

Postgraduate Diploma

Development and Execution of R&D&I Projects in the Food Sector





Postgraduate Diploma Development and Execution of R&D&I Projects in the Food Sector

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

Website: www.techtute.com/us/nutrition/postgraduate-diploma/postgraduate-diploma-development-execution-rdi-projects-food-sector

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01

Introduction

This program addresses R&D&I systems in the development of new foods and ingredients for nutritionists, as innovation in the food sector is booming. New products and foods are becoming increasingly available to help us lead a healthier life, but we must be very familiar with all the processes to ensure that all health guarantees are met. Likewise, it defines the economic support systems to execute projects, legal conditions and, especially, the operating methodology in projects regarding planning, availability of resources, control and monitoring. This is an innovative and complete course that will boost our students' careers as nutritionists.





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The latest information on the development and execution of food projects condensed in this comprehensive TECH Postgraduate Diploma”

This Postgraduate Diploma presents R&D&I systems in the development of new foods and ingredients in different sectors of the food industry that require new technologies, new processes and food safety systems that are increasingly specific and adapted to the characteristics of new foods. In addition, the current research and development systems in the design and use of new ingredients are also presented, with special emphasis on the importance of preserving the food safety of these ingredients and of the foods in which they are used.

On the other hand, the economic support systems for the implementation of the projects, the legal conditions and, especially, the methodology for the operation of the projects in terms of planning, availability of resources, control and follow-up are defined.

The adaptation to project work in the food environment is of great importance to carry out innovation, the development of new products or the improvement of food safety conditions and the use of food products and ingredients used. For this reason, this program has a special section for its study.

The Postgraduate Diploma in Development and Execution of R&D&I Projects in the Food Sector of TECH Technological University is the most complete among the postgraduate training offered in universities at this time because it is aimed at the comprehensive management of food safety.

The teachers on the program are university professors and professionals from various disciplines in food production, the use of analytical and instrumental techniques for quality control, the prevention of accidental and intentional contamination and fraud, regulatory outlines for food safety certification (Food Safety / Food Integrity) and traceability (Food Defence and Food Fraud / Food Authenticity). They are experts in food legislation and regulations on quality and safety, validation of methodologies and processes, digitalization of quality management, new foods research and development and, finally, coordinating and executing R&D&I projects. Professionals specialized in each specific subject who have developed this program in order to successfully train future nutritionist experts in this sector.

This **Postgraduate Diploma in Development and Execution of R&D&I Projects in the Food Sector** contains the most complete and up-to-date scientific program on the market. The most important features include:

- ♦ Case studies presented by experts in food safety at the nutritional level
- ♦ 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
- ♦ The latest news on Development and Execution of R&D&I Projects in the Food Sector
- ♦ Practical exercises where self-assessment can be used to improve learning
- ♦ Its special emphasis on innovative methodologies in Development and Execution of R&D&I Projects in the Food Sector
- ♦ 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



TECH brings you an innovative curriculum with the most complete and updated theoretical and practical content on the market today”

“ *Invest in your future with this Postgraduate Diploma in Development and Execution of R&D&I Projects in the Food Sector*”

The teaching staff includes professionals in the field of R&D&I projects applied to the food sector, who bring their experience to this program, as well as renowned specialists from leading 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 students must try to solve the different professional practice situations that arise throughout the program. The professional will be assisted by an innovative interactive video system created by renowned and experienced experts in sports nutrition.

Designing tasty low-sugar and low-fat products is possible with this Postgraduate Diploma.

Learn the latest trends in R&D&I developments in new plant and animal-based food ingredients.



02 Objectives

The Postgraduate Diploma in Development and Execution of R&D&I Projects in the Food Sector is designed to facilitate professional performance based on the latest and most innovative advances in the sector. Through theoretical and practical content designed by professionals in this field of study, nutritionists will expand their knowledge and acquire the tools they need to guide their career in this particular area. Likewise, during the course of this Postgraduate Diploma, professionals will approach the main interventions specialists conduct in the area of food safety, which will allow them to improve and increase their competences with the certainty of following established protocols.



“Focus your professional future and prepare yourself for success with TECH”



General Objectives

- ♦ Analyze the principles of food legislation, at national and international level, and its evolution up to the present day
- ♦ Analyze the competencies in food legislation to develop the corresponding functions in the food industry
- ♦ Evaluating food industry procedures and mechanisms of action
- ♦ Develop the basis for applying legislation to the development of food industry products
- ♦ Establish R&D&I systems that enable the development of new foods and ingredients, especially in food safety issues, so that they can address research, development and innovation in this field
- ♦ Develop knowledge that provides a basis or opportunity for the development and/or application of ideas, in a research context, including reflections on the responsibilities linked to the application of their developments
- ♦ Determine the functioning of R&D&I systems in the field of new product and process development in the food environment
- ♦ Analyze the R&D&I system and the use of tools for planning, management, evaluation, protection of results and dissemination of food R&D&I
- ♦ Develop knowledge that provide a base, or an opportunity to improve and implement certain ideas, in a context of research and development that facilitate productive results





Specific Objectives

Module 1. Food Legislation and Quality and Safety Standards

- ♦ Define the fundamentals of food law
- ♦ Describe and develop the main international, European and national organizations in the field of food safety, as well as determine their competencies
- ♦ Analyze the food safety policy in the European and Spanish frameworks
- ♦ Describe the principles, requirements and measures of food legislation
- ♦ Explain the European legislative framework regulating the food industry
- ♦ Identify and define the responsibility of the participants in the food chain
- ♦ Classify the types of liability and offenses in the field of food safety
- ♦ Developing the criteria for horizontal legislation in Spain
- ♦ Develop vertical legislation criteria in Spain

Module 2. R&D&I of Novel Foods and Ingredients

- ♦ Establish new trends in food technologies that give rise to the development of a line of research and implementation of new products in the market
- ♦ Establish the fundamentals of the most innovative technologies that require research and development work to understand their potential for use in the production of new foods and ingredients
- ♦ Design research and development protocols for the incorporation of functional ingredients to a base food, taking into account its techno-functional properties, as well as the technological process involved in its elaboration
- ♦ Compile new trends in food technologies that will lead to the development of a line of research and implementation of new products in the market
- ♦ Apply research and development methodologies to evaluate the functionality, bioavailability and bioaccessibility of novel foods and ingredients

Module 3. Food Safety Certifications for the Food Industry

- ♦ Establish R&D&I systems that enable the development of novel foods and ingredients especially in food safety issues, so that they can address research, development and innovation in the field of novel foods and ingredients
- ♦ Compile the sources of financing for R&D&I activities in the development of new food products that allow different innovation strategies in the food industry to be addressed
- ♦ Analyze the forms of access to public and private sources of information in the scientific-technical, economic and legal fields for the planning of an R&D&I project
- ♦ Develop methodologies for project planning and management, control reporting and monitoring of results
- ♦ Evaluate the technology transfer systems that allow the transfer of R&D&I results to the productive environment
- ♦ Analyze the implementation of projects once their documentation stage has been completed

03

Course Management

This program includes in its teaching staff leading experts in the development and execution of R&D&I projects applied to the food sector at a nutritional level, who will provide you with their knowledge and experience to enhance your daily work. Likewise, other experts of recognized prestige participate in the design and development of the study plan to complete the program in an interdisciplinary way. All of this, under TECH's criteria of excellence, whose objective is to train nutritionists and provide them with the academic tools required to work in this field with greater guarantees of success in the workplace.





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True experts in the field will guide you towards the correct development of R&D&I projects so you can revolutionize the world of nutrition”

Management



Dr. Limón Garduza, Rocío Ivonne

- PhD in Agricultural Chemistry and Bromatology (Autonomous University of Madrid)
- Master's Degree in Food Biotechnology (MBTA) (University of Oviedo)
- Food Engineer, Bachelor's Degree in Food Science, and Technology (CYTA)
- Expert in Food Quality Management ISO 22000
- Specialist in Food Quality and Safety, Mercamadrid Training Center (CFM)



Professors

Dr. Colina Coca, Clara

- ◆ Collaborating Professor at the UOC.
- ◆ D. in Nutrition, Food Science and Technology.
- ◆ Master's Degree in Food Quality and Safety: HACCP system.
- ◆ Postgraduate in Sports Nutrition

Dr. Martínez López, Sara

- ◆ Assistant Professor of Nutrition and Food Technology at the European University of Madrid
- ◆ Researcher in the research group "Microbiota, Food and Health". European University of Madrid
- ◆ D. in Pharmacy (Universidad Complutense de Madrid)
- ◆ Degree in Chemistry (University of Murcia)

Dr. Rendueles de la Vega, Manuel

- ◆ Principal investigator in three projects of the National R&D Plan.
- ◆ Doctorate In Chemical Engineering, Professor of Chemical Engineering (University of Oviedo)
- ◆ Coordinator of the Master in Food Biotechnology at the University of Oviedo since 2013

04

Structure and Content

The content of this Postgraduate Diploma is structured in such a way for nutritionists to acquire a full understanding of the current situation in development and execution of R&D&I projects in the food sector. The syllabus has been developed by professionals in the industry who perform these functions on a daily basis, providing students with real cases and the latest developments in technology applied to their field of study. Thus, the structure is organized in three blocks that explain each concept in detail. The first module covers food legislation and quality and safety regulations. The second deals with R&D&I of new foods and ingredients. Finally, the third module focuses on the development, coordination and execution of R&D&I projects. With all this, students will acquire comprehensive skills for their daily practice.





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You will learn how to design functional foods aimed at improving specific physiological functions”

Module 1. Food Legislation and Quality and Safety Standards

- 1.1. Introduction
 - 1.1.1. Legal Organization
 - 1.1.2. Basic Concepts
 - 1.1.2.1. Law
 - 1.1.2.2. Legislation
 - 1.1.2.3. Food Legislation
 - 1.1.2.4. Standard
 - 1.1.2.5. Royal Decree
 - 1.1.2.6. Certification, etc.
- 1.2. International Food Legislation. International Organizations
 - 1.2.1. Food and Agriculture Organization of the United Nations (FAO)
 - 1.2.2. World Health Organisation (WHO)
 - 1.2.3. Codex Alimentarius Commission
 - 1.2.4. World Trade Organization
- 1.3. European Food Legislation
 - 1.3.1. European Food Legislation
 - 1.3.2. White Paper on Food Safety
 - 1.3.3. Principles of Food Legislation
 - 1.3.4. General Requirements of Food Legislation
 - 1.3.5. Procedures
 - 1.3.6. European Food Safety Authority (EFSA)
- 1.4. Spanish Food Legislation
 - 1.4.1. Skills
 - 1.4.2. Agencies
- 1.5. Food Safety Management in the Company
 - 1.5.1. Responsibilities
 - 1.5.2. Authorization
 - 1.5.3. Certifications





- 1.6. Horizontal Food Legislation Part 1
 - 1.6.1. General Hygiene Regulations
 - 1.6.2. Water for Public Consumption
 - 1.6.3. Official Control of Foodstuffs
- 1.7. Horizontal Food Legislation Part 2
 - 1.7.1. Storage, Preservation and Transportation
 - 1.7.2. Materials in Contact with Food
 - 1.7.3. Food Additives and Flavorings
 - 1.7.4. Contaminants in Food
- 1.8. Vertical Food Legislation: Products of Plant Origin
 - 1.8.1. Vegetables and By-Products
 - 1.8.2. Fruits and Derivatives
 - 1.8.3. Cereals
 - 1.8.4. Legumes
 - 1.8.5. Edible Vegetable Oils
 - 1.8.6. Edible Fats
 - 1.8.7. Seasonings and Spices
- 1.9. Vertical Food Legislation: Animal Products
 - 1.9.1. Meat and Meat Derivatives
 - 1.9.2. Fish Products
 - 1.9.3. Milk and Dairy Products
 - 1.9.4. Eggs and Egg Products
- 1.10. Vertical Food Legislation: Other Products
 - 1.10.1. Stimulant Foods and Derivatives
 - 1.10.2. Beverages
 - 1.10.3. Prepared Dishes

Module 2. R&D&I of Novel Foods and Ingredients

- 2.1. New Trends in Food Product Processing
 - 2.1.1. Design of Functional Foods Aimed at Improving Specific Physiological Functions
 - 2.1.2. Innovation and New Trends in the Design of Functional Foods and Nutraceuticals
- 2.2. Technologies and Tools for Isolation, Enrichment, and Purification of Functional Ingredients from Different Starting Materials
 - 2.2.1. Chemical Properties
 - 2.2.2. Sensory Properties
- 2.3. Procedures and Equipment for the Incorporation of Functional Ingredients into the Base Feed
 - 2.3.1. Formulation of Functional Foods According to Their Chemical and Sensory Properties, Caloric Value, etc.
 - 2.3.2. Stabilization of Bioactive Ingredients from Formulation
 - 2.3.3. Dosage
- 2.4. Gastronomy Research
 - 2.4.1. Texture.
 - 2.4.2. Viscosity and Flavor: Thickeners Used in Nouvelle Cuisine
 - 2.4.3. Gelling Agents
 - 2.4.4. Emulsions
- 2.5. Innovation and New Trends in the Design of Functional Foods and Nutraceuticals
 - 2.5.1. Design of Functional Foods Aimed at Improving Specific Physiological Functions
 - 2.5.2. Practical Applications of Functional Food Design
- 2.6. Specific Formulation of Bioactive Compounds
 - 2.6.1. Flavonoid Transformation in the Formulation of Functional Foods
 - 2.6.2. Bioavailability Studies of Phenolic Compounds
 - 2.6.3. Antioxidants in the Formulation of Functional Foods
 - 2.6.4. Preservation of Antioxidant Stability in Functional Food Design
- 2.7. Designing Low-Sugar and Low-Fat Products
 - 2.7.1. Development of Low-Sugar Products
 - 2.7.2. Low fat Products
 - 2.7.3. Strategies for the Synthesis of Structured Lipids

- 2.8. Processes for the Development of New Food Ingredients
 - 2.8.1. Advanced Processes for Obtaining Food Ingredients with Industrial Application: Micronization and Microencapsulation Technologies
 - 2.8.2. Supercritical and Clean Technologies
 - 2.8.3. Enzymatic Technology for the Production of Novel Food Ingredients
 - 2.8.4. Biotechnological Production of Novel Food Ingredients
- 2.9. New Food Ingredients of Plant and Animal Origin
 - 2.9.1. Trends in R&D&I Developments in New Ingredients
 - 2.9.2. Applications of Plant-Based Ingredients
 - 2.9.3. Applications of Ingredients of Animal Origin
- 2.10. Research and Improvement of Labeling and Preservation Systems
 - 2.10.1. Labeling Requirements
 - 2.10.2. New Conservation Systems
 - 2.10.3. Validation of Health Claims

Module 3. Food Safety Certifications for the Food Industry

- 3.1. Innovation and Competitiveness in the Food Industry
 - 3.1.1. Analysis of the Food Sector
 - 3.1.2. Innovation in Processes, Products and Management
 - 3.1.3. Regulatory Conditions for the Marketing of Novel Foods
- 3.2. The R&D System
 - 3.2.1. Public Investigation and Private Investigation
 - 3.2.2. Regional and Local Business Support Plans
 - 3.2.3. National R&D&I Plans
 - 3.2.4. International Programs
 - 3.2.5. Research Promotion Organizations
- 3.3. R&D&I Projects
 - 3.3.1. R&D&I Aid Programs
 - 3.3.2. Types of Projects
 - 3.3.3. Types of Financing
 - 3.3.4. Project Evaluation, Monitoring and Control

- 3.4. Scientific and Technological Production
 - 3.4.1. Publication, Dissemination and Diffusion of Research Results
 - 3.4.2. Basic Research/Applied Research
 - 3.4.3. Private Sources of Information
- 3.5. Technology Transfer
 - 3.5.1. Protection of Industrial Property. Patents
 - 3.5.2. Regulatory Constraints on Transfers in the Food Sector
 - 3.5.3. European Food Safety Authority (EFSA)
 - 3.5.4. Food and Drug Administration (FDA)
 - 3.5.5. National Organizations Example: Spanish Agency for Food Safety and Nutrition (AESAN)
- 3.6. Planning of R&D&I Projects
 - 3.6.1. Work Decomposition Scheme
 - 3.6.2. Resource Allocation
 - 3.6.3. Priority of Tasks
 - 3.6.4. Gantt Chart Method
 - 3.6.5. Digitally Supported Planning Methods and Systems
- 3.7. Documentary Development of R&D&I Projects
 - 3.7.1. Prior Studies
 - 3.7.2. Delivery of Progress Reports
 - 3.7.3. Development of the Project Report
- 3.8. Project Execution
 - 3.8.1. Checklist
 - 3.8.2. Deliverables
 - 3.8.3. Project Progress Control
- 3.9. Project Delivery and Validation
 - 3.9.1. ISO Standards for the Management of R&D&I Projects
 - 3.9.2. Completion of the Project Phase
 - 3.9.3. Analysis of Results and Feasibility
- 3.10. Implementation of R&D&I Projects Developed by the Company
 - 3.10.1. Purchase Management
 - 3.10.2. Supplier Validation
 - 3.10.3. Project Validation and Verification

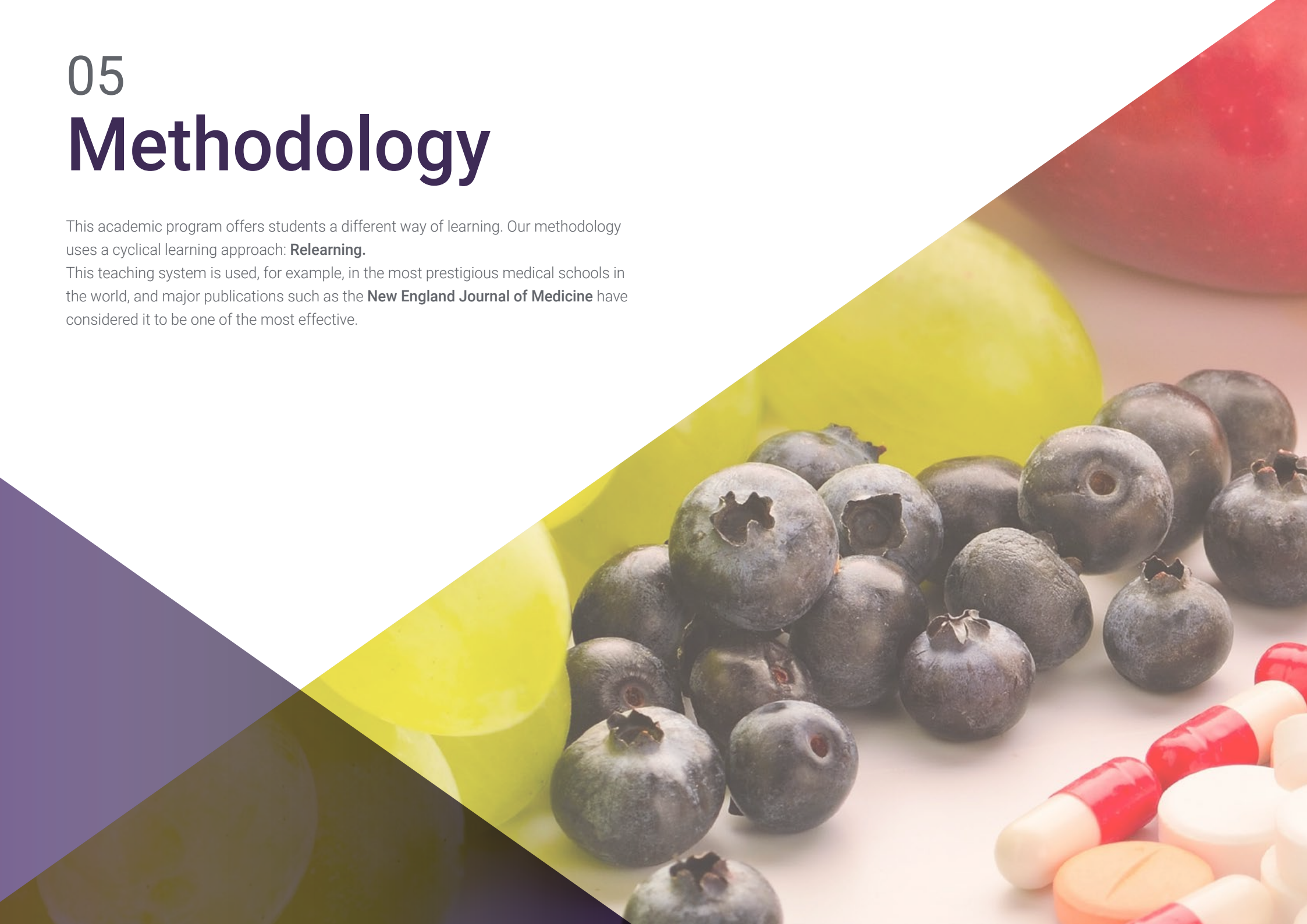


*This program will allow you to
advance in your career comfortably"*

05 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.





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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.

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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.

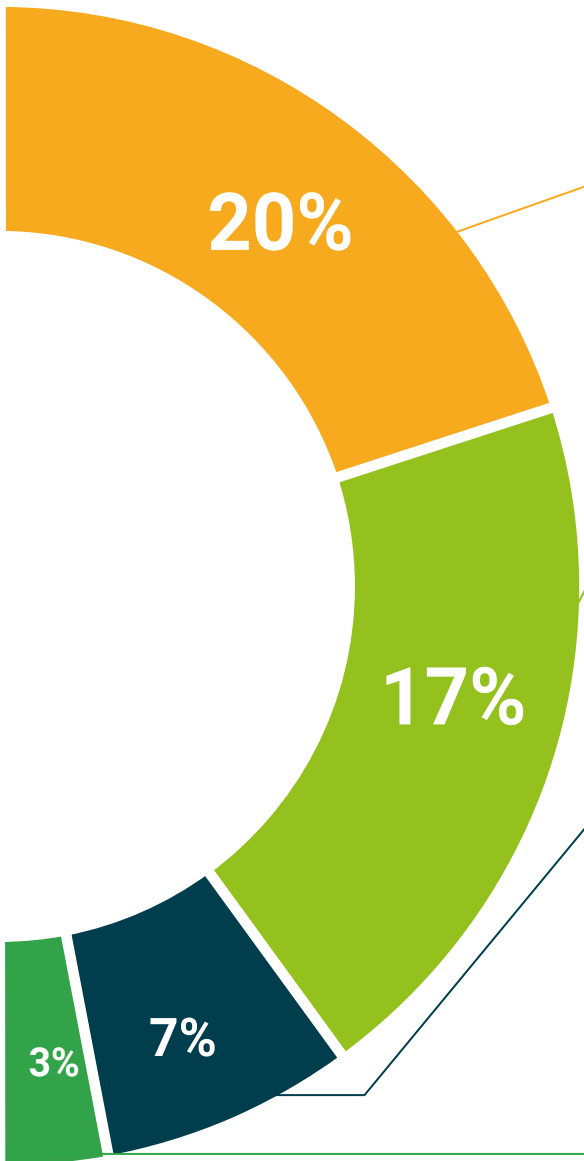
This exclusive educational system for presenting multimedia content was awarded by Microsoft as a "European Success Story".



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.



06 Certificate

The Postgraduate Diploma in Development and Execution of R&D&I Projects in the Food Sector guarantees students, in addition to the most rigorous and up-to-date education, access to a Postgraduate Diploma issued by TECH Technological University.





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

This **Postgraduate Diploma in Development and Execution of R&D&I Projects in the Food Sector** 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 Diploma** issued by **TECH Technological University** via tracked delivery*.

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

Title: **Postgraduate Diploma in Development and Execution of R&D&I Projects in the Food Sector**

Official N° of Hours: **450 h.**



*Apostille Convention. In the event that the student wishes to have their paper diploma 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

personalized service innovation

knowledge present

online training

development languages

virtual classroom

tech technological
university

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- » Modality: online
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