Postgraduate Diploma

Cardiorespiratory and Blood Disorders in Horses. Expanded Therapeutic Protocols in Outpatient Practice.

tech technological university

tech universidad tecnológica

Postgraduate Diploma

Cardiorespiratory and Blood Disorders in Horses. Expanded Therapeutic Protocols in Outpatient Practice

- Modality:**Online**
- Duration: **6 months.**
- Certificate: **TECH Technological University**
- Dedication: **8h/week**
- Schedule: **at your own pace**
- Exams: **online**

Website: www.techtitute.com/in/veterinary-medicine/postgraduate-diploma/postgraduate-diploma-cardiorespiratory-blood-disorders-horses-expanded-therapeutic-protocols-otpatient-practice

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01

Introduction

Cardiorespiratory and blood diseases in horses represent a high incidence consultation for both the field clinician and the hospital care clinician. This program will deal with the in-depth study of the alterations related to the hematopoietic and immune system, identifiable through the laboratorial study of blood components and detectable through a hemogram and serum biochemistry. In addition, the necessary aspects of anesthetic use and toxicology of the horse will be addressed. A high-quality program that will propel the student to the highest levels of competence in the industry.

A complete and total update in Cardiorespiratory and Blood Disorders in Horses. Expanded Therapeutic Protocols in Outpatient Practice, with the most comprehensive and effective online educational program on the market."

Respiratory tract diseases are a frequent cause of loss in sports performance and lead to high economic losses for the owners of athletic patients. Therefore, it is vital to be able to diagnose and act in a quick and effective way that allows a prompt recovery of the patient or a reorientation of the use of that animal.

Lower airway diseases, both inflammatory and infectious, can become a real problem for a patient's quality of life or even lead to death in the most extreme cases. Educating the owner in the prevention of the development of this type of pathology, as well as in early detection, constitutes a substantial benefit when dealing with this type of patient. The establishment of adequate treatment in the earliest stages is decisive for the prognosis of these patients.

Cardiac diseases in horses are relatively rare in relation to other types of pathologies they suffer. Because of this, in-depth knowledge of these alterations and their dissemination is more limited. Nevertheless, the sporting use given to this animal species gives great importance to the heart, so recognizing its alterations and the consequences they have on the horse is fundamental for the equine veterinarian.

On the other hand, topics specific to hospital intensive care units will be addressed, such as pain management, correction of hydro-electrolyte and acid-base balance, intensive care and ambulatory practice; with the objective of providing the student with the necessary skills to be able to treat a patient with ICU requirements while outside a hospital setting.

This **Postgraduate Diploma in Cardiorespiratory and Blood Disorders in Horses. Expanded Therapeutic Protocols in Outpatient Practice** contains the most complete and up-to-date scientific program on the market. Its most notable features are:

- The latest technology in online teaching software
- A highly visual teaching system, supported by graphic and schematic contents that are easy to assimilate and understand
- Practical cases presented by practising experts
- State-of-the-art interactive video systems
- Teaching supported by telepractice
- Continuous updating and recycling systems
- Autonomous learning: full compatibility with other occupations
- Practical exercises for self-assessment and learning verification
- Support groups and educational synergies: questions to the expert, debate and knowledge forums
- Communication with the teacher and individual reflection work
- Content that is accessible from any fixed or portable device with an Internet connection
- Supplementary documentation databases are permanently available, even after finishing the course

Join the elite, with this highly effective educational program, and open new paths to your professional progress"

A comprehensive program that will allow you to acquire the most advanced knowledge in all the fields of intervention of the Equine Veterinarian".

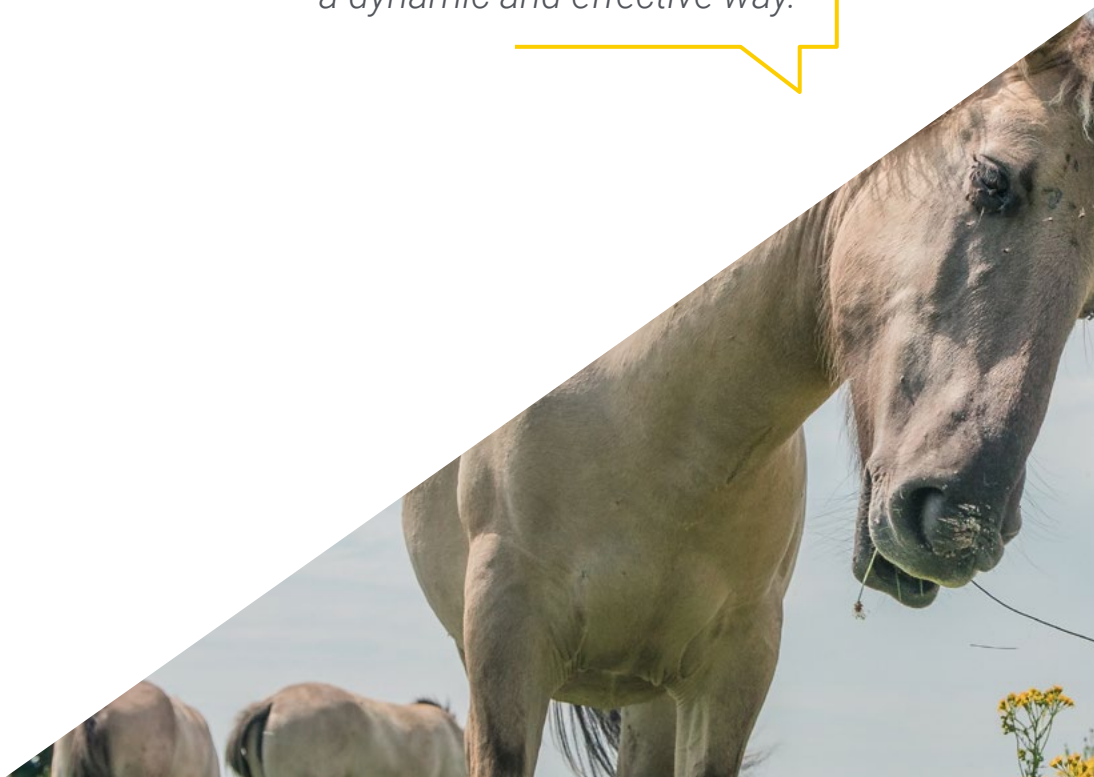
With the experience of working professionals and the analysis of real success stories, in a high-impact educational approach.

With a methodological design based on proven teaching techniques, this innovative course will take you through different teaching approaches to allow you to learn in a dynamic and effective way.

Our teaching staff is made up of professionals from different fields related to this specialty. In this way, we ensure that we provide you with the educational update we are aiming for. A multidisciplinary team of professionals prepared and experienced in different environments, who will develop the theoretical knowledge in an efficient way, but, above all, will put at your service the practical knowledge derived from their own experience: one of the differential qualities of this educational program.

This mastery of the subject matter is complemented by the effectiveness of the methodological design. Developed by a multidisciplinary team of *e-Learning* experts, it integrates the latest advances in educational technology. This way, you will be able to study with a range of comfortable and versatile multimedia tools that will give you the operability you need in your education.

The design of this program is based on Problem-Based Learning: an approach that views learning as a highly practical process. To achieve this remotely, we will use telepractice: with the help of an innovative interactive video system, and Learning from an Expert you will be able to acquire the knowledge as if you were facing the scenario you are learning at that moment. A concept that will allow you to integrate and fix learning in a more realistic and permanent way.



02

Objectives

The objective is to enable highly qualified professionals for work experience. An objective that is complemented, moreover, in a global manner, by promoting human development that lays the foundations for a better society. This objective is materialized in helping professionals to reach a much higher level of competence and control. A goal that, in just a few months, you will be able to achieve with high intensity and effective educational program.

If your objective is to reorient your skills towards new paths of success and development, this is your Postgraduate Diploma: an educational program that aspires to excellence".

General Objectives

- Identify the different anatomical structures and pathologies of the digestive tract of the horse
- Develop and advance in the most frequent procedures to solve oral cavity pathologies
- Recognize the symptoms of digestive disorders
- Enable the clinician to correctly assess the systemic state of the animal and the consequent severity of the pathology
- Establish diagnostic protocols and generate optimized treatments and prognoses
- Establish optimal preventive medicine criteria and good management guidelines
- Establish an appropriate methodology for the examination of the horse with respiratory or cardiac problems
- Identify all clinical signs associated with respiratory or cardiovascular disease in equines
- Generate specialized knowledge of respiratory and cardiac auscultation
- Establish the specific clinical approach to the horse with a respiratory or cardiovascular disorder
- Identify the pathologies of the urinary system of the horse
- Establish diagnostic protocols to facilitate the recognition of patients with urinary pathology
- Expand the alternatives of possible treatments according to pathological situations
- Recognize the medical and surgical genital pathologies of the stallion and the dam mare, assess their extent and provide appropriate treatments for recovery and restoration of proper reproductive function
- Develop surgical techniques for the resolution of pathologies of the reproductive system that can be performed in the field

Specific Objectives

Module 1. Cardio-Respiratory and Vascular System

- Specify the necessary information in the clinical examination of the horse with respiratory or cardiac pathology
- Accurately recognize normal respiratory and cardiac sounds in horses
- Identify respiratory pathologies in order to classify them and decide on possible diagnostic tests if needed
- Establish the necessary knowledge when performing diagnostic procedures for the respiratory patient. Laboratory tests, cytology, BAL. Diagnostic Imaging
- Propose work methodologies for patients with upper respiratory tract pathologies
- Propose a work methodology for patients with inflammatory lower respiratory tract pathologies
- Identify the surgical pathologies of the upper respiratory tract and develop the technical procedures that can be performed in the field, both in scheduled and emergency conditions
- Propose a work methodology for patients with infectious respiratory pathologies
- Differentiate between physiological murmurs and pathological murmurs
- Establish differential diagnoses of abnormal rhythms based on irregularity and heart rate
- Propose work methodologies for patients with cardiac murmurs
- Propose a work methodology for patients with arrhythmias

Module 2. Hematopoietic System, Immunology and Nutrition

- Delve into the study of blood components, as well as detailed attention to serological biochemical markers, all of them analytical parameters that the clinical specialist must know in depth, in order to be able to relate possible alterations in this regard to pathological situations of any kind
- Develop advanced knowledge on possible alterations related to hematopoiesis, as well as alternatives in terms of leading-edge treatments
- Achieve a high degree of knowledge of the pathophysiological mechanisms of immune-mediated disorders in order to select the latest diagnostic tests and appropriate treatment
- Delve into the pathophysiological mechanisms of endotoxemia and the development of endotoxic shock, in order to prevent secondary complications associated with this process and to apply the most up-to-date treatments
- Understand the processes of digestion and absorption of nutrients in the different anatomical compartments of the horse's digestive tract
- Provide the basic knowledge on nutrients necessary for the development of feeding programs
- Estimate a horse's weight and determine its body condition
- Easy calculation of daily fodder and grain or compound feed requirements
- Differentiate and know how to apply the terms gross, digestible and net energy

- Delve into the knowledge of antibiotic treatment alternatives, as well as the development of antibiotic resistance, in order to prepare the clinician to make decisions in situations where there is an important restriction of antibiotic use, either due to the patient's category or due to the appearance of bacterial resistance
- Update on prebiotics, probiotics, as well as the use of medicinal plants and their relevance as important tools in preventive medicine and in the treatment of specific pathologies

Module 3. Advanced Therapeutic Protocols and Toxicology

- Analyze the new alternatives in terms of drugs used in sedation and anesthesia for outpatient use, as well as to delve into the most established protocols in order to optimize this type of procedures
- Prepare the clinician in effective and dynamic decision making when dealing with a patient with a serious systemic condition, in order to ensure diagnoses and treatments that ensure patient stabilization despite non-hospital conditions
- Enable the clinician in the correction of hydroelectrolyte and acid-base imbalances to ensure the reversal of hemodynamic alterations
- Ensure advanced knowledge of equine pain management with the latest medications
- Examine the characteristics and special considerations to be taken into account when applying pharmacological treatments in the sport horse, with special emphasis on avoiding problems in the face of possible positive results in control tests for biological substances in competitions
- Generate advanced knowledge on equine toxicology, ensuring education for the recognition of toxic symptoms, as well as the identification of plants and agents harmful to equids
- Analyze euthanasia procedures in depth. The clinician must be able to act correctly with patients in these last moments of their life trajectory, applying euthanasia in the most humane way possible in case of last necessity

A path to achieve education and professional growth that will propel you towards a greater level of competitiveness in the employment market".

03

Course Management

Within the concept of total quality of our program, we are proud to put at your disposal a Teaching Staff of the highest level, chosen for their proven experience. Professionals from different areas and fields of expertise that make up a complete, multidisciplinary team. A unique opportunity to learn from the best.

Our teaching team, experts in Cardiorespiratory and Blood Disorders in Horses. Expanded Therapeutic Protocols in Outpatient Practice, will help you achieve success in your profession."

International Guest Director

As one of the foremost veterinary surgeons in equine care, Dr. Andy Fiske-Jackson is the Deputy Director of the Royal Veterinary College Equine in the United Kingdom. This is one of the leading institutions in both equine patient care and veterinary development, education and innovation. This has allowed him to develop in a privileged environment, even receiving the James Bee Educator Awards for excellence in educational work.

In fact, Dr. Andy Fiske-Jackson is also part of the team of surgeons at the Equine Referral Hospital, focusing his work on orthopedic and soft tissue surgery. As such, his main areas of focus are low performance, back pain, dental and sinus issues, digital flexor tendinopathies and regenerative medicine.

In terms of research, his work leans between diagnostic techniques for digital flexor tendinopathies, clinical uses of objective gait analysis and objective assessment of back pain. His efficiency in this field has led him to actively participate in various international events and conferences, including congresses in Portugal, Czech Republic, Finland, Belgium, Hungary, Switzerland, Austria, Germany, Ireland, Spain and Poland.

DR. Fiske-Jackson, Andy

- Deputy Director at the Royal Veterinary College Equine. Hertfordshire, United Kingdom
- Associate Professor of Equine Surgery at the Royal Veterinary College
- Equine Surgeon at the Equine Referral Hospital. Hertfordshire, United Kingdom
- Veterinarian at Axe Valley Veterinary
- Veterinarian at Liphook Equine Hospital
- Veterinarian at the Humane Society International. Morocco
- Degree from the University of Liverpool
- Master's Degree in Veterinary Medicine from the Royal Veterinary College

Thanks to TECH you will be able to learn with the best professionals in the world"

Management

Dr. Varela del Arco, Marta

- Clinical veterinarian specialized in Equine Surgery and Sports Medicine
- Head of Large Animal Unit at the Complutense Clinical Veterinary Hospital of Madrid
- Associate Professor, Department of Animal Medicine and Surgery, Complutense University of Madrid
- Head of Large Animal Unit at the Complutense Clinical Veterinary Hospital of Madrid
- Associate Professor of the Department of Animal Medicine and Surgery, UCM
- Teacher in different graduate and postgraduate courses, university specialization programs and master's degrees
- Director of Final Year Project in the Veterinary Degree and as a member of the tribunal of different doctoral theses
- PhD in Veterinary Medicine, Complutense University of Madrid
- Spanish Certificate from Equine Clinic (CertEspCEq)

Dr. De la Cuesta Torrado, María

- Veterinarian with clinical specialty in Equine Internal Medicine
- Associate Professor of the Department of Equine Medicine and Surgery at the Cardenal Herrera CEU University of Valencia
- Doctorate in Advanced Studies from the Complutense University of Madrid
- Master's Degree in Equine Internal Medicine by Alfonso X el Sabio University
- Founder of MC Veterinaria
- Member of the Organizing Committee of the 12th European College of Equine Internal Medicine Congress
- Member of the Board of Directors of Spanish Society of Ozone Therapy
- Member of the Equine Clinicians Commission of the Official College of Veterinarians of Valencia
- Member of the Spanish Association of Equine Veterinarians (AVEE)
- Member of the scientific committee and coordinator of courses and congresses in the field of ozone therapy, supported by continuing education credits (CEC) granted by the National Health System

Professors

Dr. Alonso de Diego, María

- Specialist in the Service of Equine Internal Medicine of the Alfonso X El Sabio University Clinical Veterinary Hospital
- Associate Professor of the Faculty of Veterinary Medicine of the Alfonso X El Sabio University
- Outpatient equine clinic veterinarian
- Residency at the Complutense University of Madrid Veterinary Clinical Hospital
- Training stays in several hospitals in Kentucky in the area of Equine Internal Medicine
- Spanish Certificate in Equine Clinic
- Member of Association of Equine Veterinarians coordinated by the Spanish Society of Ozone Therapy

Dr. Gómez Lucas, Raquel

- Expert in Sports Medicine in horses at the Veterinary Clinical Hospital UAX
- Head of the Sports Medicine and Diagnostic Imaging Service of the Large Animal Area of the Clinical Veterinary Hospital, Alfonso X el Sabio University
- Professor of the Veterinary Degree at the Alfonso X el Sabio University, teaching Equine Diagnostic Imaging, Internal Medicine and Applied Anatomy
- Professor of the Postgraduate Master of Equine Medicine and Surgery Internship at the Universidad Alfonso X el Sabio
- Responsible for the Postgraduate Master's Degree in Sports Medicine and Equine Surgery, Alfonso X el Sabio University
- PhD in Veterinary Medicine from CEU - Cardenal Herrera University
- Degree in Veterinary Medicine from the Complutense University Madrid
- Diplomate from the American College of Equine Sports Medicine and Rehabilitation

Dr. Marín Baldo Vink, Alexandra

- Head of the large animal hospitalization service at the Clinical Veterinary Hospital of Alfonso X el Sabio University
- Professor at the Faculty of Veterinary Medicine, Alfonso X El Sabio University
- Teacher of the theoretical and practical teaching related to the equine species of the subjects: Parasitic Diseases, Propedeutics, Medical Pathology and supervised practice. Coordinator of the Clinical Propedeutics subject
- Equine Hospitalization Service of the Veterinary Clinic Hospital of the Alfonso X El Sabio University
- Direction of Final Degree Projects of UAX students
- Training stays in several hospitals in Spain in the area of large animals
- Diploma of Advanced Studies in Animal Medicine and Reproduction by the University of Murcia
- Fellowship in the Department of Equine Surgery and Large Animals Veterinary Hospital of the University of Murcia
- Scientific publications in the field of Equine Internal Medicine

Dr. Roquet Carne, Imma

- Equine Veterinary Surgeon
- Veterinary Surgeon in private practice in Equine Medicine and Surgery
- Surgeon and Clinical Ceterinary Surgeon in the Department of Large Animals at the Clinical Veterinary Hospital of the Faculty of Veterinary Medicine
- Surgeon in equine hospitals and clinics in Europe
- Author or co-author of several publications on Equine Surgery
- Professor in undergraduate and postgraduate studies in several countries
- Degree in Veterinary Medicine, Autonomous University of Barcelona
- Master's Degree in Veterinary Science from the University of Saskatchewan

Dr. Rodríguez Hurtado, Isabel

- Head of the Department of Large Animals at the Veterinary Hospital of the Alfonso X el Sabio University
- Professor and coordinator of the subject Medical Pathology and Nutrition of the Veterinary Degree at the Alfonso X el Sabio University
- Professor of the Postgraduate Master's Degree in Equine Internal Medicine at the Alfonso X el Sabio University
- Head of the Large Animals Area of the Clinical Veterinary Hospital
- Doctor in Veterinary Medicine from Alfonso X El Sabio University
- Diplomate from the American College of Veterinary Internal Medicine
- Internship and Residency in Equine Internal Medicine at Auburn University
- Master's Degree in Biomedical Sciences from Auburn University
- Master's Degree in Research Methodology in Health Sciences from the Alfonso X El Sabio University

Dr. Santiago Llorente, Isabel

- Head of the Equine Internal Medicine at the Complutense Veterinary Clinical Hospital
- Member of the Anesthesia Service at the Complutense Veterinary Clinic Hospital of the Complutense University of Madrid
- Collaborator in practical teaching in the Department of Animal Medicine and Surgery at the Complutense University of Madrid
- PhD in Veterinary Medicine, Complutense University of Madrid
- Degree in Veterinary Medicine from the Complutense University Madrid
- Teacher at the Lusophone University of Lisbon
- Member of the AVEE Association

Dr. Villalba Orero, María

- Scientific Advisor on Cardiovascular and Pulmonary Ultrasound at the National Center for
- Cardiovascular Research
- Head and founder of CardiologiaEquina_MVO
- Head of the Equine Anesthesia Service at Asurvet Equidos
- Doctor of Veterinary Medicine, Complutense University of Madrid
- Degree in Veterinary Medicine from the Complutense University Madrid
- Master's Degree in Veterinary Sciences from the Complutense University of Madrid
- Master's Degree in Veterinary Cardiology
- European Certificate in Veterinary Cardiology (ESVPS)

Dr. Benito Bernáldez, Irene

- Veterinarian in charge of the Reproduction, Ophthalmology and Nutrition Service of MC Veterinaria
- Degree in Veterinary Medicine from the University of Extremadura
- Internship in Equine Medicine and Surgery at the Clinical Veterinary Hospital of the Autonomous University of Barcelona
- Professional internships through the Quercus Scholarship (Leonardo Da Vinci Program) for graduates of the University of Extremadura
- Erasmus Internship at the Equine Hospital of the University of Bristol
- Online training course on administrative activities in customer relations and administrative management given by La Glorieta Academy
- Attendance to the courses of Ozone Therapy in Equids coordinated by María de la Cuesta and organized by the SEOT (Spanish Society of Ozone Therapy)

Dr. Aguirre Pascasio, Carla

- Veterinary specialist in equine clinical care and soft tissue surgery
- Doctor in Veterinary Medicine from the University of Murcia
- Postgraduate degree in equine physiotherapy from the University of Barcelona
- Master in Business and Administration by ENAE Business School, Murcia
- Certificate in Internal Medicine from the Royal Veterinary College of London and by the University of Liverpool
- Certified in Soft Tissue Surgery by the Royal Veterinary College of London and by the University of Liverpool
- Spanish Certificate in Equine Clinical Practice from the Spanish Veterinary Council
- Board Eligible in the ECEIM (European College of Equine Internal Medicine) Fellowship in the Equine Hospital Casal do Rio

Take the step to get up to date on the latest developments in Cardiorespiratory and Blood Disorders in Horses. Expanded Therapeutic Protocols in Outpatient Practice"

04

Structure and Content

The contents have been developed by its different experts, with a clear purpose: to ensure that our students acquire each and every one of the skills necessary to become a Postgraduate Diploma in this field. A complete and well-structured program that will take you to the highest standards of quality and success.

A comprehensive teaching program, structured in well-developed teaching units, oriented towards learning that is compatible with your personal and professional life"

Module 1. Cardio-Respiratory and Vascular System

1.1. Clinical Assessment of the Respiratory System and Diagnostic Methods
- 1.1.1. Examination of the Respiratory System
- 1.1.2. Respiratory Tract Sampling
  - 1.1.2.1. Samples from Nasal Cavity, Pharynx and Guttural Pouches
  - 1.1.2.2. Tracheal Aspirate and Bronchoalveolar Lavage
  - 1.1.2.3. Thoracentesis
- 1.1.3. Endoscopy
  - 1.1.3.1. Static and Dynamic Endoscopy of Upper Airways
  - 1.1.3.2. Sinuscopy
- 1.1.4. Radiology
  - 1.1.4.1. Nasal Cavity, Sinuses and Guttural Pouches
  - 1.1.4.2. Larynx and Trachea
- 1.1.5. Ultrasound
  - 1.1.5.1. Ultrasound Techniques
  - 1.1.5.2. Pleural Effusion
  - 1.1.5.3. Atelectasis, Consolidation and Masses
  - 1.1.5.4. Pneumothorax

1.2. Diseases of the Upper Respiratory Tract I (Nose, Nasal Cavity and Paranasal Sinuses)
- 1.2.1. Diseases and Pathologies Affecting the Rostral/Larynxes Area
  - 1.2.1.1. Clinical Introduction and Diagnosis
  - 1.2.1.2. Atheroma-Epidermal Inclusion Cyst
    - 1.2.1.2.1. Treatment
  - 1.2.1.3. Redundant Wing Fold
    - 1.2.1.3.1. Treatment
- 1.2.2. Diseases and Pathologies Affecting the Nasal Cavity
  - 1.2.2.1. Diagnostic Techniques
  - 1.2.2.2. Nasal Septum Pathologies
  - 1.2.2.3. Ethmoidal Hematoma
- 1.2.3. Diseases and Pathologies Affecting the Paranasal Sinuses
  - 1.2.3.1. Clinical Presentation and Diagnostic Techniques
  - 1.2.3.2. Sinusitis
    - 1.2.3.2.1. Primary Sinusitis
    - 1.2.3.2.2. Secondary Sinusitis
  - 1.2.3.3. Paranasal Sinus Cyst
  - 1.2.3.4. Paranasal Sinus Neoplasia
- 1.2.4. Approaches to the Paranasal Sinus
  - 1.2.4.1. Trepanation Anatomical References and Technique
  - 1.2.4.2. Synocentesis
  - 1.2.4.3. Sinuscopy
  - 1.2.4.4. Flaps or Bone Flaps of the Paranasal Sinuses
  - 1.2.4.5. Associated Complications

1.3. Diseases of the Upper Tract II (Larynx and Pharynx)
- 1.3.1. Diseases and Pathologies Affecting the Pharynx-Nasopharynx
  - 1.3.1.1. Anatomical Pathologies
    - 1.3.1.1.1. Nasopharyngeal Scar Tissue
    - 1.3.1.1.2. Nasopharyngeal Masses
    - 1.3.1.1.3. Treatment
  - 1.3.1.2. Functional Pathologies
    - 1.3.1.2.1. Dorsal Displacement of the Soft Palate (DDSP)
      - 1.3.1.2.1.1. Intermittent DDSP
      - 1.3.1.2.1.2. Permanent DDSP
      - 1.3.1.2.1.3. Surgical and Non-Surgical Treatments
    - 1.3.1.2.2. Rostral Pharyngeal Collapse
    - 1.3.1.2.3. Dorsal/Lateral Nasopharyngeal Collapse
  - 1.3.1.3. Nasopharyngeal Pathologies in Foals
    - 1.3.1.3.1. Choanal Atresia
    - 1.3.1.3.2. Cleft Palate
    - 1.3.1.3.3. Nasopharyngeal Dysfunction

1.3.2. Diseases and Pathologies Affecting the Larynx
1.3.2.1. Recurrent Laryngeal Neuropathy (Laryngeal Hemiplegia)
1.3.2.1.1. Diagnosis
1.3.2.1.2. Gradation
1.3.2.1.3. Treatment and Associated Complications
1.3.2.2. Vocal Cord Collapse
1.3.2.3. Bilateral Laryngeal Paralysis
1.3.2.4. Cricopharyngeal-Laryngeal Dysplasia (Fourth Branchial Arch Defects)
1.3.2.5. Collapse of the Apex of the Corniculate Process
1.3.2.6. Medial Deviation of the Aryepiglottic Folds
1.3.2.7. Chondropathy of the Arytenoid Cartilage
1.3.2.8. Pathologies in the Mucosa of the Arytenoid Cartilages
1.3.2.9. Pathologies Affecting the Epiglottis
1.3.2.9.1. Epiglottic Entrapment
1.3.2.9.2. Acute Epiglottitis
1.3.2.9.3. Subepiglottic Cyst
1.3.2.9.4. Subepiglottic Granuloma
1.3.2.9.5. Dorsal Epiglottic Abscess
1.3.2.9.6. Hypoplasia, Flaccidity, Deformity of Epiglottis
1.3.2.9.7. Epiglottic Retroversion

1.4. Diseases of Guttural Pouches and Trachea Tracheostomy
1.4.1. Diseases and Pathologies Affecting the Guttural Pouches
1.4.1.1. Tympanism
1.4.1.1.1. Functional Nasopharyngeal Obstruction in Adults
1.4.1.2. Empyema
1.4.1.3. Mycosis
1.4.1.4. Trauma-Rupture of the Ventral Rectus Muscles
1.4.1.5. Osteoarthropathy of the Temporohyoid Joint
1.4.1.6. Other Pathologies

1.4.2. Diseases and Pathologies Affecting the Trachea
1.4.2.1. Trauma
1.4.2.2. Tracheal Collapse
1.4.2.3. Tracheal Stenosis
1.4.2.4. Foreign Bodies
1.4.2.5. Intraluminal Masses
1.4.3. Tracheal Surgeries
1.4.3.1. Tracheostomy and Tracheostomy (Temporary)
1.4.3.2. Permanent Tracheostomy
1.4.3.3. Other Tracheal Surgeries
1.5. Inflammatory Diseases of the Lower Respiratory Tract
1.5.1. Introduction: Functionality of the Lower Respiratory Tract
1.5.2. Equine Asthma
1.5.2.1. Etiology and Classification
1.5.2.2. Epidemiology
1.5.2.3. Classification
1.5.2.4. Pathophysiology
1.5.2.5. Clinical Signs
1.5.2.6. Diagnostic Techniques
1.5.2.7. Therapy Options
1.5.2.8. Prognosis
1.5.2.9. Prevention
1.5.3. Exercise-Induced Pulmonary Hemorrhage
1.5.3.1. Etiology
1.5.3.2. Epidemiology
1.5.3.3. Pathophysiology
1.5.3.4. Clinical Signs
1.5.3.5. Diagnostic Techniques
1.5.3.6. Therapy Options
1.5.3.7. Prognosis
1.6. Bacterial and Fungal Infectious Diseases of the Respiratory Tract
1.6.1. Equine Mumps *Streptococcus* Equi Infection
1.6.2. Bacterial Pneumonia and Pleuropneumonia
1.6.3. Fungal Pneumonia
1.7. Pneumonias of Mixed Origin Viral Infectious Diseases of the Respiratory Tract and Tumors
1.7.1. Interstitial Pneumonia and Pulmonary Fibrosis
1.7.2. Equine Herpesvirus I, IV and V
1.7.3. Equine Influenza
1.7.4. Tumours of the Respiratory System
1.8. Exploration of the Cardiovascular System, Electrocardiography and Echocardiography
1.8.1. Anamnesis and Clinical Examination
1.8.2. Basic Principles of Electrocardiography
1.8.3. Electrocardiography Types
1.8.4. Electrocardiogram Interpretation
1.8.5. Basic Principles of Echocardiography
1.8.6. Echocardiographic Planes
1.9. Structural Cardiac Alterations
1.9.1. Congenital
1.9.1.1. Ventricular Septal Defect
1.9.2. Acquired
1.9.2.1. Aortic Insufficiency
1.9.2.2. Mitral Insufficiency
1.9.2.3. Tricuspid Regurgitation
1.9.2.4. Aorto-Cardiac Fistula
1.10. Arrhythmias
1.10.1. Supraventricular Arrhythmias
1.10.2. Ventricular Arrhythmias
1.10.3. Conduction Disturbances

Module 2. Hematopoietic System, Immunology and Nutrition

2.1. Analytical Interpretation: Blood Count and Serum Biochemistry
- 2.1.1. General Considerations for the Interpretation of Analytical Reports
  - 2.1.1.1. Essential Patient Data
  - 2.1.1.2. Sample Collection and Handling
- 2.1.2. Interpretation of Blood Count
  - 2.1.2.1. Red Blood Cells
  - 2.1.2.2. White Blood Cells
  - 2.1.2.3. Platelet Cells
  - 2.1.2.4. Smears
- 2.1.3. Interpretation of Serum or Plasma Biochemistry
  - 2.1.3.1. Electrolytes
  - 2.1.3.2. Bilirubin
  - 2.1.3.3. Creatinine, Blood Urea Nitrogen (BUN), Urea and Symmetrical Dimethylarginine (SDMA)
  - 2.1.3.4. Proteins: Albumin and Globulins
  - 2.1.3.5. Acute-Phase Proteins: Fibrinogen, Serum Amyloid A
  - 2.1.3.6. Enzymes
  - 2.1.3.7. Glucose
  - 2.1.3.8. Bicarbonate
  - 2.1.3.9. Lactate
  - 2.1.3.10. Triglycerides and Bile Acids

2.2. Hematopoietic System Pathologies
- 2.2.1. Hemolytic anemia
  - 2.2.1.1. Immune-Mediated Hemolytic Anemia
  - 2.2.1.2. Equine Infectious Anemia
  - 2.2.1.3. Piroplasmosis
  - 2.2.1.4. Other Causes
- 2.2.2. Hemorrhagic Anemia
  - 2.2.2.1. Hemoperitoneum and Hemothorax
  - 2.2.2.2. Gastrointestinal Losses
  - 2.2.2.3. Losses From Other Origin
- 2.2.3. Non-Regenerative Anemias
  - 2.2.3.1. Iron Deficiency Anemia
  - 2.2.3.2. Anemia due to Chronic Inflammation/Infection
  - 2.2.3.3. Aplastic Anemia
- 2.2.4. Coagulation Alterations
  - 2.2.4.1. Platelet Alterations
    - 2.2.4.1.1. Thrombocytopenia
    - 2.2.4.1.2. Platelet Functional Alterations
  - 2.2.4.2. Alterations of Secondary Hemostasis
    - 2.2.4.2.1. Hereditary
    - 2.2.4.2.2. Acquired
  - 2.2.4.3. Thrombocytosis
  - 2.2.4.4. Lymphoproliferative Disorders
  - 2.2.4.5. Disseminated Intravascular Coagulation (DIC)

2.3. Endotoxic Shock
- 2.3.1. Systemic Inflammation and Systemic Inflammatory Response Syndrome (SIRS)
- 2.3.2. Causes of Endotoxemia in Horses
- 2.3.3. Pathophysiological Mechanisms
- 2.3.4. Endotoxic Shock
  - 2.3.4.1. Hemodynamic Changes
  - 2.3.4.2. Multiorgan Dysfunction
- 2.3.5. Clinical Signs of Endotoxemia and Endotoxic Shock
- 2.3.6. Diagnosis
- 2.3.7. Management
  - 2.3.7.1. Endotoxin Release Inhibitors
  - 2.3.7.2. Endotoxin Uptake and Inhibition
  - 2.3.7.3. Cell Activation Inhibition
  - 2.3.7.4. Inhibition of the Synthesis of Inflammatory Mediators
  - 2.3.7.5. Other specific therapies
  - 2.3.7.6. Support Treatments

2.4. Treatment of Hematopoietic Alterations Transfusion Therapy
- 2.4.1. Indications for Transfusion of Whole Blood
- 2.4.2. Indications for Plasma Transfusion
- 2.4.3. Indications for Transfusion of Platelet Products
- 2.4.4. Donor Selection and Compatibility Testing
- 2.4.5. Technique for Whole Blood Collection and Processing of Plasma
- 2.4.6. Administration of Blood Products
  - 2.4.6.1. Volume of Administration
  - 2.4.6.2. Administration Techniques
  - 2.4.6.3. Adverse Reaction Monitoring

2.5. Immune System Alterations Allergies
- 2.5.1. Hypersensitivity Types
- 2.5.2. Pathologies Associated with Hypersensitivity
  - 2.5.2.1. Anaphylactic Reaction
  - 2.5.2.2. Hemorrhagic Purpura
- 2.5.3. Autoimmunity
- 2.5.4. Most Important Immunodeficiencies in Equines
  - 2.5.4.1. Diagnostic Tests
  - 2.5.4.2. Primary Immunodeficiencies
  - 2.5.4.3. Secondary Immunodeficiencies
- 2.5.5. Immunomodulators:
  - 2.5.5.1. Immunostimulants
  - 2.5.5.2. Immunosuppressants

2.6. Nutrition Basic Principles I
- 2.6.1. Physiology of Gastrointestinal Tract
  - 2.6.1.1. Oral Cavity, Esophagus and Stomach
  - 2.6.1.2. Small Intestine
  - 2.6.1.3. Large Intestine
- 2.6.2. Dietary Components and Nutrients
  - 2.6.2.1. Water
  - 2.6.2.2. Proteins and Amino Acids
  - 2.6.2.3. Carbohydrates
  - 2.6.2.4. Fats and Fatty Acids
  - 2.6.2.5. Minerals and Vitamins
- 2.6.3. Estimation of Horse Weight and Body Condition

2.7. Nutrition Basic Principles II
- 2.7.1. Energy and Available Energy Sources
  - 2.7.1.1. Forage
  - 2.7.1.2. Starches
  - 2.7.1.3. Fats
- 2.7.2. Metabolic Pathways of Energy Production
- 2.7.3. Energy Needs of the Horse
  - 2.7.3.1. In Maintenance
  - 2.7.3.2. For Breeding and Growth
  - 2.7.3.3. For the Show/Race Horse

2.8. Cachectic Horse Nutrition
- 2.8.1. Metabolic Response
- 2.8.2. Physical Examination and Clinical Signs
- 2.8.3. Blood Analysis
- 2.8.4. Differential Diagnoses
- 2.8.5. Nutritional Requirements

2.9. Use of Probiotics, Prebiotics and Medicinal Plants
- 2.9.1. Role of the Microbiota in the Large Intestine
- 2.9.2. Probiotics, Prebiotics, and Symbiotics
- 2.9.3. Medicinal Plants Use

2.10. Rational Use of Antibiotics. Bacterial Resistance
- 2.10.1. Responsible Antibiotic Use
- 2.10.2. New Antibiotic Therapies
- 2.10.3. Resistance Mechanisms
- 2.10.4. Main Multi-resistant Pathogens

Module 3. Advanced Therapeutic Protocols and Toxicology

3.1. Sedation and Total Intravenous Anesthesia
- 3.1.1. Total Intravenous Anesthesia
  - 3.1.1.1. General Considerations
  - 3.1.1.2. Patient and Procedure Preparation
  - 3.1.1.3. Pharmacology
  - 3.1.1.4. Total Intravenous Anesthesia in Short-Term Procedures
  - 3.1.1.5. Total Intravenous Anesthesia in Procedures of Medium Duration
  - 3.1.1.6. Total Intravenous Anesthesia in Long-Term Procedures
- 3.1.2. Sedation for On-Station Procedures
  - 3.1.2.1. General Considerations
  - 3.1.2.2. Patient/Procedure Preparation
  - 3.1.2.3. Technique: Bolus and Continuous Intravenous Infusions
  - 3.1.2.4. Pharmacology
  - 3.1.2.5. Drug Combinations

3.2. Pain Relief in Horses
- 3.2.1. Detection of Pain in Hospitalized Patients and Multimodal Analgesia
- 3.2.2. Types of NSAIDs
- 3.2.3. Agonists and Opioids
- 3.2.4. Local anesthetics
- 3.2.5. Other Drugs Used for Pain Control in Equines
- 3.2.6. Complementary Therapies: Acupuncture, Shockwaves, Chiropractic, Laser

3.3. Correction of Water and Electrolyte Balance
- 3.3.1. General Considerations on Fluid Therapy
  - 3.3.1.1. Objective and Key Concepts
  - 3.3.1.2. Organic Fluid Distribution
  - 3.3.1.3. Assessment of Patient Needs
- 3.3.2. Types of Fluid
  - 3.3.2.1. Crystalloids
  - 3.3.2.2. Colloids
  - 3.3.2.3. Supplements
- 3.3.3. Routes of Administration
  - 3.3.3.1. Intravenous
  - 3.3.3.2. Oral
- 3.3.4. Practical Principles of Fluid Therapy Calculation
- 3.3.5. Associated Complications

3.4. Specific Considerations of Acid-Base Equilibrium in Horses
- 3.4.1. Specific Considerations of Acid-Base Equilibrium in Horses
  - 3.4.1.1. Assessment of the Patient's Acid-Base Status
  - 3.4.1.2. Role of Bicarbonate, Chloride and Anion Gap
- 3.4.2. Metabolic Acidosis and Alkalosis
- 3.4.3. Respiratory Acidosis and Alkalosis
- 3.4.4. Compensatory Mechanisms
- 3.4.5. Base Excess

3.5. Pharmacological Considerations in the Sport Horse
- 3.5.1. Equestrian Sports Regulation
- 3.5.2. Doping
  - 3.5.2.1. Definition
  - 3.5.2.2. Medication Control Objectives
  - 3.5.2.3. Sampling and Accredited Laboratories
  - 3.5.2.4. Classification of Substances
- 3.5.3. Types of Doping
- 3.5.4. Withdrawal Time
  - 3.5.4.1. Factors Affecting Withdrawal Time
    - 3.5.4.1.1. Detection Time
    - 3.5.4.1.2. Regulatory Policies
    - 3.5.4.1.3. Animal Disposal Rate
  - 3.5.4.2. Factors to Consider in Determining Withdrawal Time
    - 3.5.4.2.1. Dose Administered
    - 3.5.4.2.2. Formulation
    - 3.5.4.2.3. Route of Administration
    - 3.5.4.2.4. Individual Pharmacokinetics
    - 3.5.4.2.5. Sensitivity of Analytical Procedures
    - 3.5.4.2.6. Sample Behavior Matrix
    - 3.5.4.2.7. Environmental Persistence of Substances and Environmental Pollution

3.6. Intensive Care of the Neonatal Foal
- 3.6.1. Types of Catheters, Infusion Sets, Nasogastric and Urinary Catheters for the Maintenance of Intensive Care in the Foal

3.6.2. Types of Fluids, Colloids, Plasmotherapy and Hemotherapy
3.6.3. Total and Partial Parenteral Feeding
3.6.4. Antibiotic Therapy, Analgesia and Other Important Medications
3.6.5. Cardiopulmonary Resuscitation

3.7. Adult Intensive Care
3.7.1. General Intensive Care Considerations
3.7.2. Intensive Care Procedures and Techniques
3.7.2.1. Vascular Access: Maintenance and Care
3.7.2.2. Arterial and Venous Pressure Monitoring
3.7.3. Cardiovascular Support
3.7.3.1. Shock
3.7.3.2. Supportive Drugs: Inotropes and Vasopressors
3.7.3.3. Support Strategies
3.7.4. Respiratory Support
3.7.4.1. Management of Respiratory Distress
3.7.5. Critically Ill Patient Nutrition
3.7.6. Neurological Patient Care
3.7.6.1. Medical and Supportive Management of the Neurological Horse
3.7.6.1.1. Trauma
3.7.6.1.2. Encephalopathies and Myeloencephalopathies
3.7.6.2. Specific Management of the Recumbent Horse

3.8. Toxicology I
3.8.1. Digestive System Toxicology
3.8.2. Liver Toxicology
3.8.3. Toxicology Affecting the Central Nervous System

3.9. Toxicology II
3.9.1. Toxicology Producing Clinical Signs Related to the Cardiovascular and Hemolymphatic Systems

3.9.2. Toxicology Producing Clinical Signs related to the Skin, Musculoskeletal System and General Condition
3.9.3. Toxicology Producing Clinical Signs Related to the Urinary System
3.9.4. Toxicological Problems Causing Sudden Death
3.10. Euthanasia Procedures
3.10.1. General Considerations
3.10.1.1. Geriatric Horse
3.10.2. Mechanisms of action for Hypothermia
3.10.3. Chemical Euthanasia Methods
3.10.4. Physical Euthanasia Methods
3.10.5. Euthanasia Protocol
3.10.6. Confirmation of Death

This program will allow you to advance in your career comfortably"

05

Methodology

This program offers students a different way of learning. Our methodology uses a cyclical learning approach: ***Relearning.***

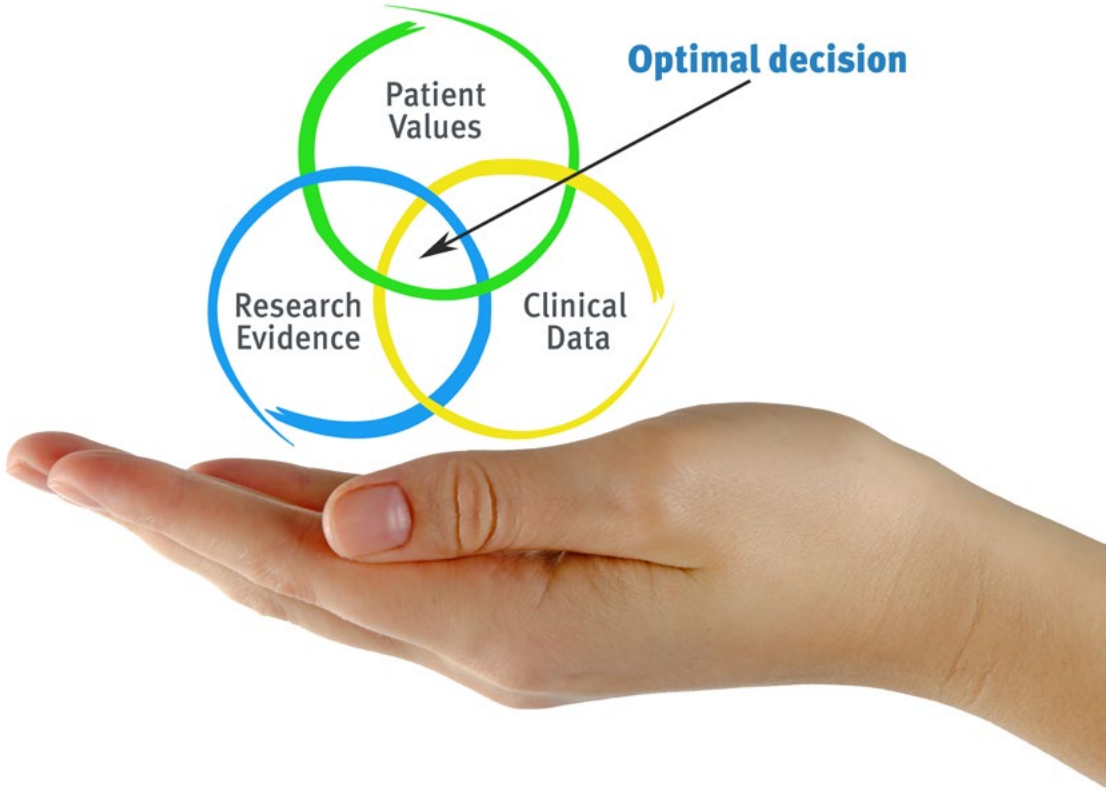
This teaching system is used, for example, in the most prestigious medical schools in the world, and major publications such as the ***New England Journal of Medicine*** have considered it to be one of the most effective.

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:

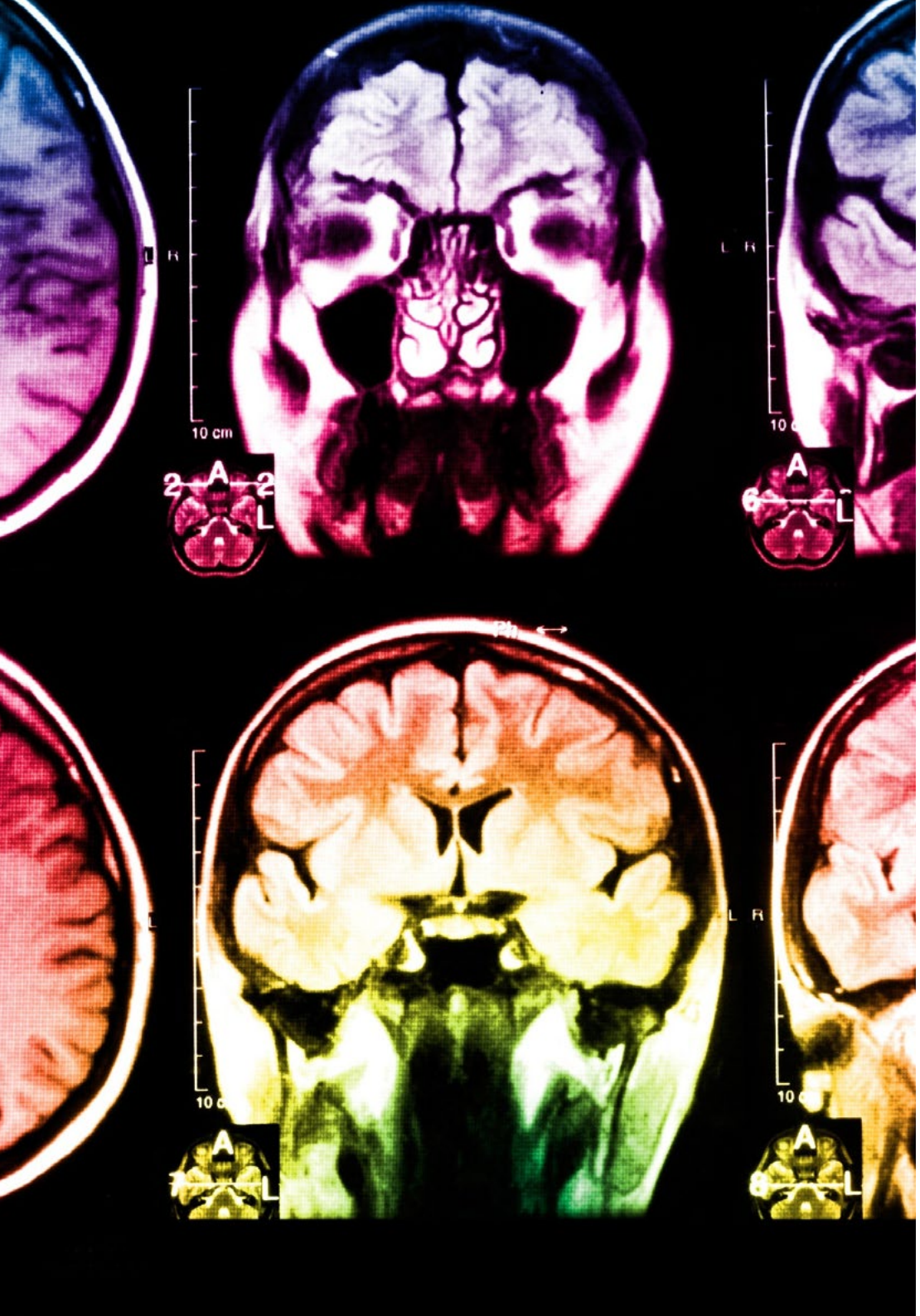
1. Veterinarians who follow this method not only manage to assimilate concepts, but also develop their mental capacity through exercises to assess real situations and knowledge application.
2. Learning is solidly translated into practical skills that allow the student to better integrate into the real world.
3. Ideas and concepts are understood more efficiently, given that the example situations are based on real-life.
4. Students like to feel that the effort they put into their studies is worthwhile. This then translates into a greater interest in learning and more time dedicated to working on the program.

Relearning Methodology

TECH effectively combines the Case Study methodology with a 100% online learning system based on repetition, which combines 8 different teaching elements in each lesson.

We enhance the Case Study with the best 100% online teaching method: Relearning.

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 prepared 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 education, 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 adapted in 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.

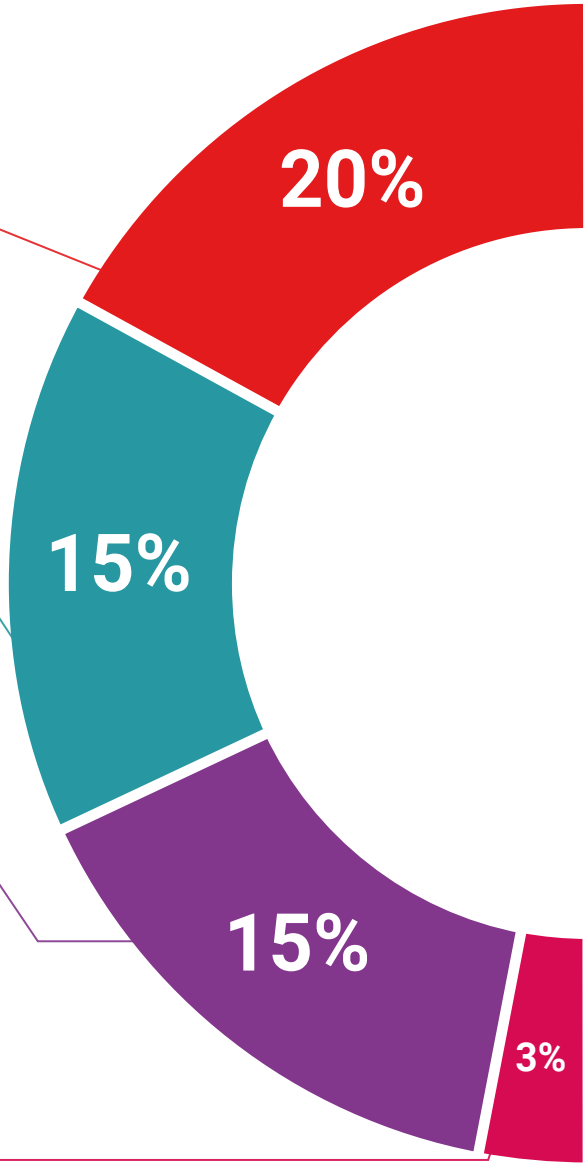
Interactive Summaries

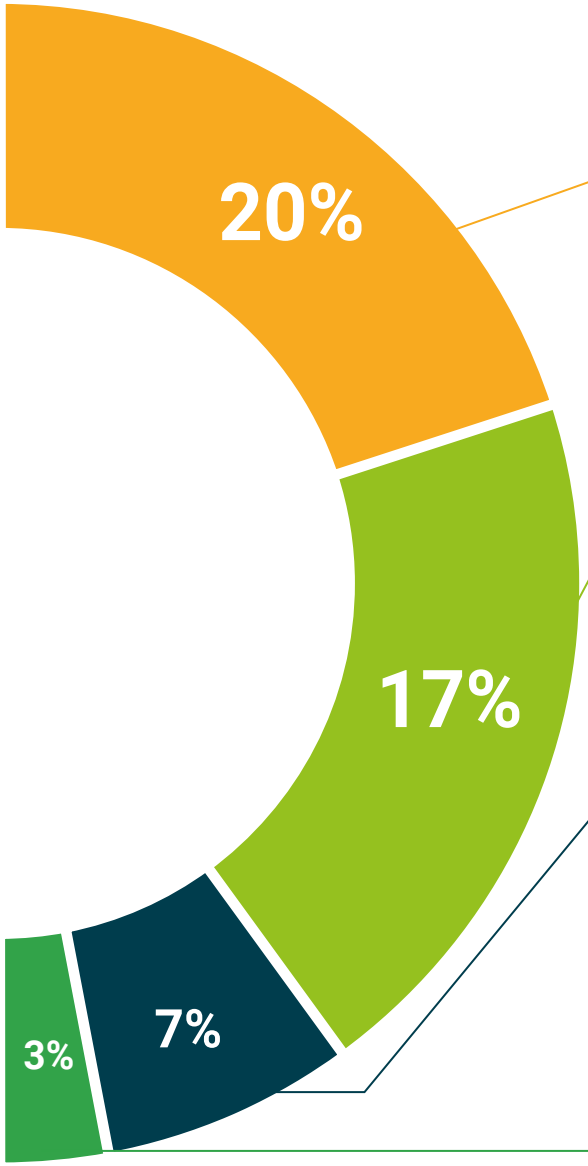
The TECH team presents the contents attractively and dynamically in multimedia lessons that include audio, videos, images, diagrams, and concept maps in order to reinforce knowledge.

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 assess and re-assess 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.

06

Certificate

The Postgraduate Diploma in Cardiorespiratory and Blood Disorders in Horses. Expanded Therapeutic Protocols in Outpatient Practice guarantees students, in addition to the most rigorous and up-to-date education, access to a Postgraduate 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 **Postgraduate Diploma in Cardiorespiratory and Blood Disorders in Horses. Expanded Therapeutic Protocols in Outpatient Practice** contains the most complete and up-to-date scientific program on the market.

After the student has passed the assessments, they will receive their corresponding **Postgraduate Diploma**, issued by **TECH Technological University** via tracked delivery*.

The certificate issued by **TECH Technological University** will reflect the qualification obtained in the Postgraduate Diploma, and meets the requirements commonly demanded by labor exchanges, competitive examinations, and professional career evaluation committees.

Title: **Postgraduate Diploma in Cardiorespiratory and Blood Disorders in Horses. Expanded Therapeutic Protocols in Outpatient Practice**

Official Nº of Hours: **450 h.**


tech technological university

Awards the following

CERTIFICATE

to

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

For having passed and accredited the following program

POSTGRADUATE DIPLOMA

in

Cardiorespiratory and Blood Disorders in Horses. Expanded Therapeutic Protocols in Outpatient Practice

This is a qualification awarded by this University, equivalent to 500 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

*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.

tech universidad tecnológica

Postgraduate Diploma

Cardiorespiratory and Blood Disorders in Horses. Expanded Therapeutic Protocols in Outpatient Practice

- Modality:**Online**
- Duration: **6 months.**
- Certificate: **TECH Technological University**
- Dedication: **8h/week**
- Schedule: **at your own pace**
- Exams: **online**

Postgraduate Diploma

Cardiorespiratory and Blood Disorders in Horses. Expanded Therapeutic Protocols in Outpatient Practice.

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