# Hybrid Professional Master's Degree

## Exotic Animal Medicine and Surgery

tech global university

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# Hybrid Professional Master's Degree
## Exotic Animal Medicine and Surgery

Modality: **Hybrid (Online + Clinical Internship)**

Duration: **12 months**

Certificate: **TECH Global University**

Recognition: **60 + 5 ECTS Credits**

Teaching Hours: **1,620 h.**

Website: **www.techtitute.com/pk/veterinary-medicine/hybrid-professional-master-degree/hybrid-professional-master-degree-exotic-animal-medicine-surgery**

# Index

01

# Introduction

It is becoming more and more common to find pets belonging to exotic species, which have gradually become pets in many homes. For this reason, the demand for veterinarians specialized in the care of this type of animals, whose diseases are sometimes complex to treat, has grown. Similarly, natural environments and zoos need experts in these species, so it is necessary for the professional to have specific and updated knowledge. In this sense, TECH has designed this program, which covers from an advanced agenda, the set of exotic species that usually come to veterinary clinics and their approach.  To complete this program, a practical stay of 3 weeks in a veterinary center of reference, where the specialist will achieve an update on the most effective treatments and surgical techniques used, with the help of the best experts.

*This Hybrid Professional Master's Degree is the opportunity you were looking for to update your knowledge in Exotic Animal Medicine and Surgery, with the help of the best specialists"*

The passion for animals has led to the increasing introduction of animals such as rodents, reptiles or birds, which are not found in their natural habitat, but become part of homes. This leads to the proliferation of diseases, which require precise and specialized attention from veterinarians. Their excellent mastery in this field makes them widely demanded by clinics, zoos and recovery centers, in charge of promoting research and conservation of species.

In this scenario, the professional must be constantly updated, to be able to offer a much more accurate care in the diagnoses and treatments applied. That is why TECH has created this Hybrid Professional Master's Degree in Exotic Animal Medicine and Surgery, which provides a theoretical and practical perspective through the knowledge provided by an excellent specialized teaching team.

A Hybrid Professional Master's Degree that deepens through a syllabus taught in 100% online mode in areas such as nutrition in lagomorphs and rodents, the facilities where fish should grow or clinical management and application of preventive medicine in the main exotic species. All this with multimedia teaching resources that can be easily accessed from any electronic device with an Internet connection.

This theoretical stage is followed by a Clinical Internship in a prestigious clinical center, which will allow the students to apply all the concepts covered in the syllabus in a first class scenario. Therefore, during 3 weeks, the professionals will be tutored by a specialist in exotic animals, who will show them the most innovative diagnostic and analysis techniques, as well as the most innovative surgical treatments in this field.

This is an excellent opportunity offered by TECH to all professionals who wish to update their knowledge through a program that provides flexibility and the real practice they need to update their knowledge in a field where specialized veterinarians are increasingly in demand.

This **Hybrid Professional Master's Degree in Exotic Animal Medicine and Surgery** contains the most complete and up-to-date scientific program on the market. The most important features include:

- Development of more than 100 clinical cases presented by nursing professionals with expertise in exotic animal medicine and surgery
- The graphic, schematic, and practical contents with which they are created, provide scientific and practical information on the disciplines that are essential for professional practice
- Assessment and monitoring of exotic animals
- Comprehensive systematized action plans for the main pathologies
- Practical clinical guides on approaching different pathologies
- All of this will be complemented by theoretical lessons, questions to the expert, debate forums on controversial topics, and individual reflection assignments
- Content that is accessible from any fixed or portable device with an Internet connection
- In addition, you will be able to carry out a clinical internship in one of the best veterinary clinical centers

*Exotic animals often mask their pathologies, so it is increasingly necessary the presence of veterinarians specialized in these species"*

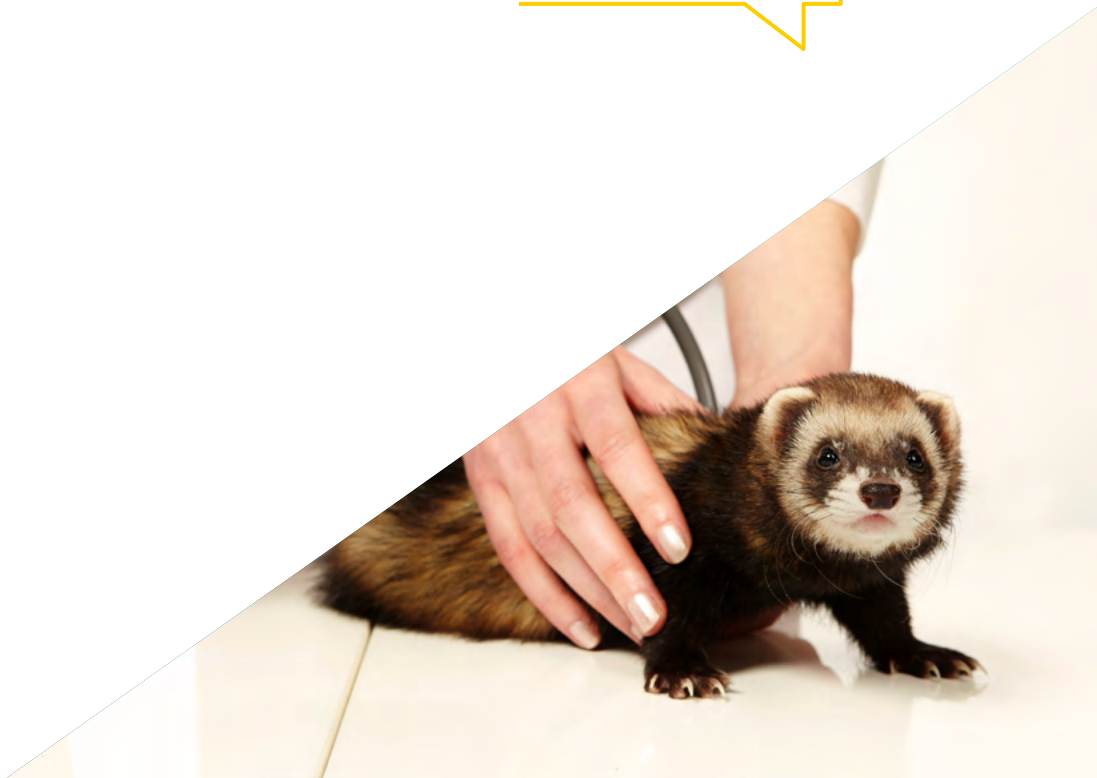
*Take an intensive 3-week internship in a prestigious center and get an update in Exotic Animal Medicine and Surgery with the best professionals"*

*This Hybrid Professional Master's Degree will take you to delve into hyperadrenocorticism, the most frequent endocrine pathology in sterilized ferrets.*

*With this program you will be up to date with the latest nutritional developments in reptile care.*

This Hybrid Professional Master's Degree, of a professionalizing nature and hybrid learning modality, the program is aimed at updating veterinary professionals who perform their functions in clinical centers, and who require a high level of qualification. The contents are based on the latest scientific evidence, and oriented in a didactic way to integrate theoretical knowledge in the practice of medicine and surgery applied to exotic animals, and the theoretical and practical elements will facilitate the updating of knowledge and allow decision making in the management of the animal.

Thanks to its multimedia content elaborated with the latest educational technology, it will allow the veterinary professional to obtain a situated and contextual learning, that is, a simulated environment that will provide an immersive learning programmed to practice in real situations. The design of this program is focused on Problem-Based Learning, through which you will have to try to solve the different situations of professional practice that arise throughout the program. For this purpose, the students will be assisted by an innovative interactive video system created by renowned and experienced experts.



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# Why Study this Hybrid Professional Master's Degree?

In the field of Exotic Animal Medicine and Surgery, especially, it is as relevant to know the latest techniques and medical approaches as it is to know how to implement them in the appearance of various pathologies. For this reason, TECH has created this unique program in the academic panorama, which perfectly combines the most recent update in areas such as ferret therapeutics, surgical techniques in rodents or treatments in exotic birds with a practical stay in a prestigious veterinary center. In this way, the professionals will obtain a much broader vision of the current panorama of Medicine and Surgery in Exotic Animals, guided at all times by an excellent team of specialized professionals.

*With TECH you will learn in situ about the most relevant surgical advances used in exotic animal interventions"*

### 1. Updating from the Latest Technology Available

New technologies have made it possible to incorporate much more precise analysis systems and, therefore, to make diagnoses with innovative and much more accurate devices. In addition, this has contributed to the work carried out by veterinarians in the area of Exotic Animal Medicine and Surgery. For this reason, and with the aim of bringing the specialist closer to this technology, TECH presents this Hybrid Professional Master's Degree, which will take over 12 months to learn about the most outstanding progress in this field from the hand of a specialized teaching team and professional experts who perform their work in leading clinical centers.

### 2. Gaining In-depth Knowledge from the Experience of Top Specialists

The large team of professionals that will accompany the specialists throughout the practical period is a first-class and an unprecedented guarantee of updating. In this way, the veterinarians who enter this program will have, first of all, a faculty with extensive experience in the care of exotic animals. In addition, during the practical stay, the professional will be surrounded by a specialized team in a state-of-the-art clinical center.

### 3. Entering First-Class Clinical Environments

TECH carries out a rigorous and meticulous process of selection of all the centers where the practical phase of this Hybrid Professional Master's Degree is carried out. In this way, the professionals will have the guarantee of being able to access an environment that will provide them with the latest information on the diagnosis and management of exotic animals in different situations. In this way, this institution provides a complete update of knowledge from a practical point of view.



### 4. Combining the Best Theory with State-of-the-Art Practice

This institution approaches the real needs of professionals, who demand flexible degrees that allow them to integrate into their daily practice, the most outstanding advances in Exotic Animal Medicine and Surgery. TECH offers a new academic model, which combines an advanced theoretical framework with a practical stay that provides a useful update for the professional performance of veterinarians.

### 5. Expanding the Boundaries of Knowledge

Thanks to the theoretical-practical combination of this program, the professionals will be able to expand their competences and skills in a field where specialized professionals are increasingly in demand. This will allow them to incorporate technical and scientific advances in their practice, or to apply them in any other professional environment that requires veterinarians of the highest level.

*You will have full practical immersion at the center of your choice"*

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# Objectives

The objectives of the Hybrid Professional Master's Degree in Exotic Animal Medicine and Surgery are oriented to facilitate the performance of the professional dedicated to veterinary medicine with the latest advances and newest treatments in the sector. To this end, this academic institution provides innovative teaching material and a teaching team that will guide the professional at all times to successfully achieve these goals.

*Update with this program your knowledge on vaccination and deworming schedules applied to each species"*

## General Objectives

- Specifically, this TECH program will allow veterinarians to be up to date on the latest criteria for recognizing rare diseases in exotic species. At the same time, they will incorporate various procedures and advanced therapies that facilitate the intervention of diverse pathologies in animals of various kinds. Likewise, the latest radiology tools that are implemented nowadays in the attention, diagnosis and care of birds, reptiles, among others, will be analyzed.



## Specific Objectives

**Module 1. Relevant Aspects of Lagomorfs and Rodents**

- Examine the different species and their taxonomic classification
- Determine how to handle each clinical situation
- Analyze the most frequent questions asked by animal owners in practice
- Establish a prevention protocol and guidelines for the correct maintenance of rabbits or rodents
- List the most common pathologies in lagomorphs and rodents
- Develop a list of problems, with their varying diagnoses to obtain an adequate work plan
- Finally achieve the definitive diagnosis and find the cause of the pathology

**Module 2. Advanced Criteria in Rabbits and Rodents**

- Visualize the anatomy and physiological functioning of the oral cavity
- Examine dental malocclusion disease in lagomorphs
- Identify all diseases with zoonotic potential that we will encounter after handling or accidental ingestion
- Provide advanced knowledge related to the sedation of an exotic mammal, including up-to-date anesthetic protocols to perform surgical treatments
- Compile the ocular pathologies that may present, their causes and the currently available treatments
- Analyze the reason why not all medications currently available in the dog and cat clinic can be used and cite the most commonly used medications and their dosage
- Develop specialized knowledge of routine surgical techniques such as sterilization and when it should be performed, as well as more advanced surgical techniques such as cystotomy or enterotomy

**Module 3. Symptoms and Therapeutics for Ferrets**

- Establish an adequate anatomo-physiological background, advanced knowledge of dentition, types of molt, skeletal system, digestive system, perineal glands and salivary glands
- Analyze the cardio-respiratory system and its pathologies
- Develop the best method of drug administration, access routes, routine radiographic projections and laboratory sampling to achieve a reliable and effective diagnosis
- List the various types of pathologies that are commonly encountered in daily clinical practice. Gastrointestinal and respiratory pathologies are very common, but so are neoplasms and skin problems
- Analyze the most frequent and serious endocrine pathology in sterilized ferrets: hyperadrenocorticism, going deeper into the subject with an anatomical review of the adrenal glands and paying attention to the non-specific symptoms they present in order to obtain the correct diagnosis
- Examine the most up-to-date treatments and make decisions about surgical or solely medical processes and the rationale for choosing each one
- Assess the monitoring of anesthetized patients and the levels of anesthesia that can be used
- Develop specialized knowledge to attend an emergency and cardio-respiratory resuscitation
- List the most common surgical techniques and those that are unique and exclusive to ferrets

### Module 4. New Pets

- Anatomically and taxonomically describe the differences between each species
- Design installations equipped to fulfil their needs, according to their habits, diet, furnishings, environmental enrichment and special characteristics
- Specify the necessary legal requirements to have invasive exotic pets
- Establish the most important zoonoses in order to protect the veterinary specialist and the owners
- Differentiate between the different techniques for drug administration and laboratory sampling
- Examine the most common pathologies of each species
- Describe the exclusive pathologies in each species

### Module 5. Relevant Aspects of Birds

- Develop specialized knowledge about the different bird species
- Examine the anatomical differences in order to be able to detect them in the daily consultation
- Design appropriate installations in each situation and for each species, understanding the key factors for each of them
- Set up a basic list of nutrients for birds
- Develop the nutritional requirements for Psittacidae, the most frequent exotic birds in practice
- Perform mathematical energy calculations according to the needs of the established classifications
- Determine the feeding of other, less frequent, bird species that also come to the daily practice

### Module 6. Diagnostic Criteria and Treatments in Birds

- Learn handling techniques and preventive medicine in avian patients
- Establish the proper routes for sampling and drug administration, understanding their anatomical differences in comparison to other species
- Master radiology, ultrasound and endoscopy techniques as vital diagnostic imaging tools in avian patients
- Detect the most common dermal pathologies, such as acariasis, follicular cysts, itching and cutaneous lipomas
- Classify diseases caused by viruses, as well as important traumatologic pathologies
- Analyze the most frequent emergencies
- Establish the appropriate treatment for each of them and understand the most common treatments

### Module 7. Relevant Aspects of Reptiles I

- Evaluate the types of facilities that exist and adapt them to each species and its needs. Access to water, the material used for the terrarium, and the crucial importance of temperature, humidity and light, which are the most important factors in fulfilling the basic needs of reptiles
- Identify the natural process of hibernation, taking into account relevant aspects such as the types of hibernation, the species that hibernate and the problems that hibernation can cause during captivity
- Gain specialized knowledge on radiology in reptiles, a basic diagnostic technique to treat their diseases
- Identify all the information provided by a coprological analysis, a routine procedure in practices that should always be performed
- Study the biochemical parameters of reptiles
- Establish routine necropsy techniques to detect pathologies

### Module 8. Relevant Aspects of Reptiles II

- Determine the most frequent zoonoses, prevention and indications for owners
- Analyze the most important diseases in reptiles
- Treat the species with specific drugs and doses
- Understand the use of the concepts MEC (Minimum Energy Cost) and SMEC (Specific Minimum Energy Cost), understanding that there are differences in the dose depending on the physiological state
- Examine up-to-date anesthetic studies
- Analyze the anatomical and physiological particularities of each species in order to make the appropriate anesthetic considerations
- Establish the basic and routine surgical techniques in clinical practice
- Analyze other important surgical issues
- Describe the pathologies presented by reptiles with more complex causes

### Module 9. Wild Animal Medicine and Surgery

- Establish the handling tasks of the veterinarian, together with his work team
- Develop specialized criteria to decide on the release of a wild species treated for a pathology
- Develop preventive medicine programs, such as vaccinations, coprologicals, and vermifugations
- Develop specialized knowledge to perform the mandatory clinical examination of any patient who is hospitalized or has just been admitted to a recovery center
- Interpret the laboratory tests performed on animals in order to treat their disease
- Establish guidelines for nutrition and nutritional diseases, infectious diseases, reproductive aspects and rescue work for primates, ursids and wild felines
- Analyze the most commonly used anesthesia techniques in zoo animals



**Module 10. Care and Pathologies in Fish**

- Analyze, in each case, the main contexts to carry out an adequate anamnesis
- Analyze clinical management and establish guidelines for the correct collection of laboratory samples
- Learn the different pathologies of ornamental fish
- Describe the predisposing causes and establish differing diagnoses for each case
- Establish a definitive diagnosis and apply a medical or surgical treatment and follow-up of the case
- Assess the use of anesthetics and updated protocols
- Examine the most commonly used anti-parasitic treatments and external disinfectants
- Evaluate the degree of learning with the presentation of a clinical case

*Thanks to the Relearning system, you will be able to progress through the syllabus in an agile way, reducing the long hours of study and memorization"*

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# Skills

After completing this Hybrid Professional Master's Degree in Exotic Animal Medicine and Surgery, the veterinary professionals will be able to enhance their capabilities and technical skills in the performance of surgical interventions in exotic animals. These skills will allow them to apply more efficiently the latest advancesin this field, guided at all times by the best specialists.

*This Hybrid Professional Master's Degree will provide you with the professional skills you need to carry out the medical and surgical treatments with which to achieve excellence in your daily practice with exotic animals"*

## General Skills

- Carry out the clinical management, maintenance and feeding of different exotic species
- Diagnose, take samples, perform cutting-edge laboratory techniques, and implement medical and surgical treatments to achieve excellence in your daily practice

*Enhance your skills to address poultry pathologies, through the most current treatments"*

## Specific Skills

- Carry out the taxonomic classification of the different exotic species arriving at veterinary or rehabilitation centers
- Be able to sedate rabbits and rodents, as well as other exotic species, in order to perform diagnostics and ocular treatments
- Gain in-depth knowledge about all the pathologies that affect ferrets and be able to treat them effectively
- Identify the different species of exotic birds, with special emphasis on the nutrients and food required
- Perform the latest techniques in diagnosis and treatment of avian pathologies
- Perform diagnostic imaging techniques in reptiles
- Provide the necessary medicines to reptiles in each case
- Perform clinical examinations on specialized wild patients
- Establish diagnoses for fish pathologies and apply specific and necessary treatments in each case

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# Course Management

The teaching staff of this Hybrid Professional Master's Degree has top level professionals with an excellent academic and professional background, synonymous with TECH's commitment to quality. The experts in the field will give the veterinary professional a complete and global vision of the most common exotic pets with which they deal with today and how to treat them properly. This team is made up of a multidisciplinary and transversal cast that has poured its knowledge and experience in the design of an exceptional program, to which is added an internship in a prestigious veterinary center, enabling the professionals to achieve their academic goals, positioning them among the elite of the sector.

*Experts in exotic pets put their knowledge and experience in Medicine and Surgery at your disposal in this Hybrid Professional Master's Degree"*

## Management

**Dr. Trigo García, María Soledad**

- Postgraduate Diploma in Exotic Animals and Emergency Care
- Veterinarian in charge of the Internal Medicine and Exotic Animal Surgery Service at the Clinical Veterinary Hospital of the Alfonso X el Sabio University
- Director of the Exotic Animal Service at the Prado BOADILLA veterinary center
- Degree in Veterinary Medicine from Alfonso X El Sabio University
- Postgraduate degree in General Practitioner Certificate Program in Exotic Animals, Improve International
- Postgraduate degree in Food Safety from the Complutense University of Madrid
- Coordinator and Professor of the Clinical and Therapeutic Subject of Exotic Animals at the Faculty of Veterinary Medicine of the Alfonso X el Sabio University



## Professors

### Dr. Ouro Núñez, Carlos

- Exotic Animal Specialist Veterinarian
- Degree in Veterinary Medicine from the University of Santiago de Compostela
- Member of the International Ornithological Association Aviornis
- Member of: Group of Medicine and Surgery of Exotic Animals (GMCAE) of the Association of Spanish Small Animal Veterinarians (AVEPA), Association of Avian Veterinarians (AAV), Association of Exotic Mammal Veterinarians (AEMV), Association of Reptile and Amphibian Veterinarians (ARAV), Association of Reptile and Amphibian Veterinarians (ARAV).

*If you have any doubts about the content of this program, you will be able to solve them with an excellent specialized teaching team"*

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# Educational Plan

The contents of this program have been developed by the different experts of this Hybrid Professional Master's Degree, with the aim of offering the latest developments in the field of Exotic Animal Medicine and Surgery. For this, TECH provides an advanced syllabus, which will lead the professional to deepen both preventive medicine, accurate diagnosis, as well as the latest surgical techniques used. All this, with a multimedia didactic material, which can be accessed at any time of the day, from an electronic device with Internet connection. In addition, thanks to the Relearning method, you will be able to reduce the long hours of study and memorization.

*A program specially designed for veterinarians to treat both domesticated and wild exotic animals with the latest techniques, in real situations requiring anesthesia and immobilization"*

## **Module 1.** Relevant Aspects of Lagomorfs and Rodents

1.1. Taxonomic Classification: Is it a Lagomorph a Rodent?
- 1.1.1. Lagomorphs
- 1.1.2. Hystricomorph Rodents
- 1.1.3. Myomorph Rodents
- 1.1.4. Visible Differences Between the Different Species

1.2. Technical Requirements: The Importance of Adapting Installations to Each Species
- 1.2.1. Types of Accommodation
- 1.2.2. Absorbent Hygienic Bedding
- 1.2.3. Accommodation During the Hospitalization of the Patients

1.3. Nutritional Aspects: Nutritional Specifications of Diets
- 1.3.1. Specific Feeding Patterns in Lagomorphs and Hystricomorph Rodents
- 1.3.2. Nutritional Programs for Myomorph Rodents
- 1.3.3. Nutritional Care in Special Situations

1.4. Anatomical Review: Different Species, Different Anatomies
- 1.4.1. The Domestic Rabbit
- 1.4.2. Hystricomorph Rodents
- 1.4.3. Myomorph Rodents

1.5. Clinical Handling and Preventive Medicine: The Key Factor for Excellence in the Eyes of the Owner
- 1.5.1. Clamping
  - 1.5.1.1. Handling Techniques for Examination in the Practice
- 1.5.2. Physical Examination
  - 1.5.2.1. Sexing: Sexual Dimorphism
- 1.5.3. Preventive Medicine
  - 1.5.3.1. Current Legislation and Animal Identification System
  - 1.5.3.2. Vaccination Protocol
  - 1.5.3.3. Deworming Guidelines
  - 1.5.3.4. Information on Sterilization

1.6. Sampling for Diagnosis and Pathways for Drug Administration
- 1.6.1. Venepuncture
- 1.6.2. Medication administration
- 1.6.3. Urine Collection
- 1.6.4. Radiographic Images Necessary to Reach the Correct Diagnosis and How to Perform Them

1.7. Diagnostic Techniques
- 1.7.1. Sample Analysis: Key Factor for a Reliable Diagnosis
  - 1.7.1.1. Urine Sample. Interpretation of Results
  - 1.7.1.2. Blood Sample. Different Results
- 1.7.2. The X-Ray as a Basic Tool
  - 1.7.2.1. Radiographic Interpretation and Diagnostic Imaging
- 1.7.3. Ultrasound to Diagnose Specific Pathologies
  - 1.7.3.1. Main Approaches
- 1.7.4. Other Diagnostic Techniques

1.8. Skin and Gastrointestinal Pathologies: Recompilation of the most Frequent Pathologies
- 1.8.1. External Parasites
- 1.8.2. Fungal Infections
- 1.8.3. Bacterial Infections
- 1.8.4. Viral Infections
- 1.8.5. Dermal Neoplasms:
- 1.8.6. Other Dermal Alterations
- 1.8.7. Dental Problems
- 1.8.8. Mucocele
- 1.8.9. Foreign Bodies and Impaction
- 1.8.10. Internal Parasites:
- 1.8.11. Bacterial Enteritis
- 1.8.12. Ileum

1.9. Respiratory and Genitourinary Disorders
- 1.9.1. Respiratory Diseases of Rabbits and Rodents
- 1.9.2. Cystitis and Urolithiasis
- 1.9.3. Dystocia
- 1.9.4. Hyperestrogenism
- 1.9.5. Mammary Tumors
- 1.9.6. Gestational Toxemia
- 1.9.7. Ovarian Cysts
- 1.9.8. Paraphimosis
- 1.9.9. Pyometra and Hemometra

1.10. Other Less Frequent Pathologies of Interest, But of Equal Importance
- 1.10.1. Musculoskeletal Alterations
  - 1.10.1.1. Vitamin C Deficit
  - 1.10.1.2. Fractures and Dislocation of the Rachis in Rabbits
- 1.10.2. Neurological Alterations:
  - 1.10.2.1. Vestibular Syndrome in Rabbits
  - 1.10.2.2. Epilepsy in Gerbils
- 1.10.3. Other Pathologies
  - 1.10.3.1. Viral Hemorrhagic Disease
  - 1.10.3.2. Myxomatosis
  - 1.10.3.3. Lymphomas

## **Module 2.** Advanced Criteria in Rabbits and Rodents

2.1. Anatomo-Physiological Reminder of the Oral Cavity
- 2.1.1. Anatomy of the Oral Cavity
  - 2.1.1.1. Dental Formula
  - 2.1.1.2. Types of Dentition
  - 2.1.1.3. Types of Mastication
- 2.1.2. Origin of Dental Pathologies
  - 2.1.2.1. Genetic Origin
  - 2.1.2.2. Traumatic Origin
  - 2.1.2.3. Systemic Origin
  - 2.1.2.4. Dietary Origin
- 2.1.3. Types of Oral Pathologies
  - 2.1.3.1. Malocclusion of Incisors
  - 2.1.3.2. Malocclusion of Premolars and Molars

2.2. Oral Pathologies
- 2.2.1. Symptoms Associated With Dental Pathologies. Early Diagnosis
  - 2.2.1.1. Symptoms According to Location
  - 2.2.1.2. Presumptive Diagnosis and Work Plan
  - 2.2.1.3. Complementary Diagnostic Tests
  - 2.2.1.4. Firm Diagnosis
- 2.2.2. Prevention, Treatment and Prognosis of Patients With Oral Pathologies
  - 2.2.2.1. Medical Treatment
  - 2.2.2.2. Surgical Treatment: New Advances in the Treatment of Oral Abscesses

2.3. Fundamental Zoonoses in Lagomorphs and Rodents
- 2.3.1. Basic Features of Prevention and Protection of the Veterinary Professional
- 2.3.2. Diseases of Bacterial Origin
  - 2.3.2.1. Francisella Tularensis
  - 2.3.2.2. Pasteurellosis
  - 2.3.2.3. Salmonellosis
  - 2.3.2.4. Bordetella Pertussis
  - 2.3.2.5. Brucellosis
  - 2.3.2.6. Yersinia Pestis
  - 2.3.2.7. Q fever
- 2.3.3. Parasitic Diseases
  - 2.3.3.1. Internal Parasites:
  - 2.3.3.2. External Parasites

2.4. Advanced Zoonoses in Lagomorphs and Rodents
- 2.4.1. Diseases Caused by Protozoos
  - 2.4.1.1. Encephalitozoonosis
  - 2.4.1.2. Toxoplasmosis
  - 2.4.1.3. Giardiasis
- 2.4.2. Viral Diseases
  - 2.4.2.1. Herpesvirus
- 2.4.3. Diseases of Fungal Origin
  - 2.4.3.1. Dermatophytosis
  - 2.4.3.2. Microsporum sp
  - 2.4.3.3. Trichophyton Mentagrophytes

2.5. Most Commonly Used Anesthesia Techniques in Rodent and Lagomorph Clinics
- 2.5.1. Basic Concepts
- 2.5.2. Anesthesia- Analgesic Epidural
- 2.5.3. Sedation and General Anaesthesia

2.6. Updated Anesthesia Techniques
- 2.6.1. Anatomical Review of the Facial Nerves
- 2.6.2. Local Anesthesia and Cranial Nerve Block
- 2.6.3. Jaw Nerve Blockade
- 2.6.4. Infraorbital Nerve Block
- 2.6.5. Palatine Nerve Block
- 2.6.6. Mandibular Nerve Block
- 2.6.7. Mental Nerve Block
- 2.6.8. Emergency Room Anesthesia: Cardio-pulmonary Resuscitation

2.7. Ophthalmology in Lagomorphs and Rodents
- 2.7.1. Common Ocular Infections
- 2.7.2. Corneal Ulcers. Diagnosis and Treatment
- 2.7.3. Protrusion of the Nictitating Membrane
- 2.7.4. Pseudopterygium
- 2.7.5. Naso-lacrimal Duct Catheterization in Rabbits

2.8. Updated Medical Treatments
- 2.8.1. Relevant Aspects
- 2.8.2. Safe Drugs and Suitable Dosage
- 2.8.3. Common Drugs in Other Species, But Banned For Lagomorphs and Rodents

2.9. Basic Surgical Techniques
- 2.9.1. Pre-Surgical Factors
- 2.9.2. Surgery Factors
- 2.9.3. Post-Surgical Factors
- 2.9.4. Lagomorph and Rodent Sterilization Techniques

2.10. Advanced Surgical Techniques
- 2.10.1. Cystotomy in Rabbits and Guinea Pigs
- 2.10.2. Urethrotomy and Perineal Urethrostomy in Rabbits
- 2.10.3. Gastrotomy in Lagomorphs and Rodents
- 2.10.4. Enterotomy and Enterectomy in Lagomorphs and Rodents



## **Module 3.** Symptoms and Therapeutics for Ferrets

3.1. Introduction to the Ferret Symptoms. Reinforced Basis to Move Towards a Diagnosis
- 3.1.1. Anatomy
  - 3.1.1.1. Taxonomic Classification
  - 3.1.1.2. Anatomophysiological Peculiarities
  - 3.1.1.3. Noticeable Differences With Other Domestic Carnivores
  - 3.1.1.4. Sexual Dimorphism:
  - 3.1.1.5. Physiological Parameters
- 3.1.2. Maintenance and Nutritional Requirements of Ferrets
  - 3.1.2.1. Interior and Exterior Accommodation
  - 3.1.2.2. Specific Facilities
  - 3.1.2.3. Absorbent Hygienic Bedding
  - 3.1.2.4. Hospitalization Maintenance Requirements
    - 3.1.2.4.1. Nutritional Classification
    - 3.1.2.4.2. Feeding Guidelines
    - 3.1.2.4.3. Nutritional Requirements in Special Physiological Situations

3.2. Clinical Handling and Preventive Medicine: The Importance of the First Visit to the Veterinarian Center
- 3.2.1. Receiving the Patient and Clinical History
- 3.2.2. Physical Examination: Systematic Physical Examination Protocol
- 3.2.3. Clinical Handling and Veterinary Actions. Physical Containment of the Ferret for Examination, Diagnostic Techniques and How to Apply Treatments
  - 3.2.3.1. No Contact With the Patient
  - 3.2.3.2. Light Containment
  - 3.2.3.3. Light Immobilization
  - 3.2.3.4. Full Immobilization
- 3.2.4. Sexing: Sexual Dimorphism
- 3.2.5. Preventive Medicine
  - 3.2.5.1. Current Legislation and Animal Identification System
  - 3.2.5.2. Vaccination Protocol
  - 3.2.5.3. Deworming Guidelines
  - 3.2.5.4. Information on Sterilization

3.3. Pathways for Administering Drugs and Diagnostic Techniques
- 3.3.1. Venepuncture
  - 3.3.1.1. Access to the Cephalic Vein
  - 3.3.1.2. Vena Cava: Location and Common Use
  - 3.3.1.3. Lateral Saphenous Vein
- 3.3.2. Medication administration
  - 3.3.2.1. Oral Posology
  - 3.3.2.2. Subcutaneous Route
  - 3.3.2.3. Intramuscular Route
  - 3.3.2.4. Intravenous Route
  - 3.3.2.5. Intracardiac Route
  - 3.3.2.6. The Importance of Nebulizations
- 3.3.3. Urine Collection
- 3.3.4. Radiographic Images Necessary to Reach the Correct Diagnosis and How to Perform Them
  - 3.3.4.1. Handling Techniques for Performing X-Rays Without Sedation
  - 3.3.4.2. The X-Ray as a Basic Tool
- 3.3.5. Laboratory Samples: Interpretation and Results
  - 3.3.5.1. Urine Sample. Interpretation of Results
  - 3.3.5.2. Blood Sample. Different Results
- 3.3.6. Ultrasound to Diagnose Specific Pathologies
  - 3.3.6.1. Main Ultrasound Approaches

3.4. Skin Diseases. Update on Dermatological Cases in Ferrets
- 3.4.1. Alopecia: Very Common in Clinical Practice
  - 3.4.1.1. Non-Specific Symptoms That Should Not Be Forgotten
- 3.4.2. Ectoparasites. Symptoms and Treatment Discussion
  - 3.4.2.1. Ear Mites
  - 3.4.2.2. Fleas. Ctenocephalides Felis and C. Canis
  - 3.4.2.3. Ticks
- 3.4.3. Dermal Neoplasms: Very Frequent in Ferrets
  - 3.4.3.1. Carcinomas
  - 3.4.3.2. Sebaceous Adenomas
  - 3.4.3.3. Epitheliomas
  - 3.4.3.4. Cystadenomas
  - 3.4.3.5. Epitheliotropic Cutaneous Lymphomas

3.5. Oral Cavity Problems: Pathologies Similar to Those of Other Domestic Carnivores
- 3.5.1. Dental Malocclusion: Congenital Causes
- 3.5.2. Double Dentition: Supranumerary Incisors
- 3.5.3. Dental Fractures: The Most Common Dental Pathology
- 3.5.4. Periodontal Disease: Middle-aged Ferrets. Geriatrics
- 3.5.5. Tooth Abscesses
  - 3.5.5.1. Advanced Periodontal Disease
  - 3.5.5.2. Malpractice
- 3.5.6. Alterations in Dental Coloring. There are Two Classifications
  - 3.5.6.1. Dental Stains
    - 3.5.6.1.1. Intrinsic Staining of the Teeth
    - 3.5.6.1.2. Extrinsic Staining
  - 3.5.6.2. Dental Coloring

3.6. Gastrointestinal Pathologies. The Importance of Diagnostic Tools
- 3.6.1. Gastritis
  - 3.6.1.1. Gastric Ulcers
  - 3.6.1.2. Causes, Diagnosis and Treatment
- 3.6.2. Diarrhoeal Processes: The Most Common Condition in Ferrets
- 3.6.3. Presence of Internal Parasites
  - 3.6.3.1. Leonine Toxascaris
  - 3.6.3.2. Toxocara Cati
  - 3.6.3.3. Ancylostoma Sp
  - 3.6.3.4. Dipylidium Caninum
  - 3.6.3.5. Giardia Sp
  - 3.6.3.6. Coccidiosis
- 3.6.4. Inflammatory Bowel Disease
  - 3.6.4.1. Lymphoplasmacytic
  - 3.6.4.2. Eosinophilic
- 3.6.5. Epizootic Catarrhal Enteritis (Coronavirus)
  - 3.6.5.1. Frequency, Clinical Picture and Diagnosis
- 3.6.6. Infectious Peritonitis (Systemic Coronavirus)
  - 3.6.6.1. High Frequency
  - 3.6.6.2. Symptoms and Diagnosis
  - 3.6.6.3. Prognosis of the Disease

3.7. Respiratory Pathologies:
- 3.7.1. Human Influenza: Orthomyxovirus
  - 3.7.1.1. Transmission
  - 3.7.1.2. Clinical Picture
  - 3.7.1.3. Diagnosis
  - 3.7.1.4. Treatment
- 3.7.2. Distemper Virus: Paramyxovirus
  - 3.7.2.1. Progression of the Disease
  - 3.7.2.2. Diagnosis
  - 3.7.2.3. Prevention: The Best Tool Currently Available

3.8. Endocrine Pathologies. The Main Issue With Ferrets
- 3.8.1. Hyperadrenocorticism in Ferrets
  - 3.8.1.1. Definition and General Concepts
  - 3.8.1.2. Adrenal Gland Anatomy. Localization
  - 3.8.1.3. Endocrinological Functioning of the Adrenal Glands
    - 3.8.1.3.1. Reminder of Hormonal Functioning
  - 3.8.1.4. Typical and Non-Specific Symptoms
    - 3.8.1.4.1. Alopecia
    - 3.8.1.4.2. General Malaise: Anorexia
    - 3.8.1.4.3. Genital Inflammation
    - 3.8.1.4.4. Other Symptoms
  - 3.8.1.5. Establishing a Diagnosis
    - 3.8.1.5.1. Differential Diagnosis and Work Plan
    - 3.8.1.5.2. Complementary Tests: The Importance of Ultrasound
      - 3.8.1.5.2.1. Studies on the Measurement of Adrenal Glands
    - 3.8.1.5.3. Other Complementary Tests
  - 3.8.1.6. Management Patient Stabilization
    - 3.8.1.6.1. Surgical: Left or Bilateral, Total or Partial Adrenalectomy
    - 3.8.1.6.2. Doctor
      - 3.8.1.6.2.1. Deslorelin Implant
      - 3.8.1.6.2.2. Agonists of the Gonadotropin-Releasing Hormone (GnRH)
      - 3.8.1.6.2.3. Other Medical Treatments Used
- 3.8.2. Hyperestrogenism
  - 3.8.2.1. Symptoms, Diagnosis and Treatment

3.9. Other Important Pathologies
- 3.9.1. Urinary Pathologies
  - 3.9.1.1. Renal Cysts
    - 3.9.1.1.1. Clinical Findings
    - 3.9.1.1.2. Treatment
  - 3.9.1.2. Bladder Uroliths
    - 3.9.1.2.1. Frequency (F)
    - 3.9.1.2.2. Types of Calculi and Recommended Treatment
- 3.9.2. The Cardiac Patient
  - 3.9.2.1. The Most Common Symptoms
  - 3.9.2.2. Diagnostic Tools: X-Rays, Electrocardiograms, Ultrasound Scans
  - 3.9.2.3. Common Treatments and Case Monitoring
- 3.9.3. Aleutian Disease
  - 3.9.3.1. Causes
  - 3.9.3.2. Characteristic Symptomatology
  - 3.9.3.3. Early Diagnosis
- 3.9.4. Neoplasms
  - 3.9.4.1. Insulinoma: Very Common Pathology in Middle-Aged Ferrets
    - 3.9.4.1.1. Causes. Symptoms
    - 3.9.4.1.2. Diagnostic Plan
    - 3.9.4.1.3. Effective Treatment
  - 3.9.4.2. Lymphoma
    - 3.9.4.2.1. Causes
    - 3.9.4.2.2. Diagnostic Plan

3.10. Surgical Techniques in Ferrets
- 3.10.1. Most Commonly Used Anesthesia and Analgesia in Ferrets
  - 3.10.1.1. Analgesia
  - 3.10.1.2. Sedation
  - 3.10.1.3. General Anesthesia
  - 3.10.1.4. Emergency Room Anesthesia: Cardio-pulmonary Resuscitation
- 3.10.2. Basic Surgical Techniques
  - 3.10.2.1. Pre-Surgical, Surgical and Post-Surgical Factors
  - 3.10.2.2. Lagomorph and Rodent Sterilization Techniques

3.10.3. Advanced Surgical Techniques
3.10.3.1. Adrenalectomy in Ferrets
3.10.3.1.1. Surgical Technique: Bilateral, Unilateral, Total or Partial Decisions Prior
3.10.3.2. Saculectomy: Anal Sacs Located in the Perineal Space
3.10.3.2.1. The Most Common Approaches Currently Used
3.10.3.2.2. When It Goes Wrong: Complications
3.10.3.3. Cystotomy
3.10.3.3.1. Indications: Neoplasms and Urinary Obstructions
3.10.3.3.2. Surgical Technique
3.10.3.4. Urethrotomy and Urethrostomy in Ferrets
3.10.3.4.1. Anatomical Review: Os Penis (Penile Bone)
3.10.3.4.2. Indications: Neoplasms, Distal Urethral Strictures and Urinary Obstructions
3.10.3.4.3. Surgical Technique
3.10.3.5. Gastrotomy, Enterotomy and Enterectomy in Ferrets
3.10.3.5.1. Indications: Gastrointestinal Obstructions, Foreign Bodies, Neoplasms and Biopsies
3.10.3.5.2. Surgical Technique

## **Module 4.** New Pets

4.1. Taxonomic Classification: Notable Differences Between Species
4.1.1. Squirrels, Prairie Dogs (PP) and Richardson's Squirrels: Small Rodents of Worldwide Distribution
4.1.1.1. Common or Red Squirrel (Sciurus Vulgaris)
4.1.1.2. Grey Squirrel (Sciurus Carolinensis)
4.1.1.3. Siberian Chipmunk (Eutamias Sibiricus)
4.1.1.4. Eastern Chipmunk (Tamias Striatus)
4.1.1.5. Prairie Dog (Cynomys Spp)
4.1.1.6. Richardson's Squirrels (Urocitellus / Spermophilus Rochardsonii)
4.1.2. Hedgehogs: The Most Common Species
4.1.2.1. African White-Bellied, 4-Toed or Pygmy Hedgehog (Atelerix Albiventris)
4.1.2.2. Egyptian Hedgehog (Hemiechinus Auritus)
4.1.2.3. European Hedgehog (Erinaceus Europaeus)
4.1.2.4. Moorish Hedgehod (Erinaceus Algirus)
4.1.3. Pet Pigs
4.1.3.1. Vietnamese Pig (Sus Scrofa Domestica)
4.1.3.2. Kune Pig (Sus Scrofa Domestica)
4.2. Maintenance in Captivity: Specific Facilities. Furniture and Special Features
4.2.1. Sciuromorphs. Thermal Factor
4.2.1.1. Body and Environmental Temperature in Each Species
4.2.2. Hedgehogs: Nocturnal, Territorial and Solitary Animals
4.2.2.1. Body and Environmental Temperature
4.2.2.2. Behavior in the Wild and in Captivity
4.2.2.3. The "Self-Anointing". A Characteristic Behavior of the Species
4.2.3. Pet Pigs: Dwarf Pigs
4.2.3.1. Body and Environmental Temperature
4.2.3.2. Interior and Exterior Facilities
4.2.3.3. Environmental Enrichment: Techniques for Preventing Destructive Behavior
4.2.3.4. Behavior in the Wild: Extrapolation to Captivity
4.3. Nutritional Aspects: Nutritional Specifications of Diets Different Nutritional program for Each Species
4.3.1. Sciuromorphs
4.3.1.1. Classification According to their Habits
4.3.1.1.1. Arboreal
4.3.1.1.2. Mixed
4.3.1.1.3. Land
4.3.1.2. General Dental Distribution
4.3.1.3. Changes in Feeding for Hibernation
4.3.1.4. Nutritional Deficiencies
4.3.2. Hedgehogs: Very Different Nutrition in Captivity Compared to in the Wild
4.3.3. Pet Pigs: They are Omnivorous Animals
4.4. Anatomical Review: Different Species, Different Anatomies
4.4.1. Sciuromorphs
4.4.1.1. Oral Cavity. Types of Dentition
4.4.1.2. Sexual Dimorphism: Only Clear in Adult Specimens
4.4.1.3. Special Breeding Criteria: One Litter Per Year
4.4.1.4. Differences Between Species

4.4.2. Hedgehogs: They Are Polygamous
4.4.2.1. Sexual Dimorphism:
4.4.2.2. Special Criteria for Reproduction
4.4.2.3. Anatomic Considerations
4.4.3. Pet Pigs
4.4.3.1. Special Criteria for Reproduction
4.4.3.2. Anatomy Recap

4.5. Clinical Handling and Preventive Medicine: The Key Factor for Excellence in the Eyes of the Owner. Key Questions
4.5.1. Sciuromorphs
4.5.1.1. Handling Techniques for Examination in the Practice
4.5.2. Hedgehogs
4.5.3. Pet Pigs
4.5.4. Preventive Medicine
4.5.4.1. Current Legislation and Animal Identification System
4.5.4.2. Vaccination Protocol
4.5.4.3. Deworming Guidelines
4.5.4.4. Information on Sterilization

4.6. Sampling for Diagnosis and Pathways for Drug Administration
4.6.1. Sciuromorphs
4.6.2. Hedgehogs
4.6.3. Pet Pigs

4.7. The Most Important Zoonoses: Protection as a Key Factor in the Veterinarian's Practice
4.7.1. Sciuromorphs
4.7.1.1. Animals Born in Captivity
4.7.1.2. Captured Animals That Live in Captivity
4.7.2. Hedgehogs
4.7.2.1. Demodex Spp
4.7.2.2. Notoedrees Cati
4.7.3. Pigs
4.7.3.1. Hydatidosis

4.8. Most Common Pathologies in Sciuromorphs
4.8.1. Update on Dermatology in Squirrels, Prairie Dogs and Richardson's Squirrels
4.8.1.1. Alopecia
4.8.1.2. Scabies: Sarcoptes Scabiei and Notoedres Cati
4.8.1.3. Dermatophytosis
4.8.2. Oral Cavity Pathologies: Most Common Dental Problems
4.8.2.1. Most Frequent Causes
4.8.2.2. Treatment
4.8.2.3. The Pseudo-Odontoma: The Most Common Dental Problem in Prairie Dogs
4.8.2.3.1. Predisposing Causes: Repeated Trauma
4.8.2.3.2. Symptoms: The Reason for Coming to the Practice
4.8.2.3.3. Effective Diagnosis
4.8.2.3.4. Definitive Treatment

4.9. The Most Common Pathologies in Hedgehogs
4.9.1. Scabies: Loss of Spikes That Scares the Owner
4.9.1.1. Caparinia Tripilis
4.9.1.2. Symptoms and Treatment
4.9.2. Dermatophytosis
4.9.2.1. Trichophyton Mentagrophytes and Microsporum Spp
4.9.2.2. Symptoms and Treatment
4.9.3. Respiratory Pathologies: Pneumonias
4.9.3.1. Bordetella Bronchiseptica
4.9.3.2. Multicide Pasteurella
4.9.3.3. Mycoplasma Spp
4.9.4. Nerve Pathologies: Wobbly Hedgehog Syndrome
4.9.4.1. Definition
4.9.4.2. Symptoms

4.10. The Most Common Pathologies in Dwarf Pigs
- 4.10.1. Dermal Pathologies: A Common Consultation Problem
- 4.10.2. Parasitosis
  - 4.10.2.1. Sarcoptes Scabiei
  - 4.10.2.2. Haematopinus Suis
- 4.10.3. Botulism: Similar Symptoms to Other Dermal Lesions
  - 4.10.3.1. Erysipelothrix Rhusiopathiae
- 4.10.4. Nail Overgrowth
  - 4.10.4.1. Specific Anatomy of the Nails
- 4.10.5. Obesity: A Common Issue with Pigs in Captivity
- 4.10.6. Swine Pleuropneumonia: Low Incidence but High Mortality
  - 4.10.6.1. Actinobacillus Pleuropneumoniae

## **Module 5.** Relevant Aspects of Birds

5.1. Taxonomic Classification of Psittaciformes: The Majority of Birds Brought to the Practice
- 5.1.1. Taxonomic Classification
- 5.1.2. Worldwide Distribution
- 5.1.3. Anatomic Differences

5.2. Taxonomic Classification of Psittaciformes: The Vast Majority of Wild Birds
- 5.2.1. Taxonomic Classification
- 5.2.2. Worldwide Distribution
- 5.2.3. Anatomic Differences

5.3. Taxonomic Classification of Falconiformes: Birds of prey
- 5.3.1. Taxonomic Classification
- 5.3.2. Worldwide Distribution
- 5.3.3. Anatomic Differences

5.4. Anatomy Recap
- 5.4.1. Generalized Anatomy Among Species
- 5.4.2. Anatomy of the Skeletal System
- 5.4.3. Anatomy of the Organs



5.5. Maintenance: Suitable Facilities for Each Species
- 5.5.1. Special Equipment: Types of Cages
- 5.5.2. Stress
- 5.5.3. Physical exercise
- 5.5.4. Ultraviolet Light
- 5.5.5. Bird Maintenance in Captivity
- 5.5.6. Feathers Coloring
- 5.5.7. Water Availability
- 5.5.8. Medication Added to the Water
- 5.5.9. Water Baths and Sprays

5.6. Nutritional Requirements: Food
- 5.6.1. Feeding Guidelines
- 5.6.2. Nutritional Composition Feed
  - 5.6.2.1. Carbohydrates
  - 5.6.2.2. Proteins
  - 5.6.2.3. Fats
  - 5.6.2.4. Vitamins
    - 5.6.2.4.1. Liposoluble Vitamins
    - 5.6.2.4.2. Hydrosoluble Vitamins
    - 5.6.2.4.3. Antivitamins
  - 5.6.2.5. Minerals

5.7. Type of Nutrition in Psittacine Birds
- 5.7.1. Seed Mix: Nature in Captivity
- 5.7.2. Feed: Differences Between Granulated and Extruded
- 5.7.3. Fruits and Vegetables: Environmental Enrichment
- 5.7.4. Germinated Seeds: With High Amounts of Vitamins
- 5.7.5. Cooked Legumes: In Raw Form They Generate Digestive Alterations
- 5.7.6. Eggfood: Desirable and Undesirable Effects
- 5.7.7. Other Products
- 5.7.8. Calculating Energy Needs: Basal Metabolic Rate (BMR) and Maintenance Energy Requirements (MER)

5.8. Generalized Diet for the Most Common Psittacines in Clinics
- 5.8.1. Australian Parakeet (Melopsittacus Undulattus)
- 5.8.2. Nymph, Cocotilla or Carolina (Nymphicus Hollandicus)
- 5.8.3. Lovebirds (Agapornis Spp)
- 5.8.4. African Grey Parrot, Yaco (Psithacus Erithacus)

5.9. Generalized Diet for the Least Common Psittacines in Clinics
- 5.9.1. Amazon Parrot (Amazona Sp)
- 5.9.2. Macaw (Ara Sp)
- 5.9.3. Cockatoo (Cacatua Sp)
- 5.9.4. Ecleptus Parrot (Ecleptus Roratus)
- 5.9.5. Loris
- 5.9.6. Psittacine Diet Conversion

5.10. Other Dietary Aspects
- 5.10.1. Relevant Aspects
- 5.10.2. Feeding in Passerine Birds
- 5.10.3. Diet in Hospitalized Patients

## **Module 6.** Diagnostic Criteria and Treatments in Birds

6.1. The Most Important Zoonoses
- 6.1.1. Prevention and Protection of the Veterinary Professional
- 6.1.2. Risk of Zoonosis from Handling
- 6.1.3. Risk of Zoonosis from Ingesting

6.2. Clinical Management and Preventive Medicine
- 6.2.1. Physical Examination: Comprehensive and Orderly
- 6.2.2. Bird Containment
- 6.2.3. Sampling and Drug Administration
  - 6.2.3.1. Intravenous Route
  - 6.2.3.2. Intraosseous Route
  - 6.2.3.3. Oral Posology
  - 6.2.3.4. Intramuscular Route
  - 6.2.3.5. Subcutaneous Route
  - 6.2.3.6. Topical Route
- 6.2.4. Preventive Medicine
  - 6.2.4.1. Vaccination
  - 6.2.4.2. Deworming
  - 6.2.4.3. Sterilization

6.3. Diagnostic Imaging: Avian Radiology
- 6.3.1. Ultrasound Equipment
- 6.3.2. Handling Techniques in Radiography
- 6.3.3. Ultrasound Visualization

6.4. Advanced Diagnostic Imaging
- 6.4.1. Avian Ultrasound: The Use of Ultrasound
- 6.4.2. Technical Problems
- 6.4.3. Preparing and Positioning the Patient
- 6.4.4. Avian Endoscopy: Instrumentation Required

6.5. Pathologies of the Skin
- 6.5.1. Acariasis: in Budgerigars and Canaries
- 6.5.2. Follicular Cysts: Usual Reason for Attending a Practice in Canaries
- 6.5.3. Itching: A Major Disorder
- 6.5.4. Cutaneous Lipomas: Very Common in Parakeets and Other Species

6.6. Other Important Diseases
- 6.6.1. Avian Smallpox: Poxvirus
- 6.6.2. Circovirus: Diseases of the Beak and Feathers
- 6.6.3. Gout: Visceral or Articular
- 6.6.4. Lameness: Multifactorial Causation
- 6.6.5. Spikes: "Bumblefoot"

6.7. Reproductive Diseases
- 6.7.1. Introduction
- 6.7.2. Egg Retention
- 6.7.3. Chronic Egg Laying Nymphs, Parakeets and Lovebirds

6.8. Review of Frequent Pathologies
- 6.8.1. Macrorhabdus Ornithogaster: The Megabacteria
- 6.8.2. Vomiting and Regurgitations: Non-specific Type
- 6.8.3. PDD: Proventricular Dilatation Disease
- 6.8.4. The Most Common Liver Problem
- 6.8.5. Non-specific Diarrhea: In Passerines and Psittaciformes

6.9. Other Pathologies
- 6.9.1. Psittacosis: Potential Zoonosis
- 6.9.2. Hypovitaminosis A: Common in Birds Fed Exclusively on Seeds
- 6.9.3. Aspergillosis: Fungi of the Aspergillus Genus
- 6.9.4. Non-specific Respiratory Problems: The Big Problem
- 6.9.5. Heavy Metal Poisoning
- 6.9.6. Hypocalcemia: Very common in Yacos

6.10. Treatment
- 6.10.1. Key Aspects to Perform a Surgical Procedure
- 6.10.2. Making Bandages
  - 6.10.2.1. Bandaging Wings
  - 6.10.2.2. Bandaging Spikes
- 6.10.3. Feather Cutting

## **Module 7.** Relevant Aspects of Reptiles I

7.1. Introduction
- 7.1.1. Taxonomic Classification
- 7.1.2. The Most Common Species of Reptiles in Captivity
- 7.1.3. Other Reptiles Kept in Captivity

7.2. Anatomy
- 7.2.1. Common Aspects in Reptiles
  - 7.2.1.1. Skeletal System
  - 7.2.1.2. Circulatory System
  - 7.2.1.3. Digestive System
- 7.2.2. Particular Anatomy of Turtles
- 7.2.3. Anatomy of Lizards
- 7.2.4. Anatomy of Snakes

7.3. Maintenance: Suitable Facilities for Each Species
- 7.3.1. Special Equipment: Types of Terrariums and Their Dimensions
- 7.3.2. Water: Calculation of Daily Water Requirements
- 7.3.3. The Material of the Terrarium
- 7.3.4. The Importance of temperature: POTZ (Preferred Optimum Temperature Zone)
- 7.3.5. The Importance of Humidity
- 7.3.6. Light Control: Effects on the Organism
  - 7.3.6.1. Types of Radiation
  - 7.3.6.2. Existing Materials on the Market
- 7.3.7. Living Together
  - 7.3.7.1. Interspecific
  - 7.3.7.2. Intraspecific

7.4. Hibernation or Diapause
- 7.4.1. Relevant Concepts
- 7.4.2. Types of Hibernation
- 7.4.3. Species that Hibernate
- 7.4.4. Problems Derived from Hibernation

7.5. Nutritional Requirements: Food
- 7.5.1. Classification Depending on the Type of Diet
- 7.5.2. Factors to be Assessed in Each Physiological State
- 7.5.3. Diet for Herbivore Species
- 7.5.4. Diet for Insectivore Species
- 7.5.5. Diet for Carnivore Species

7.6. Clinical Management
- 7.6.1. Reptile Transportation
  - 7.6.1.1. How Attend the Practice
  - 7.6.1.2. Long-Haul Transportation
  - 7.6.1.3. Legislation
- 7.6.2. Containing the Reptile for its Examination
- 7.6.3. Caudal Autotomy
- 7.6.4. Physical Examination
- 7.6.5. Sexing Techniques
  - 7.6.5.1. Turtles
  - 7.6.5.2. Lizards
  - 7.6.5.3. Ophidians
- 7.6.6. Handing During Hospitalization

7.7. Sampling and Drug Administration
- 7.7.1. Oral Posology
  - 7.7.1.1. Suitable Techniques
  - 7.7.1.2. Administering Food During Hospitalization
- 7.7.2. Subcutaneous Route
- 7.7.3. Intramuscular Route
- 7.7.4. Intravenous Route: Intravenous Catheterization
  - 7.7.4.1. Chelonids
  - 7.7.4.2. Lizards
  - 7.7.4.3. Ophidians
- 7.7.5. Intraosseous Route: Interosseous Catheterization
- 7.7.6. Intracellular Route: Similar to the Intraperitoneal Route in Mammals

7.8. The X-Ray as a Basic Diagnostic Technique
- 7.8.1. Radiological Technique: Machinery and Optimum Radiographic Contrast
- 7.8.2. Handling During X-Rays and Radiographic Visualization
  - 7.8.2.1. Chelonids
  - 7.8.2.2. Lizards
  - 7.8.2.3. Snakes

7.9. Other Diagnostic Imaging Techniques Used: Ultrasound and Endoscopy
- 7.9.1. Ultrasound in Reptiles: The Complement to Radiography
- 7.9.2. Endoscopy: With a Variety of Uses

7.10. Other Diagnostic Techniques
- 7.10.1. Biopsies: Very Valuable Information
- 7.10.2. Clinical Biochemistry
- 7.10.3. Cytological Techniques
- 7.10.4. Coprology in Reptiles
- 7.10.5. Microbiology: Detecting Viruses, Bacteria and Parasites
- 7.10.6. Necropsy: Postmortem Examination

## **Module 8.** Relevant Aspects of Reptiles II

8.1. The Most Important Zoonoses
- 8.1.1. Prevention and Protection
- 8.1.2. Risk of Zoonosis from Handling
- 8.1.3. Risk of Zoonosis from Ingesting

8.2. Dermal Diseases:
- 8.2.1. Injuries: Trauma and Aggressions
- 8.2.2. Dysecdysis: Alteration of Skin Shedding
- 8.2.3. Thermal Burns Caused by a Lack of Information Provided to the Owner
- 8.2.4. Pyramiding: Deformation of the Shell
- 8.2.5. Otic Abscesses: Common in Chelonians
- 8.2.6. Ectoparasites
- 8.2.7. Hypovitaminosis A: Multifactorial Cause

8.3. Digestive Alterations
- 8.3.1. Stomatitis: Very Common in Reptiles
- 8.3.2. Intestinal Obstruction: Causes
- 8.3.3. Hepatic Lipidosis: Obesity in Reptiles
- 8.3.4. Internal Parasites: Different Species

8.4. Other Pathologies
- 8.4.1. Rhinitis: Dyspnea and Urgency
- 8.4.2. Pneumonia: The Deficient Mucociliary System of The Lungs
- 8.4.3. Renal Insufficiency: Very Frequent in Reptiles
- 8.4.4. Gout: Multifaceted Causation

8.5. What Dose of a Drug to Use?
- 8.5.1. Minimum Energy Cost
- 8.5.2. MEC (Metabolic Energy Constant) and SMEC (Specific Minimum Energy Cost) Dose Values
- 8.5.3. Dose Examples

8.6. Common Treatments
- 8.6.1. Antibiotics
- 8.6.2. Disinfectants
- 8.6.3. Nutritional Treatments
- 8.6.4. Antimycotics
- 8.6.5. Antiparasitics II
- 8.6.6. Harmful Treatments

8.7. The Success of Anesthesia
- 8.7.1. Anesthetic Evaluation
- 8.7.2. Pre-Medication
- 8.7.3. Induction With Anesthetic Gas
  - 8.7.3.1. Types of Gases
  - 8.7.3.2. Anesthetic Circuitry
- 8.7.4. Anesthetic Recovery

8.8. Techniques and Applications of Basic Surgery
- 8.8.1. Esophagotomy
- 8.8.2. Intracellular Access in Saurians and Ophidians: Celiotomy
- 8.8.3. Cloacal Replacement
- 8.8.4. Tympanic Removal Due to Abscesses

8.9. Advanced Surgical Techniques
- 8.9.1. Cloacal or Penile Prolapse
- 8.9.2. Egg Retention
- 8.9.3. Hepatic biopsy
- 8.9.4. Renal Biopsy

8.10. Common Orthopedic Surgeries
- 8.10.1. Metabolic Bone Disease: SNHP (Secondary Nutritional Hyperparathyroidism)
- 8.10.2. Tail Amputation
- 8.10.3. Limb Amputation and Fractures
- 8.10.4. Shell Fractures

## **Module 9.** Wild Animal Medicine and Surgery

9.1. Triage and Emergency Care of Wildlife
- 9.1.1. Legislation, Organization and Function of Animal Centers
- 9.1.2. The Philosophy and Ethics of Wild Life
- 9.1.3. Answering Questions About Treatment and Release into the Wild
- 9.1.4. The Relationship With the Wildlife Rehabilitator
- 9.1.5. Emergency Treatment of Wildlife
- 9.1.6. Animal Identification Techniques: Essential for Population Control

9.2. Selection and Emergency Treatment in Wild Patients
- 9.2.1. Trauma
- 9.2.2. Oil Spills
- 9.2.3. Intoxications
- 9.2.4. Infectious Diseases
- 9.2.5. Geriatric Animals
- 9.2.6. Natural Disasters
- 9.2.7. Rehabilitation and Release of Wild Patients

9.3. Real Situations in Wildlife Anesthesia and Immobilization
- 9.3.1. Ideal Situation
- 9.3.2. Real Situation
- 9.3.3. Anesthetic Considerations
- 9.3.4. Public Safety

9.4. The Anesthetic Procedure in Relation to Wildlife
- 9.4.1. The Immobilization Process
- 9.4.2. Non-Injectable Anesthetics
- 9.4.3. Non-Injectable Anesthetics
- 9.4.4. Anesthetic Recovery: Capture Myopathy

9.5. Bacterial Diseases of Wildlife I
- 9.5.1. Leptospirosis: Leptospira Spp
- 9.5.2. Brucellosis: Undulant Fever
- 9.5.3. The Bubonic plague: Yersinia Pestis

9.6. Bacterial Diseases of Wildlife II
- 9.6.1. Psittacosis: Ornithosis and Chlamydiosis
- 9.6.2. Salmonellosis: Salmonella Spp
- 9.6.3. Tetanus: Clostridium Tetanii
- 9.6.4. Tularemia: Rabbit Fever

9.7. Other Important Diseases in Wildlife III
- 9.7.1. Aspergillosis: Aspergillus Fumigatus
- 9.7.2. Histoplasmosis: Histoplasma Capsulatum
- 9.7.3. Rabies: Rhabdovirus
- 9.7.4. Helminth Diseases: Parasites

9.8. Ursid Medicine
- 9.8.1. Taxonomy: Ursidae Family
- 9.8.2. Most Common Species of Bears
- 9.8.3. Eye Anesthesia: Necessary Medicines
- 9.8.4. Most Common Infectious Diseases
- 9.8.5. Biometrics
- 9.8.6. Diagnostic Techniques
- 9.8.7. Vaccination: Types and Protocols

9.9. Wild Feline Medicine
- 9.9.1. Taxonomy: Felidae Family
- 9.9.2. Most Common Species of Wild Felines
- 9.9.3. Anesthesia in Wild Felines: Common Drugs
- 9.9.4. Most Common Infectious Diseases
- 9.9.5. Other Important Diseases
- 9.9.6. Biometrics
- 9.9.7. Diagnostic Techniques

9.10. Medicine in Primates
- 9.10.1. Taxonomic Classification: Primates of the New World and the Old World
- 9.10.2. The Most Common Species of Primates
- 9.10.3. Anesthesia in Primates: Common Drugs
- 9.10.4. Most Common Infectious Diseases

## **Module 10.** Care and Pathologies in Fish

10.1. Veterinary Clinic Activity in Fish: Basis for Clinical Diagnosis
- 10.1.1. Profile of the Clinic: The Global Picture
- 10.1.2. The Different Aquatic Environments
  - 10.1.2.1. Natural Aquatic Environment and Ornamental Fish Keeping Facilities
  - 10.1.2.2. The Role of Technology in Water Maintenance
- 10.1.3. Chemical Properties of the Water
  - 10.1.3.1. Chemical Criteria
  - 10.1.3.2. Biological Criteria

10.2. Anatomic Review: Guidelines to Achieve Cross-Species Identification
- 10.2.1. Taxonomic Classification
- 10.2.2. Most Common Species of Fish
  - 10.2.2.1. Ornamental Fish
  - 10.2.2.2. Fish for Consumption
  - 10.2.2.3. Laboratory Fish

10.3. Clinical Handling: Guidelines for Correct Handling
- 10.3.1. Appropriate Anamnesis
- 10.3.2. Accurate Physical Evaluation
- 10.3.3. Basic Handling Techniques
- 10.3.4. Specialized Methods in Clinical Techniques
  - 10.3.4.1. Taking Samples for Complementary Tests

10.4. Clinical Guidelines: The Definitive Diagnosis
- 10.4.1. Identifying Clinical Problems
- 10.4.2. Post-Mortem Diagnostic Techniques: the Big Finding
  - 10.4.2.1. Necropsy Technique
- 10.4.3. Interpreting Clinical Findings
- 10.4.4. Zoonosis: The Importance of Knowledge for Our Protection
- 10.4.5. Biosecurity
- 10.4.6. Patient Protection
- 10.4.7. Food Safety
- 10.4.8. Environmental Safety

10.5. Pathologies Diagnosed with Simple Water Analysis Kits: Incorrect Management of the Aquatic Environment
- 10.5.1. Low Concentration of Oxygen
- 10.5.2. Adequate Temperature Control
  - 10.5.2.1. Thermal Gradients
- 10.5.3. Toxicity Due to Ammonia Concentration
- 10.5.4. Toxicity Due to Nitrite Concentration
- 10.5.5. Controlling the pH of the Water
- 10.5.6. Appropriate Use and Measurement of the Water pH
- 10.5.7. Concentration of Solutes in Water
  - 10.5.7.1. Hard Water
  - 10.5.7.2. Inadequate Salinity



10.6. Pathologies Resulting from Improper Maintenance: The Fish as an Individual Patient
- 10.6.1. Nutritional Deficiency
- 10.6.2. Presence of Inappropriate Toxic Substances: Poisons
- 10.6.3. Pathologies Due to the Presence of Algae
- 10.6.4. Trauma
- 10.6.5. Genetic Alterations

10.7. Pathologies Caused by Microorganisms
- 10.7.1. Viral
- 10.7.2. Bacterial
- 10.7.3. Parasitic

10.8. Pathologies that Require Complementary Diagnostic Tests
- 10.8.1. Incorrect Concentration of Gas
- 10.8.2. Trematode Infections
- 10.8.3. Nematode Infections
- 10.8.4. Cestode Infections
- 10.8.5. Ceratomyxa Shasta Infection
- 10.8.6. Microsporidiosis
- 10.8.7. Coccidiosis
- 10.8.8. Processes of Renal Destruction

10.9. Treatment Administration: General Concepts and the Most Utilized Methods
- 10.9.1. Guide of Treatments Used
- 10.9.2. Medicine Administration Routes
- 10.9.3. Choosing the Right Dosage

10.10. Most Commonly Used Anesthesia Techniques: Administration of Anesthesia
- 10.10.1. Patient Response to Aesthesia
- 10.10.2. Euthanasia
- 10.10.3. Toxicity and Residues Generated by the Environment

07

# Clinical Internship

After passing the online teaching period, the program includes a Clinical Internship period in a veterinary clinical center of reference. The student will have at their disposal the support of a tutor who will accompany them during the whole process, both in the preparation and in the development of the clinical practice.

*Get a professional development with this program, composed of the most innovative contents on exotic pets, with an internship in a renowned veterinary center"*

The internship of this program in Exotic Animal Medicine and Surgery consists of a practical stay of 3 weeks in a veterinary center of reference in the area of study. This will be done by practicing alongside an associate veterinary specialist. This stay will allow to see real cases next to a professional team of reference in the veterinary area, applying the most innovative medical and surgical procedures of last generation.

In this practical proposal, the activities are aimed at developing and perfecting the skills necessary for the provision of veterinary care in areas and conditions that require a high level of qualification, and are oriented to the specific education for the exercise of the activity, in an environment of safety and high professional performance.

In this way, TECH offers a unique academic experience, which takes the professional into the latest scientific and technical advances in the approach to exotic species. An exceptional opportunity to turn a clinical scenario into a space where professionals can improve their veterinary skills.

The practical part will be carried out with the active participation of the students performing the activities and procedures of each area of competence (learning to learn and learning to do), with the accompaniment and guidance of the professors and other fellow students that facilitate teamwork and multidisciplinary integration as transversal competencies for the practice of veterinary medicine and surgery (learning to be and learning to relate).

The procedures described below will form the basis of the practical part of the internship, and their implementation is subject to both the suitability of the patients and the availability of the center and its workload, with the proposed activities being as follows:



| Module | Practical Activity |
|---|---|
| Medical practice in exotic animals | Practice the prevention protocol and guidelines for a correct maintenance of the animal after the initial consultation |
| | Provide support in the application of preventive medicine, such as vaccinations, coprological and vermifugations |
| | Explore the anatomy and physiological functioning of the oral cavity of rabbits and rodents |
| | Practice sedation of rabbits and rodents |
| | Use anesthesia to perform surgical treatments |
| | Perform abscess practice |
| Treat new companion animals | Examine the different exotic species that enter the clinic |
| | Practice the prevention protocol and guidelines for a correct maintenance of the animal after the initial consultation |
| | Inform about the legal requirements for keeping invasive exotic pets |
| | Perform the most common procedures and pathologies in pets |
| Diagnostic Criteria and Treatments in Birds | Practice radiology and ultrasound of the avian patient |
| | Detect the most common dermal pathologies, such as acariasis, follicular cysts, itching and cutaneous lipomas |
| | Collaborate in the analysis of follicular cysts in birds |
| | Perform differential diagnosis of the main pathologies in birds |
| | Perform infectious diseases tests |
| | Carrying out laboratory sampling: coprological, Uri complete analysis |
| Wild Animal Medicine and Surgery | Perform examination of felines entering the practice |
| | Analyze possible nutritional diseases and infectious diseases in wild animals |
| | Practicing anesthesia and sedation techniques |
| | Perform infectious disease tests |
| | Perform sampling: coprological, complete urinalysis, cytology and smears, culture of dermatophytes |
| Care and Pathologies in Fish | Examining fish entering the clinical center |
| | Collaborate in the most commonly used antiparasitic treatments and external disinfectants |
| | Test fish for infectious diseases |
| | Analyze the type of facilities where the fish live, their suitability and needs |

## Civil Liability Insurance

This institution's main concern is to guarantee the safety of the students and other collaborating agents involved in the internship process at the company. Among the measures dedicated to achieve this is the response to any incident that may occur during the entire teaching-learning process.

To this end, this entity commits to purchasing a civil liability insurance policy to cover any eventuality that may arise during the course of the internship at the center.

This liability policy for interns will have broad coverage and will be taken out prior to the start of the practical training period. That way professionals will not have to worry in case of having to face an unexpected situation and will be covered until the end of the internship program at the center.

## General Conditions of the Internship Program

The general terms and conditions of the internship agreement for the program are as follows:

1. TUTOR: During the Hybrid Professional Master's Degree, students will be assigned with two tutors who will accompany them throughout the process, answering any doubts and questions that may arise. On the one hand, there will be a professional tutor belonging to the internship center who will have the purpose of guiding and supporting the student at all times. On the other hand, they will also be assigned with an academic tutor whose mission will be to coordinate and help the students during the whole process, solving doubts and facilitating everything they may need. In this way, the student will be accompanied and will be able to discuss any doubts that may arise, both clinical and academic.

2. DURATION: The internship program will have a duration of three continuous weeks, in 8-hour days, 5 days a week. The days of attendance and the schedule will be the responsibility of the center and the professional will be informed well in advance so that they can make the appropriate arrangements.

3. ABSENCE: If the students does not show up on the start date of the Hybrid Professional Master's Degree, they will lose the right to it, without the possibility of reimbursement or change of dates. Absence for more than two days from the internship, without justification or a medical reason, will result in the professional's withdrawal from the internship, therefore, automatic termination of the internship. Any problems that may arise during the course of the internship must be urgently reported to the academic tutor.

4. CERTIFICATION: Professionals who pass the Hybrid Professional Master's Degree will receive a certificate accrediting their stay at the center.

5. EMPLOYMENT RELATIONSHIP: The Hybrid Professional Master's Degree shall not constitute an employment relationship of any kind.

6. PRIOR EDUCATION: Some centers may require a certificate of prior education for the Hybrid Professional Master's Degree. In these cases, it will be necessary to submit it to the TECH internship department so that the assignment of the chosen center can be confirmed.

7. DOES NOT INCLUDE: The Hybrid Professional Master's Degree will not include any element not described in the present conditions. Therefore, it does not include accommodation, transportation to the city where the internship takes place, visas or any other items not listed.

However, students may consult with their academic tutor for any questions or recommendations in this regard. The academic tutor will provide the student with all the necessary information to facilitate the procedures in any case.

08

# Where Can I Do the Clinical Internship?

This Hybrid Professional Master's Degree includes in its itinerary a practical stay in a prestigious veterinary center where the students will put into practice everything they have learned in the treatment of exotic animals. In this sense, and in order to bring this program closer to more professionals, TECH offers the opportunity to study it in different veterinary centers. In this way, this institution strengthens its commitment to quality in all its programs for everyone.

*Achieve your goals through a first class practical stay in the veterinary clinical center provided by TECH"*

The students will be able to complete the practical part of this Hybrid Professional Master's Degree at the following centers:


### Centro veterinario Madrid exóticos

Country: Spain
City: Madrid

Address: Calle Meléndez Valdés 17, 28015, Madrid

Veterinary Center specialized in the care of exotic animals

**Related internship programs:**
-Exotic Animal Medicine and Surgery


### Mastervet

Country: Spain
City: Madrid

Address: Calle de Nuria, 57, 28034, Madrid

Veterinary center specialized in the training of professionals based on the latest techniques available

**Related internship programs:**
- Exotic Animal Medicine and Surgery
- Veterinary Surgery in Small Animals


### Hospital Artemisa Cañaveral

Country: Spain
City: Madrid

Address: Francisco Grande Covian, local 1, 28052 Madrid

Veterinary hospital specialized in general care and 24-hour emergency assistance

**Related internship programs:**
- Veterinary Anesthesiology
- Veterinary Surgery in Small Animals


### Hospital Veterinario La Fortuna MiVet

Country: Spain
City: Madrid

Address: C. de San Pedro, 29, 28917 Leganés, Madrid

Clinic specializing in the comprehensive care of the sick animal and in clinical problems difficult to diagnose

**Related internship programs:**
- Veterinary Surgery in Small Animals
- Veterinary Emergencies in Small Animals

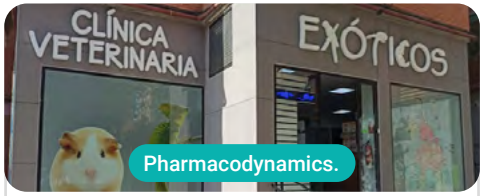

### Animales Exóticos 24h

Country: Spain
City: Madrid

Address: C. de Cartagena, 160, 28002 Madrid

24-hour comprehensive veterinary assistance clinic

**Related internship programs:**
- Exotic Animal Medicine and Surgery



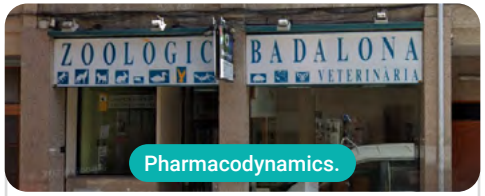

### Clínica Veterinaria Exóticos

Country: Spain
City: Madrid

Address: Calle Húmera 16 posterior Acceso por calle Villalba y, C/ de Málaga, 28945 Fuenlabrada, Madrid

Veterinary care center specializing in exotic animals

**Related internship programs:**
- Exotic Animal Medicine and Surgery




### Zoològic Veterinaris

Country: Spain
City: Barcelona

Address: Carrer de la Conquista, 74, 08912 Badalona, Barcelona

Veterinary clinic specialized in the veterinary and high level care of domestic, exotic, wild and zoo animals

**Related internship programs:**
- Exotic Animal Medicine and Surgery


### Els Altres

Country: Spain
City: Barcelona

Address: Rosselló, 274, 08037 Barcelona

Veterinary center specialized in exotic animals

**Related internship programs:**
- Exotic Animal Medicine and Surgery


### Hospital Veterinario

Country
Argentina

City
Buenos Aires

Address: Caveri 1343, Cruce Castelar, Moreno

Emergency and specialty veterinary hospital for small domestic and exotic animals

**Related internship programs:**
- Veterinary Surgery in Small Animals
- Veterinary Emergencies in Small Animals

*You will combine theory and professional practice through a demanding and rewarding educational approach"*

09

# Methodology

This academic program offers students a different way of learning. Our methodology uses a cyclical learning approach: **Relearning.**
This teaching system is used, for example, in the most prestigious medical schools in the world, and major publications such as the **New England Journal of Medicine** have considered it to be one of the most effective.

*Discover Relearning, a system that abandons conventional linear learning, to take you through cyclical teaching systems: a way of learning that has proven to be extremely effective, especially in subjects that require memorization"*

## At TECH we use the Case Method

What should a professional do in a given situation? Throughout the program you will be presented with multiple simulated clinical cases based on real patients, where you will have to investigate, establish hypotheses and, finally, resolve the situation. There is an abundance of scientific evidence on the effectiveness of the method. Specialists learn better, faster, and more sustainably over time.

*With TECH you will experience a way of learning that is shaking the foundations of traditional universities around the world.*


According to Dr. Gérvas, the clinical case is the annotated presentation of a patient, or group of patients, which becomes a "case", an example or model that illustrates some peculiar clinical component, either because of its teaching power or because of its uniqueness or rarity. It is essential that the case is based on current professional life, in an attempt to recreate the actual conditions in a veterinarian's professional practice.

*Did you know that this method was developed in 1912, at Harvard, for law students? The case method consisted of presenting students with real-life, complex situations for them to make decisions and justify their decisions on how to solve them. In 1924, Harvard adopted it as a standard teaching method"*

**The effectiveness of the method is justified by four fundamental achievements:**

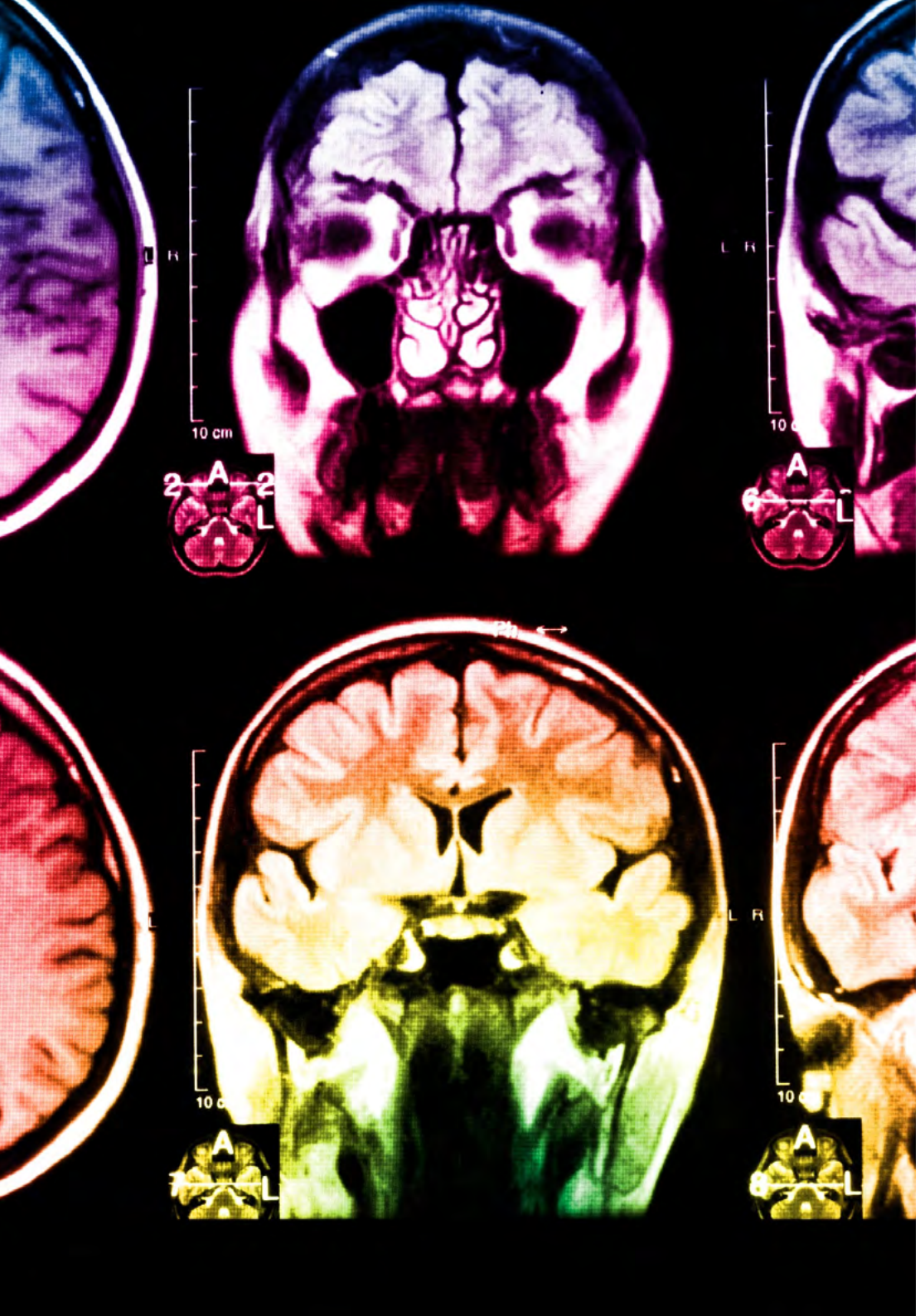
1. Veterinarians who follow this method not only manage to assimilate concepts, but also develop their mental capacity through exercises to evaluate real situations and knowledge application
2. Learning is solidly translated into practical skills that allow the student to better integrate into the real world.
3. Ideas and concepts are understood more efficiently, given that the example situations are based on real-life.
4. The feeling that the effort invested is effective becomes a very important motivation for veterinarians, which translates into a greater interest in learning and an increase in the time dedicated to working on the course.

## Relearning Methodology

At TECH we enhance the case method with the best 100% online teaching methodology available: Relearning.

This university is the first in the world to combine the study of clinical cases with a 100% online learning system based on repetition, combining a minimum of 8 different elements in each lesson, a real revolution with respect to the mere study and analysis of cases.

*Veterinarians will learn through real cases and by resolving complex situations in simulated learning environments. These simulations are developed using state-of-the-art software to facilitate immersive learning.*



At the forefront of world teaching, the Relearning method has managed to improve the overall satisfaction levels of professionals who complete their studies, with respect to the quality indicators of the best online university (Columbia University).

With this methodology more than 65,000 veterinarians have been trained with unprecedented success in all clinical specialties, regardless of the surgical load. Our teaching method is developed in a highly demanding environment, where the students have a high socio-economic profile and an average age of 43.5 years.

*Relearning will allow you to learn with less effort and better performance, involving you more in your training, developing a critical mindset, defending arguments, and contrasting opinions: a direct equation for success.*

In our program, learning is not a linear process, but rather a spiral (learn, unlearn, forget, and re-learn). Therefore, we combine each of these elements concentrically.

The overall score obtained by TECH's learning system is 8.01, according to the highest international standards.

**This program offers the best educational material, prepared with professionals in mind:**

### Study Material

All teaching material is produced by the specialists who teach the course, specifically for the course, so that the teaching content is highly specific and precise.

These contents are then applied to the audiovisual format, to create the TECH online working method. All this, with the latest techniques that offer high quality pieces in each and every one of the materials that are made available to the student.

### Latest Techniques and Procedures on Video

TECH introduces students to the latest techniques, the latest educational advances and to the forefront of current and procedures of veterinary techniques. All of this in direct contact with students and explained in detail so as to aid their assimilation and understanding. And best of all, you can watch the videos as many times as you like.

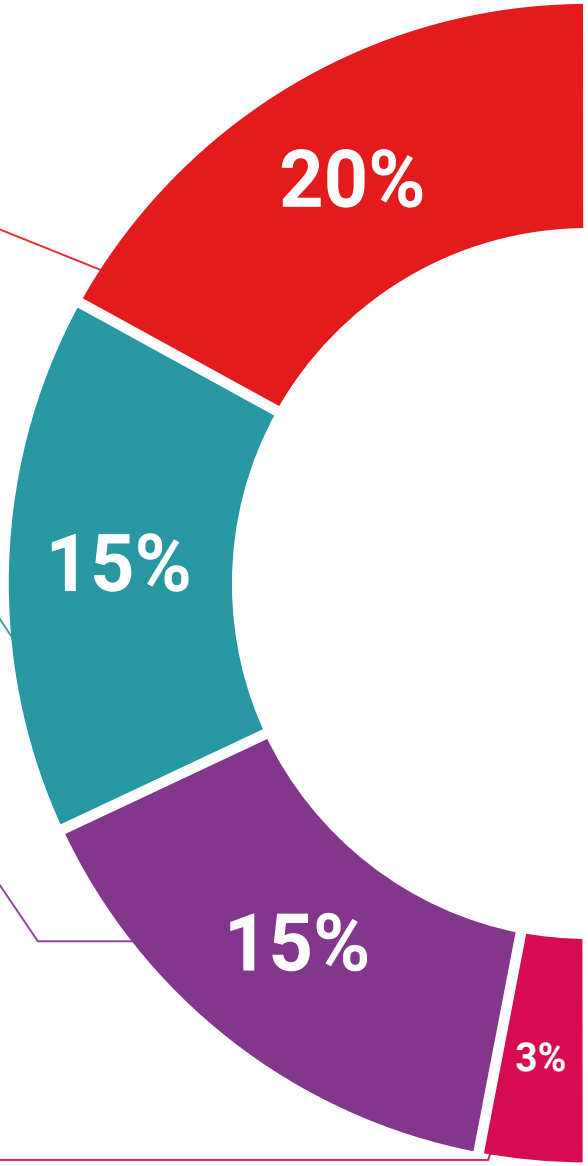
### Interactive Summaries

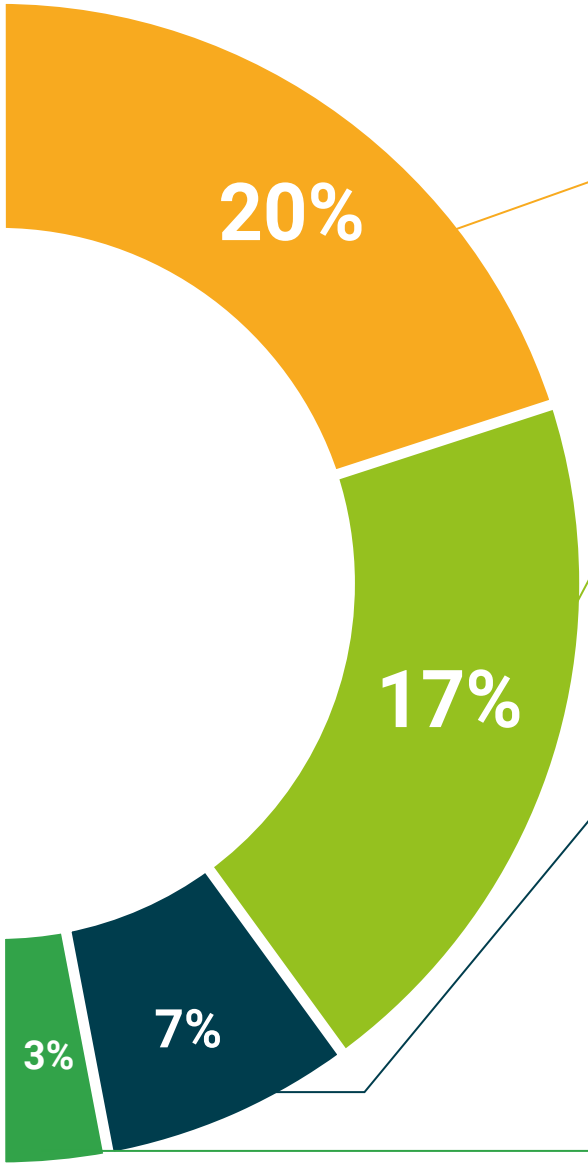
The TECH team presents the contents attractively and dynamically in multimedia lessons that include audio, videos, images, diagrams, and concept maps in order to reinforce knowledge.

This exclusive educational system for presenting multimedia content was awarded by Microsoft as a "European Success Story".

### Additional Reading

Recent articles, consensus documents and international guidelines, among others. In TECH's virtual library, students will have access to everything they need to complete their course.






### Expert-Led Case Studies and Case Analysis

Effective learning ought to be contextual. Therefore, TECH presents real cases in which the expert will guide students, focusing on and solving the different situations: a clear and direct way to achieve the highest degree of understanding.

### Testing & Retesting

We periodically evaluate and re-evaluate students' knowledge throughout the program, through assessment and self-assessment activities and exercises, so that they can see how they are achieving their goals.

### Classes

There is scientific evidence suggesting that observing third-party experts can be useful.

Learning from an Expert strengthens knowledge and memory, and generates confidence in future difficult decisions.

### Quick Action Guides

TECH offers the most relevant contents of the course in the form of worksheets or quick action guides. A synthetic, practical, and effective way to help students progress in their learning.

10

# Certificate

This Hybrid Professional Master's Degree in Exotic Animal Medicine and Surgery guarantees students, in addition to the most rigorous and up-to-date education, access to a Hybrid Professional Master's Degree diploma issued by TECH Technological University

*Successfully complete this program and receive your university qualification without having to travel or fill out laborious paperwork"*

This **Hybrid Professional Master's Degree in Exotic Animal Medicine and Surgery** contains the most complete and up-to-date program on the professional and educational field.

After the student has passed the assessments, they will receive their corresponding Hybrid Professional Master's Degree diploma issued by TECH Technological University via tracked delivery*.

In addition to the certificate, students will be able to obtain an academic transcript, as well as a certificate outlining the contents of the program. In order to do so, students should contact their academic advisor, who will provide them with all the necessary information.

Title: **Hybrid Professional Master's Degree in Exotic Animal Medicine and Surgery**

Modality: **Hybrid (Online + Clinical Internship)**

Duration: **12 months**

Certificate: **TECH Global University**

Recognition: **60 + 5 ECTS Credits**

Teaching Hours: **1,620 h.**

tech technological university

Awards the following

CERTIFICATE

to

Mr./Ms. _____, with identification number _____.

For having successfully passed and accredited the following program

HYBRID PROFESSIONAL MASTER'S DEGREE

in

Exotic Animal Medicine and Surgery

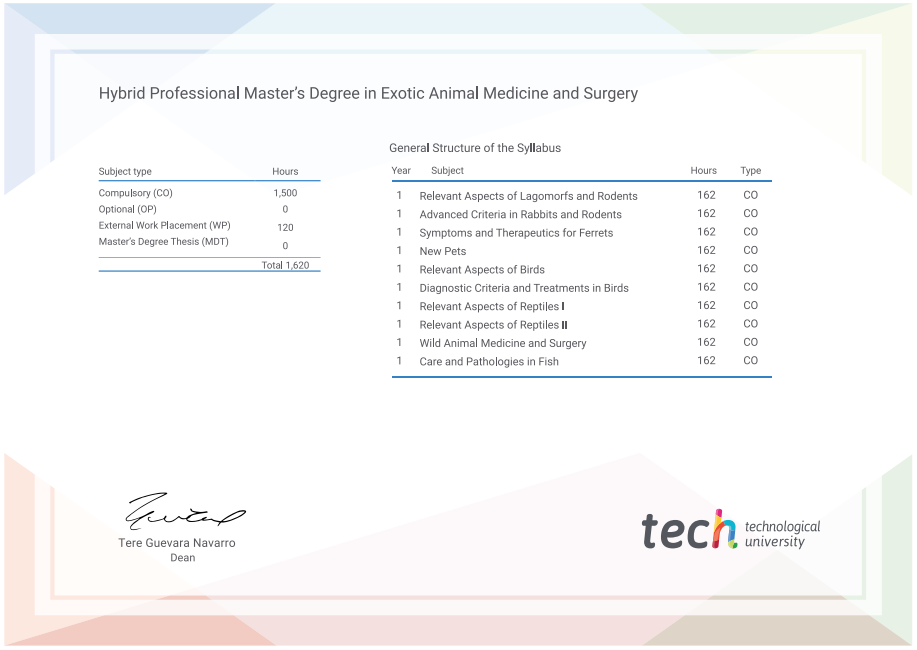
This is a qualification awarded by this University, with a duration of 1,620 hours, with a start date of dd/mm/yyyy and an end date of dd/mm/yyyy.

TECH is a Private Institution of Higher Education recognized by the Ministry of Public Education as of June 28, 2018.

June 17, 2020

Tere Guevara Navarro
Dean

This qualification must always be accompanied by the university degree issued by the competent authority to practice professionally in each country. Unique TECH Code: AFWORD23S techtitute.com/certificates



Hybrid Professional Master's Degree in Exotic Animal Medicine and Surgery

| Subject type | Hours |
|---|---|
| Compulsory (CO) | 1,500 |
| Optional (OP) | 0 |
| External Work Placement (WP) | 120 |
| Master's Degree Thesis (MDT) | 0 |
| | Total 1,620 |

General Structure of the Syllabus

| Year | Subject | Hours | Type |
|---|---|---|---|
| 1 | Relevant Aspects of Lagomorfs and Rodents | 162 | CO |
| 1 | Advanced Criteria in Rabbits and Rodents | 162 | CO |
| 1 | Symptoms and Therapeutics for Ferrets | 162 | CO |
| 1 | New Pets | 162 | CO |
| 1 | Relevant Aspects of Birds | 162 | CO |
| 1 | Diagnostic Criteria and Treatments in Birds | 162 | CO |
| 1 | Relevant Aspects of Reptiles I | 162 | CO |
| 1 | Relevant Aspects of Reptiles II | 162 | CO |
| 1 | Wild Animal Medicine and Surgery | 162 | CO |
| 1 | Care and Pathologies in Fish | 162 | CO |

Tere Guevara Navarro
Dean

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*Apostille Convention. In the event that the student wishes to have their paper certificate issued with an apostille, TECH EDUCATION will make the necessary arrangements to obtain it, at an additional cost.

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# Hybrid Professional Master's Degree
## Exotic Animal Medicine and Surgery

Modality: **Hybrid (Online + Clinical Internship)**

Duration: **12 months**

Certificate: **TECH Global University**

Recognition: **60 + 5 ECTS Credits**

Teaching Hours: **1,620 h.**

# Hybrid Professional Master's Degree

## Exotic Animal Medicine and Surgery

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