



Postgraduate Diploma Wildlife Census and Monitoring

» Modality: online

» Duration: 6 months

» Certificate: TECH Technological University

» Dedication: 16h/week

» Schedule: at your own pace

» Exams: online

We bsite: www.techtitute.com/in/veterinary-medicine/postgraduate-diploma/postgraduate-diploma-wildlife-census-monitoring

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In species conservation, early detection of the problems faced by a population is of vital importance. Monitoring is the key tool to determine certain factors of the population, its numbers or any other relevant factor.

This information will be recorded periodically in the monitoring programs responsible for recording the conservation status of the population and provide information on population trends to ultimately establish and implement conservation measures.



tech 06 | Introduction

Unlike other programs, the Postgraduate Diploma in Census and Wildlife Monitoring approaches wildlife management from an interdisciplinary point of view.

This Postgraduate Diploma will address wildlife monitoring in depth and through direct and indirect animal observation by analyzing droppings, nests, pellets and other natural signs thanks to devices such as photo-trapping. Finally, the main methods to census a species, which are fundamental for developing a wildlife monitoring program, will be analyzed in detail.

Wildlife management covers a wide spectrum of lines of research and action, in addition to the study of health surveillance and disease control, which is usually the general line of study in similar programs. However, in the future, veterinary professionals will have to face other lines of work in biodiversity conservation, which are also extensively developed throughout the syllabus.

Nowadays, it is difficult to find a program like this one, which provides students with specialized training in the use of the most common software in daily practice. Today there are many computer tools available that are considered necessary and that facilitate and increase the level of quality of work.

One of the aspects that is usually lost sight of in species management is the territorial analysis of their habitats and their areas of distribution.

Species biology is not only based on theoretical knowledge, but also on spatial and geolocalized data. The only way to understand and visualize how species are distributed is by using Geographic Information Systems to represent and model the data.

This complete program is designed by professors with the highest recognized degree of specialization, thus guaranteeing its quality in all aspects in wildlife, both clinical and scientific. A unique opportunity to specialize in an area where professional positions are in high demand, from the hands of outstanding professionals.

This **Postgraduate Diploma in Wildlife Census and Monitoring** contains the most complete and up-to-date scientific program on the market. The most important features include:

- Case studies presented by experts in Wildlife
- The graphic, schematic, and practical contents with which they are created, provide scientific and practical information on the disciplines that are essential for professional development
- New developments in Wildlife Management
- Practical exercises where the self-assessment process can be carried out to improve learning
- Special emphasis on innovative methodologies in Wildlife Management
- Theoretical lessons, questions to the expert, debate forums on controversial topics, and individual reflection assignments
- Content that is accessible from any fixed or portable device with an Internet connection



Train with us and learn the concepts associated with wildlife populations and the processes and interactions that take place"



This Postgraduate Diploma is the best investment you can make when selecting a refresher program in Wildlife Census and Monitoring"

It includes, in its Teaching staff, Professionals belonging to the veterinary field, who pour into this training the experience of their work, in addition to recognized 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 immersive specialization programmed 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, the professional will have the help of an innovative, interactive video system made by recognized and experienced experts in Wildlife.

This program comes with the best educational material, providing you with a contextual approach that will facilitate your learning.

This 100% online Postgraduate Diploma will allow you to combine your studies with your professional work while expanding your knowledge in this field.







tech 10 | Objectives



General Objectives

- Establish the ecological basis to understand the relevant concepts in the area
- Develop the concepts associated with wildlife populations and the processes and interactions that take place
- Establish the differences between the types of surrogate species and how to read them as environmental indicators
- Compile energy flows and processes that take place in different ecosystems
- Discuss the international regulatory framework of Wildlife Management
- Examine the main legal implementation tools in biodiversity conservation at the European level
- Discuss the tools used in the three main areas of biodiversity conservation: sites, species and environmental conservation
- Establish management mechanisms in line with the regulations discussed
- Analyze the main direct and indirect wildlife observation methods
- Establish the factors necessary to design monitoring programs
- Develop the main species census methods
- Choose the appropriate census methodology
- Understand the potential of geographic information systems (GIS) in the management of species distribution data, their environments and monitoring strategies
- Manage QGIS software to manage field sampling data
- Analyze the available territorial data to obtain strategic maps that fulfill specific functions in species management
- Represent the available information and the processed results within GIS







Specific Objectives

Module 1. Fundamentals of Ecology

- Define the different biological indicators associated with the study of animal populations
- Develop population dynamics through the definition of species life history strategies
- Establish the critical periods in the life cycle of species and their vulnerability to extinction
- Study surrogate species, through real examples, and identify differences and similarities between them
- Define the basics of plant ecology and plant-animal interactions
- Analyze the structure of ecosystems and the joint action of various factors that influence their development
- Value the energy flows and cycles that occur in the natural environment

Module 2. Regulatory Bases in Species Conservation

- Develop the main lines of action at the international level in biodiversity conservation
- Analyze the objectives of the Convention on International Trade in Endangered Species of Wild Fauna and Flora and its strategy
- Develop the Convention on Biological Diversity as a basic international reference on biodiversity concerns
- Establish the Ramsar Convention as a basic tool in the conservation and wise use of wetlands and their resources
- Analyze the main European directives in the field of biodiversity conservation
- BORRAR



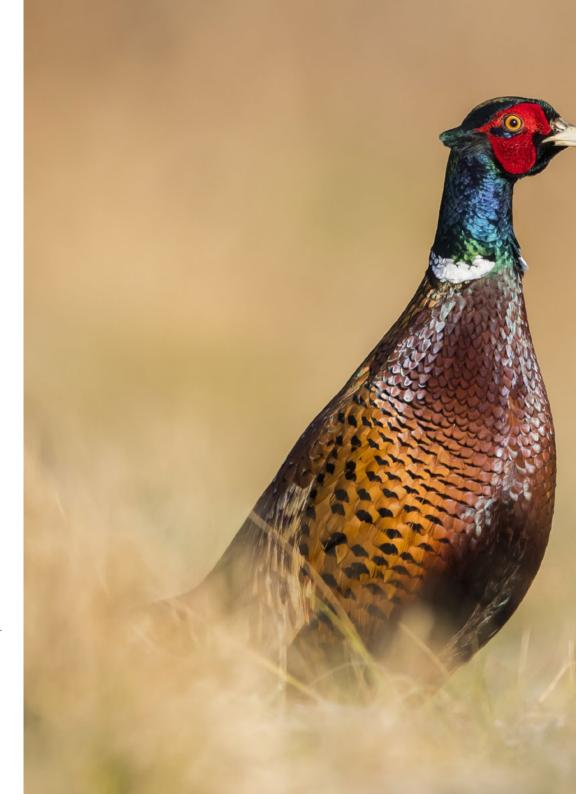
tech 12 | Objectives

Module 3. Wildlife Census

- Identify fundamental methods and tools used to identify wildlife signs
- Facilitate understanding of key parameters when designing wildlife census
- Learn to identify the remains of the main wildlife species
- Introduce photo-trapping as one of the indirect population monitoring techniques
- · Analyze the adequacy of static versus dynamic censuses according to the target species
- Determine the key factors in analysing wildlife tracks

Module 4. Spatial Management of Species using Geographic Information Systems in QGIS

- Understand the key functionalities offered by geographic information systems
- Manage basic symbology and geoprocessing analysis tools in QGIS
- Establish cartographic methodologies to manage territorial plots for species monitoring and analysis
- Dump and represent field data linked to species using GIS
- Manage QGIS plugins to virtually collect species distribution data
- Create thematic maps to represent particular aspects of censuses or inventories, such as richness maps or effort maps
- Analyze territorial variables in order to obtain species suitability maps that can be used for conservation purposes
- Develop ecological corridors between natural areas in order to plan conservation routes for species migration
- Understand the key concepts linked to field data collection in order to obtain correctly documented and technically feasible cartography







Seize the opportunity and take the step to get up to speed on the latest developments in Wildlife Census and Monitoring"





tech 16 | Course Management

Management



Mr. Matellanes Ferreras, Roberto

- Degree in Environmental Sciences, Rey Juan Carlos University
- Master's Degree in Training Management Management and development of training plans, European University, Madrid
- Master's Degree in Big Data and Business Intelligence, Rey Juan Carlos University
- Course on Pedagogical Aptitude in Natural Sciences, Complutense University, Madrid
- Unmanned Aerial Vehicle Pilot, State Agency of Aviation Safety (AESA)
- Technician in Management of Protected Natural Spaces, Official College of Forestry Technical Engineers
- Technician in Environmental Impact Assessment, Polytechnic University, Madrid
- Professor of Geographic Information Systems applied to the conservation of species and protected natural areas
- Conservation and national biodiversity management projects linked to species and protected natural areas
- Management, documentation and monitoring of species distribution inventories
- Territorial analyses for the reintroduction of protected species
- Analysis of the conservation status of species linked to the Natura 2000 Network for European sexennial reports (Directive 92/43/ EEC and Directive 79/409/EEC)
- Inventory management of national and international wetland natural areas



Ms. Pérez Fernández, Marisa

- Forestry Polytechnic University of Madrid
- Master's Degree in Integrated Quality, Environmental and Occupational Health and Safety Management Systems, OHSAS
- San Pablo CEU University
- 3rd Year, Degree in Mechanical Industrial Engineering UNED
- Teaching Experience: Forest management for biodiversity conservation, natural inventories, integrated management of the natural environment, sustainable game management Technical bases and Technical Hunting Plans
- Senior Technician in Environmental Assessment, Engineering and Environmental Quality Management TRAGSATEC
- Technical Assistant TECUM Project (Tackling Environmental Crimes through standardized Methodologies) B&S Europe
- Field instructor on the Forest Arsonist Profiling project Environmental and Urban Planning Prosecutor's Office General Prosecutor's Office of the State
- Environmental Technician SEPRONA Spanish Civil Guard Headquarter
- Environmental Work Management of the Fraga-Mequinenza Gas Pipeline ENDESA Gas Transporter IIMA CONSULTING FIRM





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Module 1. Fundamentals of Ecology

- 1.1. General Ecology I
 - 1.1.1. Reproduction Strategies
 - 1.1.2. Biological Indicators
 - 1.1.2.1. Productivity
 - 1.1.2.2. Sex Ratio
 - 1.1.2.3. Flight Rate
 - 1.1.2.4. Operational Birth Rate
 - 1.1.2.5. Reproductive Success
- 1.2. General Ecology II
 - 1.2.1. Birth Rate and Mortality
 - 1.2.2. Growth
 - 1.2.3. Density and Assessment
- 1.3. Population Ecology
 - 1.3.1. Gregariousness and Territorialism
 - 1.3.2. Feeding Area
 - 1.3.3. Activity Patterns
 - 1.3.4. Age Structure
 - 1.3.5. Predation
 - 1.3.6. Animal Nutrition
 - 1.3.7. Extinction: Critical Periods
- 1.4. Wildlife Census and Monitoring
 - 1.4.1. Life Cycle Critical Periods
 - 1.4.2. International Union for Conservation of Nature (IUCN) Categories
 - 1.4.3. Conservation Indicators
 - 1.4.4. Vulnerability to Extinction

- 1.5. Surrogate Species I
 - 1.5.1. Keystone Species
 - 1.5.1.1. Description
 - 1.5.1.2. Real Examples
 - 1.5.2. Umbrella Species
 - 1.5.2.1. Description
 - 1.5.2.2. Real Examples
- 1.6. Surrogate Species II
 - 1.6.1. Flagship Species
 - 1.6.1.1. Description
 - 1.6.1.2. Real Examples
 - 1.6.2. Indicator Species
 - 1.6.2.1. Biodiversity Status
 - 1.6.2.2. Habitat Status
 - 1.6.2.3. Population Status
- 1.7. Plant Ecology
 - 1.7.1. Plant Successions
 - 1.7.2. Animal-Plant Interaction
 - 1.7.3. Biogeography
- 1.8. Ecosystems
 - 1.8.1. BORRAR
 - 1.8.2. Factors
- 1.9. Biological Systems and Communities
 - 1.9.1. Community
 - 1.9.2. BORRAR
 - 1.9.3. Biomass
- 1.10. Energy Flows
 - 1.10.1. Nutrient Cycles

Module 2. Regulatory Bases in Species Conservation

- 2.1. Convention on Biological Diversity
 - 2.1.1. Mission and Objectives
 - 2.1.2. Strategic Plan for Biological Diversity
- 2.2. Convention on International Trade in Endangered Species of Wild Fauna and Flora
 - 2.2.1. Structure and Objectives
 - 2.2.2. Appendices I, II and III
- 2.3. Ramsar Convention
 - 2.3.1. Structure and Objectives
 - 2.3.2. Designation of Ramsar Sites
- 2.4. Other International Conventions
 - 2.4.1. United Nations Convention to Combat Desertification
 - 2.4.2. Bonn Convention on the Conservation of Migratory Species
 - 2.4.3 OSPAR Convention
- 2.5. Berna Convention
 - 2.5.1. Structure and Objectives
- 2.6. BORRAR
 - 261 BORRAR
 - 2.6.2. Mission and Objectives
 - 2.6.3. BORRAR
- 2.7. BORRAR
 - 2.7.1. BORRAR
 - 2.7.2. Mission and Objectives
- 2.8. BORRAR
 - 2.8.1. BORRAR

2.8.1.1. BORRAR

2.8.1.2. BORRAR

- .9. BORRAR
 - 2.9.1. BORRAR
 - 2.9.2. BORRAR
- 2.10. South America: National Strategies for Biodiversity
 - 2.10.1. Mission and Objectives
 - 2.10.2. Main Lines of Action

Module 3. Wildlife Census

- 3.1. Introduction to Observation Methods
 - 3.1.1. Direct Observation
 - 3.1.2. Signs
 - 3.1.2.1. Direct Signs
 - 3.1.2.2. Indirect Signs
 - 3.1.3. Electric Fishing
- 3.2. Indirect Signs: Natural Signs I
 - 3.2.1. Natural Signs
 - 3.2.1.1. Tracks
 - 3.2.1.2. Paths and Steps
 - 3.2.1.3. Droppings and Pellets
- 3.3. Indirect Signs: Natural Signs II
 - 3.3.1.1. Sleeping Sites, Beds and Burrows
 - 3.3.1.2. Territorial Markings
 - 3.3.1.3. Moults, Hairs, Feathers and Other Remains
- 3.4. Indirect Signs: Techniques
 - 3.4.1 Devices
 - 3.4.1.1. Hair Traps
 - 3.4.1.2. Sand Traps
 - 3.4.1.3. Photo-Trapping
- 3.5. Census Design
 - 3.5.1. Previous Concepts
 - 3.5.1.1. Sizes and Density
 - 3.5.1.2. Abundance Index
 - 3.5.1.3. Accuracy and Precision
 - 3.5.2. Populations
 - 3.5.2.1. Aggregate Distribution
 - 3.5.2.2. Uniform Distribution
 - 3.5.2.1. Manipulable
 - 3.5.3. Detectability and Catchability
 - 3.5.4. GPS Data Acquisition

tech 22 | Structure and Content

| 3.6. | Direct Census: Static | | |
|-------|-------------------------------|--|--|
| | 3.6.1. | Searches | |
| | 3.6.2. | Observation Points | |
| | 3.6.3. | Estimates from Hunting | |
| 3.7. | Direct Census: Dynamic Census | | |
| | 3.7.1. | Plot Census without Search | |
| | 3.7.2. | Fixed Band Transects | |
| | 3.7.3. | Line Transects | |
| | | 3.7.3.1. Capture-Recapture | |
| | | 3.7.3.1.1. Modifying of the Number of Individuals | |
| | | 3.7.3.1.2. Not Modifying the Number of Individuals | |
| 3.8. | Wildlife | Wildlife Monitoring | |
| | 3.8.1. | Introduction to Ethology | |
| | 3.8.2. | Research Design | |
| | | 3.8.2.1. Behavior Description | |
| | | 3.8.2.2. Category Selection | |
| | | 3.8.2.3. Behavior Measures | |
| | | 3.8.2.4. Types of Sampling | |
| | | 3.8.2.5. Types of Recording | |
| | | 3.8.2.6. Inventories | |
| 3.9. | Tracks | | |
| | 3.9.1. | Influencing Factors | |
| | 3.9.2. | Ecological Information | |
| | 3.9.3. | Morphology | |
| | 3.9.4. | Finding and Preserving Tracks | |
| | 3.9.5. | Keys | |
| 3.10. | Wildlife Monitoring Programs | | |
| | 3.10.1. | BORRAR | |
| | 3.10.2. | Main Experiences in South America | |



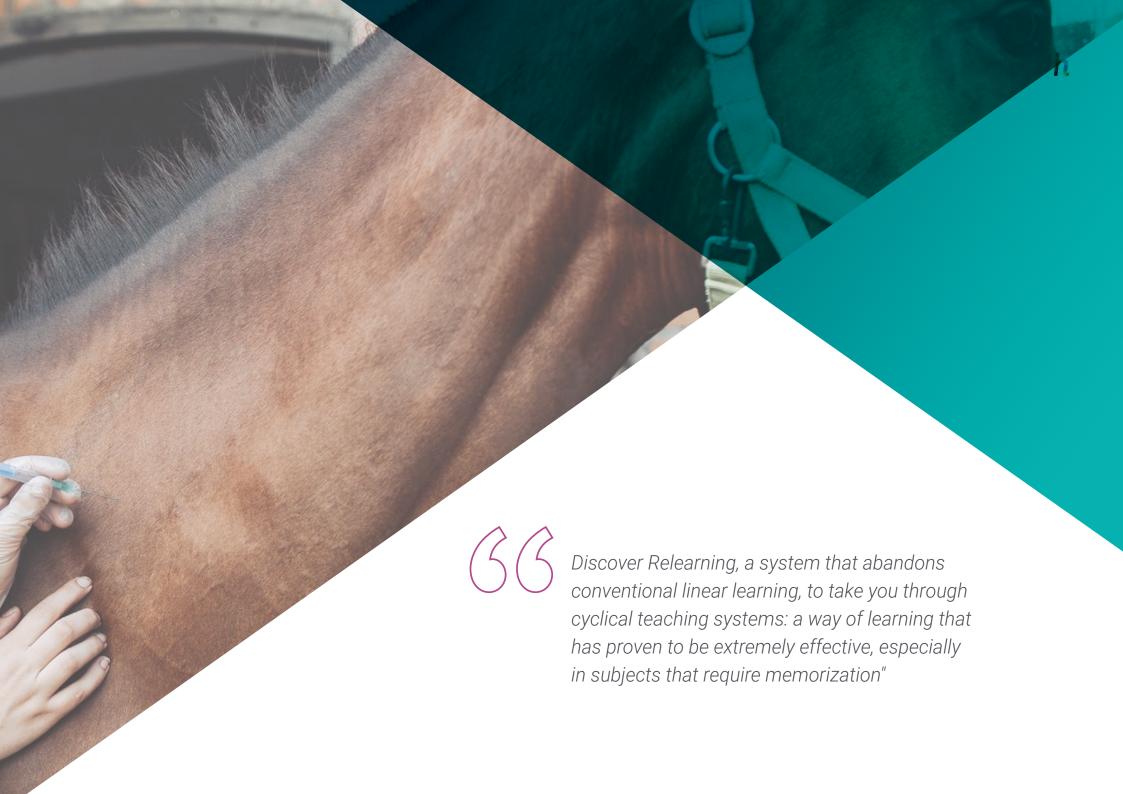
Module 4. Spatial Management of Species using Geographic Information Systems in QGIS

- 4.1. Introduction to Geographic Information Systems (GIS)
 - 4.1.1. Introduction to Geographic Information Systems
 - 4.1.2. Mapping File Formats for Species Analysis
 - 4.1.3. Main Geoprocessing Analyses for Species Management
- 4.2. Reference Systems in Map Files
 - 4.2.1. The Importance of Reference Systems in the Visualization and Accuracy of Field Data Linked to Species Distribution
 - 4.2.2. Examples of Correct and Incorrect Data Management in Species Domains
- 4.3. QGIS Interface
 - 4.3.1. Introduction to OGIS
 - 4.3.2. Interface and Sections to be Analyzed and Data Display
- 4.4. Data Visualization and Display on QGIS
 - 4.4.1. Visualizing Mapping Data on QGIS
 - 4.4.2. Attribute Tables for Querying and Documenting Information
 - 4.4.3. Symbolism for Sample Representation
- 4.5. QGIS *Plug-ins* for Species Mapping and Analysis
 - 4.5.1. QGIS Plug-ins
 - 4.5.2. GBIF Plug-in
 - 4.5.3. Natusfera Plug-in
 - 4.5.4. Species Explorer Plug-in
 - 4.5.5. Citizen Science Platforms and Other Analysis Plug-ins
- 4.6. Cartographic Management of Sample Plots and Field Monitoring
 - 4.6.1. Geometric Planning of Sampling Plots and Grids
 - 4.6.2. Representation of Distribution Data, Sampling Data and Transects in the Field
- 4.7. Species Richness and Effort Maps
 - 4.7.1. Analysis of Species Richness Data
 - 4.7.2. Representation of Richness Maps
 - 4.7.3. Analysis of Effort Data
 - 4.7.4. Representation of Effort Maps
- 4.8. Practical Example: Multi-Criteria Analysis for Species Suitability Maps

- 4.8.1. Introduction to the Use of Land Suitability Maps
- 4.8.2. Analysis of Environmental Variables Linked to the Species
- 4.8.3. Analysis of Suitability Values for the Variables
- 4.8.4. Elaboration of Land Suitability Maps for Species
- 1.9. Creation of Ecological Corridors for Species Distribution
 - 4.9.1. Introduction to Spatial Connectivity Strategies to Create Ecological Corridors
 - 4.9.2. Resistance and Friction Maps vs. Suitability Maps
 - 4.9.3. Identification of Connectivity Points
 - 4.9.4. Development of Ecological Corridors for Species Distribution
- 4.10. Considerations for Field Data Collection
 - 4.10.1. Available Technologies
 - 4.10.2. Device Configuration prior to Data Collection
 - 4.10.3. Technical Considerations in Data Documentation
 - 4.10.4. Considerations according to the Scale of Work





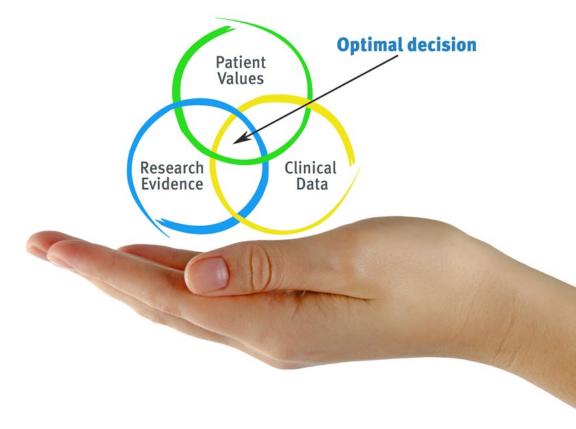


tech 26 | Methodology

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. 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 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.** 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.





Relearning Methodology

At TECH we enhance the 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-theart software to facilitate immersive learning.



Methodology | 29 tech

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 applied to the 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

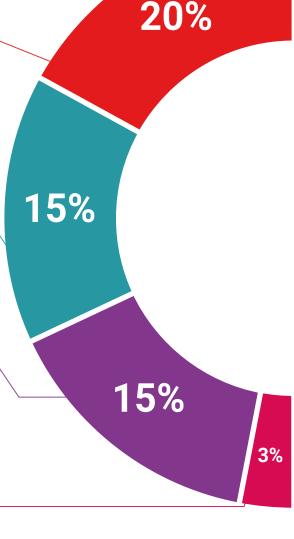
TECH introduces students to the latest techniques, the latest educational advances and to the forefront of current and procedures of veterinary techniques. All of this in direct contact with students and explained in detail so as to aid their assimilation and understanding. And best of all, you can watch 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 Therefore, TECH presents real cases in which

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



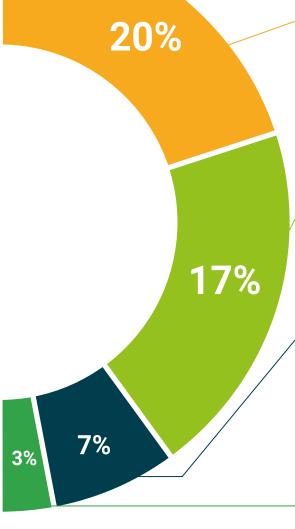
There is scientific evidence suggesting that observing third-party experts can be useful.

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.







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This **Postgraduate Diploma in Wildlife Census and Monitoring** contains the most complete and up-to-date educational program on the market.

After the student has passed the assessments, 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 Wildlife Census and Monitoring
Official N° of hours: 600 h.



POSTGRADUATE DIPLOMA

in

Wildlife Census and Monitoring

This is a qualification awarded by this University, equivalent to 600 hours, with a start date of dd/mm/yyyy and an end date of dd/mm/yyyy.

TECH is a Private Institution of Higher Education recognized by the Ministry of Public Education as of June 28, 2018.

June 17, 2020

Tere Guevara Navarro

This qualification must always be accompanied by the university degree issued by the competent authority to practice professionally in each country.

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^{*}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.



Postgraduate Diploma Wildlife Census and Monitoring

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