



# Postgraduate Diploma

Canine and Feline Nutrition and Feeding

» Modality: Online

» Duration: 6 months.

» Certificate: TECH Global University

» Credits: 18 ECTS

» Schedule: at your own pace

» Exams: online

Website: www.techtitute.com/us/veterinary-medicine/postgraduate-diploma/postgraduate-diploma-canine-feline-nutrition-feeding

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### tech 06 | Introduction

This **Postgraduate Diploma in Canine and Feline Nutrition and Feeding** is unique given its level of specialization and the logical learning sequence in which the content is organized.

Its ultimate goal is to specialize and update professionals in the most advanced technical and scientific aspects of animal nutrition and feeding.

Knowledge that enables the entry, linkage and specialization in one of the most important sectors of animal production at present and with more labor demand and need for specialization.

The current world population estimated at 7.6 billion is expected to increase to 8.6 billion by 2030 and animal nutrition is one of the disciplines called upon to help solve the problem of producing sufficient and economical protein to feed this growing demand in an efficient and sustainable manner.

With an innovative format, this specialization allows participants to develop autonomous learning and optimal time management.

Join the elite, with this highly efficient specialization and open new paths to your professional progress".

In short, it is an ambitious, broad, structured and interwoven proposal, which covers everything from the fundamental and relevant principles of nutrition to the manufacture of food. All this with the characteristics of a course of high scientific, teaching and technological level.

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.
- Availability of content from any fixed or portable device with
- internet connection.
- Supplementary documentation databases are permanently available, even after the course.



A course that will enable you to work in the sectors of food production for or with animal origin, with the solvency of a high-level professional".

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 prepared and experienced in different environments, who will develop the theoretical knowledge in an efficient way, but, above all, will put at the service of this Postgraduate Diploma practical knowledge derived from their own experience: one of the differential qualities of this specialization.

This mastery of the subject is complemented by the effectiveness of the methodological design of this Expert. 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.

With a methodological design that relies on teaching techniques proven for their effectiveness, this Postgraduate Diploma in Canine and Feline Nutrition and Feeding will take you through different teaching approaches to allow you to learn in a dynamic and effective way.







### tech 10 | Objectives



### **General Objectives**

- Determine the properties, use and metabolic transformations of nutrients in relation to the nutritional needs of an animal.
- Provide clear and practical tools so that the professional can identify and classify the
  different foods that are available in the region and have better elements of judgement to
  make the most appropriate decision in terms of differential costs, etc.diferenciales, etc.
- Propose a series of technical arguments which allow for a better quality of diet and nutrition and therefore, improve the end produce (meat or milk)
- Analyze the different raw material components with both positive and negative effects on Animals. Nutrition and how animals use them for the production of animal protein
- Identify and understand the different levels of digestibility for each of the various nutritional components according to their origin.
- To analyze the key aspects for the design and creation of diets (food) aimed at achieving the maximum utilization of nutrients by animals intended for animal protein production.
- Provide specialized training on the nutritional requirements for the two main species of birds to be used in animal protein production.
- Develop specialized understanding of the nutritional requirements of the porcine species and the different feeding strategies needed in order to guarantee that they reach the expected welfare and production standards according to their production stage.
- Provide practical, theoretical and specialized knowledge on the physiology of canine and feline digestive systems.
- Analyze the digestive system of ruminants and their particular way of assimilating nutrients





### Objectives | 11 tech

from fiberrich foods.

- Analyze the main additive groups used in the food production industry, focused on ensuring the quality and performance of different food products.
- Analyze, in a clear way, how the complete animal feed manufacturing process is developed: the phases and processes which feed undergoes to guarantee its nutritional composition, quality and safety

### tech 12 | Objectives



### **Specific Objectives**

### Module 1.

- Utilize extensive knowledge of all aspects of nutrients to understand the processes of energy and animal protein production
- Recognise the importance of water as a nutrient.

#### Module 2.

- Understand the importance of the concept of digestibility and intestinal integrity and to know which are the factors that influence them.
- Define the use and characteristics of fats in animal nutrition.
- Define the use of antibiotics in animal nutrition.

#### Module 3.

- Recognise all nutritional aspects of cats and dogs and identify the myths surrounding them.
- Know how to establish appropriate dietary treatments for every circumstance or pathology.
- Determine what foods are available in the market and their suitability.
- Implement sampling and establish its importance in the quality control process.







Take advantage of the opportunity and take the step to get up to date on the latest developments in Canine and Feline Nutrition and Feeding."





An impressive teaching staff, made up of professionals from different areas of expertise, will be your teachers during your training: a unique opportunity not to be missed"

### tech 16 | Course Management

### Coordinator



### Dr. Cuello Ocampo, Carlos Julio

- Veterinarian with extensive experience in the areas of Health, Production, Nutrition and Feeding in the line of Poultry, Swine and Cattle Farming.
- Master's Degree in Ration Formulation for Productive Species
- Experience in the use and formulation of additives for animal nutrition.
- Experience in farm management and feed mill development and formulation consulting
- Technical Director in Huvepharma NV Laboratories (Bulgaria)

### **Professors**

### Dr. Cuello Ocampo, Carlos Julio

- Veterinarian with extensive experience in the areas of Health, Production, Nutrition and Feeding in the line of Poultry, Swine and Cattle Farming.
- Master's Degree in Ration Formulation for Productive Species
- Experience in the use and formulation of additives for animal nutrition.
- Experience in farm management and feed mill development and formulation consulting.
- Technical Director in Huvepharma NV Laboratories (Bulgaria)

### Dr. Fernández Mayer, Anibal Enrique

- PhD in Veterinary Science
- Postdoctorate of Veterinary Science, with a focus on: Animal Nutrition in Institute of Animal Science (IAS)
- Agricultural Engineer, National University of La Plata (1975-1979), Buenos Aires.

### Lic. Ordoñez Gómez, Ciro Alberto

- Animal technician
- Master's Degree in Animals. Nutrition.
- University Professor in the area of animal nutrition with emphasis on ruminants.

### Dr. Páez Bernal, Luis Ernesto

• PhD in Monogastric Nutrition and Production

- Doctor Scientiae in Zootechnics, Nutrition and Monogastric Production. Federal University of Viçosa (UFV), MG, Brazil. 2008, MSc in Zootechnics, Nutrition and Monogastric Production. Federal University of Viçosa (UFV), MG, Brazil. 2004
- Medical veterinary with a Master's Degree in Monogastric Nutrition and Production
- Lecturer

#### Dña. Portillo Hoyos Diana Paola

• Professional Graduated from the National University of Colombia.

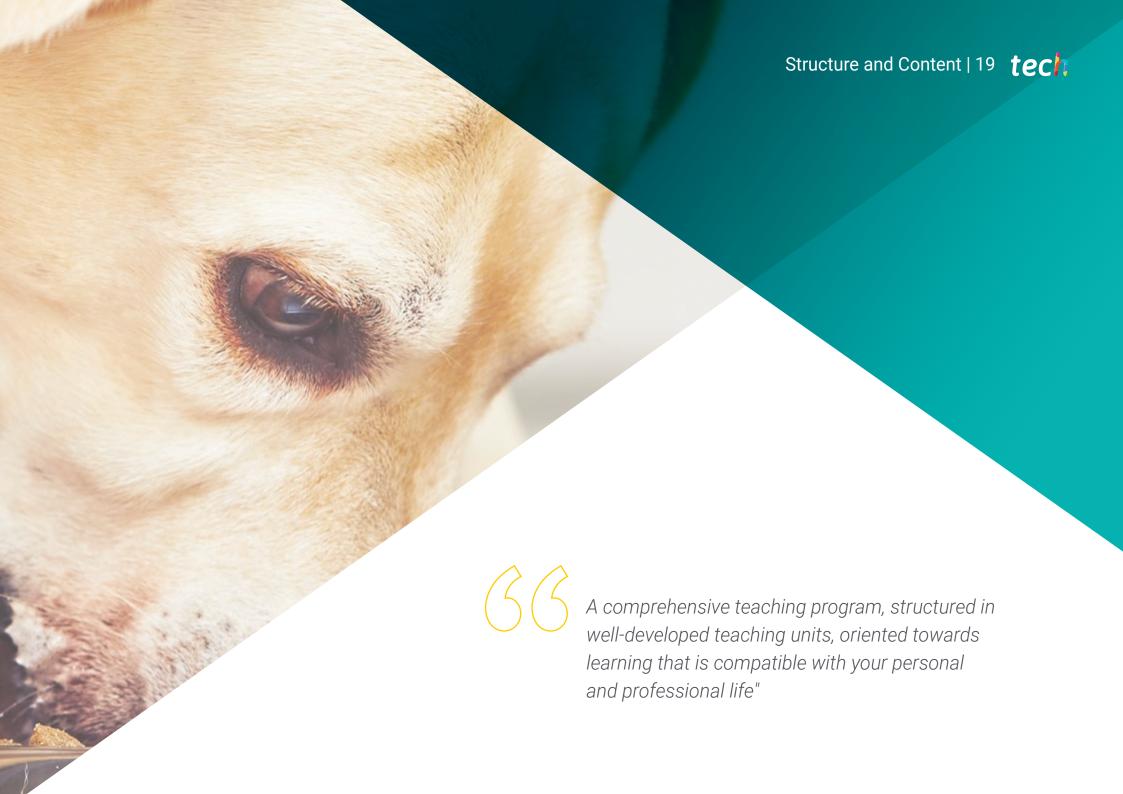
### Rodríguez, Pedro

• Animal technician with a Master's Degree in Veterinary Nutrition...

#### D. Sarmiento García, Ainhoa

- Phd in Science and Chemical Technology. (09/ 09.2017 / 2019) University of Salamanca,
- University Master's in Innovation of Biomedical Sciences and Health. (10- 10.2015 2016) University of León
- Degree in Veterinary Medicine. (09-10.2015 2014) University of León





### tech 20 | Structure and Content

### Module 1. Nutrients and Metabolism

- 1.1. Carbohydrates
  - 1.1.1. Carbohydrates in Animal Food
  - 1.1.2. Classification of Carbohydrates
  - 1.1.3. Digestion Process
  - 1.1.4. Fiber and Digestion of Fiber
  - 1.1.5. Factors which Affect the Utilistion of Fiber
  - 1.1.6. Physical Function of Fibre
- 1.2. Metabolism of Carbohydrates
  - 1.2.1. Metabolic Fate of Carbohydrates
  - 1.2.2. Glycolysis, Glycogenolysis, Glycogenesis and Gluconeogenesis
  - 1.2.3. Pentose Phosphate Cycle
  - 1.2.4. Krebs Cycle
- 1.3. Lipids
  - 1.3.1. Classification of Lipids
  - 1.3.2. Functions of Lipids
  - 1.3.3. Fatty Acids.
  - 1.3.4. Digestion and Absorption of Fats
  - 1.3.5. Factors which Affect Lipid Digestion
- 1.4. Lipid Metabolism
  - 1.4.1. Metabolic Fate of Lipids
  - 1.4.2. Fat Metabolism Energy
  - 1.4.3. Oxidative Rancidity.
  - 1.4.4. Essential Fatty Acids
  - 1.4.5. Lipid Metabolism Problems
- 1.5. Energetic Metabolism.
  - 1.5.1. Measurement of Heat Reaction
  - 1.5.2. Biological Partitioning of Energy
  - 1.5.3. Nutrient Caloric Increase
  - 1.5.4. Energy Balance
  - 1.5.5. Environmental Factors that Influence Energy Requirements
  - 1.5.6. Characteristics of Energy Deficiencies and Excesses

- 1.6. Proteins
  - 1.6.1. Protein Classification
  - 1.6.2. Functions of the Different Proteins
  - 1.6.3. Digestion and Absorption of Proteins
  - 1.6.4. Factors which Affect Protein Digestion
  - 1.6.5. Nutritional Classification of Amino Acids for Poultry and Swine
- 1.7. Protein Metabolism in Poultry and Swine
  - 1.7.1. Metabolic Fate of Proteins
  - 1.7.2. Gluconeogenesis and Degradation of Amino Acids
  - 1.7.3. Excretion of Nitrogen and Synthesis of Uric Acid
  - 1.7.4. Imbalance of Amino Acids and Energetic Cost of Protein Metabolism
  - 1.7.5. Interaction Between Amino Acids
- 1.8. Vitamins and Minerals
  - 1.8.1. Vitamin Classification
  - 1.8.2. Vitamin Requirements for Poultry and Swine
  - 1.8.3. Vitamin Deficiencies
  - 1.8.4. Macro and Micro minerals
  - 1.8.5. Interaction Between Minerals
  - 1.8.6. Organic Chelates.
- 1.9. Mineral and Vitamin Metabolism
  - 1.9.1. Vitamin Interdependence.
  - 1.9.2. Deficiencies and Toxicity of Vitamins
  - 1.9.3. Choline.
  - 1.9.4. Metabolism of Calcium and Phosphorus
  - 1.9.5. Electrolyte Balance.
- 1.10. Water. The Forgotten Nutrient
  - 1.10.1. Principal Functions of Water
  - 1.10.2. Distribution of Water in an Organism
  - 1.10.3. Sources of Water
  - 1.10.4. Factors Affecting Water Requirements
  - 1.10.5. Water Requirements
  - 1.10.6. Requirements for the Quality of Drinking Water



### Structure and Content | 21 tech

### Module 2. Digestibility, Ideal Protein and Advances in Animal Nutrition

- 2.1. Apparent Digestibility Coefficients
  - 2.1.1. Techniques to Obtain the Ileal Digesta
  - 2.1.2. Methodology to Calculate Digestibility
- 2.2. Endogenous Losses.
  - 2.2.1. Origin and Composition of Endogenous Amino Acids
  - 2.2.2. Techniques to Measure Endogenous Losses
- 2.3. Standardized Coefficients and True Digestibility
- 2.4. Factors Affecting Digestibility Coefficients
  - 2.4.1. Age and Physical State
  - 2.4.2. Food Consumption and Composition
- 2.5. Synthetic Amino Acids in Animal Nutrition
  - 2.5.1. Synthesis of Synthetic Amino Acids
  - 2.5.2. Use of Synthetic Amino Acids in Diets.
- 2.6. Ideal Protein and Advances in Protein Nutrition.
  - 2.6.1. Concept of Ideal Protein
  - 2.6.2. Profiles of Ideal Protein
  - 2.6.3. Use of Practical Applications
- 2.7. Estimation of Nutritional Requirements Through Performance Experiments
  - 2.7.1. Evaluation Methods for Nutritional Requirements
  - 2.7.2. Requirements Determination
- 2.8. Factors Affecting Ntrient Utilization
  - 2.8.1. Age
  - 2.8.2. Physiological Condition.
  - 2.8.3. Level of Consumption
  - 2.8.4. Environmental Conditions.
  - 2.8.5. Diet
- 2.9. Importance of the Quality and Stability of Fats in Nutrition
  - 2.9.1. Types of Fats
  - 2.9.2. Nutritional Profile of Fats
  - 2.9.3. Quality
  - 2.9.4. Inclusion of Fat in the Diet

### tech 22 | Structure and Content

- 2.10. Organic Minerals in Monogastric Nutrition
  - 2.10.1. Macrominerals.
  - 2.10.2. Microminerals.
  - 2.10.3. Structure of Organic Minerals
- 2.11. Integrity and Intestinal Health, its Importance in Animal Nutrition
  - 2.11.1. Intestinal Physiology and Anatomy
  - 2.11.2. Intestinal Health and Digestibility
  - 2.11.3. Factors which Affect Intestinal Integrity
- 2.12. Strategies for Animal Production Without Using Growth Enhancing Antibiotics
  - 2.12.1. Effects of Antibiotics on Nutrition
  - 2.12.2. Risk of Using Anitbiotics
  - 2.12.3. Global Patterns.
  - 2.12.4. Formulation and Feeding Strategies
- 2.13. Concept of Precision Nutrition
  - 2.13.1. Diets Close Up
  - 2.13.2. Animal Models.
  - 2.13.3. Ideal Protein.
  - 2.13.4. Physiological Condition.
  - 2.13.5. Growth Physiology

#### Module 3. Nutrition and Food in Canines and Felines.

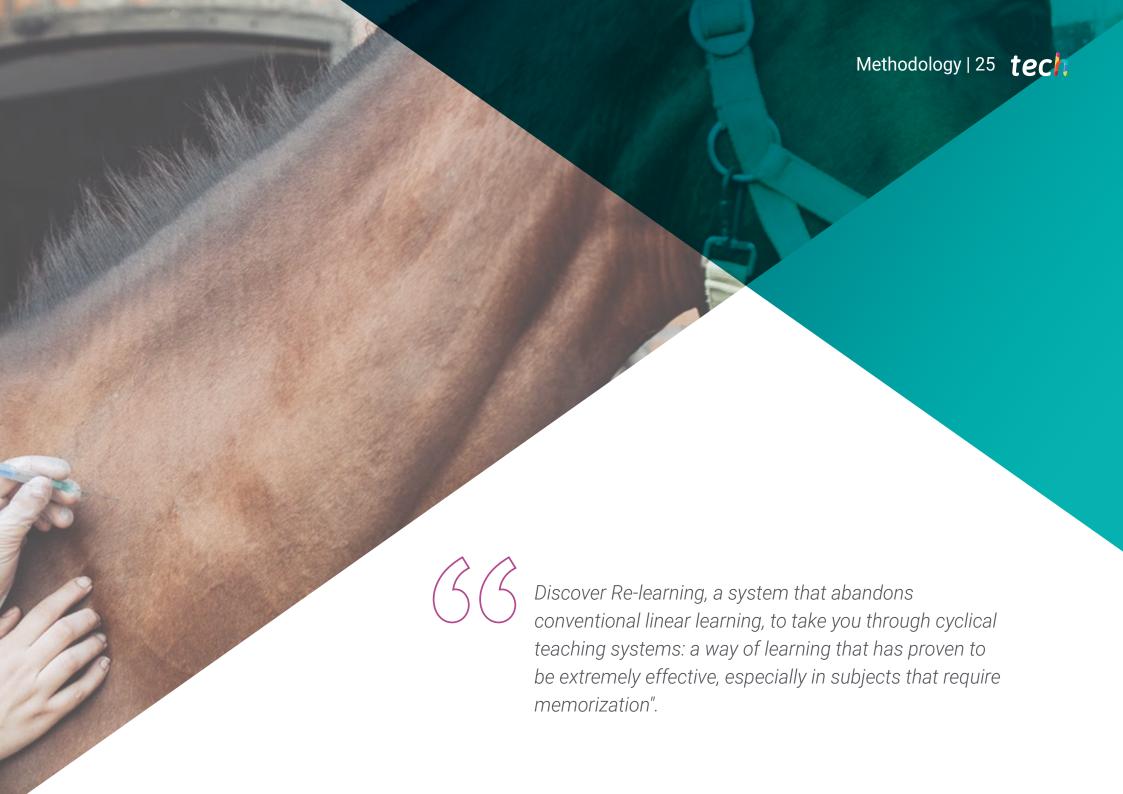
- 3.1. Physiology of the Digestive System of Canines and Felines (I)
  - 3.1.1. Introduction
  - 3.1.2. Functioning of the Digestive System
  - 3.1.3. Principle Differences and Similarities Between Both Species
- 3.2. Physiology of the Digestive System of Canines and Felines (II)
  - 3.2.1. Introduction
  - 3.2.2. Balanced Diet
  - 3.2.3. Factors that influence ingestion
- 3.3. Requirements
  - 3.3.1. Energy and Carbohydrates for Dogs and Cats
  - 3.3.2. Fats and Proteins
  - 3.3.3. Vitamins and Minerals

- 3.4. Foods Available for Pet Animals
  - 3.4.1. Introduction
  - 3.4.2. Types of Diets
  - 3.4.3. Owners Interpretation of the Label.
- 3.5. Nutrition for Different Stages of Life (I)
  - 3.5.1. Introduction
  - 3.5.2. Maintenance for Adults
  - 3.5.3. Food for Puppies
- 3.6. Nutrition for Different Stages of Life (II)
  - 3.6.1. Reproduction and Lactation
  - 3.6.2. Food for Pets of an Advanced Age
  - 3.6.3. A Special Case. Food for Racing Dogs
- 3.7. Pathologies Derived from Nutrition and their Treatments (I)
  - 3.7.1. Introduction
  - 3.7.2. The Obese Patient
  - 3.7.3. The Underweight Patient
- 3.8. Pathologies Derived from Nutrition and their Treatments (II)
  - 3.8.1. Cardiac Patient.
  - 3.8.2. Renal Patient.
  - 3.8.3. Liver patient.
- 3.9. Pathologies Derived from Nutrition and their Treatments (II)
  - 3.9.1. Gastrointestinal Problems.
  - 3.9.2. Skin Diseases.
  - 3.9.3. Diabetes Mellitus
- 3.10. Nutritional Management in Extreme Situations
  - 3.10.1. Introduction
  - 3.10.2. Food for a Sick Patient
  - 3.10.3. Intensive Care Nutritional Support



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





### tech 26 | 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 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 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 | 29 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 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 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.

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**

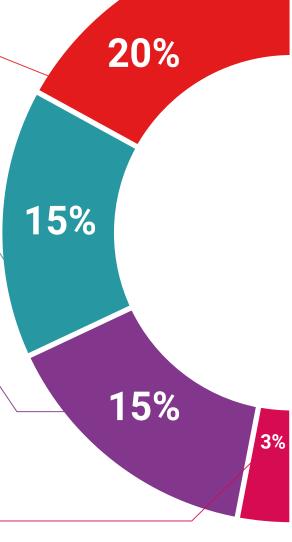
We bring you closer to the latest Techniques, to the latest Educational Advances, to the forefront of current Veterinary Techniques and Procedures. All this, in first person, with the maximum rigor, explained and detailed for your assimilation and understanding. And best of all, you can watch them as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

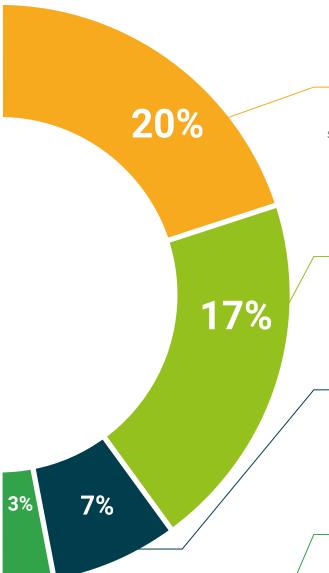
This unique multimedia content presentation training system was awarded by Microsoft as a "European Success Story".





### **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.



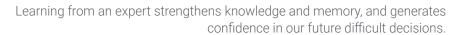
### **Testing & Re-testing**

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.





#### **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 34 | Certificate

This program will allow you to obtain your **Postgraduate Diploma in Canine and Feline Nutrition and Feeding** 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 Canine and Feline Nutrition and Feeding

Modality: online

Duration: 6 months

Accreditation: 18 ECTS



## has successfully passed and obtained the title of: Postgraduate Diploma in Canine and Feline Nutrition and Feeding

This is a program of 450 hours of duration equivalent to 18 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



<sup>\*</sup>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.

tech global university



### Postgraduate Diploma Canine and Feline Nutrition and Feeding

- » Modality: Online
- » Duration: 6 months.
- Certificate: TECH Global University
- » Credits: 18 ECTS
- » Schedule: at your own pace
- » Exams: online

