

Postgraduate Certificate

Update on Veterinary Chemotherapy





Postgraduate Certificate Update on Veterinary Chemotherapy

- » Modality: online
- » Duration: 12 weeks
- » Certificate: TECH Technological University
- » Dedication: 16h/week
- » Schedule: at your own pace
- » Exams: online

Website: www.techtute.com/in/veterinary-medicine/postgraduate-certificate/update-veterinary-chemotherapy

Index

01

Introduction

p. 4

02

Objectives

p. 8

03

Course Management

p. 12

04

Structure and Content

p. 16

05

Methodology

p. 22

06

Certificate

p. 30

01

Introduction

Antineoplastic Pharmacology studies drugs that act on neoplastic cells that may appear in animals. Pharmacology intervenes by trying to eliminate them in their entirety, affecting the patient's normal cells as little as possible. This program offers you all the advances in this field, in a high-quality program, which offers the most advanced resources in online specialization, to guarantee the student an effective, real and practical learning that boosts their competencies to the highest level in this area of work.



“

All the advances in Pharmacology and their application in the field of chemotherapy in animals, in a program of high impact competence”

Anti-infective pharmacology is characterized by the study of drugs that have to act on cells other than those of the veterinary patient, which are intended to be eliminated in their entirety. They are capable of destroying or inhibiting the development of live germs that cause infections by acting through different pharmacological targets.

These drugs can act by destroying or inhibiting the development of tumor cells. TECH considers this program of great interest, due to the increasing incidence of neoplastic diseases in animals, with a greater emphasis on small animals.

This Postgraduate Certificate will bring you up to date on all of them and the new forms and protocols of action.

This **Postgraduate Certificate in Update on Veterinary Chemotherapy** contains the most complete and up-to-date educational program on the market. The most important features include:

- ♦ Innovative and up-to-date diagnostic techniques in infectious diseases and their application in daily clinical practice, including the use of cytology as a diagnostic tool in these diseases
- ♦ The most frequent and not so frequent pathologies of infectious origin in dogs from a practical and completely up-to-date point of view
- ♦ Infectious Pathologies oriented to the Feline Species, dealing extensively with all those of this species
- ♦ "One Health" vision, in which Zoonoses and their implications for public health will be reviewed
- ♦ At present, there are no more exotic diseases, and they should be included by the clinician in the differential diagnosis when the epidemiology allows to suspect them
- ♦ Prevention and management of all infectious diseases, including clinical, home and community settings



A program created to examine and explain the main pharmacological properties of antineoplastic drug groups"

“

A great opportunity for the Veterinary Medicine professional to advance in their competences and to get up to date in all the new developments in the pharmacological approach"

Its teaching staff includes professionals belonging to the field of Veterinary Medicine, who bring to this program the experience of their work, as well as renowned specialists from reference societies and prestigious universities.

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

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

Learn in an efficient way, with a real qualification objective, with this Postgraduate Certificate, unique for its quality and price, in the online teaching market.

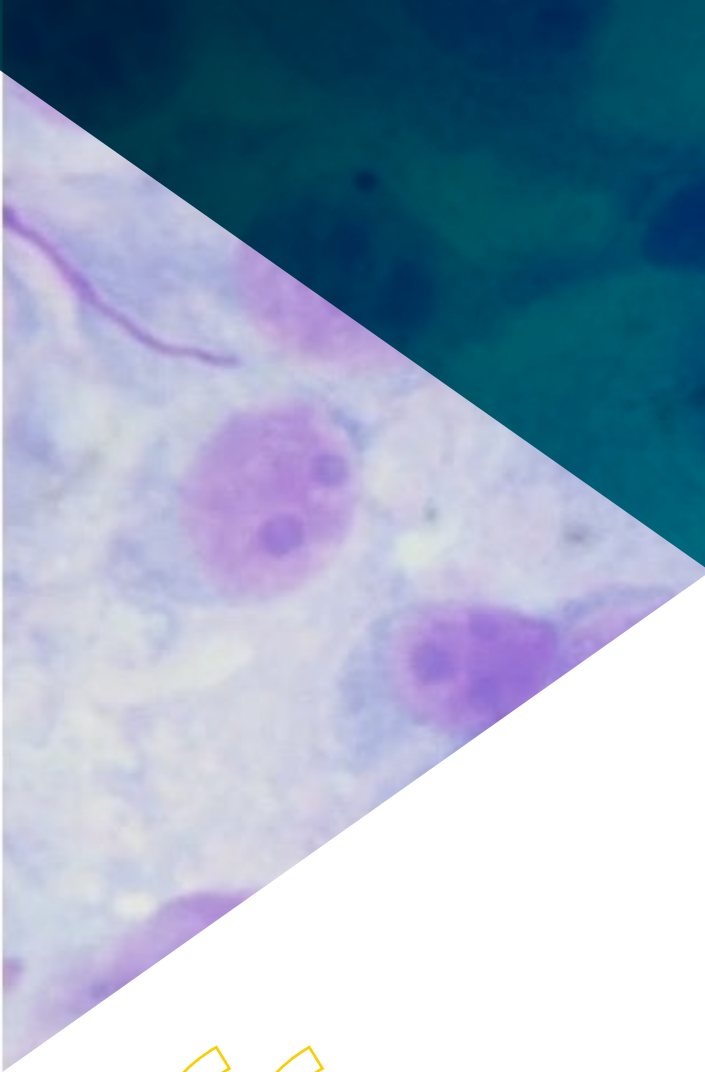
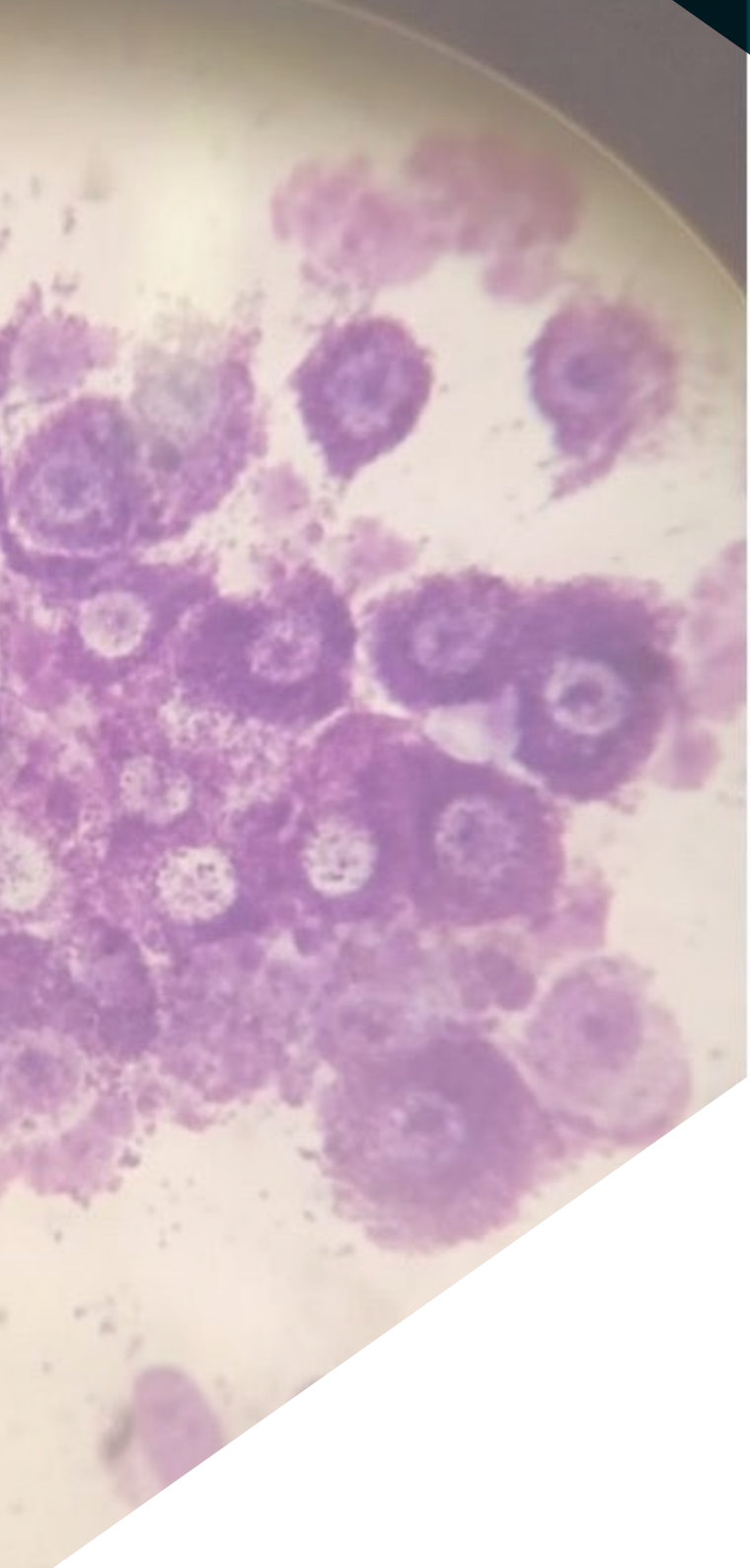
A revolutionary specialization for its ability to reconcile the highest quality of learning with the most complete online preparation.



02 Objectives

The Postgraduate Certificate aims to provide students with the skills required in relation to preclinical or clinical research of drugs used in veterinary chemotherapy, and their application in the therapeutic use of drugs so that they can be integrated into the professional field.





“

A complete update that will allow you to act according to the most up-to-date protocols in the use of antineoplastic drugs"



General Objectives

- Examine and explain the main pharmacological properties of the anti-infective drug groups
- Identify the different pharmacological targets involved in anti-infective agents
- Recognize the main pharmacological characteristics (mechanism of action, pharmacokinetics and therapeutic and toxic effects) of groups of anti-infective drugs
- Examine and explain the main pharmacological properties of the antineoplastic drug groups
- Identify the different pharmacological targets involved in antineoplastic agents
- Know the main toxic effects of antineoplastic drugs



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





Specific Objectives

- ♦ Analyze the historical development of antiseptic and chemotherapeutic substances
- ♦ Point out the general principles of chemotherapy and the drugs that comprise it
- ♦ Define the concepts of antiseptic and antibiotic
- ♦ Explain the mechanisms of antibiotic resistance
- ♦ Classify antibiotics according to mechanism of action
- ♦ Describe each of the groups of antibiotics and know their mechanism of action
- ♦ Classifying antifungal and antiviral drugs
- ♦ Describe each of the groups of antifungal and antiviral drugs and their mechanism of action
- ♦ Analyze the importance of antiparasitics in Veterinary Medicine
- ♦ Analyzing cancer in small animals
- ♦ Point out the general principles in the use of antineoplastic drugs
- ♦ Know the care in the application of antineoplastic drugs
- ♦ Classify the main families of chemotherapeutics
- ♦ Determine the main drugs for palliative use in neoplasms
- ♦ Consider the use of each antineoplastic according to the pathology
- ♦ Analyze the main toxicity effects of antineoplastic drugs
- ♦ Describe each of the groups of antifungal and antiviral drugs and their mechanism of action
- ♦ Analyze the importance of antiparasitics in Veterinary Medicine

03

Course Management

The teaching team of this Postgraduate Certificate is prepared by professionals specialized in the study of Pharmacology, both human and veterinary, with clinical experience in small and large animals. They have extensive and recognized teaching and research experience, with officially recognized six-year research periods, participation in numerous research projects and dissemination of their research both nationally and internationally in high impact journals, books and conferences.



“

A unique opportunity to learn with internationally renowned professors, with teaching, clinical and research experience”

Management



Dr. Santander Ballestín, Sonia

- ♦ Teaching Coordinator, Department of Pharmacology, University of Zaragoza, Spain
- ♦ Lecturer in the university course: "Introduction to Pharmacology: Principles for the Rational Use of Drugs" Basic Program of the University of Experience of Zaragoza
- ♦ Evaluation professor in: objective-structured clinical evaluation of the Degree in Medicine
- ♦ Degree in Biology and Biochemistry, specializing in the area of Pharmacology
- ♦ PhD with the European Degree from the University of Zaragoza
- ♦ Master's Degree in Environment and Water Management. Andalusia Business School
- ♦ Title of the doctoral program: Biochemistry and Molecular and Cellular Biology

Professors

Ms. Luesma Bartolomé, María José

- ♦ Veterinarian. Study Group on Prion Diseases, Vectorial Diseases and Emerging Zoonoses at the University of Zaragoza
- ♦ Study group of the University Research Institute
- ♦ Professor of Film and Anatomy. University Degree: Complementary Academic Activities
- ♦ Professor of Anatomy and Histology University degree: Graduate in Optics and Optometry. University of Zaragoza
- ♦ Professor of Final Degree Project University Degree, Bachelor's Degree in Medicine
- ♦ Professor of Morphology. Development Biology University degree: Professional Master's Degree in Initiation to Research in Medicine. University of Zaragoza
- ♦ Doctor of Veterinary Medicine. Official Doctorate Program in Veterinary Sciences. University of Zaragoza
- ♦ Degree in Veterinary Medicine. University of Zaragoza

Dr. García Barrios, Alberto

- ♦ Interim Professor at the University of Zaragoza
- ♦ Casetas Veterinary Clinic
- ♦ Utebo Veterinary Clinic
- ♦ Nanoscale Biomagnetics R&D Researcher
- ♦ Veterinary Clinic Utebo. Clinical Veterinarian
- ♦ PhD in Veterinary Science
- ♦ Teacher with an interim contract. University of Zaragoza
- ♦ Degree in Veterinary Medicine
- ♦ Postgraduate Veterinary Oncology (Improve International). Homologation of the qualification to work with experimental animals

04

Structure and Content

This Postgraduate Certificate provides all the necessary knowledge to be able to perform Pharmacology in Veterinary Medicine in the best possible way. It is important to take into account that the contents allow the student to obtain specialized knowledge of pharmacology, as well as the ability to deal with different solutions for veterinary pathologies. A complete and accessible journey that will make a difference in your career progression.



“

A complete course that will take you through the exhaustive program necessary to intervene as a specialist in the theoretical and practical aspects of Veterinary Pharmacology"

Module 1. Antiseptics and Chemotherapeutics I

- 1.1. Introduction. Definition of Antiseptic and Chemotherapeutic. Antiseptics
 - 1.1.1. Introduction
 - 1.1.2. Antiseptic and Disinfectant Concept
 - 1.1.3. Factors Affecting the Potency of Antiseptics and Disinfectants
 - 1.1.4. Characteristics of an Ideal Antiseptic and Disinfectant
 - 1.1.5. Classification of Disinfectants and Antiseptics
 - 1.1.6. Main Antiseptics and Disinfectants for Clinical Use
 - 1.1.6.1. Alcohol
 - 1.1.6.2. Biguanides
 - 1.1.6.3. Halogenated Products
 - 1.1.6.4. Peroxygens
 - 1.1.6.5. Other Antiseptics
- 1.2. Introduction to Antimicrobial Therapy. Types of Antibiotics. Rational Use
 - 1.2.1. Introduction
 - 1.2.2. Historical Review of Antimicrobial Therapy
 - 1.2.3. Side Effects
 - 1.2.4. Principles of Antibiotherapy
 - 1.2.5. Resistance: Types and Mechanisms of Occurrence
 - 1.2.6. Waiting Times
 - 1.2.7. Requirements for an Antimicrobial
 - 1.2.8. Classification of Antimicrobials
 - 1.2.8.1. According to its Spectrum
 - 1.2.8.2. According to its Effect
 - 1.2.8.3. According to its Mechanism of Action
 - 1.2.8.4. According to its Chemical Group
 - 1.2.8.5. Depending on the Microorganism Affected
 - 1.2.9. Criteria to be Followed in the Selection of a Drug
- 1.3. Antimicrobials that Act Against the Bacterial Wall. Antibiotics that Inhibit Protein Synthesis
 - 1.3.1. Antibiotics Acting Against the Bacterial Wall
 - 1.3.1.1. General Aspects
 - 1.3.1.2. Betalactams (b-lactams)
 - 1.3.1.2.1. Penicillin
 - 1.3.1.2.2. Cephalosporins
 - 1.3.1.2.3. Vancomycin and Bacitracin
 - 1.3.2. Antibiotics that Inhibit Protein Synthesis
 - 1.3.2.1. Aminoglycosides
 - 1.3.2.2. Tetracyclines
 - 1.3.2.3. Chloramphenicol and Derivatives
 - 1.3.2.4. Macrolides and Lincosamides
 - 1.3.3. β -Lactamase Inhibitors
- 1.4. Antibiotics that Act on the Synthesis of Nucleic Acids. Antibiotics Acting on the Bacterial Membrane
 - 1.4.1. Fluroquinolones
 - 1.4.2. Nitrofurans
 - 1.4.3. Nitroimidazoles
 - 1.4.4. Sulfamides
 - 1.4.5. Polymyxins and Thyrothricin
- 1.5. Antifungal
 - 1.5.1. General Description of the Mycotic Structure
 - 1.5.2. Classification of Antifungal Agents by Chemical Structure
 - 1.5.3. Systemic Antifungals
 - 1.5.4. Topical Antifungals



1.6. Antivirals

1.6.1 Objective of Antiviral Chemotherapy

1.6.2 Groups of Antivirals According to their: Origin, Chemistry, Pharmacological Action, Pharmacokinetics, Pharmacodynamics, Posology, Therapeutic Uses, Adverse Reactions, Contraindications, Interactions and Pharmaceutical Forms

1.6.2.1. Inhibitors of RNA and DNA Synthesis

1.6.2.2. Purine Analogs

1.6.2.3. Pyrimidine Analogs

1.6.2.4. Reverse Transcriptase Inhibitors

1.6.2.5. Interferons

1.7. Antiparasitics II

1.7.1. Introduction to Antiparasitic Therapy

1.7.2. Importance of Dewormers in Veterinary Medicine

1.7.3. General Concepts: Antinematodic, Anticestodic, Antitrematodic, Antiprotozoal, Ectoparasiticide and Endectocide

1.8. Antiparasitics for Internal or Endoparasitic Use

1.8.1. Antinematodes

1.8.2. Antistatics

1.8.3. Antitrematodic

1.8.4. Antiprotozoals

1.9. Antiparasitics for External or Ectoparasitic Use

1.9.1. Introduction to External Parasites

1.9.2. Antiparasitics II

1.10. Antiparasitics for Internal and External Use or Endectocides

1.10.1. Introduction

1.10.2. Macrocyclic Lactones

1.10.3. Main Combinations of Endectocide Use

Module 2. Chemotherapy II: Antineoplastic Drugs

- 2.1. Introduction to Antineoplastic Therapy
 - 2.1.1. Cancer in Veterinary Medicine: Pathophysiology and Etiology of Cancer
 - 2.1.2. Antineoplastic Treatment Approach: Drug Posology
 - 2.1.3. Administration of Chemotherapy Drugs
 - 2.1.3.1. Care in the Application of Chemotherapeutic Agents
 - 2.1.3.2. Standards and Instructions for Chemotherapy Application: Preparation During Preparation/Administration of Cytotoxic Drugs
- 2.2. Palliative Antineoplastic Pharmacology. Introduction to Special Antineoplastic Pharmacology
 - 2.2.1. Introduction to Palliative Antineoplastic Pharmacology: Oncologic Pain Control/ Assessment. Pharmacological Principles for Palliative Pain Management. Nutritional Management of the Oncology Patient
 - 2.2.2. Non-Steroidal Analgesics
 - 2.2.3. Opioids
 - 2.2.4. Others: NMDA Antagonists, Bisphosphonates, Tricyclic Antidepressants, Anticonvulsants, Nutraceuticals, Cannabidiol
 - 2.2.5. Introduction to Special Antineoplastic Pharmacology. Main Antineoplastic Drug Families
- 2.3. Family I: Alkylating Agents
 - 2.3.1. Introduction
 - 2.3.2. Nitrogen Mustards: Cyclophosphamide, Chlorambucil and Melphalan
 - 2.3.3. Nitrosoureas: Lomustine/Procarbazine
 - 2.3.4. Others: Hydroxyurea
 - 2.3.5. Main Uses in Veterinary Medicine
- 2.4. Family II: Antimetabolites
 - 2.4.1. Introduction
 - 2.4.2. Folic Acid Analogs (Antifolates): Methotrexate
 - 2.4.3. Purine Analogues: Azathioprine
 - 2.4.4. Pyrimidine Analogues: Cytosine Arabinoside, Gentamicin, 5-Fluorouracil
 - 2.4.5. Main Uses in Veterinary Medicine



- 2.5. Family III: Antibiotics
 - 2.5.1. Introduction
 - 2.5.2. Anthracycline-Derived Antibiotics (Doxorubicin/Other Anthracyclines) and Non-Anthracycline-Derived Antibiotics (Actinomycin-d, Mitoxantrone, Bleomycin)
 - 2.5.3. Main Uses in Veterinary Medicine
- 2.6. Family IV: Antineoplastics of Plant Origin
 - 2.6.1. Introduction
 - 2.6.2. Alkaloids: History/Antitumor Activity. Vinca Alkaloids
 - 2.6.3. Epipododiphyllotoxin-Derived Ligands
 - 2.6.4. Camptothecin Alkaloid Analogs
 - 2.6.5. Main Uses in Veterinary Medicine
- 2.7. Family V: Tyrosine Kinase Inhibitors
 - 2.7.1. Introduction
 - 2.7.2. Protein Kinases: Non-Receptor Tyrosine Kinase Proteins (NRTK; Receptor Tyrosine Kinase RTK)
 - 2.7.3. Toceranib
 - 2.7.4. Masitinib
 - 2.7.5. Main Uses in Veterinary Medicine
- 2.8. Platinum Derivatives
 - 2.8.1. Introduction
 - 2.8.2. Carboplatin
 - 2.8.3. Cisplatin
 - 2.8.4. Main Uses in Veterinary Medicine
- 2.9. Miscellaneous. Monoclonal Antibodies. Nanotherapy. L-asparaginase
 - 2.9.1. Introduction
 - 2.9.2. L-asparaginase
 - 2.9.3. Monoclonal Antibodies
 - 2.9.4. Tiglylanol Toglata (stelfonta)
 - 2.9.5. Immunotherapy
 - 2.9.6. Metronomic Therapy
- 2.10. Toxicity of Antineoplastic Drugs
 - 2.10.1. Introduction
 - 2.10.2. Hematological Toxicity
 - 2.10.3. Gastrointestinal Toxicity
 - 2.10.4. Cardiotoxicity
 - 2.10.5. Urinary Toxicity
 - 2.10.6. Specific Toxicities: Hepatic, Neurological, Cutaneous, Hypersensitivity, Breed/Species Associated
 - 2.10.7. Pharmacological Interactions



It advances towards excellence with the help of the best professionals and teaching resources of the moment"

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. Gervas, 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. Students like to feel that the effort they put into their studies is worthwhile. This then translates into a greater interest in learning and more time dedicated to working on the program.



Relearning Methodology

At TECH, we enhance the Harvard 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.

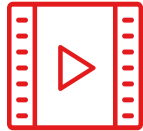
Relearning will allow you to learn with less effort and better performance, involving you more in your training, developing a critical mindset, defending arguments, and contrasting opinions: a direct equation for success.

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 adapted in 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

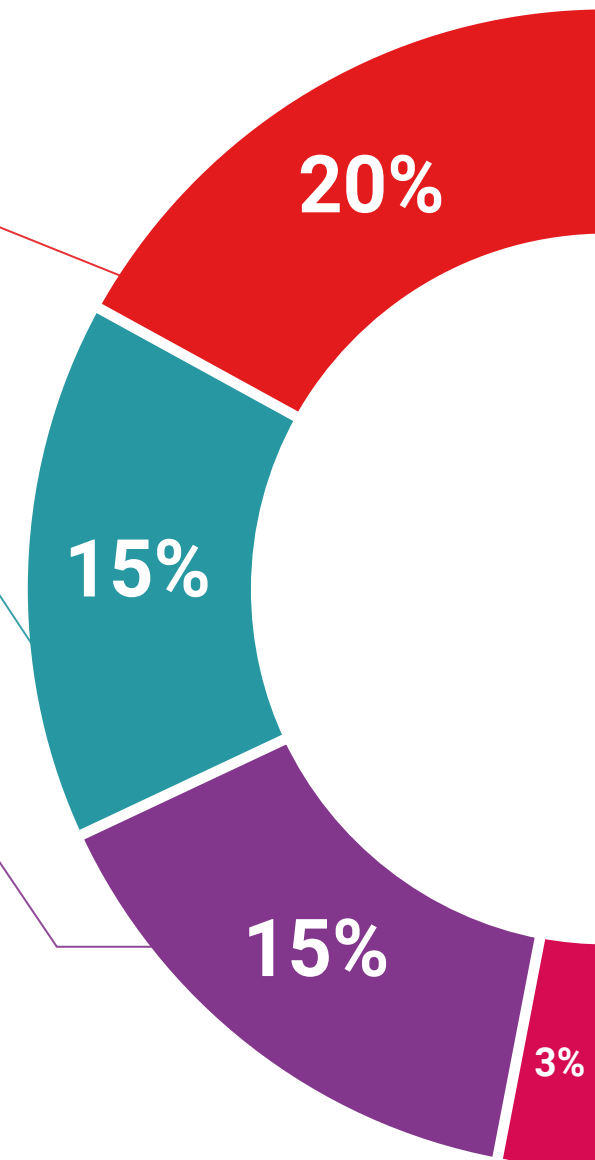
The TECH team presents the contents attractively and dynamically in multimedia lessons that include audio, videos, images, diagrams, and concept maps in order to reinforce knowledge.

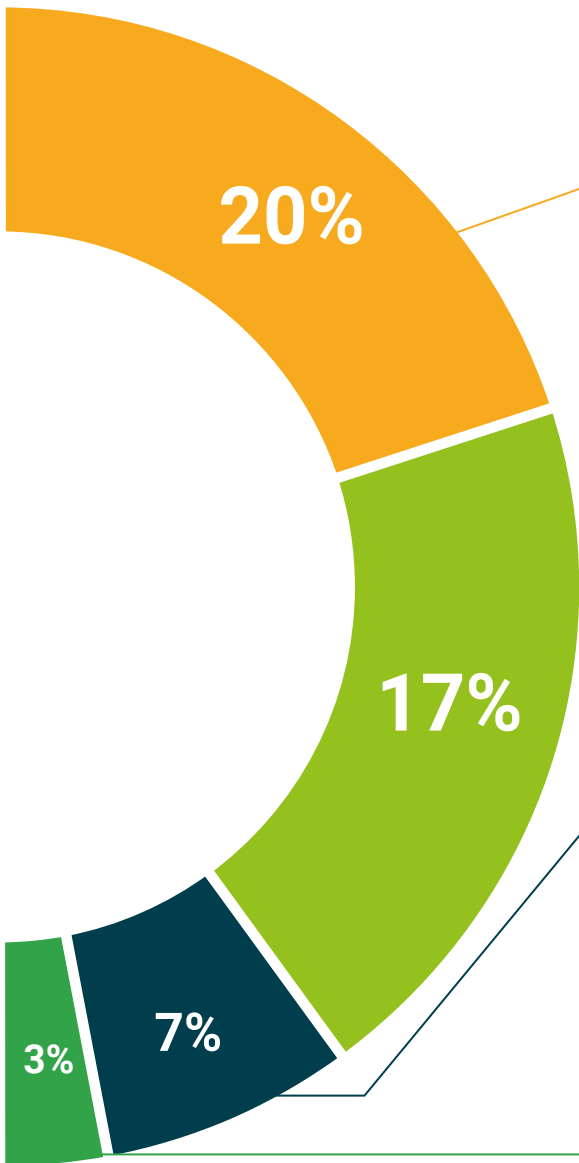
This exclusive educational system for presenting multimedia content was awarded by Microsoft as a "European Success Story".



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 Update on Veterinary Chemotherapy guarantees students, in addition to the most rigorous and up-to-date program, access to a Postgraduate Certificate 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 Certificate in Update on Veterinary Chemotherapy** contains the most complete and up-to-date scientific program on the market.

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

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

Title: **Postgraduate Certificate on Update on Veterinary Chemotherapy**

Official N° of hours: **300 h.**



*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.

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 technological
university

Postgraduate Certificate Update on Veterinary Chemotherapy

- » Modality: online
- » Duration: 12 weeks
- » Certificate: TECH Technological University
- » Dedication: 16h/week
- » Schedule: at your own pace
- » Exams: online

Postgraduate Certificate

Update on Veterinary Chemotherapy