

# Postgraduate Certificate Gastrointestinal and Urinary Tract Diseases in Ruminants





## Postgraduate Certificate Gastrointestinal and Urinary Tract 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/gastrointestinal-urinary-tract-diseases-ruminants](http://www.techtute.com/us/veterinary-medicine/postgraduate-certificate/gastrointestinal-urinary-tract-diseases-ruminants)

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# 01

# Introduction

Diseases affecting the gastrointestinal tract are, in general, very frequent in ruminants. Therefore, it is essential to know how to deal in an up-to-date way with the main digestive pathologies suffered by bovines and small ruminants. This program has been designed to provide students with the most comprehensive knowledge of diseases of the intestinal and urinary tract, with a practice-focused approach that will equip them with the skills of the best in the field.





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*The most up-to-date ways of working on  
Gastrointestinal and Urinary Tract Diseases  
in Ruminants, with a clinical and practical  
approach that makes the difference"*

Throughout this Postgraduate Certificate, the main alterations affecting the oral cavity, the pre-stomachs, the abomasum and the intestine will be studied. Some diseases, such as indigestion or abomasal displacements are very important in cattle, representing one of the main causes of visits to cattle farms.

Likewise, in this module the specific genitourinary diseases of bovines and small ruminants are developed; some of them relatively frequent in the veterinarian's clinic of these species as, for example, emergencies due to urinary obstruction in male goats. The knowledge acquired in this module specializes the veterinarians in the diagnosis, treatment and prevention of these alterations, which are fundamental for their daily practice.



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

This **Postgraduate Certificate in Gastrointestinal and Urinary Tract Diseases in Ruminants** contains the most complete and up-to-date educational program on the market.

The most important features of the program 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
- ◆ Availability of content from any fixed or portable device with internet connection
- ◆ Complementary documentation banks permanently available, even after the course

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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"*

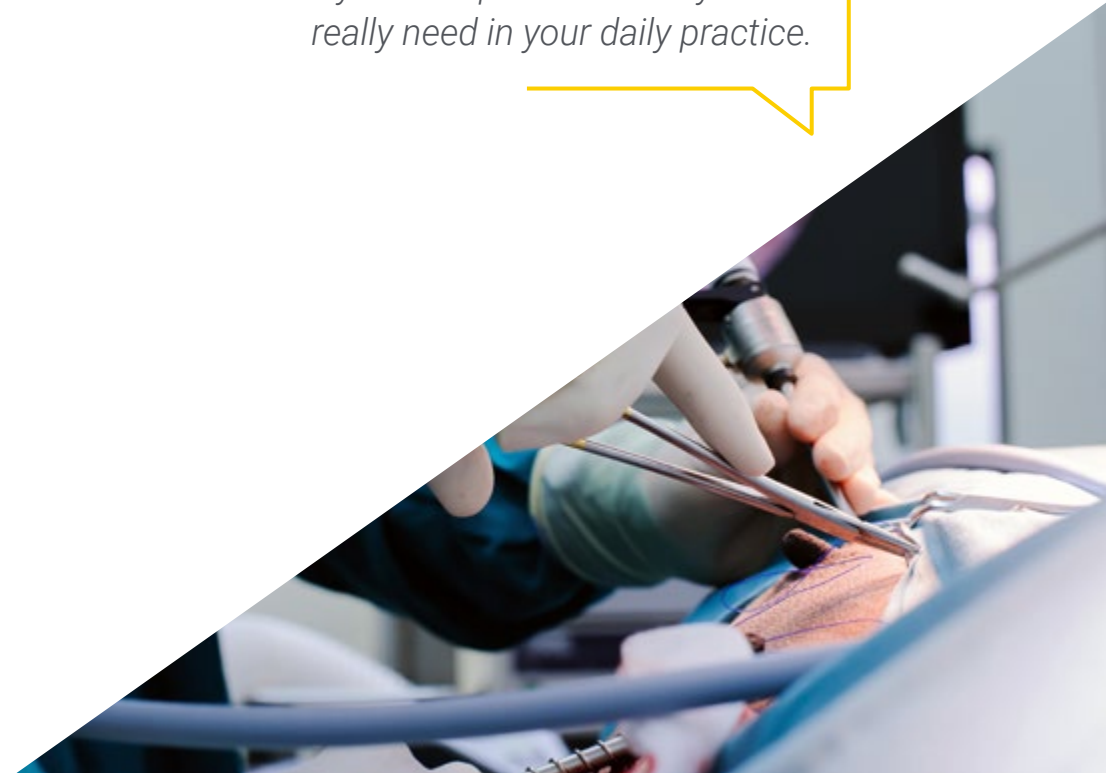
Our teaching staff is made up of professionals from different fields related to this specialty. In this way, TECH makes sure to offer professionals the up-to-date objective it intends. A multidisciplinary team of professionals trained and experienced in different environments who will develop theoretical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

This mastery of the subject 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 you 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 Gastrointestinal and Urinary Tract Diseases in Ruminants will allow the veterinary clinicians to update and broaden their knowledge and skills in Ruminant Medicine and Surgery”*



## General Objectives

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- Develop specialized knowledge on the most common gastrointestinal problems in ruminants
- Specify all clinical signs associated with each gastrointestinal disease
- Analyze the specific clinical approach to each gastrointestinal pathology
- Determine the prognosis and the most appropriate treatment in each case
- Examine the physiological functioning of the urinary system
- Establish an appropriate methodology for examination of the patient with urinary and renal problems
- Identify all clinical signs associated with kidney disease
- Establish the specific clinical approach to patients with renal disorders



*A very complete training 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

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- ◆ Recognize the clinical signs of the main pathologies affecting the gastrointestinal system of ruminants
- ◆ Develop the main gastrointestinal pathologies affecting bovines
- ◆ Examine the typical signs of diseases affecting the oral cavity of cattle and their possible differential diagnoses
- ◆ Analyze the mechanisms of the different causes of indigestion in cattle
- ◆ Establish action protocols for cattle suffering from abomasal displacement
- ◆ Identify clinical signs and therapeutic options for the main causes of intestinal obstruction in cattle
- ◆ Specify the diagnosis of diarrhea in cattle
- ◆ Establish treatment protocols for cattle with diarrhea
- ◆ Develop the main gastrointestinal pathologies affecting small ruminants
- ◆ Generate specialized knowledge to perform a clinical examination of a patient with urinary and renal problems
- ◆ Identify the alterations inherent to the different renal diseases
- ◆ Establish an appropriate diagnostic plan for the main clinical manifestations of renal problems
- ◆ Correctly diagnose the different renal problems and issue a prognosis for these animals
- ◆ Determine a treatment plan, both short and long term, for major urinary and renal problems

03

# Course Management

Within the concept of total quality of our Postgraduate Certificate, TECH is proud to offer students 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 (1987)
- Degree in Veterinary Medicine from the University of Zaragoza 1982
- Specialist in Applied and Experimental Animal Surgery University of Zaragoza, 1982
- Specialist in Animal Reproduction and Artificial Insemination University of Zaragoza, 1985
- Diploma of the European College of Veterinary Surgeons (Large Animals). 1998
- 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
- ◆ D. in Veterinary Science from the University of Guelph, Ontario
- ◆ Master's Degree 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
- ◆ D. 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 very complete and well-structured program that will lead the professional 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. Gastrointestinal and Urinary Tract Diseases in Ruminants

- 1.1. Examination of the Gastrointestinal Tract and Diagnostic Tests in Bovines
  - 1.1.1. Anatomy and Physiology of the Gastrointestinal Tract
  - 1.1.2. Characteristic Clinical Signs of Gastrointestinal Tract Disorders
  - 1.1.3. Physical Examination
    - 1.1.3.1. History
    - 1.1.3.2. General Physical Evaluation
    - 1.1.3.3. Examination of the Gastrointestinal Tract
  - 1.1.4. Diagnostic Imaging Techniques
    - 1.1.4.1. Radiography
    - 1.1.4.2. Ultrasound
    - 1.1.4.3. Others Diagnostic Imaging Techniques
  - 1.1.5. Other Diagnostic Techniques
    - 1.1.5.1. Rumen Fluid Analysis
    - 1.1.5.2. Macroscopic Stool Examination
    - 1.1.5.3. Laparotomy or Exploratory Rumenotomy
- 1.2. Disorders of the Oral Cavity in Bovines
  - 1.2.1. Dental and Salivary Gland Disorders
  - 1.2.2. Actinobacillosis ("Wooden Tongue")
  - 1.2.3. Actinomycosis ("Rubber Jaw")
  - 1.2.4. Oral Necrobacillosis
  - 1.2.5. Viruses Causing Mucosal Lesions
    - 1.2.5.1. Bluetongue
    - 1.2.5.2. Bovine Papular Stomatitis
    - 1.2.5.3. Vesicular Stomatitis
    - 1.2.5.4. Bovine Viral Diarrhea Virus (BVDV)
    - 1.2.5.5. Malignant Catarrhal Fever
    - 1.2.5.6. Foot and Mouth Disease
    - 1.2.5.7. Rinderpest
- 1.3. Indigestions and Traumatic Reticuloperitonitis in Bovines
  - 1.3.1. Primary Indigestions
    - 1.3.1.1. Rumen Wall or Reticuloruminal Motor Disorders
      - 1.3.1.1.1. Traumatic Reticuloperitonitis
      - 1.3.1.1.2. Foamy Tympanism
      - 1.3.1.1.3. Gaseous Tympanism
      - 1.3.1.1.4. Reticulitis or Rumenitis
      - 1.3.1.1.5. Rumen Parakeratosis
      - 1.3.1.1.6. Vagal Indigestion
      - 1.3.1.1.7. Cardiac Obstruction
      - 1.3.1.1.8. Reticuloomasal Orifice Obstruction
      - 1.3.1.1.9. Diaphragmatic Hernia
    - 1.3.1.2. Reticuloruminal Fermentative Disorders
      - 1.3.1.2.1. Inactivity of Ruminal Microbial Flora
      - 1.3.1.2.2. Simple Indigestion
      - 1.3.1.2.3. Ruminal Acidosis
      - 1.3.1.2.4. Ruminal Alkalosis
      - 1.3.1.2.5. Putrefaction of Ruminal Intake
  - 1.3.2. Secondary Indigestions
    - 1.3.2.1. Indigestions Secondary to Reticuloruminal Motor Inactivity
    - 1.3.2.2. Indigestions Secondary to Reticuloruminal Microflora Inactivity
    - 1.3.2.3. Abomasal Reflux
- 1.4. Abomasal Displacements and Other Abomasal Displacements in Bovines
  - 1.4.1. Left Displacement of the Abomasum
  - 1.4.2. Right Displacement of the Abomasum
  - 1.4.3. Abomasal Torsion
  - 1.4.4. Abomasal Ulcers
  - 1.4.5. Abomasal Impaction

- 1.5. Obstructive Intestinal Disorders in Bovines
  - 1.5.1. General aspects
  - 1.5.2. Intradigestive Mechanical Causes of Intestinal Obstruction
    - 1.5.2.1. Congenital
    - 1.5.2.2. Intestinal Intussusception
    - 1.5.2.5. Intestinal Volvulus
    - 1.5.2.4. Cecal Dilatation and Volvulus
    - 1.5.2.5. Neoplasty
    - 1.5.2.6. Rectal Prolapse
  - 1.5.3. Extradigestive Mechanical Causes of Intestinal Obstruction
    - 1.5.3.1. Mesenteric Fat Necrosis
    - 1.5.3.2. Fibrous Adhesions
    - 1.5.3.3. Hernias
  - 1.5.4. Other Causes of Intestinal Obstruction
    - 1.5.4.1. Intraluminal Obstruction
    - 1.5.4.2. Jejunal Hemorrhagic Syndrome
- 1.6. Diarrhea in Bovines
  - 1.6.1. Diarrhea Caused by Bacteria
    - 1.6.1.1. Paratuberculosis
    - 1.6.1.2. Salmonella
    - 1.6.1.3. Clostridiosis
  - 1.6.2. Diarrhea Caused by Virus
    - 1.6.2.1. Bovine Viral Diarrhea Virus (BVDV)
    - 1.6.2.2. Coronavirus
    - 1.6.2.3. Other Viruses
  - 1.6.3. Diarrhea Caused by Parasites
  - 1.6.4. Diarrhea Caused by Intoxications
  - 1.6.5. Other Causes of Diarrhea
- 1.7. Examination of the Gastrointestinal Tract and Diagnostic Tests in Small Ruminant
  - 1.7.1. Anatomy and Physiology of the Gastrointestinal Tract
  - 1.7.2. Characteristic Clinical Signs of Gastrointestinal Tract Disorders
  - 1.7.3. Physical Examination
    - 1.7.3.1. History
    - 1.7.3.2. General Physical Evaluation
    - 1.7.3.3. Examination of the Gastrointestinal Tract
  - 1.7.4. Diagnostic Imaging Techniques
    - 1.7.4.1. Radiography
    - 1.7.4.2. Ultrasound
    - 1.7.4.3. Others Diagnostic Imaging Techniques
  - 1.7.5. Other Diagnostic Techniques
    - 1.7.5.1. Rumen Fluid Analysis
    - 1.7.5.2. Macroscopic Stool Examination
    - 1.7.5.3. Laparotomy or Exploratory Rumenotomy
- 1.8. Gastrointestinal Disorders of Small Ruminants
  - 1.8.1. Disorders of the Oral Cavity
  - 1.8.2. Indigestion and Other Pre-stomach Disorders
  - 1.8.3. Enterotoxemia
  - 1.8.4. Diarrhea in Adult Sheep and Goats
- 1.9. Urinary Diseases in Bovines
  - 1.9.1. Congenital Genitourinary Pathologies
  - 1.9.2. Renal Damage and Failure
  - 1.9.3. Other Kidney Diseases
  - 1.9.4. Diseases of the Ureters, Bladder and Urethra
- 1.10. Urinary Diseases in Small Ruminants
  - 1.10.1. Congenital Genitourinary Pathologies
  - 1.10.2. Renal Damage and Failure
  - 1.10.3. Other Kidney Diseases
  - 1.10.4. Urinary Obstruction.
  - 1.10.5. Diseases of the Ureters, Bladder and Urethra

# 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.*



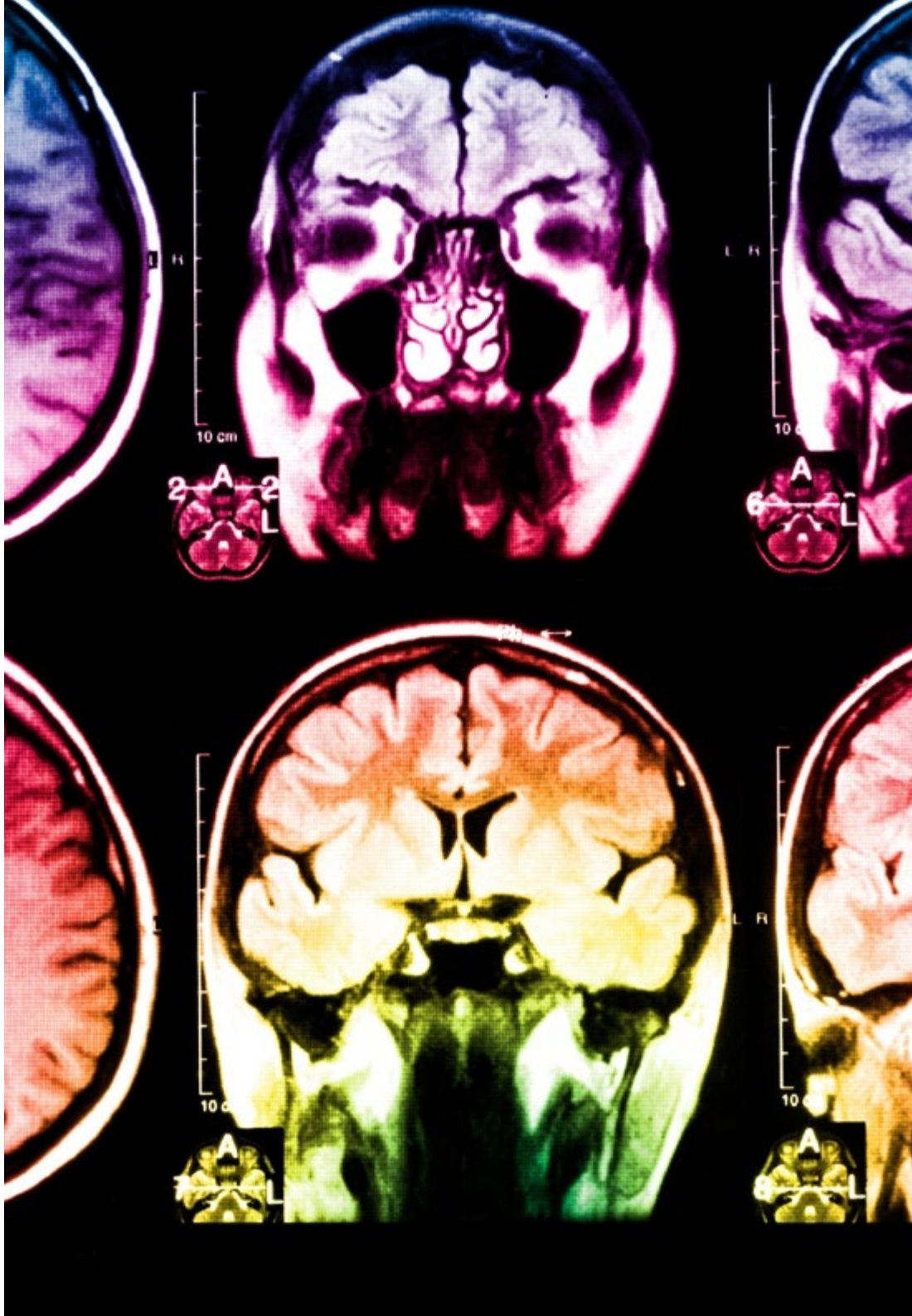
At the forefront of world teaching, the Relearning method has managed to improve the overall satisfaction levels of professionals who complete their studies, with respect to the quality indicators of the best online university (Columbia University).

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

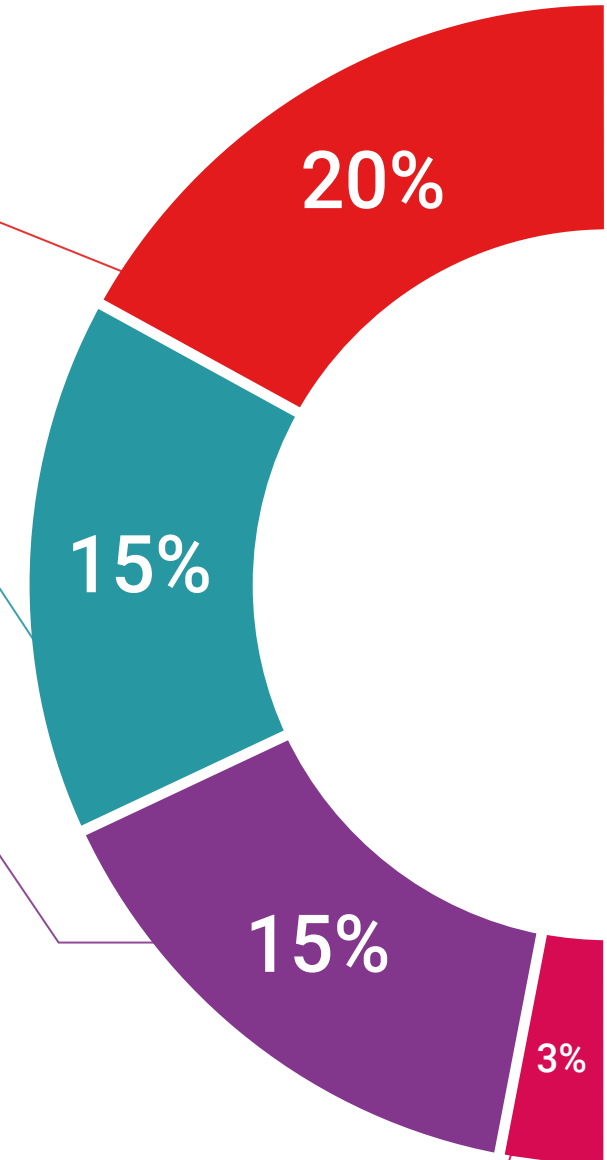
The TECH team presents the contents attractively and dynamically in multimedia lessons that include audio, videos, images, diagrams, and concept maps in order to reinforce knowledge.

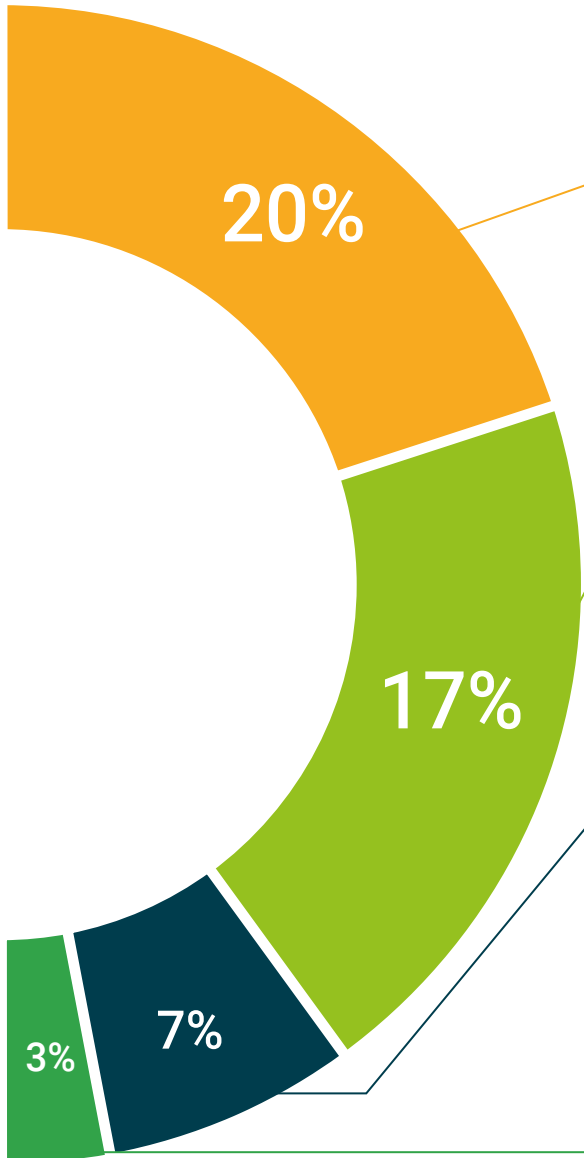
This exclusive educational system for presenting multimedia content was awarded by Microsoft as a "European Success Story".



#### 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 Gastrointestinal and Urinary Tract 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 Gastrointestinal and Urinary Tract 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.

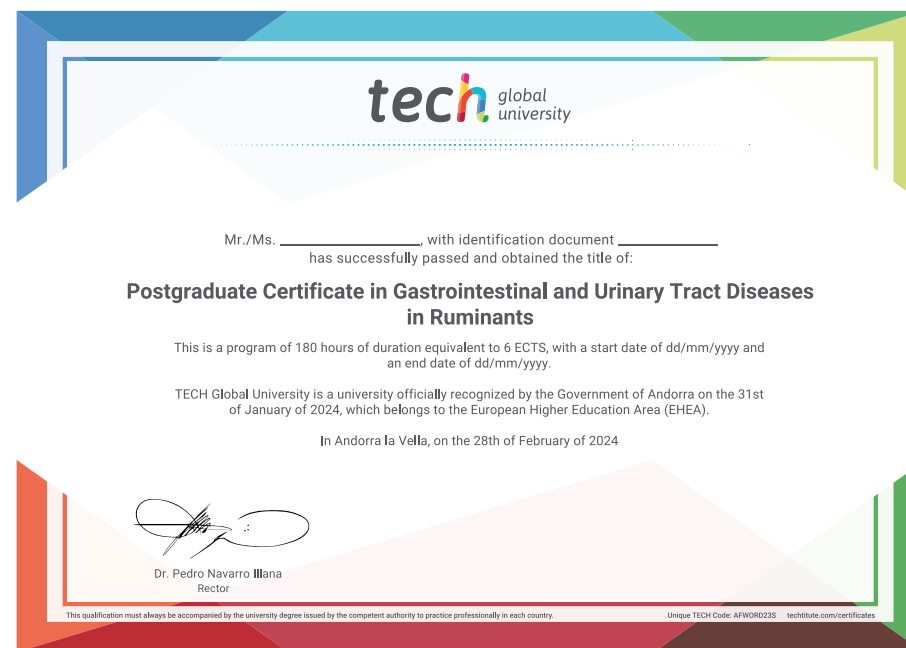
This **TECH Global University** title is a European program of continuing education and professional updating that guarantees the acquisition of competencies in its area of knowledge, providing a high curricular value to the student who completes the program.

Title: **Postgraduate Certificate in Gastrointestinal and Urinary Tract Diseases in Ruminants**

Modality: **online**

Duration: **6 weeks**

Accreditation: **6 ECTS**





## Postgraduate Certificate Gastrointestinal and Urinary Tract Diseases in Ruminants

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

# Postgraduate Certificate

## Gastrointestinal and Urinary Tract Diseases in Ruminants

