Postgraduate Diploma
Clinical Management of Complications in Large Animal Anesthesia

tech *technological university*

Postgraduate Diploma
Clinical Management of Complications in Large Animal Anesthesia

» Modality: **online**
» Duration: **6 months**
» Certificate: **TECH Technological University**
» Dedication: **16h/week**
» Schedule: **at your own pace**
» Exams: **online**

Website: **www.techtitute.com/in/veterinary-medicine/postgraduate-diploma/postgraduate-diploma-clinical-management-complications-large-animal-anesthesia**

Index

Introduction

The training offered by this program is aimed at experienced clinical veterinarians who wish to specialize in Clinical Management of Complications in Large Animal Anesthesia in order to provide comprehensive and high-quality care to clients, meeting the current demands for highly specialized training in veterinary medicine.

This program brings together theoretical concepts, clinical practice, knowledge and teaching experience from a scientific point of view. The professional will be provided with high-quality contents and up-to-date didactic resources, taught by practicing professionals.

Become one of the most in-demand professionals of the moment: expand your knowledge of Clinical Management of Complications in Large Animal Anesthesia with this complete online program"

In the last 20 years, Veterinary Anesthesia in 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 Diploma in Clinical Management of Complications in Large Animal Anesthesia 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 Diploma is made up of professionals specialized in Veterinary Anesthesiology in Large Animals, with extensive experience in teaching, both in undergraduate and graduate programs, most of them being university professors and graduates. These professors are practicing anesthesiologists at leading veterinary centers and directors or participants in various research projects, so that in addition to teaching and clinical work they also carry out research activities.

The topics covered in the Postgraduate Diploma in Clinical Management of Complications in Large Animal Anesthesia 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 Diploma in Clinical Management of Complications in Large Animal Anesthesia** 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
- 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.
- internet connection
- Supplementary documentation databases which are permanently available, even after the program

Get a complete and useful qualification in the Clinical Management of Complications in Large Animal Anesthesia with this highly effective educational Postgraduate Diploma and open up new routes to professional progress"

A Postgraduate Diploma that will enable you to work in all fields of veterinary anesthesiology with the competence of a high-level professional"

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 program.

This mastery of the subject is complemented by the effectiveness of the methodology used in the design of this program in Clinical Management of Complications in Large Animal Anesthesia. 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 him the operability he needs in his 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.
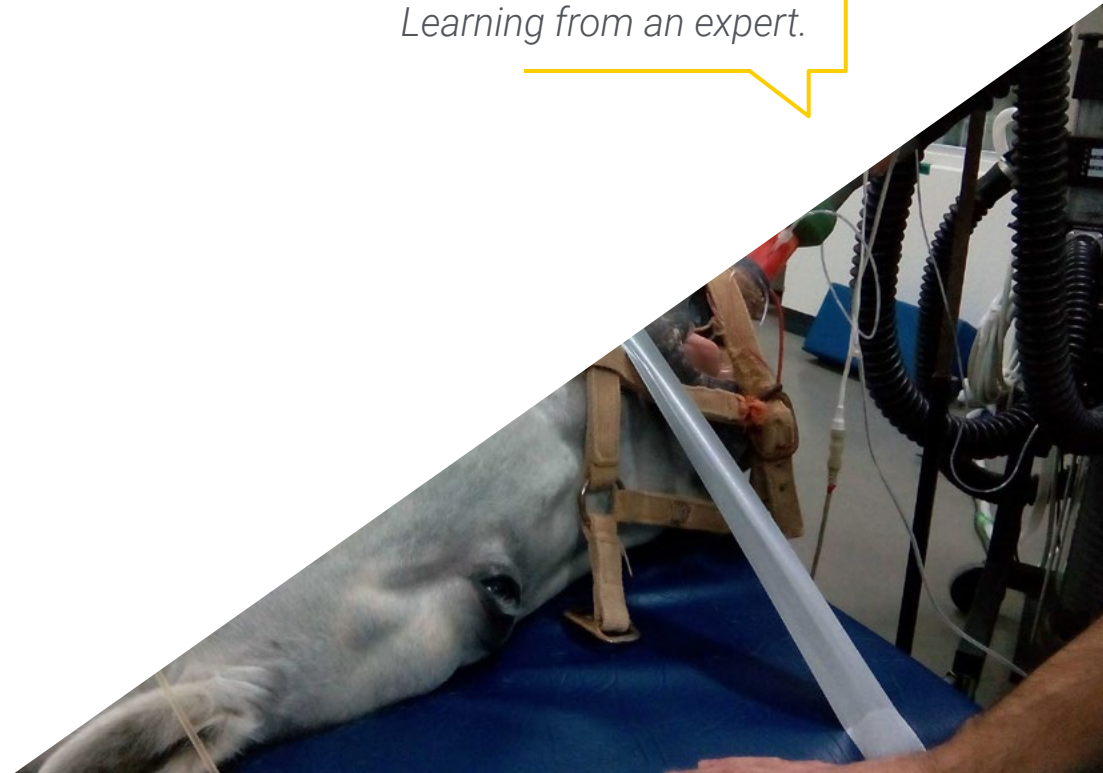
02
Objectives

The objective of this Postgraduate Diploma is to train highly qualified professionals. An objective that is complemented, moreover, in a holistic 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 program that aspires to excellence"

General Objectives

- Determine the vital importance of the correct use of the anesthetic records during general anesthesia
- Examine and broaden your knowledge of the vital signs that must 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
- Develop knowledge of the main special monitoring requirements in ruminants, swine and camelids
- Identify, prevent and resolve complications during the perianesthetic period in the horse
- Establish the appropriate clinical approach to cardiorespiratory resuscitation in the adult horse and neonatal foal
- Identify, prevent and resolve complications during the perianesthesia period in small and large ruminants, swine and camelids
- Establish the bases of body fluid and electrolyte physiology in the equine patient
- Determine the acid-base balance and interpret the most common alterations in equine patients
- Examine the skills and knowledge required for venous catheterization in the equine patient
- Establish the clinical and laboratory parameters important for the monitoring of fluid therapy in the equine patient
- Establish the special physiological considerations related to fluid therapy in ruminants, swine and camelids
- Examine the main characteristics of crystalloid and colloid solutions frequently used in ruminants, swine and camelids
- Generate specialized knowledge related to the therapeutic applications of fluid therapy in ruminants, swine and camelids
- Analyze the types of fluids available for the equine patient

Specific Objectives

Module 1. Monitoring in Large Animals

- 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 for other species such as ruminants, swine and camelids

Module 2. Anesthetic Complications and Cardiopulmonary Resuscitation

- Know about the published studies on mortality and peri-anesthetic morbidity in horses
- Know the risk factors and causes for peri-anesthetic mortality
- Identify, anticipate and resolve complications that occur in the premedication phase.
- Identify, anticipate and resolve complications that occur during the induction phase
- Identify, anticipate and resolve complications that occur in the maintenance phase
- Identify, anticipate and resolve complications that occur in the recovery and postoperative phase
- Early recognition of life-threatening cardiorespiratory emergencies in horses
- Develop effective cardiorespiratory resuscitation protocols
- Know the complications relating to improper positioning of the ruminant, swine or camelid patient
- Recognize the main cardiovascular complications in ruminants, swine and camelids
- Study the complications associated with the gastrointestinal system in camelids
- Recognize complications associated with intravenous catheter placement in ruminants, swine and camelids
- Broaden your knowledge of the pathophysiology of malignant hyperthermia
- Identify the complications that can occur during anesthetic recovery in ruminants, swine and camelids

Module 3. Fluid Therapy in Large Animals

- Detail the physiology and movement of bodily water
- Deepen your knowledge of the physiology and alterations of the most important electrolytes
- Determine the acid-base balance and its regulation
- Interpret pH alterations
- Review the important factors for catheter and catheterization site selection
- Detail the most frequent complications of venous catheterization
- Analyze the most frequent crystalloid fluids
- Detail the properties of blood derivatives and know their complications
- Deepen your knowledge of the special physiological features of ruminants, swine and camelids in relation to fluid therapy
- Establish the properties of the isotonic, hypotonic and hypertonic crystalloid solutions most frequently used for ruminants, swine and camelids

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

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. 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 several 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. Santiago Llorente, Isabel

- Doctorate in Veterinary from Complutense University Madrid
- Degree in Veterinary Medicine from Complutense University Madrid
- Professor at the University of Lisbon (Portugal) in the Department of Medical Clinical Pathology II from 2019 to present
- Her professional career is focused on equine clinical practice and research, currently as a contract veterinarian in the large animal area of the Hospital Clínico Veterinario Complutense, Complutense University Madrid
- Head of Equine Internal Medicine and member of the Anesthesia Service at the Hospital Clínico Veterinario Complutense, Complutense University Madrid

Dr. Peña Cadahía, Celia
- Clinical veterinarian at Eurocan Veterinary Centre
- Horse Anethesia, 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. 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. Bercebal, Lucía
- Internal Veterinary, Rotatory in Equine Clinic at the Complutense Clinical Vetinary Hospital, Madrid
- Doctorate in Veterinary Medicine, Complutense University Madrid
- Course "Director of Veterinary Radiodiagnostic Facilities" - Official College of Veterinarians of Madrid
- Course "Vets with Horse Power 10: The virtual event 21"- Vets with Horse Power
- Course "Diagnosis of Lameness in the CDE" - EquiVet Academy

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

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. Arenillas, Mario
- Veterinary Anesthesiology
- Degree in Veterinary Medicine from Complutense University Madrid
- He obtained the Diploma of Advanced Studies in 2011 and will defend the thesis for the achievement of the Doctorate in Veterinary Medicine in 2020
- Associate Professor in the Clinical Rotation of the subject "Anesthesiology" in the Veterinary Degree of the Faculty of Veterinary Medicine at the Complutense University Madrid

Dr. Troya, Lucas
- Internal Medical and Anesthesia Service, Equine Unit, Clínic Veterinari Hospital
- Degree in Veterinary Medicine from Complutense University Madrid
- Postgraduate Diploma in Equine Clinic in the Autonomous University of Barcelona.
- Master's Degree in Clinic at Complutense University Madrid
- Associate Professor, Department of Animal Medicine and Surgery, Autonomous University of Barcelona, teaching equine internal medicine
- Professor at the Institute for Applied Studies (IDEA-Madrid)
- Associate Professor, Department of Animal Medicine and Surgery, Autonomous University of Barcelona
- Training placements in various national and European centers
- Member of the Spanish Association of Equine Veterinarians (AVEE)

04
Structure and Content

The contents of this Postgraduate Diploma 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 complete and well-structured program will take you to the highest standards of quality and success.

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

Module 2. Anesthetic Complications and Cardiopulmonary Resuscitation

2.1. Morbidity and Mortality
   2.1.1. Mortality
      2.1.1.1. General Considerations
      2.1.1.2. Mortality Studies
         2.1.1.2.1. Mortality Compared
      2.1.1.3. Risk Factors
         2.1.1.3.1. Related to the Horse
         2.1.1.3.2. Related to Surgical Procedure
         2.1.1.3.3. Related to Anesthesia
      2.1.1.4. Causes of Death Related to Anesthesia
         2.1.1.4.1. Cardiovascular
         2.1.1.4.2. Respiratory
         2.1.1.4.3. Others
   2.1.2. Morbidity
2.2. Complications in Premedication and Induction I
   2.2.1. Intra-arterial and Perivascular Injection
   2.2.2. Anaphylactic Reactions
   2.2.3. Drug-Induced Priapism
   2.2.4. Incomplete or Inadequate Sedation/Induction
2.3. Complications in Premedication and Induction II
   2.3.1. Hypoventilation
   2.3.2. Inability to Intubate/Laryngeal Trauma
   2.3.3. Hypotension.
2.4. Complications in Maintenance I
   2.4.1. Hypoxemia
   2.4.2. Hypercapnia
   2.4.3. Inadequate Anesthetic Plan and Alternative Anesthetic Plans
   2.4.4. Malignant Hyperthermia
2.5. Complications in Maintenance II
   2.5.1. Hypotension
   2.5.2. Hypertension
   2.5.3. Bleeding
   2.5.4. Alterations in Heart Rate and Rhythm

2.6. Complications in Recuperation I
   2.6.1. Hypoxemia/Hypercapnia
   2.6.2. Nasal Edema
   2.6.3. Airway Obstruction
   2.6.4. Pulmonary Edema
   2.6.5. Fractures and Soft Tissue Damage
   2.6.6. Neuropathologies
   2.6.7. Myopathies
2.7. Complications in Recovery II
   2.7.1. Myelopathies
   2.7.2. Periodic Hyperkalemia Paralysis
   2.7.3. Delay/Excitation in Recovery
   2.7.4. Immediate Postoperative Complications
   2.7.5. Human Error
2.8. Cardiopulmonary Resuscitation (CPR) I
   2.8.1. Causes of Cardiopulmonary Emergencies
   2.8.2. Diagnosis of Cardiopulmonary Emergencies
   2.8.3. Cardiac Massage
   2.8.4. CPR Maneuver
      2.8.4.1. Foal CPR Maneuver
      2.8.4.2. Adult CPR Maneuver
2.9. Complications in Small and Large Ruminants
   2.9.1. Complications Associated with Poor Patient Positioning
   2.9.2. Cardiovascular Complications
   2.9.3. Tympanism, Regurgitation, Salivation
   2.9.4. Respiratory Complications
   2.9.5. Hypothermia
   2.9.6. Other Complications
2.10. Complications in Ruminants, Swine and Camelids
   2.10.1. Complications Related to Improper Placement of Ruminants, Swine and Camelids
   2.10.2. Cardiovascular Complications in Ruminants, Swine and Camelids
   2.10.3. Respiratory Complications in Ruminants, Swine and Camelids

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.

01 learning from evidence

02 relearning from evidence

03 testing

04 learning from an expert

05 neurocognitive context dependent learning

06 Von-Restorff effect

07 case based learning through storytelling

08 competencies testing (retesting)

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.

20%

15%

15%

3%

20%

17%

7%

3%

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 Diploma in Clinical Management of Complications in Large Animal Anesthesia guarantees students, in addition to the most rigorous and up-to-date education, access to a Postgraduate Diploma issued by TECH Technological University.

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

This **Postgraduate Diploma in Clinical Management of Complications in Large Animal Anesthesia** contains the most complete and up-to-date educational program on the market.

After the student has passed the assessments, they will receive their corresponding **Postgraduate Diploma** issued by **TECH Technological University** via tracked delivery*.

The certificate issued by **TECH Technological University** will reflect the qualification obtained in the Postgraduate Diploma, and meets the requirements commonly demanded by labor exchanges, competitive examinations, and professional career evaluation committees.

Title: **Postgraduate Diploma in Clinical Management of Complications in Large Animal Anesthesia**

Official Nº of Hours: **450 h.**

tech technological university

Awards the following

CERTIFICATE
to

Mr./Ms. _____, with identification number _____.
For having passed and accredited the following program

POSTGRADUATE DIPLOMA
in

Clinical Management of Complications in Large Animal Anesthesia

This is a qualification awarded by this University, equivalent to 500 hours, with a start date of dd/mm/yyyy and an end date of dd/mm/yyyy.

TECH is a Private Institution of Higher Education recognized by the Ministry of Public Education as of June 28, 2018.

June 17, 2020

Tere Guevara Navarro
Dean

Unique TECH Code: AFWORD23S   techtitute.com/certificates

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

tech technological university

Postgraduate Diploma
Clinical Management of Complications in Large Animal Anesthesia

» Modality: **online**
» Duration: **6 months**
» Certificate: **TECH Technological University**
» Dedication: **16h/week**
» Schedule: **at your own pace**
» Exams: **online**

Clinical Management of
Complications in Large
Animal Anesthesia

tech technological
university