Postgraduate Certificate
Analytical Quality Control in the Food Industry

tech global university

![tech global university]

Postgraduate Certificate
Analytical Quality Control
in the Food Industry

- » Modality: **online**
- » Duration: **6 weeks**
- » Certificate: **TECH Global University**
- » Credits: **6 ECTS**
- » Schedule: **at your own pace**
- » Exams: **online**

Website: **www.techtitute.com/us/nutrition/postgraduate-certificate/analytical-quality-control-food-industry**

Index

01
Introduction

This program was created with the objective of providing nutritionists with the knowledge and tools required to successfully implement quality control techniques in the food industry. In this sense, the quality control of processes and products is essential to ensure food safety and to guarantee Good Manufacturing Practice (GMP) in the processes carried out in the food industry. Students will conduct an in-depth study of facility, personnel, laboratory techniques and equipment requirements, the quality parameters for food, materials and processes susceptible to analysis according to regulations, accepted quality control indexes, analytical techniques required for each product and the interpretation of results. This is a fundamental task in monitoring food batches to guarantee food safety and quality.

"

It is vital for nutritionists to keep up to date so they can successfully face new challenges in the profession"

This Postgraduate Certificate highlights the tools that guarantee food safety, which are mandatory and under the responsibility of producers, and which can be conducted either through the food industry's laboratory controls or by outsourcing the service to leading food laboratories that test raw materials and products.

Students will conduct an in-depth study of facility, personnel, laboratory techniques and equipment requirements, the quality parameters for food, materials and processes susceptible to analysis according to regulations, accepted quality control indexes, analytical techniques required for each product and the interpretation of results. Therefore, quality control in the food industry, by means of analytical tools and techniques, is essential in monitoring food batches to guarantee food safety, quality and safety, thus ensuring the continuous improvement of processes and products through integrated quality management.

This Postgraduate Certificate is taught by university professors and professionals from various disciplines in primary production, including the use of analytical and instrumental techniques for quality control, the prevention of accidental and intentional contamination and fraud, 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.

This **Postgraduate Certificate in Analytical Quality Control in the 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 Analytical Quality Control in the Food Industry
- Practical exercises where self-assessment can be used to improve learning
- Its special emphasis on innovative methodologies in Analytical Quality Control in the 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

This Postgraduate Certificate will be the ideal starting point to advance your career and become a prestigious professional"

Discover the Analytical Quality Control in the Food Industry and take a step forward in your career"

This program includes professional experts in the field, specialized in Analytical Quality Control in the Food Industry.

Its multimedia content, developed with the latest educational technology, will allow the professional a situated and contextual learning, that is, a simulated environment that will provide immersive information 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 renowned and experienced experts in Analytical Quality Control in the Food Industry.

You will identify the analytical techniques used on food and you will be in charge of managing adequate quality control in any company if you take this program.

One of the points you will study in depth will be establishing quality characteristics that raw materials, intermediate and finished products must comply with according to their origin.

02
Objectives

The Postgraduate Certificate in Analytical Techniques of Application in Quality is focused on providing nutritionists with the relevant knowledge for their professional development. For this purpose, exceptional professors have developed a quality syllabus with the latest developments in the industry. In this way, students will acquire throughout the course the skills to examine laboratory food regulations and standards or determine the requirements to be met according to ISO IEC 17025, among others.

"
Specialize with the certainty of receiving the most up-to-date contents based on the maximum scientific rigor in the industry"

General Objectives

- Examine the regulations and standards for food laboratories and define their role in food safety

- Analyze food safety regulations and standards applicable to raw materials and products in food laboratories

- Determine the requirements to be met by food analysis laboratories (ISO IEC 17025 Standard, applicable to the accreditation and certification of quality systems in laboratories)

- Recognize the consumer's right to acquire safe, healthy and innocuous food from the agrifood chain, both nationally and internationally

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

Specific Objectives

♦ Establish the quality characteristics to be met by raw materials, intermediate and finished products according to their origin, prior to their laboratory analysis

♦ Develop the relevant methodology for product conformity, taking into account the applicable requirements considered by the regulations and standards

♦ Define the most appropriate methodology for food quality assessment: integrity analysis and characterization, including the detection of biotic or abiotic food contaminants that may pose a health risk to consumers

♦ Describe food sampling depending on source, use and characteristics or specifications

♦ Identify and recognize the analytical techniques used in food and manage an adequate quality control

♦ Describe the main agri-food contaminants and learn about the application of analytical techniques by observing the sector to which they belong

♦ Outline the process for identifying and ensuring the safety of raw materials, processed foods and the suitability of water in the production of safe products for food and feed

03
Course Management

The course has benefited from one of the most distinguished profiles in the industry today, whose references are remarkable and whose field within the food industry is complete and diverse. The experience of her work and her deep knowledge in the field guarantee students an exceptional program and academic support, guaranteed by TECH. 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 training nutritionists and providing them with the academic tools required to practice in the field with greater guarantees of success and rigor.

Dr. Limón Garduza has an exceptional track record in the industry and has poured into this program all her knowledge and experience to guide you toward professional success"

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

- 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

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 has been meticulously developed by an industry expert, structured in several headings that will provide students with a complete and accurate vision. Several cases have been reviewed, studied and diagnosed to complement the course material and curriculum. This TECH course is born from the relevance of this area in the industry so that it can provide students with an online option they can balance with their professional life.

"

Delve into the concepts of food safety / food integrity that characterize the quality and conformity indexes of food products"

Module 1. Analytical and Instrumental Techniques in Process and Product Quality Control

1.1. Laboratory Types, Regulations and Standards
1.1.1. Reference Laboratories
1.1.1.1. European Reference Laboratory
1.1.1.2. National Reference Laboratories
1.1.2. Food Laboratory
1.1.3. Regulations and Standards Applicable to Laboratories (ISO/IEC 17025)
1.1.3.1. General Requirements for Laboratory Competence
1.1.3.2. Equipment Testing and Calibration
1.1.3.3. Implementation and Validation of Analytical Methods
1.2. Official Control of the Agri-Food Chain
1.2.1. PNCPA of the Agri-Food Chain
1.2.2. Competent Authorities
1.2.3. Legal Support for Official Control
1.3. Official Methods of Food Analysis
1.3.1. Methods of Animal Feed Analysis
1.3.2. Water Analysis Methods
1.3.2.1. Analytical Requirements According to Royal Decree 140/2003
1.3.2.2. Sampling Frequencies according to Industry Type
1.3.3. Methods of Analysis of Cereals
1.3.4. Methods of Analysis of Fertilizers, Residues of Phytosanitary and Veterinary Products
1.3.5. Methods of Analysis of Food Products
1.3.6. Methods of Analysis of Meat Products
1.3.7. Fat Analysis Methods
1.3.8. Methods of Analysis of Dairy Products
1.3.9. Methods of Analysis of Wines, Juices and Musts
1.3.10. Methods of Analysis of Fishery Products

1.4. On-Site Analytical Techniques for Fresh Food Receiving, Processing and Finished Product
1.4.1. In Food Handling
1.4.1.1. Analysis of Environments and Surfaces
1.4.1.2. Handler Analysis
1.4.1.3. Equipment Analysis
1.4.2. Analysis of Fresh Feed and Finished Product
1.4.2.1. Product Data Sheets
1.4.2.2. visual Inspection
1.4.2.3. Color Charts
1.4.2.4. Organoleptic Evaluation according to Food Type
1.4.3. Basic Physicochemical Analysis
1.4.3.1. Determination of Maturity Index in Fruit
1.4.3.2. Firmness
1.4.3.3. Brix Degrees
1.5. Nutritional Analysis Techniques
1.5.1. Protein Determination
1.5.2. Determination of Carbohydrates
1.5.3. Determination of Fats
1.5.4. Ash Determination
1.6. Microbiological and Physicochemical Food Analysis Techniques
1.6.1. Preparation Techniques: Fundamentals, Instrumentation and Application in Food Processing.
1.6.2. Microbiological Analysis
1.6.2.1. Handling and Treatment of Samples for Microbiological Analysis
1.6.3. Physical-Chemical Analysis
1.6.3.1. Handling and Treatment of Samples for Physical-Chemical Analysis

This program will allow you to advance in your career in a seamless way."

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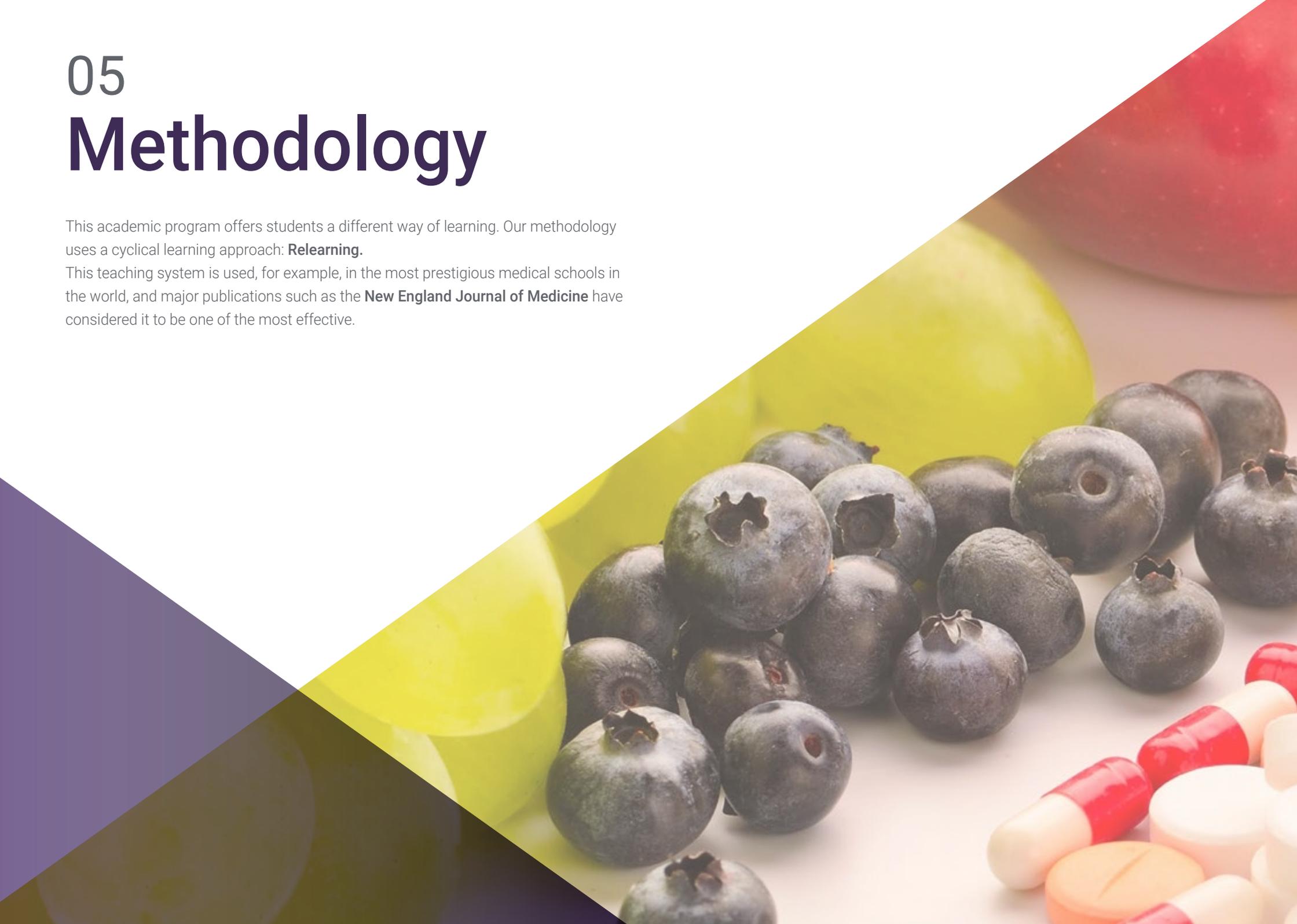
Discover Relearning, a system that abandons conventional linear learning, to take you through cyclical teaching systems: a way of learning that has proven to be extremely effective, especially in subjects that require memorization"

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.
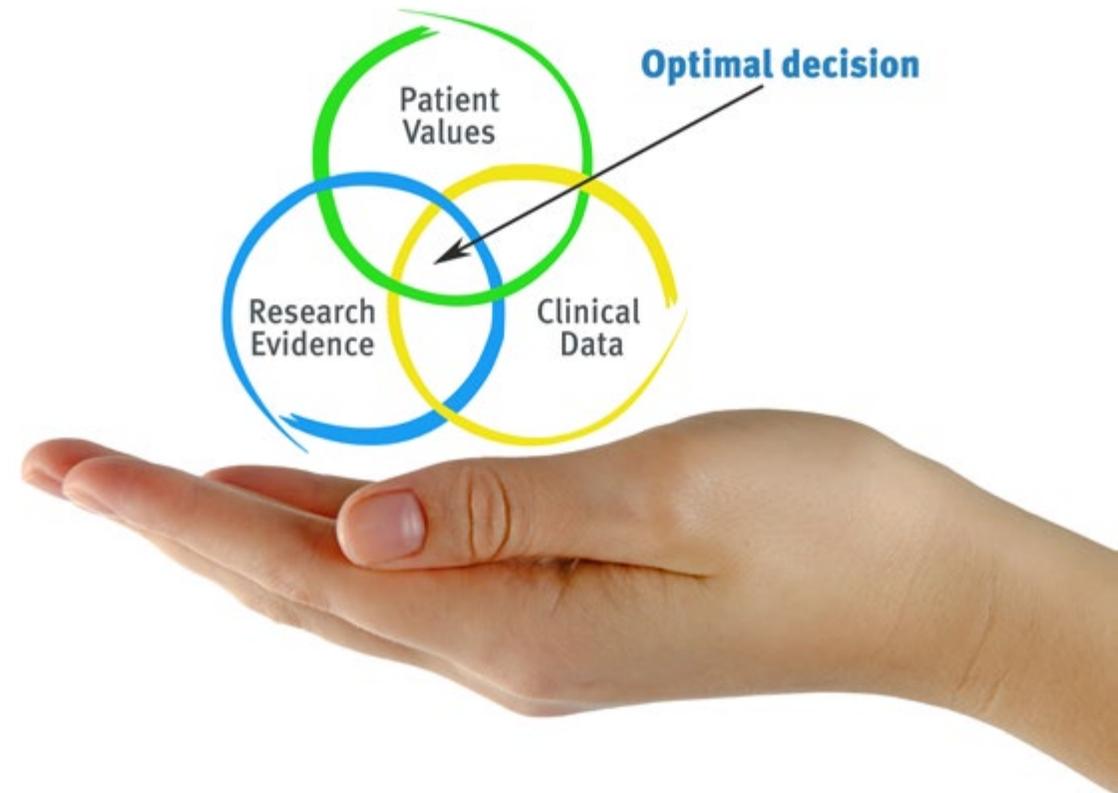
According to Dr. Gérvas, the clinical case is the annotated presentation of a patient, or group of patients, which becomes a "case", an example or model that illustrates some peculiar clinical component, either because of its teaching power or because of its uniqueness or rarity. It is essential that 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.

01 learning from evidence

02 relearning from evidence

03 testing

04 learning from an expert

05 neurocognitive context dependent learning

06 Von-Restorff effect

07 case based learning through storytelling

08 competencies testing (retesting)

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:
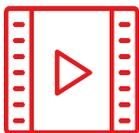
Study Material

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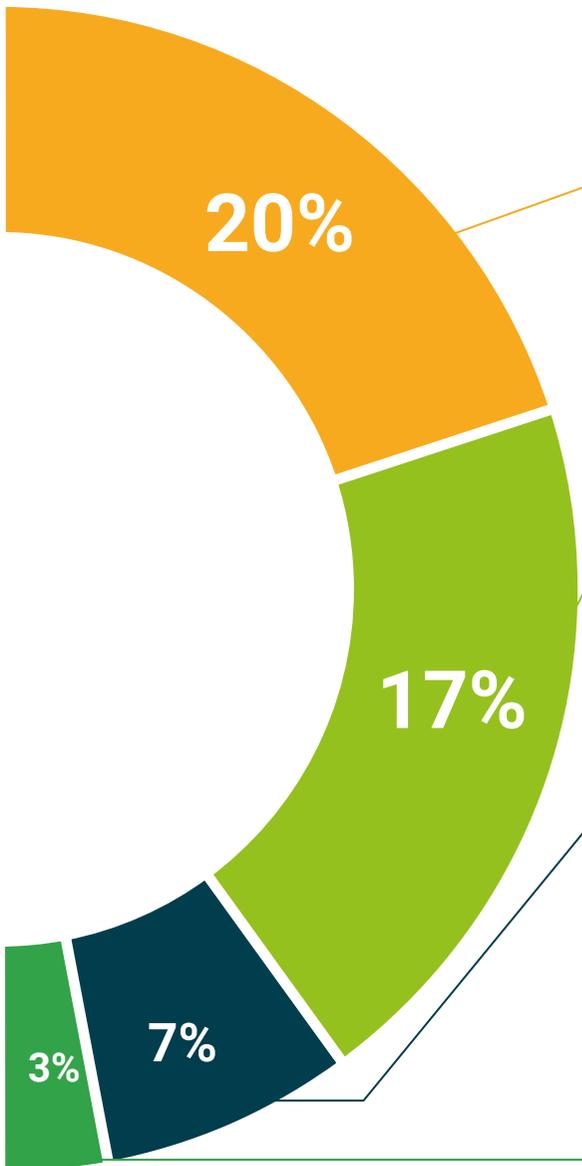
This exclusive educational system for presenting multimedia content was awarded by Microsoft as a "European Success Story".

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.

20%

15%

15%

3%

20%

17%

7%

3%

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 Analytical Quality Control in the 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.

"

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 Analytical Quality Control in the 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 Analytical Quality Control in the Food Industry**

Modality: **online**

Duration: **6 weeks**

Accreditation: **6 ECTS**

tech global
university

Mr./Ms. _____, with identification document _____
has successfully passed and obtained the title of:

Postgraduate Certificate in Analytical Quality Control in the Food Industry

This is a program of 180 hours of duration equivalent to 6 ECTS, with a start date of dd/mm/yyyy and an end date of dd/mm/yyyy.

TECH Global University is a university officially recognized by the Government of Andorra on the 31st of January of 2024, which belongs to the European Higher Education Area (EHEA).

In Andorra la Vella, on the 28th of February of 2024

Dr. Pedro Navarro Illana
Rector

This qualification must always be accompanied by the university degree issued by the competent authority to practice professionally in each country.   Unique TECH Code: AFWORD23S   techtitute.com/certificates

*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.

tech global university

Postgraduate Certificate
Analytical Quality Control
in the Food Industry

» Modality: **online**
» Duration: **6 weeks**
» Certificate: **TECH Global University**
» Credits: **6 ECTS**
» Schedule: **at your own pace**
» Exams: **online**

Postgraduate Certificate
Analytical Quality Control in the Food Industry

tech global university