

# Postgraduate Certificate

## Diseases and Surgery of the Crystalline Lens in Equids



## Postgraduate Certificate Diseases and Surgery of the Crystalline Lens in Equids

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

Website: [www.techtute.com/us/veterinary-medicine/postgraduate-certificate/diseases-surgery-crystalline-lens-equids](http://www.techtute.com/us/veterinary-medicine/postgraduate-certificate/diseases-surgery-crystalline-lens-equids)

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# 01

# Introduction to the Program

The crystalline lens in equids plays a fundamental role in the visual focusing process, being essential for clear and accurate vision. According to the American College of Veterinary Ophthalmologists (ACVO), diseases of this area of the eye are more prevalent in certain breeds and may be associated with hereditary, traumatic or metabolic conditions. In this context, TECH has devised this comprehensive postgraduate course, designed to address the main related pathologies, as well as the advances in surgical techniques used for their treatment. Through a 100% online modality, specialists will acquire essential knowledge about the various conditions that can compromise the eyesight of horses and the most innovative surgical techniques to treat problems such as cataracts or dislocation of the crystalline lens.





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*Take a step further in your professional career with TECH and become an expert in Equine Lens Surgery! You will be ready to offer your patients an adequate, effective and safe treatment”*

Eye diseases in equids not only impact the animal's vision, but can also trigger other medical complications if not properly treated. Therefore, knowing the latest diagnostic and surgical treatment techniques is essential to provide the best possible care for equids. With specialized training in this field, veterinarians not only improve their clinical practice, but also contribute significantly to the well-being of horses, helping to preserve their vision and, consequently, their overall health and quality of life.

Against this backdrop, TECH offers this Postgraduate Certificate in Diseases and Surgery of the Crystalline Lens in Equids, which will provide the knowledge and skills necessary to treat the most common ocular conditions. Through a practical and accessible approach, professionals will receive a detailed understanding of the diseases that directly affect equine vision, as well as the most advanced surgical techniques to treat them. They will also develop key skills to effectively diagnose these pathologies and manage the postoperative process, enabling them to provide comprehensive treatment to horses.

At the professional level, this degree will give graduates a competitive advantage in the labor market, specializing them in a highly demanded field. In this way, they will not only improve their technical skills, but also increase their confidence in performing complex surgical procedures. As a result, they will contribute to the welfare of animals, while providing high quality and specialized medical care in their veterinary practice.

The 100% online modality will allow experts to access flexible, innovative and high quality training from anywhere in the world. Through this approach, students will benefit from the Relearning methodology, designed to maximize the academic experience through a continuous process of reflection and reinforcement. This technique is based on the principle that learning is most effective when it builds on previous knowledge and is constantly reinforced.

This **Postgraduate Certificate in Diseases and Surgery of the Crystalline Lens in Equids** contains the most complete and up-to-date scientific program on the market.

The most important features include:

- ♦ The development of case studies presented by experts with a deep mastery of Diseases and Surgery the Crystalline Lens in Equids
- ♦ The graphic, schematic and eminently practical content of the book provides scientific and practical information on those disciplines that are essential for professional practice
- ♦ Practical exercises where the process of self-assessment can be used to improve learning
- ♦ Its special emphasis on innovative methodologies
- ♦ Theoretical lessons, questions to the expert, debate forums on controversial topics, and individual reflection assignments
- ♦ Content that is accessible from any fixed or portable device with an Internet connection



*The combination of flexibility and active training make this program the ideal choice for advancing your career as a veterinarian without sacrificing your time or commitment to professional excellence”*



*Want to master equine surgical techniques and transform your career? With this TECH program you will achieve your goals, becoming a specialist in Crystalline Diseases”*

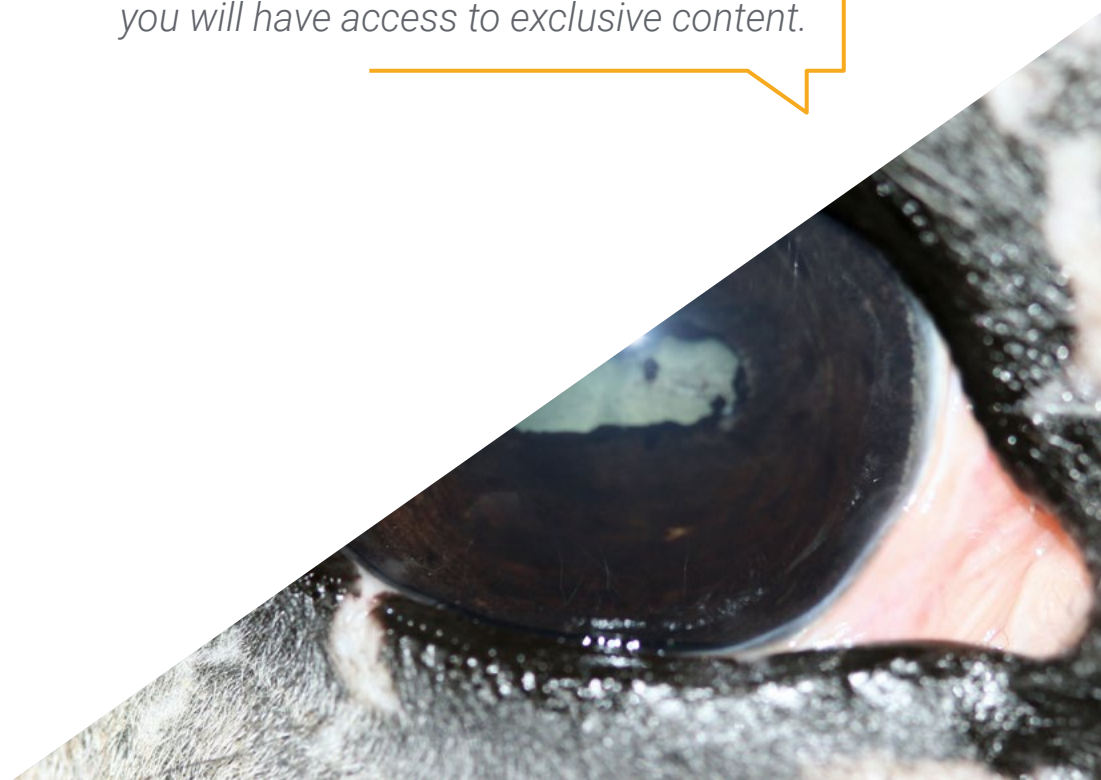
The program’s teaching staff includes professionals from the field who contribute their work experience to this educational program, as well as renowned specialists from leading societies and prestigious universities.

The multimedia content, developed with the latest educational technology, will provide the professional with situated and contextual learning, i.e., a simulated environment that will provide immersive education programmed to learn in real situations.

This program is designed around Problem-Based Learning, whereby the professional must try to solve the different professional practice situations that arise during the course. For this purpose, students will be assisted by an innovative interactive video system created by renowned experts.

*Specialize in equine eye surgery with the most complete and updated Postgraduate Certificate in the academic market! You will learn at your own pace, without preset schedules.*

*Empower your veterinary practice in the largest online university in the world, according to Forbes: TECH! In this innovative program you will be trained by experts and you will have access to exclusive content.*



02

# Why Study at TECH?

TECH is the world's largest online university. With an impressive catalog of more than 14,000 university programs, available in 11 languages, it is positioned as a leader in employability, with a 99% job placement rate. In addition, it has a huge faculty of more than 6,000 professors of the highest international prestige.





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*Study at the largest online university in the world and ensure your professional success. The future begins at TECH”*

**The world's best online university, according to FORBES**

The prestigious Forbes magazine, specialized in business and finance, has highlighted TECH as "the best online university in the world" This is what they have recently stated in an article in their digital edition in which they echo the success story of this institution, "thanks to the academic offer it provides, the selection of its teaching staff, and an innovative learning method oriented to form the professionals of the future".

**Forbes**  
The best online university in the world

The most complete  
**syllabus**

**The most complete syllabuses on the university scene**

TECH offers the most complete syllabuses on the university scene, with programs that cover fundamental concepts and, at the same time, the main scientific advances in their specific scientific areas. In addition, these programs are continuously updated to guarantee students the academic vanguard and the most demanded professional skills and the most in-demand professional competencies. In this way, the university's qualifications provide its graduates with a significant advantage to propel their careers to success.

**The best top international faculty**

TECH's faculty is made up of more than 6,000 professors of the highest international prestige. Professors, researchers and top executives of multinational companies, including Isaiah Covington, performance coach of the Boston Celtics; Magda Romanska, principal investigator at Harvard MetaLAB; Ignacio Wistumba, chairman of the department of translational molecular pathology at MD Anderson Cancer Center; and D.W. Pine, creative director of TIME magazine, among others.

**TOP**  
international faculty

**The world's largest online university**

TECH is the world's largest online university. We are the largest educational institution, with the best and widest digital educational catalog, one hundred percent online and covering most areas of knowledge. We offer the largest selection of our own degrees and accredited online undergraduate and postgraduate degrees. In total, more than 14,000 university programs, in ten different languages, making us the largest educational institution in the world.

**World's No.1**  
The World's largest online university

**The most effective methodology**

**A unique learning method**

TECH is the first university to use Relearning in all its programs. This is the best online learning methodology, accredited with international teaching quality certifications, provided by prestigious educational agencies. In addition, this innovative academic model is complemented by the "Case Method", thereby configuring a unique online teaching strategy. Innovative teaching resources are also implemented, including detailed videos, infographics and interactive summaries.

**The official online university of the NBA**

TECH is the official online university of the NBA. Thanks to our agreement with the biggest league in basketball, we offer our students exclusive university programs, as well as a wide variety of educational resources focused on the business of the league and other areas of the sports industry. Each program is made up of a uniquely designed syllabus and features exceptional guest hosts: professionals with a distinguished sports background who will offer their expertise on the most relevant topics.

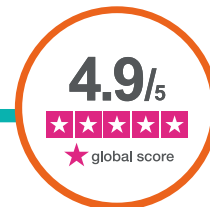
**Leaders in employability**

TECH has become the leading university in employability. Ninety-nine percent of its students obtain jobs in the academic field they have studied within one year of completing any of the university's programs. A similar number achieve immediate career enhancement. All this thanks to a study methodology that bases its effectiveness on the acquisition of practical skills, which are absolutely necessary for professional development.



**Google Premier Partner**

The American technology giant has awarded TECH the Google Premier Partner badge. This award, which is only available to 3% of the world's companies, highlights the efficient, flexible and tailored experience that this university provides to students. The recognition not only accredits the maximum rigor, performance and investment in TECH's digital infrastructures, but also places this university as one of the world's leading technology companies.



**The top-rated university by its students**

Students have positioned TECH as the world's top-rated university on the main review websites, with a highest rating of 4.9 out of 5, obtained from more than 1,000 reviews. These results consolidate TECH as the benchmark university institution at an international level, reflecting the excellence and positive impact of its educational model.



# 03 Syllabus

This academic pathway will provide advanced and specialized training in one of the most critical areas of Equine Veterinary Medicine. Through a comprehensive curriculum, covering the most up-to-date aspects, students will address advanced surgical techniques, including cataract surgery in horses and specialized postoperative management, which are fundamental for a successful recovery. In addition, they will delve into key topics such as pre-surgical evaluation, advances in ocular diagnostics and post-operative complications, among others.



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*With a comprehensive and efficient approach, you will enjoy a flexible, dynamic and applied academic experience designed to enhance your professional development in this highly specialized field”*

## Module 1. Diseases and Surgery of the Crystalline Lens in Equids

- 1.1. Embryology of the Crystalline Lens in Equids
  - 1.1.1. Embryology of the Crystalline Lens in Equids
  - 1.1.2. Histology of the Lens
  - 1.1.3. Alterations in Lenticular Development
- 1.2. Physiology of the Crystalline Lens in Equids
  - 1.2.1. Metabolism of the Crystalline Lens
  - 1.2.2. Alterations in Crystalline Lens Metabolism
  - 1.2.3. Transparency and Refraction of the Lens
- 1.3. Examination of the Crystalline Lens in Equids
  - 1.3.1. Limits of Examinations in the Field
  - 1.3.2. Pupillary Dilatation, Pharmacology of Iris Dilators and Cycloplegics
  - 1.3.3. Slit-Lamp Evaluation of the Lens
  - 1.3.4. Lens Dilatation with Direct Use of Retroillumination
  - 1.3.5. Peculiarities of the Examinations in Newborns
- 1.4. Alterations of Lenticular Transparency in Equids
  - 1.4.1. Congenital Disorders
  - 1.4.2. Hereditary Disorders
  - 1.4.3. Acquired Disorders
- 1.5. Alterations of Lenticular Transparency in Equids: Cataracts
  - 1.5.1. Extralenticular
  - 1.5.2. Capsulolenticulars
  - 1.5.3. Lenticulars
    - 1.5.3.1. Focal Cataracts
    - 1.5.3.2. Suture Line Cataracts
    - 1.5.3.3. Axial Cataracts
    - 1.5.3.4. Traumatic Cataracts
    - 1.5.3.5. Complete Cataracts





- 1.6. Anatomical Alterations of the Crystalline Lens, Dislocation and Subluxation of the Lens in Equids
  - 1.6.1. Congenital Disorders
  - 1.6.2. Hereditary Disorders
  - 1.6.3. Acquired Disorders
- 1.7. Other Lenticular Changes in Equids
  - 1.7.1. Rupture of the Lenticular Capsule
  - 1.7.2. Anterior Subcapsular Vacuoles
  - 1.7.3. Concentric Cortical Lamination
  - 1.7.4. Age-Associated Physiological Findings
  - 1.7.5. Evaluation of Lesions during Pre-Purchase Examination
- 1.8. Cataract Surgery in Equids
  - 1.8.1. Indications
  - 1.8.2. Previous Diagnostic Tests
  - 1.8.3. Surgical Procedure
  - 1.8.4. Complications
  - 1.8.5. Post Surgical Management
- 1.9. Anterior Lens Luxation Surgery in Equids
  - 1.9.1. Indications
  - 1.9.2. Surgical Procedure
  - 1.9.3. Complications and Post Surgical Management
- 1.10. Medical Management of Patients with Non-Operable Cataracts in Equids
  - 1.10.1. Phacolytic Uveitis
  - 1.10.2. Glaucoma Secondary to Cataracts
  - 1.10.3. Pharmacology of Phacolytic Uveitis



*To access the contents of this Postgraduate Certificate at any time and place, all you need is an electronic device with an Internet connection”*

# 04

# Teaching Objectives

This Postgraduate Certificate is oriented to provide a comprehensive and advanced preparation in the management of equine ocular pathologies. At the end of the postgraduate course, veterinarians will be able to accurately diagnose the main diseases of the crystalline lens in horses (cataracts and dislocation of the crystalline lens), applying updated clinical and diagnostic criteria. In addition, they will know how to plan and perform complex surgical interventions, such as Cataract surgery, with a focus on safety and animal welfare. In this way, they will be prepared to offer specialized and high quality treatment, positioning themselves as experts in this specialized field of Veterinary Medicine.







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*TECh is a pioneer in the implementation of the Relearning methodology! This assures you a didactic and practical training in which you will develop essential skills for the mastery of Equine Crystalline Diseases and Surgery”*



## General Objectives

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- ◆ Develop advanced skills in the diagnosis of ocular diseases in horses
- ◆ Acquire knowledge about the most common pathologies of the equine crystalline lens
- ◆ Learn how to plan and perform surgical interventions on the equine lens
- ◆ Master the post-surgical management of horses after ocular surgery
- ◆ Apply advanced imaging techniques in equine ophthalmology
- ◆ Improve the ability to identify complications during and after ocular surgery
- ◆ Encourage constant updating on advances in equine crystalline lens surgery
- ◆ Manage the prevention and treatment of ocular diseases in horses





## Specific Objectives

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- ◆ Understand the anatomy and physiology of the equine lens, developing a thorough understanding of the structure and function of the equine lens
- ◆ Identify the main pathologies of the equine lens, analyzing the most common diseases of the equine lens such as cataracts and dislocations, and their implications on vision and ocular health
- ◆ Apply diagnostic techniques in lens diseases to perform advanced ophthalmologic examinations and use diagnostic tools to detect lens diseases in equids
- ◆ Master the surgical techniques necessary for the treatment of lens diseases, including cataract extraction and dislocation correction



*Thanks to the specialization acquired, you will stand out in the veterinary sector, improving your professional profile and opening numerous job opportunities. As a result, you will contribute to the development of new techniques and treatments”*

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 teaching quality, the quality of the materials, the structure of the program and its objectives is excellent. Not surprisingly, the institution became the top-rated university by its students according to the global score index, 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

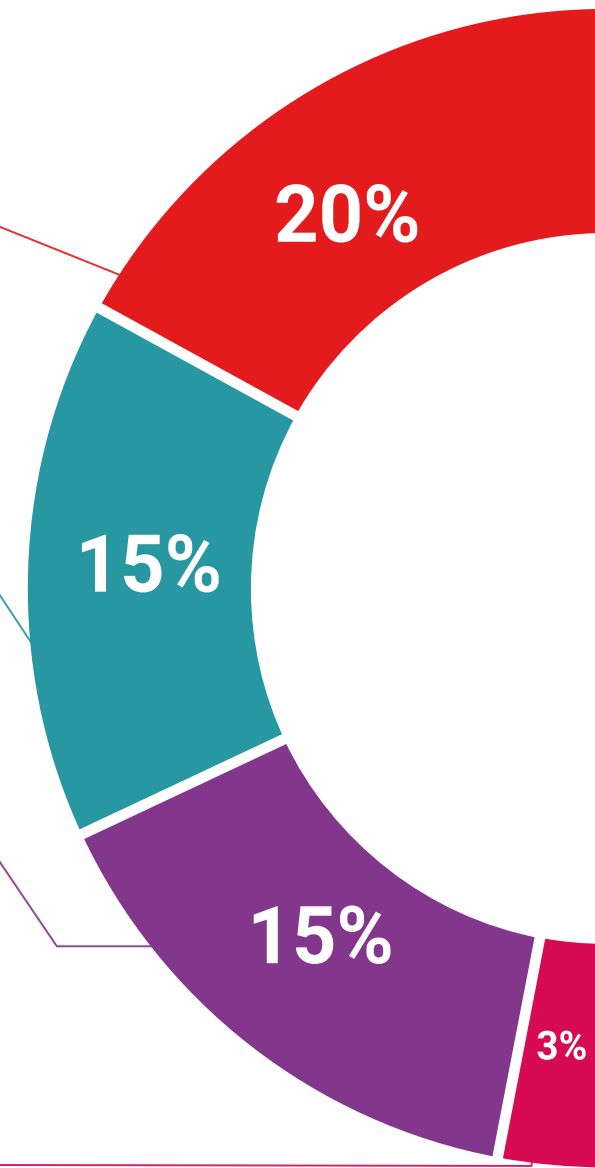
We present the contents attractively and dynamically in multimedia lessons that include audio, videos, images, diagrams, and concept maps in order to reinforce knowledge.

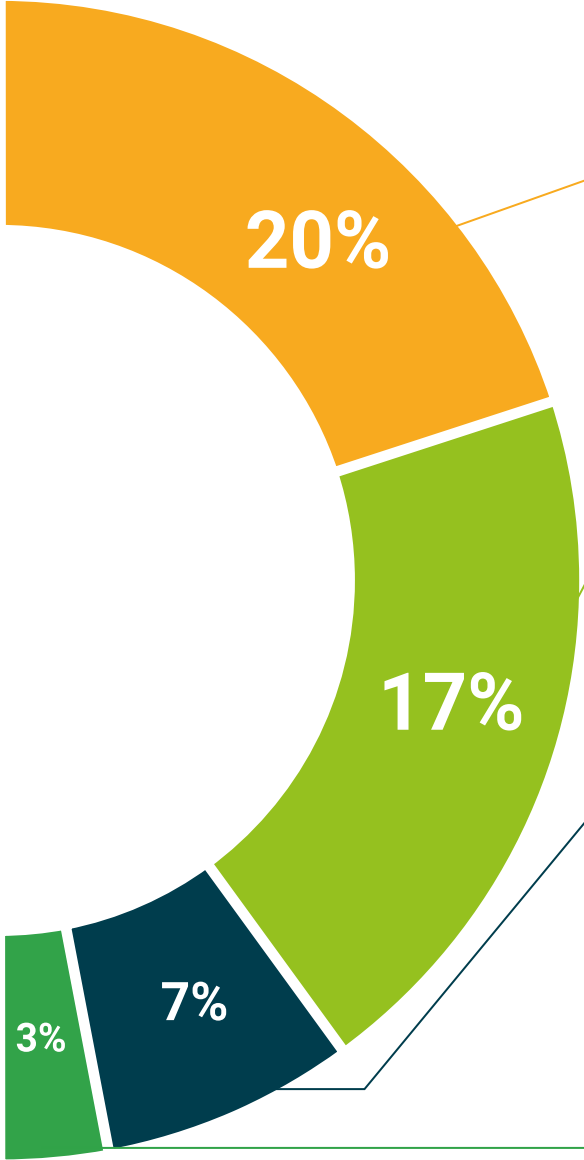
This exclusive educational system for presenting multimedia content was awarded by Microsoft as a "European Success Story".



#### 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

# Teaching Staff

The faculty is comprised of recognized experts in Equine Ophthalmology, who combine their strong academic background with extensive clinical and surgical experience. Each member brings an innovative and up-to-date approach, ensuring that students receive knowledge based on the latest advances in equine lens diagnosis, treatment and surgery. In addition, a track record in research and scientific publications ensures rigorous training backed by the latest evidence. In short, the faculty will not only guide graduates in the mastery of advanced techniques, but also share strategies to face real challenges in equine eye care.



“

*The best faculty makes this program an enriching experience, designed to boost your professional specialization and strengthen your profile in an ever-evolving field”*

## Management



### Dr. Arteaga Sancho, Kevin

- Senior Ophthalmologist at CityU VMC
- Expert in Basic Sciences in Ophthalmology from the University of California
- Specialist in Veterinary Ophthalmology from the University of Barcelona
- Master's Degree in Small Animal Medicine from the University of Murcia
- Degree in Veterinary Medicine from the CEU University of Valencia





## Professors

### Dr. Matas Riera, Màrian

- ◆ Administrator-Founding Partner of Memvet - Itinerant Equine Ophthalmology Services Mallorca
- ◆ Specialist in Veterinary Education from the Royal Veterinary College
- ◆ Specialist in Veterinary Ophthalmology by the UAB
- ◆ Certified by the European College of Veterinary Ophthalmology
- ◆ Degree in Veterinary Medicine and Science from the Autonomous University of Barcelona (UAB)
- ◆ Editor of the Journal of AVEPA (Veterinary Association of Small Animal Specialists)

### Dr. Castilla Rey, Laura

- ◆ Veterinarian in the Ophthalmology and Support Service at MEMVET
- ◆ Expert in Corneal Microsurgery and Gonioimplant by SEOVET
- ◆ Expert in Basic Abdominal Ultrasound in Small Animals by Quadam Institute
- ◆ Degree in Veterinary Medicine from the University of Córdoba
- ◆ Certified in Veterinary Ophthalmology (CCOV) by the Autonomous University of Barcelona
- ◆ Member of: Spanish Association of Veterinary Ophthalmology (SEOVET)

# 07 Certificate

The Postgraduate Certificate in Diseases and Surgery of the Crystalline Lens in Equids guarantees, in addition to the most accurate and up-to-date training, 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 Diseases and Surgery of the Crystalline Lens in Equids** 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 Diseases and Surgery of the Crystalline Lens in Equids**

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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