

# Postgraduate Certificate

## Neurological and Ophthalmological Diseases in Ruminants





## Postgraduate Certificate Neurological and Ophthalmological Diseases in Ruminants

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

Website: [www.techtute.com/us/veterinary-medicine/postgraduate-certificate/neurological-ophthalmological-diseases-ruminants](http://www.techtute.com/us/veterinary-medicine/postgraduate-certificate/neurological-ophthalmological-diseases-ruminants)

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# 01

# Introduction

In the education process in veterinary medicine and, especially, in ruminant or collective medicine, it is essential to acquire a series of clinical skills to face the different neurological and ophthalmic pathologies. This intervention is highly determined by the need to work in the hygienic and practical conditions that the field veterinarians carry with them. This program is the best tool in the educational market to acquire quickly, and with total quality, all this specific knowledge that will make the difference in the results of the student's work: with the quality that the professional's development needs.





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*The approach to neurological and ophthalmic diseases in ruminants, with all the specific developments that field work brings with it, in a Postgraduate Certificate focused on real practice"*

Neurological diseases are frequent in ruminants. This Postgraduate Certificate provides students with the necessary tools to identify the main neurological pathologies in cattle and small ruminants. Ruminants can develop neurological diseases, which if unknown are virtually impossible to diagnose.

First, it will be explained how to perform a neurological examination and how to locate a neurological lesion in cattle. Next, the main pathologies affecting cattle will be studied, divided by anatomical regions: brain, brainstem, cerebellum, spinal cord and peripheral nerves. Finally, how to perform the neurological examination will be discussed and the main neurological pathologies affecting small ruminants will be detailed.

Some neurological diseases are very important and even have public health implications as they can be zoonotic, such as rabies, listeriosis or spongiform encephalopathies. This module provides the knowledge to establish a diagnosis and to be able to treat and prevent these diseases.

Additionally, this module deals with ocular disorders affecting cattle and small ruminants. Some diseases have a significant impact on these animals, even influencing their productive performance on the farm, such as infectious keratoconjunctivitis. In-depth knowledge of these alterations in order to diagnose, treat and prevent them is fundamental for the clinical veterinarian.

This **Postgraduate Certificate in Neurological and Ophthalmological 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 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
- ◆ Complementary documentation banks permanently available, even after the course



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

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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”*

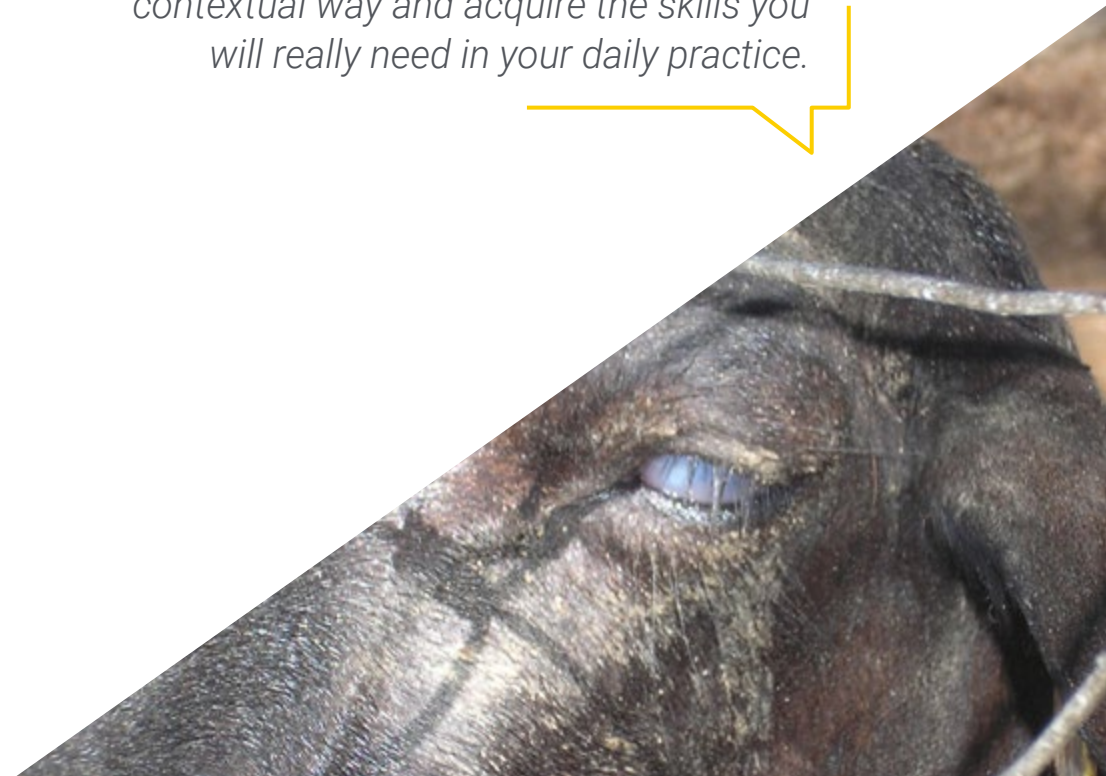
Our teaching staff is made up of professionals from different fields related to this specialty. In this way, TECH makes sure to offer professionals the up-to-date objective it intends. A multidisciplinary team of professionals trained and experienced in different environments will develop the theoretical knowledge efficiently, but, above all, they will provide students with the practical knowledge derived from their teaching experience: one of the differential qualities of this training.

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 students 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 and fix 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 Postgraduate Certificate 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 Neurological and Ophthalmological Diseases in Ruminants will allow the veterinary clinician to update and expand their knowledge and skills in Medicine and Surgery of Ruminants"*



## General Objectives

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- Provide specialized knowledge of the most common neurological problems in ruminants
- Identify all clinical signs associated with each neurological disease
- Establish the specific clinical approach for each pathology
- Determine the prognosis and the most appropriate treatment in each case
- Address the main ocular pathologies affecting ruminants, their diagnosis and treatment
- Determine the importance of ocular diseases in ruminants
- Analyze the economic and health impact of diseases with ocular signs
- Develop screening procedures and specific treatments for ruminants that differ from other species
- Examine the main diseases and their specific treatment





## Specific Objectives

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- ◆ Localize lesions in a patient with a neurological disorder
- ◆ Identify the main pathologies affecting the bovine brain, brainstem, cerebellum and spinal cord
- ◆ Develop the main alterations affecting peripheral nerves in cattle
- ◆ Study the main nervous pathologies affecting small ruminants
- ◆ Examine the particular examination protocols in ophthalmology in ruminants
- ◆ Enable the student to diagnose the main ocular pathologies and their relationship with other diseases
- ◆ Determine the necessary therapeutic and/or surgical treatments for each pathology
- ◆ Establish management measures and treatment protocols for the main neurological pathologies affecting cattle and small ruminants
- ◆ Develop the main ocular pathologies affecting bovines
- ◆ Develop the main ocular pathologies affecting sheep and goats

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*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"*

03

# Course Management

Within the concept of total quality of our Postgraduate Certificate, TECH is proud to provide the student 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 your teachers throughout the training, providing you with the most real, close and current 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, United States
- ◆ 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 researcher
- ◆ 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 of this Postgraduate Certificate have been developed by the different experts on this course, with a clear purpose: to ensure that our students acquire each and every one of the necessary skills to become true experts in this field.

A complete and well-structured program that 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 toward learning that is compatible  
with your personal and professional life"*

## Module 1. Neurological and Ophthalmological Diseases

- 1.1. Neurological Examination and Main Diagnostic Tests in Bovines
  - 1.1.1. Clinical Examination and Clinical Signs
  - 1.1.2. Dynamic Assessment and Localization of the Lesion
  - 1.1.3. Diagnostic Tests: Cerebrospinal Fluid Extraction and Analysis
  - 1.1.4. Other Diagnostic Tests
- 1.2. Alterations Mainly Affecting the Brain in Bovines
  - 1.2.1. Polioencephalomalacia
  - 1.2.2. Other Causes. Bovine Spongiform Encephalopathies
  - 1.2.3. Viral Disorders
    - 1.2.3.1. Rabies
    - 1.2.3.2. Bovine Herpesvirus Encephalomyelitis
    - 1.2.3.3. Aujeszky's Disease
    - 1.2.3.4. Other Viruses
  - 1.2.4. Bacterial Disorders
    - 1.2.4.1. Bacterial Meningitis
    - 1.2.4.2. Pituitary Abscess
    - 1.2.4.3. Others
  - 1.2.5. Parasitic Disorders
    - 1.2.5.1. Nervous Coccidiosis
    - 1.2.5.2. Others
  - 1.2.6. Intoxications
    - 1.2.6.1. Urea Toxicity
    - 1.2.6.2. Others
- 1.3. Disorders Mainly Affecting the Brainstem in Bovines
  - 1.3.1. Listeriosis
  - 1.3.2. Thromboembolic Meningoencephalitis
  - 1.3.3. Otitis Media/Internal
  - 1.3.4. Others
- 1.4. Disorders Mainly Affecting the Cerebellum in Bovines
  - 1.4.1. Bovine Viral Diarrhea Virus (BVDV)
  - 1.4.2. Tremorgenic Toxins
  - 1.4.3. Others
- 1.5. Alterations Mainly Affecting the Spinal Cord in Bovines
  - 1.5.1. Spinal Lymphoma
  - 1.5.2. Vertebral Osteomyelitis
  - 1.5.3. Trauma
  - 1.5.4. Spastic Paresis
  - 1.5.5. Spastic Paralysis
  - 1.5.6. Botulism
  - 1.5.7. Tetanus
  - 1.5.8. Aberrant Parasitic Migration
  - 1.5.9. Others
- 1.6. Alterations Mainly Affecting the Peripheral Nerves in Bovines
  - 1.6.1. Suprascapular Nerve
  - 1.6.2. Radial Nerve
  - 1.6.3. Femoral Nerve
  - 1.6.4. Sciatic Nerve
  - 1.6.5. Obturator Nerve
  - 1.6.6. Downer Cow Syndrome
- 1.7. Neurological Examination and Main Diagnostic Tests in Small Ruminants
  - 1.7.1. Clinical Examination and Clinical Signs
  - 1.7.2. Dynamic Assessment and Localization of the Lesion
  - 1.7.3. Diagnostic Tests: Cerebrospinal Fluid Extraction and Analysis
  - 1.7.4. Other Diagnostic Tests
- 1.8. Neurologic Disorders of Small Ruminants
  - 1.8.1. Disorders Mainly Affecting the Brain in Small Ruminants
  - 1.8.2. Disorders Mainly Affecting the Brainstem in Small Ruminants
  - 1.8.3. Disorders Mainly Affecting the Cerebellum in Small Ruminants
  - 1.8.4. Disorders Mainly Affecting the Spinal Cord in Small Ruminants



- 1.9. Cattle Ophthalmology
  - 1.9.1. Cattle Eye Examination
  - 1.9.2. Specific Management in the Examination
  - 1.9.3. Ophthalmic Examination. Inspection
  - 1.9.4. Probing and Washing of the Nasolacrimal Duct
  - 1.9.5. Orbital Abnormalities
  - 1.9.6. Anophthalmia, Microphthalmia
  - 1.9.7. Exophthalmia and Enophthalmia
  - 1.9.8. Inflammation and Orbital Cellulitis
  - 1.9.9. Orbital Neoplasms
  - 1.9.10. Eyelid Abnormalities
    - 1.9.10.1. Palpebral Neoplasms
    - 1.9.10.2. Ectropion and Entropion
    - 1.9.10.3. Other Disorders of the Eyelids
  - 1.9.11. Corneal and Conjunctival Diseases
    - 1.9.11.1. Corneal Characteristics
    - 1.9.11.2. Lacerations and Ruptures of the Cornea and/or Sclera
    - 1.9.11.3. Corneal Foreign Bodies
    - 1.9.11.4. Corneal Ulcers
    - 1.9.11.5. Corneal Edema
    - 1.9.11.6. Vascularization
    - 1.9.11.7. Infectious Bovine Keratoconjunctivitis (IBK, Pink-Eye)
    - 1.9.11.8. Conjunctival and Corneal Tumors. Squamous Cell Carcinoma
  - 1.9.12. Uveal Diseases
- 1.10. Ocular Disorders in Small Ruminants
  - 1.10.1. Orbital Diseases
  - 1.10.2. Infectious Keratoconjunctivitis
  - 1.10.3. Parasitic Keratitis
  - 1.10.4. Retinal Degeneration
  - 1.10.5. Blindness

# 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.





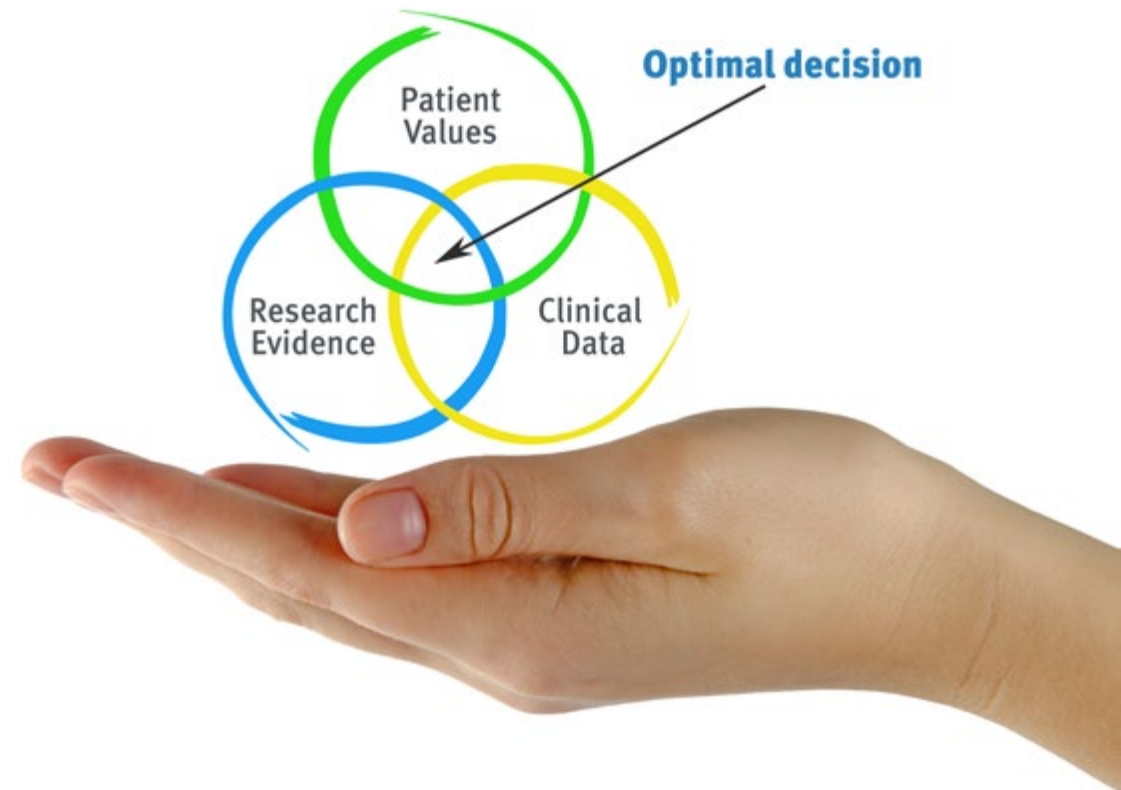
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*Discover Relearning, a system that abandons conventional linear learning, to take you through cyclical teaching systems: a way of learning that has proven to be extremely effective, especially in subjects that require memorization"*

## 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

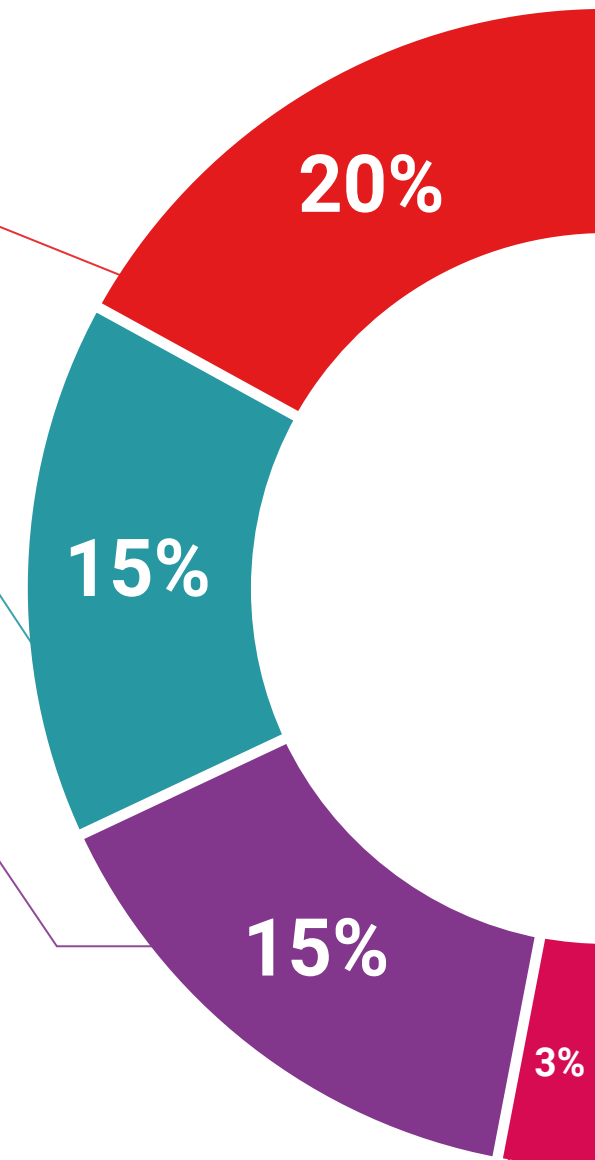
The TECH team presents the contents attractively and dynamically in multimedia lessons that include audio, videos, images, diagrams, and concept maps in order to reinforce knowledge.

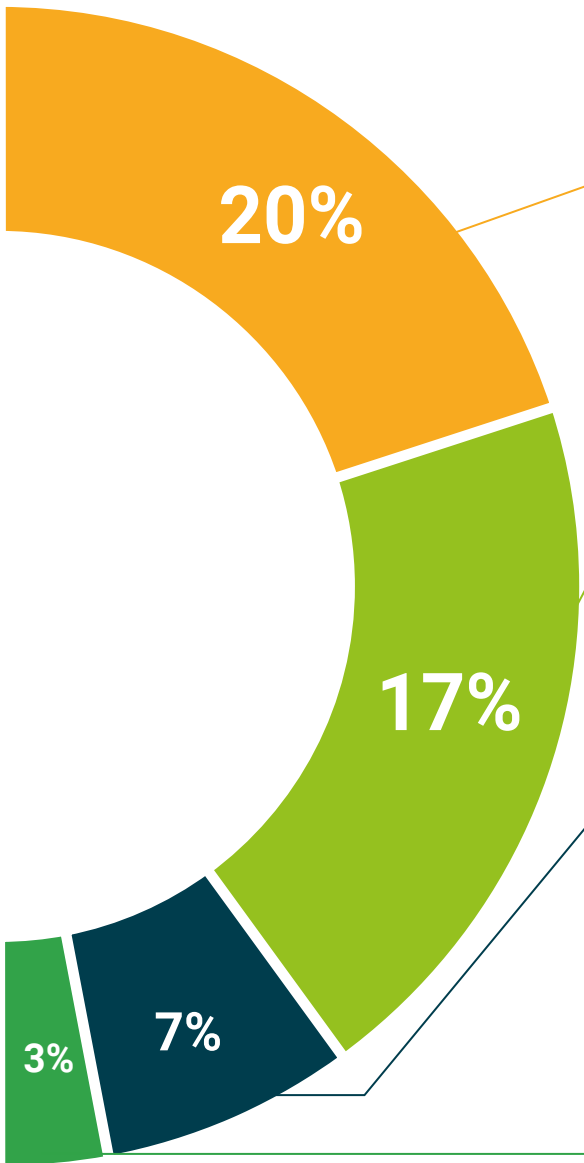
This exclusive educational system for presenting multimedia content was awarded by Microsoft as a "European Success Story".



### 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 Neurological and Ophthalmological Diseases in Ruminants guarantees students, in addition to the most rigorous 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 program will allow you to obtain your **Postgraduate Certificate in Neurological and Ophthalmological 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** title is a European program of continuing education and professional updating that guarantees the acquisition of competencies in its area of knowledge, providing a high curricular value to the student who completes the program.

Title: **Postgraduate Certificate in Neurological and Ophthalmological Diseases in Ruminants**

Modality: **online**

Duration: **6 weeks**

Accreditation: **6 ECTS**



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 Neurological and Ophthalmological Diseases in Ruminants

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

# Postgraduate Certificate

## Neurological and Ophthalmological Diseases in Ruminants

