Postgraduate Diploma
Pharmacology Related to Anesthesia

tech global university

Postgraduate Diploma
Pharmacology Related to Anesthesia

» Modality: **online**
» Duration: **6 months**
» Certificate: **TECH Global University**
» Credits: **16 ECTS**
» Schedule: **at your own pace**
» Exams: **online**

Website: **www.techtitute.com/us/veterinary-medicine/postgraduate-diploma/postgraduate-diploma-pharmacology-related-anesthesia**

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01
Introduction

The scientific developments of the last few decades have led to the implementation of new methods and protocols in the field of anesthetic application in veterinary medicine. New drugs make it possible to perform longer interventions with less risk, or to carry out anesthetic induction in patients with important pathologies or delicate health conditions. The importance of these advances requires the professional to have a specific and in-depth knowledge of all of them in order to remain at the forefront in their professional practice: a specific objective that this training will allow you to achieve in a simple and practical way.

Acquire the knowledge and practical routines of Pharmacology Related to Anesthesia, in relation to the latest advances in drugs, in the most intensive and effective training in the online educational market"

Effective veterinary interventions often require the use of anesthetic techniques. A careful approach that requires the choice of the appropriate measures and drugs in each case and that implies the involvement of numerous aspects of fundamental importance that will determine the success of the process.

The implementation of the use of new drugs, new protocols and new ways of working in this area, have made it essential for professionals to study and deepen their understanding of these issues.

In this scenario, the Postgraduate Diploma in Pharmacology Related to Anesthesia is configured as a unique opportunity to acquire, in a single training, all the necessary knowledge in this extensive field.

With a vision totally focused on practical experience, this Postgraduate Diploma will provide you with the best learning systems, to allow you to learn efficiently and put into clinical practice everything you have learned immediately.

This **Postgraduate Diploma in Pharmacology Related to Anesthesia** 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.

Become fully and adequately qualified in Pharmacology Related to Anesthesia with this highly effective Postgraduate Diploma and open new avenues for your professional progress"

Receive complete and appropriate training in Veterinary Anesthiology with this highly effective Postgraduate Diploma and open new pathways for your 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.

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"

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 Pharmacology Related to Anesthesia. 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.

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.

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

- 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.
- Use of tables for the preparation of anesthetic or anesthesia-related drug combinations
- Know the characteristics of each anesthetic timing and the control points to take into account in order to increase patient safety.
- Know the specific needs in terms of fluid therapy and transfusion medicine related to the perioperative period.
- Learn and understand the physiology of nociceptive and acute and chronic pain.
- Acquire a logical understanding of the physiological implications of untreated pain
- In-depth knowledge of the different analgesics and their indications
- Know how to assess both acute and chronic pain

Specific Objectives

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.
- Practical knowledge of the different phases of anesthesia, from the preoperative assessment to the awakening of the patient, and the main postoperative care.
- Know the characteristics of premedication, induction, maintenance and education, in order to minimize anesthetic risks as much as possible.
- Understand in a practical way the differences during the maintenance phase in the case of inhalation and intravenous anesthesia.
- Know the characteristics and indications of perioperative fluid therapy and the administration of blood products.

Module 3.
- Understand the different nociceptive pathways and the phenomena of central and peripheral sensitization.
- Understand the action of each family of analgesics and their use in both acute and chronic pain.
- Know the importance and the different methods of acute and chronic pain assessment.

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.

Leading professionals in the field have come together to teach you the latest advances in Pharmacology Related to Anesthesia"

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 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.

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.

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 Pharmacology Related to Anesthesia 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 Opiodes.
- 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. Anesthetic Timings

2.1. Pre-Anesthetic/Anesthetic Risk Assessment.
- 2.1.1. Anesthetic Risk Versus Procedure Risk.
- 2.1.2. ASA Classification.

2.2. Pre-medication Premedication Drugs.
- 2.2.1. Sedatives.
- 2.2.2. Opioids
- 2.2.3. Alpha-2 Agonists.
- 2.2.4. Benzodiazepines.
- 2.2.5. NSAIDS.
- 2.2.6. Others.

2.3. Induction Intubation.
- 2.3.1. Induction Drugs.
  - 2.3.1.1. Propofol.
  - 2.3.1.2. Alfaxalone.
  - 2.3.1.3. Thiopental.
  - 2.3.1.4. Etomidate.
  - 2.3.1.5. Adjuvants.
- 2.3.2. Intubation Maneuver.
 - 2.3.2.1. Sellick Maneuver.

Module 3. Analgesia

3.1.   Pain Physiology.

    3.1.1.   Nociceptive Pathways.

    3.1.2.   Peripheric Sensitization.

    3.1.3.   Central Sensitization.

3.2.   Chronic Pain I. Osteoarthrosis.

    3.2.1.   Peculiarities of OA Pain.

    3.2.2.   Basic Lines of Pain Treatment Due to OA.

3.3.   Chronic Pain II. Oncologic Pain; Neuropathic Pain.

    3.3.1.   Peculiarities of Oncological Pain.

    3.3.2.   Peculiarities of Neuropathic Pain.

    3.3.3.   Basic Lines of Treatment.

3.4.   Opioid Analgesics.

    3.4.1.   General Characteristics of Opioids.

    3.4.2.   Opioid Peculiarities in Felines.

3.5.   Non-Steroidal Anti-Inflammatory Drugs (NSAIDs).

    3.5.1.   General Characteristics of NSAIDS.

    3.5.2.   NSAIDS Peculiarities in Felines.

3.6.   Other Analgesics I: Ketamine, Lidocaine.

    3.6.1.   Ketamine. General Characteristics.

    3.6.2.   Lidocaine. General Characteristics.

        3.6.2.1. Precautions with Felines.

3.7.   Other Analgesics II.

    3.7.1.   Paracetamol.

    3.7.2.   Dipyrone.

    3.7.3.   Gabapentinoids (Gabapentin and Pregabalin).

    3.7.4.   Amantadine.

    3.7.5.   Grapiprant.
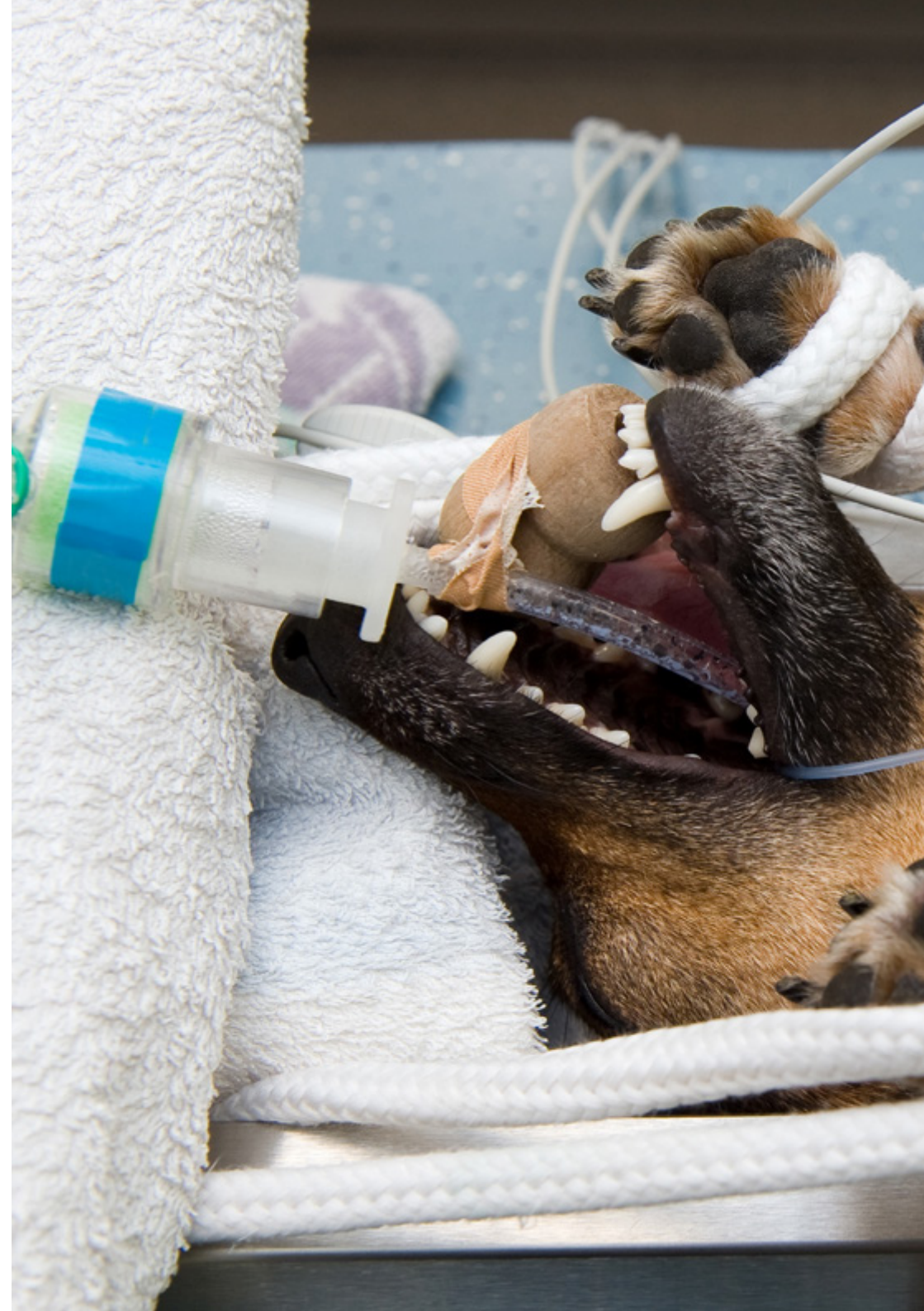
A comprehensive teaching program, structured in well-developed teaching units, oriented towards learning that is compatible with your personal and professional life"

05
Methodology

This 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.

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.
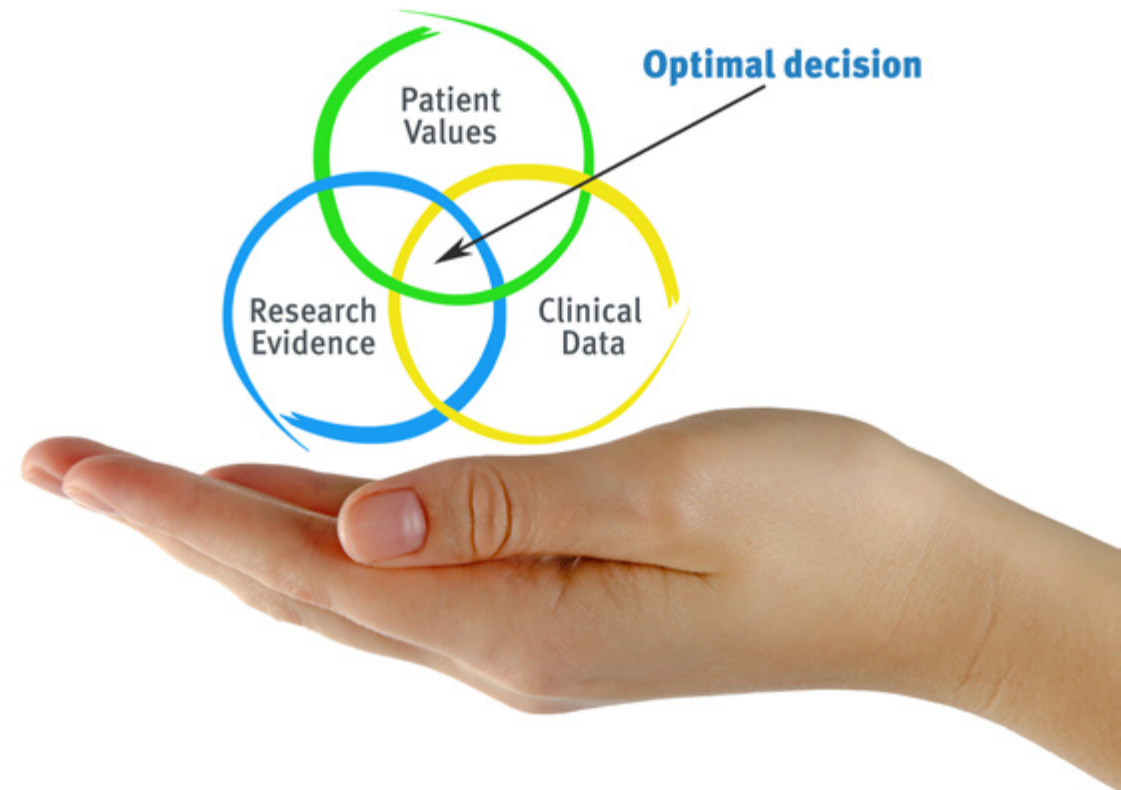
According to Dr. Gérvas, the clinical case is the annotated presentation of a patient, or group of patients, which becomes a "case", an example or model that illustrates some peculiar clinical component, either because of its teaching potential or because of its uniqueness or rarity. It is essential that the case be based on current professional life, trying to recreate the real conditions in the Veterinarian's Professional Practice.

Did you know that this method was developed in 1912 at Harvard for law students? The case method consisted of presenting sAtudents 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.

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 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.

20%

15%

15%

3%

20%

17%

7%

3%
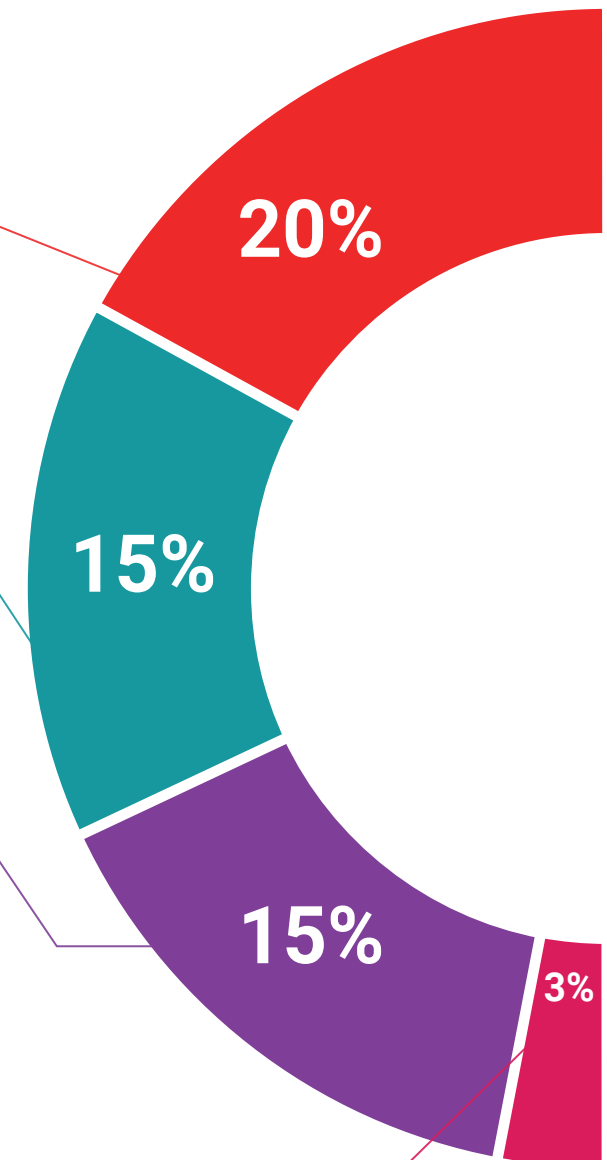
Expert-Led Case Studies and Case Analysis

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.

Include in your training a Postgraduate Diploma in Pharmacology Related to Anesthesia: a highly qualified added value for any professional in this area"

This program will allow you to obtain your **Postgraduate Diploma in Pharmacology Related to Anesthesia** 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 Diploma in Pharmacology Related to Anesthesia**

Modality: **online**

Duration: **6 months**

Accreditation: **16 ECTS**

tech global university

Mr./Ms. _____, with identification document _____
has successfully passed and obtained the title of:

Postgraduate Diploma in Pharmacology Related to Anesthesia

This is a program of 400 hours of duration equivalent to 16 ECTS, with a start date of dd/mm/yyyy and an end date of dd/mm/yyyy.

TECH Global University is a university officially recognized by the Government of Andorra on the 31st of January of 2024, which belongs to the European Higher Education Area (EHEA).

In Andorra la Vella, on the 28th of February of 2024

Dr. Pedro Navarro Illana
Rector

This qualification must always be accompanied by the university degree issued by the competent authority to practice professionally in each country.   Unique TECH Code: AFWORD23S   techtitute.com/certificates

*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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Postgraduate Diploma
Pharmacology Related to Anesthesia

» Modality: **online**
» Duration: **6 months**
» Certificate: **TECH Global University**
» Credits: **16 ECTS**
» Schedule: **at your own pace**
» Exams: **online**

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