

# Postgraduate Certificate

## Anesthetic Monitoring for Large Animals



## Postgraduate Certificate Anesthetic Monitoring for Large Animals

- » 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/anesthetic-monitoring-large-animals](http://www.techtute.com/us/veterinary-medicine/postgraduate-certificate/anesthetic-monitoring-large-animals)

# Index

01

Introduction

---

*p. 4*

02

Objectives

---

*p. 8*

03

Course Management

---

*p. 12*

04

Structure and Content

---

*p. 16*

05

Methodology

---

*p. 20*

06

Certificate

---

*p. 28*

# 01

# Introduction

General anesthesia is a clinical procedure that carries an inherent risk, and is associated with different degrees of morbidity and mortality in each species.

In order to minimize the incidence of serious complications, it is essential to have a tool that allows early identification of their occurrence. This tool is the clinical monitoring of patients. It consists of the continuous monitoring and assessment of certain vital indicators in anesthetized patients. It is desirable that this activity be carried out by a clinician experienced in interpreting its changes and trends and whose clinical activity is focussed on that while his or her patient is under anesthesia. That function is performed by the anesthesiologist.





“

*Become a professional in one of today's most in-demand fields: specialize in Anesthetic Monitoring for Large Animals with this comprehensive online program”*

In the last 20 years, Veterinary Anesthesia for Large Animals has experienced significant advances thanks to the introduction of new techniques and drugs, as well as the development of monitors and specialized anesthetic machines.

The introduction of novel surgical techniques has resulted in the need to develop new anesthetic protocols. There is a growing concern about the impact of anesthesia and analgesia on animal welfare and the final outcome of surgical procedures.

The Postgraduate Certificate in Anesthetic Monitoring for Large Animals is designed in response to the need for clinical veterinarians with greater expertise of the protocols and techniques relevant to this area.

The teaching team for this Postgraduate Certificate is made up of professionals specialized in Anesthesia for Large Animals, with extensive experience in teaching, both in undergraduate and graduate programs, most of them being university professors and graduates. These professors are active anesthesiologists in leading veterinary centers and directors or participants in various research projects, hence in addition to teaching and clinical work they also carry out research activities.

The topics covered in the Postgraduate Certificate in Anesthetic Monitoring for Large Animals have been selected with the aim of offering a complete course in anesthesia, so that the student develops specialized knowledge to safely address any situation requiring general or locoregional anesthesia and analgesia in ruminants, swine, camelids and equids.

At present, one of the main problems affecting continuing postgraduate specialization is its compatibility with work and personal life. Current professional demands make it difficult to achieve quality, specialized education in person, so the online format will allow students to combine this specialized training with their daily professional practice, without losing their connection to training and specialization.

This **Postgraduate Certificate in Anesthetic Monitoring for Large Animals** contains the most complete and up-to-date scientific program on the market. The most important features include:

- ◆ The latest technology in online teaching software
- ◆ Intensely visual teaching system, supported by graphic and schematic contents, easy to assimilate and understand
- ◆ Case studies 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-evaluation and learning verification
- ◆ Support groups and educational synergies: questions to the expert, debate and knowledge forums
- ◆ Communication with the teacher and work for individual reflection
- ◆ Content that is accessible from any fixed or portable device with an Internet connection
- ◆ Supplementary documentation databases which are permanently available, even after the program



*Achieve comprehensive and relevant training in Anesthetic Monitoring for Large Animals with this highly effective Postgraduate Certificate and open up new pathways for your professional progress”*

“

*You will have the experience of expert professionals who will contribute their experience in this area to the Postgraduate Certificate, making this course a unique opportunity for professional growth”*

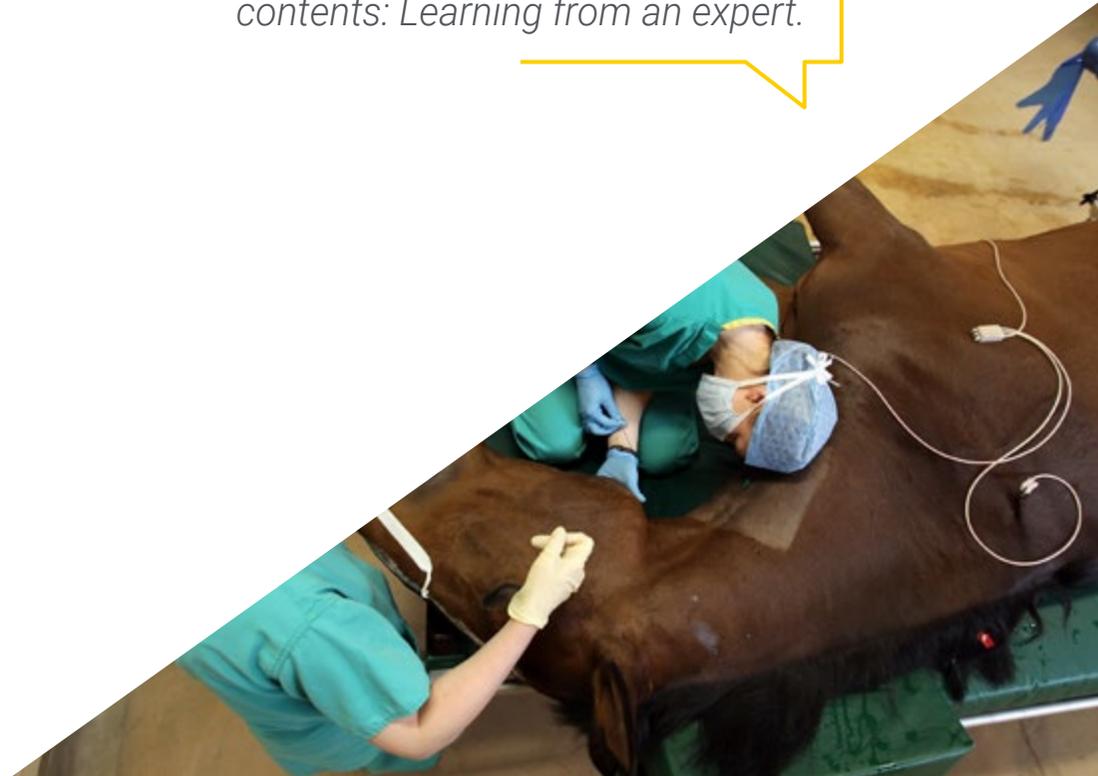
The teaching team is made up of professionals from different fields within this specialism. In this way, TECH ensures delivers educational results in line with its objectives. A multidisciplinary team of professionals, trained and experienced in different environments, who will develop the theoretical knowledge in an efficient way, but above all, they will bring their practical knowledge from their own experience to the program: one of the differential qualities of this training.

This mastery of the subject matter is complemented by the effectiveness of the methodological design of this program in Anesthetic Monitoring for Large Animals. 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 a range of comfortable and versatile multimedia tools that will give them the operability he needs in their development.

The design of this program is based on Problem-Based Learning: an approach that views learning as a highly practical process. To achieve this remotely, we TECH will use telepractice: with the help of an innovative, interactive video system, and Learning from an Expert, students will be able to acquire the knowledge as if they were facing the case they are learning in real time. A concept that will allow you to integrate and fix learning in a more realistic and permanent way.

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

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



# 02 Objectives

The objective of this Postgraduate Certificate is to train highly qualified professionals. An objective that is complemented, moreover, in a global manner, by promoting human development that lays the foundations for a better society. The aim is focused on helping professionals reach a much greater level of expertise and control. A goal that can be achieved in just a few months with a high-intensity and precision program.





“

*If your objective is to broaden your skills set to include new paths of success and development: this is the program for you: a training that aspires to excellence"*



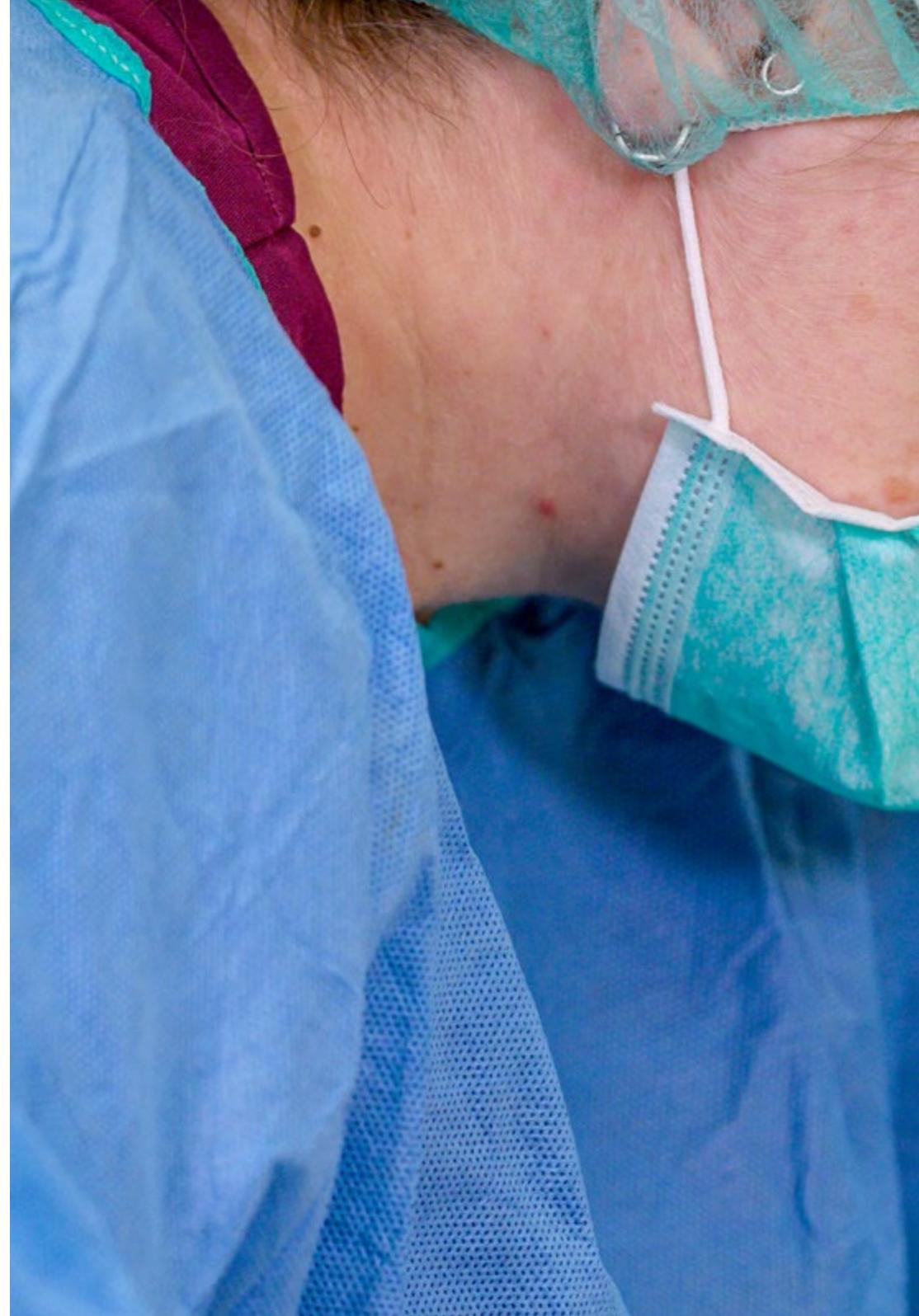
## General Objectives

---

- Determine the vital importance of the correct use of the anesthetic records during general anesthesia
- Examine and deepen knowledge related to the vital signs that should be monitored during general anesthesia or sedation of the equine patient
- Establish the technical features of the main monitoring equipment used in the equine patient
- Build knowledge of the main special monitoring requirements in ruminants, swine and camelids



*A program and professional growth path that will propel you towards a greater level of competitiveness in the employment market"*





## Specific Objectives

---

- ◆ Detail the correct and regular use of the anesthetic record during general anesthesia
- ◆ Determine the importance and the most characteristic clinical signs of anesthetic depth monitoring in the equine patient
- ◆ Analyze the importance and main technical features related to the monitoring of cardiovascular and hemodynamic rates
- ◆ Explore the leading role of arterial blood gases in the clinical monitoring of the equine patient during general anesthesia
- ◆ Detail the special monitoring considerations for other types of vital parameters, such as glucose, lactate, temperature or the degree of neuromuscular blockade
- ◆ Examine the main special anesthetic monitoring considerations in other species such as ruminants, swine and camelids

03

# Course Management

In line with the program's concept of total quality, a highly qualified teaching staff, chosen for their proven experience, is at your disposal. Professionals from different areas and fields of expertise that make up a complete, multidisciplinary team. A unique opportunity to learn from the best.





“

*We have the best teaching team, with years of experience, who are determined to transmit all their knowledge about this sector”*

## Management



### Dr. Villalba Orero, María

- ♦ Scientific Advisor on cardiovascular and pulmonary ultrasound at the National Center for Cardiovascular Research
- ♦ Doctor of Veterinary Medicine, Complutense University Madrid
- ♦ Degree in Veterinary Medicine from Complutense University Madrid
- ♦ Master's Degree in Veterinary Sciences from the Complutense University Madrid
- ♦ Master's Degree in Veterinary Cardiology
- ♦ European Certificate in Veterinary Cardiology (ESVPS)
- ♦ Scientific publications in the area of equine cardiology and anesthesia, as well as in the area of cardiovascular diseases in humans

## Professors

### Dr. Valero, Marta

- ♦ Veterinarian in the Department of Medicine and Large Animal Surgery at the University Clinical Hospital of the University of Extremadura
- ♦ Graduate in Veterinary Medicine from the University of Murcia
- ♦ Master's Degree in Medicine and Large Animal Surgery from the University of Extremadura
- ♦ Collaborator in practical teaching on the Large Animal Clinic course at the University of Extremadura

### Dr. Villalba, Marta

- ♦ Collaboration as an ambassador of the Complutense Clinical Veterinary Hospital (HCVC)
- ♦ Degree in Veterinary Medicine, Complutense University Madrid
- ♦ Delivery of Training Days at the Complutense Equine Clinic: equine ophthalmology, diagnostic imaging of the cervical spine and locoregional anesthesia and standing procedures in horses

### Dr. Pérez, Rocío Jiménez - Arellano

- ♦ Complutense Clinical Veterinary Hospital- Rotatory Intern in Equine Clinic
- ♦ Degree in Veterinary Medicine, Complutense University Madrid
- ♦ Equine Neonatology Training Day
- ♦ Training Days at the Complutense Equine Clinic: locoregional anesthesia in the horse

**Dr. Salazar Nussio, Verónica**

- ♦ Doctor of Medicine from the Complutense University Madrid
- ♦ Degree in Veterinary Medicine from Complutense University Madrid
- ♦ Certified by the American College of Veterinary Anesthesia and Analgesia
- ♦ Certificate recognized by the European College of Veterinary Anesthesia and Analgesia
- ♦ Her professional career has been mainly academic as a lecturer in Anesthesia and Veterinary Analgesia in several Universities and Reference Centers in various countries such as the United States, Spain and the United Kingdom
- ♦ In 2019 she becomes a RECOVER Certified Instructor in Basic and Advanced Life Support, a title awarded by the American College of Emergency and Critical Care. Since that same year, she has also been a RECOVER certified Rescuer in Basic and Advanced Life Support

**Dr. Jiménez, Alberto**

- ♦ Veterinary Intern at the Large Animal Department of the Veterinary Clinic Hospital of the University of Extremadura
- ♦ Degree in Veterinary Medicine, Complutense University Madrid
- ♦ Instruction and supervision of students belonging to the Department of Large Animal Surgery and students of the Clinical Rotation of the Faculty of Veterinary Medicine of the University of Extremadura

**Dr. Peña Cadahía, Celia**

- ♦ Clinical veterinarian at Eurocan Veterinary Centre
- ♦ Horse Anesthesia, Virgen de las Nieve Clinical Veterinary Hospital
- ♦ Graduated in Veterinary Medicine from the Complutense University Madrid Teaching Experience
- ♦ Collaborating Professor of Medicine and Surgery in the large animal area of the Complutense University Madrid Teaching Experience
- ♦ Emergency Anesthesia in the Area of Large Animals, Clinical Veterinary Hospital at the Complutense University Madrid

**Dr. Ruiz García, Gemma**

- ♦ Internal veterinarian of the Equine Service of the HCVC
- ♦ Degree in Veterinary Medicine, Complutense University Madrid
- ♦ Director of Radiodiagnostic Facilities
- ♦ Collaborating student of the Equine Medicine and Surgery Service of the HCVC

# 04

# Structure and Content

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





“

*We have the most complete and up-to-date academic program in the market. We strive for excellence and for you to achieve it too”*

## Module 1. Monitoring for Large Animals

- 1.1. The Anesthetic Record
- 1.2. Anesthetic Depth Monitoring
- 1.3. Monitoring of CV and Hemodynamic Status I
  - 1.3.1. Clinical Monitoring
  - 1.3.2. Electrocardiogram
- 1.4. Monitoring of CV and Hemodynamic Status II
  - 1.4.1. Indirect Arterial Pressure
    - 1.4.1.1. Oscillometry
    - 1.4.1.2. Doppler
  - 1.4.2. Direct Blood Pressure
- 1.5. Monitoring of Oxygenation Status I
  - 1.5.1. Clinical Monitoring
  - 1.5.2. Arterial Blood Gas (PaO<sub>2</sub>)
- 1.6. Monitoring of Oxygenation Status II
  - 1.6.1. Pulse Oximetry
- 1.7. Monitoring of Ventilation Status I
  - 1.7.1. Clinical Monitoring
  - 1.7.2. Arterial Blood Gas (PaCO<sub>2</sub>)
- 1.8. Monitoring of Ventilation Status II
  - 1.8.1. Capnography
- 1.9. Other Types of Monitoring
  - 1.9.1. Temperature
  - 1.9.2. Glucose
  - 1.9.3. Lactate
  - 1.9.4. Ions
  - 1.9.5. Neurostimulation
  - 1.9.6. Others
- 1.10. Monitoring in Other Species (Small and Large Ruminants, Swine and Camelids)
  - 1.10.1. Monitoring Considerations for Small Ruminants
  - 1.10.2. Monitoring Considerations for Large Ruminants
  - 1.10.3. Monitoring Considerations for Swine
  - 1.10.4. Monitoring Considerations for Camelids





“

*A comprehensive teaching program, structured in well-developed teaching units, oriented towards learning that is compatible with your personal and professional life”*

# 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.





“

*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.

“

*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

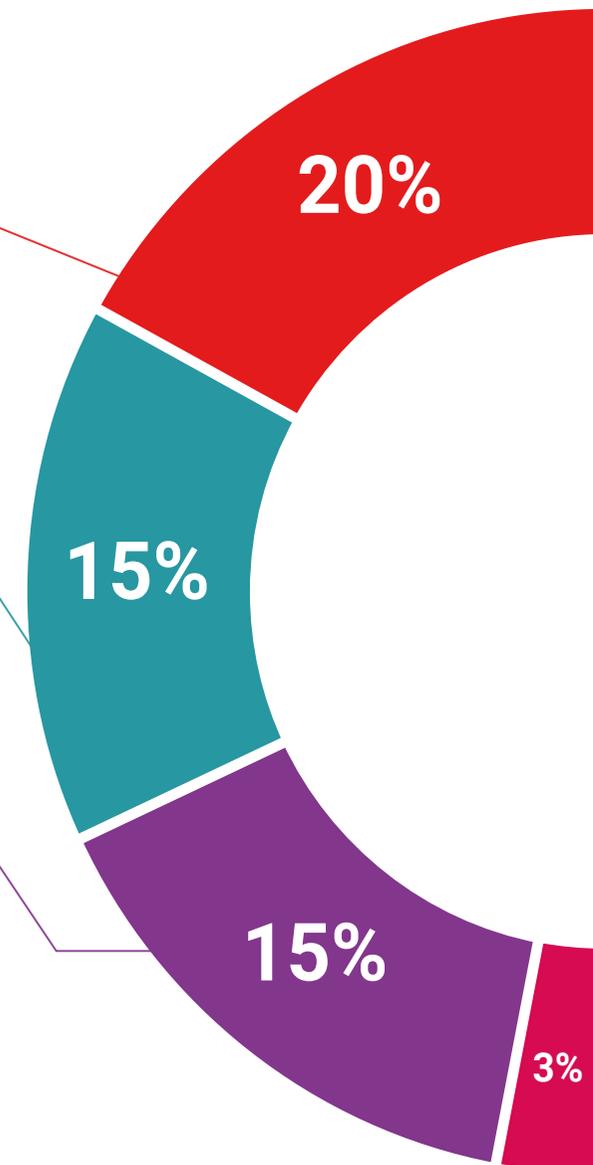
The TECH team presents the contents attractively and dynamically in multimedia lessons that include audio, videos, images, diagrams, and concept maps in order to reinforce knowledge.

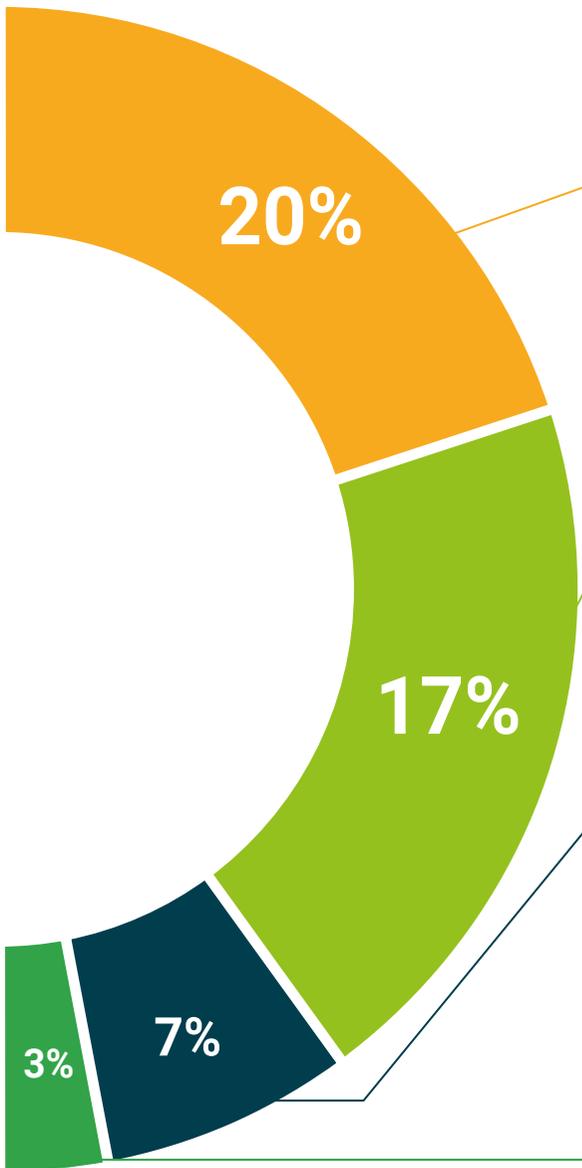
This exclusive educational system for presenting multimedia content was awarded by Microsoft as a "European Success Story".



#### 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 Anesthetic Monitoring for Large Animals guarantees students, in addition to the most rigorous and up-to-date education, access to a Postgraduate Certificate issued by TECH Global University.





“

*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 Anesthetic Monitoring for Large Animals** 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.

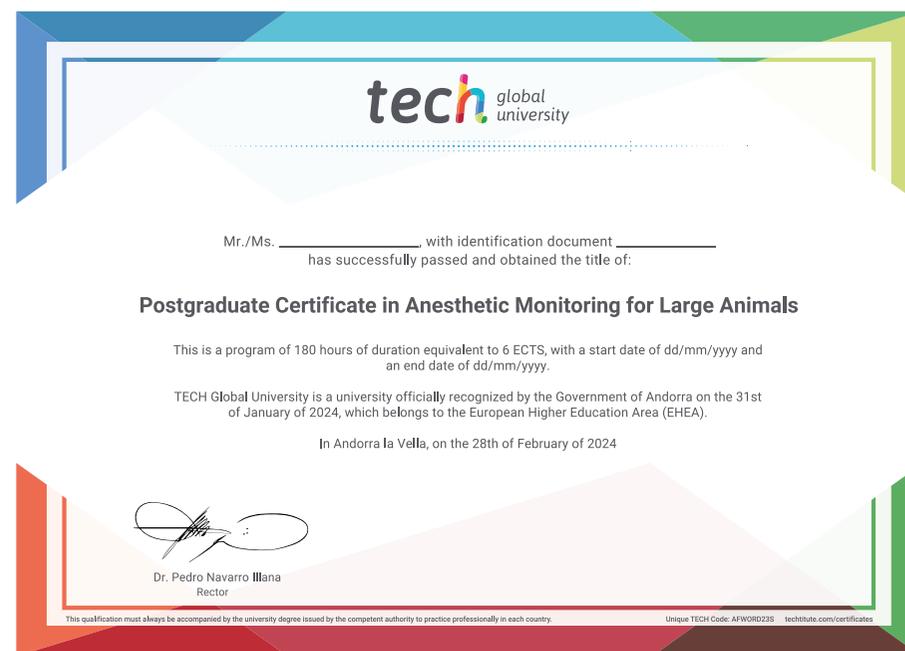
This **TECH Global University** title is a European program of continuing education and professional updating that guarantees the acquisition of competencies in its area of knowledge, providing a high curricular value to the student who completes the program.

Title: **Postgraduate Certificate in Anesthetic Monitoring for Large Animals**

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.

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

**tech** global  
university

## Postgraduate Certificate Anesthetic Monitoring for Large Animals

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

# Postgraduate Certificate

## Anesthetic Monitoring for Large Animals

