

# Postgraduate Certificate

## Methodology Validation in R&D&I Projects





## Postgraduate Certificate

### Methodology Validation in R&D&I Projects

- » Modality: online
- » Duration: 3 months
- » Certificate: TECH Technological University
- » Dedication: 16h/week
- » Schedule: at your own pace
- » Exams: online

Website: [www.techtitude.com/in/nutrition/postgraduate-certificate/methodology-validation-rdi-projects](http://www.techtitude.com/in/nutrition/postgraduate-certificate/methodology-validation-rdi-projects)

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# 01

# Introduction

This TECH program was created with the aim of providing nutritionists with the tools required to successfully validate the methodologies used in R&D&I. In this sense, food safety in the field of nutrition is paramount to control the quality of the products we consume. This makes it necessary to expand knowledge of this aspect of the industry, which is why TECH presents this complete training program on the methodologies used in R&D&I projects. Nutritionists must take advantage of the opportunity and acquire a solid body of knowledge in the field that will allow them to become successful professionals.





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*Do not miss this great opportunity and acquire in-depth knowledge of methodology validation with this comprehensive TECH Postgraduate Certificate”*

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. This course reviews the fundamental factors involved in confirming critical control points are effective in ensuring the safety of the food produced, emphasizing the need to correctly formulate said critical control points. It also lays out the tools required to validate existing controls, verify their effectiveness and have the confidence to implement sound control processes within food safety management systems.

Further, it addresses the "specific prerequisite" programs that support proper critical control point management. By analyzing the root cause with effective qualitative and quantitative methods and addressing deviations in internal audits, inspections and complaints, objective data can be obtained to validate controls already in place. It also lays out the tools required to validate existing controls, verify their effectiveness and have the confidence to implement sound control processes within food safety management systems.

It is an educational project committed to specializing high-quality professionals. A program designed by professionals specialized in each specific subject who face new challenges every day.

This **Postgraduate Certificate in Methodology Validation in R&D&I Projects** 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 in the area of nutrition
- ♦ 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 information on Methodology Validation in R&D&I Projects
- ♦ Practical exercises where self-assessment can be used to improve learning
- ♦ Its special emphasis on innovative methodologies in Methodology Validation in R&D&I Projects
- ♦ 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



*You are just one click away from  
an immersion that will catapult  
you to professional success"*

“

*This Postgraduate Certificate is the best investment you can make when choosing a refresher program to update your existing knowledge of Methodology Validation in R&D&I Projects”*

Its teaching staff includes professionals belonging to the field of food safety in the field of nutrition, who bring to this program the experience of their work, as well as recognized 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 the professional must try to solve the different professional practice situations that arise throughout the program. To that end, professionals will be assisted by an innovative, interactive video system made by recognized and extensively experienced experts in Methodology Validation in R&D&I Projects.

*The best program and the most prestigious professors in the industry join forces to lead you to professional success.*

*This 100% online Postgraduate Certificate will allow you to balance your studies with your work.*



# 02 Objectives

The Postgraduate Certificate in Methodology Validation in R&D&I Projects is aimed at facilitating professional performance based on the latest and most innovative advances in the industry. All this, in an exclusively practical way, by means of the most complete theoretical and practical contents of the field. Likewise, during the course of this Postgraduate Certificate, professionals will address the main interventions specialists conduct in food safety. This allows you to improve and enhance your skills in this regard, with the assurance that you are performing the protocols in the most effective and safe way possible.



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*Thanks to this Postgraduate Certificate you will see your professional progress on a daily basis”*



## General Objectives

- ◆ Determine critical control points
- ◆ Possess the tools to validate CCP
- ◆ Analyze the concepts of process monitoring, verification and validation
- ◆ Improve management of incidents, complaints and internal audits
- ◆ 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 provides a basis or opportunity for the development and/or implementation of ideas in a research and development context whose results can be transferred to practical application in the industry



*A path to achieve knowledge and professional growth that will propel you towards a greater level of competitiveness in the employment market"*





## Specific Objectives

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- ◆ Know the main differences between control points and critical control points
- ◆ Develop prerequisite programs and management charts to ensure food safety
- ◆ Apply internal audits, complaints or internal incidents as tools for the validation of control processes
- ◆ Review process validation methods
- ◆ Differentiate and specify the differences between monitoring, verification and validation activities within the HACCP system
- ◆ Demonstrate resolution capability with root cause analysis and implementation of corrective actions for complaint or nonconformity management
- ◆ Assess the management of internal audits as a tool for improving the HACCP plan
- ◆ 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

The program includes in its teaching staff leading experts in food safety in the area of nutrition, who pour into this program the experience of their work. Additionally, other recognized specialists participate in its design and preparation, which means that the program is developed in an interdisciplinary manner. All this, with the aim of specializing the nutritionist and providing him/her with the necessary academic tools to practice in this area with greater guarantees of success.



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*Our teaching team, specialists  
in Food Safety, will help you  
succeed professionally”*

## 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
- ♦ Specialist in Food Quality and Safety, Mercamadrid Training Center (CFM)

## Professors

### **Dr. Rendueles de la Vega, Manuel**

- ♦ D. in , Chemical Engineering, Professor of Chemical Engineering (University of Oviedo)
- ♦ Coordinator of the Master in Food Biotechnology at the University of Oviedo since
- ♦ Principal investigator in three projects of the National R&D Plan. Since 2004

### **Ms. Aranda Rodrigo, Eloísa**

- ♦ Degree in Food Science and Technology
- ♦ It develops its activity in the food production environment, with laboratory analysis of water and food
- ♦ Training in Quality Management Systems, BRC, IFS and ISO Food Safety
- ♦ Experience in audits under ISO 9001 and ISO 17025 protocols



04

# Structure and Content

The content has been designed and structured by the best professionals in the industry, with extensive experience and recognized prestige in the profession, backed by the volume of cases reviewed, studied and diagnosed, and with extensive knowledge of new technologies applied to food safety. This team, aware of the relevance of specialization in this field, has designed the most complete and up-to-date compendium of contents and practical activities with the aim of providing nutritionists with the tools they need to carry out their daily practice successfully.



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*We have the most complete and up-to-date educational program in the market. Study with us and improve your skills”*

## Module 1. Validation of New Methodologies and Processes

- 1.1. Critical Control Points
  - 1.1.1. Significant Hazards
  - 1.1.2. Prerequisite Programs
  - 1.1.3. Critical Control Point Management Chart
- 1.2. Verification of a Self-Control System
  - 1.2.1. Internal Audits
  - 1.2.2. Review of Historical Records and Trends
  - 1.2.3. Customer Complaints
  - 1.2.4. Detection of Internal Incidents
- 1.3. Monitoring, Validation and Verification of Control Points
  - 1.3.1. Surveillance or Monitoring Techniques
  - 1.3.2. Validation of Controls
  - 1.3.3. Efficiency Verification
- 1.4. Validation of Processes and Methods
  - 1.4.1. Documentary Support
  - 1.4.2. Validation of Analytical Techniques
  - 1.4.3. Validation Sampling Plan
  - 1.4.4. Method Bias and Accuracy
  - 1.4.5. Determining Uncertainty
- 1.5. Validation Methods
  - 1.5.1. Method Validation Stages
  - 1.5.2. Types of Validation Processes, Approaches.
  - 1.5.3. Validation Reports, Summary of Data Obtained
- 1.6. Incident and Deviation Management
  - 1.6.1. Formation of the Work Team
  - 1.6.2. Description of the Problem
  - 1.6.3. Root Cause Determination
  - 1.6.4. Corrective and Preventive Actions
  - 1.6.5. Efficiency Verification





- 1.7. Root Cause Analysis and Its Methods
  - 1.7.1. Causal Analysis: Qualitative Methods
    - 1.7.1.1. Tree Causes Root
    - 1.7.1.2. Why
    - 1.7.1.3. Causes and Effect
    - 1.7.1.4. Ishikawa Diagram
  - 1.7.2. Cause Analysis: Quantitative Methods
    - 1.7.2.1. Data Collection Data Model
    - 1.7.2.2. Pareto Chart
    - 1.7.2.3. Scatter Plots
    - 1.7.2.4. Histograms
- 1.8. Claims Management
  - 1.8.1. Claim Data Collection
  - 1.8.2. Investigation and Action
  - 1.8.3. Preparation of Technical Report
  - 1.8.4. Claims Trend Analysis
- 1.9. Internal Audits of the Self-Control System
  - 1.9.1. Competent Auditors
  - 1.9.2. Audit Program and Plan
  - 1.9.3. Scope of the Audit
  - 1.9.4. Reference Documents
- 1.10. Executing Internal Audits
  - 1.10.1. Opening Meeting
  - 1.10.2. System Evaluation
  - 1.10.3. Deviations from Internal Audits
  - 1.10.4. Closing Meeting
  - 1.10.5. Evaluation and Monitoring of the Effectiveness of Deviation Closure

## Module 2. Development, Coordination and Execution of R&D&I Projects

- 2.1. Innovation and Competitiveness in the Food Industry
  - 2.1.1. Analysis of the Food Sector
  - 2.1.2. Innovation in Processes, Products and Management
  - 2.1.3. Regulatory Conditions for the Marketing of Novel Foods
- 2.2. The R&D System
  - 2.2.1. Public Research and Private Research
  - 2.2.2. Regional and Local Business Support Plans
  - 2.2.3. National R&D&I Plans
  - 2.2.4. International Programs
  - 2.2.5. Research Promotion Agencies
- 2.3. R&D&I Projects
  - 2.3.1. R&D&I Aid Programs
  - 2.3.2. Types of Projects
  - 2.3.3. Types of Financing
  - 2.3.4. Project Evaluation, Monitoring and Control
- 2.4. Scientific and Technological Production
  - 2.4.1. Publication, Dissemination and Diffusion of Research Results
  - 2.4.2. Basic Research/Applied Research
  - 2.4.3. Private Sources of Information
- 2.5. Technology Transfer
  - 2.5.1. Protection of Industrial Property. Patents
  - 2.5.2. Regulatory Constraints on Transfers in the Food Sector.
  - 2.5.3. European Food Safety Authority (EFSA)
  - 2.5.4. Food and Drug Administration (FDA)
  - 2.5.5. National Organizations. Example: Spanish Agency for Food Safety and Nutrition (AESAN)





- 2.6. Planning of R&D&I Projects
  - 2.6.1. Work Decomposition Scheme
  - 2.6.2. Resource Allocation
  - 2.6.3. Priority of Tasks
  - 2.6.4. Gantt Chart Method
  - 2.6.5. Digitally Supported Planning Methods and Systems
- 2.7. Documentary Development of R&D&I Projects
  - 2.7.1. Prior Studies
  - 2.7.2. Delivery of Progress Reports
  - 2.7.3. Development of the Project Report
- 2.8. Project Execution
  - 2.8.1. Checklist
  - 2.8.2. Deliverables
  - 2.8.3. Project Progress Control
- 2.9. Project Delivery and Validation
  - 2.9.1. ISO Standards for the Management of R&D&I Projects
  - 2.9.2. Completion of the Project Phase
  - 2.9.3. Analysis of Results and Feasibility
- 2.10. Implementation of R&D&I Projects Developed by the Company
  - 2.10.1. Purchase Management
  - 2.10.2. Supplier Validation
  - 2.10.3. Project Validation and Verification

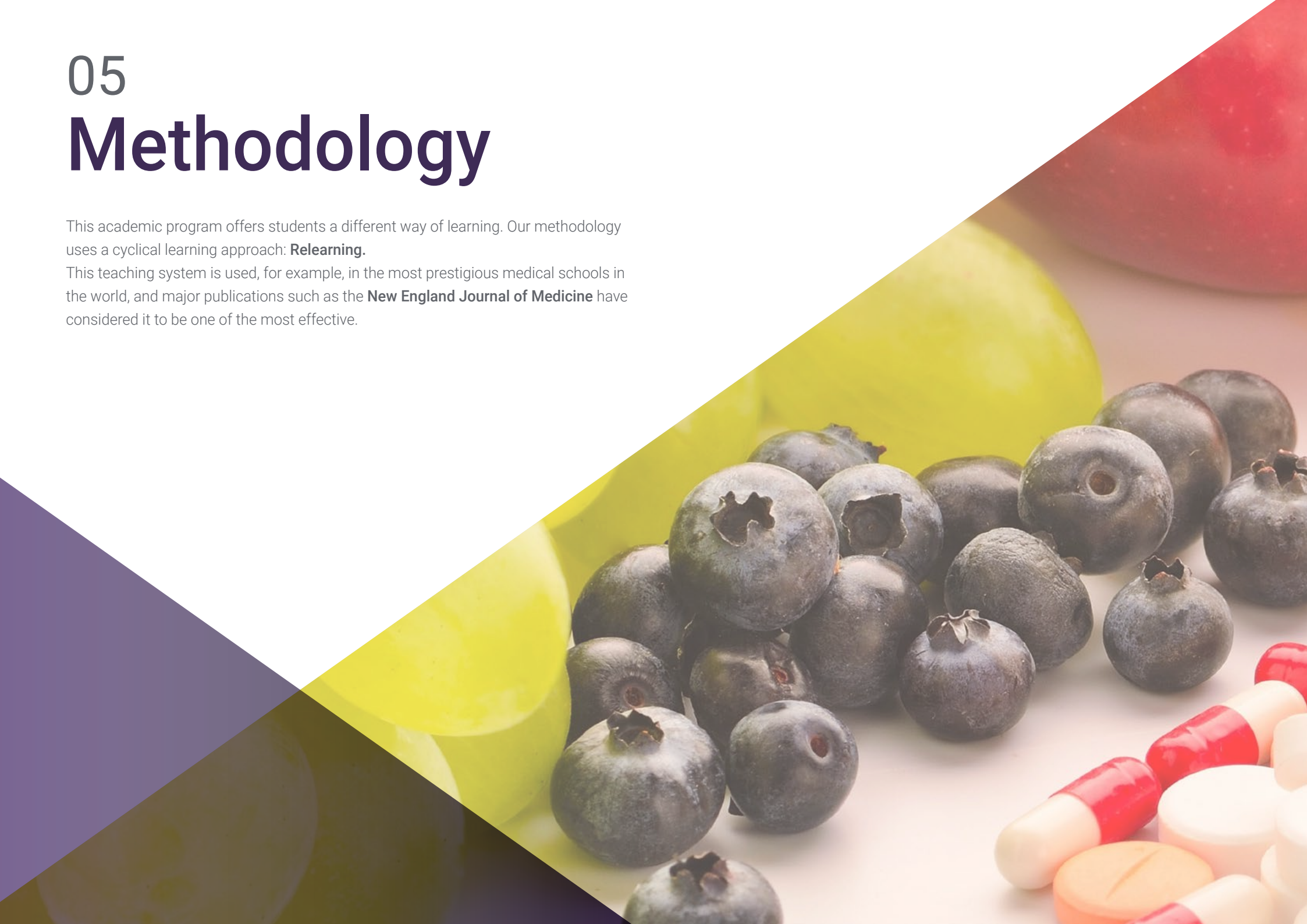


*This program will allow you to  
advance in your career comfortably"*

# 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.



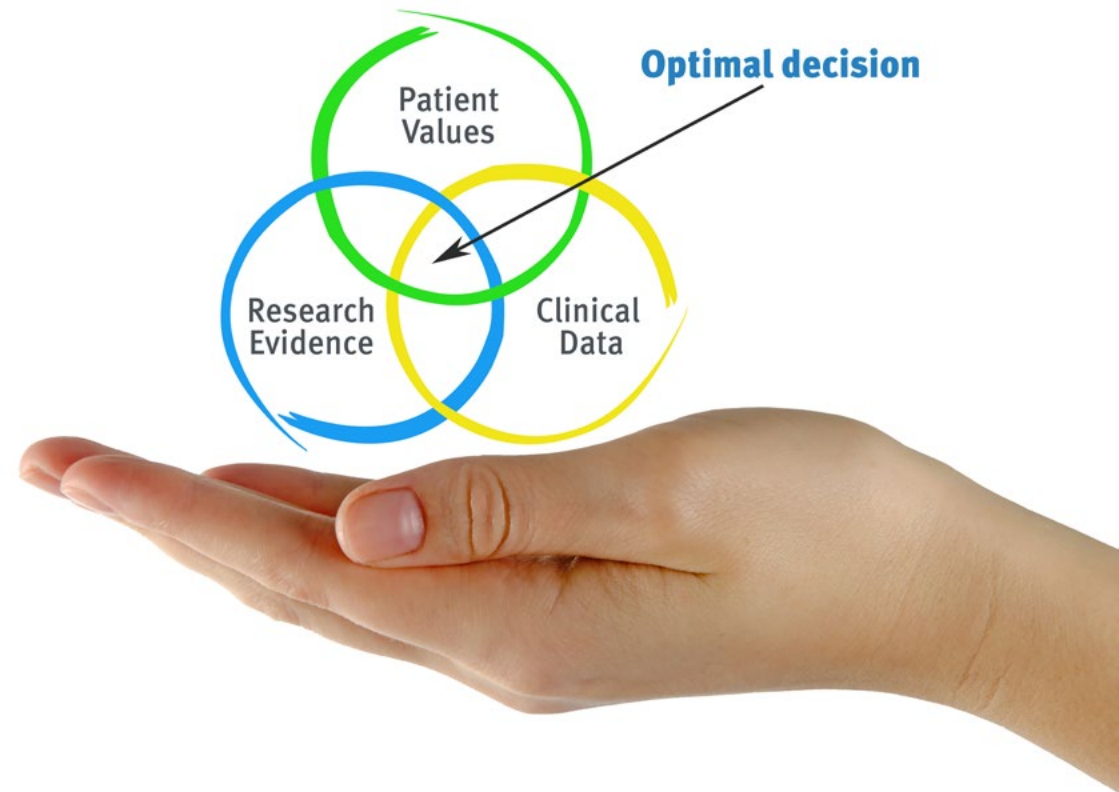
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*Discover Relearning, a system that abandons conventional linear learning, to take you through cyclical teaching systems: a way of learning that has proven to be extremely effective, especially in subjects that require memorization"*

## 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. Gervas, 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

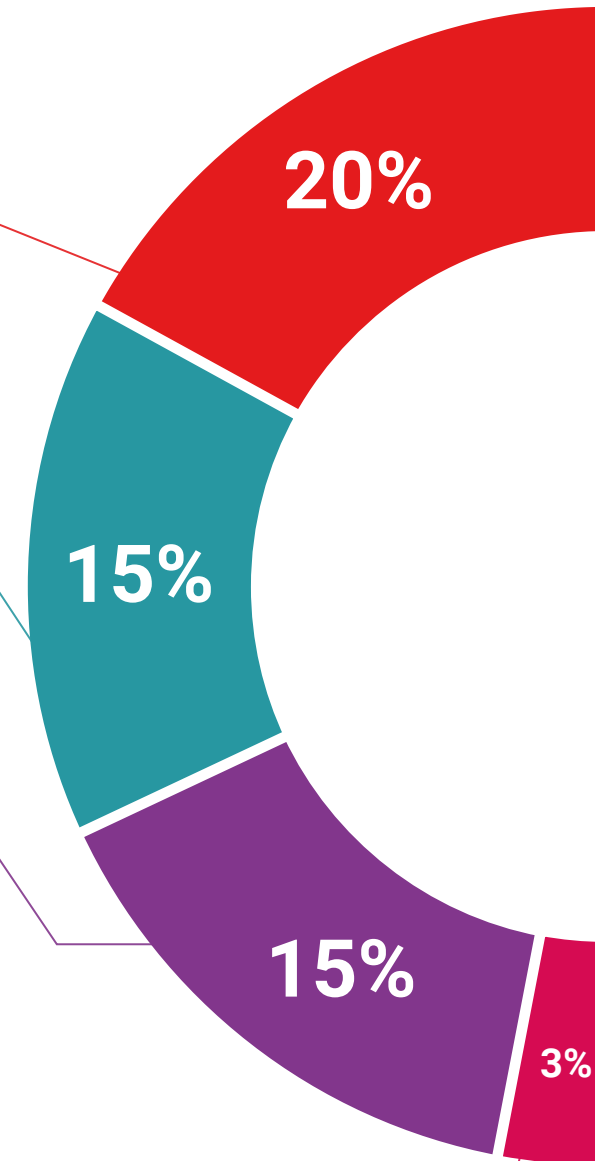
The TECH team presents the contents attractively and dynamically in multimedia lessons that include audio, videos, images, diagrams, and concept maps in order to reinforce knowledge.

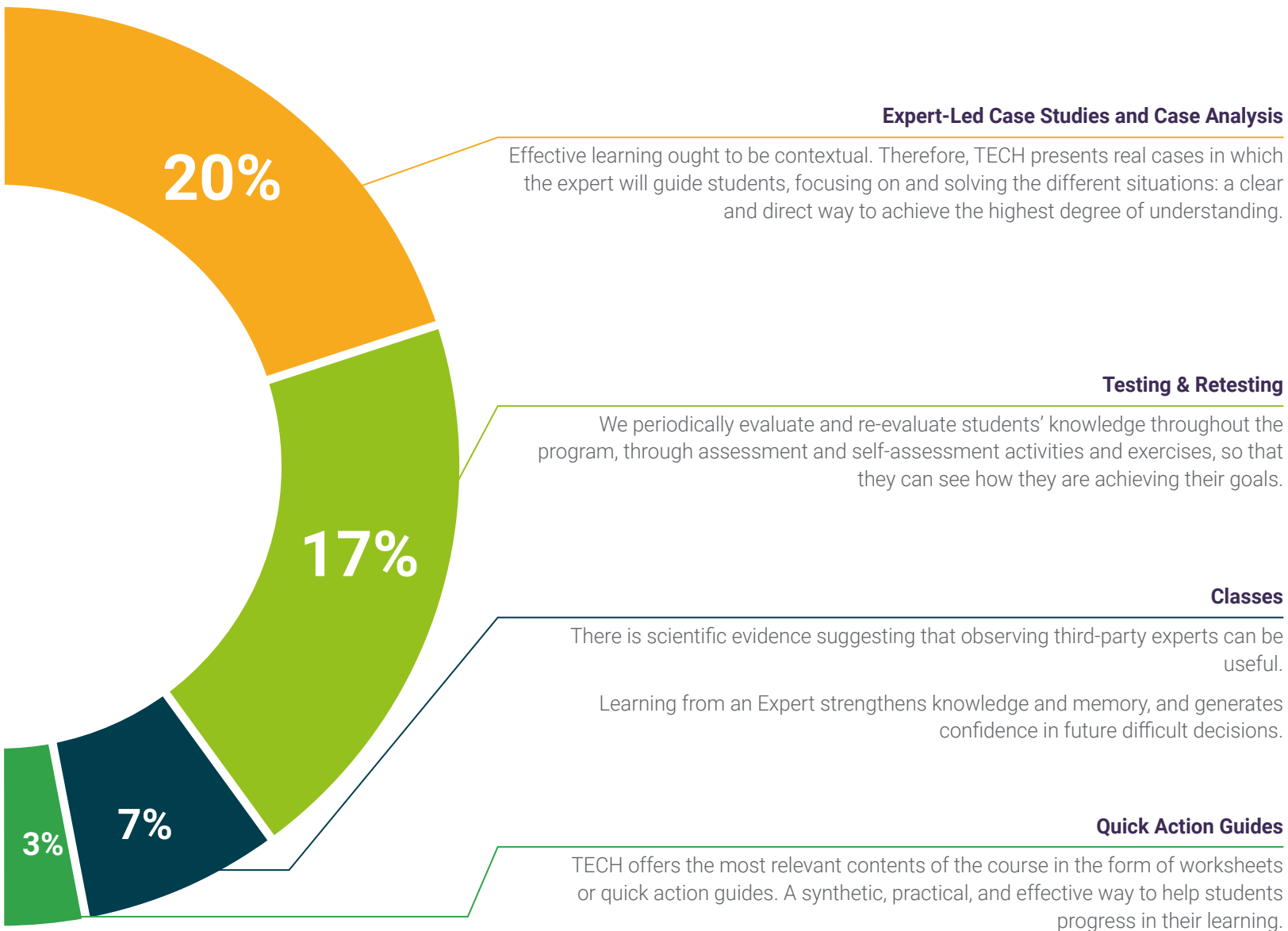
This exclusive educational system for presenting multimedia content was awarded by Microsoft as a "European Success Story".



#### 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.





# 06 Certificate

The Postgraduate Certificate in Methodology Validation in R&D&I Projects guarantees students, in addition to the most rigorous and up-to-date education, access to a Postgraduate Certificate 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 Certificate in Methodology Validation in R&D&I Projects** 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 Methodology Validation in R&D&I Projects**

Official N° of Hours: **300 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.



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