. 2022. Influência do stress térmico nas doenças pós-parto [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Ascensão PNF. 2022. Prevalência de parasitoses gastrointestinais em cães provenientes de canicultura no distrito de Setúbal, Portugal [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.

- Azevedo ASAMF. 2022. Comparação retrospectiva de imobilizações químicas com medetomidina-butorfanol e medetomidina-butorfanol-quetamina em ungulados selvagens em cativeiro [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Bastos IAP. 2022. Peritonite infecciosa felina: correlação entre formas clínicas e a deteção de mutações virais [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Bento JRN. 2022. Hemangiossarcoma em cães e gatos: estudo retrospectivo de 38 casos clínicos [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Bonito BM. 2022. Tendinoplastia: implantes de titânio [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Branco ARF. 2022. Avaliação da ação repelente dos óleos essenciais de tomilho (*Thymus vulgaris*) e de eucalipto (*Eucalyptus globulus*) em ixodídeos parasitas do coelho-bravo com vista ao controlo da Doença Hemorrágica Viral [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Brandão CP. 2022. Estudo da redução da contratilidade miocárdica a partir de 12 casos em cão [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Brito LMMC. 2022. A importância da rotulagem em produtos cárneos e lácteos [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Bugarim TFB. 2022. Hérnia inguinal em cavalo: revisão de 23 casos [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Buinho RAF. 2022. Acompanhamento do plano de auditoria interna no âmbito da segurança dos alimentos numa empresa de comércio grossista [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Cardoso SPA. 2022. Avaliação radiográfica das dimensões do átrio esquerdo [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Carvalho ARSS. 2021. Estudo retrospectivo da influência do uso de transfusões de plasma no prognóstico em parvovirose canina [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Carvalho CIAR. 2022. Endo-exo próteses em animais com neuropatia periférica do membro torácico [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Castro DR. 2021. Pesquisa de parasitas gastrointestinais em aves de rapina mantidas em cativeiro em Portugal [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Cavaco BMM. 2021. Análise parasitológica de tratos digestivos de tartarugas verdes juvenis (*Chelonia mydas*) provenientes do estado do Rio de Janeiro, Brasil [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Celeste SA. 2022. Estudo das variáveis associadas com a presença de metástase no linfonodo regional de cães com osteosarcoma mamário: uma avaliação retrospectiva de 260 casos [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Cerca LPMP. 2021. Quantificação objetiva da qualidade dos andamentos concentrados: comparação entre o piaffer e o trote [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Coelho JAC. 2022. Ensaio clínico sobre os benefícios analgésicos do canabidiol (CBD) em gatos com gengivoestomatite crónica submetidos a extração dentária [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Coelho JMFP. 2021. Avaliação da imunidade na doença hemorrágica viral e mixomatose em coelho bravo em Portugal [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Cordeiro BCV. 2022. Avaliação in vitro da atividade de novos fármacos no desenvolvimento de *Amyloodinium ocellatum* [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Costa RIR. 2022. The use of cytologic samples as a method of evaluation of the health status of bottlenose dolphins (*Tursiops truncatus*) under human care [master's thesis]. Lisboa: FMV-Universidade de Lisboa.

- Couteiro MCMP. 2021. Colecistite bacteriana em cães: estudo de sete casos clínicos [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Custódio CAV. 2021. Lipidose hepática felina: estudo retrospectivo [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Diogo JLN. 2022. Doenças inflamatórias encefálicas do cão : comparação entre a imagem de ressonância magnética e a análise do líquido cefalorraquidiano [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Duro IG. 2022. Contribuição para o estudo do linfoma gastrointestinal em gatos: análise retrospectiva de 19 casos clínicos [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Estevens IA. 2021. Imagiologia abdominal: ultrassonografia Vs. tomografia computadorizada em pequenos animais: estudo retrospectivo [dissertação de mestrado] Lisboa: FMV-Universidade de Lisboa.
- Fernandes JTM. 2022. O uso do LASER terapêutico classe IV no tratamento da osteoartrite do cotovelo em Canis familiaris [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Ferreira LA. 2022. Utilização de plasma autólogo no tratamento de úlceras da córnea no cão: estudo retrospectivo de 30 casos [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Ferreira MMT. 2022. Aplicação do método quick Sequential Organ Failure Assessment (qSOFA) em cães e gatos em estado crítico que dão entrada na urgência de um hospital veterinário [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Fontes AMT. 2021. Efeito da adição de zinco ao concentrado na proteção de bovinos contra a pitomicototoxicose na Ilha Terceira [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Freitas JFS. 2021. Avaliação da retenção de cobre em casos de patologia crónica no fígado de cão (Canis familiaris) [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Gameiro DAAS. 2022. Avaliação da qualidade de vida de cães com leishmaniose [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Hipólito IR. 2021. Contribuição para o estudo da síndrome de lise tumoral subclínica em cães [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Jorge AMC. 2022. Osteotomia pélvica dupla no tratamento da displasia da anca em cães : estudo retrospectivo [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Laranjo VPM. 2022. Detecção de anticorpos anti-Leishmania em roedores, lagomorfos e mustelídeos tidos como animais de companhia na Área Metropolitana de Lisboa [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Lebre INSG. 2022. Eficácia dos diluidores do kit SBS CryosSystem e do BotuCrio na criopreservação de sêmen em garanhões Puro Sangue Lusitano [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Lima GS. 2021. Vigilância das resistências aos antimicrobianos em frangos, suínos e carne das respetivas espécies em Portugal [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Lobo ACC. 2021. Rastreio parasitológico na espécie Erinaceus europaeus (Ouriço-cacheiro) [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Loureiro JT. 2022. Avaliação in vitro do potencial citotóxico da imunotoxina Moxetumomab pasudotox para o tratamento do linfoma canino [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Lourenço CF. 2022. Biossegurança em explorações de produção intensiva de perus e codornizes [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Lourenço MIL. 2022. Doença hepática nutricional em psitacídeos [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Luzia MRS. 2022. Avaliação da cardiotoxicidade da doxorubicina em cães: estudo prospetivo [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.

- Marques PCGL. 2022. Enteropatia crónica refratária na leishmaniose canina [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Martinho IDF. 2022. Avaliação do rácio crânio-tumoral no prognóstico de cães com melanoma oral maligno [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Martins VJR. 2022. Seroprevalência e fatores de risco associados à presença de Lentivírus dos pequenos ruminantes em 28 explorações no concelho de Bragança [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Melo ASP. 2021. Rastreio de formas parasitárias gastrointestinais nos equinos da Guarda Nacional Republicana de Lisboa [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Monteiro SNEM. 2022. Caracterização dos fatores associados ao abandono e adoção de cães em Lisboa [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Nascimento DEDM. 2021. Estudo tomográfico das alterações ósseas e dentárias na doença dentária dos coelhos de estimação (*Oryctolagus cuniculus*) : estudo restrospetivo [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Neves AMSP. 2021. Contribuição para a caracterização andrológica de ovinos da raça campaniça [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Noné MHD. 2021. Impacto do uso de carprofeno na resposta à dor causada por pressão em vacas leiteiras com lesões podais [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Nunes AFS. 2022. O fenómeno da contração cutânea em incisões cirúrgicas realizadas com LASER cirúrgico de CO<sub>2</sub> : estudo preliminar [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Olim AER. 2021. Infecções do trato urinário em cães com doença oncológica : estudo retrospectivo [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Oliveira IS. 2022. Avaliação de procedimentos e práticas de higiene pessoal em estabelecimentos de venda a retalho de géneros alimentícios de origem animal [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Oliveira JMG. 2021. Adrenomegália felina: qual o significado clínico? [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Pacheco MFS. 2021. Influência das condições de alojamento na temperatura superficial e no crescimento de vitelos em S. Miguel (Açores) [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Paixão MP. 2022. Tratamento cirúrgico de quilotórax : laqueação do ducto torácico e pericardiectomia subtotal por toracoscopia [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Pedro JR. 2022. Variação sazonal da composição bioquímica e bioatividade de três macroalgas (*Ericaria selaginoides*, *Bifurcaria bifurcata* e *Codium* sp.) do concelho de Cascais [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Pimentel AMV. 2022. Expressão imunohistoquímica de Ki-67 e EGFR em carcinoma de células escamosas orais em cão [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Pimentel IP. 2022. Vaginite infantil: prevalência desta afeção em cadelas pré-púberes no Hospital Referência Veterinário Montenegro [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Pinela MFL. 2022. Efeito da suplementação com dextrose no pós-desmame no desempenho reprodutivo de porcas Alentejanas [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Ramos DFF. 2021. Intoxicações em carnívoros domésticos: perceção e atitudes dos detentores [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Rebelo NSCJ. 2021. O impacto dos padrões do teste de supressão de dexametasona em baixa dose na prática clínica : estudo retrospectivo [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.

- Reis GAH. 2022. Doenças do trato respiratório inferior felino: a utilidade da broncoscopia como método de diagnóstico complementar à lavagem broncoalveolar: estudo retrospectivo de 12 casos [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Rocha ALP. 2021. Maneio reprodutivo da cadela antes e durante a gestação [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Rocha SF. 2022. Panorama do parasitismo em cães de canil e exterior, do concelho de Viseu, Portugal [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Rossini SM. 2022. Estudo piloto de tripanossomose em cães na região da Ponta do Ouro e Machangulo, Moçambique [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Santos CAS. 2022. Leptospirose: prevalência em bovinos da raça Frísia Holstein na Ilha de S. Miguel (Açores) [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Santos GNS. 2022. Biocompatibilidade e tolerância do inserto oftálmico InEye em coelhos [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Sarraguça ISAG. 2022. Fatores de risco para a prevalência de parasitas gastrointestinais e broncopulmonares em ovinos das raças Merina Branca e Merina Preta no Alentejo [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Silva BM. 2022. Avaliação da presença de NT-proBNP no líquido de derrame pleural em gatos : estudo prospetivo [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Silva GG. 2022. Controlo reprodutivo em furões (*Mustela putorius furo*) : comparação de esterilização farmacológica e esterilização cirúrgica : estudo retrospectivo 2012-2020 [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Silva JAN. 2022. Colagénio, eosinófilos e interleucina 33 no endométrio da burra [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Silva JCMP. 2021. Malformação do tipo Chiari em canídeos [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Silva MEV. 2021. Doenças fúngicas sistémicas em gatos: estudo de casos [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Soares AMS. 2021. Avaliação da concentração de vitamina B12 em gatos com suspeita clínica de triadite [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Soares JN. 2022. Avaliação de fatores de prognóstico em gatos internados com panleucopénia viral felina [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Sousa AFM. 2021. Avaliação in vitro de estratégias antimicrobianas inovadoras para controlo de otites externas por *Pseudomonas aeruginosa* no cão [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Sousa LPG. 2021. Eletroquimioterapia como tratamento de carcinoma de células escamosas em gatos : estudo retrospectivo [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Taoufiq AHT. 2021. Avaliação da eficácia de um descontaminante de partículas oxidantes aplicado por aerossol gasoso em esporos de *Bacillus cereus* [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Tavares JS. 2021. A clusterina urinária como biomarcador precoce da doença renal crónica em felídeos a realizar quimioterapia [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Valente MM. 2022. Avaliação da segurança e eficácia de um novo local anatómico de inoculação para vacinação de felídeos [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Veiga MD. 2022. Ilustração científica e a sua importância na descrição de um estudo de cirurgia reconstrutiva após rinectomia total em gato [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.

Viana ML. 2022. Influência das fontes de informação online sobre Saúde Animal nos titulares de animais de companhia e respetiva interação com o Médico Veterinário [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.

### **Master's theses in English. Academic Year 2022-2023**

Albuquerque LB. 2023. Pregnancy monitoring in the Indo-Pacific Bottlenose Dolphin (*Tursiops aduncus*) and prediction of delivery date with emphasis on fetal biometry [master's thesis]. Lisboa: FMV-Universidade de Lisboa.

Alexandre MTCPM. 2022. Plasma and urinary metanephrine and normetanephrine in healthy cats : a pilot study [master's thesis]. Lisboa: FMV-Universidade de Lisboa.

Almeida FR. 2022. Prevalence and risk factors for *Toxoplasma gondii* infection in black and white Merino lambs in Alentejo, Portugal [master's thesis]. Lisboa: FMV-Universidade de Lisboa.

Andrade ASS. 2022. Prevalence of the causes of anemia in dogs [master's thesis]. Lisboa: FMV-Universidade de Lisboa.

Antunes LF. 2022. Burden of disease estimation using dose-response models based on *E.coli* quantification in ready-to-eat meals of institutional canteens [master's thesis]. Lisboa: FMV-Universidade de Lisboa.

Aragão ARV. 2022. Relapsing meningoencephalomyelitis of unknown origin : neurological presentation, diagnostic clinicopathological findings, imaging characteristics and therapeutic management of dogs with and without relapse [master's thesis]. Lisboa: FMV-Universidade de Lisboa.

Baptista CRP. 2023. *Toxoplasma gondii* in the wild environment: using REM to estimate cat density and PCR to evaluate parasite infection in birds of prey in Italy [master's thesis]. Lisboa: FMV-Universidade de Lisboa.

Cardoso SAC. 2022. Interface de transmissão de SARS-CoV-2 de humanos para animais [master's thesis]. Lisboa: FMV-Universidade de Lisboa

Carmo MMM. 2023. SIRS in feline patients : risk factors and prognostic factors using panleukopenia as a model, in a Veterinary Teaching Hospital [master's thesis]. Lisboa: FMV-Universidade de Lisboa.

Carreira FS. 2023. Factors influencing affiliative and stereotypical behaviour expression in eight couples of scarlet macaw (*Ara macao*) from a conservation breeding centre in Costa Rica [master's thesis]. Lisboa: FMV-Universidade de Lisboa.

Cascais JG. 2023. Characterization of lameness localised to the proximal metacarpal/tarsal regions using objective gait analysis systems [master's thesis]. Lisboa: FMV-Universidade de Lisboa.

Castanho LSM. 2023. Prognostic clinical tools in healthcare: a contribution to the identification of FeLV hospitalized cats with the highest risk of death [master's thesis]. Lisboa: FMV-Universidade de Lisboa.

Claro CRFC. 2023. Glandular gastric ulcers in horses: current knowlegde and its treatment [master's thesis]. Lisboa: FMV-Universidade de Lisboa.

Costa RIR. 2022. The use of cytologic samples as a method of evaluation of the health status of bottlenose dolphins (*Tursiops truncatus*) under human care [master's thesis]. Lisboa: FMV-Universidade de Lisboa.

Couto MPC. 2022. The homeostasis of the vulture's oral microbiome and its interkingdom synergies [master's thesis]. Lisboa: FMV-Universidade de Lisboa.

Esteves LFMM. 2022. Ovulation synchronization protocols study with Italian Mediterranean buffalo cows (*Bubalus bubalis*) [master's thesis]. Lisboa: FMV-Universidade de Lisboa.

Feijão MRLD. 2022. The importance of data analysis and the effect of sire line on the reproductive and production performance of an Irish pig farm [master's thesis]. Lisboa: FMV-Universidade de Lisboa.

Fernandes RLNS. 2023. Characterization and “One Health” relevance of *Escherichia coli* isolated from wild mammals from two rescue and rehabilitation centers in Costa Rica [master Thesis]. Lisboa: FMV-Universidade de Lisboa.



- Ferreira GA. 2022. Prevalence and characterization of *Aeromonas* spp. in an ex situ program for threatened freshwater fish : consequences for conservation and public health [master's thesis]. Lisboa: FMV-Universidade de Lisboa.
- Fontes LSSP. 2023. One Health em Portugal: caracterização da colaboração multissetorial para alerta precoce, avaliação de riscos e controlo de doenças zoonóticas [master's thesis]. Lisboa: FMV-Universidade de Lisboa.
- Furtado FMF. 2022. Alterations in mucosal structures and key regulatory molecules of oxidative stress in Atlantic salmon (*Salmo salar* L.) induced by amoebic gill disease and oxidant-based chemotherapeutic interventions [master's thesis]. Lisboa: FMV-Universidade de Lisboa.
- Gomes MVD. 2023. Collating, processing and analysing pig carcass quality and condemnation data to monitor and control health and welfare in the Scottish pig industry [master's thesis]. Lisboa: FMV-Universidade de Lisboa.
- Henriques MAP. 2022. Characterization of the humoral response of domestic cats naturally infected with SARS-CoV-2 [master's thesis]. Lisboa: FMV-Universidade de Lisboa.
- Jackson EP. 2022. Analysis of dermatophyte prevalence and associated risk factors in rabbits [master's thesis]. Lisboa: FMV-Universidade de Lisboa.
- Jorge DV. 2022. Virologic survey in stranded cetaceans from northern Portugal: insights on Cetacean poxvirus and Cetacean coronavirus [master's thesis]. Lisboa: FMV-Universidade de Lisboa.
- Leal MM. 2022. Effect of alternative fish feed and electricity independent oxygenation in decoupled aquaponic systems [master's thesis]. Lisboa: FMV-Universidade de Lisboa.
- Leonardo ASR. 2022. Development of dual-targeting immunoliposomes against canine B cell lymphoma [master's thesis]. Lisboa: FMV-Universidade de Lisboa.
- Lourenço MFA. 2023. Survey of gastrointestinal parasites of non-human primates from two iberian zoos and perspectives of their integrated control [master's thesis]. Lisboa: FMV-Universidade de Lisboa.
- Lourenço MHR. 2023. In vitro evaluation of specific phages against *Pseudomonas aeruginosa* otitis isolates from dogs [master's thesis]. Lisboa: FMV-Universidade de Lisboa.
- Martins ACP. 2022. Ultrasonographic evaluation of Fat-free mass and its relationship with physical activity in horses [master's thesis]. Lisboa: FMV-Universidade de Lisboa.
- Martins GD. 2022. Comparative study of the healing process of disbudding wounds using Bepanthene® or Cyclopray® [master's thesis]. Lisboa: FMV-Universidade de Lisboa.
- Martins LMR. 2023. Effect of chronic stress on the incidence of metabolic and infectious diseases in dairy cattle [master's thesis]. Lisboa: FMV-Universidade de Lisboa.
- Matos MAO. 2022. Characterization and Public Health relevance of Enterobacteriaceae isolated from faecal samples of dogs from Santiago and Boa Vista Islands, Cape Verde [master's thesis]. Lisboa: FMV-Universidade de Lisboa.
- Melo MT. 2022. A pilot welfare assessment study in three captive african elephants (*Loxodonta africana*) at Barcelona zoo [master's thesis]. Lisboa: FMV-Universidade de Lisboa.
- Molina CCCS. 2022. Retrospective evaluation of the hospitalization outcome in dogs with clinical leishmaniosis: 31 cases [master's thesis]. Lisboa: FMV-Universidade de Lisboa.
- Monteiro DFC. 2022. Comparison between the use of timed artificial insemination protocols and observed estrus in the fertility of dairy cows in Portugal and in the United Kingdom [master's thesis]. Lisboa: FMV-Universidade de Lisboa.
- Monteiro MAV. 2023. The potential of ABT-263 as a therapeutic agent in spinal cord injury-induced peripheral pathology [master's thesis]. Lisboa: FMV-Universidade de Lisboa.

- Oliveira MMG. 2022. Quality and safety assessment of dried salted cod in a logistic operator: development of a practical visual guide to enhance procedures at the reception step [master's thesis]. Lisboa: FMV-Universidade de Lisboa.
- Ramalho SIO. 2022. Screening of blood parasites in local and migratory wild birds of Israel [master's thesis]. Lisboa: FMV-Universidade de Lisboa.
- Rodrigues SD. 2022. The impact of diet in the management of canine chronic diarrhoea : from classic to refractory cases [master's thesis]. Lisboa: FMV-Universidade de Lisboa.
- Salgueiro HSF. 2023. Validation of resistome signatures through the application of a machine learning prediction algorithm on metagenomic data [master's thesis]. Lisboa: FMV-Universidade de Lisboa.
- Santos AAS. 2022. Retrospective analysis of 191 dogs with mitral valve disease based on tomazzo et AL.'s mitral insufficiency echocardiographic score [master's thesis]. Lisboa: FMV-Universidade de Lisboa.
- Sequeira SAC. 2022. Analysis of poultry trade networks to improve risk-based surveillance: a survey study in Gujarat Índia [master's thesis]. Lisboa: FMV-Universidade de Lisboa.
- Soares SMNM. 2023. Retrospective study of blood lead poisoning in Bald Eagles (*Haliaeetus leucocephalus*) in Virginia, United States of America, from 2017 to 2021 [master's thesis]. Lisboa: Universidade de Lisboa.
- Valente SSM. 2023. Serum levels and tumor expression of TIM-3 as a promising clinical biomarker in cats with mammary carcinoma [master's thesis]. Lisboa: FMV-Universidade de Lisboa.

### **Master's theses in Portuguese. Academic Year 2022-2023**

- Afonso RAS. 2023. Saúde ocupacional em medicina veterinária: perigos e sua mitigação na utilização de fármacos antineoplásicos na prática clínica [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Alves BDG. 2023. Estudo retrospectivo de cães e gatos submetidos a nefrectomia (2011-2021) [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Alves MCS. 2023. Massas intestinais sujeitas a enterectomia parcial em canídeos: estudo retrospectivo a propósito de um caso clínico [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Amado ASG. 2022. Tumores cardíacos em canídeos e felídeos domésticos [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Anastácio PMG. 2023. Estudo ultrassonográfico da cavidade abdominal em pacientes com abdómen agudo [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Araújo MBAMM. 2023. O impacto da comunicação no luto dos detentores de animais de companhia [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Ataide MFSQ. 2023. Perfil de sensibilização de cães com dermatite atópica na Área Metropolitana de Lisboa [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Barbosa JC. 2023. Deteção de anticorpos contra agentes de transmissão vetorial em cães e gatos provenientes da África Subsariana [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Bastos JRV. 2023. Complicações e sobrevivência após cirurgia de cólica em equídeos: 69 casos [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Batarda RMRS. 2022. Efeito da estirpe e do sexo no rendimento de carcaça e qualidade nutricional da fração lipídica na carne de pato [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Bento JAS. 2023. Qualidade da amostra citológica e utilidade diagnóstica de punções ecoguiadas por agulha fina em estruturas intra-abdominais e intratorácicas de canídeos e felídeos [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.

- Cabral MJS. 2023. Ensaio de utilização de Tulatromicina em borregos de feedlot [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Caldeira PJR. 2023. Deslocamento de abomaso: fatores implicados na sobrevivência após cirurgia corretiva [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Campos MMS. 2023. Rastreamento de agentes patogénicos presentes na população adulta de *Apis mellifera* no efetivo apícola nacional [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Canavilhas XRT. 2023. Criação e implementação da plataforma de prescrição electrónica médico-veterinária em Portugal [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Carapeto SFO. 2022. Caracterização do efeito da administração de um suplemento alimentar na microbiota intestinal de cães [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Caravela MR. 2022. Avaliação da biossegurança em explorações de suínos em regime extensivo [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Cardoso IM. 2023. Imunossupressão e toxicidade renal como efeitos adversos de quimioterapia metronómica no tratamento de neoplasias em pequenos animais [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Cardoso MMC. 2022. Fatores de risco para o desenvolvimento de linfoma canino: estudo retrospectivo do tipo caso-controlo de 100 casos clínicos [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Carramanho ACJS. 2023. Hepatite crónica canina: estudo retrospectivo de 19 casos clínicos (2011-2022) [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Carreiro JMC. 2023. A qualidade da carne bovina: o valor da certificação [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Carrilho AM. 2023. Discinesia paroxística em cães: estudo de 7 casos clínicos [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Coelho CMS. 2023. Identificação de fatores de risco para claudicação em vacas leiteiras da ilha Terceira [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Correia RBG. 2023. Estudo retrospectivo sobre fatores de risco para a mortalidade peri-cirúrgica em gatos (2020 – 2022) [dissertação de mestrado]. Lisboa: Universidade de Lisboa.
- Cruz ARM. 2023. Estudo preliminar da variação do dióxido de carbono total e do cálcio ionizado em cães politraumatizados e os seus papéis como fator prognóstico ao doente [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Duarte CM. 2022. Géneros alimentícios de origem animal : análise das exportações portuguesas entre 2015 e 2020 [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Duarte MRRR. 2023. Impacto da pandemia COVID-19 nos hábitos e condição corporal dos animais de companhia [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Duque IRC. 2022. Influência dos parâmetros hematológicos pré-cirúrgicos no prognóstico de hemangiossarcoma esplénico canino [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Ferreira JMM. 2023. Detecção de bactérias patogénicas em aquacultura por métodos moleculares [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Ferreira MPCCD. 2022. Biossegurança na interface animais domésticos e de caça maior em zonas de caça na região sul de Portugal [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Fontes LSSP. 2023. One Health em Portugal : caracterização da colaboração multissetorial para alerta precoce, avaliação de riscos e controlo de doenças zoonóticas [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Furtado IC. 2022. Sinus dermoide tipo VI associado a espinha bífida em leão da Rodésia [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.

- Gama IG. 2023. Caracterização do parasitismo pulmonar em *Erinaceus europaeus* no sul de Portugal [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Gamito LM. 2023. Caracterização do fenótipo do cão e das interações cão-pessoa em visitas para adoção no centro de recolha oficial de Sintra, Portugal [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Gonçalves AFM. 2023. Prevalência de protozoários do género *Trichomonas* em aves selvagens em centros de recuperação de Portugal [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Gouveia ACA. 2023. Etiologia das uveítes em cães : estudo retrospectivo de 105 casos clínicos na região de Lisboa [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Gouveia GPF. 2022. Avaliação da expressão imunohistoquímica de EGFR e KI-67 em carcinoma de células escamosas oral em gato [dissertação de mestrado]. Lisboa: FMV, Universidade de Lisboa.
- Guerra VA. 2022. Caracterização da ocorrência de cesarianas de urgência e eletivas na espécie canina [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Guerreiro MVG. 2023. Utilização de um medidor de cálcio ionizado numa vacaria de produção de leite para manejo da hipocalcemia subclínica [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Jardim JFG. 2023. Estudo parasitológico de cinco parques caninos na área metropolitana de Lisboa [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Leitão MTPC. 2023. Prevalência da febre Q em leite de tanque de vacarias do centro litoral de Portugal [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Lima RMC. 2022. Efeito do período de glicerolização na viabilidade espermática do sêmen descongelado de carneiros de raça campaniça [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Lopes CC. 2023. Doenças da glândula salivar zigomática : estudo retrospectivo de 17 casos clínicos [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Lopes IAS. 2023. Estudo prospetivo da avaliação de dor oral em gatos com doenças dentárias [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Lopes RT. 2022. Análise custo-eficácia de dois programas de controlo da ascaridiose em explorações intensivas de suínos [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Macedo CAA. 2022. Caracterização da casuística de osteoartrite do tarso em cavalos de patrulha no período de 3 de janeiro a 31 de março de 2022 [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Magalhães SF. 2022. Ideação suicida em médicos veterinários em Portugal, um projeto de estudo [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Maio RLRF. 2022. Estudo comparativo de dois protocolos de indução de ovulação múltipla em fêmeas bovinas da raça Limousine no Sul de Portugal [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Martins SC. 2022. Caracterização dos parasitas gastrointestinais em pequenos mamíferos de companhia [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Mateus ALT. 2022. Rastreio parasitológico em lagomorfos, roedores e petauros do açúcar, através das técnicas de esfregaço fecal e Mini-FLOTAC [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Medeiros FF. 2022. Aplicações da proteína C reativa na prática clínica veterinária : estudo de 19 casos [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Melo FJF. 2023. Análise dos resultados dos controlos oficiais no âmbito do PACE GA, de 2018 a 2020, em diferentes setores de atividade da área alimentar [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.

- Monteiro RA. 2023. Impacto de doenças puerperais mais frequentes sobre a fertilidade e longevidade em vacas leiteiras [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Moura BP. 2022. Controlo da qualidade e segurança de artigos de carne numa unidade logística do retalho alimentar : receção de mercadorias e avaliação de fornecedores [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Naldo MC. 2022. Estudo da exequibilidade de um protocolo de avaliação de bem-estar em manadas de vacas de carne em Moçambique e Portugal [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Nascimento DFM. 2022. Estudo preliminar sobre a malformação de desenvolvimento anorectal : Atresia ani tipo IV em *Felis catus* [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Nascimento JMMLP. 2023. Estudo observacional sobre aplicação da ozonoterapia em cães com doença osteoarticular [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- NEL LR. 2023. Estudo da validade e exequibilidade de um protocolo para avaliação de bem-estar animal em vacadas de carne [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Oliveira MMMPC. 2023. Utilização de sondas de alimentação em gatos hospitalizados com doença renal crónica : estudo retrospectivo de 63 casos clínicos (2018-2023) [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Pereira CLB. 2023. Enteropatia com perda de proteína em cães : dos sinais clínicos ao prognóstico : estudo retrospectivo de 30 casos clínicos [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Pereira DP. 2022. Próteses de tróclea femoral feitas por medida [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Pereira RN. 2023. A influência de fatores ambientais, comportamentais e a eficácia da desparasitação na carga e prevalência de parasitas gastrointestinais de slow loris (*Nycticebus javanicus* e *nycticebus coucang*) e cuscus (*Phalanger gymnotis*), num centro de recuperação da Indonésia [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Quintal LTF. 2022. Helmintofauna gastrointestinal de *Rattus rattus* e *Rattus norvegicus* nas áreas portuárias de Lisboa e Ponta Delgada, Portugal [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Ribeiro LFS. 2023. Estudo retrospectivo para caracterização de artroscopias eletivas para tratamento de osteocondrose dissecante num hospital de referência em Portugal [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Rodrigues IM. 2023. Análise da relação custo-benefício da vacinação para IBR e BVD em explorações de bovinos em extensivo [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Rodrigues MTF. 2022. Caracterização da população sénior felina internada na Unidade de Isolamento e Contenção Biológica do Hospital Escolar da FMV-ULisboa no período de 2014 a 2021 [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Rosa CD. 2023. Avaliação do corpo lúteo de éguas recetoras de embriões e sua relação com a progesterona [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Rosa DAL. 2023. Doença esquelético-dentária em cães de raça yorkshire terrier : estudo retrospectivo [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Rosa MF. 2023. Avaliação da doença mixomatosa da válvula mitral (DMVM) entre os estádios ACVIM B1 E B2, principais sinais clínicos e alterações ecocardiográficas: um estudo retrospectivo com 71 casos clínicos [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Saavedra MABC. 2023. Utilização de farinha de inseto na alimentação de galinhas poedeiras [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Saguer RSFG. 2022. Diagnóstico por imagem de nódulos e massas na cavidade torácica [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.

- Silva ARO. 2023. Prevalência de cardiomiopatia hipertrófica subclínica em gatos aparentemente saudáveis com idade igual ou superior a 7 anos na zona da Grande Lisboa [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Silva BIS. 2023. O potencial das ferramentas digitais no incentivo ao cumprimento de programas vacinais por detentores de cães [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Silva DS. 2023. Avaliação de procedimentos e práticas de higiene de superfícies que contactam com géneros alimentícios: estudo transversal e observacional em refeitórios escolares [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Silva MFA. 2023. Abordagem clínica de intoxicações por raticidas anticoagulantes em animais de companhia [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Silva MMTR. 2022. Comparação dos lípidos do estrato córneo de cães labrador retriever com e sem dermatite atópica : análise lipidómica [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Silva PJA. 2022. Avaliação e categorização do risco presente nas frutas minimamente processadas prontas para consumo [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Silva RBC. 2023. Os diferentes biomateriais osteoindutivos e osteocondutivos utilizados na reconstrução dos defeitos ósseos no doente de ortopedia e traumatologia [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Silveira IMF. 2023. Estudo de insetos potenciais vetores de agentes infecciosos na área de atividade do Centro de Estudos e Recuperação de Animais Selvagens de Castelo Branco [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Simão RM. 2022. Reabilitação em animais de companhia : estudo de caso [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Sipas VL. 2023. Acompanhamento clínico de éguas e poldros : fatores associados à falha de imunidade passiva em poldros [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Tavares AROM. 2023. Padrões de Resistência aos antibióticos de *Staphylococcus* spp. isolados de infeções da pele e tecidos moles em animais de companhia, Portugal (2020-2021) [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Tavares IR. 2023. Avaliação da sobrevivência comparada em animais com shunt portossistémico após tratamento médico ou cirúrgico [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Tavares MN. 2023. Estudo prospetivo dos valores radiográficos de referencia do tamanho da silueta cardíaca do cobaio (*Cavia porcellus*) [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Valadas ASJBL. 2022. Rastreio parasitológico de aves da região Sul de Portugal em ambiente de clínica [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.
- Vasconcelos MMBGA. 2023. A epigenética e o colagénio em placentas de éguas jovens e velha [dissertação de mestrado]. Lisboa: FMV-Universidade de Lisboa.