Postgraduate Diploma

Enzymology Applied to the Food Industry

tech technological university

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Postgraduate Diploma
Enzymology Applied to 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/in/nutrition/postgraduate-diploma/postgraduate-diploma-enzymology-applied-food-industry**

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01

Introduction

Scientific discoveries and technology applied in the food industry have boosted the use of enzymes to obtain products with better textures, rancidity, coloration decaffeination or nutritional characteristics. In this way, enzymology has become an indispensable science in the sector and one that the nutrition professional cannot ignore. For this reason, TECH has designed this 100% online program, which will allow you to deepen over 6 months in chemical engineering, biotechnological sectors and the most appropriate treatments for obtaining safe, nutritious and attractive products for the consumer. All this with a library of multimedia resources that can be easily accessed at any time of the day from an electronic device with an Internet connection.

With this 100% online Postgraduate Diploma you will be up to date in Enzymology and Business Management"

In recent years, the food industry has been able to exploit the enormous potential of the use of certain enzymes, whether of plant, animal or microbial origin, in the preparation of its products. This has boosted enzymology, improved food conversation, as well as the emergence of nutraceutical or functional products. A panorama of innovation, where there is a proliferation of studies aimed at improving health through the use of enzymes in food.

Thus, the new biotechnological processes, the novel applications of enzymes in the production of additives and their use in the food sector oblige the nutrition professional to constantly update his knowledge. That is why TECH has created this Postgraduate Diploma in Enzymology applied to the Food Industry, which offers the latest information in this field, thanks to the contributions made by specialists in this field.

A 100% online program, which will allow students to delve into the fundamentals of chemical engineering, delve into the latest advances in enzyme technology or the development of new processes and products in the field of meat, fish and their derivatives. All of this is complemented by video summaries of each topic, detailed videos, case study simulations or essential readings that you can access 24 hours a day.

The professional is thus facing an excellent opportunity to be up to date in enzymology through a flexible university degree, whose content can be easily viewed from any device with an internet connection. In addition, students have the Relearning system, used by TECH, which will allow them to reduce the long hours of study and move through the syllabus of this Postgraduate Diploma in a much more agile way.

This **Postgraduate Diploma in Enzymology Applied to the Food Industry** 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 Food 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

Get the most recent and relevant information on Enzymology applied to the Food Industry with this degree"

You have an extensive resource library with which you can consult the latest information on food shelf life estimation calculations at any time"

Thanks to this Postgraduate Diploma you will be able to learn about the latest advances in the development of new processes and products in the field of meat, fish and their derivatives.

Access the latest information on the environment, quality and the use of enzymes whenever you want, from your computer or tablet.

The program's teaching staff includes professionals from the 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. For this purpose, the student will be assisted by an innovative interactive video system created by renowned experts.

02

Objectives

The structure of this Postgraduate Diploma has been designed so that the professional obtains the most advanced and comprehensive professional obtains the most advanced and exhaustive knowledge update on Enzymology applied to the Food Industry. This will allow you to be up to date in the design and laboratory protocols to determine the enzymatic activity of commercial preparations or the formulation of new foods by choosing ingredients and additives. In order to achieve these goals, students will have specialists in this field to guide them and resolve any doubts that may arise regarding the content of the syllabus.

In only 6 months you will be up to date on the use of enzymes in food processing and preservation while maintaining the quality standards required by current regulations"

General Objectives

- Confidently handle the basic concepts of chemical kinetics applied to reactors in the food industry, definitions and nomenclature
- Pose and solve kinetic rate equations for the most common cases in batch and continuous reactors, in steady state
- Be familiar with the most common types of reactors used in the food industry, and to be able to perform design calculations of the most typical ones
- Identify possible uses of the studied concept in kinetics and reactors, and decide on their specific application
- Develop appropriate criteria for deciding on the validity of the results obtained
- Develop the ability to work in a group

A degree that will allow you to update your knowledge of chemical engineering and reactor design for the food industry"

Specific Objectives

Module 1. Chemical Engineering Fundamentals

- Ability to classify processes into discontinuous, semi-continuous and continuous, and to differentiate whether an operation is performed in a steady or non-steady state
- Interpret and elaborate flow diagrams from a process description
- Study and perform unit changes in magnitudes and equations
- Propose and solve matter and energy balances in systems with and without chemical reaction, in steady state and non-steady state, as well as in processes related to the food industry
- Address the mechanical energy balance, and apply it to simple cases of fluid flow through pipes
- Explore some of the most commonly used pressure measurement elements
- Apply the concepts and knowledge acquired to solve problems related to the food industry
- Correctly classify and apply tabulated data, graphs, nomograms, as well as literature related to the subject matter

Module 2. Enzymatic Technology

- Understand and correctly use the basic enzyme kinetics and the main parameters that regulate the activity of commercial enzymes in the different processes of the food industry
- Learn to design and adapt laboratory protocols to determine the enzymatic activity of commercial preparations
- Learn to design and plan food manufacturing processes including the use of enzymes in certain stages of the production process
- Learn how to write a professional report

Module 3. Science and Technology of meat, fish and fish products

- 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

This Postgraduate Diploma has been developed by experts in Enzymology applied to the Food Industry. His extensive knowledge is reflected in the 3 modules that make up the structure of this university degree. Through it, students will be able to keep abreast of the latest developments in the enzymatic modification of carbohydrates, lipids or proteins. Likewise, you will be able to delve into the technology used in the food industry for the preparation and preservation of meat, dairy or fish products. In addition, the Relearning method, based on the repetition of content, will allow you to progress through the content of this program in a much more agile way.

A study plan designed for nutrition professionals who wish to obtain a Postgraduate Diploma without neglecting other areas of their lives"

Module 1. Chemical Engineering Fundamentals

1.1. Introduction to Chemical Engineering
- 1.1.1. The Chemical Process Industry: General Characteristics
- 1.1.2. Unit and Stage Operations
- 1.1.3. Stationary and Non-Stationary Regime
- 1.1.4. International System of Units
- 1.1.5. The Food Industry, Chemical Engineering and the Environment

1.2. Material Balance in Systems Without Chemical Reaction
- 1.2.1. General Formula for the Total Material Balance and Applied to a Component
- 1.2.2. Application of Material Balances: Systems with Bypass Current, Recirculation and Purge
- 1.2.3. Steady State Systems
- 1.2.4. Non-Steady State Systems

1.3. Material Balance in Systems with Chemical Reaction
- 1.3.1. General Concepts: Stoichiometric Equation, Stoichiometric Coefficient, Extensive and Intensive Conversion
- 1.3.2. Degree of Conversion and Limiting Reactant
- 1.3.3. Application of the Material Balances to Reactive Systems
  - 1.3.3.1. Reactor/Separator System with Recirculation of Unconverted Reactant
  - 1.3.3.2. Reactor/Separator System with Recirculation and Purge

1.4. Heat Energy Balances
- 1.4.1. Types of Energy: Formula for Total Energy Balance
- 1.4.2. Energy balance in Steady State and Non-Steady State Systems
- 1.4.3. Application of the Energy Balance in Reactive Systems
- 1.4.4. Heat Energy Balances

1.5. Mechanical Energy Balances
- 1.5.1. Mechanical Energy Balance
- 1.5.2. Bernoulli's Equation
- 1.5.3. Pressure Gauges: Manometers

1.6. Chemical Kinetics and Reactor Engineering
- 1.6.1. Definitions and Basic Concepts in Applied Chemical Kinetics and Reactor Engineering
- 1.6.2. Classification of Reactions Expression of Reaction Rate Equations
- 1.6.3. Study of the Dependence of Velocity on Temperature
- 1.6.4. Reactor Classification
  - 1.6.4.1. Ideal Reactors: Design Equations and Characteristics
  - 1.6.4.2. Problem Solving

1.7. Velocity Equations in Constant Volume Reactors
- 1.7.1. Velocity Equations for Elementary Reactions: Integral and Differential Methods
- 1.7.2. Reversible reactions
- 1.7.3. Parallel and Series Reactions
- 1.7.4. Problem Solving

1.8. Reactor Design for the Food Industry
- 1.8.1. General Characteristics of Reactor
- 1.8.2. Types of Ideal Reactors
  - 1.8.2.1. Discontinuous Ideal Reactor
  - 1.8.2.2. Steady-State Complete Mix Flow Reactor
  - 1.8.2.3. Stationary Piston Flow Reactor
- 1.8.3. Comparative Analysis of Reactors
- 1.8.4. Production: Optimum Reactor Size
- 1.8.5. Problem Solving

1.9. Chemical Thermodynamics and Solutions
- 1.9.1. Systems, States and State Functions. Work and heat
- 1.9.2. Principles of Thermodynamics Enthalpy: Hess' Law
- 1.9.3. Entropy and Gibs´ Free Energy
- 1.9.4. Solutions: Solubility and Saturation Solution Concentration

1.10. Chemical Equilibrium
- 1.10.1. Chemical Equilibrium Reaction Rate and Equilibrium Constant Formula
- 1.10.2. Types of Equilibria: Homogeneous and Heterogeneous
- 1.10.3. Displacement of Chemical Equilibrium: Le Chatelier's Principle
- 1.10.4. Solubility Equilibrium Precipitation Reactions

Module 2. Enzymatic Technology

2.1. Introduction to enzymology
- 2.1.1. Industrial enzymes: industrial use
- 2.1.2. Classification of enzymes

2.2. Enzyme kinetics
- 2.2.1. Enzyme activity units
- 2.2.2. Stages of an enzymatic reaction
- 2.2.3. Michaelis-Menten equation: effect of substrate and enzyme concentration. Enzyme efficiency and substrate specificity
- 2.2.4. Enzyme activity and stability
  - 2.2.4.1. Limitations in practice: pH, temperature, inhibitors, stabilizers and activators. Determination of enzyme activity
- 2.2.5. Types of enzymatic processes in the food industry

2.3. Enzymatic modification of carbohydrates I
- 2.3.1. Carbohydrate structure and enzymes that modify carbohydrates
  - 2.3.1.1. Glycosidases: polysaccharidases and disaccharidases
  - 2.3.2.1. Practical examples in the food industry
- 2.3.2. Obtaining fruit juices: clarified (apple) and cloudy (orange)
- 2.3.3. Sweetening syrups: glucose, maltose, fructose

2.4. Enzymatic modification of lipids
- 2.4.1. Enzymology in organic media. Characteristics of lipases
- 2.4.2. Triglyceride modification
- 2.4.3. Phospholipid modification
- 2.4.4. Lipoprotein modification
- 2.4.5. Synthesis of aromas and flavors

2.5. Enzymatic modifications of proteins
- 2.5.1. Action of proteases
- 2.5.2. Factors affecting the activity of proteases
- 2.5.3. Protein hydrolyzates. Unmoored
- 2.5.4. Crosslinking: transglutaminase

2.6. Research methodologies in applied enzymology
- 2.6.1. Biomolecule separation methodologies: Centrifugation, extraction, evaporation and lyophilization
- 2.6.2. Chromatography of volatile and non-volatile biomolecules: GC and HPLC
- 2.6.3. Preparative chromatography of enzymes and proteins: FPLC
- 2.6.4. Proteomics and Metabolomics: Mass spectrometry: maldi-toff

2.7. Agricultural industrial enzymology
- 2.7.1. Enzymes as molecular targets in agricultural crop improvement
- 2.7.2. Enzymes applied in post-harvest technology
  - 2.7.2.1. Modified and controlled atmospheres
  - 2.7.2.2. Protective atmospheres
- 2.7.3. Enzymes applied to food extraction, processing and elaboration
  - 2.7.3.1. Foods fortified with nutraceuticals

2.8. Origin of industrial enzymes
- 2.8.1. Enzymes isolated from plants, animals, micro-organisms and genetically modified organisms
- 2.8.2. Main activity and secondary activities
- 2.8.3. Formulation

2.9. Enzymology and Business Management
- 2.9.1. Enzymes, industrial property and patents
- 2.9.2. New technology-based companies, *spin offs*
- 2.9.3. Enzymes, prevention and A.P.P.P.C.C. system
- 2.9.4. Enzymes and environment: ISO 14000 standards, by-products and contaminants
- 2.9.5. Enzymes and quality: enzymes, ISO standards, GP. Integrated management

2.10. Applied enzymology
- 2.10.1. Enzymes and Biotechnology Sectors
- 2.10.2. Enzymes and biocatalysis: Production, bioanalysis, biodegradation and synthesis
- 2.10.3. Biotechnological production and improvement of enzymes
- 2.10.4. Homogeneous and heterogeneous enzymatic biocatalysis: Activity, stability, non-aqueous media, immobilization, bioreactors and biosensors

Module 3. Science and Technology of meat, fish and fish products

3.1. Introduction to the muscle food industry
- 3.1.1. Muscle-based food industries: meat and fish
  - 3.1.1.1. Structural and functional basis of striated muscle
  - 3.1.1.2. Importance of these subsectors
- 3.1.2. Transformation of muscle into flesh: development of rigor mortis
  - 3.1.2.1. Consequences of rigor mortis
- 3.1.3. Meat maturation: changes in muscle structure and other nitrogenous compounds
  - 3.1.3.1. Endogenous proteolytic enzymes
  - 3.1.3.2. Optimal ripening conditions

3.2. Anomalous processes in meat processing
- 3.2.1. Effect of antemortem stress: DFD meats and PSE pork meats
  - 3.2.1.1. Defective sensory characteristics and technological suitability
  - 3.2.1.2. Effect of the administration of growth promoters
- 3.2.2. Effect of postmortem refrigeration: shortening due to cold
  - 3.2.2.1. Consequences

3.3. Meat quality
- 3.3.1. Sensory parameters that determine it: color, texture, odor, flavor and water retention capacity of the meat
  - 3.3.1.1. Pre- and post-mortem factors influencing this
- 3.3.2. Quality measurement and evaluation methods
  - 3.3.2.1. Integrated evaluation of meat quality and technological suitability
  - 3.3.2.2. Quality measurement and evaluation methods
- 3.3.3. Quality assurance systems in the meat industry

3.4. Industrial meat processing
- 3.4.1. Animal slaughtering, dressing and carcass preparation technology
  - 3.4.1.1. Channel Classification
  - 3.4.1.2. Electrical stimulation of the carcasses
  - 3.4.1.3. Quartering and categorization
  - 3.4.1.4. Industrial pork carcass cutting
- 3.4.2. Characteristics of industrial cattle, sheep, pig and poultry slaughterhouses
- 3.4.3. Systems used in the short term preservation of meat
  - 3.4.3.1. Industrial equipment
  - 3.4.3.2. Shelf life of meat; factors that determine and improve shelf life
- 3.4.4. Meat freezing
  - 3.4.4.1. Industrial equipment
  - 3.4.4.2. Effects of freezing on sensory and technological properties of meat
  - 3.4.4.3. Defrosting

3.5. Meat packaging and sale
- 3.5.1. Packaging systems; application to meat preservation and different types of meat sales
- 3.5.2. Storage under vacuum and in modified atmospheres
- 3.5.3. Packaging materials
- 3.5.4. Distribution and sales systems

3.6. Introduction to the fishing and seafood industry
- 3.6.1. Variability in composition and its causes
  - 3.6.1.1. Classification of fish according to its composition
  - 3.6.1.2. Peculiarities of fish lipids and their importance in technology
  - 3.6.1.3. Fish and seafood connective tissue
- 3.6.2. Stunning and slaughtering methods: effects on quality
  - 3.6.2.1. Postmortem processing in fish
- 3.6.3. Differential characteristics of rigor mortis
- 3.6.4. Most important parameters and their control

3.7. Fish quality
- 3.7.1. Influence of fishery-related factors on fish quality
  - 3.7.1.1. Main parameters of fish organoleptic quality
- 3.7.2. Indices for determining the quality and freshness of fish and shellfish
- 3.7.3. Methods of fish refrigeration
  - 3.7.3.1. Ice: types and effects
  - 3.7.3.2. Freezing: freezing speed and its influence on product quality
  - 3.7.3.3. Freezing maintenance: critical points and their control. Defrosting
- 3.7.4. Fish and seafood packaging and preservation
  - 3.7.4.1. Vacuum and modified atmospheres
  - 3.7.4.2. Packaging systems and equipment

3.8. Meat derivatives technology
- 3.8.1. Classification of meat derivatives according to their technological process
  - 3.8.1.1. Preparation, preservation and processing operations
  - 3.8.1.2. Salting, nitrification, drying, heat treatment and smoking
  - 3.8.1.3. Spicing, refrigeration, microbial processes, ripening and chopping
  - 3.8.1.4. Mixing, emulsifying, gelling, stuffing and packaging, etc
- 3.8.2. General decision and control criteria
- 3.8.3. Additives and other ingredients used in the meat industry
  - 3.8.3.1. Technological adjuvants
  - 3.8.3.2. Chemical preservatives and sensory modifiers
  - 3.8.3.3. Mass and multifunction agents
- 3.8.4. Criteria for use in relation to product quality

3.9. Technology of raw cured and cooked meat products
- 3.9.1. Whole cured meat products: cured ham and similar products
- 3.9.2. Impact of raw material quality on the final product. Formulation
  - 3.9.2.1. Phases of the elaboration process
  - 3.9.2.2. Modifications undergone during ripening and desiccation
  - 3.9.2.3. Industrial equipment
- 3.9.3. Decision criteria and process control
  - 3.9.3.1. Defects and alterations
  - 3.9.3.2. Other whole cured products
- 3.9.4. Cured raw sausages. Formulation criteria
  - 3.9.4.1. Phases and alternatives of the elaboration process
  - 3.9.4.2. Industrial equipment
  - 3.9.4.3. Modifications undergone during ripening and desiccation
- 3.9.5. Decision criteria and process control

3.10. Fish and fish product technology
- 3.10.1. Fish preservation by salting
- 3.10.2. Salting methods. Types and characteristics of salt
- 3.10.3. Most frequent defects: causes and solutions
- 3.10.4. Preparation of salted codfish
- 3.10.5. Fish smoking
  - 3.10.5.1. Smoking systems. Types of smoke
  - 3.10.5.2. Processing methods: advantages and disadvantages
  - 3.10.5.3. Specific products: food quality and safety
- 3.10.6. Canned tuna. Most important species: characteristics
  - 3.10.6.1. Elaboration process
  - 3.10.6.2. Semi-preserved fish. Salted anchovy. Marinades and pickling
- 3.10.7. Surimi and derived products
  - 3.10.7.1. Surimi elaboration process
  - 3.10.7.2. Gelation: characteristics and products
  - 3.10.7.3. Crab analogs manufacturing process technology

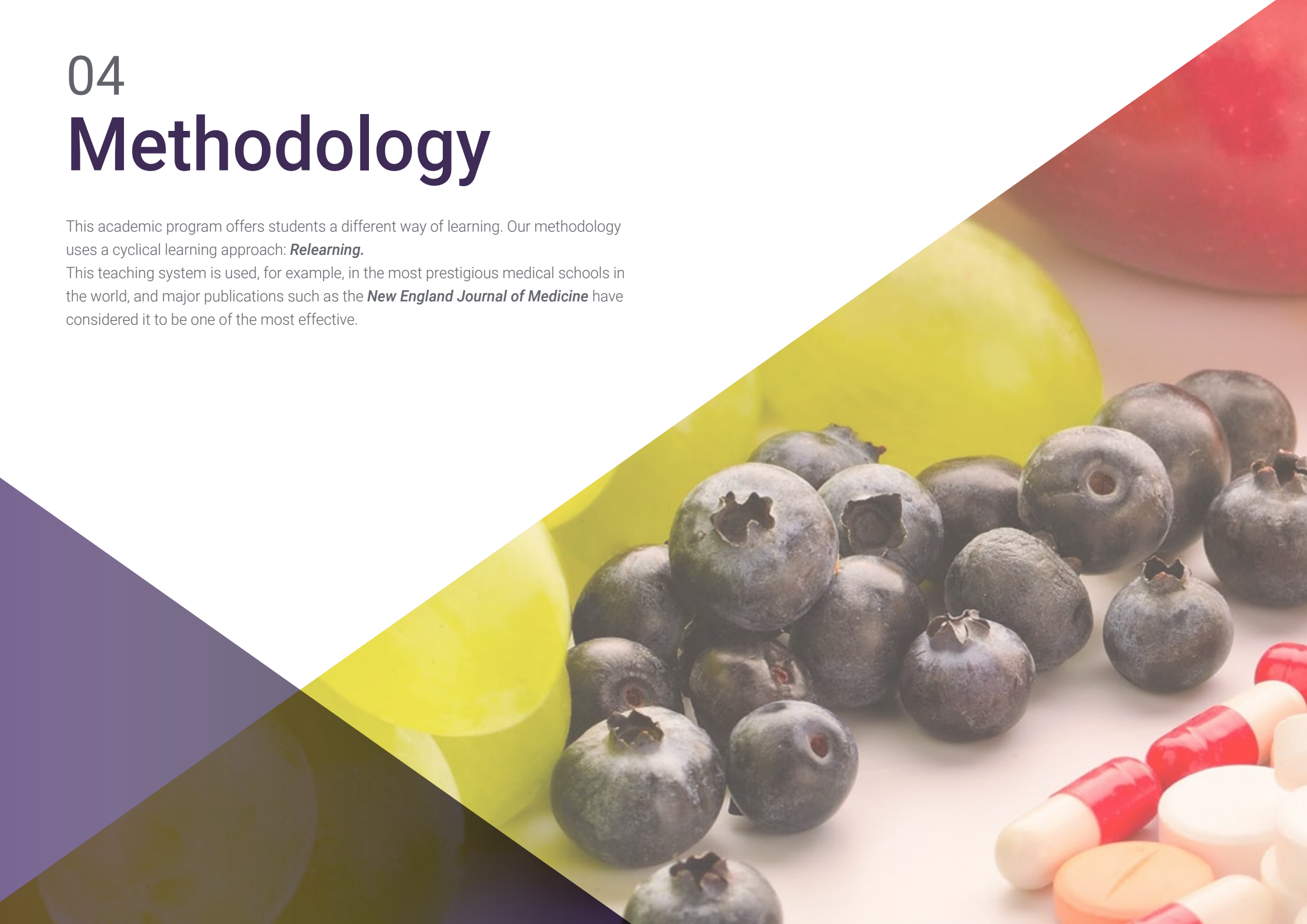
Thanks to this 100% online university degree you will be up to date with enzymatic processes in the food industry"

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.

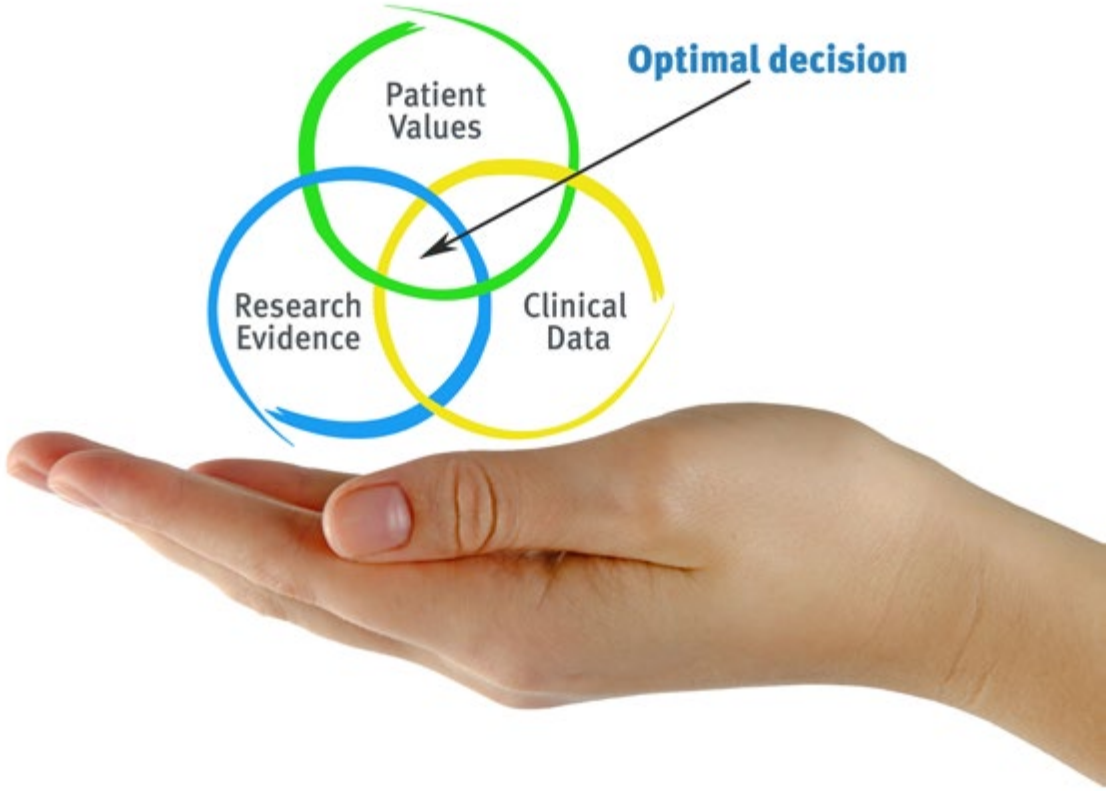


Discover Relearning, a system that abandons conventional linear learning, to take you through cyclical teaching systems: a way of learning that has proven to be extremely effective, especially in subjects that require memorization"

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:

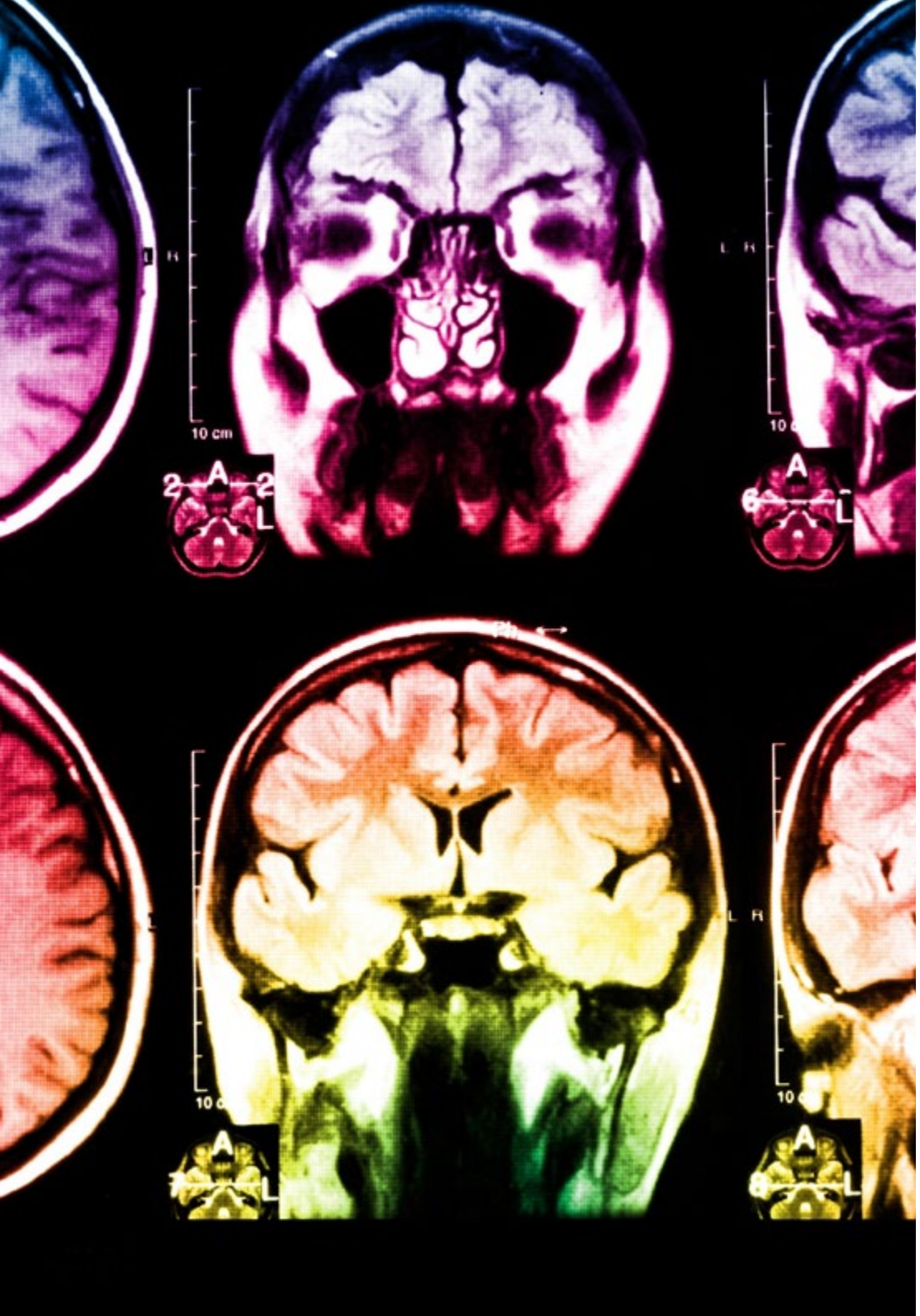
1. Nutritionists who follow this method not only achieve the assimilation of concepts, but also a development of their mental capacity through exercises to evaluate real situations and the application of knowledge.
2. Learning is solidly translated into practical skills that allow the nutritionist to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

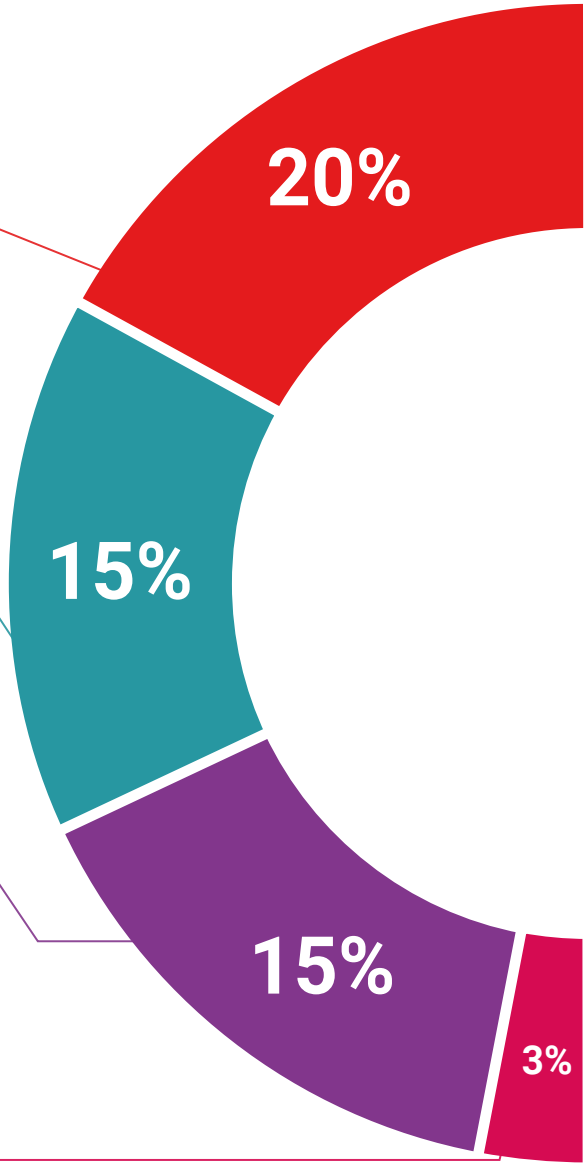
Interactive Summaries

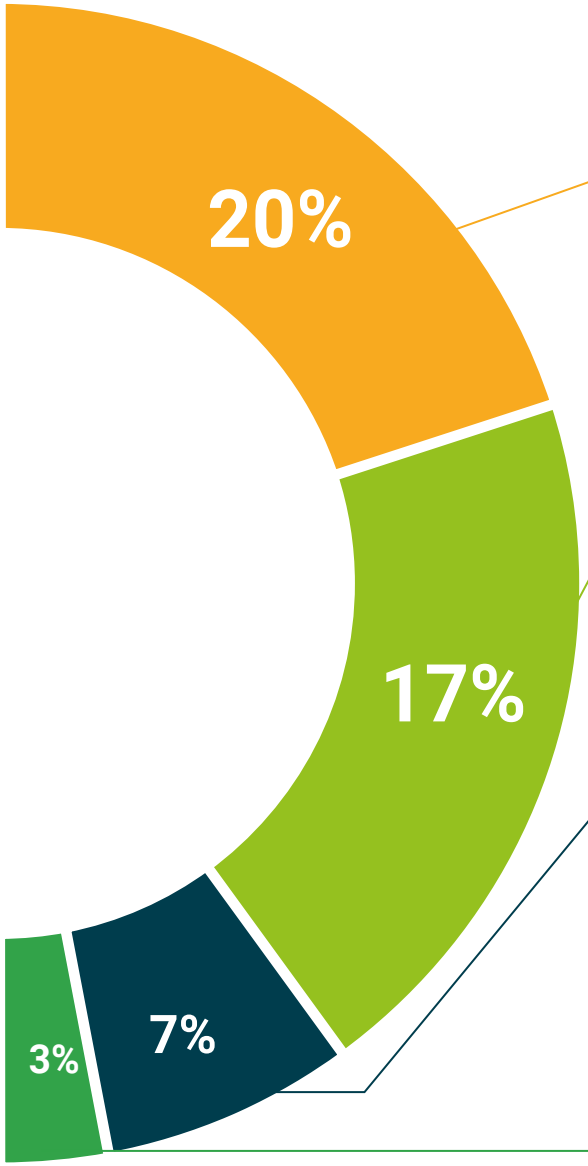
The TECH team presents the contents attractively and dynamically in multimedia lessons that include audio, videos, images, diagrams, and concept maps in order to reinforce knowledge.

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 Enzymology Applied to 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 Enzymology applied to the Food Industry** 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.

Program: **Postgraduate Diploma in Enzymology Applied to 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

Enzymology Applied to 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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Postgraduate Diploma
Enzymology Applied to the Food Industry

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

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tech technological university