

Postgraduate Certificate

Science and Technology of
Meat and Meat Derivatives



Postgraduate Certificate Science and Technology of Meat and Meat Derivatives

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

Website: www.techtute.com/pk/nutrition/postgraduate-certificate/science-technology-meat-meat-derivatives

Index

01

Introduction

p. 4

02

Objectives

p. 8

03

Structure and Content

p. 12

04

Methodology

p. 16

05

Certificate

p. 24

01

Introduction

Consumers' concern for acquiring healthier and quality-guaranteed products has led the food industry to implement strategies based on scientific criteria for meat foods and the integration of favorable technologies in the treatment process. For this reason, this sector requires more and more professionals specialized in the aforementioned elements, and this academic program seeks to meet this demand by providing students with all the necessary knowledge to face the challenges that exist in the field of animal foodstuffs. This will be possible through a 100% online methodology, which will allow students to have more control over their time.





“

This is the best academic program to specialize in the application of technological elements to the handling of Meat Derivatives. Don't miss this opportunity and enroll now"

Nowadays, within the Food Industry there are technologies that allow handling Meat and Meat Derivatives with greater precaution and this is due to the fact that the consumption habits of the population are evolving to eat healthier diets. For this reason, it is necessary to have specialized professionals in this field and with this Postgraduate Certificate students will be among the best.

With the syllabus of this program, the student will obtain a broad knowledge of the structural bases of striated muscle and its transformation into meat, based on the study of its structure. We will also delve into the characteristics suitable for the ripening process and the enzymes involved in this activity, in order to reinforce the importance of these procedures in quality control.

In this way, students will be able to perfect their skills and increase their professional competencies, which will allow them to master meat food preservation technologies and scientific techniques to protect them from any type of contamination with greater ease.

All this, thanks to the innovative Relearning methodology, which allows students to study from home and have greater time flexibility, since they will have access 24 hours a day to the multimedia resources they will find in the online campus. In addition, you will be able to strengthen your competencies and increase your ability to solve problems, since you will analyze practical cases that will place you in a real scenario.

This **Postgraduate Certificate in Science and Technology of Meat and Meat Derivatives** contains the most complete and up-to-date scientific program on the market. The most important features include:

- The development of case studies presented by experts in Meat and Meat Derivatives Science and Technology
- The graphic, schematic, and practical contents with which they are created, provide scientific and practical information on the disciplines that are essential for professional practice
- Practical exercises where self-assessment can be used to improve learning
- Its special emphasis on innovative methodologies
- 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



A Postgraduate Certificate that will provide you with the necessary tools and knowledge to excel in the food industry, especially in meat products"

“

Acquire practical skills, theoretical knowledge and learn the most important concepts to integrate the benefits of science with those of nutrition”

The program’s teaching staff includes professionals from sector who contribute their work experience to this educational program, as well as renowned specialists from leading societies and prestigious universities.

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

The design of this program focuses on Problem-Based Learning, by means of which the professional must try to solve the different professional practice situations that are presented throughout the academic course. This will be done with the help of an innovative system of interactive videos made by renowned experts.

Discover all the benefits TECH has prepared to help you achieve your goals.

Because this program is developed in an online format, you will be able to accommodate your study schedule with greater flexibility.



02

Objectives

The primary purpose of this educational program is to familiarize students with the latest developments in the Food Industry, providing them with an in-depth understanding of the elements that science brings to the preservation of meat in all its presentations and the implementation of technologies to treat them. In this way, students will be trained to carry out effective strategies to mitigate the risks of contamination during meat production. All this will be achieved through the study of multimedia content that will strengthen students' skills in this area.





“

Take advantage of the technological advances that exist in meat food processing and integrate your knowledge to achieve optimal results in this process”



General Objectives

- Know the influence that chemical engineering has had in recent years in the production and creation of foodstuffs
- Identify the main quality processes to which food products are subjected
- Apply knowledge of food chemistry in dietetics and nutrition
- Recognize the influence of Bromatology and its related aspects in the qualitative and quantitative food composition
- Analyze new technologies and their contribution to the food production process

“

Thanks to the Relearning methodology, you will update your knowledge in meat science and technology"





Specific Objectives

- ◆ Identify and classify the physical, chemical and microbiological agents that cause food spoilage and select the most appropriate strategies for their prevention and control
- ◆ Identify and assess the physicochemical, sensory and nutritional characteristics of foods, their influence on processing and on the quality of the final product
- ◆ To elaborate, transform and preserve food considering quality and safety standards, integrating environmental management in these processes
- ◆ To formulate new foods by choosing the ingredients and additives, as well as the most appropriate treatments to obtain safe, nutritious and attractive products for the consumer
- ◆ Analyze the quality and estimate the shelf life of each of these foods according to their properties and storage conditions
- ◆ Contribute to the development of new processes and products in the field of meat, fish and fish by-products

03

Structure and Content

The academic program of this Postgraduate Certificate has been designed by recognized experts in the field of the Food Industry, with the objective of providing students with a first class education. In this way, students will have the opportunity to obtain specialized knowledge on the application of science to the meat food preservation process. All this will be achieved through the study of multimedia resources and the analysis of practical cases, which will allow students to develop the best professional skills in this area.





“

Learn about the biological characteristics of meat through multimedia resources that are at the forefront of developments in the Food Industry”

Module 1. Science and Technology of meat, fish and fish products

- 1.1. Introduction to the muscle food industry
 - 1.1.1. Muscle-based food industries: meat and fish
 - 1.1.1.1. Structural and functional basis of striated muscle
 - 1.1.1.2. Importance of these subsectors
 - 1.1.2. Transformation of muscle into flesh: development of rigor mortis
 - 1.1.2.1. Consequences of rigor mortis
 - 1.1.3. Meat maturation: changes in muscle structure and other nitrogenous compounds
 - 1.1.3.1. Endogenous proteolytic enzymes
 - 1.1.3.2. Optimal ripening conditions
- 1.2. Anomalous processes in meat processing
 - 1.2.1. Effect of antemortem stress: DFD meats and PSE pork meats
 - 1.2.1.1. Defective sensory characteristics and technological suitability
 - 1.2.1.2. Effect of the administration of growth promoters
 - 1.2.2. Effect of postmortem refrigeration: shortening due to cold
 - 1.2.2.1. Consequences
- 1.3. Meat quality
 - 1.3.1. Sensory parameters that determine it: color, texture, odor, flavor and water retention capacity of the meat
 - 1.3.1.1. Pre- and post-mortem factors influencing this
 - 1.3.2. Quality measurement and evaluation methods
 - 1.3.2.1. Integrated evaluation of meat quality and technological suitability
 - 1.3.2.2. Quality measurement and evaluation methods
 - 1.3.3. Quality assurance systems in the meat industry
- 1.4. Industrial meat processing
 - 1.4.1. Animal slaughtering, dressing and carcass preparation technology
 - 1.4.1.1. Channel Classification
 - 1.4.1.2. Electrical stimulation of the carcasses
 - 1.4.1.3. Quartering and categorization
 - 1.4.1.4. Industrial pork carcass cutting
 - 1.4.2. Characteristics of industrial cattle, sheep, pig and poultry slaughterhouses
 - 1.4.3. Systems used in the short term preservation of meat
 - 1.4.3.1. Industrial equipment
 - 1.4.3.2. Shelf life of meat; factors that determine and improve shelf life
 - 1.4.4. Meat freezing
 - 1.4.4.1. Industrial equipment
 - 1.4.4.2. Effects of freezing on sensory and technological properties of meat
 - 1.4.4.3. Defrosting
- 1.5. Meat packaging and sale
 - 1.5.1. Packaging systems; application to meat preservation and different types of meat sales
 - 1.5.2. Storage under vacuum and in modified atmospheres
 - 1.5.3. Packaging materials
 - 1.5.4. Distribution and sales systems
- 1.6. Introduction to the fishing and seafood industry
 - 1.6.1. Variability in composition and its causes
 - 1.6.1.2. Classification of fish according to its composition
 - 1.6.1.3. Peculiarities of fish lipids and their importance in technology
 - 1.6.1.4. Fish and seafood connective tissue
 - 1.6.2. Stunning and slaughtering methods: effects on quality
 - 1.6.2.1. Postmortem processing in fish
 - 1.6.3. Differential characteristics of rigor mortis
 - 1.6.4. Most important parameters and their control
- 1.7. Fish quality
 - 1.7.1. Influence of fishery-related factors on fish quality
 - 1.7.1.1. Main parameters of fish organoleptic quality
 - 1.7.2. Indices for determining the quality and freshness of fish and shellfish
 - 1.7.3. Methods of fish refrigeration
 - 1.7.3.1. Ice: types and effects
 - 1.7.3.2. Freezing: freezing speed and its influence on product quality
 - 1.7.3.3. Freezing maintenance: critical points and their control. Defrosting

- 1.7.4. Fish and seafood packaging and preservation
 - 1.7.4.1. Vacuum and modified atmospheres
 - 1.7.4.2. Packaging systems and equipment
- 1.8. Meat derivatives technology
 - 1.8.1. Classification of meat derivatives according to their technological process
 - 1.8.1.1. Preparation, preservation and processing operations
 - 1.8.1.2. Salting, nitrification, drying, heat treatment and smoking
 - 1.8.1.3. Spicing, refrigeration, microbial processes, ripening and chopping
 - 1.8.1.4. Mixing, emulsifying, gelling, stuffing and packaging, etc
 - 1.8.2. General decision and control criteria
 - 1.8.3. Additives and other ingredients used in the meat industry
 - 1.8.3.1. Technological adjuvants
 - 1.8.3.2. Chemical preservatives and sensory modifiers
 - 1.8.3.3. Mass and multifunction agents
 - 1.8.4. Criteria for use in relation to product quality
- 1.9. Technology of raw cured and cooked meat products
 - 1.9.1. Whole cured meat products: cured ham and similar products
 - 1.9.2. Impact of raw material quality on the final product. Formulation
 - 1.9.2.1. Phases of the elaboration process
 - 1.9.2.2. Modifications undergone during ripening and desiccation
 - 1.9.2.3. Industrial equipment
 - 1.9.3. Decision criteria and process control
 - 1.9.3.1. Defects and alterations
 - 1.9.3.2. Other whole cured products
 - 1.9.4. Cured raw sausages. Formulation criteria
 - 1.9.4.1. Phases and alternatives of the elaboration process
 - 1.9.4.2. Industrial equipment
 - 1.9.4.3. Modifications undergone during ripening and desiccation
 - 1.9.5. Decision criteria and process control
- 1.10. Fish and fish product technology
 - 1.10.1. Fish preservation by salting
 - 1.10.2. Salting methods. Types and characteristics of salt
 - 1.10.3. Most frequent defects: causes and solutions
 - 1.10.4. Preparation of salted codfish
 - 1.10.5. Fish smoking
 - 1.10.5.1. Smoking systems. Types of smoke
 - 1.10.5.2. Processing methods: advantages and disadvantages
 - 1.10.5.4. Specific products: food quality and safety
 - 1.10.6. Canned tuna. Most important species: characteristics
 - 1.10.6.1. Elaboration process
 - 1.10.6.2. Semi-preserved fish. Salted anchovy. Marinades and pickling
 - 1.10.7. Surimi and derived products
 - 1.10.7.1. Surimi elaboration process
 - 1.10.7.2. Gelation: characteristics and products
 - 1.10.7.3. Crab analogs manufacturing process technology



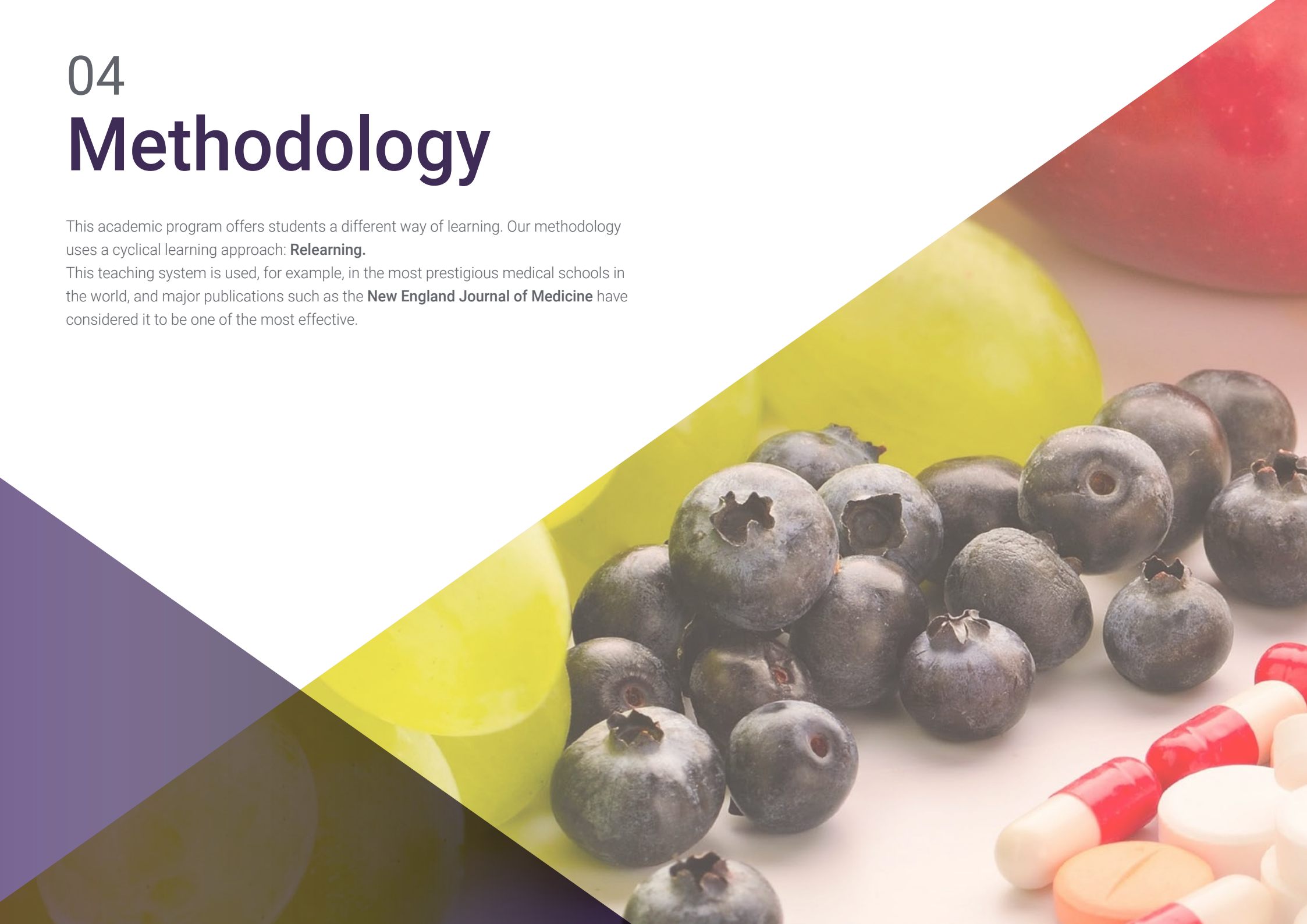
Grow professionally with this Postgraduate Certificate and give your profile the boost it needs to achieve excellence"

04

Methodology

This academic program offers students a different way of learning. Our methodology uses a cyclical learning approach: **Relearning**.

This teaching system is used, for example, in the most prestigious medical schools in the world, and major publications such as the **New England Journal of Medicine** have considered it to be one of the most effective.





“

Discover Relearning, a system that abandons conventional linear learning, to take you through cyclical teaching systems: a way of learning that has proven to be extremely effective, especially in subjects that require memorization"

At TECH we use the Case Method

In a given situation, what should a professional do? Throughout the program, students will face multiple simulated clinical cases, based on real patients, in which they will have to do research, establish hypotheses, and ultimately 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, nutritionists 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 power or because of its uniqueness or rarity. It is essential that the case is based on current professional life, trying to recreate the real conditions of professional nutritional 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. Nutritionists 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. Learning is solidly translated into practical skills that allow the nutritionist to better integrate knowledge into clinical practice.
3. Ideas and concepts are understood more efficiently, given that the example situations are based on real-life.
4. Students like to feel that the effort they put into their studies is worthwhile. This then translates into a greater interest in learning and more time dedicated to working on the 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.

The nutritionist will learn through real cases and by solving complex situations in simulated learning environments. These simulations are developed using state-of-the-art software to facilitate immersive learning.



At the forefront of world teaching, the Relearning method has managed to improve the overall satisfaction levels of professionals who complete their studies, with respect to the quality indicators of the best online university (Columbia University).

With this methodology, more than 45,000 nutritionists have been trained 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.

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.



Nutrition Techniques and Procedures on Video

TECH brings students closer to the latest techniques, the latest educational advances and to the forefront of current nutritional counselling techniques and procedures. All of this in direct contact with students and explained in detail so as to aid their assimilation and understanding. And best of all, you can watch the videos as many times as you like.



Interactive Summaries

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

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



Additional Reading

Recent articles, consensus documents and international guidelines, among others. In TECH's virtual library, students will have access to everything they need to complete their course.





Expert-Led Case Studies and Case Analysis

Effective learning ought to be contextual. Therefore, TECH presents real cases in which the expert will guide students, focusing on and solving the different situations: a clear and direct way to achieve the highest degree of understanding.



Testing & Retesting

We periodically evaluate and re-evaluate students' knowledge throughout the program, through assessment and self-assessment activities and exercises, so that they can see how they are achieving their goals.



Classes

There is scientific evidence suggesting that observing third-party experts can be useful.
Learning from an Expert strengthens knowledge and memory, and generates confidence in future difficult decisions.



Quick Action Guides

TECH offers the most relevant contents of the course in the form of worksheets or quick action guides. A synthetic, practical, and effective way to help students progress in their learning.



05

Certificate

The Postgraduate Certificate in Science and Technology of Meat and Meat Derivatives guarantees students, in addition to the most rigorous and up-to-date education, access to a Postgraduate Certificate issued by TECH Technological University.





“

Successfully complete this program and receive your university qualification without having to travel or fill out laborious paperwork”

This **Postgraduate Certificate in Science and Technology of Meat and Meat Derivatives** contains the most complete and up-to-date scientific program on the market.

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

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

Title: **Postgraduate Certificate in Science and Technology of Meat and Meat Derivatives**

Official N° of Hours: **150 h.**



*Apostille Convention. In the event that the student wishes to have their paper certificate issued with an apostille, TECH EDUCATION will make the necessary arrangements to obtain it, at an additional cost.

future

health confidence people

education information tutors

guarantee accreditation teaching

institutions technology learning

community commitment

tech technological
university

personalized service innovation

knowledge present
online teaching quality

development languages

virtual classroom

Postgraduate Certificate Science and Technology of Meat and Meat Derivatives

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

Postgraduate Certificate

Science and Technology of
Meat and Meat Derivatives

