



# Postgraduate Diploma Ultrasound in Feline Patients and Exotic Animals

» Modality: online

» Duration: 6 months

» Certificate: TECH Technological University

» Dedication: 16h/week

» Schedule: at your own pace

» Exams: online

Website: www.techtitute.com/pk/veterinary-medicine/postgraduate-diploma/postgraduate-diploma-ultrasound-feline-patients-exotic-animals

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# tech 06 | Introduction

Ultrasound in Feline Patients and Exotic Animals has become a basic diagnostic imaging procedure nowadays and is increasingly performed and required in daily clinical practice. It provides us with very relevant and sometimes conclusive information to reach a diagnosis in our patients.

This training will deepen your knowledge not only in the technical differences and how to apply them to obtain an excellent examination, but will also address the main pathologies that we can diagnose with the use of ultrasound in the chest, abdomen and cervical region. It will also cover the ultrasound and differential signs of these pathologies and other techniques that can be used to reach the definitive diagnosis.

However, ultrasound is not a commonly-used diagnostic tool in exotic animal clinics. The large number of species included in this field, the anatomical differences and the different methods of restraint mean that the clinician is not confident in the use of this imaging technique.

Technological advances and the development of new equipment with higher resolution have allowed the progression of ultrasound in these varied species, making it an essential diagnostic test.

Given the online format of this program, you will develop confidence, assurance and greater knowledge of pathologies and differential diagnoses when it comes to providing relevant and necessary information in daily ultrasound practice.

As it is an online program, the student is not conditioned by fixed schedules, nor do they need to move to physically move to another location. All of the content can be accessed at any time of the day, so you can balance your working or personal life with your academic life.

This **Postgraduate Diploma in Ultrasound in Feline Patients and Exotic Animals** 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, debate and knowledge forums.
- 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.



As the course is online, you will be able to train wherever and whenever you want, balancing your personal and professional life"



Achieve comprehensive and relevant training in Ultrasound in Feline Patients and Exotic Animals 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 Ultrasound in Feline Patients and Exotic Animals. Developed by a multidisciplinary team of e-learning experts, it integrates the latest advances in educational technology. In this way, you will be able to study with a range of easy-to-use and versatile multimedia tools that will give you the necessary skills you need for your specialization.

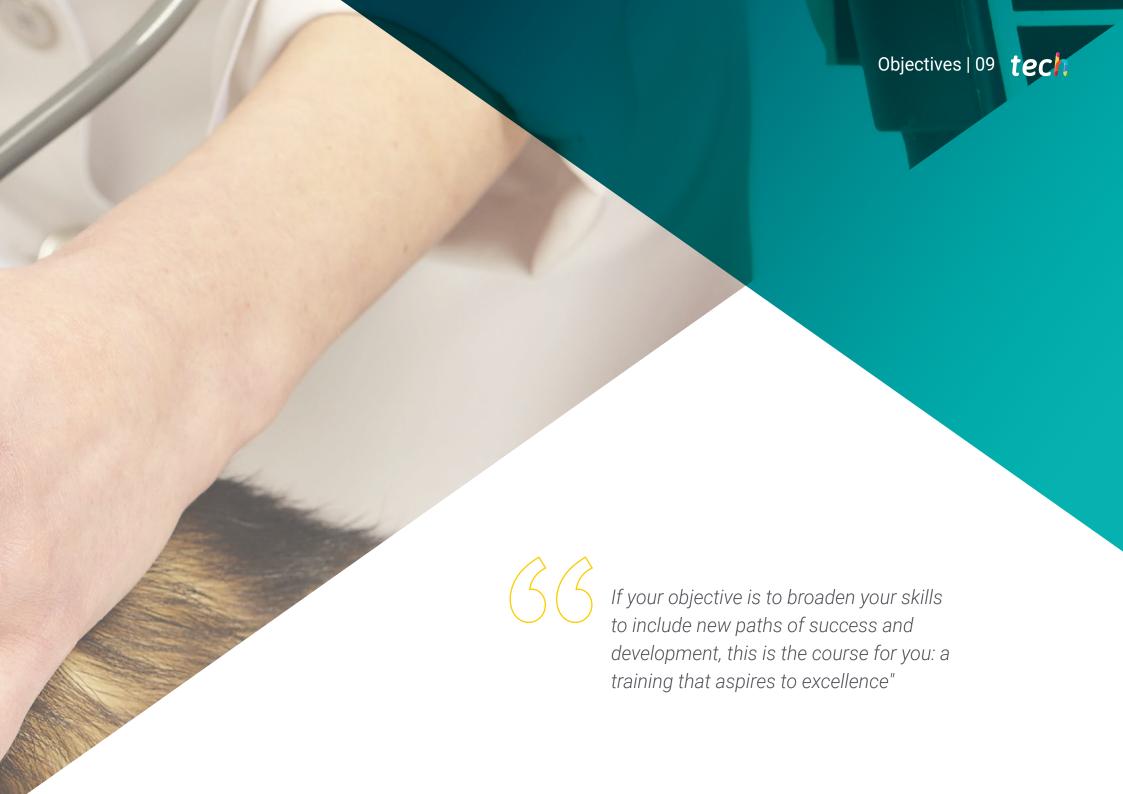
The design of this program is based on Problem-Based Learning: an approach that conceives learning as a highly practical process. To achieve this remotely, we will use telepractice: with the help of an innovative interactive video system, and learning from an expert, you will be able to acquire the knowledge 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.

Learn from real cases with this highly effective educational Postgraduate
Diploma and open up new paths to your professional progress

Immerse yourself in this training of the highest educational quality, which will allow you to face future challenges that may arise during daily practice in Ultrasound in Feline Patients and Exotic Animals





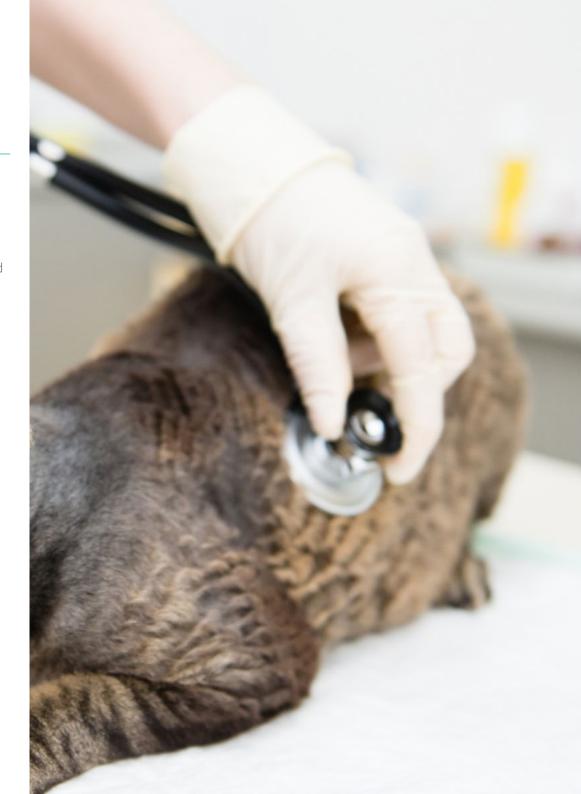


# tech 10 | Objectives



### **General Objectives**

- Establish the basics of pulmonary ultrasonography in cats, and the main pathological signs.
- Review feline pathologies that can be diagnosed using abdominal ultrasonography.
- Determine the situations in which it is advisable to perform a cervical ultrasound scan and which findings may be pathological.
- Take a closer look at the uses of Doppler ultrasound beyond echocardiography.
- List the possible complementary techniques for use with conventional ultrasound.
- Determine which organs or cavities can be evaluated by ultrasound-guided cytology.
- Establish ultrasonography as a diagnostic imaging tool in exotic animals or new companion animals (NCA).
- Study the difficulties of diagnostic ultrasound in different species.
- Develop specialized knowledge for the correct ultrasound interpretation of NCA anatomy.
- Identify the advantages of ultrasound scanning over other diagnostic imaging tests in small mammals, birds and reptiles.
- Improve reporting writing capabilities.
- Increase your knowledge of the jargon used in ultrasonography.
- Record and save studies and images in the most appropriate manner.
- Improve skills for describing organs and lesions using technical terms.





#### **Specific Objectives**

#### Module 1.

- · Recognize the signs of a healthy lung.
- Differentiate between the different findings in pulmonary ultrasound and be familiar with the different pathologies that can be correlated with these findings.
- Perform a FAST ultrasound scan on the emergency feline patient.
- Using ultrasonography, determine the main pathologies in abdominal organs and their correlation.
- Study the most common findings in the feline kidney and how to differentiate between acute and chronic kidney disease.
- Reliably measure the different renal structures (pelvis, ureter) and consider their possible differential diagnoses when they are altered.
- Differentiate between the different types of alteration in the gastrointestinal tract and their association with different feline diseases.
- Use abdominal ultrasound scans to diagnose biliary tract pathologies.
- Perform correct gestational diagnoses in cats.
- Incorporate the use of Doppler ultrasound to diagnose vascular pathologies.
- Incorporate the use of Doppler ultrasound to diagnose neoplastic pathologies.
- Use ultrasound as a diagnostic tool in pathologies affecting the cervix.
- Safely and effectively use ultrasound-guided punctures on a regular basis in organs, masses or cavities (gall bladder, cysts...).
- Determine when it is advisable to use contrasts in abdominal ultrasound scans and what information they can provide.

#### Module 2.

- Develop containment and positioning methods for the ultrasound study of small mammals, birds and reptiles.
- Study existing ultrasound equipment and diagnostic options.
- Determine the ultrasound protocol for small mammals: rabbits, ferrets, guinea pigs and small rodents
- Determine the ultrasound protocol for birds and reptiles.
- Determine the anatomical references for New Companion Animals (NCA) in ultrasonography.
- Identify ultrasound findings in the most common pathologies of New Companion Animals (NCA).
- Evaluate the different possibilities provided by ultrasound in daily clinical practice with New Companion Animals (NCA).

#### Module 3.

- Correctly handle abdominal, cardiac, ophthalmic or other organ or system ultrasound reports.
- Standardize the way in which reports are carried out.
- Work on and interpret the most commonly used physiological and pathological measurements in ultrasound.
- Train students to elaborate differential diagnoses and to issue a definitive diagnosis.
- Know how to advise a clinician based on study results.





# tech 14 | Course Management

#### Management



#### Dr. Conde Torrente, María Isabel

- Head of the Diagnostic Imaging and Cardiology Service at Hospital Veterinario Alcor. Currently
- Degree in Veterinary Medicine from the University of Santiago de Compostela in 2012 with a certified European degree
- Advanced Postgraduate Course in Diagnostic Imaging (Computerized Axial Tomography). General Practitioner Advanced Certificate TCESMD. 2019
- Postgraduate General Practitioner Certificate in Diagnostic Imaging (GPCert- DI) 2016
- Professor in Veterinary Practical Training in 2015 as a teacher for the official qualification of veterinary technical assistant
- Gives training courses on clinical and laboratory analysis for veterinarians at Hospital Veterinario Alberto Alcoce
- Medical Director and head of the Advanced Diagnostic Imaging Service at Grupo Peñagrande. Exclusive handling of TC General Electrics TriAc Revolution 16 cuts. (2017-2019)
- Head of the Diagnostic Imaging Service at Centro Veterinario Mejorada. (2016-2017)
- Responsible for diagnostic services at Hospital Veterinario Alberto Alcocer. (2013-2016)
- University of Santiago de Compostela. Department of Animal Pathology. Collaboration with the research group on heavy meta accumulation in bovine meat in collaboration with Cornell University. New York: published in the Journal of Animal Science.



## Course Management | 15 tech

#### **Professors**

#### Dr. Martí Navarro, María Teresa

- Clinical Veterinarian in several centers in Zaragoza and Valencia
- Associate Professor of the Department of Diagnostic Imaging at the CEU Cardenal Herrera University, Valencia
- Collaboration with the Cardiology Unit at Hospital la Fe, Valencia
- Degree in Biology from the University of Navarra
- Degree in Veterinary Medicine from the Faculty of Veterinary Medicine, Zaragoza.
- Improve Postgraduate Course in Cardiology
- Member of the AVEPA Diagnostic Imaging and Cardiology Group



Specialize in a growing sector with the help of the best specialists in the field"





# tech 18 | Structure and Content

#### Module 1. Ultrasound in Feline Patients

- 1.1. Pulmonary Ultrasound Scan
  - 1.1.1. Ultrasound Techniques
  - 1.1.2. Ultrasound Findings in a Healthy Lung
  - 1.1.3. Ultrasound Findings in Pulmonary Conditions
  - 1.1.4. FAST Ultrasound of the Thorax
- 1.2. Abdominal Ultrasound: Nephrourinary Pathologies
  - 1.2.1. Bladder and Urethra Ultrasound Scans
  - 1.2.2. Kidney and Ureter Ultrasound Scans
- 1.3. Abdominal Ultrasound: Gastrointestinal Pathologies
  - 1.3.1. Ultrasonography of the Stomach
  - 1.3.2. Ultrasound Scan of the Small Intestine
  - 1.3.3. Ultrasound Scan of the Large Intestine
- 1.4. Abdominal Ultrasonography: Liver and Biliary Pathologies
  - 1.4.1. Ultrasound Scan of the Liver
  - 1.4.2. Ultrasound Scan of the Biliary Tract
- 1.5. Abdominal Ultrasonography: Pancreatic and Adrenal Pathologies.
  - 1.5.1. Ultrasound Scan of the Pancreas
  - 1.5.2. Ultrasound Scan of the Adrenal Gland
- 1.6. Abdominal Ultrasound Scan: Splenic and Lymphatic Pathologies
  - 1.6.1. Ultrasound Scan of the Spleen
  - 1.6.2. Ultrasound Scan of the Lymph Nodes
- 1.7. Ultrasonography of Reproductive Conditions
  - 1.7.1. Gestational Diagnosis
  - 1.7.2. Ultrasound Scan of the Reproductive System in Cats
  - 1.7.3. Ultrasound of the Reproductive System in Cats
- 1.8. Uses of Doppler Ultrasound in Feline Patients
  - 1.8.1. Technical Considerations
  - 1.8.2. Blood Vessel Abnormalities
  - 1.8.3. Doppler Ultrasound Utilities in Lymph Nodes and Masses
- 1.9. Ultrasound Scans of Cervical Pathologies
  - 1.9.1. Ultrasound Scans of Glands and Lymph Nodes
  - 1.9.2. Ultrasound Scans of Thyroid and Parathyroid Glands
  - 1.9.3. Ultrasound Scans of the Larynx





# Structure and Content | 19 tech

- 1.10. Diagnostic Techniques Applied to Ultrasonography
  - 1.10.1. Ultrasound-guided Punctures
    - 1.10.1.1.Indicaciones.
    - 1.10.1.2. Considerations and Specific Equipment
    - 1.10.1.3. Sampling of Intra-abdominal Fluids and/or Cavities
    - 1.10.1.4. Organ and/or Mass Sampling
  - 1.10.2. Use of Contrasts in Feline Ultrasound
    - 1.10.2.1. Types of Contrast in Cats
    - 1.10.2.2. Indications for Using Contrasts
    - 1.10.2.3. Diagnosis of Pathologies by Ultrasound Contrast

#### Module 2. Ultrasound in Exotic Animals

- 2.1. Ultrasound Examination of New Companion Animals
  - 2.1.1. Features and handling of New Companion Animals
  - 2.1.2. Patient Preparation
  - 2.1.3. Ultrasound Equipment
- 2.2. Abdominal Ultrasonography in Rabbits
  - 2.2.1. Ultrasound Scan of the Urinary Tract
  - 2.2.2. Ultrasound Scan of the Reproductive System
  - 2.2.3. Ultrasound Scan of the Digestive System
  - 2.2.4. Ultrasound Scan of the Hepatic and Biliary Tracts
  - 2.2.5. Ultrasound Scan of the Adrenal Glands
  - 2.2.6. Ocular Ultrasonography
- 2.3. Abdominal Ultrasonography in Rodents
  - 2.3.1. Ultrasonography in Guinea Pigs
  - 2.3.2. Ultrasonography in Chinchillas
  - 2.3.3. Ultrasonography in Small Rodents
- 2.4. Abdominal Ultrasonography in Ferrets
  - 2.4.1. Ultrasound Scan of the Urinary Tract
  - 2.4.2. Ultrasound Scan of the Reproductive System
  - 2.4.3. Ultrasound Scan of the Digestive System
  - 2.4.4. Ultrasound Scan of the Hepatic and Biliary Tracts
  - 2.4.5. Ultrasound Scan of the Spleen and Pancreas
  - 2.4.6. Ultrasound Scan of the Lymph Nodes and Adrenal Glands

# tech 20 | Structure and Content

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2.5.	Ultrasonography in Turtles	
	2.5.1.	Ultrasound Scan of the Urinary Tract
	2.5.2.	Ultrasound Scan of the Reproductive System
	2.5.3.	Ultrasound Scan of the Digestive System
	2.5.4.	Hepatic Ultrasound Scan
2.6.	Ultrasonography in Lizards	
	2.6.1.	Diagnostic and Physiological Ultrasonography
	2.6.2.	Renal Ultrasound Scan
	2.6.3.	Ultrasound Scan of the Reproductive System
	2.6.4.	Hepatic Ultrasound Scan
2.7.	Ultrasonography in Snakes	
	2.7.1.	Diagnostic and Physiological Ultrasonography
	2.7.2.	Renal Ultrasound Scan
	2.7.3.	Ultrasound Scan of the Reproductive System
	2.7.4.	Ultrasound Scan of the Digestive System
	2.7.5.	Hepatic Ultrasound Scan
2.8.	Ultrasonography in Birds	
	2.8.1.	Diagnostic and Physiological Ultrasonography
	2.8.2.	Ultrasound Scan of the Reproductive System
	2.8.3.	Hepatic Ultrasound Scan
	2.8.4.	Ultrasonography in Birds
2.9.	Thoracic Ultrasound Scan	
	2.9.1.	Thoracic Ultrasonography in Rabbits
	2.9.2.	Thoracic Ultrasonography in Guinea Pigs
	2.9.3.	Thoracic Ultrasonography in Ferrets
2.10.	<u> </u>	
		Thoracic Ultrasonography in Rabbits
		<u> </u>

2.10.2. Echocardiography in Ferrets

#### Module 3. Preparing an Ultrasound Report

- 3.1. Ultrasound Jargon I
  - 3.1.1. Nomenclature, Description and the Diagnostic Uses of Different Artifacts
  - 3.1.2. Relative Echogenicity
  - 3.1.3. Comparative Echogenicity
- 3.2. Ultrasound Jargon II
  - 3.2.1. Structural Description of Selected Organs
  - 3.2.2. Using the Movement of Structures and Organs for Assessing the Latter
  - 3.2.3. Location of Each Organ in Space and Its Relation to Anatomical Landmarks
- 3.3. Registering a Study
  - 3.3.1. How Should an Image Study be Recorded and Stored
  - 3.3.2. Study Validity Period
  - 3.3.3. Which Images and How Should I Attach Them to the Report?
- 3.4. Report Templates
  - 3.4.1. What is the Purpose of an Ultrasound Report
  - 3.4.2. Basic Outline of a Professional Ultrasound Report
  - 3.4.3. Specific Outline of Selected Ultrasound Reports
- 3.5. Indices
  - 3.5.1. Distances
  - 3.5.2. Volumes
  - 3.5.3. Ratios or Indices
  - 3.5.4. Speeds
- 3.6. Description of Lesions Observed
  - 3.6.1. Mnemonic Rule FOR TA CON E ES U V
  - 3.6.2. Subjective Assessments
  - 3.6.3. Objective Assessments
- 3.7. Diagnoses
  - 3.7.1. Differential Diagnoses
  - 3.7.2. Presumptive Diagnosis
  - 3.7.3. Firm Diagnosis

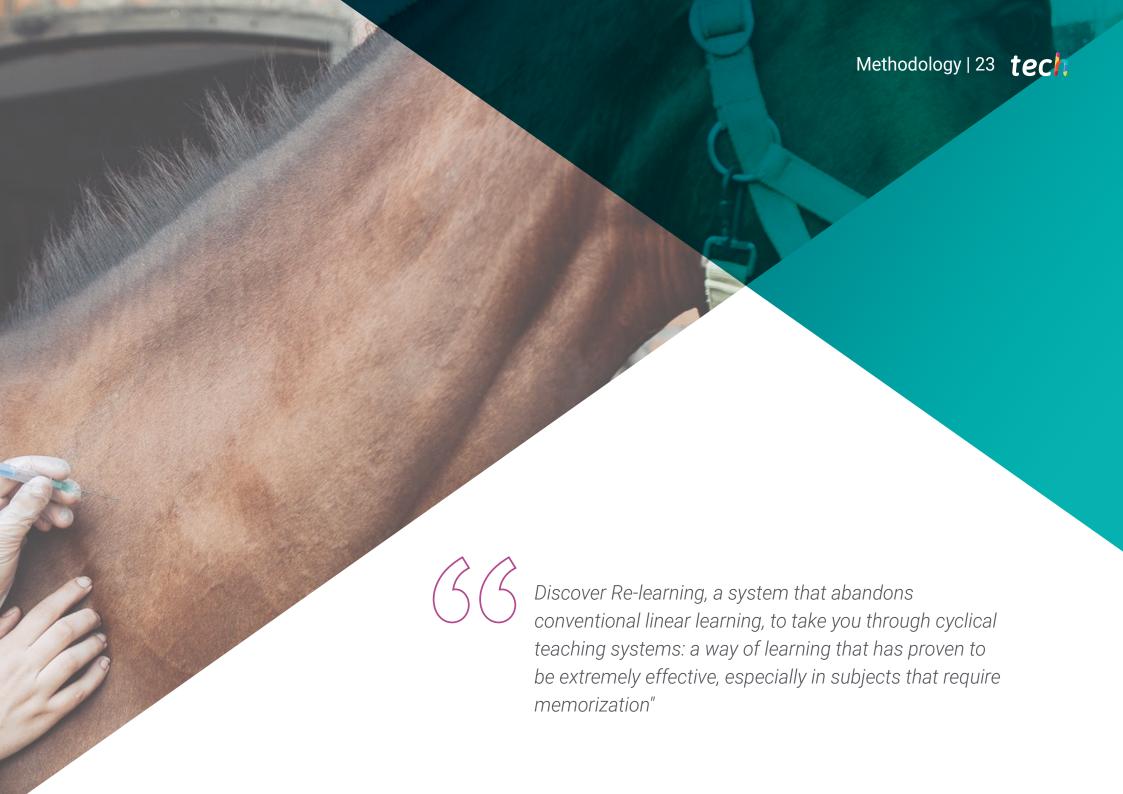
- 3.8. Final Recommendations
  - 3.8.1. Limitations of Ultrasound Studies (Operator-Dependent Technique)
  - 3.8.2. Diagnostic Recommendations
  - 3.8.3. Therapeutic Guidelines
- 3.9. Echocardiographic Report
  - 3.9.1. Function
  - 3.9.2. Structure of the Echocardiographic Report
  - 3.9.3. Differences Between Abdominal Ultrasound Reports of Other Organs and Cardiac Ultrasound Reports
- 3.10. Using Templates
  - 3.10.1. Using Templates vs. Self-reporting
  - 3.10.2. Ultrasound Report Templates
  - 3.10.3. How Can I Stand Out From the Rest by Creating My Own Templates?



This Postgraduate Diploma in Ultrasound in Feline Patients and Exotic Animals allows you to assimilate the content in a quicker and more effective way thanks to it innovative learning methodology"





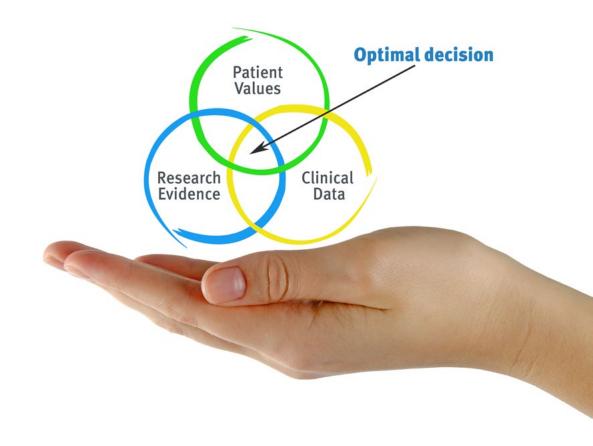


# tech 24 | Methodology

#### 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 adundant scientific evidence on the effectiveness of this 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 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



## Methodology | 27 tech

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 specialization, 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**

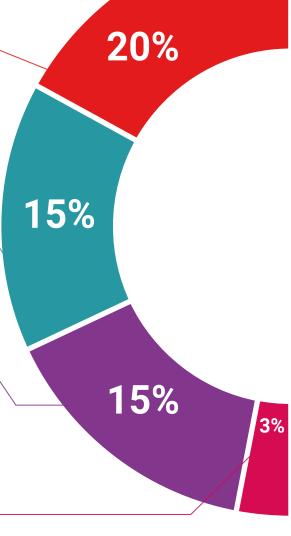
We bring you closer to the latest Techniques, to the latest Educational Advances, to the forefront of current Veterinary Techniques and Procedures. All this, in first person, with the maximum rigor, explained and detailed for your assimilation and understanding. And best of all, you can watch them as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



7%

#### **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 future difficult 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.





# tech 32 | Certificate

This **Postgraduate Diploma in Ultrasound in Feline Patients and Exotic Animals** contains the most complete and up-to-date scientific program on the market.

After the student has passed the evaluations, 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 Ultrasound in Feline Patients and Exotic Animals

ECTS: **18** 

Official Number of Hours: 450



<sup>\*</sup>Apostille Convention. In the event that the student wishes to have their paper certificate stamped with a Hague Apostille, TECH EDUCATION will make the necessary arrangements at an additional cost.

future
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institutions technology learning
community commitment



# Postgraduate Diploma Ultrasound in Feline Patients and Exotic Animals

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- » Dedication: 16h/week
- » Schedule: at your own pace
- » Exams: online

