

# Postgraduate Certificate Process Validation in the Agri-Food Industry





## Postgraduate Certificate

### Process Validation in the Agri-Food Industry

- » Modality: online
- » Duration: 12 weeks
- » Certificate: TECH Global University
- » Credits: 12 ECTS
- » Schedule: at your own pace
- » Exams: online

Website: [www.techtitude.com/us/nutrition/postgraduate-certificate/process-validation-agri-food-industry](http://www.techtitude.com/us/nutrition/postgraduate-certificate/process-validation-agri-food-industry)

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# 01

# Introduction

The agri-food industry has undergone numerous changes in recent years, which is why it is crucial for nutrition professionals to acquire in-depth knowledge of today's food industry. Project validation in this industry is essential to control the quality of plant-based consumer products. Therefore, this program addresses the most important concepts of hazard, risk and safety as applied to the food industry, as well as the principles of safety assurance management in the food production industry that are followed, using the HACCP plan as a model. In addition, the program follows a risk assessment approach in accordance with current trends in quality and safety assurance management. Nutritionists will also master the fundamental aspects that ensure critical control points are effectively guaranteeing food safety, as it is fundamental for them to be correctly formulated.





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*You will contribute to safety in the food industry, and you will be responsible for verifying the controls implemented in the specifically in the agri-food industry”*

The program also covers the most important concepts of food industry hazards, risks and safety, as well as the most commonly used methods to control them, including allergens. It addresses the principles of safety assurance management in the food production industry, using the HACCP plan as a model, its prerequisites, the stages for its implementation and the verification of its efficiency.

The program has been developed from a risk assessment approach in accordance with current trends in quality and safety assurance management. From this perspective, the most current trends derived from this program are reviewed, such as HARCP; and the fundamental aspects that confirm critical control points are effectively guaranteeing food safety, as it is fundamental for them to be correctly formulated.

In addition, it includes the tools required to validate the controls in place, verify their effectiveness and have the confidence to implement sound control processes within a food safety management system.

University professors and professionals from various disciplines in food production make up the teaching team on this Postgraduate Certificate, in addition to a complete syllabus on analytical and instrumental techniques for quality control, prevention of accidental and intentional contamination and fraud, food safety/food integrity and traceability (food defense and food fraud/food authenticity). These experts in food legislation and regulations on quality and safety and validation of methodologies and processes have designed this program for our students to develop as nutritionists specialized in this field, providing them with the tools they need to contribute to the existing rigor in the industry.

This **Postgraduate Certificate in Process Validation in the Agri-Food Industry** 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 Process Validation in the Agri-Food Industry
- » Practical exercises where self-assessment can be used to improve learning
- » Its special emphasis on innovative methodologies in Process Validation in the Agri-Food Industry
- » 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



*Food contamination is avoidable in most cases and the industry requires, now more than ever, expert nutritionists to validate food safety processes”*

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*This Postgraduate Certificate gives you the tools to implement the principles of the HACCP plan, which is highly demanded by companies in the industry”*

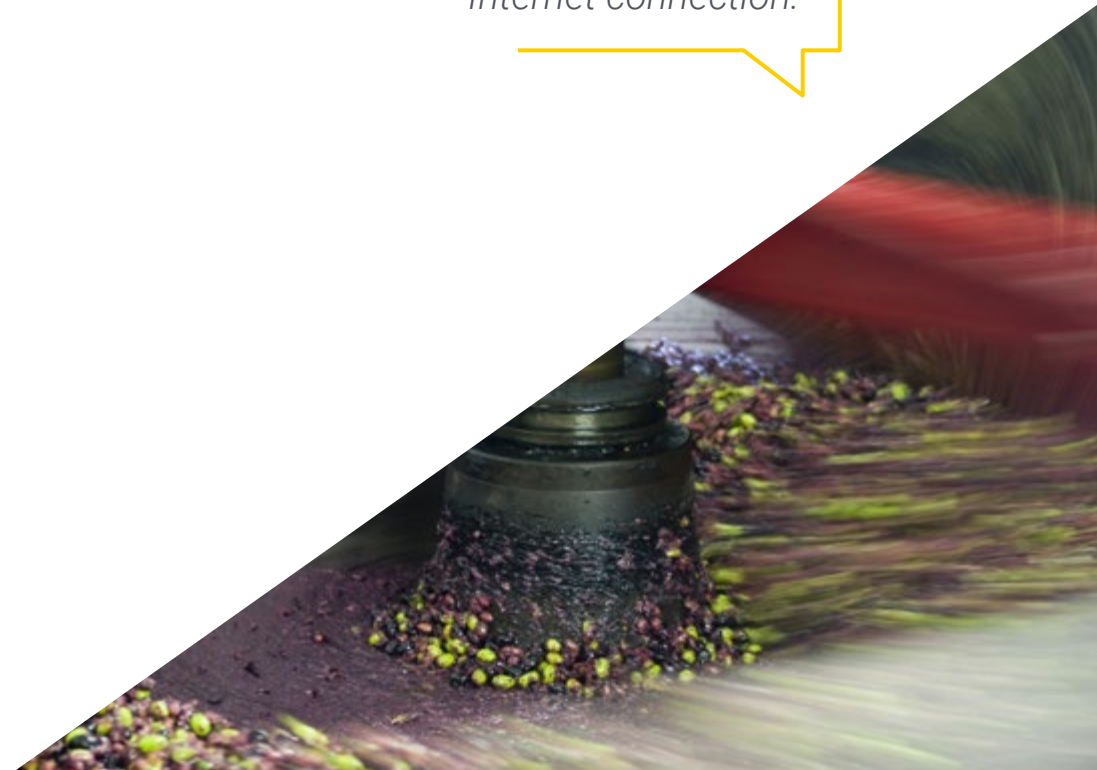
The teaching staff includes professionals who belong to the food industry, specialized in the Process Validation in the Agri-Food Industry, and whose expertise focuses on nutrition.

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 a novel and interactive video system developed by recognized and extensively experienced experts in Process Validation in the Agri-Food Industry.

*You will identify the dangers associated with the most common foods according to their physical, chemical or biological nature, which will make you a 360° nutritionist.*

*At TECH, you can take this program in no time, when and how you want; all you need is digital device with an Internet connection.*



# 02 Objectives

The Postgraduate Certificate in Process Validation in the Agri-Food Industry is aimed at facilitating professional performance in this field based on the latest and most innovative advances in the industry. Through a complete syllabus with updated theoretical and practical content, nutritionists will acquire the knowledge needed to work successfully in the field and develop the required skills. Similarly, during the course of this Postgraduate Certificate, professionals will address the main interventions specialist conduct in food safety applied to the agri-food industry. This will enhance all the skills students need to develop, which can be found on this program that students can balance with their professional activity.





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*This Postgraduate Certificate will give you a foundation of the most important concepts in food safety so you can apply the principles of a management plan in agri-food processes”*



## General Objectives

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- » Fundamentals of the most important food safety concepts
- » Define the concept of risk and risk assessment
- » Apply these principles to the development of a safety management plan
- » Concretize the principles of the HACCP plan
- » 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



*Increase your decision-making confidence by updating your knowledge with this Postgraduate Certificate”*





## Specific Objectives

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- » Analyze the main types of hazards associated with food
- » Evaluate and apply the principle of risk and risk analysis in food safety
- » Identify the prerequisites and previous steps for the implementation of a safety management plan
- » Establish the main hazards associated with food according to their physical, chemical or biological nature, and some of the methods used for their control
- » Apply these principles to the development of a safety management plan
- » Specify the methods to evaluate the efficiency of a critical point and of the safety management plan
- » 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

# 03

# Course Management

The professors on the program are highly qualified in the field of Process Validation in the Agri-Food Industry, turning this Postgraduate Certificate into a point of reference for the sector given the relevance it had yesterday, today, and will continue to have. They have brought their knowledge and experience, including the latest developments in the field and environmental considerations, to provide nutritionists with a complete and updated education. Legal specialists have also participated in the development of the curriculum to complete the program in an interdisciplinary way from a global perspective. All this under TECH's guarantee and our goal to train nutritionists for professional success.





“TECH only trusts the best in each sector for its courses. Trust TECH”

## International Guest Director

Widely specialized in Food Safety, John Donaghy is a leading Microbiologist with an extensive professional experience of more than 20 years. His comprehensive knowledge on subjects such as foodborne pathogens, risk assessment and molecular diagnostics has led him to be part of international reference institutions such as Nestlé or the Department of Agriculture Scientific Services of Northern Ireland.

Among his main tasks, he has been in charge of operational aspects related to food safety microbiology, including hazard analysis and critical control points. He has also developed multiple prerequisite programs, as well as bacteriological specifications to ensure hygienic environments at the same time as safe for optimal food production.

His strong commitment to providing first class services has led him to combine his management work with scientific research. In this sense, he has an extensive academic production, consisting of more than 50 comprehensive articles on topics such as the impact of Big Data in the dynamic management of food safety risk, microbiological aspects of dairy ingredients, detection of ferulic acid esterase by *Bacillus subtilis*, extraction of pectin from citrus peels by polygalaturonase produced in serum or the production of proteolytic enzymes by *Lysobacter gummosus*.

On the other hand, he is a regular speaker at conferences and forums worldwide, where he discusses the most innovative molecular analysis methodologies to detect pathogens and the techniques for implementing systems of excellence in the manufacture of foodstuffs. In this way, he helps professionals stay at the forefront of these fields while driving significant advances in the understanding of Quality Control. In addition, it sponsors internal research and development projects to improve the microbiological safety of foods.



## Dr. Donaghy, Jhon

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- Global Head of Food Safety, Nestlé, Lausanne, Switzerland
- Project Leader in Food Safety Microbiology, Institute of Agri-Food and Biological Sciences, Northern Ireland
- Senior Scientific Advisor at the Department of Agriculture Scientific Services, Northern Ireland
- Consultant on various initiatives funded by the Food Safety Authority of the Government of Ireland and the European Union
- Doctorate in Science, Biochemistry, University of Ulster
- Member of the International Commission on Microbiological Specifications for Foods

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*Thanks to TECH, you will be able to learn with the best professionals in the world”*

## 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

### 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 22000 Food Safety
- » Experience in audits under ISO 9001 and ISO 17025 protocols





# 04

# Structure and Content

The content on the program is structured in two blocks that focus on food safety management and validation of new methodologies and processes in the agri-food industry. Professionals will expand their knowledge in this regard, launching their career into more areas in nutrition. The proposed curriculum has been created and developed by experts in the food industry who have poured their knowledge and experience in a complete and unmatched syllabus on the market, as one of the best and most demanded by professionals in the industry. It is complemented by practical cases and a unique methodology, so nutritionists learn how to apply the skills gained in their daily work.





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*The importance of validation in food industry processes directly influences food safety and nutritional diagnostics”*

## Module 1. Food Safety Management

- 1.1. Food Safety Principles and Management
  - 1.1.1. The Concept of Danger
  - 1.1.2. The Concept of Risk
  - 1.1.3. Risk Evaluation
  - 1.1.4. Food Safety and Its Management Based on Risk Assessment
- 1.2. Physical Hazards
  - 1.2.1. Concepts and Considerations on Physical Hazards in Foods
  - 1.2.2. Physical Hazard Control Methods
- 1.3. Chemical Hazards
  - 1.3.1. Concepts and Considerations on Chemical Hazards in Foods
  - 1.3.2. Chemical Hazards Naturally Occurring in Food
  - 1.3.3. Hazards Associated with Chemicals Intentionally Added to Foods
  - 1.3.4. Incidentally or Unintentionally Added Chemical Hazards
  - 1.3.5. Chemical Hazard Control Methods
  - 1.3.6. Allergens in Food
  - 1.3.7. Allergen Control in the Food Industry
- 1.4. Biological Hazards
  - 1.4.1. Concepts and Considerations of Biological Hazards in Foods
  - 1.4.2. Microbial Hazards
  - 1.4.3. Non-Microbial Biological Hazards
  - 1.4.4. Biological Hazard Control Methods
- 1.5. Good Manufacturing Practices Program (GMP)
  - 1.5.1. Good Manufacturing Practices (GMP)
  - 1.5.2. Background on GMP
  - 1.5.3. Scope of GMPAI
  - 1.5.4. GMPs in a Safety Management System
- 1.6. Standard Operating Procedure for Sanitation (SSOP)
  - 1.6.1. Sanitary Systems in the Food Industry
  - 1.6.2. Scope of SSOPs
  - 1.6.3. Structure of a SSOP
  - 1.6.4. SSOPs in a Safety Management System
- 1.7. The Hazard Analysis and Critical Control Point (HACCP) Plan
  - 1.7.1. Hazard Analysis and Critical Control Points (HACCP)
  - 1.7.2. Background of HACCP
  - 1.7.3. HACCP Prerequisites
  - 1.7.4. The 5 Preliminary Steps to HACCP Implementation
- 1.8. The 7 Steps of Hazard and Critical Control Point (HACCP) Plan Implementation
  - 1.8.1. Risk Analysis
  - 1.8.2. Identification of Critical Control Points
  - 1.8.3. Establishment of Critical Limits
  - 1.8.4. Establishment of Monitoring Procedures
  - 1.8.5. Implementation of Corrective Actions
  - 1.8.6. Establishment of Verification Procedures
  - 1.8.7. Record Keeping and Documentation System
- 1.9. Evaluation of the Efficiency of the Hazard and Critical Control Point Plan (HACCP) System.
  - 1.9.1. Evaluation of the Efficiency of a CCP
  - 1.9.2. Overall Evaluation of the Efficiency of the HACCP Plan
  - 1.9.3. Use and Management of Records to Evaluate the Efficiency of the HACCP Plan
- 1.10. Hazard and Critical Control Point Plan (HACCP) System Variants Based on Risk Systems
  - 1.10.1. VACCP or Vulnerability Assessment and Critical Control Points (VACCP) Plan
  - 1.10.2. Threat Assessment Critical Control Points (TACCP)
  - 1.10.3. Hazard Analysis and Risk-Based Preventive Controls (HARPC)

## Module 2. Validation of New Methodologies and Processes

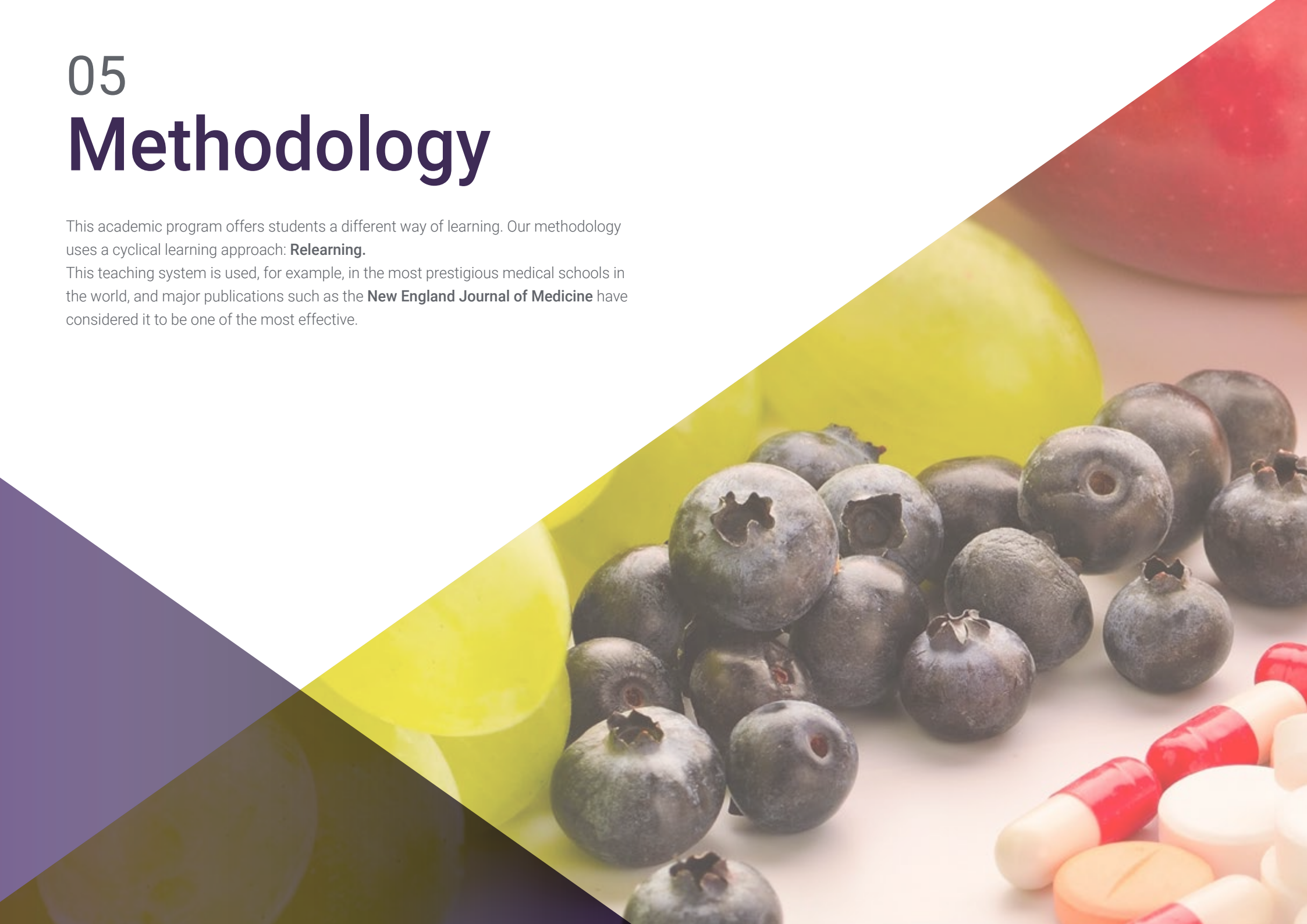
- 2.1. Critical Control Points
  - 2.1.1. Significant Hazards
  - 2.1.2. Prerequisite Programs
  - 2.1.3. Critical Control Point Management Chart
- 2.2. Verification of a Self-Control System
  - 2.2.1. Internal Audits
  - 2.2.2. Review of Historical Records and Trends
  - 2.2.3. Customer Complaints
  - 2.2.4. Detection of Internal Incidents
- 2.3. Monitoring, Validation and Verification of Control Points
  - 2.3.1. Surveillance or Monitoring Techniques
  - 2.3.2. Validation of Controls
  - 2.3.3. Efficiency Verification
- 2.4. Validation of Processes and Methods
  - 2.4.1. Documentary Support
  - 2.4.2. Validation of Analytical Techniques
  - 2.4.3. Validation Sampling Plan
  - 2.4.4. Method Bias and Accuracy
  - 2.4.5. Determining Uncertainty
- 2.5. Validation Methods
  - 2.5.1. Method Validation Stages
  - 2.5.2. Types of Validation Processes, Approaches
  - 2.5.3. Validation Reports, Summary of Data Obtained
- 2.6. Incident and Deviation Management
  - 2.6.1. Formation of the Work Team
  - 2.6.2. Description of the Problem
  - 2.6.3. Root Cause Determination
  - 2.6.4. Corrective and Preventive Actions
  - 2.6.5. Efficiency Verification
- 2.7. Root Cause Analysis and Its Methods
  - 2.7.1. Causal Analysis: Qualitative Methods
    - 2.7.1.1. Tree Causes Root
    - 2.7.1.2. Why
    - 2.7.1.3. Causes and Effect
    - 2.7.1.4. Ishikawa Diagram
  - 2.7.2. Cause Analysis: Quantitative Methods
    - 2.7.2.1. Data Collection Data Model
    - 2.7.2.2. Pareto Chart
    - 2.7.2.3. Scatter Plots
    - 2.7.2.4. Histograms
- 2.8. Claims Management
  - 2.8.1. Claim Data Collection
  - 2.8.2. Investigation and Action
  - 2.8.3. Preparation of Technical Report
  - 2.8.4. Claims Trend Analysis
- 2.9. Internal Audits of the Self-Control System
  - 2.9.1. Competent Auditors
  - 2.9.2. Audit Program and Plan
  - 2.9.3. Scope of the Audit
  - 2.9.4. Reference Documents
- 2.10. Executing Internal Audits
  - 2.10.1. Opening Meeting
  - 2.10.2. System Evaluation
  - 2.10.3. Deviations from Internal Audits
  - 2.10.4. Closing Meeting
  - 2.10.5. Evaluation and Monitoring of the Effectiveness of Deviation Closure

# 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

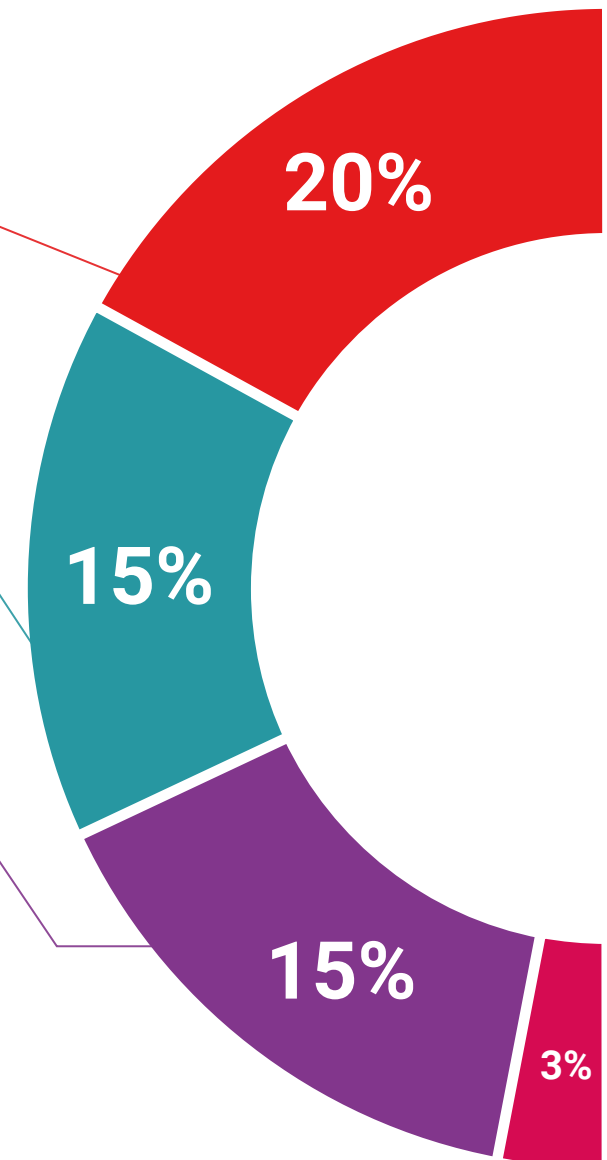
The TECH team presents the contents attractively and dynamically in multimedia lessons that include audio, videos, images, diagrams, and concept maps in order to reinforce knowledge.

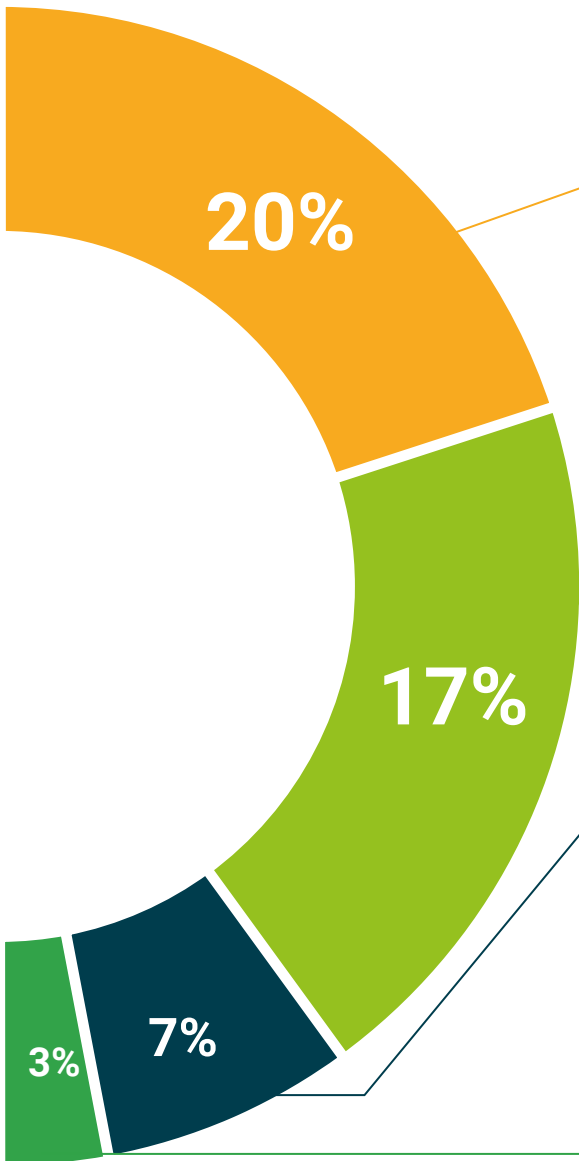
This exclusive educational system for presenting multimedia content was awarded by Microsoft as a "European Success Story".



#### 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 Certificate in Process Validation in the Agri-Food Industry guarantees students, in addition to the most rigorous and up-to-date education, access to a Postgraduate Certificate issued by TECH Global University.



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

This program will allow you to obtain your **Postgraduate Certificate in Process Validation in the Agri-Food Industry** endorsed by **TECH Global University**, the world's largest online university.

**TECH Global University** is an official European University publicly recognized by the Government of Andorra ([official bulletin](#)). Andorra is part of the European Higher Education Area (EHEA) since 2003. The EHEA is an initiative promoted by the European Union that aims to organize the international training framework and harmonize the higher education systems of the member countries of this space. The project promotes common values, the implementation of collaborative tools and strengthening its quality assurance mechanisms to enhance collaboration and mobility among students, researchers and academics.

This **TECH Global University** title is a European program of continuing education and professional updating that guarantees the acquisition of competencies in its area of knowledge, providing a high curricular value to the student who completes the program.

Title: **Postgraduate Certificate in Process Validation in the Agri-Food Industry**

Modality: **online**

Duration: **12 weeks**

Accreditation: **12 ECTS**



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



future

health confidence people

education information tutors

guarantee accreditation teaching

institutions technology learning

community commitment

**tech** global  
university

personalized service innovation

knowledge present

Postgraduate Certificate  
Process Validation in the  
Agri-Food Industry

development language

virtual classroom

- » Modality: online
- » Duration: 12 weeks
- » Certificate: TECH Global University
- » Credits: 12 ECTS
- » Schedule: at your own pace
- » Exams: online

# Postgraduate Certificate Process Validation in the Agri-Food Industry