

Postgraduate Certificate

Cardiovascular, Respiratory and Hemolymphatic Diseases in Ruminants





Postgraduate Certificate Cardiovascular, Respiratory and Hemolymphatic Diseases in Ruminants

- » Modality: online
- » Duration: 6 weeks
- » Certificate: TECH Global University
- » Accreditation: 6 ECTS
- » Schedule: at your own pace
- » Exams: online

Acceso web: www.techtute.com/us/veterinary-medicine/postgraduate-certificate/cardiovascular-respiratory-hemolymphatic-diseases-ruminants

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01

Introduction

The incidence of diseases in the cardiovascular, respiratory and hemolympatic systems occupies the first place among the affections of the different ruminant species, being the cause of very high impact on health, animal welfare and production. Therefore, specific training in this area is of utmost relevance for the veterinarian in order to develop the most efficient approaches with the support of the most up-to-date evidence. This program is the best way to achieve excellence, with the quality and flexibility you were looking for.





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A complete program that will give you the broadest and most specialized knowledge on the most common affectations and productive consequences in ruminants”

Respiratory system diseases occupy the second place in disease incidence in ruminants. This module groups respiratory diseases together with pathologies of the cardiovascular and hemolymphatic systems.

Although in the diseases of the three systems we find highly variable severity, even in cases that initially appear to be mild, it is common to see rapid deterioration of the individual, marked decrease in production and, in the case of infectious-contagious problems that occupy the first place among respiratory diseases, the possibility of contagion and group affectation, with substantial losses for the producer. Consequently, the rapid recognition of the main diseases affecting the respiratory tract, the cardiovascular system and the lymphatic system is of vital importance for timely intervention to allow early diagnosis and the implementation of control and treatment measures for affected animals, as well as to prevent transmission to other animals (in the case of livestock herds), seeking to minimize losses and restore the health of affected individuals and the entire operation.



Essential yet rare specialization for the specialist veterinary clinician that will set you apart as a specialist in this field of work"

This **Postgraduate Certificate in Cardiovascular, Respiratory and Hemolymphatic Diseases in Ruminants** 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
- ◆ A highly visual teaching system, supported by graphic and schematic contents that are easy to assimilate and understand
- ◆ Practical cases presented by practicing 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 the program

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The clinical, specialized and advanced fundamentals, based on veterinary evidence that will allow you to face the daily intervention in cattle and ruminants"

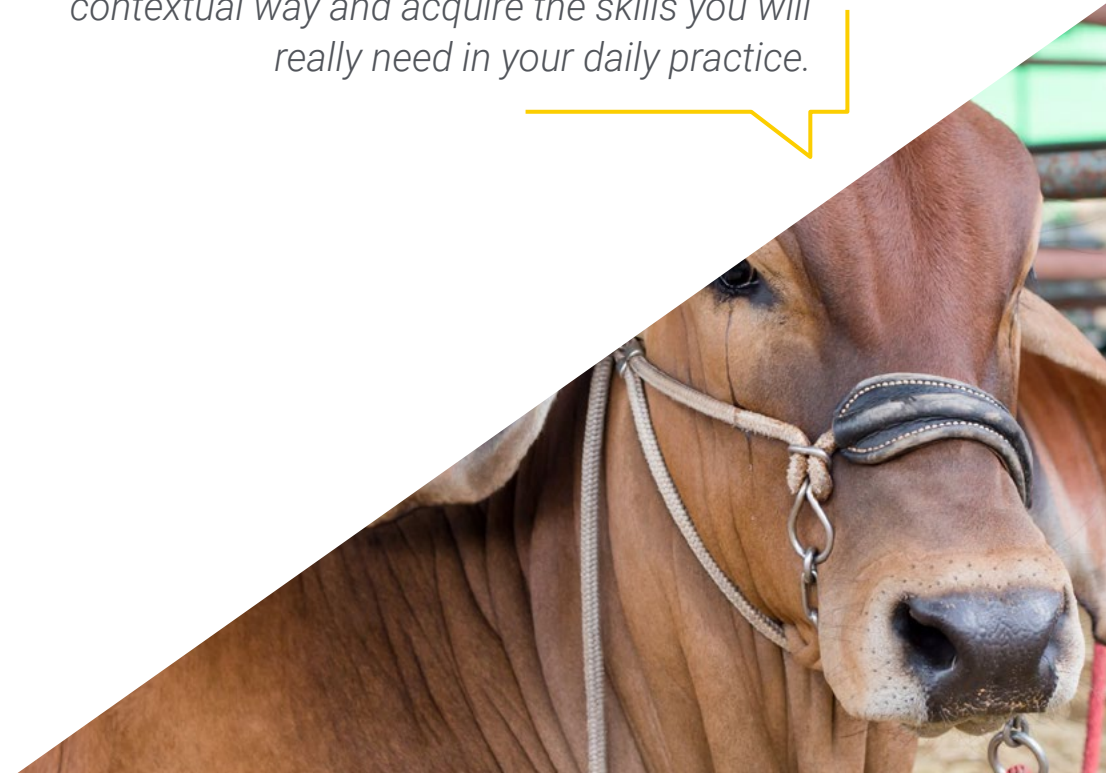
Our teaching staff is made up of professionals from different fields related to this specialty. In this way, TECH makes sure to offer professionals the up-to-date objective it intends. A multidisciplinary team of professionals trained and experienced in different environments who will develop theoretical knowledge efficiently, but, above all, will provide students with practical knowledge derived from their teaching experience: 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. In this way, the student will be able to study with comfortable and versatile multimedia tools that will give them the operability they need in their training.

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 telepractice will be used: with the help of an innovative system of interactive videos and *learning from an expert* they will be able to acquire the knowledge as if they were facing the case they are learning at that moment. A concept that will make it possible to integrate learning in a more realistic and permanent way.

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

Supported by evidence, the approach of this program will allow you to learn in a contextual way and acquire the skills you will really need in your daily practice.



02 Objectives

The completion of this program provides the veterinary professional with specialized and advanced clinical fundamentals, based on evidence to face the daily clinical practice in cattle and ruminants.

Additionally, this up-to-date approach to the problems encountered in daily clinical practice, the bibliography provided, and the structuring of the topics will allow you to keep this knowledge up to date.





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The Postgraduate Certificate in Cardiovascular, Respiratory and Hemolymphatic Diseases in Ruminants will allow the veterinary clinician to update and expand their knowledge and skills in Medicine and Surgery of Ruminants"

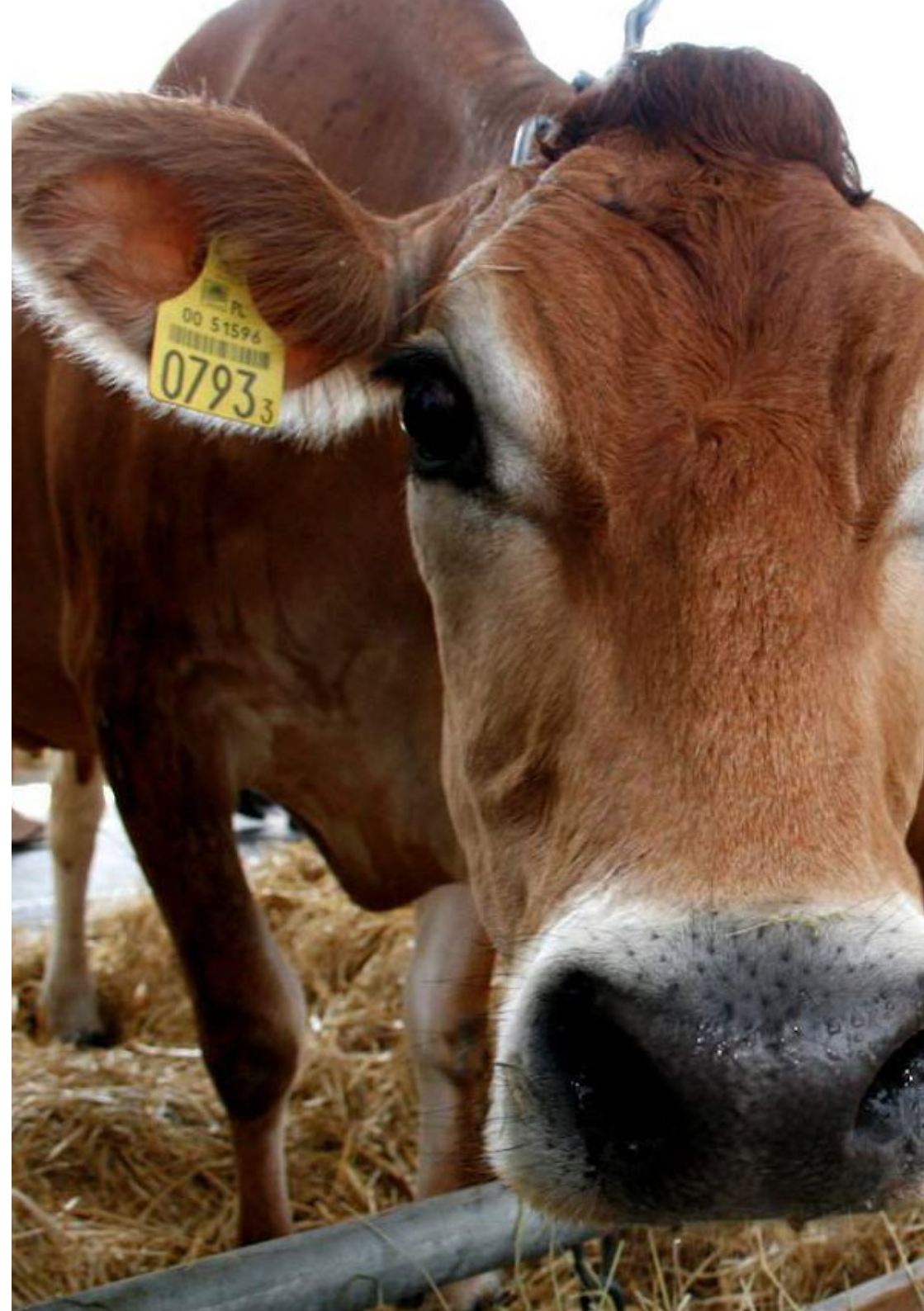


General Objectives

- ◆ Establish an appropriate methodology for the screening of ruminants with cardiovascular, respiratory and hemolympatic problems
- ◆ Identify all clinical signs associated with cardiovascular, respiratory and hemolympatic diseases in ruminants
- ◆ Address the main cardiovascular, respiratory and hemolympatic pathologies affecting ruminants, their diagnosis and treatment



A comprehensive program that will boost your ability to work in prevention, management and cost reduction in animal production, giving you greater competitiveness in the labor market"





Specific Objectives

- ◆ Examine how to perform a complete physical examination of the cardiovascular, respiratory and hemolymphatic systems
- ◆ Understand the diagnostic procedures used in suspected cardiovascular, respiratory and hemolymphatic pathology, and the interpretation of their results
- ◆ Accurately recognize the clinical signs of pathologies of the cardiovascular, respiratory (upper or lower respiratory tract) and hemolymphatic systems
- ◆ Determine the main causes of disease of the cardiovascular, respiratory and hemolymphatic systems in cattle, sheep and goats
- ◆ Examine the necessary and triggering factors of traumatic reticulopericarditis and Bovine Respiratory Syndrome (BRS)
- ◆ Identify the main pathogens involved in the development of BRS and know their relative importance within the complex
- ◆ Determine the epidemiology and clinical significance of bovine leukosis and anemia in small ruminants

03

Course Management

Within the concept of total quality of our program, 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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An impressive teaching staff, made up of professionals of the highest level, will be the professors throughout the program providing the most real, close and current learning experience"

Management



Dr. Ezquerra Calvo, Luis Javier

- ◆ PhD in Veterinary Medicine from the University of Extremadura
- ◆ Degree in Veterinary from the University of Zaragoza
- ◆ Specialist in Applied and Experimental Animal Surgery University of Zaragoza
- ◆ Specialist in Animal Reproduction and Artificial Insemination University of Zaragoza
- ◆ Diploma of the European College of Veterinary Surgeons in Large Animals
- ◆ Presents 6 five-year teacher evaluation periods

Professors

Dr. Medina Torres, Carlos E.

- ♦ Veterinarian from the National University of Colombia
- ♦ Assistant Professor and Internal Medicine Specialist, School of Veterinary Medicine, Faculty of Science, University of Queensland
- ♦ PhD in Veterinary Science from the University of Guelph, Ontario
- ♦ Master of Science, University of Liverpool, England
- ♦ Diploma of the American College of Internal Medicine in the specialty of Large Animals and of the European College of Internal Medicine
- ♦ Certificate in University Teaching Practice (CUTP) from The University of Queensland
- ♦ PhD at the University of Queensland
- ♦ Assistant and Clinical Professor of Large Animal Internal Medicine at the Large Animal Clinic, Faculty of Veterinary Medicine and Animal Husbandry, National University of Colombia
- ♦ Research Associate in Sports Physiology at the Department of Morphology, Anatomy, Physiology and Pathology of the University of Messina, Italy
- ♦ Tutor, Teaching Assistant and Professor in Anatomy, Physiology, Internal Medicine of Production Animals and Internal Medicine and Surgery of Companion Animals
- ♦ Assistant Professor, Research Associate and Director of the Equine Herpesvirus Research Laboratory at the University of California, Berkeley, USA.
- ♦ Equivalent to Senior Lecturer and Clinical Specialist in Internal Medicine at the University of Queensland, Australia

Dr. Barba Recreo, Martha

- ♦ Veterinary Outpatient Equine Clinic, Gres-Hippo, St. Vincent de Mercuze, France
- ♦ Professor, researcher and clinical veterinarian in the Equine Internal Medicine Service, Faculty of Veterinary Medicine, CEU Cardenal Herrera University, Valencia
- ♦ Degree in Veterinary from the University of Zaragoza
- ♦ PhD in Biomedical Sciences, Auburn University, Alabama, USA.
- ♦ Diploma of the American College of Internal Medicine, Large Animals
- ♦ Rotating internship in Equine Medicine and Surgery at the University of Lyon, VetAgro-Sup, France
- ♦ Residency in Equine Internal Medicine, J.T. Vaughan Large Animal Teaching Hospital, Auburn University, Alabama, U.S.
- ♦ Assistant Professor, Department of Animal Medicine and Surgery, Faculty of Veterinary Medicine, CEU Cardenal Herrera University, Valencia
- ♦ Professor and veterinary specialist in Equine Internal Medicine and research associate, Weipers Centre Equine Hospital, University of Glasgow, Scotland, United Kingdom



The leading professionals in the field have come together to offer you the most comprehensive knowledge in this field, so that you can develop with total guarantees of success"

04

Structure and Content

The contents have been developed by the different experts of this Postgraduate Certificate, 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 comprehensive and well-structured program that will lead the professional to the highest standards of quality and success.



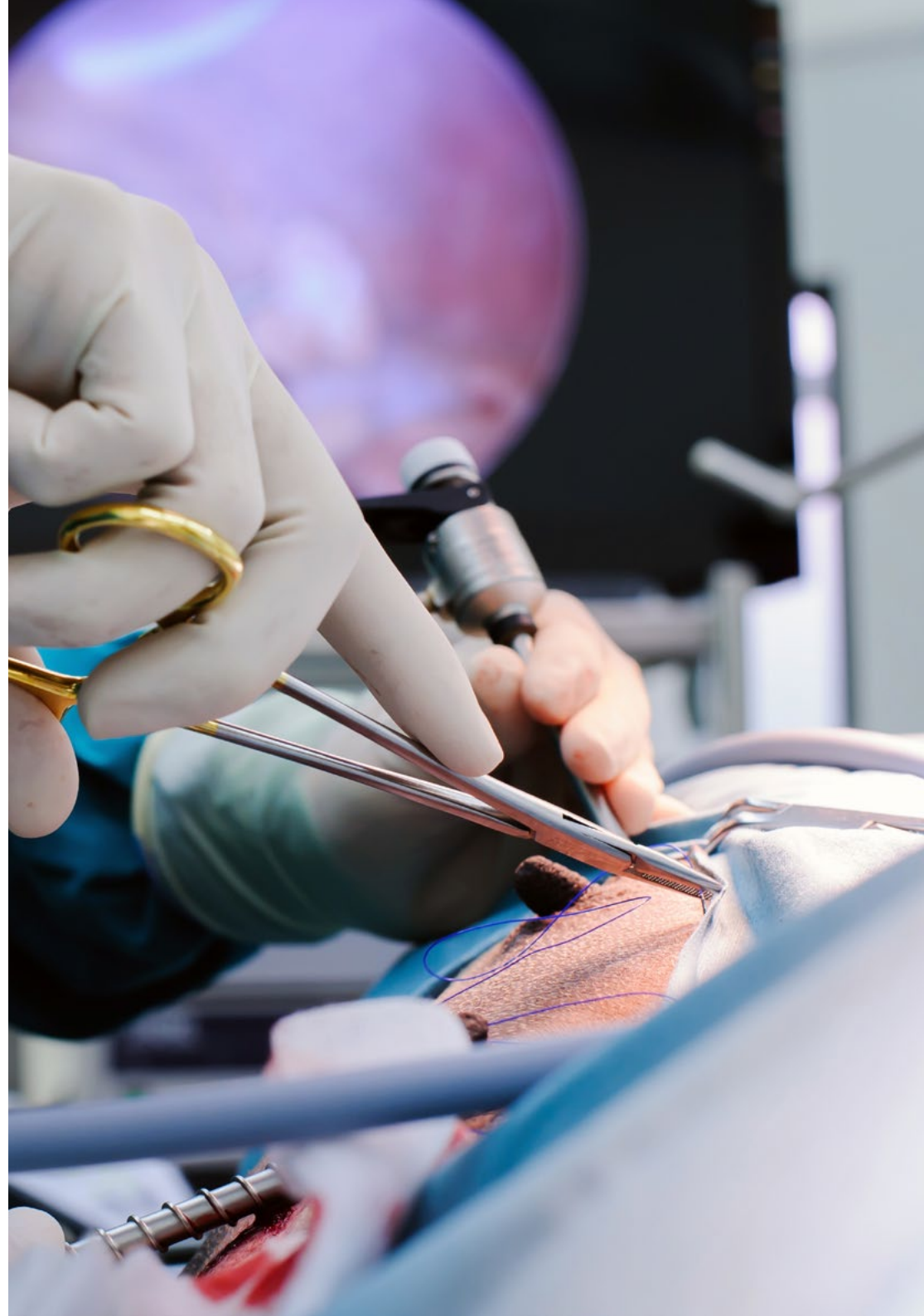


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A teaching program, structured in well-developed teaching units, oriented toward learning that is compatible with your personal and professional life"

Module 1. Cardiovascular, Respiratory and Hemolympatic Diseases in Ruminants

- 1.1. Interpretation of Blood Tests in Bovines
 - 1.1.1. Blood Count:
 - 1.1.2. Blood Biochemistry
 - 1.1.3. Urinalysis
 - 1.1.4. Bone Marrow
- 1.2. Interpretation of Blood Tests in Small Ruminant
 - 1.2.1. Blood Count:
 - 1.2.2. Blood Biochemistry
- 1.3. Immunological and Hematopoietic Disorders in Cattle and Small Ruminants
 - 1.3.1. Immune-Mediated Anemia
 - 1.3.2. Anemia and the FAMACHA System
 - 1.3.3. Thrombocytopenia
 - 1.3.4. Bone Marrow Suppression
- 1.4. Cardiovascular Diseases in Cattle
 - 1.4.1. Cardiovascular System Examination in Bovines
 - 1.4.2. Congenital Cardiovascular Pathologies
 - 1.4.3. Arrhythmias
 - 1.4.4. Heart Failure and Cor Pulmonale
 - 1.4.5. Valvular and Endocardial Diseases
 - 1.4.6. Myocardial Diseases and Cardiomyopathies
 - 1.4.7. Pericardial Diseases
 - 1.4.8. Thrombosis and Embolism
 - 1.4.9. Neoplasty.
- 1.5. Cardiovascular Diseases in Small Ruminants
 - 1.5.1. Cardiovascular System Examination in Small Ruminants
 - 1.5.2. Congenital Cardiovascular Pathologies
 - 1.5.3. Acquired Cardiovascular Pathologies
 - 1.5.4. Toxic or Nutritional Deficiency Cardiopathies
 - 1.5.5. Vascular Diseases



- 1.6. Examination of the Respiratory Tract and Diagnostic Tests in Ruminants
 - 1.6.1. Anatomy and Physiology of the Respiratory Tract
 - 1.6.2. Characteristic Clinical Signs of Respiratory Tract Disturbances
 - 1.6.3. Physical Examination
 - 1.6.3.1. History
 - 1.6.3.2. General Physical Evaluation
 - 1.6.3.3. Examination of the Respiratory Tract
 - 1.6.4. Diagnostic Imaging Techniques
 - 1.6.4.1. Radiography
 - 1.6.4.2. Ultrasound
 - 1.6.4.3. Other Diagnostic Imaging Techniques
 - 1.6.5. Collection and Assessment of Respiratory Secretions
 - 1.6.5.1. Tracheal Aspirate and Bronchoalveolar Lavage
 - 1.6.5.2. Thoracentesis
- 1.7. Pathologies Affecting the Upper Respiratory Tract of Bovines
 - 1.7.1. Nasal Cavity Diseases
 - 1.7.1.1. Bacterial or Mycotic Nasal Granuloma
 - 1.7.1.2. Allergic Rhinitis and Enzootic Nasal Granuloma
 - 1.7.1.3. Nasal Foreign Bodies
 - 1.7.1.4. Fractures
 - 1.7.1.5. Tumors and Polyps
 - 1.7.1.6. Congenital Problems
 - 1.7.2. Sinus Diseases
 - 1.7.2.1. Sinusitis
 - 1.7.3. Diseases of the Pharynx, Larynx and Trachea
 - 1.7.3.1. Alterations of Pharynx
 - 1.7.3.2. Necrotic Laryngitis or Necrobacillosis
 - 1.7.3.3. Other Laryngeal Disorders
 - 1.7.3.4. Tracheal Disorders
- 1.8. Bovine Respiratory Syndrome (BRS)
 - 1.8.1. BRS Overview
 - 1.8.2. Factors Involved in the Development of BRS
 - 1.8.3. Main Pathogens Involved in BRS
 - 1.8.3.1. Viruses Involved in BRS
 - 1.8.3.2. Bacteria Involved in BRS
- 1.9. Other Causes of Pneumonia and Thoracic Disease in Bovines
 - 1.9.1. Bovine Interstitial Pneumonia
 - 1.9.2. Metastatic Pneumonia due to Thrombosis of the Cava Vein
 - 1.9.3. Aspiration Pneumonia
 - 1.9.4. Fungal Pneumonia
 - 1.9.5. Bovine Tuberculosis
 - 1.9.6. Other Disorders of the Thoracic Cavity
- 1.10. Respiratory Pathologies in Small Ruminants
 - 1.10.1. Examination of the Respiratory System in Sheep and Goats
 - 1.10.2. Alterations in the Upper Respiratory Tract
 - 1.10.3. Pneumonia
 - 1.10.4. Alterations of the Thoracic Cavity



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

05

Study Methodology

TECH is the world's first university to combine the **case study** methodology with **Relearning**, a 100% online learning system based on guided repetition.

This disruptive pedagogical strategy has been conceived to offer professionals the opportunity to update their knowledge and develop their skills in an intensive and rigorous way. A learning model that places students at the center of the educational process giving them the leading role, adapting to their needs and leaving aside more conventional methodologies.



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TECH will prepare you to face new challenges in uncertain environments and achieve success in your career”

The student: the priority of all TECH programs

In TECH's study methodology, the student is the main protagonist. The teaching tools of each program have been selected taking into account the demands of time, availability and academic rigor that, today, not only students demand but also the most competitive positions in the market.

With TECH's asynchronous educational model, it is students who choose the time they dedicate to study, how they decide to establish their routines, and all this from the comfort of the electronic device of their choice. The student will not have to participate in live classes, which in many cases they will not be able to attend. The learning activities will be done when it is convenient for them. They can always decide when and from where they want to study.

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*At TECH you will NOT have live classes
(which you might not be able to attend)”*



The most comprehensive study plans at the international level

TECH is distinguished by offering the most complete academic itineraries on the university scene. This comprehensiveness is achieved through the creation of syllabi that not only cover the essential knowledge, but also the most recent innovations in each area.

By being constantly up to date, these programs allow students to keep up with market changes and acquire the skills most valued by employers. In this way, those who complete their studies at TECH receive a comprehensive education that provides them with a notable competitive advantage to further their careers.

And what's more, they will be able to do so from any device, pc, tablet or smartphone.

“

TECH's model is asynchronous, so it allows you to study with your pc, tablet or your smartphone wherever you want, whenever you want and for as long as you want”

Case Studies and Case Method

The case method has been the learning system most used by the world's best business schools. Developed in 1912 so that law students would not only learn the law based on theoretical content, its function was also to present them with real complex situations. In this way, they could make informed decisions and value judgments about how to resolve them. In 1924, Harvard adopted it as a standard teaching method.

With this teaching model, it is students themselves who build their professional competence through strategies such as Learning by Doing or Design Thinking, used by other renowned institutions such as Yale or Stanford.

This action-oriented method will be applied throughout the entire academic itinerary that the student undertakes with TECH. Students will be confronted with multiple real-life situations and will have to integrate knowledge, research, discuss and defend their ideas and decisions. All this with the premise of answering the question of how they would act when facing specific events of complexity in their daily work.



Relearning Methodology

At TECH, case studies are enhanced with the best 100% online teaching method: Relearning.

This method breaks with traditional teaching techniques to put the student at the center of the equation, providing the best content in different formats. In this way, it manages to review and reiterate the key concepts of each subject and learn to apply them in a real context.

In the same line, and according to multiple scientific researches, reiteration is the best way to learn. For this reason, TECH offers between 8 and 16 repetitions of each key concept within the same lesson, presented in a different way, with the objective of ensuring that the knowledge is completely consolidated during the study process.

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



A 100% online Virtual Campus with the best teaching resources

In order to apply its methodology effectively, TECH focuses on providing graduates with teaching materials in different formats: texts, interactive videos, illustrations and knowledge maps, among others. All of them are designed by qualified teachers who focus their work on combining real cases with the resolution of complex situations through simulation, the study of contexts applied to each professional career and learning based on repetition, through audios, presentations, animations, images, etc.

The latest scientific evidence in the field of Neuroscience points to the importance of taking into account the place and context where the content is accessed before starting a new learning process. Being able to adjust these variables in a personalized way helps people to remember and store knowledge in the hippocampus to retain it in the long term. This is a model called Neurocognitive context-dependent e-learning that is consciously applied in this university qualification.

In order to facilitate tutor-student contact as much as possible, you will have a wide range of communication possibilities, both in real time and delayed (internal messaging, telephone answering service, email contact with the technical secretary, chat and videoconferences).

Likewise, this very complete Virtual Campus will allow TECH students to organize their study schedules according to their personal availability or work obligations. In this way, they will have global control of the academic content and teaching tools, based on their fast-paced professional update.



The online study mode of this program will allow you to organize your time and learning pace, adapting it to your schedule”

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

1. Students who follow this method not only achieve the assimilation of concepts, but also a development of their mental capacity, through exercises that assess real situations and the application of knowledge.
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 course.

The university methodology top-rated by its students

The results of this innovative teaching model can be seen in the overall satisfaction levels of TECH graduates.

The students' assessment of the quality of teaching, quality of materials, course structure and objectives is excellent. Not surprisingly, the institution became the best rated university by its students on the Trustpilot review platform, obtaining a 4.9 out of 5.

Access the study contents from any device with an Internet connection (computer, tablet, smartphone) thanks to the fact that TECH is at the forefront of technology and teaching.

You will be able to learn with the advantages that come with having access to simulated learning environments and the learning by observation approach, that is, Learning from an expert.



As such, the best educational materials, thoroughly prepared, will be available in this program:



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.

This content is then adapted in an audiovisual format that will create our way of working online, with the latest techniques that allow us to offer you high quality in all of the material that we provide you with.



Practicing Skills and Abilities

You will carry out activities to develop specific competencies and skills in each thematic field. Exercises and activities to acquire and develop the skills and abilities that a specialist needs to develop within the framework of the globalization we live in.



Interactive Summaries

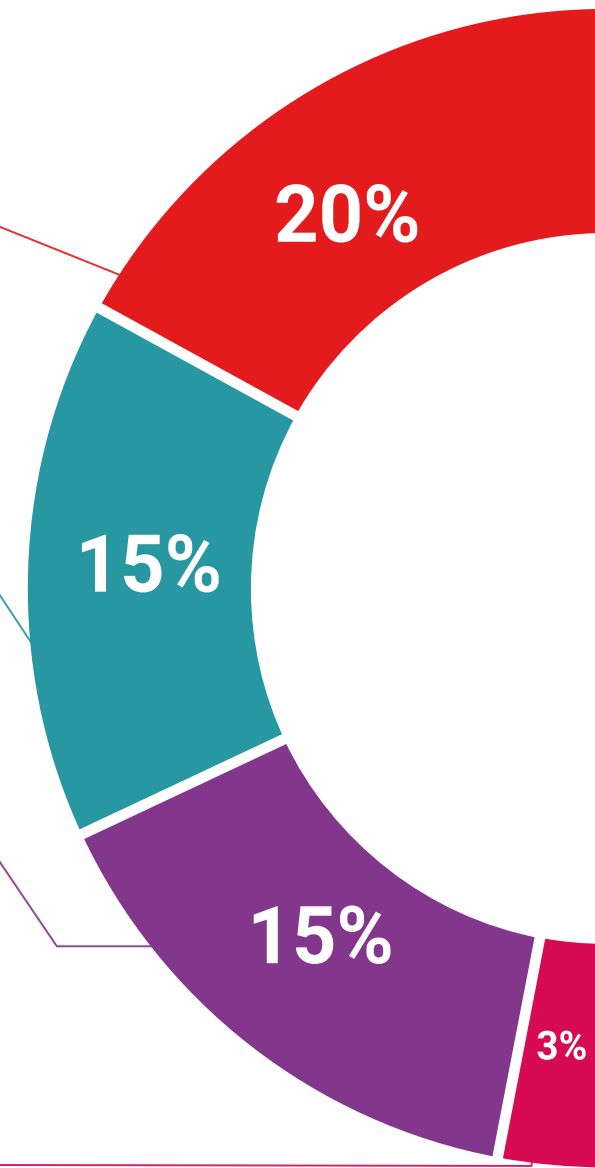
We present the contents attractively and dynamically in multimedia lessons that include audio, videos, images, diagrams, and concept maps in order to reinforce knowledge.

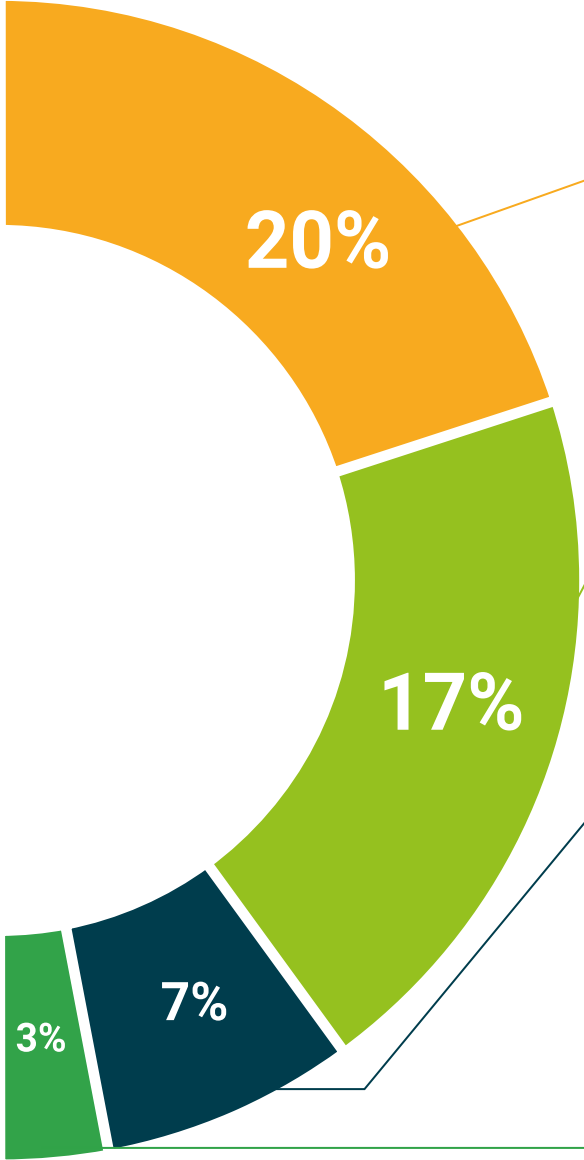
This exclusive educational system for presenting multimedia content was awarded by Microsoft as a "European Success Story".



Additional Reading

Recent articles, consensus documents, international guides... In our virtual library you will have access to everything you need to complete your education.





Case Studies

Students will complete a selection of the best case studies in the field. Cases that are presented, analyzed, and supervised by the best specialists in the world.



Testing & Retesting

We periodically assess and re-assess your knowledge throughout the program. We do this on 3 of the 4 levels of Miller's Pyramid.



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 for 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 Cardiovascular, Respiratory and Hemolymphatic Diseases in Ruminants guarantees, in addition to the most accurate and up-to-date education, access to a Postgraduate Certificate issued by TECH Global University.



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

This private qualification will allow you to obtain a **Postgraduate Certificate in Cardiovascular, Respiratory and Hemolymphatic Diseases in Ruminants** endorsed by **TECH Global University**, the world's largest online university.

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

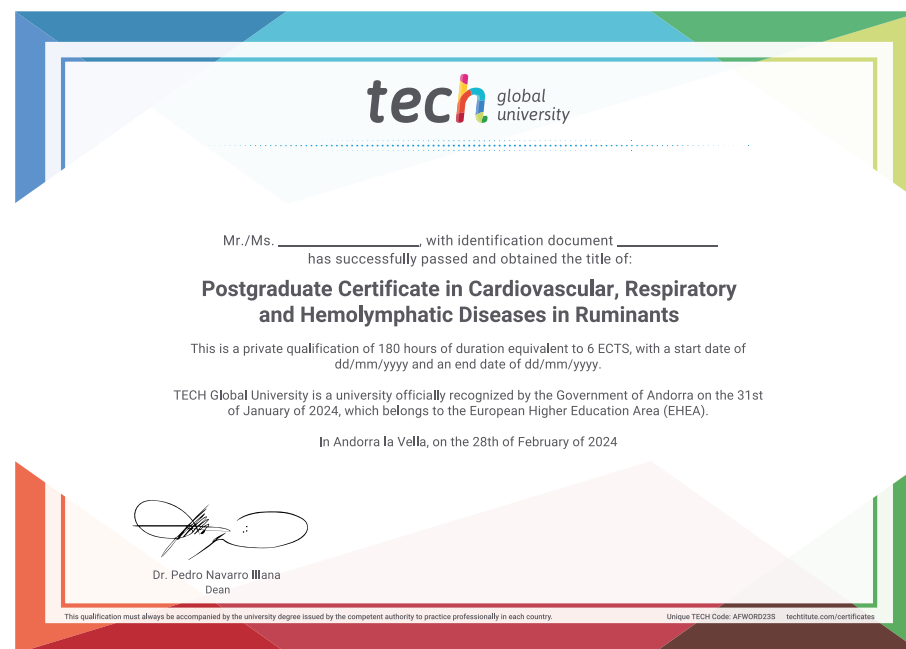
This **TECH Global University** private qualification, is a European program of continuing education and professional updating that guarantees the acquisition of competencies in its area of knowledge, providing a high curricular value to the student who completes the program.

Title: **Postgraduate Certificate in Cardiovascular, Respiratory and Hemolymphatic Diseases in Ruminants**

Modality: **online**

Duration: **6 weeks**

Accreditation: **6 ECTS**



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



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