

Postgraduate Certificate Cardiorespiratory, Blood and Nutrition Disorders in Horses





Postgraduate Certificate Cardiorespiratory, Blood and Nutrition Disorders in Horses

- » Modality: online
- » Duration: 12 weeks
- » Certificate: TECH Technological University
- » Dedication: 16h/week
- » Schedule: at your own pace
- » Exams: online

Website: www.techtute.com/pk/veterinary-medicine/postgraduate-certificate/cardiorespiratory-blood-nutrition-disorders-horses

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01

Introduction

Cardiorespiratory, blood and nutritional diseases of the horse represent a high incidence consultation for both the field clinician and the hospital care clinician. This Postgraduate Certificate 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. Furthermore, the necessary aspects of anesthetic use and toxicology of the horse will be addressed.





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A complete and total update in Cardiorespiratory, Blood and Nutrition Disorders in Horses with the most complete and effective format program in the online educational market"

This Postgraduate Diploma covers a compendium of diverse topics, all of them essential for the clinician who wants to opt for advanced and updated knowledge in equine internal medicine. They all encompass issues that require an advanced level of knowledge to be able to deal with situations that the specialist-qualified ambulatory clinician will have to deal with on a day-to-day basis.

Upper airway diseases are a frequent cause of loss of athletic 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 fast 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.

In addition, the Postgraduate Certificate in Cardiorespiratory and Blood Pathologies and Horse Nutrition incorporates a series of masterclasses given by an international expert in the diagnosis and treatment of these pathologies. Students will have the opportunity to learn about the latest diagnostic techniques and therapeutic options for cardiorespiratory and blood pathologies, as well as improve their skills in equine nutrition. The master session will focus on providing students with a comprehensive view of these pathologies and improving their skills in clinical practice.

Finally, the student will receive specialized knowledge on feeding with the most advanced knowledge in this sector, essential in veterinary practice.

This **Postgraduate Certificate in Cardiorespiratory, Blood and Nutrition Disorders in Horses** contains the most complete and up-to-date scientific program on the market.

The most important features include:

- ◆ The latest technology in online teaching software
- ◆ Intensely visual teaching system, supported by graphic and schematic contents, 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



Take advantage of the opportunity to update yourself with the unique and exclusive Masterclasses of this program, which will allow you to delve deeper into specific areas of interest"

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Our innovative telepractice concept will give you the opportunity to learn through an immersive experience, which will provide you with a faster integration and a much more realistic view of the contents: Learning from an expert”

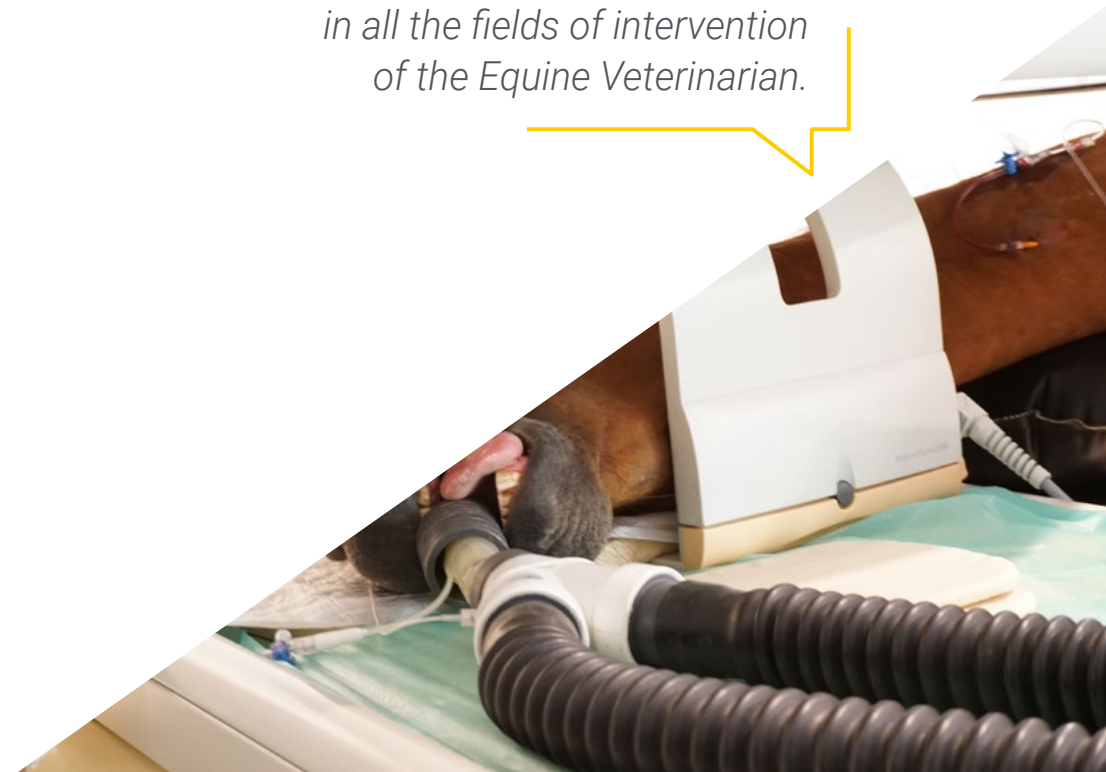
Our teaching staff is made up of professionals from different fields related to this specialty. In this way, we ensure that we provide you with the educational update we are aiming for. A multidisciplinary team of professionals specialized and experienced in different environments, who will develop the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

The design of this program is based on Problem-Based Learning: an approach that conceives 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 actually dealing with the scenario you are learning about. A concept that will allow you to integrate and fix learning in a more realistic and permanent way.

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

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



02

Objectives

TECH's objective is to prepare 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 a highly intensive and effective program.





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If your objective is to broaden your skills set to include new paths of success and development, this is your Postgraduate Certificate: a 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 equids
- ♦ 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

- ◆ 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
- ◆ Delve into the study of blood components, as well as to attend in detail to the 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 sense 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

03

Course Management

In keeping with this program's impeccable standards, TECH is proud to provide students with 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.





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Our teaching team is the most complete and successful in the educational panorama”

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

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*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 the Large Animal Department at the Complutense Veterinary Clinic Hospital
- ♦ Associate Professor, Department of Animal Medicine and Surgery, Complutense University of Madrid
- ♦ 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 CEU University Cardenal Herrera
- ♦ 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: Organizing Committee of the 12th European College of Equine Internal Medicine Congress, Board of Directors of the Spanish Society of Ozone Therapy, Equine Clinicians Commission of the Official College of Veterinarians of Valencia, Spanish Association of Equine Veterinarians (AVEE), Scientific Committee and Coordinator of courses and congresses in the area of Ozone Therapy, supported by continuing education credits granted by the National Health System

Professors

Dr. Alonso de Diego, María

- ♦ 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

- ♦ Head of the Sports Medicine and Diagnostic Imaging Service of the Large Animal Area of the Clinical Veterinary Hospital of the Alfonso X el Sabio University
- ♦ Sports Medicine Service in the Alfonso X El Sabio University Clinical Veterinary Hospital
- ♦ 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 Professional Master's Degree in Sports Medicine and Equine Surgery, Universidad Alfonso X el Sabio
- ♦ PhD in Veterinary Medicine from CEU Cardenal Herrera University
- ♦ Degree in Veterinary Medicine from the Complutense University Madrid
- ♦ Diploma in Equine Sports Medicine and Rehabilitation from the American College of Equine Sports Medicine and Rehabilitation

Dr. Roquet Carne, Imma

- ♦ Equine Veterinary Surgeon
- ♦ Veterinary Surgeon in private practice in Equine Medicine and Surgery
- ♦ Surgeon and Pharmacodynamics. 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. Villalba Orero, María

- ♦ Scientific Advisor on cardiovascular and pulmonary ultrasound at the National Center for Cardiovascular Research
- ♦ Head and Founder of Equine Cardiology 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
- ♦ Certificate European Certificate in Veterinary Cardiology by the European School of Veterinary Postgraduate Studies (ESVPS)

Dr. Benito Bernáldez, Irene

- ◆ 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 learning 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. 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. 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, propaedeutics subject Medical Pathology and supervised from practice
- ◆ Clinical Propedeutics course coordination
- ◆ Equine Hospitalization Service of the Clinical Veterinary Hospital of the University Alfonso X El Sabio
- ◆ Management of Final Degree Projects at Universidad Alfonso X El Sabio
- ◆ 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

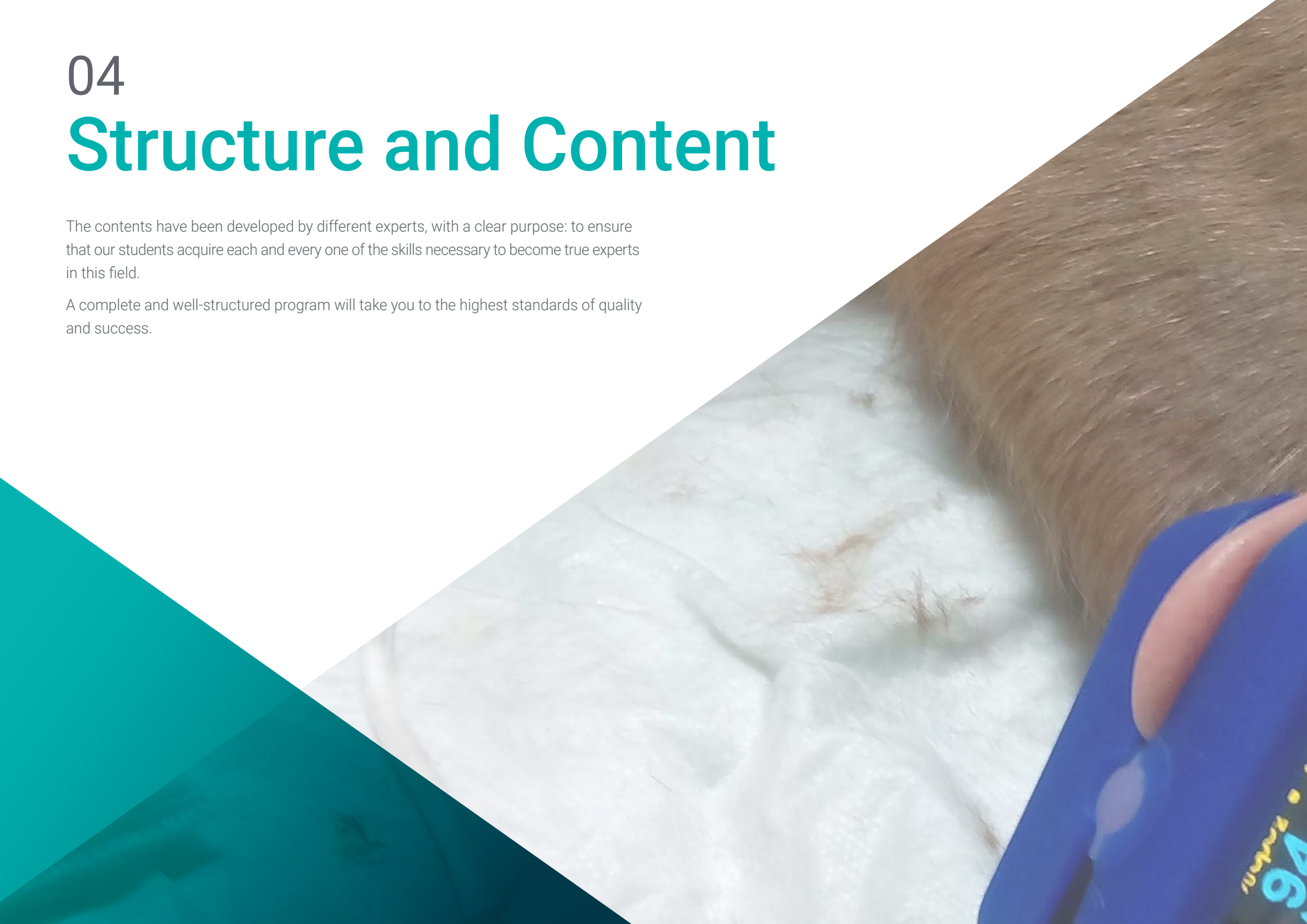
“ *An impressive teaching staff, made up of professionals from different areas of expertise, will be your teachers during your learning: a unique opportunity not to be missed*”

04

Structure and Content

The contents have been developed by different experts, with a clear purpose: to ensure that our students acquire each and every one of the skills necessary to become true experts in this field.

A complete and well-structured program will take you to the highest standards of quality and success.





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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

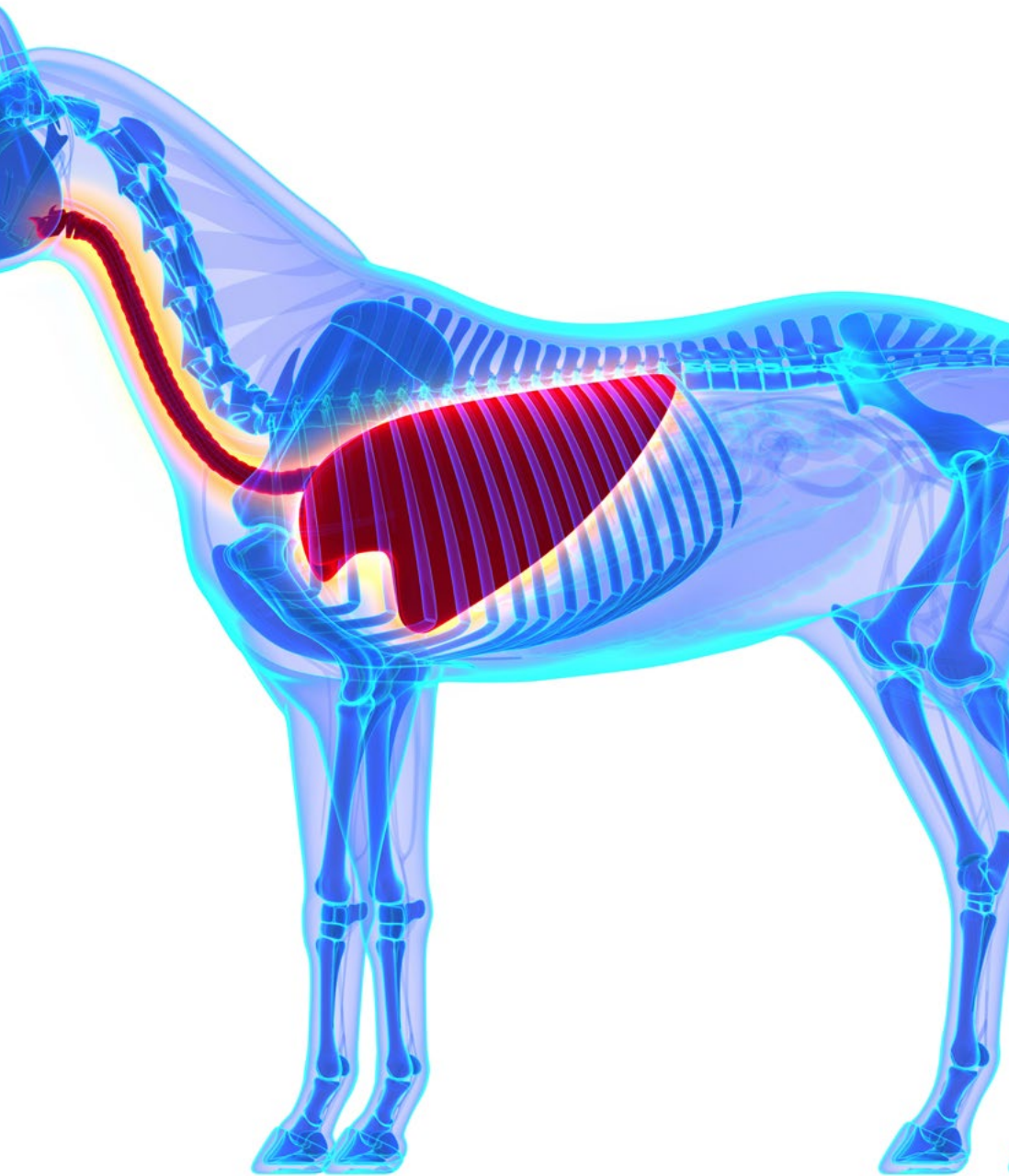
- 1.3.2. Diseases and Pathologies Affecting the Larynx
 - 1.3.2.1. Recurrent Laryngeal Neuropathy (Laryngeal Hemiplegia)
 - 1.3.2.1.1. Diagnosis
 - 1.3.2.1.2. Gradation
 - 1.3.2.1.3. Treatment and Associated Complications
 - 1.3.2.2. Vocal Cord Collapse
 - 1.3.2.3. Bilateral Laryngeal Paralysis
 - 1.3.2.4. 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 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 hemogram:
 - 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 disorders:
 - 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
 - 2.2.1. 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, Stomach
 - 2.6.1.2. Small Intestine
 - 2.6.1.3. Large Intestine



- 2.6.2. Diet Components, 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

05 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.

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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.



06

Certificate

The Postgraduate Certificate in Cardiorespiratory, Blood and Nutrition Disorders in Horses guarantees students, in addition to the most rigorous and up-to-date education, access to a Postgraduate Certificate issued by TECH Technological University.



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

This **Postgraduate Certificate in Cardiorespiratory, Blood and Nutrition Disorders in Horses** contains the most complete and up-to-date scientific on the market.

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

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

Title: **Postgraduate Certificate in Cardiorespiratory, Blood and Nutrition Disorders in Horses**

Official N° of Hours: **300 h.**



*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.

future
health confidence people
education information tutors
guarantee accreditation teaching
institutions technology learning
community commitment
personalized service innovation
knowledge present
development language
virtual classroom



Postgraduate Certificate Cardiorespiratory, Blood and Nutrition Disorders in Horses

- » Modality: online
- » Duration: 12 weeks
- » Certificate: TECH Technological University
- » Dedication: 16h/week
- » Schedule: at your own pace
- » Exams: online

Postgraduate Certificate Cardiorespiratory, Blood and Nutrition Disorders in Horses

