

Professional Master's Degree  
Veterinary Traumatology  
and Orthopedic Surgery





## Professional Master's Degree Veterinary Traumatology and Orthopedic Surgery

- » Modality: online
- » Duration: 12 months
- » Certificate: TECH Global University
- » Credits: 60 ECTS
- » Schedule: at your own pace
- » Exams: online

Website: [www.techtute.com/us/veterinary-medicine/professional-master-degree/master-veterinary-traumatology-orthopedic-surgery](http://www.techtute.com/us/veterinary-medicine/professional-master-degree/master-veterinary-traumatology-orthopedic-surgery)

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01

# Introduction

Every day, veterinarians face new challenges in treating their patients. This Professional Master's Degree specializes veterinary professionals in Traumatology and Orthopedic Surgery through theoretical and practical training given by professionals with extensive experience and worldwide recognition in this field.





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*This specialisation is the best option you can find to specialize in Veterinary Traumatology and Orthopedic Surgery and make more accurate diagnoses"*

The teaching team of this Professional Master's Degree in Veterinary Traumatology and Orthopedic Surgery has made a careful selection of the different state-of-the-art surgical techniques for experienced professionals working in the veterinary field, focusing on anamnesis, physical examination of the patient, complementary medical tests and interpretation, differential diagnoses and treatment.

The Professional Master's Degree in Veterinary Traumatology and Orthopedic Surgery develops a program based on scientific evidence and daily veterinary hospital practice with a global approach to the state of orthopedic surgery in the world.

And to the question: Can you learn surgery online? The answer is yes. The study of online surgery is nowadays a reality. Scientific studies carried out at Ohio State University in the 1980s prove that students are more efficient at performing sutures when they have watched videos of the procedures before performing them on training models. The same results were obtained in endoscopic surgery: there is more efficient learning when students have previously watched videos of the procedures to be performed in laparoscopy.

The teachers in this training are university professors with between 10 and 50 years of classroom and hospital experience. They are professors from schools on different continents, with different ways of doing surgery and with world-renowned surgical techniques. This makes this Professional Master's Degree a unique specialisation program, different from any other Master's Degree currently offered by other universities.

Being an online program, the student is not constrained by fixed schedules or the need to move to another physical location, but can access the contents at any time of the day, balancing their work or personal life with their academic life as they wish.

This Professional Master's Degree provides students with specialized tools and skills to successfully develop their professional activity in the broad field of Traumatology and Orthopedic Surgery, working on key competencies such as knowledge of the reality and daily practice of the Veterinary Hospital, and developing responsibility in the monitoring and supervision of their work, as well as communication skills within the essential teamwork.

This **Professional Master's Degree in Veterinary Traumatology and Orthopedic Surgery** contains the most complete and up-to-date scientific program on the market.

The most important features include:

- ♦ The development of practical cases presented by experts in veterinary traumatology and orthopedic surgery
- ♦ The graphic, schematic, and eminently practical contents with which they are created, provide scientific and practical information on the disciplines that are essential for professional practice
- ♦ Latest innovations in veterinary traumatology and orthopedic surgery
- ♦ Practical exercises where self-assessment can be used to improve learning
- ♦ Special emphasis on innovative methodologies in veterinary traumatology and orthopedic surgery
- ♦ 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



*Don't miss the opportunity to take this Professional Master's Degree in Veterinary Traumatology and Orthopedic Surgery with us. It's the perfect opportunity to advance in your career"*

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*This Professional Master's Degree is the best investment you can make when choosing a refresher program to update your existing knowledge of Veterinary Traumatology and Orthopedic Surgery"*

Its teaching staff includes professionals from the veterinary field, who bring the experience of their work to this training, as well as recognised specialists from leading societies and prestigious universities.

Its Multimedia Content, elaborated with the latest Educational Technology, will allow the Professional a situated and contextual learning, that is to say, a Simulated Environment that will provide an immersive specialization programmed to train in real situations.

This program is designed around Problem Based Learning, whereby the student must try to solve the different professional practice situations that arise during the academic year. To do this, the professional will be assisted by an innovative interactive video system created by renowned and experienced experts in veterinary traumatology and orthopedic surgery.

*This training comes with the best didactic material, providing you with a contextual approach that will facilitate your learning.*

*This 100% online program's degree will allow you to combine your studies with your professional work while increasing your knowledge in this field.*



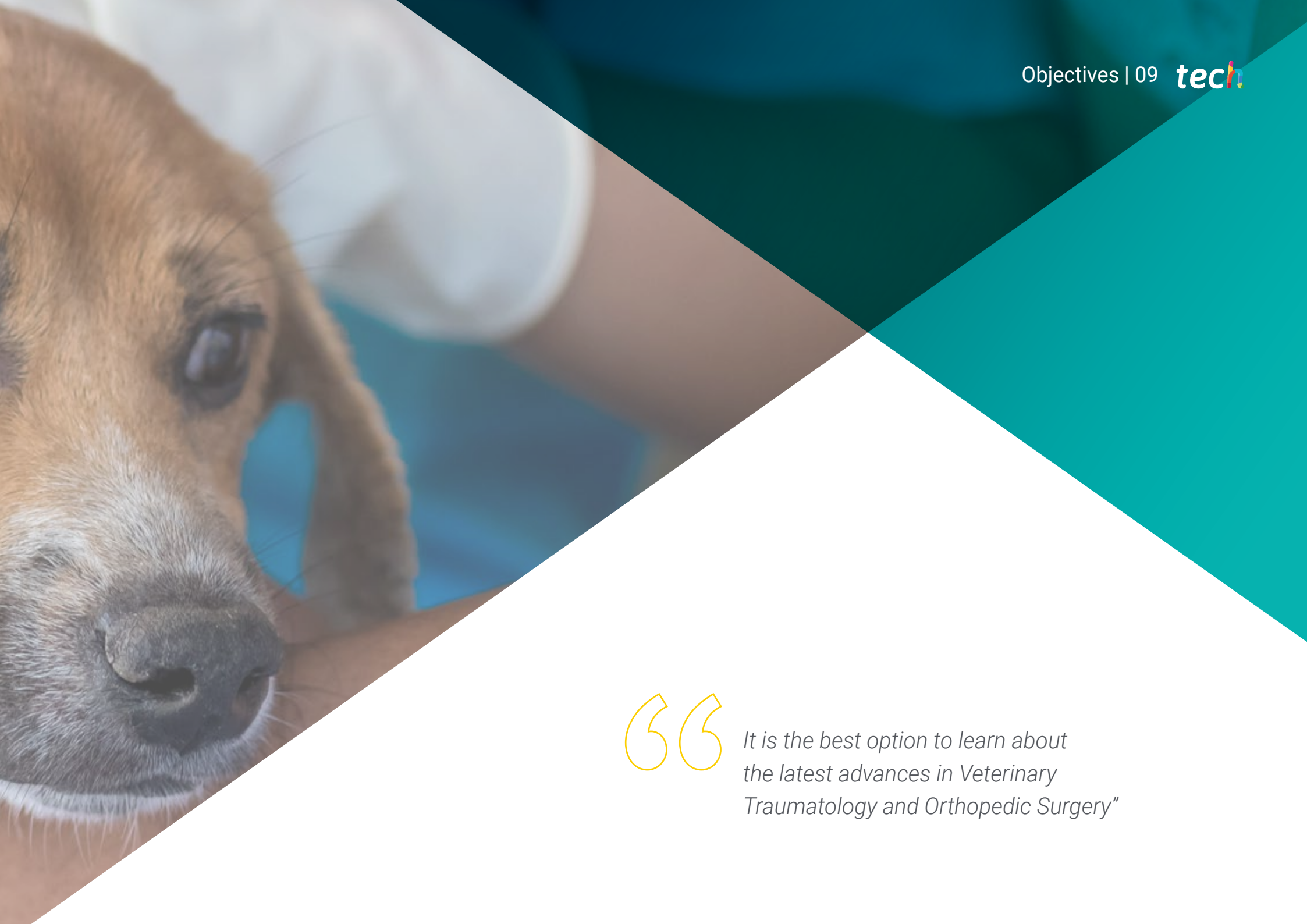
02

# Objectives

The Professional Master's Degree in Veterinary Traumatology and Orthopedic Surgery is aimed at facilitating the medical professional's performance with the latest advances and most innovative treatments in the sector.







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*It is the best option to learn about  
the latest advances in Veterinary  
Traumatology and Orthopedic Surgery”*



## General Objectives

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- ♦ Gain in-depth knowledge of cytology and bone histology
- ♦ Develop understanding of bone physiology and its influence in a patient with bone disease on the hormonal system that governs the bone
- ♦ Determine how to carry out bone repair, clinical radiographic assessment and fracture reparation
- ♦ Analyze the forces acting on the skeletal body causing stress and the absorption of that force depending on the magnitude and direction of the force absorbed by the body
- ♦ Examine the different types of bone repair that exist in a bone depending on the method of fixation
- ♦ Perform a dynamic and static physical examination of a patient
- ♦ Differentiate the different orthopedic diseases depending on the different symptoms found at the time of physical examination
- ♦ Use audiovisual methods to make an assessment for an orthopedic physical examination such as normal speed video cameras, slow motion video, metric measurements and use of a goniometer
- ♦ Compile the different configurations of the Kirschner-Ehmer external tutor
- ♦ Analyze the advantages and disadvantages of using external fixators
- ♦ Establish post-surgical care for external tutors
- ♦ Develop a discussion regarding nailing technique
- ♦ Identify and apply the basic principles in the use of the intramedullary and locked nails used in fractures in dogs and cats
- ♦ Analyze the biomechanics and forces controlling the intramedullary nail in long bone fractures in dogs and cats
- ♦ Establish the methods of insertion, types and sizes of intramedullary nails used in fractures in dogs and cats
- ♦ Identify the advantages, disadvantages and complications of the use of the intramedullary nail in fractures in dogs and cats
- ♦ Analyze and understand the principles and uses of the locking nail in long bone fractures in dogs and cats
- ♦ Identify other uses of the intramedullary nail and ancillary methods applied to bone fractures in dogs and cats
- ♦ Examine the evolution of internal fixation with plates over the last 50 years
- ♦ Determine the characteristics of each of the most important systems used in the world
- ♦ Classify the different plate fixation systems for osteosynthesis in dogs and cats, in terms of form, size and function
- ♦ Detail the anatomy of the pelvic region as well as closely related regions
- ♦ Identify "candidate patients" for conservative or surgical treatment following a pelvic fracture
- ♦ Specialise in the various fixation systems for pelvic fractures
- ♦ Establish the main complications associated with pelvic fractures
- ♦ Assess the immediate post-surgical needs of patients with pelvic fractures, as well as their medium and long-term evolution



- ◆ Develop theoretical and practical knowledge of osteosynthesis in specific fractures of the femur, tibia and patella
- ◆ Encourage specialist judgement for decision making in specific fractures with specific repairs in each of the clinical situations in femur, patella and tibia
- ◆ Develop specialized knowledge of osteosynthesis of complicated fractures of the scapula, humerus, radius and ulna
- ◆ Develop specialized decision-making criteria for "specific" fractures with "specific" repairs in each of the fractures that exist in the scapula, humerus, radius and ulna
- ◆ Analyze arthroscopy techniques in different joints
- ◆ Examine arthroscopic visualisation
- ◆ Evaluate arthroscopic instrumentation
- ◆ Develop surgical techniques guided by arthroscopy
- ◆ Identify the three possible orthopedic conditions in each clinical case
- ◆ Identify the definitive orthopedic disease after ruling out those that do not apply
- ◆ Analyze the differences between the two diseases in order to avoid misdiagnosis.
- ◆ Examine state-of-the-art diagnostic methods
- ◆ Develop specialized knowledge in order to carry out the best treatment for each of these diseases



## Specific Objectives

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### Module 1. Osteogenesis

- ♦ Develop knowledge of bone cytology
- ♦ Determine the formation of structures and the difference between immature bone and true bone
- ♦ Examine the hormonal influence on bone development
- ♦ Detail the resistance of the bone to trauma, differentiate between a stable fracture and an unstable fracture by the appearance of the callus in an X-ray

### Module 2. Orthopedic Physical Examination

- ♦ Identify abnormalities in the patient through their medical history
- ♦ Establish the management of a patient on arrival at the hospital for a static and dynamic orthopedic physical
- ♦ Determine the importance in the orthopedic physical examination of observation, inspection, palpation, tenderness and listening for joint crepitus, as well as measurement of joint range of motion
- ♦ Recognize the 20 most commonly encountered diseases in dogs
- ♦ Develop the necessary skills and ability to perform a good orthopedic clinical examination in order to make a decisive diagnosis
- ♦ Develop the ability to establish possible diagnoses by detailing the supporting diagnostic methods to obtain a definitive diagnosis

### Module 3. Skeletal External Fixators and Circular Fixators

- ♦ Analyze the behaviour of different configurations of linear, hybrid and circular tutors
- ♦ Compile the use of external tutors in cases of non-unions
- ♦ Propose the use of external fixation as the first option for tibia and radius fractures

- ♦ Gain sound knowledge of the use of tutors as a first option for open or infected fractures
- ♦ Demonstrate that external tutors can be used in felines
- ♦ Establish guidelines for the choice of use of each of the configurations
- ♦ Assess the importance of the quality of materials
- ♦ Examine the behaviour of the use of acrylic for long bone fractures
- ♦ Justify the advantages of the use of circular arthrodesis tutors
- ♦ Generate in the student the curiosity about the use of external tutors

### Module 4. Intramedullary Nailing

- ♦ Establish the uses of intramedullary and locking nail applications in fractures of the femur, tibia and humerus
- ♦ Define the biomechanics and rotational stability of the intramedullary nail applied to the long bones of dogs and cats
- ♦ Identify the normograde and retrograde insertion forms for intramedullary nailing of long bones in dogs and cats
- ♦ Identify the use of intramedullary nailing and auxiliary fixation as cerclages and external fixators in fractures in dogs and cats
- ♦ Establish fracture repair times, radiographic follow-up and removal of intramedullary nails and ancillary methods used in fractures in dogs and cats
- ♦ Identify the use of the tension band applied to avulsion fractures in dogs and cats
- ♦ Evaluate the use of cross pins in metaphyseal, supracondylar and physal fractures of the long bones of dogs and cats

### Module 5. Bone Plates and Screws

- ◆ Develop specialist judgement in the use of any of the systems covered in this module to decide which is the optimal fracture verification system for daily practice in dogs and cats
- ◆ Identify the main advantages and disadvantages of each of the plate fixation methods
- ◆ Evaluate the rope or conical locking systems in each of the plate fastening systems
- ◆ Determine the instrumentation required for the application of each implant.
- ◆ Make the best decision for each of the most common fractures on the best plate fixation system
- ◆ Decide on the optimal system to be used for different developmental conditions that cause angulations or abnormalities of bones and joints

### Module 6. Pelvis Fractures

- ◆ Analyze and identify the clinical features associated with a pelvic fracture
- ◆ Recognize and evaluate the different factors in patients with pelvic fractures that allow us to make an accurate prognosis
- ◆ Perform surgical approaches in the various anatomical regions where therapeutic procedures are carried out
- ◆ Apply the various conservative therapies in patients with pelvic fractures, both in the initial stages and in the subsequent weeks of recovery
- ◆ Specialize the veterinary professional in the performance of standard and proper maneuvers in the reduction of pelvic fractures
- ◆ Select the appropriate surgical implant for each type of pelvic pathology, identifying the advantages and disadvantages of each case
- ◆ Specialize the veterinary professional in the surgical techniques characteristic of specific pelvic pathologies

- ◆ Perform a correct analgesic management of patients immediately post surgery and in the medium- and long-term
- ◆ Develop the main methods of rehabilitation and return to function of patients with pelvic fractures

### Module 7. Pelvic Limb Fractures

- ◆ Establish the classification of proximal femoral fractures and develop expertise on the most recommended fixation methods for successful fracture repair
- ◆ Compile the different systems and combinations of osteosynthesis systems in the repair of mid-femoral weight-bearing fractures
- ◆ Analyse the different methods of fixation and specialise in those that offer the highest success rate of fixation of knee fractures
- ◆ Determine the different fractures involving the tibia and specialize in the most recommended fixation methods for the solution of their fractures
- ◆ Examine the most common fractures encountered in daily practice, their diagnosis and surgical resolution

### Module 8. Thoracic Limb Fractures

- ◆ Analyze the fractures of the scapula and how to fix each one of them
- ◆ Examine the classification of distal humerus fractures
- ◆ Determine the most recommended methods of fixation for successful fracture repair
- ◆ Develop specialized training in the different combinations of osteosynthesis systems for the repair of mid-humeral fractures
- ◆ Study the different methods of fixation and refine knowledge in those methods that have the highest success rate among the different methods of elbow fracture fixation
- ◆ Specify the different fractures involving the radius and ulna

- ♦ Analyse the different methods of fixation most recommended for the solution of fractures of the radius and ulna
- ♦ Detail the most common fractures of the region and their diagnosis and surgical resolution
- ♦ Examine fractures and dislocations of the carpus and phalanges and the most effective fixation of these
- ♦ Determine forelimb growth abnormalities, origin and treatment by means of angular corrections through osteotomies and associated treatment methods
- ♦ Determine the most common fractures of the mandible and maxilla, as well as the different ways of solving them

#### Module 9. Arthroscopy

- ♦ Describe the history and evolution of arthroscopy in human and veterinary medicine
- ♦ Evaluate arthroscopy equipment and instruments and their handling
- ♦ Examine the advantages of arthroscopy compared to conventional open surgery
- ♦ Analyse arthroscopy as a method of diagnosing intra-articular pathologies of each joint
- ♦ Provide a rationale for arthroscopy as a method of surgical treatment of intra-articular pathologies
- ♦ Develop arthroscopically assisted surgical techniques for the treatment of periarticular pathologies
- ♦ Establish the contraindications of arthroscopy, assess the complications of this technique and how to resolve them





### Module 10. Orthopedic Diseases

- ♦ Examine and analyze each of the diseases
- ♦ Carry out a correct assessment in order to reach a definitive diagnosis for each of the diseases mentioned
- ♦ Improve therapeutic practice in each of these diseases
- ♦ Assess how best to prevent these diseases
- ♦ Identify early symptoms of diseases for early treatment
- ♦ Methodically analyse the main developmental diseases taking into account differences of age, sex, size, forelimb and hind limb

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*Make the most of the opportunity and take the step to get up to date on the latest developments in Veterinary Traumatology and Orthopedic Surgery "*

# 03 Skills

After passing the assessments in the Professional Master's Degree in Veterinary Traumatology and Orthopedic Surgery, the professional will have acquired the necessary skills for a quality and up-to-date practice based on the most innovative teaching methodology.





A close-up photograph of a horse's mane, showing the texture and color of the hair. The mane is light brown and appears to be blowing in the wind. The image is positioned on the left side of the page, overlapping a dark teal background that transitions into a white background.

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*This program will help you acquire the skills you need to excel in your daily work"*



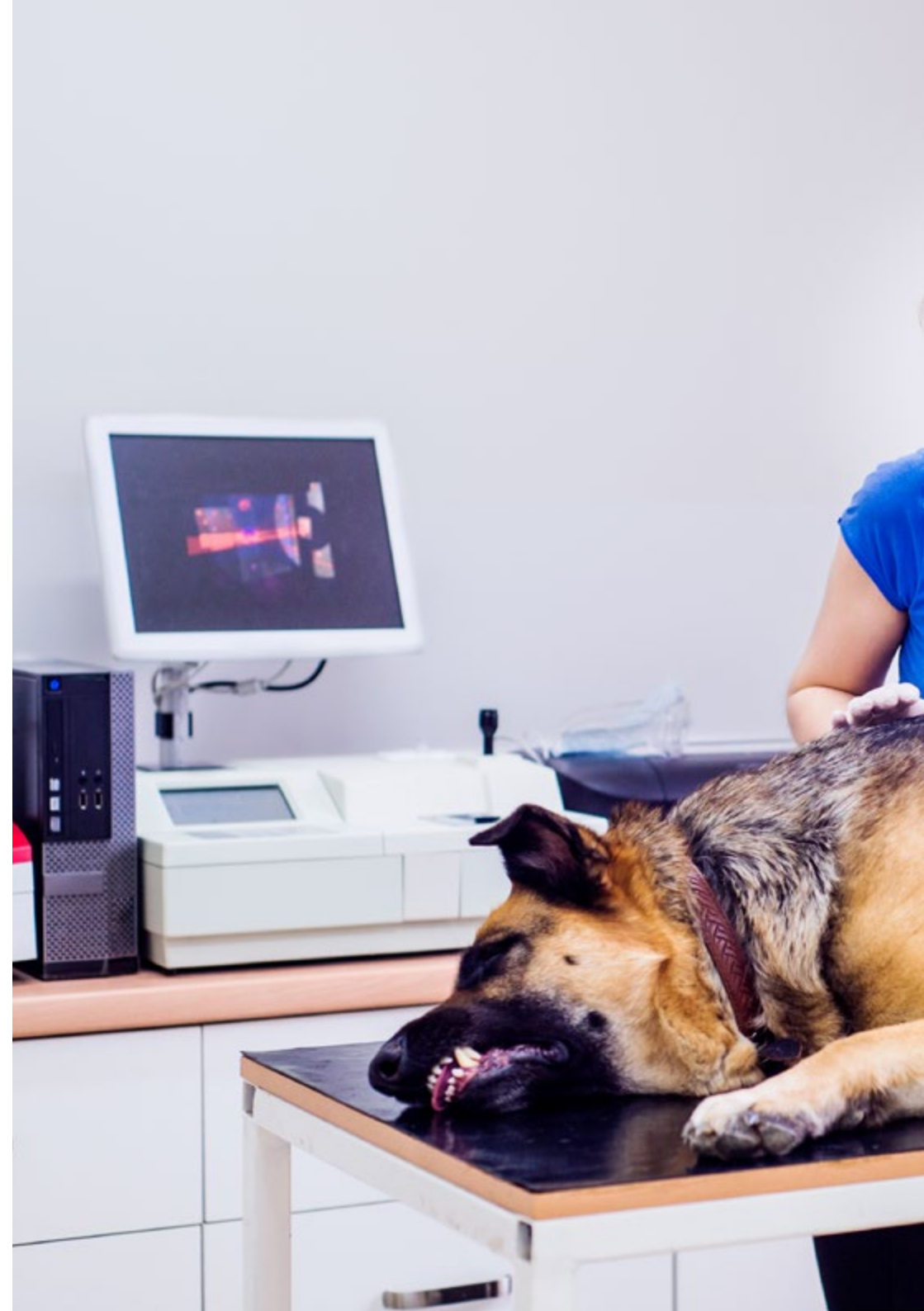
## General Skills

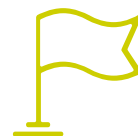
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- ♦ Diagnose the different traumatological problems in animals and use the necessary techniques for their treatment
- ♦ Assess different traumatological pathologies using audiovisual methods
- ♦ Perform post-surgical care
- ♦ Utilize the most modern methods of Orthopedic Surgery

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*A program that will allow you to acquire high level training to develop in this very competitive field"*





## Specific Skills

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- ◆ Knowledge of bone cytology
- ◆ Differentiate the types of bone fractures
- ◆ Perform an orthopedic physical examination to reach definitive diagnoses
- ◆ Know the most common diseases in this area in dogs and cats
- ◆ Know the best procedures for treating fractures
- ◆ Use the best devices for bone fixation after a fracture
- ◆ Apply the most appropriate mechanisms for femur, tibia and humerus fractures in dogs and cats
- ◆ Managing recovery times after a fracture
- ◆ Use the optimal fracture verification system in the daily practice of dogs and cats
- ◆ Know the advantages and disadvantages of the use of plates, and use them if necessary
- ◆ Identify all characteristics associated with pelvic fractures
- ◆ Apply the necessary techniques for the treatment of these pathologies
- ◆ Perform the necessary post-surgical care for this type of fracture
- ◆ Know the characteristics of fractures of the femur, tibia and knee
- ◆ Use the most appropriate fixation methods for these fractures
- ◆ Identify and analyze fractures of the scapula, radius and ulna, as well as the carpus, phalanges, mandible and maxilla
- ◆ Use the most appropriate methods in each case
- ◆ Know the advantages of arthroscopy and use it in appropriate cases
- ◆ Know the contraindications of arthroscopy
- ◆ Evaluate animals to effectively diagnose their pathology
- ◆ Perform the best therapeutic practice in each case
- ◆ Prevent certain diseases in pets

04

# Course Management

The teaching staff of the program includes leading experts in Veterinary Traumatology and Orthopedic Surgery, who bring their years of experience to this program. They are world-renowned doctors from different countries with proven theoretical and practical professional experience.





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*Our teaching team, experts in  
Veterinary Traumatology and  
Orthopedic Surgery, will help you to  
achieve success in your profession"*

## Management



### Dr. Soutullo Esperón, Ángel

- ◆ Head of the surgery service at the University Hospital of the Alfonso X el Sabio University
- ◆ Owner of the veterinary clinic ITECA
- ◆ Degree in Veterinary Medicine from the Complutense University of Madrid
- ◆ Master's Degree in Surgery and Traumatology the Complutense University of Madrid
- ◆ Diploma of Advanced Studies in Veterinary Medicine from the Complutense University of Madrid
- ◆ Member of the Scientific Committee of GEVO and AVEPA
- ◆ Lecturer at the Alfonso X el Sabio University in the subjects of Radiology, Surgical Pathology and Surgery
- ◆ Head of the surgery section on the AEVA Master's Degree in Small Animal Emergencies.
- ◆ Study of the clinical repercussions of corrective osteotomies TPLO (TFG Meskal Ugatz)
- ◆ Study of the clinical repercussions of corrective osteotomies in TPLO (TFG Ana Gandía)
- ◆ Studies of biomaterials and xenografts for orthopedic surgery

## Professors

### Dr. Borja Vega, Alonso

- ♦ Advanced PGCert in Small Animal Orthopedics
- ♦ Postgraduate Course in Veterinary Ophthalmology UAB
- ♦ SETOV practical course on initiation to osteosynthesis
- ♦ Advanced elbow course

### Dr. Flores Galán, José A.

- ♦ Head of the Traumatology, Orthopedics and Neurosurgery Service at Privet Veterinary Hospitals
- ♦ Degree in Veterinary Medicine from the Complutense University of Madrid
- ♦ PhD student at the Complutense University of Madrid in the field of traumatological surgery in the Dept. of Animal Medicine and Surgery of the Faculty of Veterinary Medicine
- ♦ Specialist in Traumatology and Orthopedic Surgery in Companion Animals, Complutense University of Madrid

### Dr. García Montero, Javier

- ♦ Member of the Official College of Veterinarians of Ciudad Real, Veterinary Hospital Cruz Verde (Alcazar de San Juan)
- ♦ Traumatology and Orthopedics, Surgery and Anesthesia Service Manager
- ♦ El Pinar Veterinary Clinic (Madrid)

### Dr. Guerrero Campuzano, María Luisa

- ♦ Director, exotic animal and small animal veterinarian, Petiberia Veterinary Clinic
- ♦ Zoo veterinarian
- ♦ Member of the Official College of Veterinarians of Madrid

### Dr. Monje Salvador, Carlos Alberto

- ♦ Head of the Outpatient Surgery and Endoscopy Service
- ♦ Head of Surgery and Minimally Invasive Service (endoscopy, laparoscopy, bronchoscopy, rhinoscopy etc.)
- ♦ Head of the Diagnostic Imaging Service (advanced abdominal ultrasound and radiology)

05

# Structure and Content

The structure of the content has been designed by the best professionals in Veterinary Traumatology and Orthopedic Surgery sector, with extensive experience and recognized prestige in the profession, backed by the volume of cases reviewed, studied, and diagnosed, and with extensive knowledge of new technologies applied to veterinary.







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*This Professional Master's Degree in Veterinary Traumatology and Orthopedic Surgery contains the most complete and up-to-date scientific program on the market”*

## Module 1. Osteogenesis

- 1.1. Biomechanics of Fractures
  - 1.1.1. Bone as a material
  - 1.1.2. The Role of Bone in Bone Fracture. Mechanical Concepts
- 1.2. Osteogenic Cells
  - 1.2.1. Osteoblasts
  - 1.2.2. Osteocytes
  - 1.2.3. Osteoclasts
- 1.3. The Bone Matrix
- 1.4. The Growth Plate
  - 1.4.1. Organization of the Growth Plate
  - 1.4.2. Blood Supply to the Growth Plate
  - 1.4.3. Structure and Function of the Growth Plate
  - 1.4.4. Cartilaginous Components
    - 1.4.4.1. Reserve Area
    - 1.4.4.2. Proliferative Zone
    - 1.4.4.3. Hypertrophic Zone
  - 1.4.5. Bone Components (Metaphysis)
  - 1.4.6. Fibrous and Fibrocartilaginous Components
- 1.5. Diaphyseal Bone Formation
- 1.6. Cortical Remodelling
- 1.7. Bone Irrigation
  - 1.7.1. Normal Irrigation of Young Bone
  - 1.7.2. Normal Irrigation of Mature Bone
    - 1.7.2.1. Afferent Vascular System
      - 1.7.2.1.1. Physiology of the Afferent Vascular System
    - 1.7.2.2. Afferent Vascular System
      - 1.7.2.2.1. Physiology of the Afferent Vascular System
    - 1.7.2.3. Intermediate Vascular System of Compact Bone
      - 1.7.2.3.1. Physiology Intermediate Vascular System of Compact Bone
      - 1.7.2.3.2. Bone Cell Activity
- 1.8. Calcium-Regulating Hormones
  - 1.8.1. Parathyroid Hormone
    - 1.8.1.1. Anatomy of the Parathyroid Glands
    - 1.8.1.2. Parathyroid Hormone Biosynthesis
    - 1.8.1.3. Control of Parathyroid Hormone Secretion
    - 1.8.1.4. Biological Action of Parathyroid Hormone
  - 1.8.2. Calcitonin
    - 1.8.2.1. Thyroid C (Parafollicular) Cells
    - 1.8.2.2. Calcitonin Secretion Regulation
    - 1.8.2.3. Biological Action and Physiological Significance of Calcitonin
    - 1.8.2.4. Primary and Secondary Hypercalcitoninemia
  - 1.8.3. Cholecalciferol (Vitamin D)
    - 1.8.3.1. Metabolic Activation of Vitamin D
    - 1.8.3.2. Subcellular Mechanisms of Action of Active Vitamin Metabolites
    - 1.8.3.3. Effects of Hormonal Alterations on the Skeleton Under Pathological Conditions
    - 1.8.3.4. Vitamin D Deficiency
    - 1.8.3.5. Vitamin D Excess
    - 1.8.3.6. Primary and Secondary Hyperparathyroidism
- 1.9. Fracture Repair
  - 1.9.1. The Bone's Response to Trauma
  - 1.9.2. Basic Fracture Repair
    - 1.9.2.1. Inflammatory Phase
    - 1.9.2.2. Repair Phase
    - 1.9.2.3. Remodelling Phase
    - 1.9.2.4. Callus Formation
    - 1.9.2.5. Fracture Healing
    - 1.9.2.6. First Intention Repair
    - 1.9.2.7. Second Intention Repair
    - 1.9.2.8. Clinical Union
    - 1.9.2.9. Clinical Attachment Ranges

- 1.10. Complications of Fractures
  - 1.10.1. Delayed Stabilization
  - 1.10.2. Non-Union
  - 1.10.3. Malunion
  - 1.10.4. Osteomyelitis

## Module 2. Orthopedic Physical Examination

- 2.1. The Owner's First Contact with the Hospital
  - 2.1.1. Questions to Be Asked at Reception.
  - 2.1.2. Appointment with the Patient
  - 2.1.3. Age, Sex, Race
- 2.2. Orthopedic Physical Examination Dynamism
  - 2.2.1. Image and Video Capture
  - 2.2.2. Slow Motion Video
  - 2.2.3. Front, Rear and Side Views
  - 2.2.4. Walking, Jogging, Running
- 2.3. Static Orthopedic Physical Examination
  - 2.3.1. Methodology for its Implementation
  - 2.3.2. Degrees of Claudication
  - 2.3.3. Superficial Palpation
  - 2.3.4. Superficial Palpation
  - 2.3.5. The Anatomy That One Should Know in Each Palpated Region
  - 2.3.6. Joint Ranges of Motion and the Goniometer
  - 2.3.7. According to Breed and Age, Which Are the 5 Most Commonly Encountered?
- 2.4. Diagnostic Imaging in Traumatology and Orthopedic Surgery I
  - 2.4.1. Radiology
    - 2.4.1.1. General Aspects
    - 2.4.1.2. Positioning, Technique and Applications
  - 2.4.2. Ultrasound
    - 2.4.2.1. General Aspects
    - 2.4.2.2. Positioning, Technique and Applications
- 2.5. Diagnostic Imaging in Traumatology and Orthopedic Surgery II
  - 2.5.1. Tomography
    - 2.5.1.1. General Aspects
    - 2.5.1.2. Positioning, Technique and Applications
  - 2.5.2. Magnetic Resonance
    - 2.5.2.1. General Aspects
    - 2.5.2.2. Positioning, Technique and Applications
- 2.6. Arthrocentesis. Joint Diseases From the Cytology Point of View
  - 2.6.1. Preparation for Arthrocentesis
  - 2.6.2. Arthrocentesis Approach in Different Regions
  - 2.6.3. Sending Samples
  - 2.6.4. Physical Examination of Synovial Fluid
- 2.7. Arthritis and Polyarthritis
  - 2.7.1. Types of Arthritis and Polyarthritis
    - 2.7.1.1. Autoimmune
    - 2.7.1.2. Cells I
    - 2.7.1.3. Ehrlichia
    - 2.7.1.4. Rickets
  - 2.7.2. Clinical diagnosis
  - 2.7.3. Differential Diagnosis
- 2.8. Osteoarthritis I
  - 2.8.1. Etiology
  - 2.8.2. Clinical and Laboratory Diagnostics
- 2.9. Osteoarthritis II
  - 2.9.1. Treatment
  - 2.9.2. Prognosis
- 2.10. Medicine, Orthopedics and Management of Exotic Species
  - 2.10.1. Birds
  - 2.10.2. Reptiles
  - 2.10.3. Small Mammals

### Module 3. Skeletal External Fixators and Circular Fixators

- 3.1. External Fixators
  - 3.1.1. History of the External Skeletal Fixator
  - 3.1.2. Description of the External Fixator
- 3.2. Parts That Make Up the Kirschner-Ehmer Apparatus
  - 3.2.1. Nail
    - 3.2.1.1. Fasteners
  - 3.2.2. Connector Bar
- 3.3. Settings of the External Skeletal Fixator
  - 3.3.1. Half Skeletal Fixation Device
  - 3.3.2. Standard Kirschner-Ehmer Apparatus
  - 3.3.3. Modified Kirschner-Ehmer Apparatus
  - 3.3.4. Bilateral External Fixator Model
- 3.4. Mixed Skeletal Fixator Apparatus
- 3.5. Methods of Application of the Kirschner-Ehmer Apparatus
  - 3.5.1. Standard Method
  - 3.5.2. Modified Method
- 3.6. External Fixators with Acrylic
  - 3.6.1. The Use of Resin
  - 3.6.2. The Use of Dental Acrylics
    - 3.6.2.1. Preparation of Acrylics
    - 3.6.2.2. Application and Setting Time
    - 3.6.2.3. Post-Surgery Care
    - 3.6.2.4. Implant Removal
  - 3.6.3. Acquisition of Acrylic Material
  - 3.6.4. Care in the Application of Acrylics
  - 3.6.5. Toxicity of Acrylic
  - 3.6.6. Bone Cement for Use in Fractures
- 3.7. Indications and Uses of External Fixatives
  - 3.7.1. Fore Limb
  - 3.7.2. Hind Limb
  - 3.7.3. Other Areas
- 3.8. Advantages and Disadvantages of Using External Fixators

- 3.9. Postoperative Care and Complications
  - 3.9.1. Cleaning the Fixator
  - 3.9.2. Post-Operative Radiographic Studies
  - 3.9.3. Implant Removal
  - 3.9.4. Repositioning of a Fixator
- 3.10. Fixators in Exotic Species
  - 3.10.1. Birds
  - 3.10.2. Reptiles
  - 3.10.3. Small Mammals

### Module 4. Intramedullary Nailing

- 4.1. History
  - 4.1.1. Kuntcher's Nail
  - 4.1.2. The First Canine Patient with an Intramedullary Nail
  - 4.1.3. The Use of the Steinmann Nail in the 1970s
  - 4.1.4. The Use of the Steinmann Nail Today
- 4.2. Principles of Intramedullary Nail Application
  - 4.2.1. Type of Fractures in Which it Can Be Exclusively Placed
  - 4.2.2. Rotational Instability
  - 4.2.3. Length, Tip and Rope
  - 4.2.4. Nail to Medullary Canal Diameter Ratio
  - 4.2.5. Principle of the 3 Points of the Cortex
  - 4.2.6. Behaviour of the Bone and its Irrigation after Intramedullary Nail
    - 4.2.6.1. The Steinmann Nail and the Radius
- 4.3. The Use of Locks with the Steinmann Intramedullary Nail
  - 4.3.1. Principles of Application of Fastenings and Lashings
    - 4.3.1.1. Barrel Principle
    - 4.3.1.2. Type of Fracture Line
- 4.4. Principles of Application of the Tension Band
  - 4.4.1. Pawel's or Brace Principle
  - 4.4.2. Application of Engineering to Orthopedics
  - 4.4.3. Bone Structures where the Tension Band is to Be Applied



- 4.5. Normograde and Retrograde Application Method of the Steinmann Nail
  - 4.5.1. Proximal and Distal Normograde
  - 4.5.2. Proximal and Distal Retrograde
- 4.6. Femur
  - 4.6.1. Proximal Femoral Fractures
  - 4.6.2. Fractures of the Medium Third of the Femur
  - 4.6.3. Fractures of the Distal Third of the Femur
- 4.7. Tibia
  - 4.7.1. Fractures of the Proximal Third
  - 4.7.2. Fractures of the Middle Third of the Tibia
  - 4.7.3. Fractures of the Distal Third of the Tibia
  - 4.7.4. Fractures of the Tibial Malleoli
- 4.8. Anterior Member
  - 4.8.1. Intramedullary Nail in the Humerus
  - 4.8.2. Intramedullary Nail in the Ulna
  - 4.8.3. Steinmann Intramedullary Nail Fixation
  - 4.8.4. Steinmann Intramedullary Nail and Auxiliary Fixation
  - 4.8.5. Acromion
- 4.9. Intramedullary and Proximal Nailing in Exotic Animals
  - 4.9.1. X-ray Monitoring
  - 4.9.2. Bone Callus Formation
  - 4.9.3. Consolidation Behavior of the Different Species
- 4.10. Centromedullary Steel Nail
  - 4.10.1. History
  - 4.10.2. Components
  - 4.10.3. Structure
  - 4.10.4. Application
  - 4.10.5. Advantages and Disadvantages

## Module 5. Bone Plates and Screws

- 5.1. History of Metal Plates in Internal Fixing
  - 5.1.1. The Initiation of Plates for Fracture Fixation
  - 5.1.2. The World Association of Orthopedic Manufacturers (AO/ASIF)
  - 5.1.3. Sherman and Lane plates
  - 5.1.4. Steel Plates
  - 5.1.5. Titanium Plates
  - 5.1.6. Plates of Other Materials
  - 5.1.7. Combination of Metals for New Plate Systems
- 5.2. Different Fixing Systems with Plate (AO/ASIF, ALPS, FIXIN)
  - 5.2.1 AO/ASIF Plates
  - 5.2.2. Advanced Locked Plate System. (ALPS)
  - 5.2.3. FIXIN and its Conical Block
- 5.3. Instrument Care
  - 5.3.1. Cleaning and Disinfection
  - 5.3.2. Lavage
  - 5.3.3. Drying
  - 5.3.4. Lubrication
  - 5.3.5. Organisation
- 5.4. Instruments Used for the Fixation of Plates and Screws
  - 5.4.1. Self-Tapping Screws and Tap Removal
  - 5.4.2. Depth Gauges
  - 5.4.3. Drilling Guides
  - 5.4.4. Plate Benders and Plate Twisters
  - 5.4.5. Screw Heads
  - 5.4.6. Screws / Bolts
- 5.5. Use and Classification of Screws
  - 5.5.1. Cancellous Bone Screws
  - 5.5.2. Cortical Bone Screws
  - 5.5.3. Locked Screws/Bolts
  - 5.5.4. Fastening of Screws
    - 5.5.4.1. Use of the Drill
    - 5.5.4.2. Use of the Countersink
    - 5.5.4.3. Borehole Depth Measurement
    - 5.5.4.4. Use of the Tap
    - 5.5.4.5. Introduction to Screws
- 5.6. Technical Classification of Screws
  - 5.6.1. Big Screws
  - 5.6.2. Small Screws
  - 5.6.3. Minifragments
- 5.7. Classification of Screws According to their Function
  - 5.7.1. Screw with Interfragmentary Compression Effect
  - 5.7.2. The Cortical Bone Screw with Interfragmentary Compression Effect
  - 5.7.3. Reduction Techniques and Screw Fixation with Compression Effect Interfragmentary
  - 5.7.4. Locked System
- 5.8. Bone Plates
  - 5.8.1. Bases for Fixing with Plates
    - 5.8.1.1. Classification of Plates According to Their Shape
    - 5.8.1.2. Classification of Plates According to Their Function
      - 5.8.1.2.1. Compression Plate
      - 5.8.1.2.2. Neutralization Plate
      - 5.8.1.2.3. Bridge Plate
    - 5.8.1.3. Dynamic Compression Plates
      - 5.8.1.3.1. Mode of Action
      - 5.8.1.3.2. Fixing Technique
      - 5.8.1.3.3. Advantages and Disadvantages
    - 5.8.1.4. Blocked Plates
      - 5.8.1.4.1. Advantages and Disadvantages
      - 5.8.1.4.2. Types of Blocks
      - 5.8.1.4.3. Mode of Action
      - 5.8.1.4.4. Techniques, Instruments
    - 5.8.1.5. Minimum Contact Plates
    - 5.8.1.6. Mini Plates
    - 5.8.1.7. Special Plates

- 5.9. How to Select and Implant
  - 5.9.1. Biological Factors
  - 5.9.2. Physical Factors
  - 5.9.3. Collaboration of the Owner in the Treatment
  - 5.9.4. Table of Implant Size According to Patient's Weight
- 5.10. When to Carry Out a Plate Removal
  - 5.10.1. Has It Fulfilled Its Clinical Function?
  - 5.10.2. The Implant Breaks
  - 5.10.3. The Implant Folds
  - 5.10.4. The Implant Moves
  - 5.10.5. Rejection
  - 5.10.6. Infection
  - 5.10.7. Thermal Interference

## Module 6. Pelvis Fractures

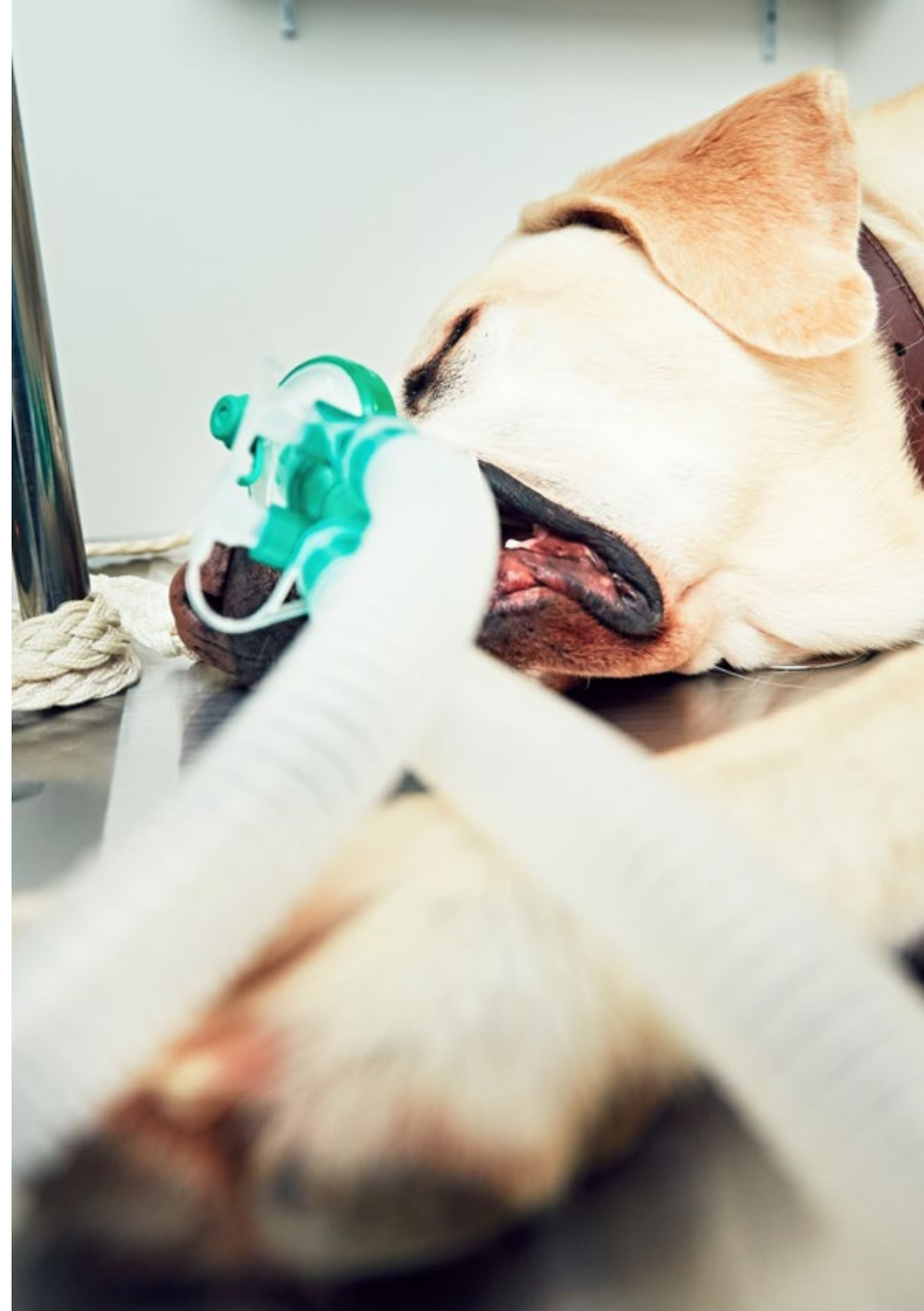
- 6.1. Anatomy of the Pelvis
  - 6.1.1. General Considerations
- 6.2. Non-Surgical Group
  - 6.2.1. Stable Fractures.
  - 6.2.2. Weight of the Patient
  - 6.2.3. Age of the Patient
- 6.3. Surgical Group
  - 6.3.1. Intra-Joint Fracture
  - 6.3.2. Closure of the Pelvic Canal
  - 6.3.3. Joint Instability of a Hemipelvis
- 6.4. Fracture Separation of the Sacro-Iliac Joint
  - 6.4.1. Surgical Approach for Reduction and Fixation
  - 6.4.2. Examples of Surgically Treated Fractures
- 6.5. Fractures of the Acetabulum
  - 6.5.1. Examples of Surgically Treated Fractures
- 6.6. Fracture of the Ilium
  - 6.6.1. Surgical Approach to the Lateral Surface of the Ilium
  - 6.6.2. Examples of Surgically Treated Cases

- 6.7. Ischial Fractures
  - 6.7.1. Surgical Approach to the Body of the Ischium
  - 6.7.2. Examples of Surgically Treated Cases
- 6.8. Pubic Symphysis Fractures
  - 6.8.1. Surgical Approach to the Ventral Surface of the Pubic Symphysis
  - 6.8.2. Reparation Methods
- 6.9. Fractures of the Ischial Tuberosity
  - 6.9.1. Surgical Approach
  - 6.9.2. Healed, Non-Reduced, Compressive Fractures of the Pelvis
- 6.10. Postoperative Management of Pelvic Fractures
  - 6.10.1. The Use of the Harness
  - 6.10.2. Waterbed
  - 6.10.3. Neurological Damage
  - 6.10.4. Rehabilitation and Physiotherapy
  - 6.10.5. Radiographic Studies and Evaluation of the Implant and Bone Repair

## Module 7. Pelvic Limb Fractures

- 7.1. General Overview of Pelvic Limb Fractures
  - 7.1.1. Soft Tissue Damage
  - 7.1.2. Neurological Assessment
  - 7.1.3. Preoperative Care
    - 7.1.3.1. Temporary Immobilization
    - 7.1.3.2. Radiographic Studies
    - 7.1.3.3. Laboratory Exams
  - 7.1.4. Surgical Preparation
- 7.2. Fractures of the Proximal Femoral Proximal Third
  - 7.2.1. Surgical Approach
  - 7.2.2. Fractures of the Femoral Head. Pre-surgical Assessment
  - 7.2.3. Fractures of the Femoral Neck, Greater Trochanter and Femoral Body
- 7.3. Surgical Treatment for Complications of the Femoral Head and Neck
  - 7.3.1. Arthroplastic Excision of the Femoral Head and Neck
  - 7.3.2. Total Hip Replacement of Prosthesis
    - 7.3.2.1. Cemented System
    - 7.3.2.2. Biological System
    - 7.3.2.3. Locked System

- 7.4. Fractures of the Middle Third of the Femur
  - 7.4.1. Surgical Approach to the Femoral Body
  - 7.4.2. Femoral Body Fracture Fixation
    - 7.4.2.1. Steinmann Nail
    - 7.4.2.2. Locked Nails
    - 7.4.2.3. Plates and Screws
      - 7.4.2.3.1. External Fixators
      - 7.4.2.3.2. System Combinations
  - 7.4.3. Postoperative Care
- 7.5. Fractures of the Distal Femoral Third
  - 7.5.1. Surgical Approach
  - 7.5.2. Fracture by Separation of the Distal Femoral Epiphysis or Supracondylar
  - 7.5.3. Intercondylar Femoral Fracture
  - 7.5.4. Fracture of the Femoral Condyles. "T- or "Y-Fractures"
- 7.6. Fractures of the Patella
  - 7.6.1. Surgical Approach
  - 7.6.2. Surgical Technique
  - 7.6.3. Post-Surgical Treatment
  - 7.6.4. Fracture of the Patellar Ligament
- 7.7. Fractures of the Proximal Tibia and Fibula
  - 7.7.1. Surgical Approach
  - 7.7.2. Classification
  - 7.7.3. Avulsion of the Tibial Tubercle
  - 7.7.4. Fracture Separation of the Proximal Tibial Epiphysis
- 7.8. Fractures of the Body of the Tibia and Fibula
  - 7.8.1. Surgical Approach
  - 7.8.2. Internal/External/Open/Conservative Fixation
  - 7.8.3. Intramedullary Nails
  - 7.8.4. Intramedullary Nail and Supplementary Fixation
  - 7.8.5. Skeletal External Fixator
  - 7.8.6. Bone Plates
  - 7.8.7. MIPO





- 7.9. Fractures of the Distal Portion of the Tibia
  - 7.9.1. Surgical Approach
  - 7.9.2. Separation Fracture of the Distal Epiphysis of the Tibia
  - 7.9.3. Fractures of the Lateral or Medial Malleolus or Both
- 7.10. Clavicle Fractures and Dislocations
  - 7.10.1. Surgical Approach
  - 7.10.2. Calcaneal Fracture
  - 7.10.3. Fracture or Dislocation of the Central Bone of the Tarsus
  - 7.10.4. Achilles Tendon Fracture
  - 7.10.5. Tarsal Arthrodesis

## Module 8. Thoracic Limb Fractures

- 8.1. Fractures of the Jaw
  - 8.1.1. Classification of Fractures
  - 8.1.2. Conservative Treatment
  - 8.1.3. Surgical Approach
    - 8.1.3.1. Reduction and Fixation
- 8.2. Dorsal Dislocation of the Scapula
  - 8.2.1. Diagnosis
  - 8.2.2. Treatment
- 8.3. Proximal Humerus Fracture
  - 8.3.1. Fractures of the Proximal Humerus
- 8.4. Humerus Fractures
  - 8.4.1. Surgical Approach
  - 8.4.2. Reduction and Fixation
- 8.5. Proximal Humerus Fracture
  - 8.5.1. Supracondylar
    - 8.5.1.1. Medial Approach
    - 8.5.1.2. Lateral Approach
    - 8.5.1.3. Reduction and Fixation
    - 8.5.1.4. Post-Surgery
- 8.5.2. Fixation of the Medial or Lateral Humeral Condyle
  - 8.5.2.1. Reduction and Fixation
  - 8.5.2.2. Post-Surgery
- 8.5.3 Intercondylar Fractures, Condylar T-Fractures, and Y-Fractures
  - 8.5.3.1. Reduction and Fixation
  - 8.5.3.2. Post-Operative
- 8.6. Fractures of the Radius and Ulna
  - 8.6.1. Fractures of the Proximal Third of the Radius and/or Ulna
    - 8.6.2.1. Surgical Approach
    - 8.6.2.2. Treatment
    - 8.6.2.3. Post-Surgery
  - 8.6.2. Fractures of the Radius and/or Ulna
    - 8.6.2.1. Closed Reduction and External Fixation of the Radius and Ulna
    - 8.6.2.2. Surgical Approach to the Radius and Ulna Body
      - 8.6.2.2.1. Craniomedial to Radius
      - 8.6.2.2.2. Craniolateral
      - 8.6.2.2.3. Ulnar Flow Rate
    - 8.6.2.3. Reduction and Fixation
    - 8.6.2.4. Post-Surgery
  - 8.6.3. Fractures of the Proximal Third of the Radius and/or Ulna
    - 8.6.3.1. Surgical Approach
    - 8.6.3.2. Reduction and Fixation
    - 8.6.3.3. Post-Surgery
- 8.7. Carpal and Metacarpal Fractures
  - 8.7.1. Carpal Fractures
  - 8.7.2. Metacarpal Fractures
  - 8.7.3. Phalange Fracture
  - 8.7.4. Ligament Reconstruction
    - 8.7.4.1 Surgical Approach

- 8.8. Fractures of the Maxilla and Mandible
  - 8.8.1. Surgical Approach
  - 8.8.2. Fixation of the Mandibular Symphysis
  - 8.8.3. Fixation of Fractures of the Mandibular Body
    - 8.8.3.1. Orthopedic Wire Around the Teeth
    - 8.8.3.2. Intramedullary Nailing
    - 8.8.3.3. Skeletal External Fixator
    - 8.8.3.4. Bone Plates
    - 8.8.3.5. Fractures of the Maxilla
      - 8.8.3.5.1. Treatment of Fractures in Young Growing Animals
      - 8.8.3.5.2. Some Characteristic Aspects of Immature Bone
      - 8.8.3.5.3. Primary Indications for Surgery
- 8.9. Fractures Resulting in Incongruence of the Articular Surface
  - 8.9.1. Fractures Affecting the Growth Core
  - 8.9.2. Classification of the Epiphysis Based on its Type
  - 8.9.3. Classification of Slipped or Split Fractures Involving the Growth Nucleus and Adjacent Epiphyseal Metaphysis
  - 8.9.4. Clinical Assessment and Treatment of Damage to Nuclei Growth
  - 8.9.5. Some of the Most Common Treatments for Premature Closing
- 8.10. Tendon Surgery
  - 8.10.1. Most Common Tendon Fractures
  - 8.10.2. Types of Suture
  - 8.10.3. Transarticular External Fixator
  - 8.10.4. Implant Removal

## Module 9. Arthroscopy

- 9.1. History of Arthroscopy
  - 9.1.1. Beginning of Arthroscopy in Human Medicine
  - 9.1.2. Start of Veterinary Arthroscopy
  - 9.1.3. Dissemination of Veterinary Arthroscopy
  - 9.1.4. Future of Arthroscopy
- 9.2. Advantages and Disadvantages of Arthroscopy
  - 9.2.1. Open Surgery vs. Minimally Invasive Surgery
  - 9.2.2. Economic Aspects of Arthroscopy
  - 9.2.3. Arthroscopy Techniques Training

- 9.3. Arthroscopy Equipment and Instruments
  - 9.3.1. Endoscopy Equipment
  - 9.3.2. Arthroscopy Specific Material
  - 9.3.3. Instruments and Implants for Intra-Articular Surgery
  - 9.3.4. Cleaning, Disinfection and Maintenance of Arthroscopy Instruments
- 9.4. Elbow Arthroscopy
  - 9.4.1. Patient Preparation and Positioning
  - 9.4.2. Joint Anatomy of the Elbow
  - 9.4.3. Arthroscopic Approach to the Elbow
  - 9.4.4. Fragmentation of the Medial Coronoid Process
  - 9.4.5. Osteochondrosis-Osteochondritis Dissecans of the Humeral Condyle
  - 9.4.6. Medial Compartment Syndrome
  - 9.4.7. Other Pathologies and Indications for Elbow Arthroscopy
  - 9.4.8. Contraindications and Complications in Elbow Arthroscopy
- 9.5 Shoulder Arthroscopy
  - 9.5.1. Patient Preparation and Positioning
  - 9.5.2. Joint Anatomy of the Shoulder
  - 9.5.3. Lateral and Medial Shoulder Approach with the Limb Hanging
  - 9.5.4. Osteochondrosis-Osteochondritis Shoulder
  - 9.5.5. Bicipital Tendinitis
  - 9.5.6. Shoulder Instability
  - 9.5.7. Other Pathologies and Indications for Shoulder Arthroscopy
  - 9.5.8. Contraindications and Complications in Shoulder Arthroscopy
- 9.6. Knee Arthroscopy
  - 9.6.1. Patient Preparation and Positioning
  - 9.6.2. Joint Anatomy of the Knee
  - 9.6.3. Arthroscopic Approach to the Knee
  - 9.6.4. Cranial Cruciate Ligament Injury
  - 9.6.5. Meniscopathies
  - 9.6.6. Osteochondrosis-Osteochondritis Dissecans
  - 9.6.7. Other Pathologies and Indications for Knee Arthroscopy
  - 9.6.8. Contraindications and Complications in Knee Arthroscopy

- 9.7. Hip Arthroscopy
  - 9.7.1. Patient Preparation and Positioning
  - 9.7.2. Approach to the Hip
  - 9.7.3. Pathologies and Indications for Hip Arthroscopy
  - 9.7.4. Contraindications and Complications in Hip Arthroscopy
- 9.8. Tarsal Arthroscopy
  - 9.8.1. Articular Anatomy of the Tarsus
  - 9.8.2. Preparation and Positioning of the Patient
  - 9.8.3. Arthroscopic Approach to the Tarsus
  - 9.8.4. Pathologies and Indications for Tarsal Arthroscopy
  - 9.8.5. Contraindications and Complications in Tarsal Arthroscopy
- 9.9. Carpal Arthroscopy
  - 9.9.1. Anatomy of the Carpal Joint
  - 9.9.2. Preparation and Positioning of the Patient
  - 9.9.3. Arthroscopic Approach to the Carpus
  - 9.9.4. Pathologies and Indications for Carpal Arthroscopy
  - 9.9.5. Contraindications and Complications in Carpal Arthroscopy
- 9.10. Arthroscopy-Assisted Surgery
  - 9.10.1. Bone Anchors and Other Implants for Joint Stabilisation Surgery
  - 9.10.2. Arthroscopically Assisted Shoulder Stabilisation Surgery

## Module 10. Orthopedic Diseases

- 10.1. Hip Dysplasia
  - 10.1.1. Definition
  - 10.1.2. Etiology
  - 10.1.3. Pathogenesis
  - 10.1.4. Clinical Signs
    - 10.1.4.1. Diagnosis
    - 10.1.4.2. Treatment
  - 10.1.5. Dislocation of the Hip
- 10.2. Anterior Cruciate Ligament or Cranial Ligament Rupture I
  - 10.2.1. Definition
  - 10.2.2. Etiology
  - 10.2.3. Pathogenesis
  - 10.2.4. Clinical Signs
  - 10.2.5. Diagnosis
  - 10.2.6. Therapy
  - 10.2.7. Meniscus Pathology
- 10.3. Anterior Cruciate Ligament or Cranial Ligament Rupture II
  - 10.3.1. Surgical Treatment. Techniques
- 10.4. Patella Dislocation
  - 10.4.1. Diagnosis
  - 10.4.2. Degrees of Patella Dislocation
  - 10.4.3. Surgical Procedures that Counteract the Forces
  - 10.4.4. Surgical Procedures that Counteract the Forces
  - 10.4.5. Prognosis
- 10.5. Elbow Dysplasia
  - 10.5.1. Definition
  - 10.5.2. Etiology
  - 10.5.3. Pathogenesis
  - 10.5.4. Clinical Signs
  - 10.5.5. Diagnosis
  - 10.5.6. Treatment
  - 10.5.7. Elbow Dislocation
- 10.6. Radial Curvature and Other Bone Deformities
  - 10.6.1. Definition
  - 10.6.2. Etiology
  - 10.6.3. Pathogenesis
  - 10.6.4. Clinical Signs
  - 10.6.5. Diagnosis
  - 10.6.6. Treatment

- 10.7. Orthopedic Diseases in Exotic Animals
  - 10.7.1. Reptile Diseases
  - 10.7.2. Bird Diseases
  - 10.7.3. Small Mammal Diseases
- 10.8. Wobbler Syndrome
  - 10.8.1. Definition
  - 10.8.2. Etiology
  - 10.8.3. Pathogenesis
  - 10.8.4. Clinical Signs
  - 10.8.5. Diagnosis
  - 10.8.6. Treatment
  - 10.8.7. Lumbosacral Instability
    - 10.8.7.1. Definition
    - 10.8.7.2. Etiology
    - 10.8.7.3. Pathogenesis
    - 10.8.7.4. Clinical Signs
    - 10.8.7.5. Diagnosis
    - 10.8.7.6. Treatment
- 10.9. Other Pathologies
  - 10.9.1. Osteochondrosis - Osteochondritis Discordant (OCD), Scapulohumeral Instability, Panosteitis, Hypertrophic Osteodystrophy, Craniomandibular Osteopathy
    - 10.9.1.1. Definition
    - 10.9.1.2. Etiology
    - 10.9.1.3. Pathogenesis
    - 10.9.1.4. Clinical Signs
    - 10.9.1.5. Diagnosis
    - 10.9.1.6. Treatment





- 10.9.2. LeggPerthes Disease
  - 10.9.2.1. Definition
  - 10.9.2.2. Etiology
  - 10.9.2.3. Pathogenesis
  - 10.9.2.4. Clinical Signs
  - 10.9.2.5. Diagnosis
  - 10.9.2.6. Treatment
- 10.9.3. Hypertrophic Osteodystrophy
- 10.9.4. Hypertrophic Osteoarthropathy
- 10.9.5. Tendinopathies: Supraspinatus, Quadriceps, Carpal Flexor Tendon Contracture
- 10.10. Bone Tumors
  - 10.10.1. Definition
  - 10.10.2. Etiology
  - 10.10.3. Pathogenesis
  - 10.10.4. Clinical Signs
  - 10.10.5. Diagnosis
  - 10.10.6. Treatment

“

*This training will allow you to advance in your career comfortably”*

06

# 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.





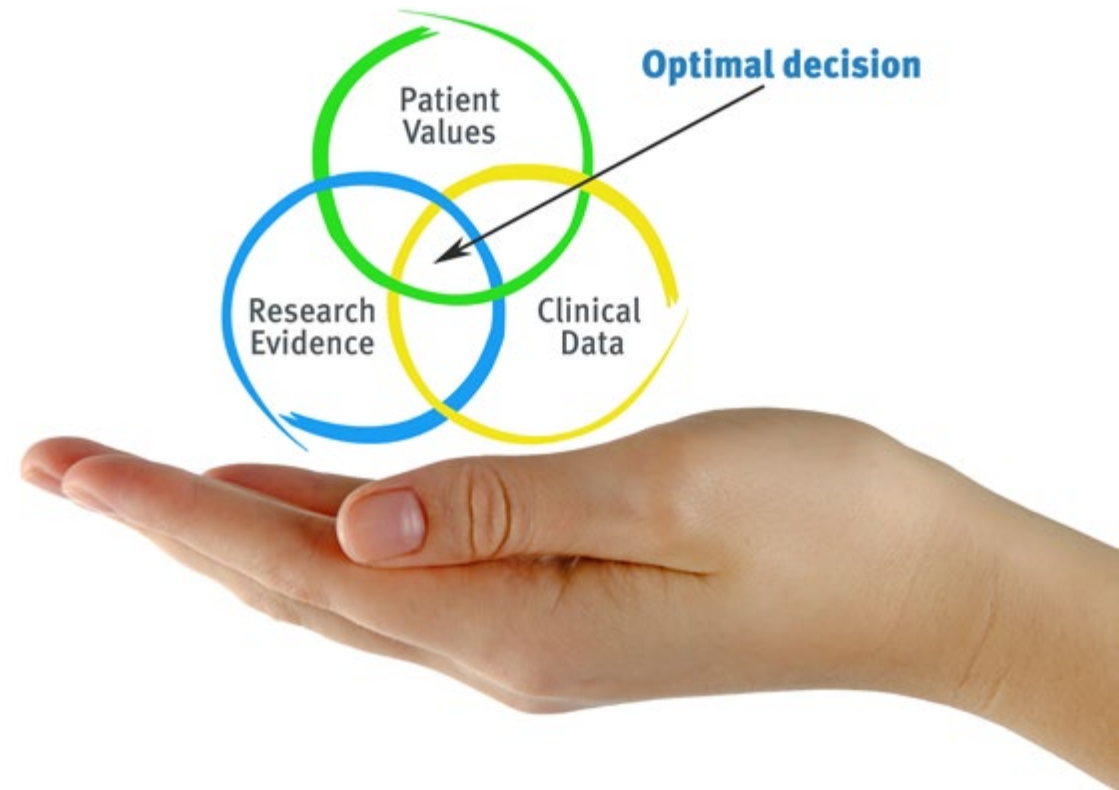
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*Discover Relearning, a system that abandons conventional linear learning, to take you through cyclical teaching systems: a way of learning that has proven to be extremely effective, especially in subjects that require memorization"*

## 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

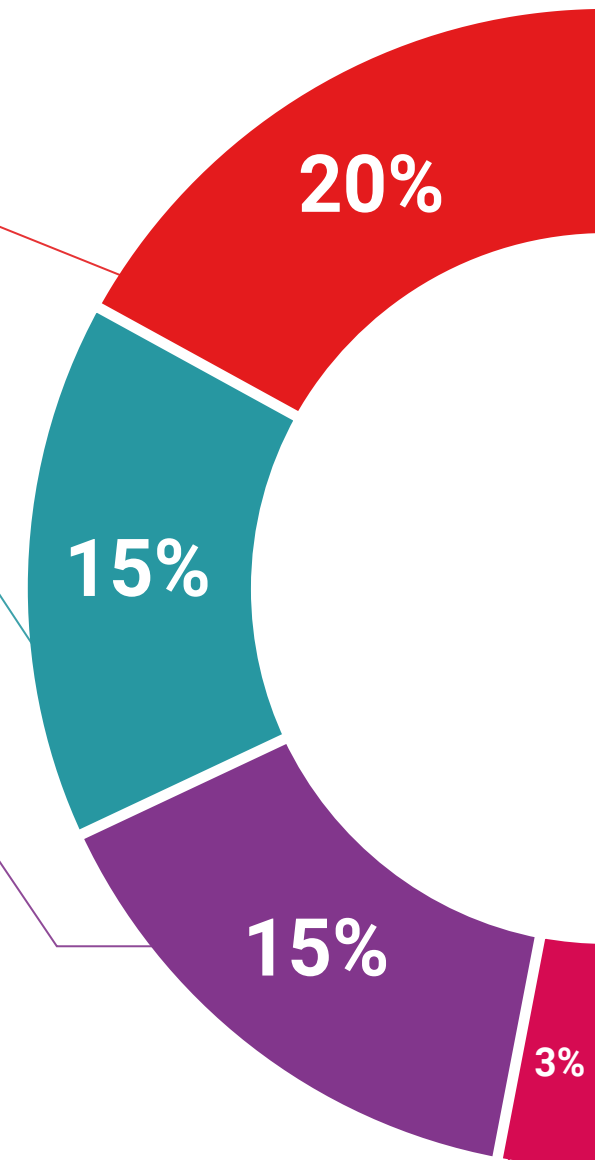
The TECH team presents the contents attractively and dynamically in multimedia lessons that include audio, videos, images, diagrams, and concept maps in order to reinforce knowledge.

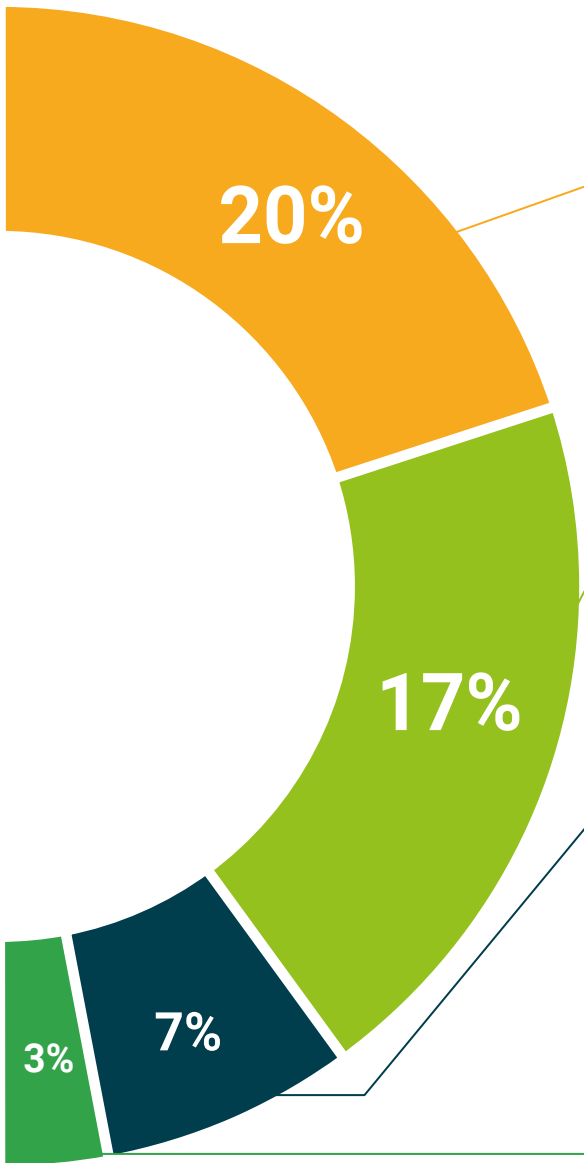
This exclusive educational system for presenting multimedia content was awarded by Microsoft as a "European Success Story".



### 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.



07

# Certificate

The Professional Master's Degree in Veterinary Traumatology and Orthopedic Surgery guarantees you, in addition to the most rigorous and updated training, access to a Professional Master's Degree issued by TECH Global University.



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*Successfully complete this program  
and receive your university degree  
without travel or laborious paperwork”*

This program will allow you to obtain your **Professional Master's Degree diploma in Veterinary Traumatology and Orthopedic Surgery** endorsed by **TECH Global University**, the world's largest online university.

**TECH Global University** is an official European University publicly recognized by the Government of Andorra ([official bulletin](#)). Andorra is part of the European Higher Education Area (EHEA) since 2003. The EHEA is an initiative promoted by the European Union that aims to organize the international training framework and harmonize the higher education systems of the member countries of this space. The project promotes common values, the implementation of collaborative tools and strengthening its quality assurance mechanisms to enhance collaboration and mobility among students, researchers and academics.

This **TECH Global University** title is a European program of continuing education and professional updating that guarantees the acquisition of competencies in its area of knowledge, providing a high curricular value to the student who completes the program.

Title: **Professional Master's Degree in Veterinary Traumatology and Orthopedic Surgery**

Modality: **online**

Duration: **12 months**

Accreditation: **60 ECTS**



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





## Professional Master's Degree Veterinary Traumatology and Orthopedic Surgery

- » Modality: online
- » Duration: 12 months
- » Certificate: TECH Global University
- » Credits: 60 ECTS
- » Schedule: at your own pace
- » Exams: online

Professional Master's Degree  
Veterinary Traumatology  
and Orthopedic Surgery

