

# Postgraduate Diploma

Doppler Ultrasound, Echocardiography  
and Interventional Ultrasound in Small  
Animals





## Postgraduate Diploma Doppler Ultrasound, Echocardiography and Interventional Ultrasound in Small An

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

Website: [www.techtute.com/pk/veterinary-medicine/postgraduate-diploma/postgraduate-diploma-doppler-ultrasound-echocardiography-interventional-ultrasound-small-animals](http://www.techtute.com/pk/veterinary-medicine/postgraduate-diploma/postgraduate-diploma-doppler-ultrasound-echocardiography-interventional-ultrasound-small-animals)

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01

# Introduction

Current ultrasound techniques have evolved in such a way that they allow the examination of other regions of our patients' bodies beyond the traditional ones. It is necessary to know Doppler ultrasound, echocardiography, as well as other new applications in order to offer them to our patients and make use of them to complete the diagnosis of different ailments.



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*Don't miss the opportunity to study this Postgraduate Diploma in Doppler Ultrasound and Echocardiography with us. It is the perfect opportunity to advance in your professional career”*

Ultrasound scans provide the veterinary professional with moving images of the structures being studied, as well as information on the condition of the different tissues.

The introduction of Doppler in ultrasound equipment brought about a diagnostic revolution in ultrasound studies. Doppler makes it possible to evaluate moving structures, as well as to perform a detailed study of blood vessels, all in real time and using a painless, non-invasive method.

It is of utmost importance to know the versatility that ultrasound allows us in different areas and types of patients, in order to obtain the greatest advantage of this technique and to be able to offer complete services. For this reason, this training will also focus on echocardiography, a very powerful tool for the diagnosis and follow-up of cardiac conditions, whether acquired or congenital.

It is therefore essential to have advanced knowledge of the different types of ultrasound scans, in order to establish a correct and accurate examination protocol, as this is of vital importance for the interpretation of the results.

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 Doppler Ultrasound, Echocardiography and Interventional Ultrasound in Small Animals** offers you all the features 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.



*This training is the best investment you can make when choosing a refresher program in Doppler Ultrasounds and Echocardiograms”*

“*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 Doppler Ultrasounds and Echocardiograms*”

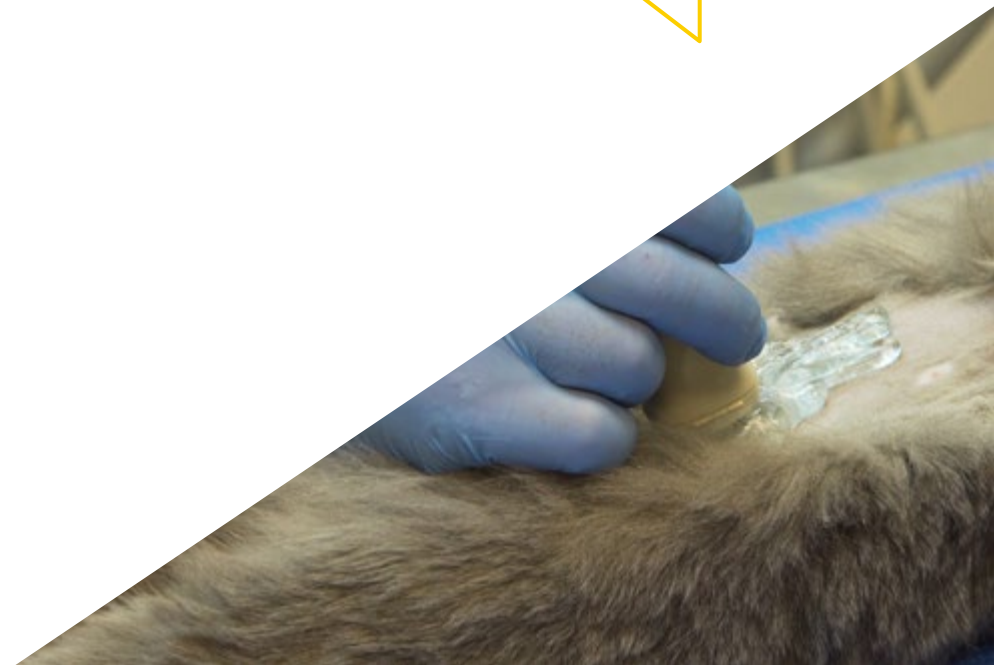
Our teaching staff is made up of professionals from different fields related to this specialty. In this way, we ensure that we provide you with the training update we are aiming for. A multidisciplinary team of professionals trained and experienced in different environments, who will cover the theoretical 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 Doppler Ultrasound, Echocardiography and Interventional Ultrasound in Small 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*

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



02

# Objectives

Our objective is to train highly qualified professionals for the working A goal that you will reach in just a few months and that will allow you to achieve professional excellence.







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*You will learn how to interpret echocardiographic images of the most common diseases”*



## General Objectives

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- Acquire knowledge of how the Doppler Ultrasound works.
- Determine the types of Doppler that exist and their uses.
- Study of abdominal pathologies detected by Doppler ultrasound.
- Develop a comprehensive echocardiographic examination protocol.
- Build confidence for conducting different echocardiographic cuts.
- Optimizing the image to achieve a correct and accurate examination.
- Determine the different echocardiographic measures applied in veterinary cardiology.
- Have the ability to interpret echocardiographic images of the most common diseases.
- Effectively assess each disease and be able to stage it.
- Differentiate between the different illnesses that we can detect through echocardiography.
- Be familiar with other useful applications beyond the traditional scanning modes.
- Learn how to identify which structures can be explored using ultrasound.
- Study the protocol to be followed in ultrasound-guided interventions.
- Recognize the main blocks using ultrasound-guidance.





## Specific Objectives

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### Module 1.

- ♦ Study the physical principles of a Doppler.
- ♦ Obtain a correct ultrasound beam for accurate flow study.
- ♦ Differentiate between vein flow and artery flow.
- ♦ Use vascular indices of vascular resistance and pulsatility.
- ♦ Evaluate vascularization in organs and masses.
- ♦ Identify structures by absence or presence of flow.
- ♦ Detect vascular alterations.
- ♦ Carry out an evaluation of thromboembolism and infarction as applied to abdominal ultrasound and what information they can provide.

### Module 2.

- ♦ Determine ultrasound equipment requirements for echocardiographic studies.
- ♦ Establish the different physical principles that generate echocardiographic images.
- ♦ Work on the different types of images used in echocardiography.
- ♦ Provide key criteria for implementing the Doppler mode in echocardiography.
- ♦ Assess the size of the cardiac chambers using echocardiography.
- ♦ Assess systolic and diastolic function using echocardiography.

### Module 3.

- ♦ Assess and study valvular heart disease.
- ♦ Identify echocardiographic signs for detecting pulmonary hypertension.
- ♦ Be able to differentiate between and diagnose canine and feline cardiomyopathies.
- ♦ Evaluate the pericardial cavity, as well as the layers that form the pericardium.
- ♦ Detect the different cardiac neoplasms.
- ♦ Establish the theoretical bases for pericardiocentesis.
- ♦ Study the different congenital conditions that can be found in small animals.
- ♦ Assess for cardiac parasites.
- ♦ Develop advanced echocardiography techniques.

### Module 4.

- ♦ Determine how to perform an organized and concise examination of the thoracic and cervical structures.
- ♦ Perform serial and structured monitoring in emergency ultrasonography.
- ♦ Establish a correct technique for administering anesthesia with the help of ultrasound.
- ♦ Conduct a good screening and follow-up of pregnancy cases.
- ♦ Interpret findings that may show up in pediatric and geriatric animals.

03

# Course Management

Professionals from different areas and skill sets with extensive experience in animal ultrasound will be your tutors throughout this specialist course. A complete multidisciplinary team that stands out for its illustrious professional trajectory and teaching experience.





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*Leading professionals in the field  
have come together to teach you the  
latest advances in Doppler Ultrasound,  
Echocardiography and Interventional  
Ultrasound in Small Animals”*

## 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 Alcocer
- ♦ 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 metal accumulation in bovine meat in collaboration with Cornell University, New York; published in the Journal of Animal Science.

## Professors

### Dr. Monge Utrilla, Óscar

- ♦ Cardiology, Diagnostic Imaging and Endoscopy, KITICAN Group, Madrid (currently)
- ♦ Degree in Veterinary Medicine, Universidad Complutense de Madrid 2017
- ♦ GPCert Cardiology IVSPS 2017
- ♦ Degree Course "Specialist Course in Veterinary Hospital Clinic", University of León 2018
- ♦ Professional Master's Degree "Veterinary Anesthesiology", TECH - Technological University. 2021
- ♦ In-house training in cardiology and respiratory medicine at Grupo Veterinario Kitican
- ♦ Veterinary Intern/Resident at the Veterinary Hospital of the University of León Faculty of Veterinary Medicine 2018
- ♦ Veterinarian at the Emergency Department of the Surbatán Veterinary Clinic 2018
- ♦ Veterinarian at the Emergency Department and in charge of the Cardiology Department at El Retiro Veterinary Hospital 2018
- ♦ Veterinarian at the Emergency Department and the Cardiology Department at Majadahonda Veterinary Hospital 2019
- ♦ Cardiology, Ultrasound and Outpatient Endoscopy for Coromoto Diagnostic Imaging, Sinergia 2020

### Dr. Millán Varela, Lorena

- ♦ Director of the Cardiology and Diagnostic Imaging Service at San Pedro Veterinary Clinic
- ♦ Specialist Technical Assistance in Internal Medicine and Diagnostic Imaging in Small Animals together with the University of León
- ♦ PhD in Veterinary Medicine from the University of León.
- ♦ AVEPA Accredited Specialist in Diagnostic Imaging

### Dr. García Guerrero, Francisco

- ♦ Veterinarian at Ecopet (Ultrasound Service/Outpatient Cardiology) (2013-present)
- ♦ Degree in Veterinary Medicine from the University of Cordoba in 2003
- ♦ Experience at the Diagnostic Imaging and Cardiology Service at the University of Murcia. (March 2012-June 2012)
- ♦ Residency at the Diagnostic Imaging and Internal Medicine Department of UAB Clinical Hospital (May 2014 – August 2014)
- ♦ Abdominal Ultrasound Course for Trauvel In May 2018
- ♦ Several Private Training Courses at Veterinary Centers/Hospitals
- ♦ Veterinarian at García Vallejo Veterinary Hospital (Seville), 2003-2016

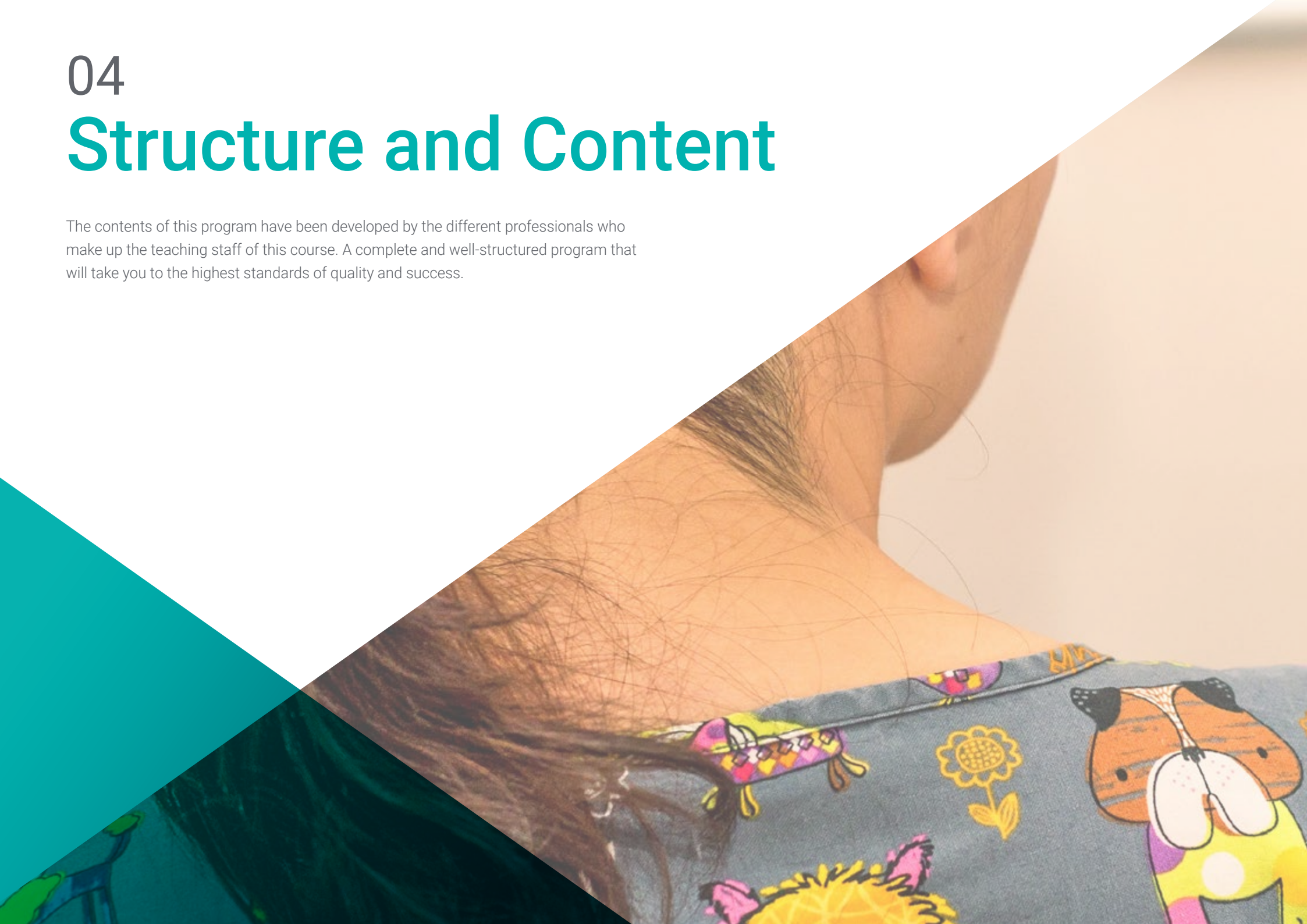


*Specialize in a growing sector with the help of the best specialists in the field"*

04

# Structure and Content

The contents of this program have been developed by the different professionals who make up the teaching staff of this course. A complete and well-structured program that will take you to the highest standards of quality and success.





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*A complete and well-structured program will take you to the highest standards of quality and success”*

## Module 1. Doppler Ultrasound and its Abdominal Applications

- 1.1. Doppler Ultrasound
  - 1.1.1. Flow Characteristics
  - 1.1.2. The Doppler Effect
- 1.2. Types of Doppler
  - 1.2.1. Continuous Wave Doppler
  - 1.2.2. Pulsed Doppler
  - 1.2.3. Duplex Doppler
  - 1.2.4. Color Doppler
  - 1.2.5. Power Doppler
- 1.3. Abdominal Vascular System
  - 1.3.1. Single-vessel Doppler Study
  - 1.3.2. Types of Vascular Flow
  - 1.3.3. Abdominal Vascularization
- 1.4. Vascular System Applications
  - 1.4.1. Aortic Flow
  - 1.4.2. Vena Cava Flow Rate
  - 1.4.3. Hepatic Vessel Hypertension
- 1.5. Abdominal Cavity Applications
  - 1.5.1. Renal Vascularization
  - 1.5.2. Vascularization in Abdominal Masses
  - 1.5.3. Vascularization in Parenchymal Organs
- 1.6. Shunts
  - 1.6.1. Congenital Portosystemic Shunts
    - 1.6.1.1. Intrahepáticas.
    - 1.6.1.2. Extrahepatic
  - 1.6.3. Acquired Portosystemic Shunts
  - 1.6.4. Arteriovenous Fistulae

- 1.7. Heart Attacks
  - 1.7.1. Renal
  - 1.7.2. Intestinal
  - 1.7.3. Hepatic
  - 1.7.4. Others
- 1.8. Thrombosis
  - 1.8.1. Aortic Thromboembolism
  - 1.8.2. Aortic Mineralization
  - 1.8.3. Portal Vein Thrombosis
  - 1.8.4. Vena Cava Thromboembolism
- 1.9. Lymph Node Vascularization
  - 1.9.1. Exploration
  - 1.9.2. Pathological Abdominal Lymph Nodes
- 1.10. Intestinal Vovulus
  - 1.10.1. Intestinal Vascularization

## Module 2. Echocardiography I. Echocardiographic Examination. Examination Methods Application to Cardiology

- 2.1. Echocardiography
  - 2.1.1. Equipment and Probes
  - 2.1.2. Patient Positioning
  - 2.1.3. Echocardiographic Examination Methods
- 2.2. Keys to Carrying Out an Optimal Echocardiographic Study
  - 2.2.1. How to Optimize the Performance of my Ultrasound Equipment
  - 2.2.2. Factors affecting the quality of an Echocardiographic Study
  - 2.2.3. Artifacts in Echocardiography
- 2.3. Echocardiographic Slicing
  - 2.3.1. Right Side Parasternal Cuts
  - 2.3.2. Left Side Parasternal Cuts
  - 2.3.3. Subcostal Cuts

- 2.4. M Mode Echocardiographic Examination
  - 2.4.1. How to Optimize the Image in M Mode
  - 2.4.2. M Mode Applied to the Left Ventricle
  - 2.4.3. M Mode Applied Mitral Valve
  - 2.4.4. M Mode Applied Aortic Valve
- 2.5. Color and Spectral Doppler Echocardiographic Examinations
  - 2.5.1. Physical Principles of Color Dopplers
  - 2.5.2. Physical Principles of Spectral Dopplers
  - 2.5.3. Color Doppler Imaging
  - 2.5.4. Pulsed Doppler Imaging Importance of Continuous Dopplers in Echocardiography
  - 2.5.5. Tissue Doppler
- 2.6. Echocardiographic Examination of the Aortic and Pulmonary Valves
  - 2.6.1. Color Doppler Mode at Aortic Valve
  - 2.6.2. Color Doppler Mode at Lung Valve
  - 2.6.3. Spectral Doppler Mode at Aortic Valve
  - 2.6.4. Spectral Doppler Mode at Lung Valve
- 2.7. Echocardiographic Examination of Mitral/Tricuspid Valves and Pulmonary Veins
  - 2.7.1. Color Doppler Mode at Mitral and Tricuspid Valves
  - 2.7.2. Spectral Doppler Mode at Mitral and Tricuspid Valves
  - 2.7.3. Spectral Doppler Mode at Pulmonary Veins
- 2.8. Assessment of Systolic and Diastolic Function Using Echocardiography
  - 2.8.1. Determination of Systolic Function in 2D Mode
  - 2.8.2. Determination of Systolic Function in M Mode
  - 2.8.3. Determination of Systolic Function in Spectral Doppler Mode
- 2.9. Assessment of Systolic and Diastolic Function Using Echocardiography
  - 2.9.1. Determination of Diastolic Function in 2D Mode
  - 2.9.2. Determination of Diastolic Function in M Mode
  - 2.9.3. Determination of Diastolic Function in Spectral Doppler Mode
- 2.10. Echocardiographic Examination to Assess Hemodynamics Application in Cardiology
  - 2.10.1. Pressure Gradients
  - 2.10.2. Systolic Pressure
  - 2.10.3. Diastolic Pressure

### Module 3. Echocardiography II Assessment of Main Cardiac Diseases

- 3.1. Valvular Diseases
  - 3.1.1. Chronic Mitral Valve Degeneration
  - 3.1.2. Chronic Tricuspid Valve Degeneration
  - 3.1.3. Atrioventricular Valve Stenosis
  - 3.1.4. Semilunar Valve Abnormalities
- 3.2. Pulmonary Hypertension
  - 3.2.1. Echocardiographic Signs of Pulmonary Hypertension: B Mode
  - 3.2.2. Echocardiographic Signs of Pulmonary Hypertension: M Mode
  - 3.2.3. Echocardiographic Signs of Pulmonary Hypertension: Doppler
  - 3.2.4. Causes and Differentiation of Types of Pulmonary Hypertension
- 3.3. Myocardial Diseases
  - 3.3.1. Canine Dilated Cardiomyopathy
  - 3.3.2. Arrhythmogenic Right Ventricular Cardiomyopathy
  - 3.3.3. Myocarditis
- 3.4. Feline Cardiomyopathies
  - 3.4.1. Hypertrophic Cardiomyopathy
  - 3.4.2. Restrictive Cardiomyopathy
  - 3.4.3. Feline Dilated Cardiomyopathy
  - 3.4.4. Arrhythmogenic Cardiomyopathy
  - 3.4.5. Unclassified Cardiomyopathies
- 3.5. Pericardium and Pericardiocentesis
  - 3.5.1. Idiopathic Pericarditis
  - 3.5.2. Constrictive Pericarditis
  - 3.5.3. Other Pericardial Diseases
  - 3.5.4. Pericardiocentesis
  - 3.5.5. Pericardiectomy.
- 3.6. Cardiac Neoplasms
  - 3.6.1. Hemangiosarcoma
  - 3.6.2. Cardiac-based Tumors
  - 3.6.3. Lymphoma
  - 3.6.4. Mesothelioma
  - 3.6.5. Others

- 3.7. Congenital Heart Diseases I
  - 3.7.1. Patent Ductus Arteriosus
  - 3.7.2. Pulmonary Stenosis.
  - 3.7.3. Subaortic Stenosis
  - 3.7.4. Interventricular and Interatrial Defects
  - 3.7.5. Valvular Dysplasia
- 3.8. Congenital Heart Diseases II
  - 3.8.1. Interventricular and Interatrial Defects
  - 3.8.2. Valvular Dysplasia
  - 3.8.3. Tetralogy of Fallot
  - 3.8.4. Others
- 3.9. Dirofilariasis and Other Cardiopulmonary Worms
  - 3.9.1. Canine and Feline Dirofilariasis
  - 3.9.2. Canine Angiostrongylosis
  - 3.9.3. Complementary Tests
- 3.10. Transesophageal Echocardiography and 3D Echocardiography
  - 3.10.1. Transesophageal Echocardiogram: Basics
  - 3.10.2. Transesophageal Echocardiogram: Indications
  - 3.10.3. 3D Echocardiogram: Basics
  - 3.10.4. 3D Echocardiogram: Indications

## Module 4. Other Ultrasound Applications

- 4.1. Non-cardiac Thoracic Ultrasound
  - 4.1.1. Thoracic Ultrasound Scan
  - 4.1.2. Ultrasound Examination of the Thorax
  - 4.1.3. Findings and Main Pathologies
  - 4.1.4. TFAST
- 4.2. Cervical Ultrasonography
  - 4.2.1. Cervical Ultrasound Scan
  - 4.2.2. Ultrasound Examination of the Cervical Region
  - 4.2.3. Thyroid and Parathyroid Glands
  - 4.2.4. Lymph Nodes and Salivary Glands
  - 4.2.5. Trachea and Esophagus
- 4.3. Ophthalmic Ultrasonography
  - 4.3.1. Ophthalmologic Ultrasound Scan
  - 4.3.2. Ultrasound Examination of the Eye and Surrounding Area
  - 4.3.3. Findings and Main Pathologies
- 4.4. Transcerebral Ultrasound and Gestational Ultrasonography
  - 4.4.1. Ultrasound Scans in Pregnancy
  - 4.4.2. Gestational Screening Protocol
  - 4.4.3. Transcerebral Ultrasound Scan
- 4.5. Interventional Ultrasonography
  - 4.5.1. Basics of Interventional Ultrasonography
  - 4.5.2. Equipment and Patient Preparation
  - 4.5.3. Types of Punctures and Biopsy
  - 4.5.4. Specific Technique for Each Case?
- 4.6. Musculoskeletal Ultrasonography
  - 4.6.1. Musculoskeletal Examination
  - 4.6.2. Musculoskeletal Scanning and Patterning
  - 4.6.3. Musculoskeletal Pathologies
- 4.7. Ultrasound of Surface Tissues
  - 4.7.1. Basis for Examining Surface Structures
  - 4.7.2. Surface Structure Recognition
  - 4.7.3. Pathologies and Abnormalities in Superficial Tissues
- 4.8. Echoguided Blocks
  - 4.8.1. Equipment and Basics of Ultrasound-guided Anesthesia
  - 4.8.2. Posterior Third Blocks
  - 4.8.3. Anterior Third Blocks
  - 4.8.4. Other Blocks
- 4.9. Ultrasonography in Pediatric and Geriatric Animals
  - 4.9.1. Features of Ultrasonography in Pediatrics and Geriatrics
  - 4.9.2. Ultrasound Examination Protocol, Artifacts and Findings
  - 4.9.3. Detectable Pediatric Pathologies and their Ultrasound Patterns
- 4.10. Emergency Department Ultrasonography
  - 4.10.1. Use of Ultrasound Scans in Emergencies
  - 4.10.2. Emergency Abdominal Ultrasound Scan
  - 4.10.3. Emergency Thoracic Ultrasound Scan



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*This Postgraduate Diploma in Doppler Ultrasound, Echocardiography and Interventional Ultrasound in Small Animals allows you to assimilate the content in a quicker and more effective way thanks to its innovative learning methodology”*

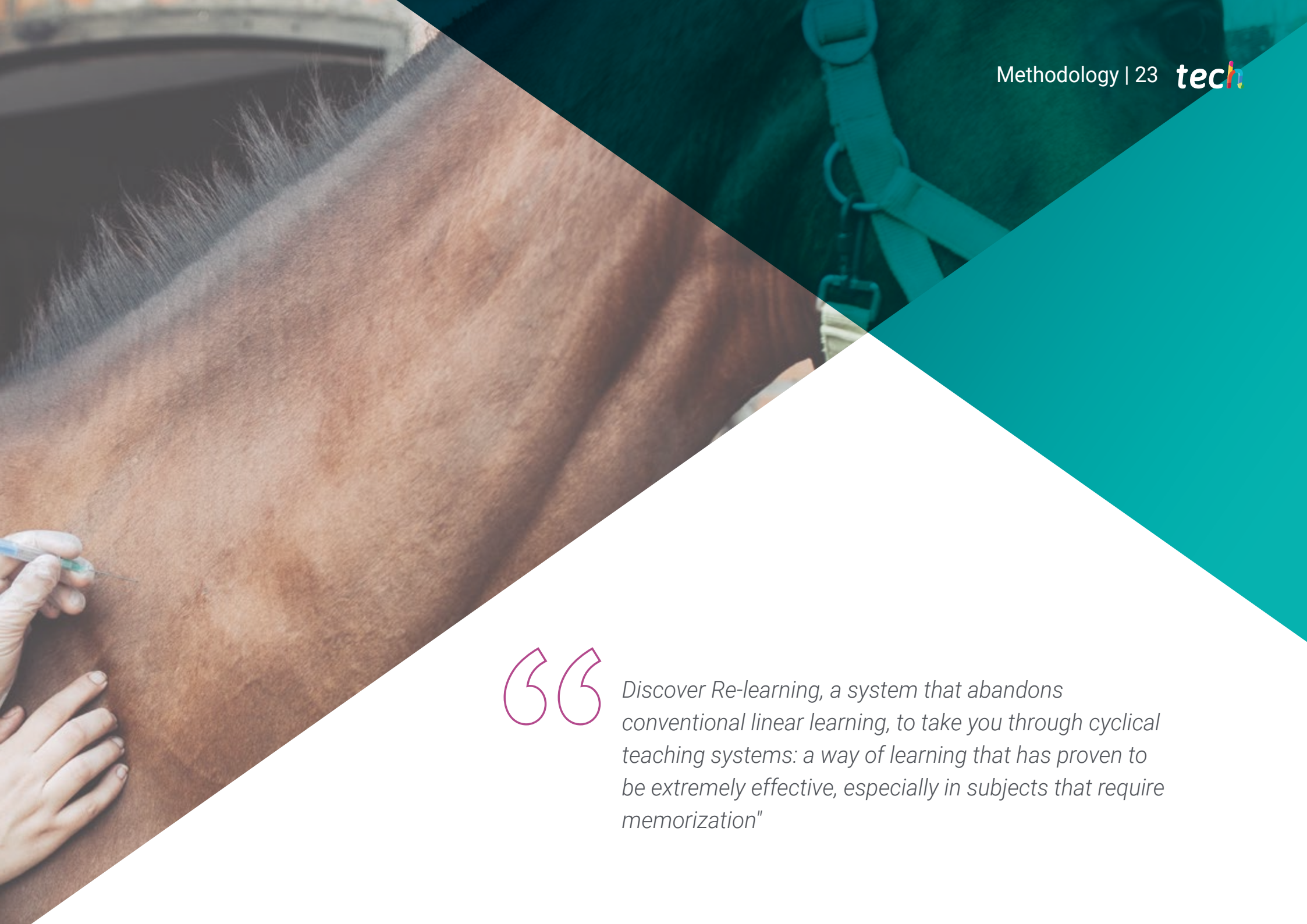
05

# 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 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. 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 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 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

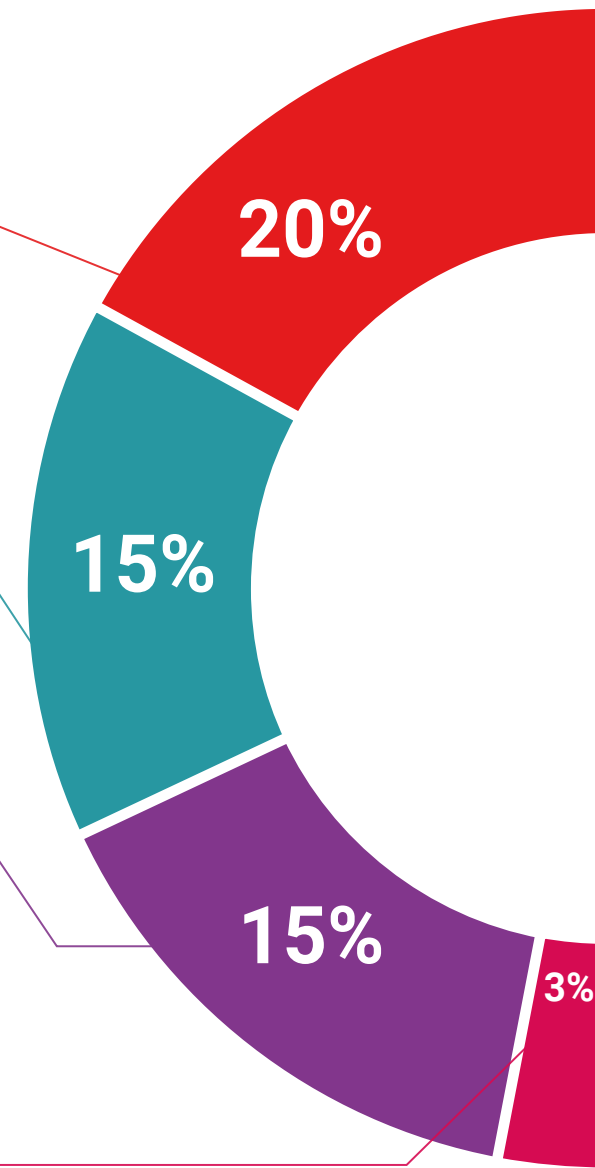
We present the contents attractively and dynamically in multimedia lessons that include audio, videos, images, diagrams, and concept maps in order to reinforce knowledge.

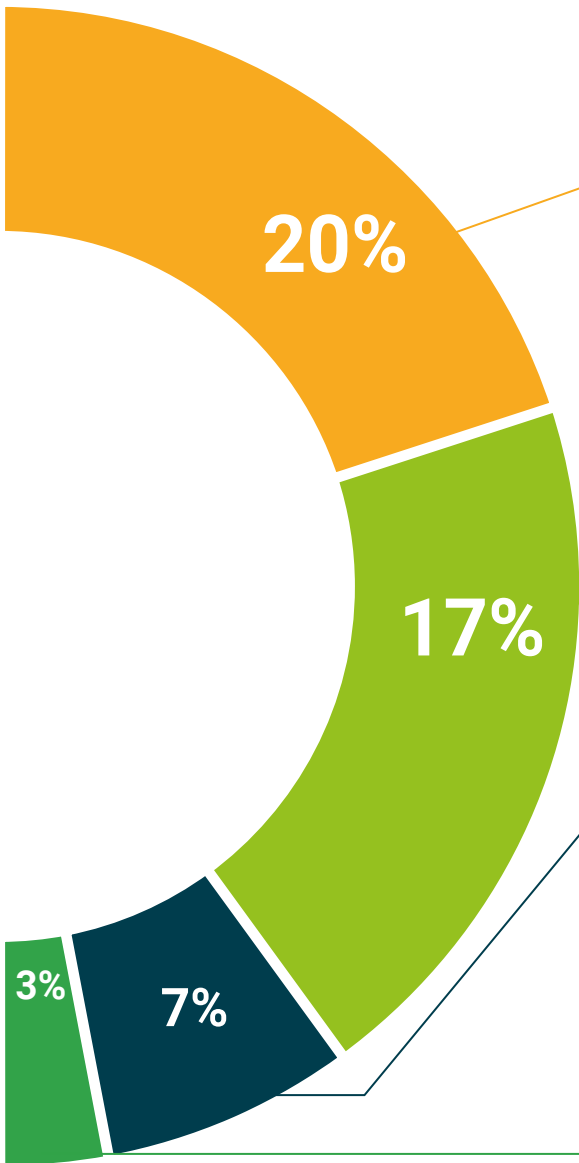
This unique multimedia content presentation training system was awarded by Microsoft as a "European Success Story".



### Additional Reading

Recent articles, consensus documents, international guides. in our virtual library you will have access to everything you need to complete your training.





#### 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.



# 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 studies this Postgraduate Diploma in Doppler Ultrasound, Echocardiography and Interventional Ultrasound in Small Animals: a highly qualified added value for any professional in this area”*

This **Postgraduate Diploma in Doppler Ultrasound, Echocardiography and Interventional Ultrasound in Small 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 Doppler Ultrasound, Echocardiography and Interventional Ultrasound in Small Animals**

ECTS: **24**

Official Number of Hours: **600**



\*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.





**Postgraduate Diploma**  
Doppler Ultrasound,  
Echocardiography and  
Interventional Ultrasound  
in Small An

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

# Postgraduate Diploma

Doppler Ultrasound, Echocardiography  
and Interventional Ultrasound in Small  
Animals