

# Postgraduate Diploma Anesthetic Monitoring in Veterinary Medicine





## Postgraduate Diploma Anesthetic Monitoring in Veterinary Medicine

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

Website: [www.techtute.com/us/veterinary-medicine/postgraduate-diploma/postgraduate-diploma-anesthetic-monitoring-veterinary-medicine](http://www.techtute.com/us/veterinary-medicine/postgraduate-diploma/postgraduate-diploma-anesthetic-monitoring-veterinary-medicine)

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# 01

# Introduction

The time in which a patient is under the effects of anesthesia is one of the most delicate periods in veterinary intervention. Monitoring the situation is necessary in order to constantly control the evolution of the vital signs of the animal undergoing surgery and definitively determine the course of the work in the other areas of the intervention. Their in-depth knowledge and correct application make the difference for a successful practice. This training offers you the opportunity to acquire the skills in the latest advances and ways of working in Anesthetic Monitoring in Veterinary Medicine.







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*Become a professional in one of the most in-demand fields of the moment: train in Veterinary Anesthesiology with this comprehensive online Postgraduate Diploma”*

However, the success of an anesthetic procedure goes far beyond the administration of the appropriate drugs. It is essential to master pre-anesthetic assessment, induction, maintenance and education in order to achieve success in the process and a return to normality without sequelae.

Monitoring at this time is the most basic and important tool to ensure complete control of the patients' evolution. In our comprehensive Postgraduate Diploma in Anesthetic Monitoring, we will take you through a comprehensive training process in which we will present to you all of the latest techniques and procedures in the sector.

With an eminently practical approach, this course allows you to learn all the necessary information to put into practice the new ways for controlling and monitoring anesthesia in veterinary practice.

A comprehensive course in which you will learn with new study techniques, created to optimize your effort and take your results to the highest level.



*Get fully and adequately trained in Anesthetic Monitoring in Veterinary Medicine with this highly effective Postgraduate Diploma and open new avenues for your professional progress"*

This **Postgraduate Diploma in Anesthetic Monitoring in Veterinary Medicine** offers you the advantages of a high-level scientific, teaching, and technological course. These are some of its most notable features:

- ◆ Latest technology in online teaching software.
- ◆ 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.
- ◆ Self-regulating learning: full compatibility with other occupations.
- ◆ Practical exercises for self-evaluation and learning verification.
- ◆ Support groups and educational synergies: questions to the expert, discussion forums and debates.
- ◆ Communication with the teacher and individual reflection work.
- ◆ Content that is accessible from any fixed or portable device with an Internet connection.
- ◆ Supplementary documentation databases are permanently available, even after the course.



*Receive complete and appropriate training in Veterinary Anesthesiology with this highly effective Postgraduate Diploma and open new pathways for your professional progress"*

Our teaching staff is made up of professionals from different fields related to this specialty. In this way, we ensure that we provide you with the training update we are aiming for. A multidisciplinary team of professionals trained and experienced in different environments, who will cover the theoretical knowledge in an efficient way, but, above all, will put the practical knowledge derived from their own experience at the service of the course: one of the differential qualities of this course.

This mastery of the subject is complemented by the effectiveness of the methodological design of this Postgraduate Diploma in Anesthetic Monitoring in Veterinary Medicine. Developed by a multidisciplinary team of e-learning experts, it integrates the latest advances in educational technology. This way, you will be able to study with a range of comfortable and versatile multimedia tools that will give you the operability you need in your 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, we will use telepractice: with the help of an innovative interactive video system, and learning from an expert, you will be able to acquire the knowledge as if you were actually dealing with the scenario you are learning about. A concept that will allow you to integrate and fix learning in a more realistic and permanent way.

*A Postgraduate Diploma that will enable you to work in all fields of Veterinary Anesthesiology with the competence of a high-level professional.*

*You will have the experience of expert professionals who will contribute their experience in the field to the program, making this training a unique opportunity for professional growth.*



# 02 Objectives

Our objective is to train highly qualified professionals for work experience. An objective that is complemented, moreover, in a global manner, by promoting human development that lays the foundations for a better society. This objective is focused on helping medical professionals reach a much higher level of expertise and control. A goal that, in just six months, you will be able to achieve with a highly intensive and precise course.







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



## General Objectives

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- ♦ Know the most important physiological characteristics of the different organ systems and their relationship and modifications that occur during anesthesia.
- ♦ Know the general characteristics of pharmacology and the specific characteristics of the main anesthetic drugs used.
- ♦ Understand the monitoring of the anesthetized patient, from the most basic to the most complicated such as nociception and hypnosis monitoring.
- ♦ Understand the limitations and the most appropriate monitoring in each patient and in each specific case.
- ♦ Detect, prevent and treat the main complications during the perioperative period.



## Specific Objectives

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### Module 1.

- ♦ Know and understand the ventilatory, cardiovascular, digestive, renal, endocrine physiology and that of the nervous system (both central and peripheral) and their age-related modifications.
- ♦ Know and understand the general pharmacological processes and those directly related to each of the pharmacological families related to anesthesia (sedatives, analgesics, inducers, neuromuscular relaxants).

### Module 2.

- ♦ Understand in detail how to make the most of basic patient monitoring based on examination, observation and palpation.
- ♦ Understand the most important parameters to monitor from a cardiovascular, ventilatory and neurological point of view.
- ♦ Understand and assess the different methods of monitoring the patient's blood volume.

### Module 3.

- ♦ Assist in the detection, prevention and treatment of complications related to perioperative management (regurgitation, hypothermia).
- ♦ Assist in the detection, prevention and treatment of cardiovascular, neurological and ventilatory complications associated with anesthesia.
- ♦ Assist in the detection and treatment of cardiorespiratory arrest and patient management after resuscitation.



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



# 03

# Course Management

For our course to be of the highest quality, we are proud to work with a teaching staff of the highest level, chosen for their proven track record. 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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*Leading professionals in the field have come together to teach you the latest advances in this Anesthetic Monitoring in Veterinary Medicine”*

## Management



### Dr. Jiménez Cidre, Miguel Ángel

- ◆ Degree in Veterinary Medicine from the Complutense University of Madrid. Two-year internship at the Anesthesia Service of the Veterinary Clinic Hospital of the UCM.
- ◆ Accredited by AVEPA in the Specialty of Anesthesia and Analgesia.
- ◆ Head of the Anesthesia-Resuscitation Service and Pain Unit at Puchol Veterinary Hospital.
- ◆ Founding member of the Spanish Society of Veterinary Anesthesia and Analgesia (SEAAV). Member of the European Association of Veterinary Anesthesia (AVA), International Association for the Study of Pain (IASP) and the International Veterinary Academy of Pain Management (IVAPM).
- ◆ Speaker in several Anesthesia and Analgesia courses and national and international congresses.
- ◆ Author of the books "Practical Pain Management in Small Animals" and "Role of NSAIDs in Chronic Pain".
- ◆ Co-author of the "Clinical Manual of Pharmacology and "Complications in Small Animal Anesthesia"; as well as author of specific chapters in other books.

## Professors

### **Cabezas Salamanca, Miguel Angel**

- ◆ Degree in Veterinary Medicine from the Complutense University of Madrid. Two-year internship at the Anesthesia Service of the Veterinary Clinic Hospital of the UCM.
- ◆ Accredited by AVEPA in the Specialty of Anesthesia and Analgesia.
- ◆ Head of the Anesthesia-Resuscitation Service and Pain Unit at Puchol Veterinary Hospital.
- ◆ Founding member of the Spanish Society of Veterinary Anesthesia and Analgesia (SEAAV). Member of the European Association of Veterinary Anesthesia (AVA), International Association for the Study of Pain (IASP) and the International Veterinary Academy of Pain Management (IVAPM).
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- ◆ Co-author of the "Clinical Manual of Pharmacology and "Complications in Small Animal Anesthesia"; as well as author of specific chapters in other books.

### **Soto Martín, María**

- ◆ Degree in Veterinary Medicine from the Complutense University of Madrid in 2009, with preferential dedication to anesthesia since 2010 and sole dedication since 2012.
- ◆ Member of the Spanish Society of Veterinary Anesthesia and Analgesia, with frequent participation in its annual congresses, one of which earned her the award for best oral communication.
- ◆ Member of the Anesthesia group of AVEPA, having also participated on several occasions with scientific content in its annual congress.
- ◆ She provided specific small animal anesthesia training throughout her career in the form of lectures, webinars, hands-on workshops and clinic-based training.
- ◆ She also collaborated in books and scientific articles, published nationally and internationally.

04

# Structure and Content

The contents of this Postgraduate Diploma have been developed by the different experts on this course, with a clear purpose: to ensure that our students acquire each and every one of the necessary skills to become true experts in this field. A complete and well-structured program that will take you to the highest standards of quality and success.







*This Postgraduate Diploma in Anesthetic Monitoring in Veterinary Medicine contains the most complete and up-to-date scientific program on the market"*

## Module 1. Physiology and Pharmacology Related to Anesthesia

- 1.1. Ventilatory Physiology.
  - 1.1.1. Introduction.
  - 1.1.2. Ventilation of the Awake Patient.
  - 1.1.3. Ventilation in Anesthesia.
- 1.2. Cardiovascular Physiology.
  - 1.2.1. Introduction.
  - 1.2.2. Anesthesia-related Characteristics of the Cardiovascular System.
- 1.3. Neurological Physiology. Central and Autonomic Nervous System.
  - 1.3.1. Introduction.
  - 1.3.2. Anesthesia-related Characteristics of the SNA.
- 1.4. Renal Physiology. Acid/ Base Balance
  - 1.4.1. Introduction.
  - 1.4.2. Anesthesia-related Characteristics of the Renal System.
  - 1.4.3. Mechanism of Regulating the Acid/ Base Balance.
- 1.5. Gastrointestinal and Endocrine Physiology.
  - 1.5.1. Introduction.
  - 1.5.2. Characteristics of the Digestive System in Anesthesia.
  - 1.5.3. Characteristics of the Endocrine System in Anesthesia.
- 1.6. Age Related Physiological Changes.
  - 1.6.1. Ventilatory Changes.
  - 1.6.2. Cardiovascular Changes.
  - 1.6.3. Nervous System Changes.
  - 1.6.4. Endocrine Changes.
  - 1.6.5. Other Changes Related to Anesthesia.
- 1.7. Pharmacology and Anesthesia I. Basic Principles.
  - 1.7.1. Pharmacokinetics Applied to Anesthesia.
  - 1.7.2. Pharmacodynamics Applied to Anesthesia.
- 1.8. Pharmacology and Anesthesia II. Inhalation Drugs.
  - 1.8.1. Main Halogenated Agents.
  - 1.8.2. Pharmacology of the Main Agents.





- 1.9. Pharmacology and Anesthesia III. Non-inhaled Drugs.
  - 1.9.1. Pharmacology of Inducers.
  - 1.9.2. Pharmacology of Sedatives.
  - 1.9.3. Pharmacology of Opioids.
  - 1.9.4. Pharmacology of Non-steroid Anti-inflammatory Drugs.
  - 1.9.5. Pharmacology of Neuromuscular Blockers.
- 1.10. Physiological Constants Charts, Medication Charts, Dosage Calculation (etc.).
  - 1.10.1. Physiological Constants Charts.
  - 1.10.2. Continuous Medical Infusion Charts.
  - 1.10.3. Dose Calculation Sheets.

## Module 2. Monitoring

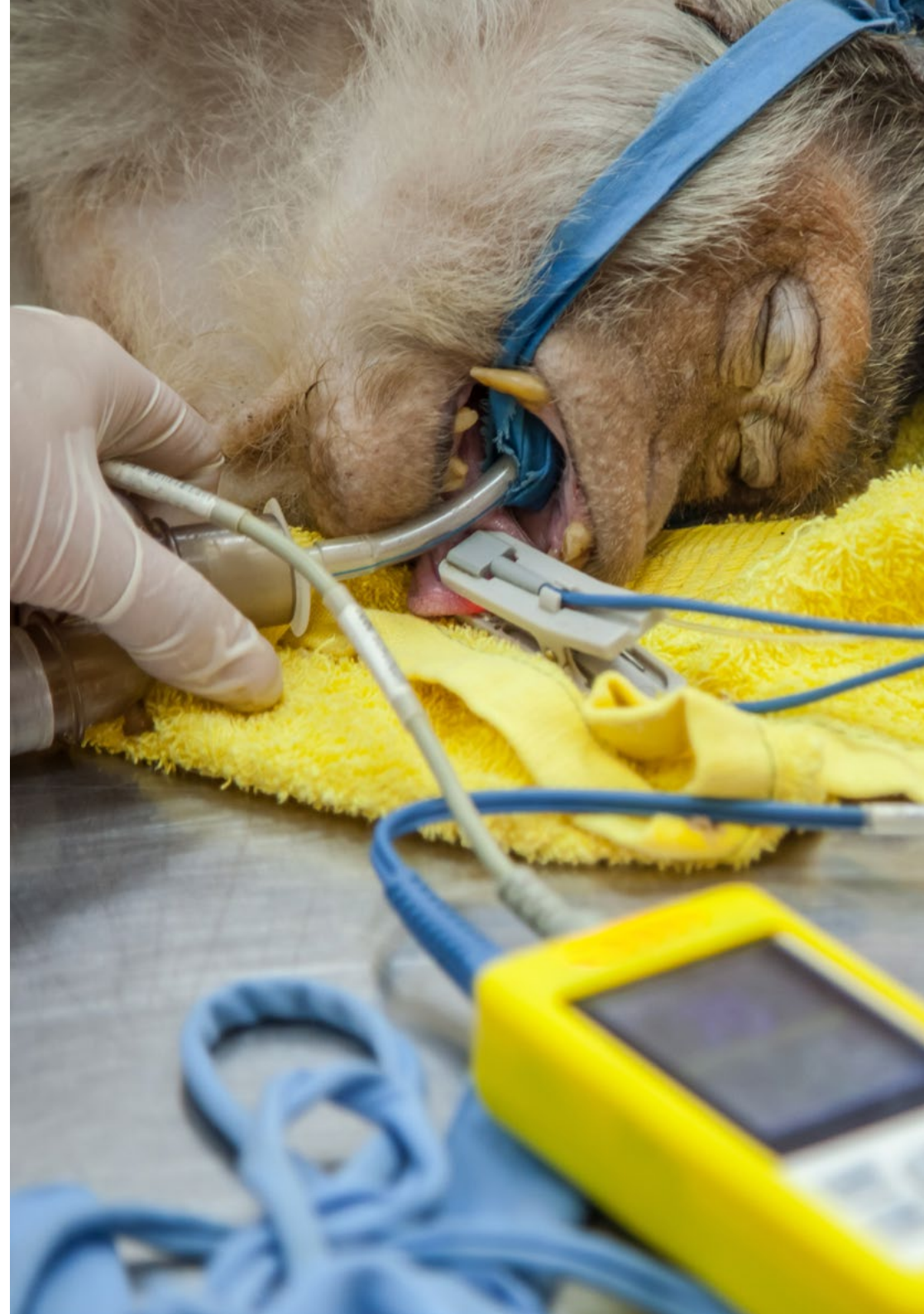
- 2.1. Basic Monitoring
  - 2.1.1. Palpation
  - 2.1.2. Observation
  - 2.1.3. Auscultation
  - 2.1.4. Temperature Monitoring
- 2.2. Electrocardiography
  - 2.2.1. Introduction to Electrocardiography
  - 2.2.2. ECG Interpretation in Anesthesia
- 2.3. Arterial Pressure
  - 2.3.1. Introduction to Arterial Pressure Physiology
  - 2.3.2. Medication Methods of Arterial Pressure
  - 2.3.3. Non-invasive Arterial Pressure
  - 2.3.4. Invasive Arterial Pressure
- 2.4. Cardiac Output Monitoring
  - 2.4.1. Introduction to Cardiac Output Physiology
  - 2.4.2. Different Methods of Monitoring Cardiac Output
- 2.5. Ventilatory Monitoring I. Pulse Oximetry
  - 2.5.1. Physiological Introduction
  - 2.5.2. Plethysmogram Interpretation



- 2.6. Ventilatory Monitoring II Capnography.
  - 2.6.1. Physiological Introduction
  - 2.6.2. Capnogram Interpretation
- 2.7. Ventilatory Monitoring III
  - 2.7.1. Spirometry.
  - 2.7.2. Anesthetic Gases
  - 2.7.3. Arterial Blood Gas Analysis
- 2.8. Hypnosis Monitoring
  - 2.8.1. Introduction to Hypnosis During Anesthesia
  - 2.8.2. Subjective Monitoring of the Hypnosis Plane
  - 2.8.3. BIS Monitoring
- 2.9. Nociception Monitoring
  - 2.9.1. Physiology Introduction of Intraoperative Nociception
  - 2.9.2. Monitoring of Nociception by ANI
  - 2.9.3. Other Methods of Intraoperative Nociception Monitoring
- 2.10. Volemia Monitoring Acid/ Base Balance
  - 2.10.1. Introduction to the Physiology of Volemia During Anesthesia
  - 2.10.2. Monitoring Methods

### Module 3. Anesthetic Complications

- 3.1. Regurgitation/Aspiration
  - 3.1.1. Definition
  - 3.1.2. Treatment
- 3.2. Hypotension/Hypertension
  - 3.2.1. Definition
  - 3.2.2. Treatment
- 3.3. Hypocapnia/Hypercapnia
  - 3.3.1. Definition
  - 3.3.2. Treatment
- 3.4. Bradycardia/Tachycardia
  - 3.4.1. Definition
  - 3.4.2. Treatment





- 3.5. Other Alterations in an Electrodiagram
  - 3.5.1. Definition
  - 3.5.2. Treatment
- 3.6. Hypothermia/Hyperthermia
  - 3.6.1. Definition
  - 3.6.2. Treatment
- 3.7. Nociception/Intraoperative Awakening
  - 3.7.1. Definition
  - 3.7.2. Treatment
- 3.8. Airway Complications/Hypoxia
  - 3.8.1. Definition
  - 3.8.2. Treatment
- 3.9. Cardiorespiratory Arrest
  - 3.9.1. Definition
  - 3.9.2. Treatment
- 3.10. Various Complications
  - 3.10.1. Post-Anesthesia Blindness
  - 3.10.2. Postanesthetic Tracheitis
  - 3.10.3. Post-anesthesia Cognitive Dysfunction.



*This training will allow you to advance in your career comfortably"*

05

# Methodology

This training provides you with a different way of learning. Our methodology uses a cyclical learning approach: ***Re-learning***.

This teaching system is used 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 Re-learning, 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

In a given clinical situation, what would you do? 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 abundant scientific evidence on the effectiveness of the method. Specialists learn better, faster, and more sustainably over time.

*With TECH you can 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 potential or because of its uniqueness or rarity. It is essential that the case be based on current professional life, trying to recreate the real conditions in the 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 achieve the assimilation of concepts, but also a development of their mental capacity through exercises to evaluate real situations and the application of knowledge.
2. The learning process has a clear focus on 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.



## Re-Learning Methodology

At TECH we enhance the Harvard case method with the best 100% online teaching methodology available: Re-learning.

Our 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, which represent a real revolution with respect to simply studying and analyzing 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 Re-learning method has managed to improve the overall satisfaction levels of professionals who complete their studies, with respect to the quality indicators of the best Spanish-speaking online university (Columbia University).

With this Methodology we have trained more than 65,000 veterinarians with unprecedented success, in all clinical specialties regardless of the Surgical Load. All this in a highly demanding environment, where the students have a strong socio-economic profile and an average age of 43.5 years.

*Re-learning 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 to success.*

In our program, learning is not a linear process, but rather a spiral (we learn, unlearn, forget, and re-learn). Therefore, we combine each of these elements concentrically.

The overall score obtained by our learning system is 8.01, according to the highest international standards.



In this program you will have access to the best educational material, prepared with you in mind:



### Study Material

All the teaching materials are specifically created for the course, by specialists who teach on 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.



### Latest Techniques and Procedures on Video

We bring you closer to the latest Techniques, to the latest Educational Advances, to the forefront of current Veterinary Techniques and Procedures. All this, in first person, with the maximum rigor, explained and detailed for your assimilation and understanding. And best of all, you can watch them as many times as you want.



### 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 unique multimedia content presentation training system 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 training.





### Expert-Led Case Studies and Case Analysis

Effective learning ought to be contextual. Therefore, we will present you with real case developments in which the expert will guide you through focusing on and solving the different situations: a clear and direct way to achieve the highest degree of understanding.



### Testing & Re-Testing

We periodically evaluate and re-evaluate your knowledge throughout the program, through assessment and self-assessment activities and exercises: so that you can see how you are achieving your 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 our difficult future decisions.



### Quick Action Guides

We offer you the most relevant contents of the course in the form of worksheets or quick action guides. A synthetic, practical, and effective way to help you progress in your learning.





# 06

# Certificate

Through a different and stimulating learning experience, you will be able to acquire the necessary skills to take a big step in your training. An opportunity to progress, with the support and monitoring of a modern and specialized university, which will propel you to another professional level.



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*Include in your training a Postgraduate Diploma in Anesthetic Monitoring in Veterinary Medicine: a highly qualified added value for any professional in this area"*

This Postgraduate Diploma in Anesthetic Monitoring in Veterinary Medicine contains the most complete and up-to-date scientific program on the market

After students have passed the evaluations, they will receive their corresponding Postgraduate Diploma issued by TECH Technological University via tracked delivery\*.

The diploma 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 Anesthetic Monitoring in Veterinary Medicine

ECTS: 18

Official Number of Hours: 450



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



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



**Postgraduate Diploma**  
Anesthetic  
Monitoring  
in Veterinary Medicine

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

# Postgraduate Diploma Anesthetic Monitoring in Veterinary Medicine