Postgraduate Diploma

Technological Processes in the Food Industry

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Postgraduate Diploma

Technological Processes in the Food Industry

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

Website: **www.techtitute.com/pk/nutrition/postgraduate-diploma/technological-processes-food-industry**

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01

Introduction

There is no doubt that new technologies are perfecting tools and devices for food analysis, to obtain biodegradable packaging or to improve cooking techniques. These advances are aimed at safety and provide higher quality standards. In this optimization process there is still room for new lines of research and innovation, which forces nutrition professionals to continuously update their knowledge of the food industry. Faced with this scenario, this academic institution has designed a 100% online program that will delve into the most recent advances in the technological field of the sector, as well as the demanding requirements set by current regulations in the framework of product safety. All this, with multimedia content enriched and developed by the specialized teaching team that is part of this program.

A 100% online Postgraduate Diploma that allows you to be up to date with the techniques, technological equipment and quality systems used in the Food Industry"

The scarcity of raw materials, the drive for more sustainable agriculture, the reduction of pollution and the development of haute cuisine around the world have led to an incessant search for new techniques and the use of technology to improve the final quality of food products.

A scenario of innovation and optimization of resources that is undoubtedly of great interest to nutrition professionals who must keep abreast of the latest advances in the sector to perform their daily practice in the best possible way. Given the changes in the sector, TECH has developed this Postgraduate Diploma in Technological Processes in the Food Industry with the aim of bringing the specialist the latest information in this area.

A university program taught exclusively online that will lead the professionals to deepen, throughout over 6 months, in the techniques and equipment most used for food processing and the new systems used, as well as the design of packaging. In addition, the multimedia resources available will help them to delve into the requirements demanded in quality controls.

In addition, the students have case studies provided by the specialists who teach this program, which will allow them to have a much closer view of the current situation of the Food Industry.

The professionals are, therefore, before a university program that is at the academic forefront and which can be accessed wherever and whenever they wish. They only need a device with an Internet connection to be able to visualize the syllabus hosted in the Virtual Campus. Also, you have the freedom to distribute the teaching load according to your needs, allowing you to combine the most demanding responsibilities with a Postgraduate Diploma.

This **Postgraduate Diploma in Technological Processes in the Food Industry** contains the most complete and up-to-date program on the market. The most important features include:

- The development of case studies presented by experts in Food Technology
- 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

Thanks to this university program you will obtain the latest and most advanced information on culinary science and technology"

You have a library of multimedia resources that you can access conveniently whenever you want from your computer with an Internet connection"

During 450 teaching hours, you will learn about the latest advances in the elaboration and production processes in the food industry.

A university program that will introduce you to the latest developments in culinary treatments to obtain quality products.

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 professionals 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 professionals must try to solve the different professional practice situations that are presented throughout the academic course. For this purpose, the students will be assisted by an innovative interactive video system created by renowned experts.

02

Objectives

In just 6 months, students who take this Postgraduate Diploma will have updated their knowledge on Technological Processes in the Food Industry. To this end, they will have the most relevant and up-to-date scientific information on the equipment and industrial techniques used in food processing, as well as the quality standards necessary to comply with ISO regulations on food safety. All this, in addition, thanks to pedagogical tools, which employ the latest technology used in academic programs.

This program brings you closer to the latest developments in product packaging design and its interaction with food"

General Objectives

- Control processes in the agri-food industry, modeling and optimization of food processes
- Analyze factors influencing efficiency in food production
- Know the basic aspects of specific food processing technologies according to the initial raw material and the resulting product
- Participate in the design, organization and management of different food services
- Collaborate in the implementation of quality systems

With this program you will be able to go deeper into the requirements for ISO 22000 compliance at any time"

Specific Objectives

Module 1. Food Technology I

- Understand and use the basic fundamental principles and appropriate technological processes for food production, packaging and preservation
- Evaluate the impact of processing on food properties
- Determine the suitability of technological advances for food and process innovation in the food industry
- Know, understand and use agrifood industry facilities, their equipment and auxiliary machinery for the agrifood industry

Module 2. Food Technology II

- Assess the factors involved in the elaboration of a project.
- Build background knowledge for the study of specific food production technologies
- Establish the influence of processing systems on the design of manufacturing industries
- Establish culinary treatments that guarantee an acceptable standards of quality for cooked dishes
- Establish working and food handling conditions in the preparation of cooked dishes

Module 3. Quality and Food Safety Management

- Design and evaluate tools that promote food safety management throughout the food chain to protect public health
- Identify and interpret the requirements of the food safety management standard (UNE EN ISO 22000) for its subsequent application and evaluation in food chain operators
- Develop, implement, evaluate and maintain appropriate hygiene practices, food safety and risk control systems
- Evaluate, control and manage aspects of traceability in the food supply chain

03

Structure and Content

TECH's main objective is to offer its students a quality education. To this end, it brings together the best professionals in the sector and uses innovative teaching material in line with current times. That is why, in this syllabus, the specialists will find video summaries, detailed videos, diagrams, specialized readings and case studies that will bring them closer to the most outstanding scientific evidence on the benefits of the different food preparation and preservation processes. In addition, they will allow you to learn about the latest techniques and equipment used in the industry in order to meet the required quality criteria.

TECH has designed a Postgraduate Diploma with a theoretical-practical approach to keep you abreast of advances in food technology"

Module 1. Food Technology I

1.1. Introduction to Food Science and Technology
- 1.1.1. Historical Development
- 1.1.2. Concept of Food Science and Technology
- 1.1.3. Objectives of Food Technology. Relationships with Other Sciences.
- 1.1.4. Worldwide Food Industries

1.2. Preparation Methods Including Dry and Wet Preparation and Peeling
- 1.2.1. Reception of Food in the Food Industry and Preparation of Raw Material
- 1.2.2. Cleaning: Dry and Wet Methods
- 1.2.3. Selection and Classification
- 1.2.4. Main Peeling Methods
- 1.2.5. Peeling Equipment

1.3. Downsizing and Upsizing
- 1.3.1. General Objectives
- 1.3.2. Dry Food Size Reduction Equipment and Applications
- 1.3.3. Fibrous Food Size Reduction Equipment and Applications
- 1.3.4. Effect on Foods
- 1.3.5. Size Reduction of Liquid Foodstuffs: Homogenization and Atomization
  - 1.3.5.1. Equipment and Applications
- 1.3.6. Size Increase Techniques: Size Increase: Agglomeration, Instantaneization or Granulation

1.4. Causes and Factors Involved in Food Spoilage
- 1.4.1. Nature of the Causes of Food Spoilage
- 1.4.2. Factors Involved in Food Spoilage
- 1.4.3. Actions to Combat Physical and Chemical Spoilage
- 1.4.4. Possible Actions to Prevent or Delay Microbial Activity

1.5. Blanching Processing
- 1.5.1. General Aspects. Objectives
- 1.5.2. Blanching Methods: Steam, Hot Water and other Methods
- 1.5.3. Evaluation of Blanching in Fruits and Vegetables
- 1.5.4. Equipment and Facilities
- 1.5.5. Effects on the Nutritional and Sensory Properties of Foods

1.6. Fundamentals of Thermobacteriology
- 1.6.1. Basis of Thermobacteriology
- 1.6.2. Kinetics of Microbial Destruction by Heat
- 1.6.3. Survival Graph Concept of D-value. Thermodestruction Graphs
- 1.6.4. Z-value: Concept of Commercial Sterility
- 1.6.5. F and Fo Values Practical Examples of Heat Treatment Calculations in the Canning Industry

1.7. Pasterization
- 1.7.1. Concepts and Objectives
- 1.7.2. Types of Pasteurization Applications in the Food Industry
- 1.7.3. Effect on Foods
  - 1.7.3.1. Milk Pasteurization: Lactoperoxidase Test

1.8. Sterilization
- 1.8.1. Objectives
- 1.8.2. Sterilization of Packaged Foods
- 1.8.3. Filling, Evacuation and Closure of Containers
- 1.8.4. Types of Sterilizers: Discontinuous and Continuous TBI Treatment
- 1.8.5. Effect on Foods

1.9. Microwave Heating
- 1.9.1. General Aspects of Electromagnetic Radiation
- 1.9.2. Characteristics of Microwave
- 1.9.3. Dielectric Properties of the Material
- 1.9.4. Conversion of Microwave Energy into Heat Equipment Applications
- 1.9.5. Effect on Foods

1.10. Infrared Radiation
- 1.10.1. Theoretical Aspects
- 1.10.2. Equipment and Facilities Applications
- 1.10.3. Others Non-Ionizing Radiation

Module 2. Food Technology II

2.1. Technology of Refrigeration
- 2.1.1. Fundamentals of Preservation via Refrigeration
- 2.1.2. Effect of Refrigeration on the Chemical Reaction Rate and on Microbial Growth
- 2.1.3. Factors to be Monitored During Refrigerated Storage Effect on Foods

2.2. Technology of Freezing
- 2.2.1. Process and Stages of Freezing: Theory of Crystallization
- 2.2.2. Freezing Curves Modification of Foods During Freezing
- 2.2.3. Effects on Chemical and Biochemical Reactions
- 2.2.4. Effects on Microorganisms Defrosting

2.3. Cold Production Systems
- 2.3.1. Calculating Refrigeration and Freezing Requirements
- 2.3.2. Calculation of Freezing Time Cold Production Systems
- 2.3.3. Refrigerators and Refrigerated Storage
- 2.3.4. Freezers and Frozen Storage
- 2.3.5. Vapor Compression and Cryogenic Systems

2.4. Technology of Dehydration
- 2.4.1. Concept, Goals and Foundation
- 2.4.2. Psychrometry and Applications of the Psychrometric Diagram
- 2.4.3. Drying Speed. Drying Phases and Curves
- 2.4.4. Effects of Dehydration on Foodstuffs
- 2.4.5. Equipment, Installations and Applications

2.5. Freeze-Drying and Concentration Freezing
- 2.5.1. Theoretical Fundamentals Freeze-drying Systems
- 2.5.2. Applications. Effect on Foods
- 2.5.3. Freezing Concentration: Fundamentals and Objectives

2.6. Reduction of the Water Activity in Food Via the Addition of Solutes
- 2.6.1. Main Water Activity Reducing Agents and How They Act
- 2.6.2. Salting Technology: Salting Methods, Effects on Foodstuffs
- 2.6.3. Addition of Sugars and Other Chemical Agents as Depressants of Water Activity
- 2.6.4. Effect on Foods

2.7. Smoking Technology
- 2.7.1. Definition and Composition of Smoke Smoke Production Systems
- 2.7.2. Smokehouse Characteristics Smoking Techniques
- 2.7.3. Effect on Foods
- 2.7.4. Applications in the Food Industry

2.8. Packaging Technology
- 2.8.1. Purposes of Packaging
- 2.8.2. Design of Packaging and Materials for Manufacture
- 2.8.3. Analysis of the Interactions Between Packaging and Food Packaging and Dosing Systems
- 2.8.4. Container Closure and Closure Control Checks Packaging for Distribution
- 2.8.5. Container Labeling

2.9. Material Transport Systems
- 2.9.1. Material Transport Systems. Transporters
- 2.9.2. Pneumatic Equipment Cranes and Vehicles
- 2.9.3. Temperature Regulated Food Transportation

2.10. Food Preparation Industries and the Preparation of an Industrial Kitchen
- 2.10.1. Concepts and Objectives of Culinary Science and Technology The Professional Culinary Space
- 2.10.2. Culinary Techniques

Module 3. Quality and Food Safety Management

3.1. Food Safety and Consumer Protection
- 3.1.1. Definition and Basic Concepts
- 3.1.2. Quality and Food Safety Evolution
- 3.1.3. Situation in Developing and Developed Countries
- 3.1.4. Key Food Safety Agencies and Authorities: Structures and Functions
- 3.1.5. Food Fraud and Food Hoaxes: The Role of the Media

3.2. Facilities, Premises and Equipment
- 3.2.1. Site Selection: Design and Construction and Materials
- 3.2.2. Premises, Facilities and Equipment Maintenance Plan

3.3. Cleaning and Disinfection Plan (L + D)
- 3.3.1. Dirt Components
- 3.3.2. Detergents and Disinfectants: Composition and Functions
- 3.3.3. Cleaning and Disinfection Stages
- 3.3.4. Cleaning and Disinfection Programming

3.4. Pest Control
- 3.4.1. Pest Control and Disinsection (Plan D + D)
- 3.4.2. Pests Associated with the Food Chain
- 3.4.3. Preventive Measures for Pest Control
  - 3.4.3.1. Traps and Snares for Mammals and Ground Insects
  - 3.4.3.2. Traps and Snares for Flying Insects

3.5. Traceability Plan and Good Manipulation Practices (GMP)
- 3.5.1. Structure of a Traceability Plan
- 3.5.2. GMP Associated with Food Processing
  - 3.5.2.1. Food Handlers
  - 3.5.2.2. Requirements to be Met
  - 3.5.2.3. Hygiene Training Plans

3.6. Elements in the Management of Food Safety
- 3.6.1. Water as an Essential Element in the Food Chain
- 3.6.2. Biological and Chemical Agents Associated with Water
- 3.6.3. Quantifiable Elements of Quality, Safety and Use of Water
- 3.6.4. Approval of Suppliers
  - 3.6.4.1. Supplier Monitoring Plan
- 3.6.5. Food Labeling
  - 3.6.5.1. Consumer Information and Allergen Labeling
  - 3.6.5.2. Labeling of Genetically Modified Organisms

3.7. Food Crisis and Associated Policies
- 3.7.1. Triggering Factors of a Food Crisis
- 3.7.2. Scope, Management and Response to the Food Security Crisis
- 3.7.3. Alert Communication Systems
- 3.7.4. Policies and Strategies for Improving Food Quality and Safety

3.8. HACCP plan design
- 3.8.1. General Guidelines to be Followed for its Implementation: principles on which it is based and pre-requisite program
- 3.8.2. Management Commitment
- 3.8.3. Configuration of HACCP
- 3.8.4. Description of the Product and Identification of its Intended Use
- 3.8.5. Flow Diagrams

3.9. Development of the HACCP Plan
- 3.9.1. Defining Critical Control Points (CCPs)
- 3.9.2. The Seven Basic Principles of the HACCP Plan
  - 3.9.2.1. Requirements Identification and Analysis
  - 3.9.2.2. Establishment of Control Measures for Identified Hazards
  - 3.9.2.3. Determination of Critical Control Points (CCP)
  - 3.9.2.4. Defining Critical Control Points (CCPs)
  - 3.9.2.5. Establishment of Critical Limits
  - 3.9.2.6. Determination of Corrective Actions
  - 3.9.2.7. HACCP System Checks

3.10. ISO 22000
- 3.10.1. ISO 22000 Principles
- 3.10.2. Purpose and Field of Application
- 3.10.3. Market Situation and Position in Relation to Other Applicable Standards in the Food Chain
- 3.10.4. Application Requirements
- 3.10.5. Food Safety Management Policy

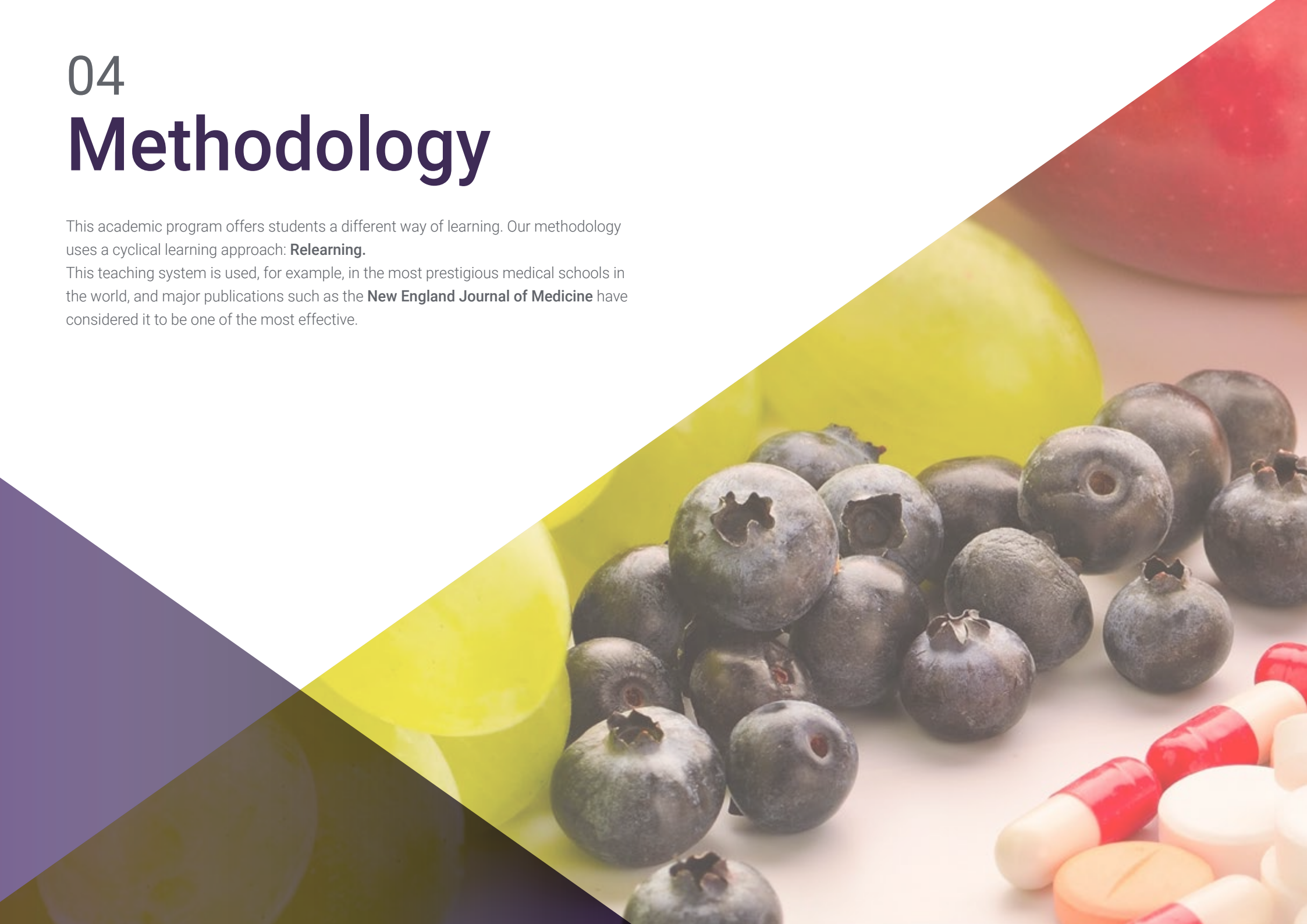
This program will allow you to deepen your knowledge of product labeling requirements, especially for genetically modified organisms"

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:

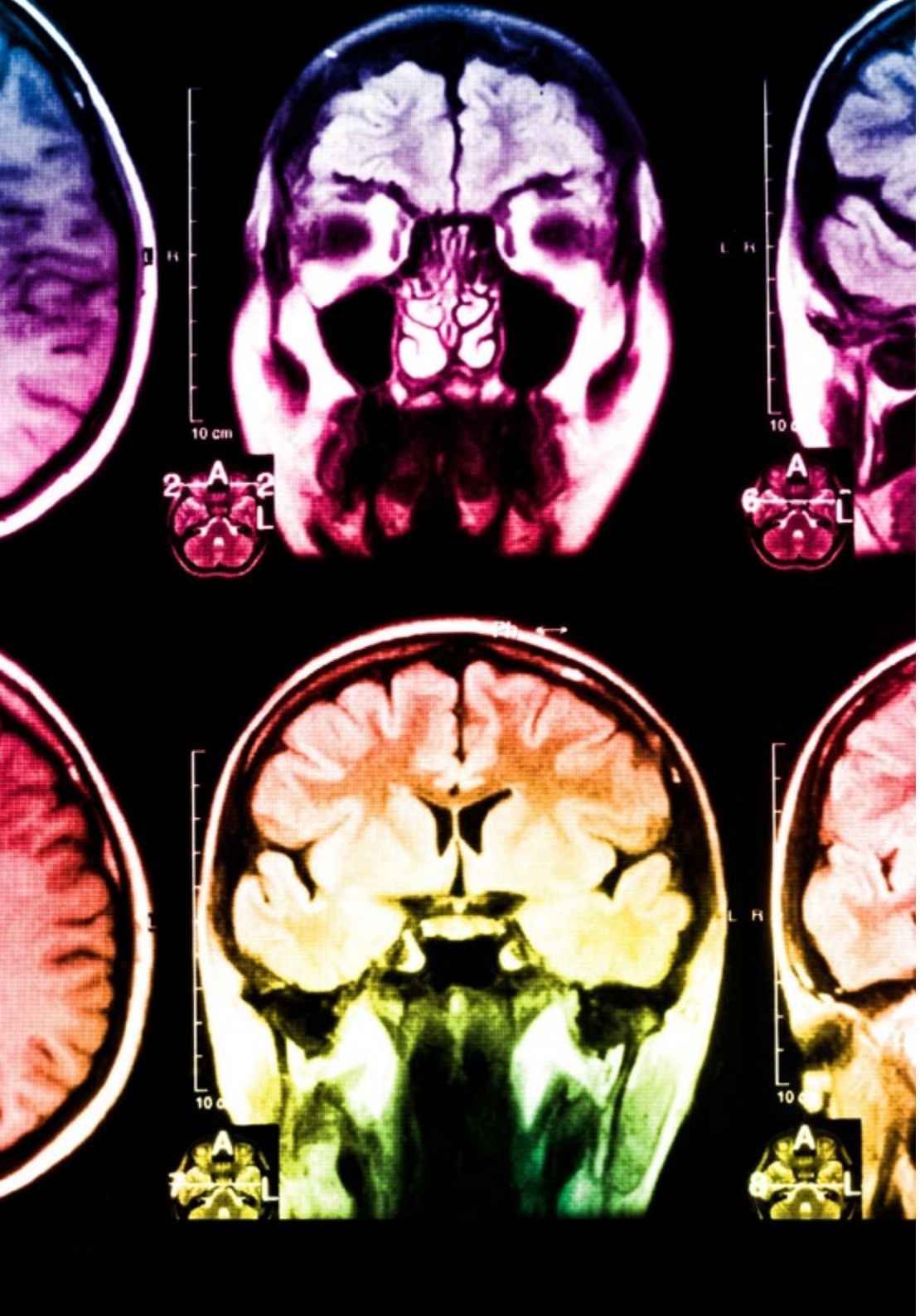
1. Nutritionists who follow this method not only achieve the assimilation of concepts, but also a development of their mental capacity through exercises to evaluate real situations and the application of knowledge.
2. Learning is solidly translated into practical skills that allow the nutritionist to 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.

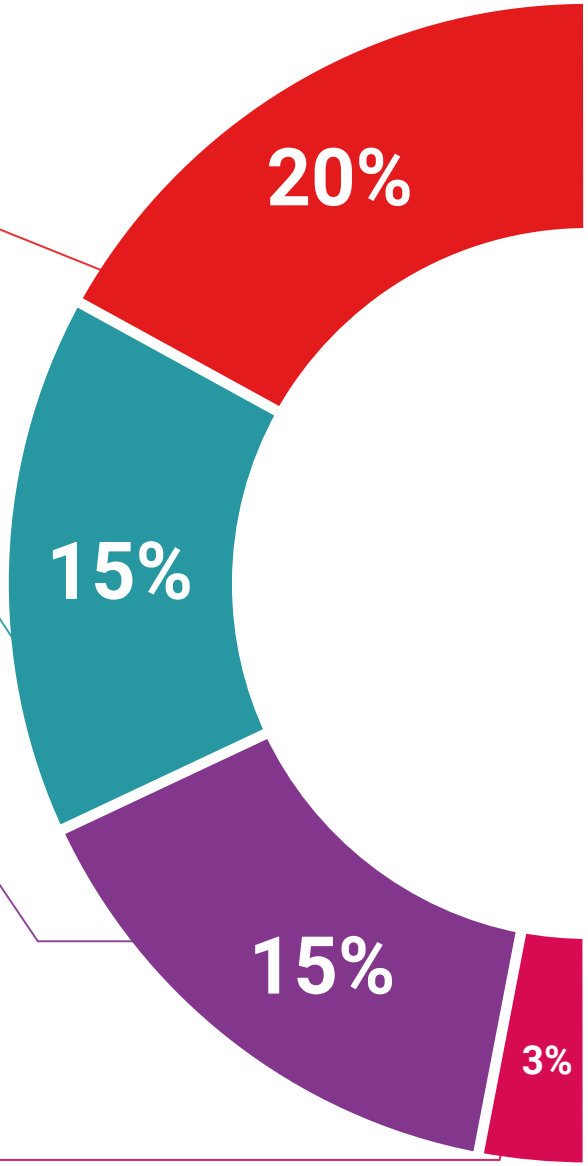
Interactive Summaries

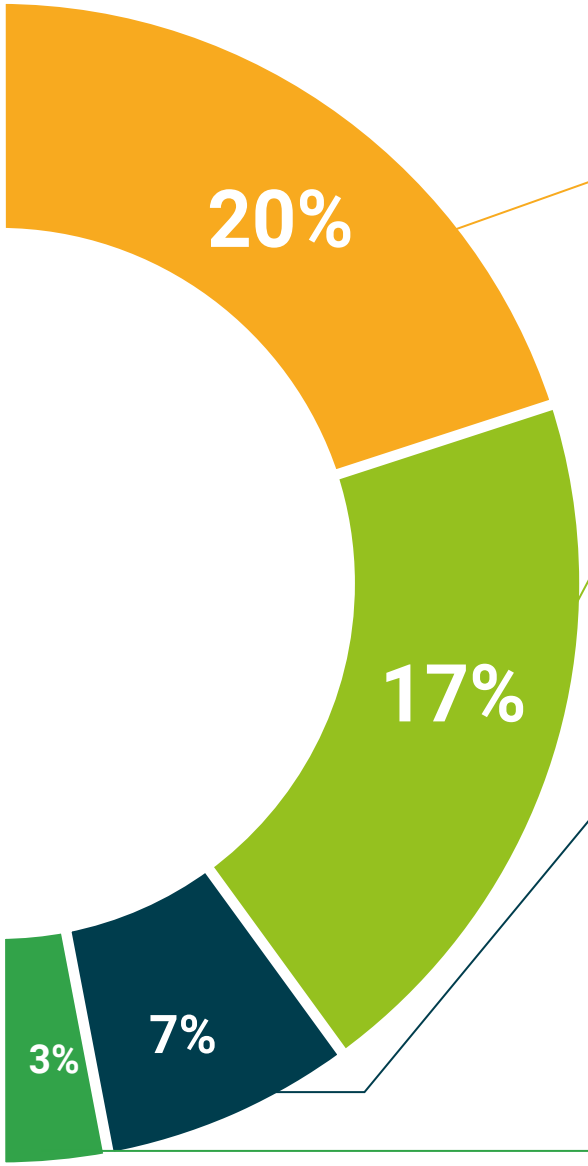
The TECH team presents the contents attractively and dynamically in multimedia lessons that include audio, videos, images, diagrams, and concept maps in order to reinforce knowledge.

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 Diploma in Technological Processes in the Food Industry guarantees students, in addition to the most rigorous and up-to-date education, access to a Postgraduate Diploma 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 Diploma in Technological Processes in the Food Industry** contains the most complete and up-to-date 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 Technological Processes in the Food Industry**

Official Nº of Hours: **450 h.**


tech technological university

Awards the following

CERTIFICATE

to

Mr./Ms. _____, with identification number _____.

For having passed and accredited the following program

POSTGRADUATE DIPLOMA

in

Technological Processes in the Food Industry

This is a qualification awarded by this University, equivalent to 450 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
Dean

Unique TECH Code: AFWORD23S techtitute.com/certificates

*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.

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